Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

Field Visit to Property of the Weston Town Campus

Present Parties: Tom Failla (Town Tree Warden) and David Beers (Western District Service Forester) on 4/12/2022

Stewardship Objectives

1. Improve recreation
2. Improve forest aesthetics
3. Improve wildlife habitat

Big Red Oak

FOREST HISTORY

Between eighteenth century colonial settlement and the mid-nineteenth century, most of western Connecticut was cleared for farming, with only a few small patches of forest remaining by the mid-nineteenth century. Only 25% of Connecticut was forested then. Under these conditions, the biggest animal left in the woods was a muskrat. Turkeys, deer, bobcat, beaver, and bear were either rare or entirely gone. Most of the land was used for livestock pasture, with only the best soils used for hay or tilled crops.

It was during this farming period that the stonewalls were built to keep livestock out of crops and the neighbor's property. Most of these walls were topped off with piled wood and stumps to make them taller. Stonewalls were also a depository for rocks removed from cultivated land. A stonewall with many fist-sized rocks means that one side of that wall had tilled crops, where the winter freeze of bare ground would push rocks to the surface. After barbed wire became widely available in 1875, many of these walls were supplemented with wire. Barbed wire was used to corral cows and goats, but not sheep (barbs did not hurt the sheep). Sheep pasture used smooth-wired rectangular page fencing.

Most of the western CT hill farms were abandoned between the mid-nineteenth century and early twentieth century. The farmers either moved west for better farming soils or headed to the cities for industrial work. Immediately after this farm abandonment, the forest began to take over again. Much of the young forestlands were then cut down to make charcoal that was used in metal blast furnaces and by blacksmiths.

For charcoal making, small young trees were cut into 4' lengths and carried by hand to make a circular pile about 30' wide and 10' high. A ditch was dug around the circumference of the pile and the soil from the ditch covered the pile to limit the amount of oxygen in the smoldering pile. Once the low-oxygen burn was completed in a few weeks, the almost pure carbon charcoal was removed for transport to market. Charcoal produces the hot fire needed for metal working.

While this charcoal making process had occurred since settlement, it came to a crescendo between 1880 and 1920. At that time, much of the landscape was cut multiple times, with patches of smoke rising from active charcoal mounds across the hills. By about 1925, less expensive coal ended charcoal making, and the forest once again began growing. The repetitive cutting of young trees for charcoal encouraged the proliferation of oak trees. Of all the tree species, oak responded best to the repetitive cutting. This, along with frequent wildfires, helped give rise to the oak dominated forest we see today.

The 1934 air photo shows a mix of fields and forests. The 1934 map is attached. Please keep in mind that you need to mentally adjust the map because the map scale projection does not exactly match what we use today.

FOREST STANDS

Stands are separate natural communities that are distinct from each other. Dividing a property into stands makes it possible to logically describe the property. Keep in mind that while stands are distinct, stand boundaries are often indistinct, where one stand melds into the next stand over the course of 100 to 200 feet. Even within a single stand, there is a tremendous amount of variation. Like most properties in Connecticut, your property could be divided into an almost unlimited number of stands due to the tremendous variety that forests inherently possess.

Within all stands, the lower slopes have moister, richer, and deeper soils. This gradual change in site quality with slope exists on every hillside and causes a change is tree species and size composition with hillside slope position. Upper slopes tend to have more oaks and hickories, and shorter/smaller trees.

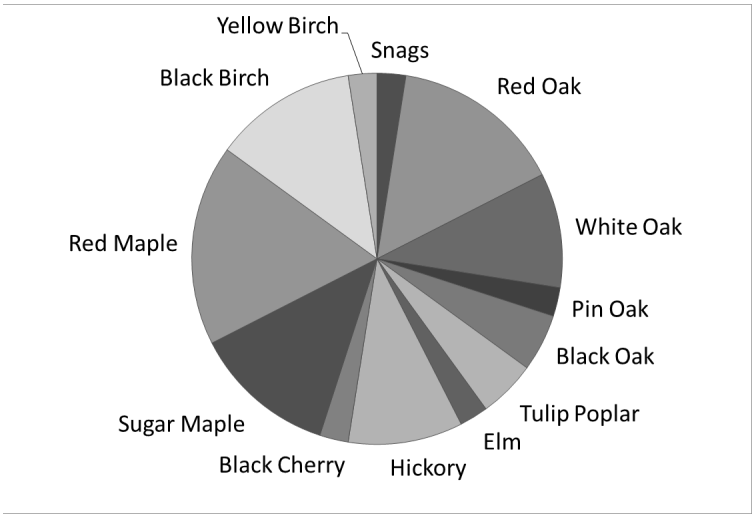
Each description begins with two graphs. The first shows the relative abundance of each species by percent. Not all species found in a stand will be included in this graph because some of the less common species did not fall within a measurement point. The second graph shows the relative abundance of different tree sizes based on the diameter of the tree measured at 4.5 feet off the ground. Please keep in mind that all this information is based on a very **brief** inventory of your forest. **Please contact a consulting forester for a much more detailed and accurate forest stewardship plan that would include timber information and a much more precise stand delineation based on many more inventory points.**

