



Connecticut Department of Energy & Environmental Protection

Field Visit to the Coe Hill Property of the Town of Middlefield (a.k.a. Steucek Parcel) on School Street, Middlefield Post Visit Report

DEEP Forestry Division, Service Forestry, Private and Municipal Lands Program

Present Parties: Mr. Brian Dumas, Middlefield Conservation Commission; David Irvin, Central District Service Forester; Andrea Urbano, Supervisor-Private and Municipal Lands Program; and Paul Benjunas, DEEP Wildlife Biologist on 7/3/2024 from 10am-11:30am. First Selectman Robert Yamartino met the above later for input on this report but did not participate in the site walk.

Stewardship Objectives

1. Improve forest health
2. Wildlife habitat improvements
3. Address invasives
4. Provide for public recreation

Specific recommendations are listed at the end of the “Forest Vegetation Recommendations” section and “Conclusions”.



PROPERTY OVERVIEW

Town of Middlefield Open Space owns and manages this property on School Street. It is listed at 37.89 acres, and for the purpose of this report, it is rounded to 38 acres. Approximately 10 of these acres is field that has grown into shrubland, and the remaining 28 acres is forest.

The “Coe Hill” name refers to early ownership by an Alva B. Coe in the 19th Century. The property served as a farm growing hay for horses and sheep until the 1920s. The attached 1934 aerial photo of the property shows that it was also open pasture and farm at that time. The Steuceks were the last family to own the land, starting in 1950. They planted apple and pear trees in the 1960s. The Town of Middlefield purchased the land from the Steucek family in 2002.

This property is surrounded by residential development on the east side off Jackson Hill Road, and to the southwest near the entrance off School Street. Route 66 occurs just to the north of the parcel, where there is some commercial development. But more forest and open space occurs along most of the western boundary, on land owned by the City of Middletown Water Department. Maps of the Coe Hill open space are included with this report.

A portion of this property in the northern section of forest is included in a small “Core Forest” (see Core Forest/NDDB map). Small Core Forests are parcels of contiguous forest under 250 acres in size. Core forests of small, medium and large acreages are tracts of unbroken forest that provide a more stable and useful home for plant and animal species, thereby protecting biodiversity. They are priority forest stewardship areas in Connecticut.

The CT DEEP Natural Diversity Database (NDDB) does **not** have occurrences of state-listed species of Endangered, Threatened or Special Concern status on this property. The majority of the property is classified as either Prime Farmland Soil or a Statewide Important Farmland Soil, which are great to preserve for continued farming or forest rather than developing. The area drains into the Coginchaug River, and is ultimately part of Connecticut River Drainage Basin.



FOREST AND FIELD VEGETATION

Tree Cover

Forest on this property, while growing on prime soils, occurs in a scattered overstory pattern due to previous mortality (such as ash from emerald ash borer). This has allowed regular openings in the canopy to provide full sunlight to the forest floor, which is unfortunately frequently dominated by invasive plants. Some of the old field acreage can be considered young forest, but has the same issues with invasives, and is a mix of nonnative shrub and vine species, berry canes, native and nonnative grasses, herbaceous plant species, and forest regeneration.

Tree species observed in the upper canopy sawtimber sizes (12" diameter and up), included black walnut, hickory, northern red oak, black oak, scarlet oak, white oak, sugar maple, red maple, black cherry and black birch. Most of these trees occupied space with low stocking or density. There was no real midstory of medium-sized or pole-sized trees (6-10"), and there was some regeneration in the seedling-sapling size class, but they were often being overwhelmed by invasives or were expected to be. Forest regeneration frequently included the same species of oaks, hickories, maples, as well as black birch and black cherry. Black walnut was prominent as seedlings and saplings.



