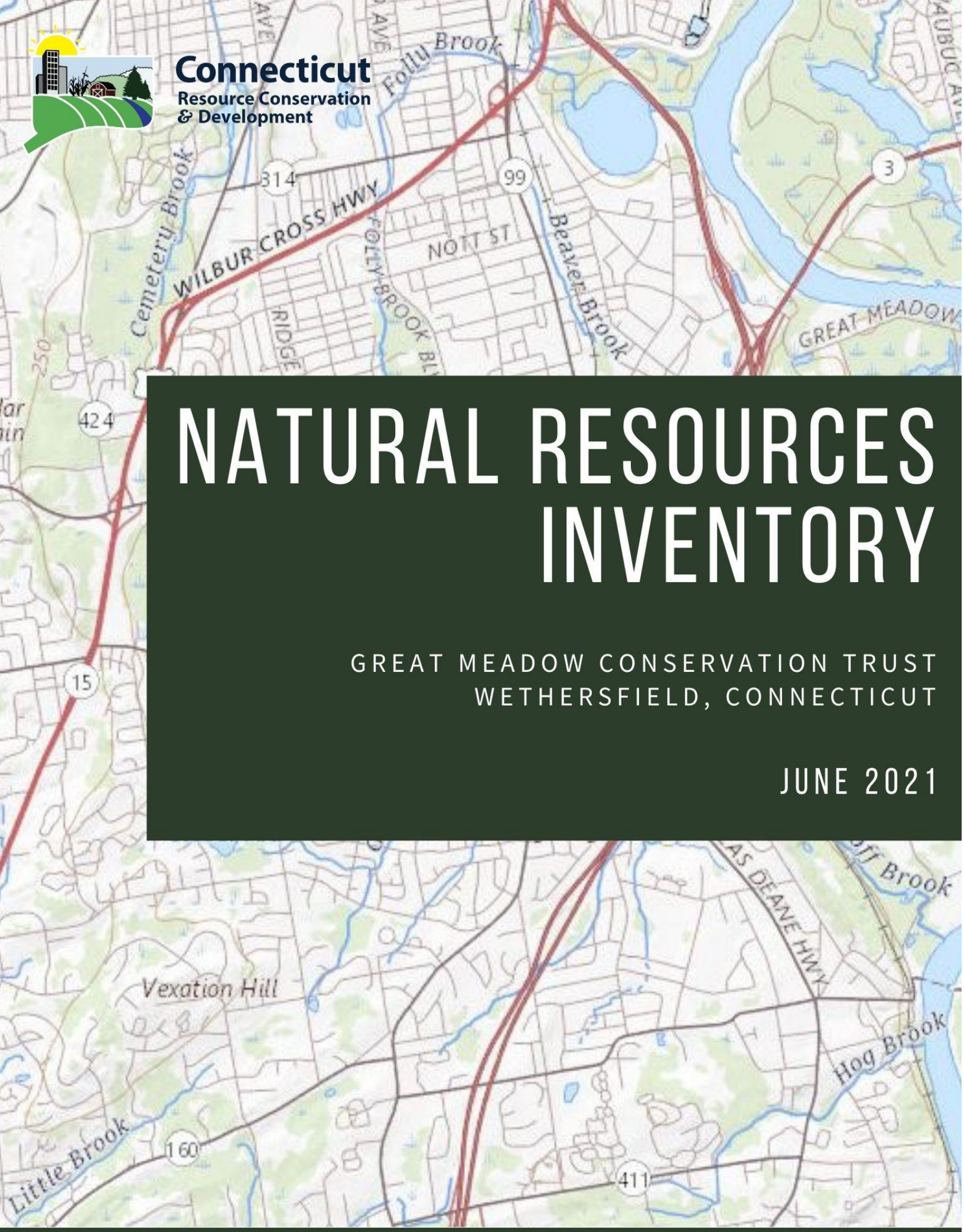


NATURAL RESOURCES INVENTORY

GREAT MEADOW CONSERVATION TRUST
WETHERSFIELD, CONNECTICUT

JUNE 2021

Table of Contents

(All site photos were taken by CT RC&D's J Davies and James Woodworth, GMCT Steward unless stated otherwise. Cover photo provided by the USGS TopoView website)

This report is the product of a request from Great Meadows Conservation Trust to CT Resource Conservation and Development's (CT RC&D) Environmental Review Team (ERT) program. The CT RC&D Environmental Review Team program is a service for Connecticut municipalities and land trusts to obtain baseline environmental data and initial best management practices for town properties or properties of significant interest for development or conservation. The ERT service for natural resource inventories is free to Connecticut municipalities and land trusts, funded through the CT Department of Energy and Environmental Protection (CT DEEP) Passport to the Parks Program as well as CT RC&D matching funds.

CT RC&D would like to acknowledge and express their appreciation for the important work of the following Environmental Review Team members. Their professionalism and expertise were critical to the analysis of the Wood Parcel, in context with its proximity to the historic district, flood plain management and agriculture lands both owned and adjacent for property owned by the Great Meadows Conservation Trust. The ERT process will provide the Great Meadows Conservation Trust and the Town of Wethersfield preliminary assessments to evaluate natural resources and agriculture management of the property to ensure baseline methods toward property management.

Field reviews were conducted February – April 2021 for individual ERT members with the support from the members of the Great Meadow Conservation Trust

Joseph Barsky	Forester Connecticut Agriculture Experiment Station
Kip Kolesinskas	Consulting Conservation Scientist Connecticut Farmland Trust
Christopher Allan	Professional Soil & Wetland Scientist LandTech https://www.landtechconsult.com/
Vivian Felton	District Conservationist Natural Resources Conservation Service (NRCS
Fernando Rincon	Landscape Architect Natural Resources Conservation Service (NRCS)
Cathy Labadia	Archaeologist /Deputy State Historic Preservation Officer Dept of Community and Economic Development – State Historic Preservation Office
James Woodworth	Great Meadows Conservation Trust Steward
Jeanne Davies, AICP	CT Resource Conservation & Development Environmental Land Use Planner

We would also like to thank the Great Meadow Conservation Trust members for their expertise, insights, and assistance during the ERT review process. Prior to the review day, each Environmental Review Team member received a summary of the proposed concepts or projects anticipated for the property along with various information and geographic information maps. Reports from each team member were submitted to the CT RC&D Executive Director/Environmental Planner for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project – all final decisions rest with the Great Meadows Conservation Trust.

This report identifies the existing resource base and evaluates its significance to potential conservation in proximity to existing open space areas and suggests considerations that should be of concern to the town. The results of this Team action are oriented toward conservation of environmental quality and the long-term economics of conservation on the property for agriculture.

An additional valued resource for future technical conservation assistance, especially on watershed management is the North Central Connecticut Conservation District https://conservect.org/northcentral/

The CT RC&D Council hopes you will find this report of value and assistance in providing information to the Great Meadows Conservation Trust and the Town of Wethersfield. If you require additional information, please contact:

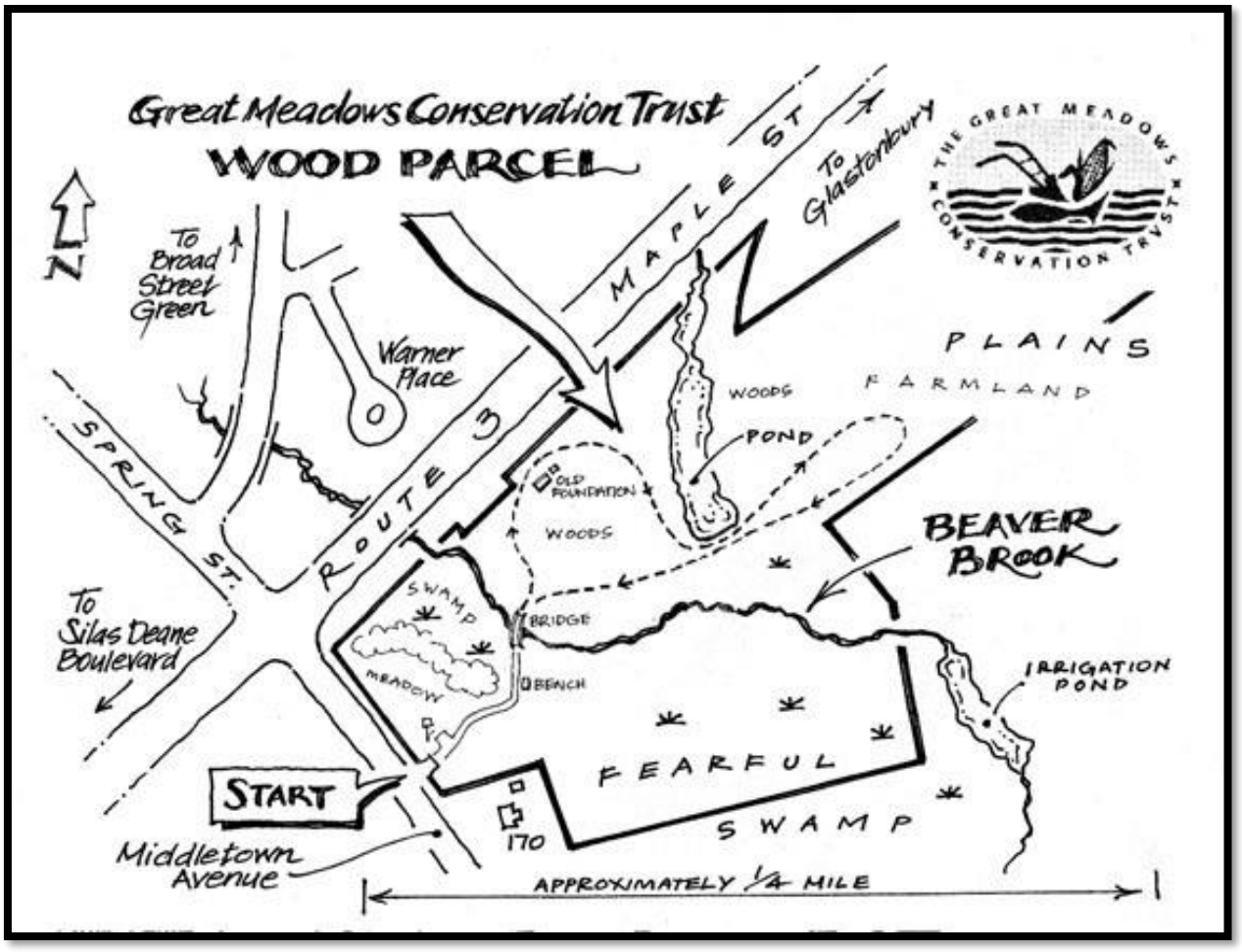
Jeanne Davies, Executive Director/Environmental Planner
jdavies@ctrcd.org
P.O. Box 70 - Haddam, CT 06438
860-345-3977
ctrcd.org

Wood Sparrow – Trout Lilly – Wood Parcel, May 2021 – J. Woodworth
Eastern Painted Turtle – Wood Parcel, April 2021 – J. Davies

Introduction

The Great Meadow Conservation Trust (GMCT) sought support through an application in December 2019 through CT RC&D Environmental Review Team program to conduct a natural resource, agriculture, forestry and historic/archeological inventory of their property located the intersection of Route 3 (Maple Street and Middletown Avenue in Wethersfield's historic district). The request was considered at the CT RC&D September meeting. It was noted that given the number of ERT reviews in progress, the situation with COVID during 2020 and the GMCT's latitude in a timeline for receipt of a final report, the ERT review would occur in late Winter and Spring of 2021.