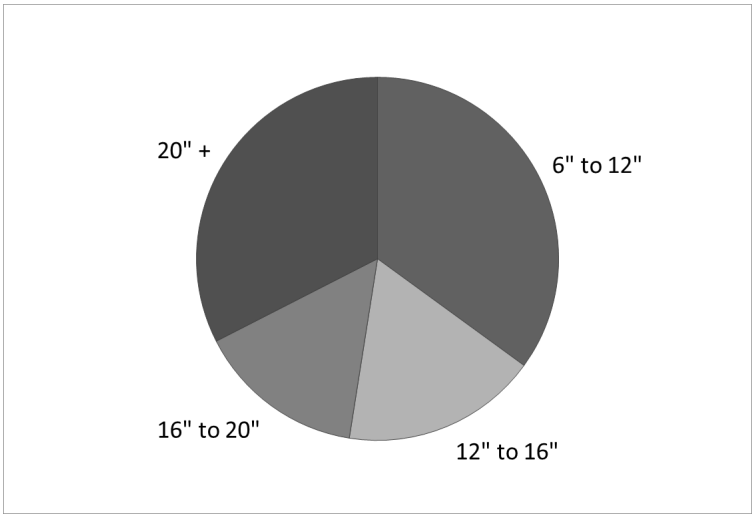
In addition to the woods described below, are 95 acres of developed land, 12 acres of wet woods and 5 acres of wet brush. The 12 acres of wet woods are forested wetlands that have mostly red maple trees, along with some slippery elm, pin oak, and black gum trees. There are also many dead ash trees that were recently killed by the emerald ash borer. While spicebush shrubs dominate the understory, invasive exotic barberry and multi-flora rose shrubs are also prevalent. The 5 acres of wet brush is an area of sparsely treed wet grasslands. It does have a few patches of invasive exotic phragmites reed. The northern half of this area was planted with native shrubs, grasses and trees fifteen years ago and is doing well. Planted trees included red maple, green ash, black gum, white pine and elm.

The CT DEEP Natural Diversity Database (NDDB) does **not** have occurrences of threatened or endangered species on or near this property. A map showing wetland and farmland soils on the property is attached to this report.

Wet brush – planted area

STAND 1: DRY FOREST (15 ACRES)





Other Species (not measured)	Large Norway spruce in most southern block, beech, white pine, swamp white oak
Understory	A few red maple, hickory, oak, beech and black birch saplings
Insect/Disease/Disturbance	Dead ash trees from Emerald Ash Borer
	Minor black birch canker (fungus)
Exotic Invasives	Areas of thick barberry, multi-flora rose and euonymus shrubs
	Area of thick vines, including bittersweet
Canopy Closure	Varies, mostly 90%
History	Partially forested in the 1934 air photo
	-1934 forest areas were likely pasture 150+ years ago

This stand is mostly a mature forest with a large variety of tree species and sizes. The six blocks of this forest are dispersed throughout the town campus as described below.

- The 3-acres at the elementary school is thick with invasive shrubs and vines. The southern half has few trees.
- The 2-acres at the intermediate school is a mature oak forest
- The 3/2-acre blocks near the high school have some big red oak trees and some green briar in the understory. This forest is mostly invasive free!
- The 4-acre block near the middle school has some large tulip poplar trees and thick barberry shrubs. There are turkeys and a page fence here.
- The acre at the public works garage has some large swamp white oak trees and some green briar shrubs.

Recommendations

1) Map and monitor side trails from local neighborhoods that students use to go to school.
2) Cut tree-hanging vines

GENERAL RECOMMENDATIONS

FOREST PROTECTION

The property is in a residential and commercial area, with a few forested patches. No protected land abuts the property. There is no core forest here.