Black walnut foliage at Coe Hill

Understory/Ground Cover

Most understory and ground cover in forested areas are invasive plants. Invasives also dominate in the shrub areas of abandoned field. Invasive species noted on the property were multiflora rose, Asiatic bittersweet, winged euonymus (burning bush), garlic mustard, Japanese stiltgrass, autumn olive, wineberry, bush honeysuckle, Norway maple, and tree-of-heaven (*Ailanthus*). Rose and bittersweet were most prominent in both the fields and forest. The Connecticut Invasive Plant Working Group at the University of Connecticut is a great resource for the identification and control of invasive plants, and you are encouraged to visit their website: [Home | Connecticut Invasive Plant Working Group \(uconn.edu\)](https://www.uconn.edu/invasive-plant-working-group/). Here is also a resource regarding control of some of the more common invasives we see in the state: [Invasives guide 2020 web.pdf](#)

Here is a document that shows some of the most commonly known companies that provide local invasive plant control services, for private and commercial landowners. DEEP Forestry has used most of these businesses for such purpose on state forest and wildlife management area property: [Invasives Vendor Contact Information revised 12-7-22.pdf](#)



It is also noteworthy that a number of native grasses, vines, shrubs, and herbaceous species were found. This included goldenrod, dogbane, Virginia creeper, staghorn sumac, deer tongue, milkweed, jack-in-the-pulpit, spicebush and wild grape.

Most grasses found are not native warm season grasses, but are introduced cool season species. Establishment of native grasses on a portion of the property would require a concerted effort to plant them.

Forest regeneration was noted in different areas of woods and in the old fields, although not consistently in adequate numbers. Saplings were particularly scattered, and seedlings were not in sufficient numbers to successfully graduate to sapling size and larger at the present time. Seedlings numbered on average in the hundreds per acre instead of thousands. While it is encouraging to find this regeneration, more needs to be established in the forested acres to provide for a future forest replacing the scattered sawtimber canopy.

On most of the property, there is a healthy layer of leaf litter and some presence of coarse woody material (CWM) from dead trees and limbs. CWM promotes soil health and nutrient recycling, as well as healthy insect populations and therefore feeding opportunities for birds and mammals. They also provide cover for small mammals, birds, reptiles, and amphibians. There are ecosystem values to leaving downed trees and material of all sizes in the forest.

Shagbark hickory being choked with a bittersweet vine at Coe Hill.

While natural regeneration establishment with invasive control is probably the most effective way to go, here is some information regarding nurseries that provide native trees and shrubs, and some information on planting that could prove useful in the future:

[Native tree and shrub availability list.pdf](#) –this is an excellent publication with many links to other useful links within.

[Tree Nurseries.pdf](#)

[cttreeownersmanualpdf.pdf](#)

Forest Health

Invasive plants are probably the most apparent and widespread threat to forest health at this town property. Both in the fields and in the forested acres surrounding them, invasives directly threaten the establishment and growth of native trees and shrubs, and must be addressed before native forest and habitats can be restored and managed. The mortality of ash from emerald ash borer attack has already shown that as trees die ([Emerald Ash Borer EAB \(ct.gov\)](#)), invasives thrive in the sudden increase of sunlight to the forest floor and forest regeneration is not allowed to establish and survive. Over time, this pattern will continue, and the remaining overstory of trees will eventually be replaced by a shrub level canopy of invasives. Some mature trees are also being killed by bittersweet vines, which can both girdle and shade out trees in their aggressive climbs up anything standing.

Part of Connecticut's issues with invasive plants are closely tied to deer browse pressure. Typically, deer consume the natives and leave invasives alone, thereby contributing directly to the dominance of nonnatives. Any native plantings made on the forested acres and field (as opposed to natural regeneration) should likely have deer protection for the first few years (trees and shrubs). This is because nursery stock tends to be sought by deer more, and planting takes time and money that you don't want to be a wasted effort. Here is an introduction to options for dealing with deer issues: [Deer Nuisance Problems \(ct.gov\)](#) , and a fact sheet about our white-tailed deer as a species: [White-tailed Deer \(ct.gov\)](#) . It was helpful to see that the property is already open to at least limited hunting. DEEP Forestry considers hunting a valuable tool for limiting damage by deer, and encourages continued archery hunting, and Middlefield may want to consider expansion of hunting on the property.