Thus, this ERT was a unique reporting process for 2021 where team members were unable to meet as a team in the field and share insights. During the site reviews, additional concerns and questions about adjacent farmland, riverine and flooding concerns as well as protected species were addressed. This ERT seeks to address those topic areas that were most prevalent to the concerns of the Great Meadows Conservation Trust.

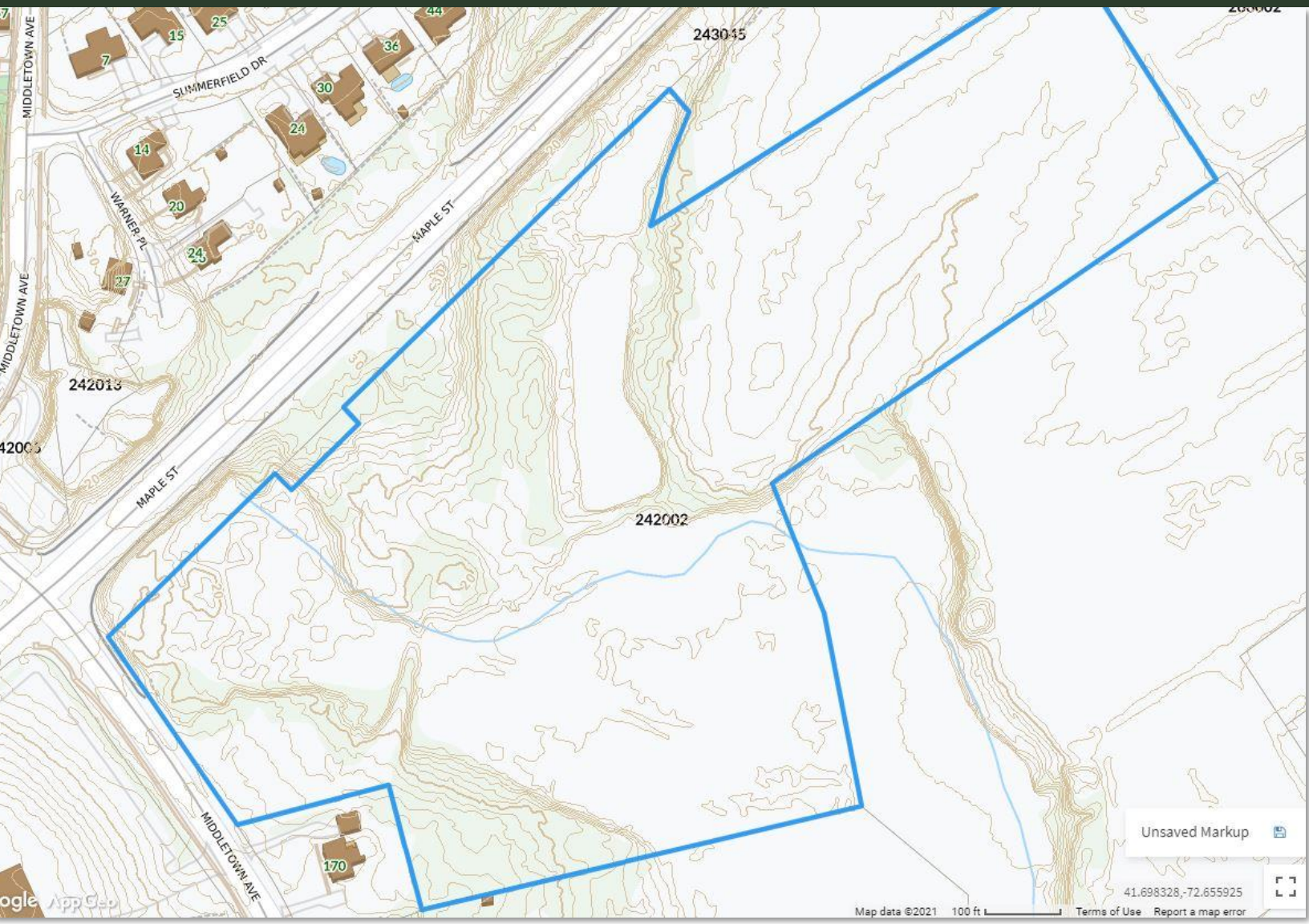


It is recommended that a follow up ERT report update occur in late Spring 2022 to follow up on invasive management, watershed, and flood plain management, revisit the agriculture management recommendations toward further ideas for funding and incentivized practices to farmers through USDA/NRCS. This could result in a ERT team meeting and site visit by the team together to discuss correlation of recommendations.

The Great Meadows Conservation Trust is a non-profit land trust incorporated in 1968 by concerned citizens of Wethersfield, Rocky Hill, and Glastonbury as a non-profit tax-exempt land trust to protect and preserve the Great Meadows. The goal of the organization is to save the floodplain's vital agricultural, scenic, archeological and wetland resources.

Membership within the organizations includes dedicated volunteers who are committed to work with like-minded groups and landowners. Members also have unique skillsets as hobbyists and professionals in the areas of birding, historic preservation, flora and fauna, invasive species identification. The organization is structured to provide support toward acquisition of land as well as promote the negotiation and purchase of conservation easements. Additionally, the organization has contracted for several studies to support overviews and analysis of its properties and the importance of the regional cooperative between the three towns.

Property Overview (Aerial Map - Parcel Delineated in Blue -Wethersfield On-line GIS)



Property Overview (Topographic Map - Parcel Delineated in Blue -Wethersfield On-line GIS)

The specific issues the Great Meadow Conservation Trust wanted to address in this ERT report include:

- Soils and Wetlands Soils
- Historic Context to Site Management
- Forestry and Invasive Species
- Agriculture and Farmland Soil Management
- Site Access
- State Plan of Conservation & Land Use Development

Highlights of the Report

- It is ultimately up to the GMCT to determine a course of action regarding controlling invasive species to meet the management goals of the property. Given the above options, one potential solution which maximizes invasive control while minimizing the use of herbicide on the property would be to employ a two-step procedure in which the first phase is to mechanically cut large infestations of invasive species during the dormant season, allow them to regrow, then apply a herbicide treatment during late summer period. This approach also minimizes impact to native herbaceous plants, as most of the clearing work and chemical applications are performed outside their growing season.

- Care must be exercised with any forest manipulation on this property to preserve what little overstory remains, while also promoting native species for the future composition of the forest. The Elm restoration project is a great kick start in helping to restore the future canopy. Efforts in eliminating invasive species will benefit these plantings as the trees will have less vegetative interference and greater access to resources, such as sunlight, water, and nutrients.

- The floodplain wetlands within the Great Meadows are recognized as valued resources with many recognized wetland functions and values including flood flow alteration and storage, removal and transformation of sediments, nutrients and other pollutants, fish and wildlife habitat, recreation, and aesthetics. The Great Meadows are among the largest unobstructed floodplains along the Connecticut River. Their continued protection for flood storage is of paramount importance to central Connecticut.

- If extensive ground disturbing activities are needed to facilitate the Trust's mission, SHPO recommends additional consultation with our office or completion of an archaeological survey prior to any improvements. This would not apply to areas that are, or in the recent past, have been used for agricultural purposes or that have been subject to prior ground disturbing activities.

- As the property is listed on the National Register of Historic Places and the Trust is a nonprofit 501(c)3, the Trust is eligible to apply for matching grants through our office to assist with preservation and interpretation efforts related to the prehistory and history of the property. In addition to these incentives, we also are always available for technical assistance.

- Although these soils are productive, there is evidence of soil health issues including erosion and sedimentation. This field has probably been in near continuous cultivation for over 1000 years. First by native people, then colonists, other Wethersfield farmers, and currently by Anderson Farms.

- Field investigation did show areas with a "plow pan"- compaction just below the plow layer, and some areas of ponding, crusting, and a lack of good topsoil structure. This reduces the rooting depth, prevents the movement of water into and through the soil, and makes it more difficult for the germination of seed. All of this can reduce yields.

- The Wood parcel offers an important and diverse landscape of CT river floodplain features with many habitats, hydrology, cultural, recreational, and agriculture values. Keeping the farmland in sustainable production should be an important component of the management plan. The develop of a conservation plan that protects the natural resources including soil health, helps adapt and mitigate climate change, while remaining economically viable are important goals.

- To keep this parcel as healthy as possible it is also important that efforts be made to better understand the many off site land use impacts that influence the parcel. That should include nearby farmland and habitat loss, farm viability from state/municipal actions, and water quality and quantity impact from impervious surfaces and hydrologic changes from infrastructure. The control and management of invasive species are also a concern.

- Support and advocate for improved bicycle and pedestrian access to the Wood Parcel site. Current conditions create risk for the immediate community to access the site by biking or walking. Bicycle racks would be a low-cost addition to the site to allow for storage of bicycles.

- GMCT should also be aware of any future site development along major corridors north of the Wood Parcel site. There are no large-scale developments in the surrounding areas at present, but future changes could impact water quality and wildlife on the site. GMCT should coordinate with the town regarding the improvements to Beaver Brook Park and the downstream impacts to the Wood Parcel site.

- GMCT could also seek to adapt a portion of the Wood Parcel, likely the part fronting Middletown Avenue, as a community space for small events. Should GMCT pursue the construction of a gazebo or pavilion on site, a special permit for conditional use may need to be acquired. In addition, this parcel is in the town's historical district and could also be subject to further restrictions. Consider investigating acquisition of land along Elm Street, to the east of the Wood Parcel. This could provide a second public point of access to the site and flexibility for adding community space.

- GMCT may be able to leverage funding and management of the Wood Parcel in context with improvements listed in the Beaver Brook Master Park Plan.

- Further investigative study is warranted to identify critical or endangered species using the habitat of the Wood Parcel. This is especially important with habitat improvements to the property to demonstrate the success toward the volunteer and cost of property management.

Forestry- Biology and Invasive Species

Joseph Barsky, Agriculture Research Technician
Connecticut Agriculture Experiment Station (CAES)

Assessment Date: January 29, 2021

This parcel is wooded and has a large marsh. It has a mowed field that fronts on Middletown Ave. The trust leases 6.1 acres for farming. A sewer line right-of-way crosses the parcel. On May 24, 2010, the Metropolitan District Commission and the Trust made an agreement as to their access to the sewer line and manholes. In 2017 the MDC supplied materials; Wethersfield Construction replaced the broken 1952 culvert. The Connecticut Department of Transportation has the right to drain storm water across the parcel, from Middletown Avenue into Beaver Brook which crosses the parcel.

We do not have the right of access from Route 3, Putnam Bridge approach, which forms the parcel's northern border. The Connecticut Department of Environmental Protection purchased a conservation easement on the property for 50% of its value. This obligates GMCT to keep the property open to the public, as well as additional restrictions. A survey was done of the property, on file as map number 2414. Several concrete monuments and iron pipes mark the boundaries. The Trust has installed a Wood Duck nesting box on the parcel; the Wethersfield Game Club installed four additional wood duck boxes.

There are several natural features that contribute to the unique character of this portion of the Connecticut River. Geologically, the Meadows are typical of the middle Connecticut River – the Connecticut River Valley Lowlands. Its basic characteristics include the soft, erodible sedimentary rock and interlayered deposits of hard traprock. Glacial forces have shaped the contour of the land, resulting in gently rolling valleys and the flat flood plain of the Connecticut River which is a remnant of ancient glacial Lake Hitchcock (Little, 1998). Hydrologically, the Connecticut River is an alluvial river, which changes as the river channel erodes and redeposits sediment. The river floods regularly during the spring thaw but has been known to flood every month of the year. As a natural storage basin for floodwaters, the Meadows help control flood levels for the surrounding areas, including Hartford. The water quality of the river has improved significantly over the past 30 years because of regional, state, and federal efforts. Formerly classified as a D grade river, the river now has a B grade rating and is considered safe for swimming and excellent for fish and wildlife habitat (MacBroom, 1998).