Forest protection also includes fostering a healthy forest. A healthy forest has a large diversity of native plant species, particularly trees, that supports a diverse array of fungi and wildlife (animals, insects, microbes). A healthy forest also has multiple layers of native vegetation to maximize biodiversity and structural complexity. This means having trees of different ages and heights. A healthy forest is resilient because it is better able to handle diseases, pests and extreme weather events.

INVASIVES/VINES

There are some exotic invasive shrubs on the property – see stand descriptions. Invasive species are typically from another part of the world and when established here they have no native enemies to hold their population in check. When left uncontrolled, they spread into natural landscapes and replace what would grow there naturally, including tree regeneration and other native understory vegetation. Native understory growth has many more native insects and arthropods that wildlife need to forage on. Exotic invasive understory growth can provide better habitat for ticks and associated pathogens while greatly reducing biodiversity.

Control methods include mechanical and chemical methods. In a shady forest, cutting a vine is enough to kill it. Invasive shrubs are not so easy. Pulling the invasives out by the roots can be effective, but extremely difficult and labor intensive. Yearly cutting back of the aboveground stems, during the growing season, will keep the invasives under control, and perhaps kill them after a few years. The most effective control method is to apply an herbicide to the green foliage, and to cut the larger invasive shrubs and treat stumps with a herbicide to prevent resprouting.

BOUNDARIES

Boundaries need to be well marked to protect the property from trespass and encroachment. Painted blazes are typically used to mark property boundaries. A blaze is a hand-sized shallow scrape in the bark. This scrape will last for decades and does not harm the tree if done properly. When painted, this blaze is quite visible and long lasting. Trees within arm's length of the boundaries are blazed, with the blazes facing the boundary line. Use only paint marks, without blazes, on the neighbor's side of the line. The blazes should be given a new coat of paint at least every 10 years. Custom signs can also be hung about every 100 feet to communicate anything the landowner desires. It is also recommended that understory vegetation and debris be cleared from boundary lines such that they can be easily traversed for inspection. I did not find any boundary markings. Please consider hiring a consulting forester to locate and mark property boundaries.

WILDLIFE

Your forest, and the State of Connecticut in general, is lucky to have a significant and diverse component of mature oak trees. Oak trees are considered a wildlife keystone species because of the large amount and diversity of life they support. Acorns, especially white oak acorns, provide the most nutritious plant-based protein for almost 90 species of wildlife. Oaks overwhelmingly host the most species of moth and butterfly caterpillars (over 500). Oak forests have more bird abundance and diversity compared to other forest types. Oaks also produce the thickest, most ecologically beneficial and longest lasting leaf litter; that has the most abundant and diverse soil biology. This top-of-the-line leaf litter is able to keep out invasive exotic stilt grass and jumping worms. It also purifies and holds the most water. For these reasons, it is important to preserve and encourage oak growth and health in your forest.

Parts of this forest have legacy trees, also known as old field trees or wolf trees. These trees were growing in open pasture, as a source of shade for livestock, before the current forest started growing. They are much older than the surrounding forest. Because they used to be open grown, they have large spreading crowns and large branches low on the trunk. When the pastures were abandoned, they became a significant seed source for the present forest. These large old trees are structurally complex, with many cavities, hollows, fat branches, and thick rough bark. They are also prolific seed producers, including acorns and nuts. This structural complexity and prolific seed production attracts an enormous number and diversity of insects, birds, and mammals. Underground, they are also the hub and source of the complex fungal soil mycorrhizal growth that all trees depend on for water and nutrients. To make them healthier and more vigorous, such legacy trees should be protected and perhaps even given more sunlight by cutting some of the surrounding trees.

ECOLOGICAL SERVICES

Forests remove carbon dioxide from the atmosphere (called sequestration), create oxygen, and remove many pollutants from the air and water. Forests absorb heavy rains and release that water to streams and underground aquifers during droughts. Your forest contributes to these valuable services with carbon stored in the below-ground roots/soil and in the above ground vegetation and fallen leaves. These services are enhanced by having a diverse mix of native tree species of different sizes and varied arrangements. Sustainable, scientifically-based forest management to remove forest products and promote young forests or regeneration of desired species has no long-term negative effect on your forest's ability to provide these vital ecological services. When trees are young and growing fast, they sequester carbon at high rates and once they are large (over 18" diameter, and often older) they store the most carbon. Whether you choose to actively manage your forest or not, your forest does a great service to our planet's health just by being a healthy forest.