The Great Meadows of the Connecticut River Glastonbury, Rocky Hill & Wethersfield, State of Connecticut Thomas Devaney, Lynn Dupuis, Paul Foley, Juliet Hansel, Renee Kinchla, Regina Mahony, Qiongli Peng, Gretchen Roberts 2001
http://www.gmct.org/preserves/studies/Draft3(complete).pdf

Introduction

A field assessment was performed on January 29, 2021, by Joseph P. Barsky, an Agricultural Research Technician II at the Connecticut Agricultural Experiment Station. He is a Certified Forester in the State of Connecticut and has over 25 years of experience in forest research, biological inventories, and invasive species research. Latin names are not used in this document but can be found at the end of this report.

Methods

Five randomized points were identified prior to the visit to serve as sampling locations. At each location, the following information was obtained: GPS location, photo, and site characteristics (ruts/trails, coarse woody material, fern cover, herbaceous cover, native shrub cover, invasive cover, predominant shrub species, mid canopy cover and species, upper canopy cover and species, vine cover and species, prism stem counts, and regeneration survey). For those unfamiliar with prism stem counts, it is a metric used by foresters to assess the density, or "stocking" of a particular area.

Summary Description

The Wood Parcel (W-15) of the Great Meadows Conservation Trust, Inc. is located in the town of Wethersfield, CT, bounded by Middletown Avenue to the West, Route 3 to the North, a private residence to the South, and a small pond to the East. It is roughly 20 acres in size. It is a typical mixed hardwood bottomland forest of the area, consisting of an open overstory of elm, cottonwood, sycamore, bitternut hickory, ailanthus, pin oak, Norway maple and ash, shadowing a sparse mid-canopy of black cherry and American hornbeam. Dense understory vegetation, consisting of bush honeysuckle, multiflora rose, combined with occasional spicebush and gray dogwood compete with bittersweet, grape, and poison ivy vines to occupy the remaining growing space.

Due to snow cover, neither fern nor herbaceous cover could be assessed during the visit, however, it would be reasonable to presume that invasive species such as garlic mustard, wild onion, and Japanese knotweed are present. Lastly, recent plantings of American elms and several standing dead trees occur throughout the parcel.
Cultural remnants can be found in the parcel and include the remains of an abandoned house with scattered debris, along with periwinkle growing in the adjacent areas.

Invasive Species Overview

The stated objectives for the Wood Parcel (W-15) Action Plan include, *"preservation of rural landscape, water resources, marshland, swamps, woodland, open spaces, native flora and fauna, and unique historic and scenic sites*." If those objectives are to be meet, a plan of ecosystem restoration must be commenced, beginning with treatment for the control of invasive species. However, a paradox must first be recognized: *controlling invasive species creates the very conditions which allows invasive species to flourish*. To address that, any long-term restoration plan must include: 1) initial treatment, 2) planting of suitable native species, 3) invasive species monitoring and treatment, and 4) a willingness to commit resources to accomplish it.
There is ample evidence that invasive species present a clear threat to long-term forest health. These stressors negatively impact both the ability of a forest to resist environmental stress, respond to environmental change, and restore to their previous state. Invasive insects, such as the emerald ash borer (EAB), not only kill the ash tree, but also the native species which depend upon it for their existence. Invasive plants simultaneously inhibit and suppress native vegetation, which can cause local extinctions of native flora and fauna. Black swallow-wort, for example, is a monarch butterfly trap. Adult female monarch butterflies will lay their eggs upon them, confusing them for common milkweed, their preferred host. The newly hatching larval caterpillars cannot complete their lifecyle upon them, and the local population declines. Finally, invasive plant species can harbor increased concentrations of blacklegged deer ticks, which vector human pathogens, such as Lyme disease, babesiosis, and/or anaplasmosis.

Invasive Species Control Alternatives

The Wood Parcel (w-15) is heavily infested with invasive woody species and is likely infested with herbaceous invasive species. To help GMCT meet their management goals for the property, all known invasive treatment options were examined, along with known benefits, limitations, and rewards. Examples range from hand weeding, flame-weeding, utilizing livestock, to mechanical (e.g.: handtools, gas powered brushsaw, brush mower, or tractor mounted mower) and chemical. An excellent overview of several invasive species control methods, published by the Connecticut Agricultural Experiment Station, can be viewed here:
https://portal.ct.gov/-/media/CAES/DOCUMENTS/Publications/Invasive-Weed/FieldGuideInvasiveTerrestrialPlants-Oct-2019--rh.pdf

Hand weeding is a process involving physical removal of individual plants from the soil. It is well suited for areas with low levels of infestation and can be employed successfully on herbaceous species. On higher level infestations, it is time consuming and can exhaust labor resources. Flame weeding can be more efficient on herbaceous species than hand weeding while providing minimal soil disturbance. However, it can only be utilized by trained individuals when the risk of fire danger is low, and where noxious irritants, such as poison ivy, are not present. Lastly, the treatment cost per acre can be extremely high, depending upon the level of infestation.

Livestock are an option which has been suggested for invasive species control. The efficacy of goats is currently being examined for invasive control, with some favorable early reviews regarding invasive species control and minimal seed dispersal, but mixed reviews concerning grazing preference and discrimination (native vs. invasive species). Additional considerations include fenced enclosures, animal welfare, local regulation, and theft. The cost of this approach is unknown.

Mechanical control involves handheld tools or gas-powered machinery which physically cut the aboveground portions of the plant from the rootstock. This method is effective on low density invasive shrub control. Continual treatment is necessary as plants often regrow to their previous condition within a few years. There are associated costs for purchase, insurance, and repair, or contracted treatment expenses.

Chemical treatment involves the use of selective herbicides to treat invasive species. This work must be performed by licensed applicators, has associated costs, and may not be and acceptable solution to the GMLT. Repeat applications may be necessary, and spray drift may damage non-target species. However, it remains the most effective approach at controlling invasive species.

Invasive Species Control Suggestions

It is ultimately up to the GMCT to determine a course of action regarding controlling invasive species to meet the management goals of the property. Given the above options, one potential solution which maximizes invasive control while minimizing the use of herbicide on the property would be to employ a two-step procedure in which the first phase is to mechanically cut large infestations of invasive species during the dormant season, allow them to regrow, then apply a herbicide treatment during late summer period. This approach also minimizes impact to native herbaceous plants, as most of the clearing work and chemical applications are performed outside their growing season. Some constraints to this proposed solution include access, herbivory, and cost. Site access is granted via an aluminum bridge. Unless access is granted for large equipment (e.g. a Bobcat T-300 with a FECON head) through the adjoining farm, mechanical treatments would have to be performed with a brush mover and brushsaw combination.

An estimate to perform this work would be approximately 200 person-hours using professionals. Site treatment would be approximately 20 person-hours with a Bobcat T-300 or similar sized equipment. Herbicide use would also be restricted to backpack spray tanks, which would likely take 50 person-hours. If access was granted for ATV's mounted with spray tanks, the site could be treated in as little as ten hours.

It is worth noting that a wide variety of entities, such as Government Agencies (e.g. DEEP, CAES), utility companies (e.g. South-Central Water Control Authority, Eversource), non-profit entities (e.g. The Nature Conservancy, the White Memorial Foundation) use a combination of mechanical and chemical applications to control invasive species on their properties, or contract with entities to perform the work.

Another constraint is herbivory. The fencing surrounding the planted elm trees suggest browsing is a problem, although there was little evidence of deer activity during the site visit. It would be reasonable to presume that any planted vegetation would also be browsed. With limited options for controlling deer populations, one alternative may be to plant in 20' x 20' areas across the landscape, then establish temporary fencing until the vegetation becomes established (3-5 years).

The third and final constraint, cost, must also be acknowledged. Any serious undertaking, such as an ecosystem restoration program to meet the land management objectives, must have financial resources to accomplish this goal, or a means to obtain them. For a project of this nature, it would be advisable to hire operators who are licensed and insured to perform the treatments, and conserve volunteer resources for planting, fencing, and long-term monitoring.

Forest Stand Overview

It is widely recognized that healthy, resilient forests have the capacity to resist environmental stress, respond to environmental change, and restore to their previous state following disturbance. Two common metrics to measure forest health include tree species diversity and canopy heterogeneity. On this parcel, the management priorities include: bird and pollinator habitat, native plants, and water resources. With that in mind, a priority for many landowners with similar goals are to: 1) maintain a diversity of structure (beneficial for birds), 2) retain native tree and shrub species (beneficial for pollinators), and 3) replace invasive species with native species (beneficial for resiliency).

Point 1. Note elm planting, dead tree snags, and vine cover. J Barsky 2021

Point 2. Note dense bush honeysuckle in foreground. J Barsky 2021

Point 3. Note dense multiflora rose. J Barsky 2021

The Wood Parcel (W-15) is an open mixed bottomland hardwood forest, with an understory of invasive species. Five sampling points were established the for the purpose of evaluating the current species density and diversity. The most common species encountered during the visit were white ash, followed by cottonwood, and sycamore. Many ash trees on the property are either in decline, or dead due to EAB, and can present a hiking hazard for the next few years. Several sycamore trees showed signs of foliar infection with sycamore anthracnose, a disease that causes aesthetic issues. The cottonwood trees appeared to be in good health. A highlight of the visit was observing an active American Elm restoration project; it is encouraging to have strong community support for its forest resources.

Forest Stand Concerns

Some concerns regarding the Wood Parcel (W-15) include low species density and diversity in the canopy and invasive species. It is widely recognized that losses in tree canopy diversity lead to opportunities for invasive species to flourish, and increased habitat loss for wildlife.

The most pressing concern regarding the health of the forest are the ash trees. The opportunity to maintain the health and vigor of individual specimen ash trees has passed, and there are few options to conserve the species at this time. While living, the trees provide a valuable food source for woodpeckers, as they readily consume EAB larva. However, the dying and dead trees can pose a hazard for hikers as they decay, break off, and fall to the ground. Trails in Southern Connecticut have been closed to hiking due to Hemlock Wooly Adelgid outbreaks in the 1990's, and more recently, trails in Eastern Connecticut were closed following Gypsy Moth outbreaks. Once on the ground however, the decaying logs do provide habitat for insect, amphibian, and small mammals.

Another concern is that the Wood Parcel (W-15) is unfortunately, an excellent example of an understocked forest. During the site visit, an average basal area was 35 ft2 was noted with an average tree diameter of 12". This equates to roughly 30 trees per acre, well below the minimum threshold to meet the criteria for an understocked stand. For reference, a fully stocked bottomland hardwood with an average diameter of 12" should have roughly 110 ft2 of basal area, equating to between 125-175 trees per acre.

Forest regeneration surveys at the five locations indicated one competitive (trees which are likely to form the future canopy) native tree, an unplanted elm. That indicates a missing link in the forest canopy line of succession, as it equates to roughly 100 saplings per acre, far fewer than the thousands typically needed to maintain a healthy forest. Herbivory is a concern in many forested areas throughout Southern New England, and in many locations, it is not possible to maintain healthy resilient forests without some form of human intervention. Land managers have erected fencing, increased hunting opportunities, and resorted to planting to meet their land management objectives. Controlling native plants, such as poison ivy may have unintended consequences. Although the plant can cause to individuals suffer skin dermatitis, it is a native plant which provides a valuable source of food for native birds. As such, efforts to eradicate it should be balanced against the goal of the conserving bird habitat.

A final concern for the stand is climate adaptability. Currently, there is limited agreement that bottomland hardwood systems are moderately vulnerability to climate change impacts, but few case studies concerning bottomland hardwood climate adaptability. However, one practice gaining attention is assisted migration (planting species northward of their traditional cool season limit).

Point 4- Note open overstory and large sycamore in background. J Barsky2021

Point 5. Note gray dogwood in foreground. J Barsky 2021

Forest Stand Suggestions

Care must be exercised with any forest manipulation on this property to preserve what little overstory remains, while also promoting native species for the future composition of the forest. The Elm restoration project is a great kick start in helping to restore the future canopy. Efforts in eliminating invasive species will benefit these plantings as the trees will have less vegetative interference and greater access to resources, such as sunlight, water, and nutrients.
In bottomland hardwood restoration, land managers facing declining overstory diversity, open canopies, and a lack of competitive regeneration have resorted to planting to supplement existing vegetation. Bare-root seedlings of many native species, such as bitternut hickory, pin oak, swamp white oak, silver maple, tupelo, tulip poplar and hackberry may be suitable suggestions, and offer a cost-effective approach. However, planting would only be advisable if some form of protection from herbivory, and invasive species can be controlled.

Final Thoughts

There are realistic challenges facing the GMCT stated goals concerning the Wood Parcel (W-15). Cost constraints, and methods of approach have been carefully evaluated and presented based on current scientific findings. It is hoped that members of the GMCT take the time to seriously consider these recommendations if they wish to meet their objectives. Further, I would be happy to offer technical assistance with meeting the objectives should it be requested.

Further Reading/Resources

North Central Region Bottomland Hardwoods Management Guide (fs.fed.us)
A Guide to Bottomland Hardwood Restoration (usda.gov)
Adaptation strategies and approaches for forested watersheds (fs.fed.us)
Forest Regeneration — Department of Ecosystem Science and Management (psu.edu)
Forest Regeneration Handbook (CAES)
New England and northern New York forest ecosystem vulnerability assessment and synthesis: a report from the New England Climate Change Response Framework project (fs.fed.us)

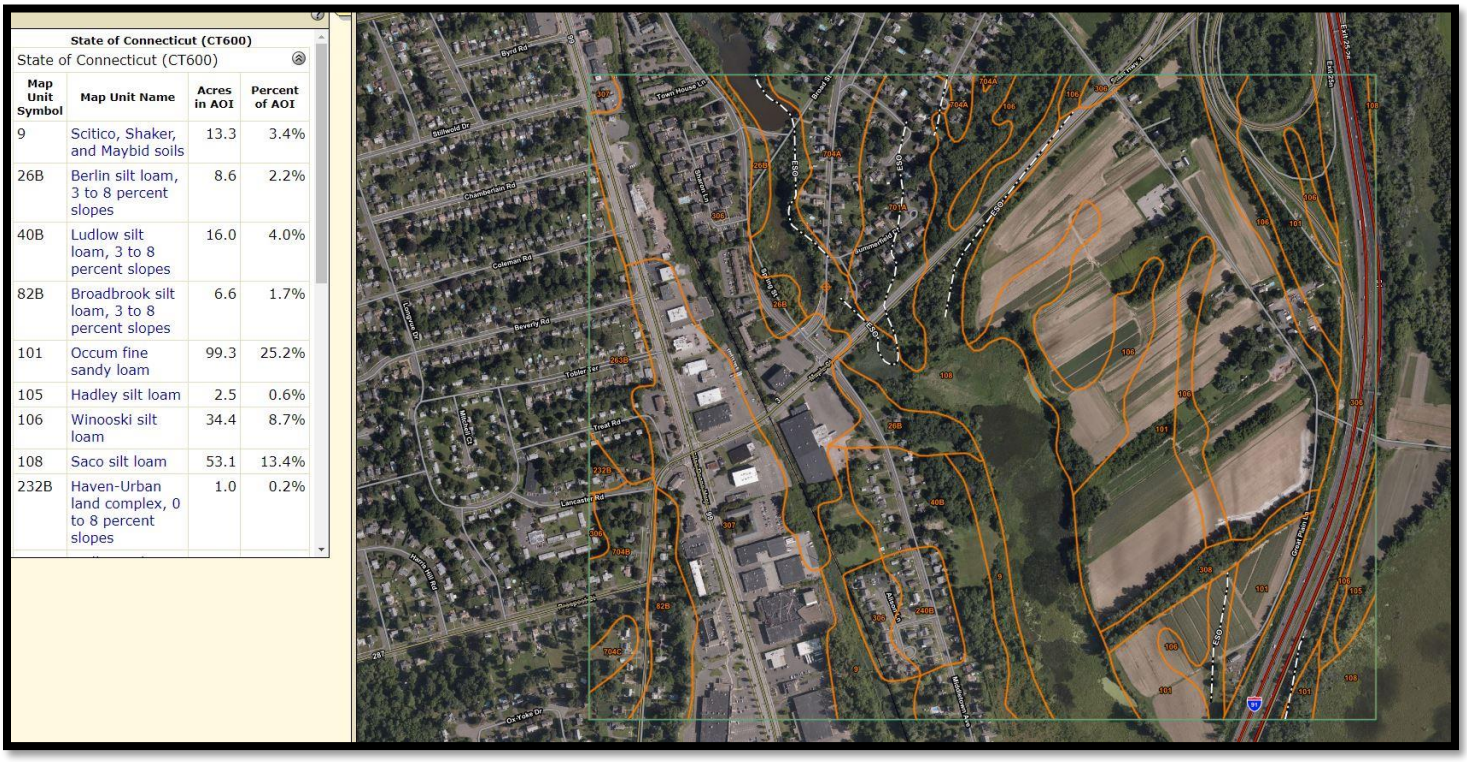
Joseph Barsky – Mid Winter Tree Plant Analysis-Identification– J. Woodworth

Soils and Wetlands

Christopher Allan, Professional Soil Scientist & Wetland Scientist
LANDTECH Consulting - Westport

Surficial Geology & Soils

The Great Meadows Conservation Trust - Wood parcel is part of the approximately 4,000 acres of floodplain along the banks of the Connecticut River. The landforms and surficial geologic features of area were formed after the last major glacial epoch, in the early and late Holocene epochs (approximately 11,700 years ago to the present). Postglacial deposits refer to those surficial materials that were emplaced by various processes after the melt back of the last ice sheet. The subject site's postglacial deposits include Stream Terrace Deposits developed in alluvium.



State of Connecticut (CT600)

State of Connecticut (CT600)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
9	Scitico, Shaker, and Maybid soils	13.3	3.4%
26B	Berlin silt loam, 3 to 8 percent slopes	8.6	2.2%
40B	Ludlow silt loam, 3 to 8 percent slopes	16.0	4.0%
82B	Broadbrook silt loam, 3 to 8 percent slopes	6.6	1.7%
101	Occum fine sandy loam	99.3	25.2%
105	Hadley silt loam	2.5	0.6%
106	Winooski silt loam	34.4	8.7%
108	Saco silt loam	53.1	13.4%
232B	Haven-Urban land complex, 0 to 8 percent slopes	1.0	0.2%

Stream Terrace Deposits

The Stream Terrace Deposits consist of sand, gravel, and silt deposited by water on terraces that were cut into glacial meltwater sediments. Texture is variable vertically and laterally but is chiefly coarse pebbly sand commonly similar to that of adjacent glacial deposits. Thickness ranges from 1 to 5 m (3 to 15 ft). The

surficial materials of the site are identified as Sand overlying Fines. Sand is of variable thickness, commonly in inclined foreset beds and overlies thinly bedded fines of variable thickness (distal deltaic deposits overlying lake-bottom sediment). “A foreset bed is one of the main parts of a stream delta. It is the inclined part of a delta that is found at the end of the stream channel as the delta sediment is deposited along the arcuate delta front.”

The site’s soils are identified by the Natural Resources Conservation Service Soil Survey as Occum fine sandy loam (Map Unit 101), Winooski silt loam (Map Unit 106), Ninigret fine sandy loam (Map Unit 701A) and Saco silt loam (Map Unit 108).

The Occum series consists of very deep, well drained loamy soils formed in alluvial sediments. They are nearly level soils on flood plains, subject to common flooding. Slope ranges from 0 to 3 percent. The soils formed in recent alluvium derived mostly from gneiss, granite, and schist. Many areas of these soils flood for short periods each year, but typically not during the growing season. The soils on higher positions flood occasionally.

The Winooski series consists of very deep, moderately well drained soils formed in alluvial material. These soils are on nearly level flood plains. They are typically in broad depressions. Slope ranges from 0 through 3 percent. The soils formed in recent alluvial deposits of very fine sand and silt. Flooding frequency varies from twice a year to once in10 years. Stream overflow generally occurs during late winter or spring and during periods of high rainfall.

The Ninigret series consists of very deep, moderately well drained soils formed in loamy over sandy and gravelly glacial outwash. They are nearly level to strongly sloping soils on glaciofluvial landforms, typically in slight depressions and broad drainage ways. Slope ranges from 0 through 15 percent but commonly are 0 through 8 percent. The soils formed in loamy over stratified sandy and gravelly glacial outwash derived from a variety of acid rocks.

The Saco series consists of very deep, very poorly drained soils formed in silty alluvial deposits. They are nearly level soils on flood plains, subject to frequent flooding. Slope ranges from 0 to 2 percent. The soils formed in recent silty alluvium derived mostly from granite, gneiss, schist, shale and sandstone.

The site’s moderately well drained and well drained soils (Occum, Winooski and Ninigret) are identified as Prime Farmland Soils. These are soils that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oil seed crops, and are also available for these uses (the land could be cropland, pastureland, range-land, forestland, or other land, but not urban built-up land or water). It has the soil quality, growing season and moisture supply needed to economically produce

sustained high yields or crops when treated and managed, including water management, according to acceptable farming practices.

Wetlands

In Connecticut, inland wetlands are defined as areas of poorly drained, very poorly drained, floodplain and alluvial soils as delineated by a soil scientist (CGS Sections 22a-36 to 22a-45). Federally regulated inland wetlands are defined by the presence of a predominance of hydrophytic vegetation, hydric soils, and evidence of wetland hydrology.

According to the CT wetland definition, the Occum, Winooski and Saco soils are identified as wetland soil types because they are either poorly drained or alluvial and floodplain soils. According to the federal wetland definition, only the Saco soils would likely be defined as an inland wetland due to the presence of hydric soils, hydrophytic vegetation and indicators of wetland hydrology.

Wetland habitats on the property include freshwater emergent wetlands, freshwater forested wetlands, a man-made excavated pond, and freshwater scrub/shrub wetland. These habitat types are identified in the U.S. Fish and Wildlife Service National Wetlands Inventory.

The majority of wetlands on the GMCT property are Freshwater Emergent Wetlands with a USFWS Classification Code PEM1E (Palustrine (P), Emergent (EM), Persistent (1), Seasonally Flooded/Saturated (E). These wetlands include the large marsh habitats to the west and east of foot bridge vegetated primarily with cattails, common reed (*Phragmites*), sedges, and wetland wildflowers.

> The *Palustrine System* includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens. The *Emergent Class* is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. The *Persistent Subclass* is dominated by species that normally remain standing at least until the beginning of the next growing season. The *Seasonally Flooded/Saturated* Water Regime indicates that surface water is present for extended periods (generally for more than a month) during the growing season, but is absent by the end of the season in most years. When surface water is absent, the substrate typically remains saturated at or near the surface.

The property also contains an area of Freshwater Forested Wetland with a USFWS Classification Code PFO1E (Palustrine (P), Forested (FO), Broad-Leaved Deciduous (1), Seasonally Flooded/Saturated (E). These forested wetlands are located south of the emergent marsh wetlands and are vegetated primarily with American elm, white ash, red maple, catalpa, oaks, cottonwood and sycamore.