MAPPING

Attached to this report is a geo-referenced map that the landowner can use with the free smartphone app 'Avenza Maps'. This map shows the landowner where they are on the property. The landowner can also record tracks and waypoints on the property. These phone mapping features allows the landowner to locate/map property boundaries and trails. To get map layers and to view maps, please visit CT ECO Home (cteco.uconn.edu).

CONCLUSION

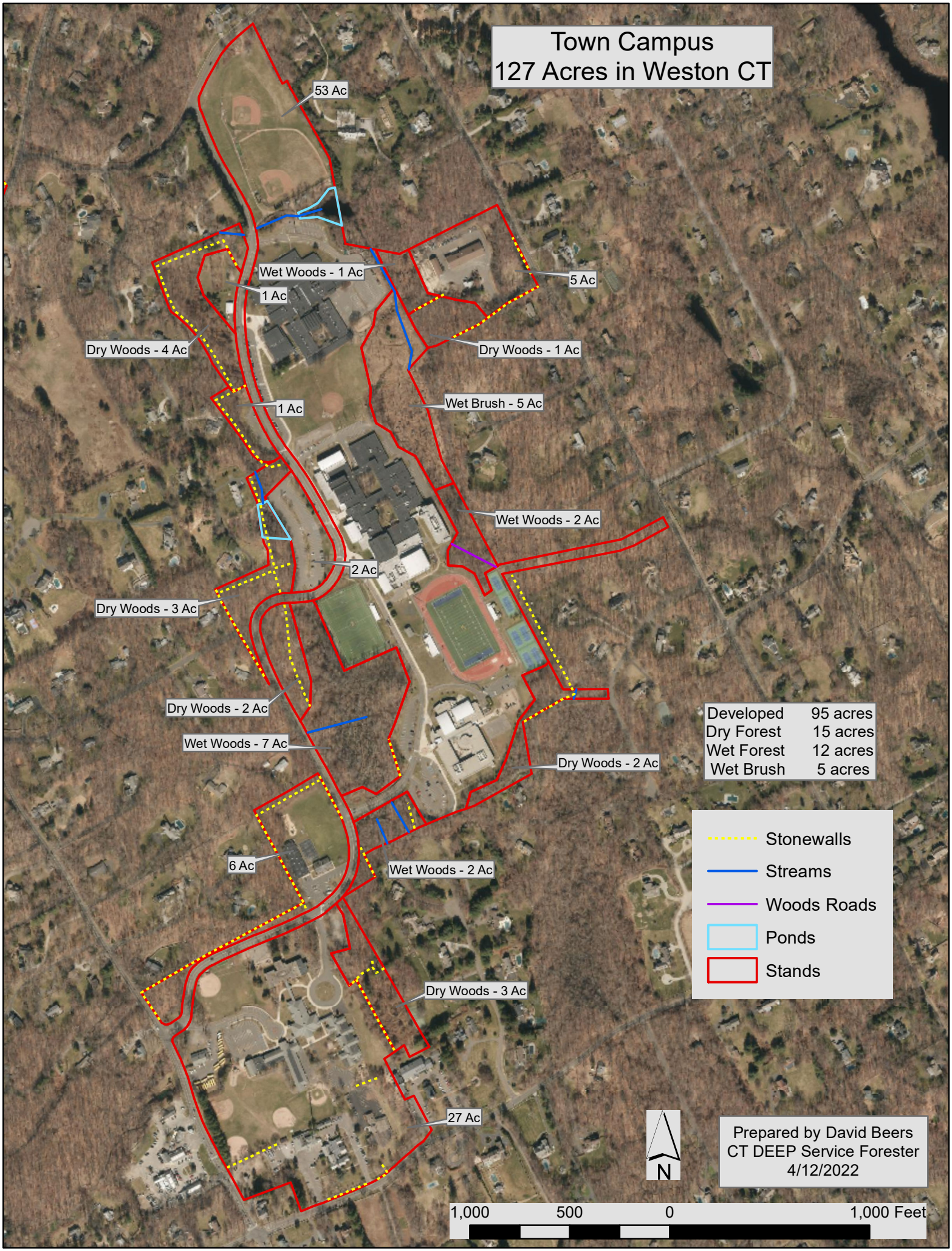
Here are some possibilities for your forest:

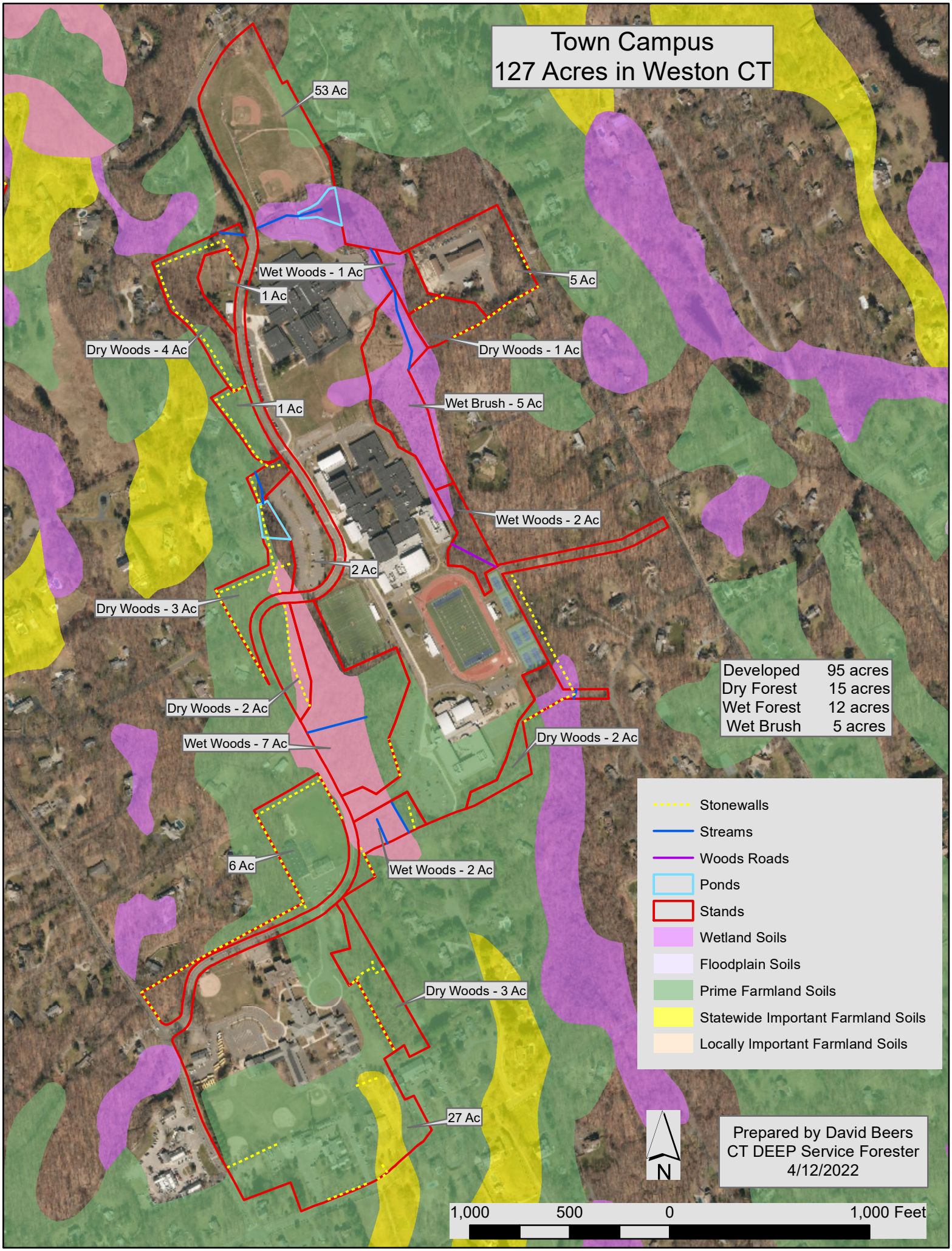
- Properly locate and mark your property boundaries
- Map and monitor side trails from local neighborhoods that students use to go to school
- Cut tree-hanging vines

Please consider hiring a consulting forester to help you implement any of the recommendations in this report.

Please feel free to share this report.

Cut this!