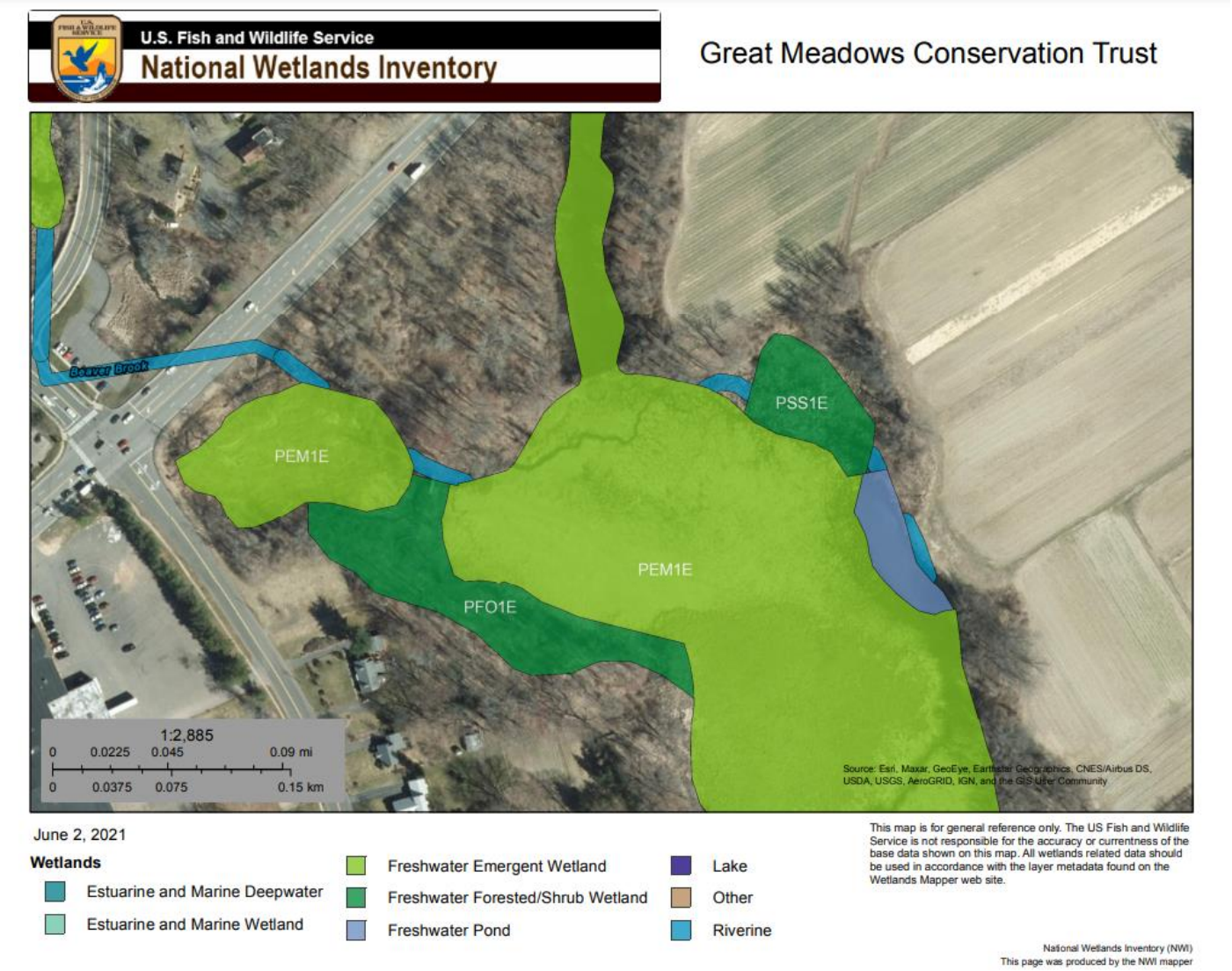
> The *Palustrine System* includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens. The *Forested Class* is characterized by woody vegetation that is 6 m tall or taller. The *Broad-Leaved Deciduous Subclass* is dominated by woody angiosperms (trees or shrubs) with relatively wide, flat leaves that are shed during the cold season. The *Seasonally Flooded/Saturated* Water Regime indicates that surface water is present for extended periods (generally for more than a month) during the growing season, but is absent by the end of the season in most years. When surface water is absent, the substrate typically remains saturated at or near the surface.

The ponded area between the emergent marsh and agricultural fields has a USFWS Classification Code PABHx (Palustrine (P), Aquatic Bed (AB), Permanently Flooded (H), Excavated (X).

> *The Palustrine System* includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, The *Aquatic Bed Class* includes wetlands and deepwater habitats dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. The *Permanently Flooded* Water Regime indicates that water

covers the substrate throughout the year in all years. The Special Modifier *Excavated* is used to identify wetland basins or channels that were excavated by humans.

The Freshwater Scrub/Shrub Wetland located adjacent to the pond, north of the freshwater emergent wetlands has a USFWS Classification Code PSS1E (Palustrine (P), Scrub-Shrub (SS), Broad-Leaved Deciduous (1), Seasonally Flooded/Saturated (E). These shrub wetlands are vegetated primarily with silky dogwood, gray dogwood, elderberry, spicebush and buttonbush.



The *Palustrine System* includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens. The *Scrub-Shrub Class* includes areas dominated by woody vegetation less than 6 m (20 feet) tall. The species include true shrubs, young trees (saplings), and trees or shrubs that are small or stunted because of environmental conditions. *Broad-Leaved Deciduous Subclass* includes woody angiosperms (trees or shrubs) with relatively wide, flat leaves that are shed during the cold or dry season. The *Seasonally Flooded/Saturated Water Regime* indicates that surface water is present for extended periods (generally for more than a month) during the growing season but is absent by the end of the season in most years. When surface water is absent, the substrate typically remains saturated at or near the surface.

The floodplain wetlands within the Great Meadows are recognized as valued resources with many recognized wetland functions and values including flood flow alteration and storage, removal and transformation of sediments, nutrients and other pollutants, fish and wildlife habitat, recreation, and aesthetics. The Great Meadows are among the largest unobstructed floodplains along the Connecticut River. Their continued protection for flood storage is of paramount importance to central Connecticut.

Archaeological Resource Assessment

Cathy Labadia
Archaeologist /Deputy State Historic Preservation Officer
Dept of Community and Economic Development – State Historic Preservation Office

Connecticut | Department of Economic and Community Development
State Historic Preservation Office

February 26, 2021

Ms. Jeanne Davies
Connecticut Environmental Review Team Programs
1066 Saybrook Road
P.O. Box 70
Haddam, CT 06438
(via email only to jdavies@ctrcd.org)

Subject: Great Meadows Conservation Trust, Wood Parcel
Middletown Avenue
Wethersfield, Connecticut

Dear Ms. Davies:

The State Historic Preservation Office (SHPO) appreciates the opportunity to comment on the referenced preservation and conservation efforts. Unfortunately, I was not able to visit the property without snow cover to identify visible ruins or other features, but I offer that service as needed for any time in the future. Based on information provided to me by Jim Woodworth from the Great Meadows Conservation Trust (Trust), a review of readily available historic information, and my own expertise and experience; I am confident that the Wood Parcel contains significant archaeological deposits and I can attest to the fact that it contributes to the Old Wethersfield Historic District, a property listed on the National Register of Historic Places. The subject parcel consists of approximately 20 acres at the southeast corner of the intersection between Maple Street (Route 3) and Middletown Avenue. SHPO has reviewed the management plan, which includes public engagement and appreciation of both the natural and cultural environments encompassed by the Wood Parcel.

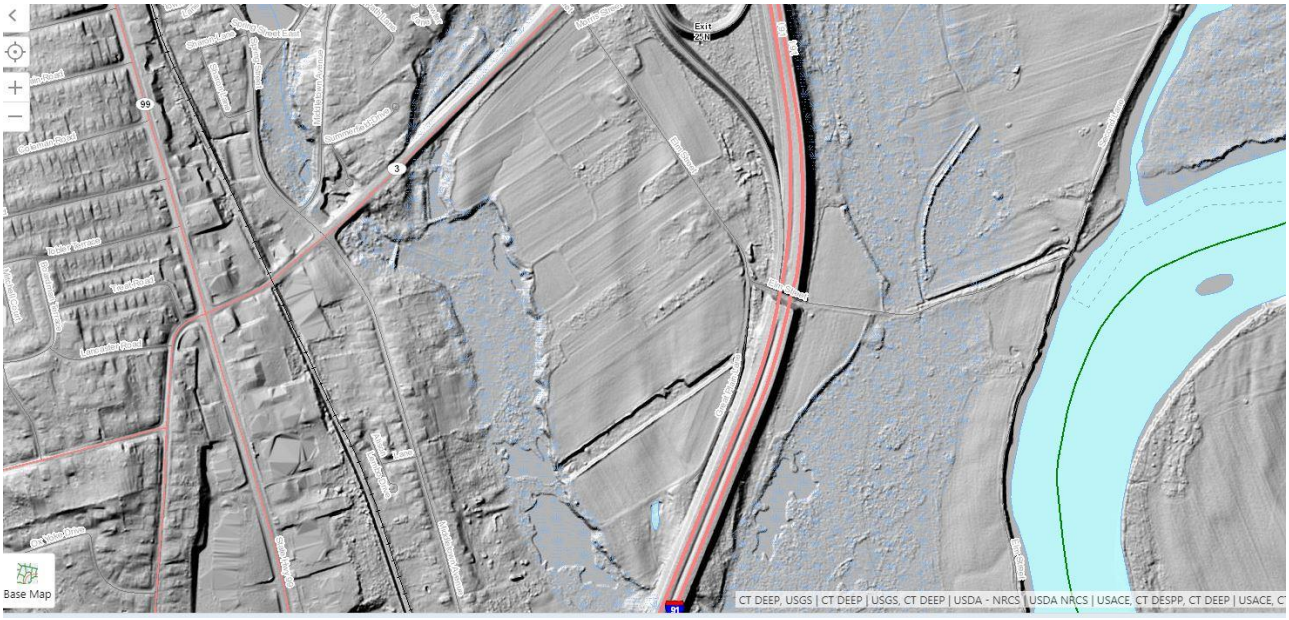
The environmental characteristics of the Wood Parcel frequently are associated with pre-contact or Native American habitation and land use. Although the parcel has not been subjected to a professional cultural resources survey, it is considered archaeologically sensitive. Mr. Woodworth shared photographs of artifacts collected in and around the property. The range of artifacts suggests indigenous occupations as early as 8,000 years ago and continuing until European settlement. In addition to a long temporal sequence, the artifacts represent a variety of activities related to hunting, hide processing, wood working, and farming. If extensive ground disturbing activities are needed to facilitate the Trust's mission, SHPO recommends additional consultation with our office or completion of an archaeological survey prior to any improvements. This would not apply to areas that are, or in the recent past, have been used for agricultural purposes or that have been subject to prior ground disturbing activities.

SHPO also understands that the parcel contained an 18th century house that has been lost, but ruins and associated feature of it and its occupants remain. The above-ground features likely are associated with important archaeological deposits dating from the period of significance listed for the Old Wethersfield Historic District. Our office understands that these visible features can be both a safety hazard and an opportunity for public education. When the snow clears, I would enjoy a visit to the site to make additional recommendations that can alleviate safety concerns and enhance interpretation. In addition, because this property is listed on the National Register of Historic Places and the Trust is a nonprofit 501(c)3, the Trust is eligible to apply for matching grants through our office to assist with preservation and interpretation efforts related to the prehistory and history of the property. In addition to these incentives, we also are always available for technical assistance.

The primary purposes of protecting and ensuring the future survival of the significant natural resources on these properties also affords permanent protection of our State's important cultural resources that might otherwise be lost to development. Therefore, SHPO is supportive of the stewardship proposed by Great Meadows Conservation Trust. For additional information or questions, please contact me at (860) 500-2329 or catherine.labadia@ct.gov.

Sincerely,

Catherine Labadia
Staff Archaeologist



State Historic Preservation Office
450 Columbus Boulevard, Suite 5 | Hartford, CT 06103 | P: 860.500.2300 | Cultureandtourism.org

Agriculture Land Management

Kip Kolesinskas, Consulting Conservation Scientist

On April 8th I was accompanied by Vivian Felten and Fernando Rincon from CT USDA NRCS and Jim Woodworth, GMCT representative, to the site. We were also able to discuss some of the current agricultural activities and challenges with a representative from Anderson Farms.

Soil Resources: The parcel's agricultural land is dominated by well drained Occum soils and moderately well drained Winooski soils. These soils have been formed in the floodplain deposits of the Connecticut River. They are subject to seasonal flooding, although due to the hydrologic modifications and highway infrastructure changes are probably subject to less flooding frequency and depth than they were historically. They are excellent high yielding and very productive agricultural soils and are considered Prime Farmland Soils by USDA NRCS. The Land Trust, State of CT, and municipality are to be commended for protecting these soils with an easement and for making them available for agricultural use. They provide significant ecosystem services including flood storage, sediment and nutrient retention, ground water recharge, habitat, food security, scenic beauty, economic activity, recreation, and protect cultural resources.

Checking the topsoil layer for compaction – April 2021 – J Davies

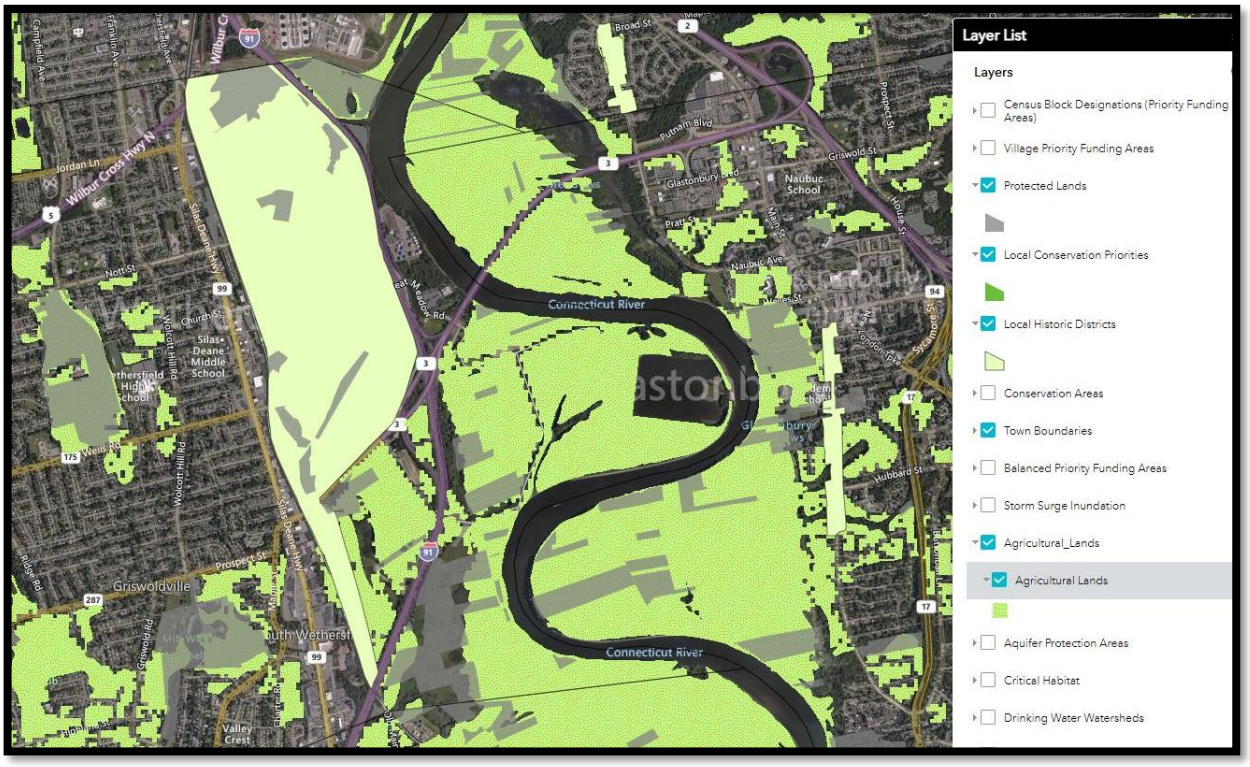
Resource Concerns: Although these soils are productive, there is evidence of soil health issues including erosion and sedimentation. This field has probably been in near continuous cultivation for over 1000 years! First by native people, then colonists, other Wethersfield farmers, and currently by Anderson Farms.

Erosion & Sedimentation: Although the field is relatively flat (less than 3% slope), it is a long slope; 800-900ft, dominated by soils with relatively high erosivity. A swale through the center of the field channels water towards the wetlands from north to south. During times of the year when there is bare soil, erosion may result. There is evidence that occasionally erosion that is carrying sediment as well as potentially nutrients and pesticides may enter into the wetlands and watercourse. GMLT has established temporary fixes of hay/stick barriers which have partially effective. The Anderson's have used cover crops on the field, but late plantings, dry fall periods that impede germination, and more intense rainfall events from climate change have probably resulted in more erosion than in the past.

Compaction/Crusting: Field investigation did show areas with a "plow pan"- compaction just below the plow layer, and some areas of ponding, crusting, and a lack of good topsoil structure. This reduces the rooting depth, prevents the movement of water into and through the soil, and makes it more difficult for the germination of seed. All of this can reduce yields. This condition was also observed in other fields in the vicinity. The Anderson's have used a chisel plow to seasonally break up some of the compaction. They also regularly use soil tests to determine fertilizer recommendations, which is commendable. I did not have access to soil test results but based on filed observations would expect that the organic matter levels may be lower than desired. These young floodplain soils naturally have poor soil structure in the topsoil and subsoil. Field activities when the soil is wet, and low organic matter levels, can contribute to compaction and crusting. A lack of a regular flooding and sediment deposition regime may also reduce organic matter levels in the topsoil.

Potential Solutions	**Considerations**
-Develop a conservation plan with USDA NRCS	Requires cooperation of owner/leasee
-Use a reduced tillage, higher residue system	May require new equipment/management
-Increase the grassed buffer on lower field edge	Lost farmable land, mowing needed, doesn't solve erosion problem.
-Design grassed waterway in swale part of field	Lost farmable land, mowing needed, may create less desirable farming operations
-Plant shorter season corn, > cover crop growth	Varieties may not meet market needs
-Plant field earlier in sequential planting of corn	Requires management change
-More rotation with other crops, green manure crop	Requires management change, may result in reduced pest/disease, fertilizer costs
-Incorporate tillage radishes into cover crop mix	Additional cost of seed, change of herbicides can help reduce compaction
-Try oats, triticale as cover crops	Oats often winterkill; triticale grows shorter & slower than rye
-Interseed corn with a cover crop/mix between rows	May need equipment, change in tillage practices and herbicide use. Benefits especially if legumes included, shows less fertilizer costs the next year.
-Reduce rental rate to encourage new practices	Reduced funds for landowner stewardship, may not be enough incentive for change/risk.
-Create an opportunity for trials of practices	Additional risk, may be increased cost & time
-Locate farmer willing to adopt new practices/crops	May create conflicts, reduce viability of Anderson farms due to lost land base

A. Team investigates the cause of erosion just off the field.
B. South farmer-owned field analysis.
C. North GMCT field analysis.
D. Dry spring made for dusty tillage while preparing field.
E. Checking the topsoil layer for compaction.
F. Close up view of the soil surface in area ponded.



Summary

The Wood parcel offers an important and diverse landscape of CT river floodplain features with many habitats, hydrology, cultural, recreational, and agriculture values. Keeping the farmland in sustainable production should be an important component of the management plan. The develop of a conservation plan that protects the natural resources including soil health, helps adapt and mitigate climate change, while remaining economically viable are important goals. Changes to current farming practices to reduce environmental impacts such as erosion involve risk to the producer and may require education, technical assistance, equipment changes, and management changes. Multiple solutions should be considered to help address the resource concerns while meeting the farmer's needs. To keep this parcel as healthy as possible it is also important that efforts be made to better understand the many off site land use impacts that influence the parcel. That should include nearby farmland and habitat loss, farm viability from state/municipal actions, and water quality and quantity impact from impervious surfaces and hydrologic changes from infrastructure. The control and management of invasive species are also a concern.

Resources:

https://www.uvm.edu/vtvegandberry/factsheets/interseeding.html

https://alseed.com/interseeding-cover-crops-into-early-season-corn/

https://nevegetable.org/cultural-practices/cover-crops-and-green-manures

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/health/?cid=stelprdb1049236

See Appendix - Custom Soil Resource Report GMCT- NRCS

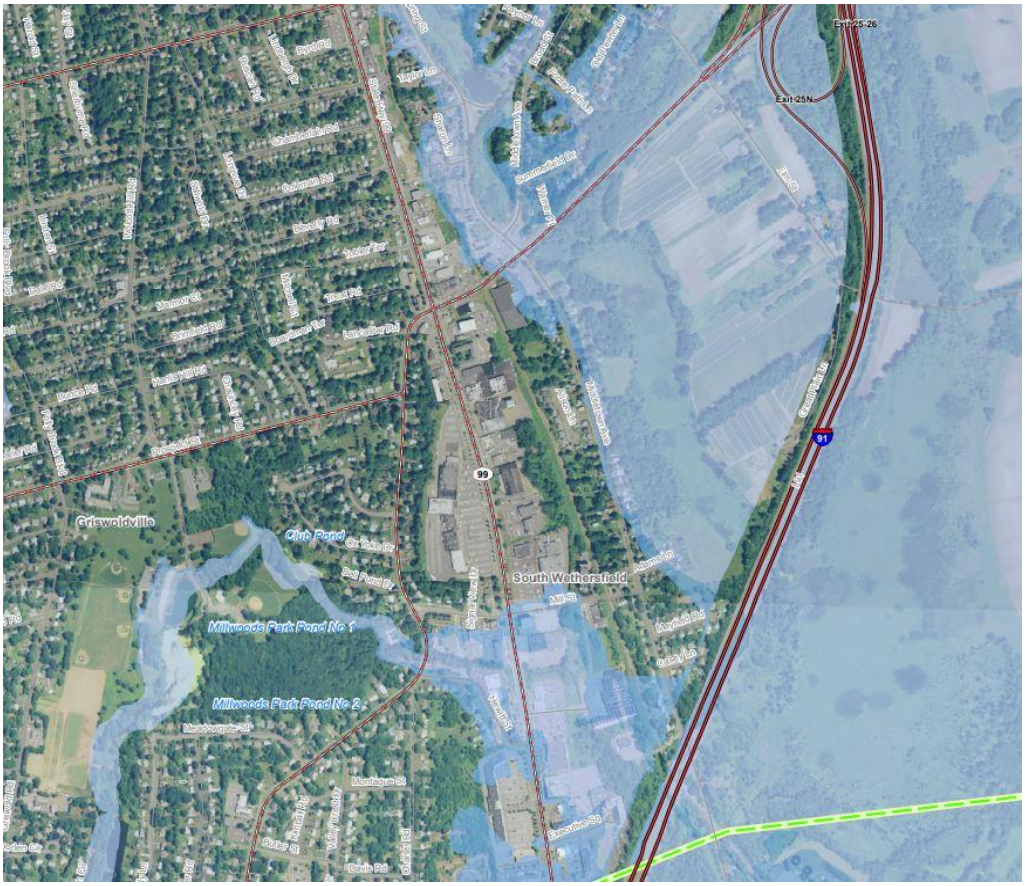
CONNECTICUT SOIL HEALTH INITIATIVE – RESOURCE FOR FARMER_GROWER EDUCATION

Land Use and Transportation Context

Christopher Henchey, Transportation Planner
Lynne Pike DeSanto, Principal Planner and Policy Analyst
Capitol Regional Council of Governments

Current Conditions

The Wood Parcel Site has very limited access for automobiles, with a small curb cut on Middletown Avenue and a dirt parking lot for 2 or 3 cars. There is no current or future ability to access the site from Maple Street (Connecticut State Route 3) as it is prohibited under restrictions in a deed from January 2001. The nearest bus stop to the site is at the intersection of Silas Dean Highway and Maple Street, with bus routes 47, 53, and 55 servicing the stop.