Town Campus
127 Acres in Weston CT
53 Ac
Wet Woods - 1 Ac
1 Ac
5 Ac
Dry Woods - 4 Ac
Dry Woods - 1 Ac
1 Ac
Wet Brush - 5 Ac
Wet Woods - 2 Ac
2 Ac
Dry Woods - 3 Ac
Dry Woods - 2 Ac
Wet Woods - 7 Ac
Dry Woods - 2 Ac
6 Ac
Wet Woods - 2 Ac
Dry Woods - 3 Ac
27 Ac
Developed 95 acres
Dry Forest 15 acres
Wet Forest 12 acres
Wet Brush 5 acres
Stonewalls
Streams
Woods Roads
Ponds
Stands
N
Prepared by David Beers
CT DEEP Service Forester
4/12/2022
1,000 500 0 1,000 Feet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Dry Woods - 2 Ac
Wet Woods - 7 Ac
Dry Woods - 2 Ac
6 Ac
Wet Woods - 2 Ac
Dry Woods - 3 Ac
27 Ac
Developed 95 acres
Dry Forest 15 acres
Wet Forest 12 acres
Wet Brush 5 acres
Stonewalls
Streams
Woods Roads
Ponds
Stands
Wetland Soils
Floodplain Soils
Prime Farmland Soils
Statewide Important Farmland Soils
Locally Important Farmland Soils
N
Prepared by David Beers
CT DEEP Service Forester
4/12/2022
1,000 500 0 1,000 Feet


Town Campus
127 Acres in Weston CT
1934 Air Photo
N
Prepared by David Beers
CT DEEP Service Forester
4/12/2022
1,000
500
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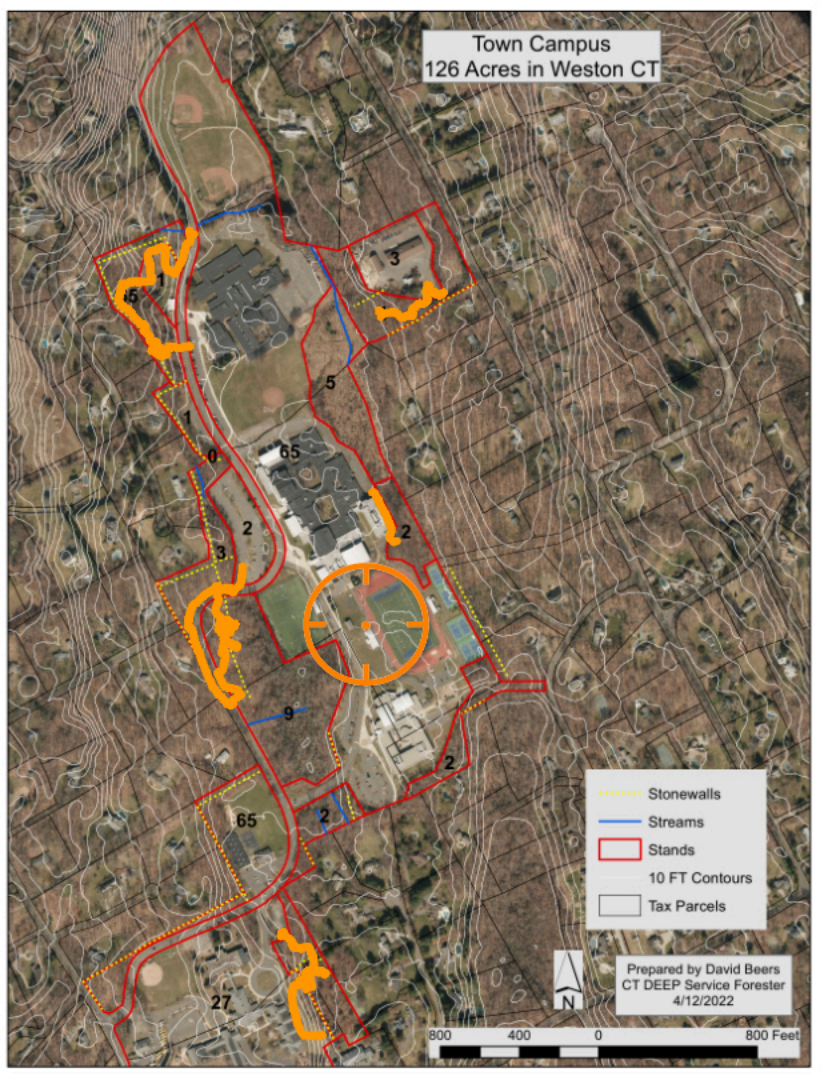
1,000 Feet


Town Campus
126 Acres in Weston CT
Stonewalls
Streams
Stands
10 FT Contours
Tax Parcels
Prepared by David Beers
CT DEEP Service Forester
4/12/2022
N
800
400
0
800 Feet