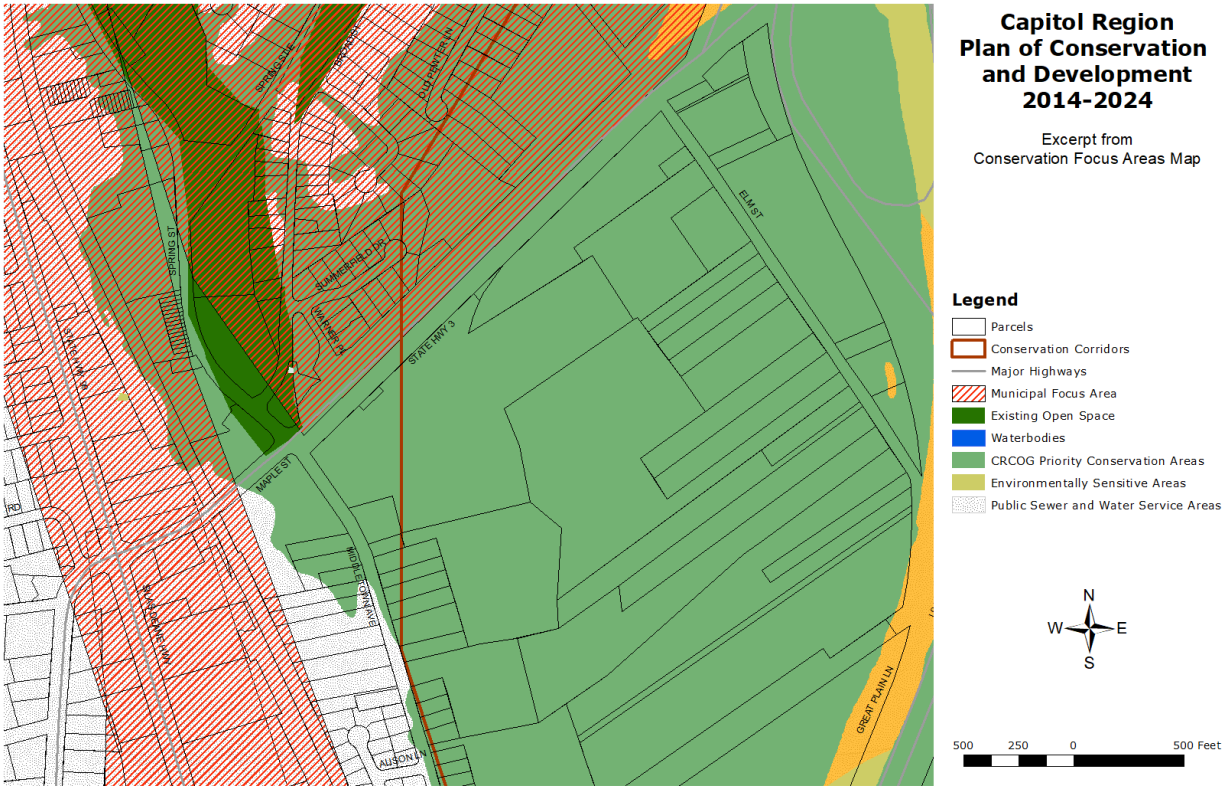
100 Year Flood Zone (Blue Shaded) – Wood Parcel – CTEco GIS Mapping: https://cteco.uconn.edu/

There is presently a sidewalk on the west side of Middletown Avenue. There are portions of sidewalk on the east side of the street but none in front of the parcel. There is no crosswalk connecting the sidewalk on the west side of Middletown Avenue to the Wood Parcel. There are no sidewalks along either side of Maple Street. There are no bike lanes along Middletown Avenue, Maple Street, or any surrounding streets. The current speed limit on Middletown Avenue is 35 miles per hour. There have been 23 crashes in the area around the Wood Parcel site including the intersection of Middletown Avenue and Maple Street from 2018 to

2020. Seven of these crashes involved injuries, but no deaths occurred, and none involved bicyclists or pedestrians.

The portion of the site fronting Middletown Avenue is currently zoned C-Single Family Residence, while the remainder is zoned AG-Agricultural. The land is located within a 100-year floodplain as of 2008 according to FEMA.

Upstream from the Wood Parcel is a combination of single family and multi-family housing developments, the historic downtown business district, and commercial strip malls contained along Silas Dean Highway. Beaver Brook Park is located north of the site between Spring Street and Broad Street. The parcel fronting Middletown Avenue is also located in Wethersfield's Historic District. The parcel is designated as a Priority Conservation Area in CRCOG's POCD Land Use Policy and Conservation Focus Areas Maps and as protected lands under the state's POCD Map. It is also located in a Conservation Corridor according to the Conservation Focus Areas Map.



Future Development in the Surrounding Area

There are several plans either underway presently or are in the development stages that may impact the Wood Parcel site. For transportation, the Town of Wethersfield is presently conducting a bicycle and

pedestrian plan, with some preliminary recommendations that will directly benefit the immediate area around the site. One recommendation is to fill in the sidewalk gaps along the east side of Middletown Avenue, including in front of the Wood Parcel. The second recommendation is to further study installing a bike lane along Middletown Avenue. Both projects would greatly enhance multimodal access to the Wood Parcel and further both CRCOG and Wethersfield's POCD goals for context sensitive solutions to support complete streets, extend sidewalks, and create bike lanes.

The town is also planning for improvements to Beaver Brook Park, which may include upgrades to Spring Street. The intersection of Spring Street, Middletown Avenue, and Maple Street will receive improvements as part of a project with Connecticut Department of Transportation. The project has been approved as CTDOT project 0171-0434, but intersection design has not yet been finalized. The future improvements to

1 Middletown Avenue looking towards Maple Street from the Wood Parcel Parking Lot. The east side of Middletown Avenue lacks adequate pedstrian facilites.

bicycle and pedestrian infrastructure will provide greater access to the Wood Parcel and can help make it a greater community asset.

For land use, a restaurant pad site has been approved across Middletown Street from the site. There are another handful of small projects which have been approved north of the site along Main Street and in other nearby areas as well. However, there are no large projects currently proposed along Silas Dean Highway or nearby. Due to the limited number of proposed developments, the quantity of impervious surfaces in the surrounding area is not expected to significantly change in the near future.

Recommendations

CRCOG recommends that GMCT support and advocate for improved bicycle and pedestrian access to the Wood Parcel site. Current conditions create risk for the immediate community to access the site by biking or walking. Bicycle racks would be a low-cost addition to the site to allow for storage of bicycles. CRCOG supports the use of environmentally friendly transportation and context sensitive solutions to support livable communities in the region. GMCT can also work with stakeholders to add signage to new bicycle and pedestrian facilities to attract users to the site.

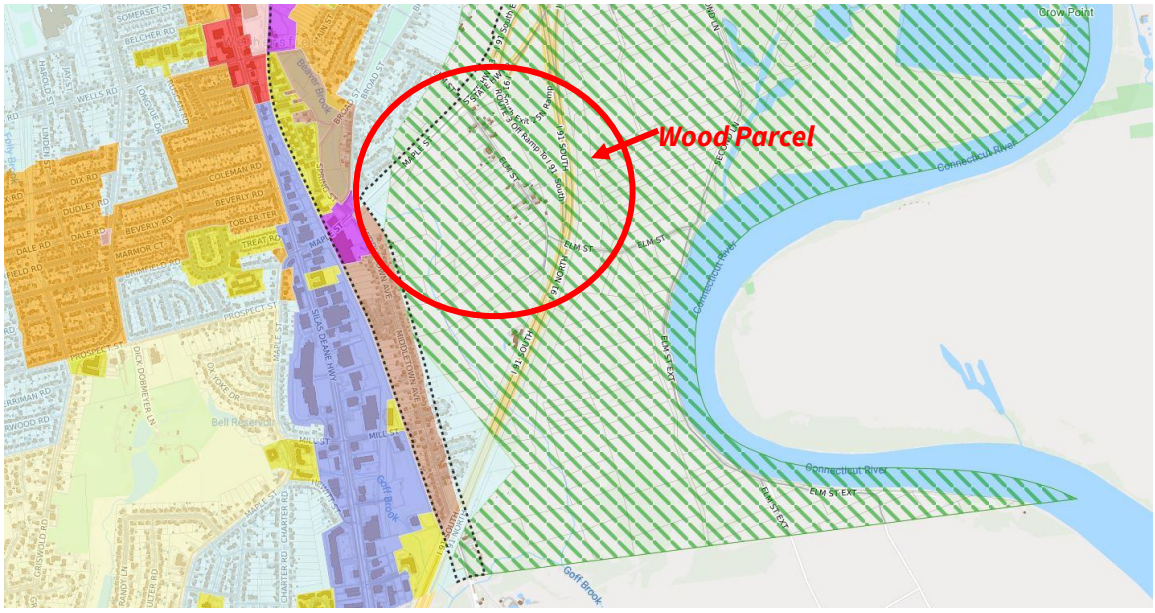
GMCT should also be aware of any future site development along major corridors north of the Wood Parcel site. There are no large-scale developments in the surrounding areas at present, but future changes could impact water quality and wildlife on the site. GMCT should coordinate with the town regarding the improvements to Beaver Brook Park and the downstream impacts to the Wood Parcel site.

GMCT could also seek to adapt a portion of the Wood Parcel, likely the part fronting Middletown Avenue, as a community space for small events. Should GMCT pursue the construction of a gazebo or pavilion on site, a special permit for conditional use may need to be acquired. In addition, this parcel is in the town's historical district and could also be subject to further restrictions. The group may also want to consider investigating acquisition of land along Elm Street, to the east of the Wood Parcel. This could provide a second public point of access to the site and flexibility for adding community space.

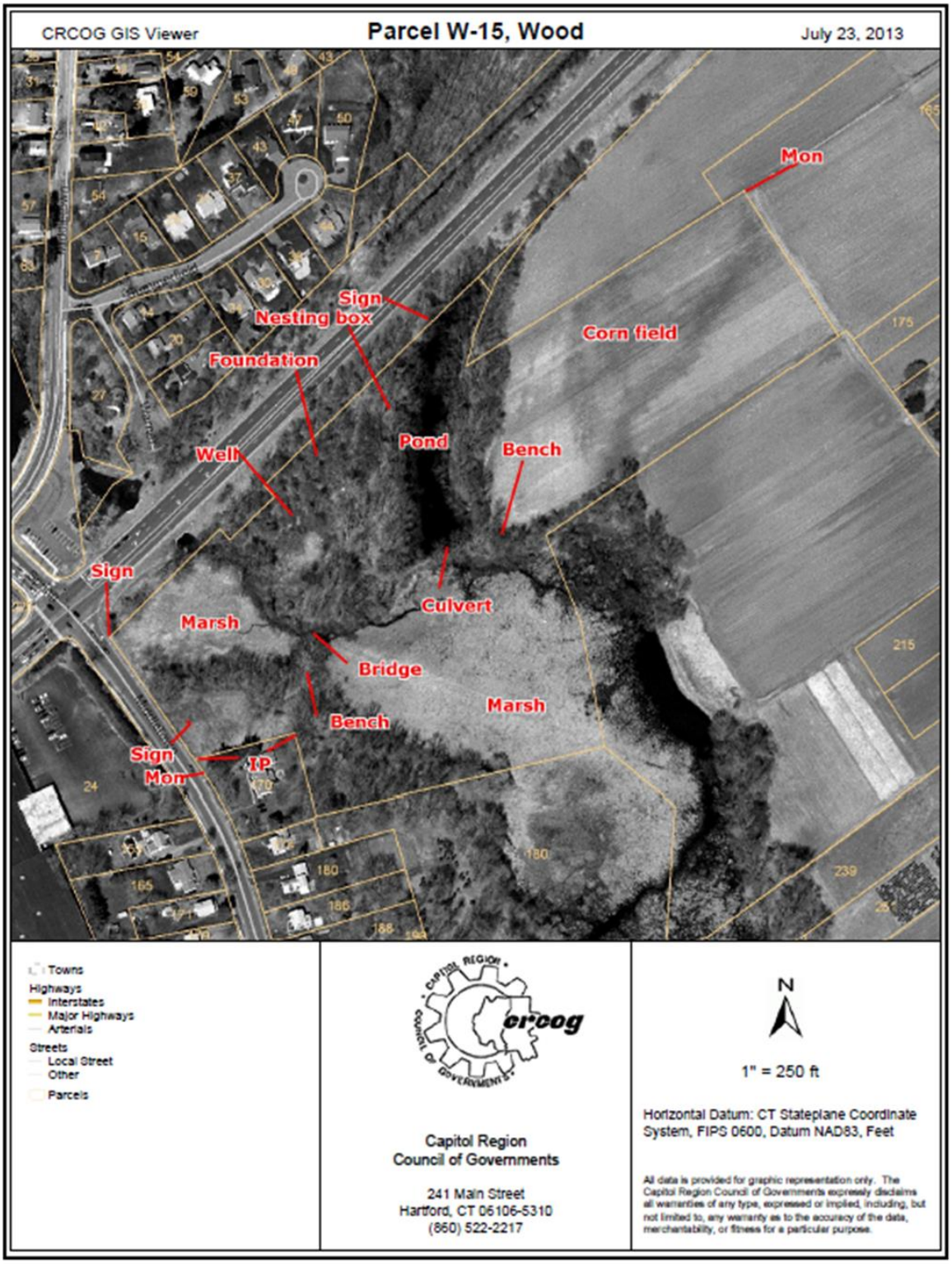
GMCT may also consider converting the path system on the Wood Parcel to become compliant with the Americans with Disabilities Act. Should they choose to pursue this, it would require widening, raising, and grading the paths and construction of a new bridge across Beaver Brook. The improvements would need to be done with care and attention-to-detail to maintain the natural and historic character of the site. These upgrades would likely be expensive but would provide visitors with mobility issues, with disabilities, or using strollers with access to natural space and to learn about the site's historic character.

2 The current bridge over Beaver Brook.

The town of Wethersfield and CRCOG support the protection of open spaces and natural environments in their respective Plans of Conservation and Development. It is the goal that this site maintains its natural and historic character well into the future.

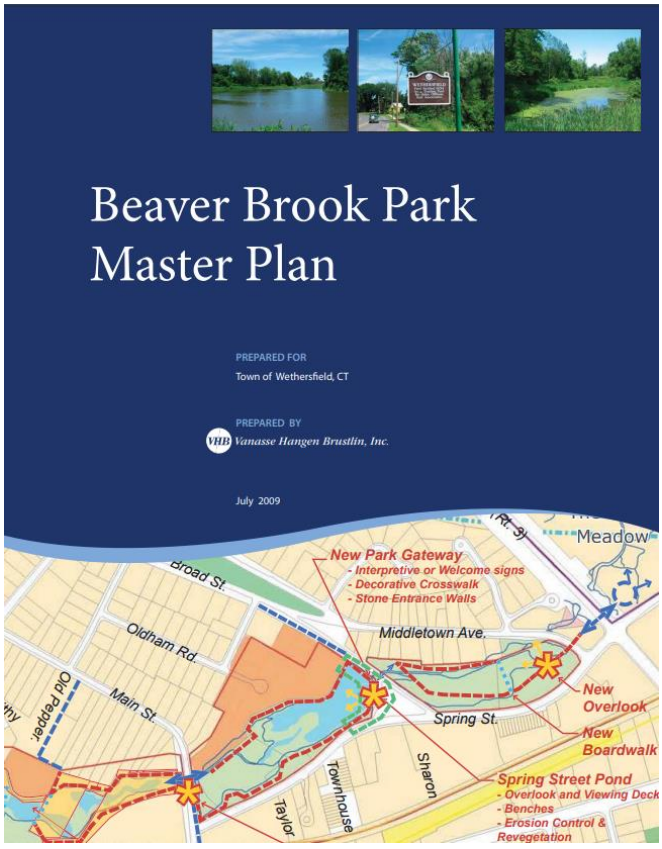


Town of Wethersfield Zoning District – Green Shaded Area – Agriculture Zone


CRCOG GIS Viewer
Parcel W-15, Wood
July 23, 2013
Mon
Sign
Nesting box
Foundation
Corn field
Pond
Well
Bench
Sign
Culvert
Marsh
Bridge
Marsh
Bench
Sign
Mon
I.P.
Towns
Highways
Interstates
Major Highways
Arterials
Streets
Local Street
Other
Parcels
Capitol Region Council of Governments
241 Main Street
Hartford, CT 06106-5310
(860) 522-2217
N
1" = 250 ft
Horizontal Datum: CT Stateplane Coordinate System, FIPS 0600, Datum NAD83, Feet
All data is provided for graphic representation only. The Capitol Region Council of Governments expressly disclaims all warranties of any type, expressed or implied, including, but not limited to, any warranty as to the accuracy of the data, merchantability, or fitness for a particular purpose.

1990 Aerial of Wood Parcel and Adjacent Development

2008 Aerial of Wood Parcel and Adjacent Development



In consideration of continuity in planning within an expanded cooperative methodology, the GMCT may be able to leverage funding and management of the Wood Parcel in context with improvements listed in the Beaver Brook Master Park Plan.

As Beaver Brook bisects the Wood Parcel at its terminus, leveraging funding for GMCT priorities would benefit both the Wood Parcel as well as the linear park.

“A major element of the master plan is the development of an integrated trail system providing continuous off-road trail connections along the entire corridor. However, many off-road connections will require land acquisition and/or easement through private property. Therefore, the initial trail system, as shown on Figure 3 as both blue and red trails, will include on-road connections initially until permanent easements or land acquisition can occur. Site furnishing and interpretive panels should be located along the trail system as appropriate. Trail spurs connecting the park to Silas Deane Highway are shown at a few key points.” BBPMP

CT DEEP Natural Diversity Data Base

Endangered, Threatened, and Special Concern Species in Connecticut

The Great Meadow Conservation Trust has noted within their management priorities for the parcel are:

a. Bird habitat, pollinator habitat, native plants, water resources
b. Integration of the Elm Tree Restoration Project
c. Other goals in our Land Management Plan: public access (Including universal access) for “nature therapy,” healthy exercise, family recreation, nature education/interpretation, opportunities for volunteer activities.

The Natural Diversity Data Base maps represent approximate locations of endangered, threatened, and special concern species and significant natural communities in Connecticut. The locations of species and natural communities depicted on the maps are based on data collected over the years by DEEP staff, scientists, conservation groups, and landowners. In some cases, an occurrence represents a location derived from literature, museum records and specimens. These data are compiled and maintained by the Natural Diversity Data Base.

The attached map is intended to be a pre-screening tool to identify potential impacts to state-listed species. Data is also used by groups wishing to identify areas of potential conservation concern. The maps are updated periodically (every 6 months or so) and new information is continually being added to the database. It is important to always use the most current version for your planning needs.

The general locations of species and communities are symbolized as shaded areas ("blobs") on the maps. Exact locations have been masked to protect sensitive species from collection and disturbance and to protect landowner’s rights whenever species occur on private property. A new mapping format was employed in 2012 that more accurately models important riparian and aquatic areas and eliminates the need for the upstream and downstream searches required in previous versions. Please read the map instructions carefully as they have changed.

Other features, including political boundaries and hydrography data on the maps, are based on the U.S. Geological Survey 7.5 Minute topographic maps. Streets and street names are provided by Tele Atlas. The base map data may be neither current nor complete.

The Connecticut Endangered Species Act, passed in 1989, 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, protect, restore, 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.

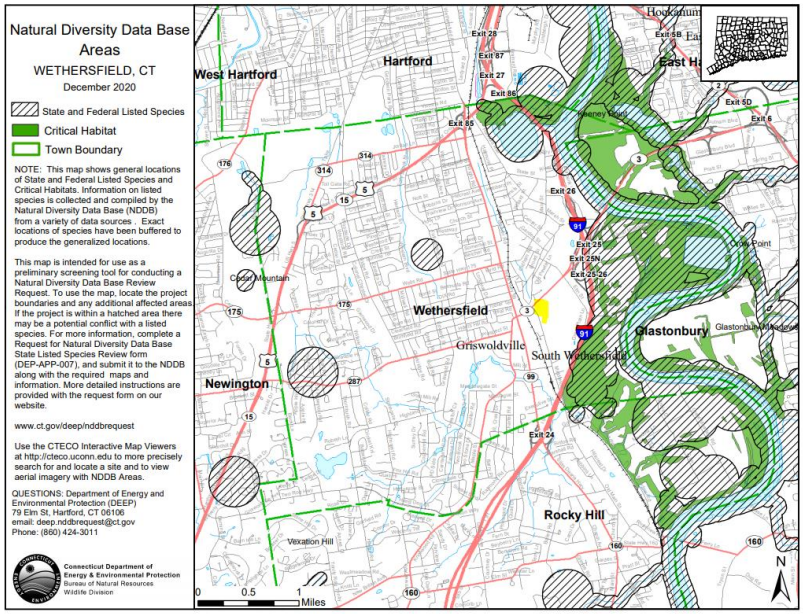
"Endangered Species" means any native species documented by biological research and inventory to be in danger of extirpation throughout all or a significant portion of its range within the state and to have no more than five occurrences in the state, and any species determined to be an "endangered species"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

"Threatened Species" means any native species documented by biological research and inventory to be likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range within the sate and to have no more than nine occurrences in the state, and any species determined to be a "threatened species" pursuant to the federal Endangered Species Act, except for such species determined to be endangered by the Commissioner in accordance with section 4 of this act.

"Species of Special Concern" means any native plant species or any native non-harvested wildlife species documented by scientific research and inventory to have a naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would be detrimental to the conservation of its population or has been extirpated from the state.

The following link provides a list of endangered species within the Hartford County region so as to identify habitat and species on the parcel as conditions on the property are improved for habitat and wildlife.

https://portal.ct.gov/-/media/DEEP/endangered_species/species_listings/hartfordctyspeciespdf.pdf



The Environmental Review Team (ERT) Program is reliant on volunteers who are experts in their field. The recommendations in this report are advisory only. The ERT program is partly funded by the Connecticut Department of Energy and Environmental Protection (CT DEEP) Passport to Parks Program. We are so grateful for our dedicated volunteers and partners.

Thank you!

- CT RC&D ERT Program Staff