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Note that some forestry programs intended to produce successful regeneration have experimented with using tops and unmerchantable debris to produce “slash walls” around the area being regenerated, that are impenetrable by deer. Nearby South Central Regional Water Authority has used this with evidence of success, and some consulting foresters are now familiar with the method and process. For information on this, you are encouraged to view this slide show: [Slash walls.pdf](#)

Wildlife Habitat

Wildlife are already using the dense cover and food sources being provided by the field as succession turns this grassland into a shrubland. In this report, recommendations to make the field and forested areas healthier with native plants, shrubs and trees will also improve the native wildlife habitat. Early successional habitat, which is normally composed of young forest, shrubland, and grassland, is lacking across Connecticut and well below historic percentages of ground cover. Even before colonization there was typically 10-15% early successional habitat that were produced by natural means, such as hurricane and other wind events, fire, and beaver meadows.

Autumn olive, one of the many invasives aggressively established in the fields.

Today, this habitat is limited to only about 3%. The 2015 CT DEEP “Wildlife Action Plan” ([Connecticut Wildlife Action Plan](#)) identified over 50 wildlife species of “Greatest Conservation Need” that depend on young forest or shrubland. The recommendations for this property will guide the town toward focus on this most needed type of habitat in our state.

Oak, hickory, and black walnut trees on this property are a great wildlife asset, due to the nuts (hard mast) they produce. Black cherry is useful in providing an additional food source (soft mast). Walnut trees occur in both the older forest canopy and in the fields, and would have value if retained both places. The hard mast availability is likely abundant most years, especially considering that there are multiple species of oak and hickory, as well as walnut (which is not common everywhere in the state) on different mast “schedules”. Deer, bear, and turkeys all depend on this hard mast to help them through the winter, by consuming large quantities to produce their winter fat layers. White oak alone is heavily sought by wildlife, because the acorns do not have the bitter tannins of red oaks. White oak supports over 500 lepidoptera species (butterflies, moths) and are critical for heavy pollinator populations.

Standing dead trees (“snags”) and any size cavity trees provide important sources of forage and shelter, as does the aforementioned CWM. Snags and downed material provide food for decay insects that, in turn, feed wildlife that seek the insects. Cavities for nesting in naturally hollow trees are invaluable for many species of both birds and mammals, including owls and flying squirrels. For more information on mast, the value of snags, edge areas, and even how to create brush piles useful for small animal cover, please see the information provided at this DEEP website link: [Wildlife Habitat Fact Sheets](#) .



Small pond next to the entrance of the Coe Hill Property on School Street. This little body of water was very active with frogs and other amphibians. Often the value of a microhabitat such as this goes well beyond size considerations, and provides a valued and subtle addition to the value of this open space parcel.

Here is a link from the DEEP Website’s Wildlife Division pages, on “Managing Grasslands, Shrublands, and Young Forest Habitats for Wildlife: A Guide for the Northeast”: [Managing Grasslands Shrublands and Young Forest Habitats for Wildlife A Guide for the Northeast \(ct.gov\)](#)

Here is a publication that discusses the wildlife benefits of clearcutting, which is a management option that will be discussed in “Forest Vegetation Recommendations”: [The "Clear Cut" Advantage for Wildlife and Forest Health \(ct.gov\)](#)

Along with retention of some oaks and black walnut for hard mast, shagbark hickory makes another multi-valued tree for wildlife. Besides the nuts it produces, the “shaggy” shedding nature of the outer bark creates natural hiding spots used by tree-roosting bats during the day. For more information on bats, their value and habitats, [Bats Count \(ct.gov\)](http://Bats.Count(ct.gov)) .

Carbon and Climate Resilience

Climate change exacerbates stress from insect, disease, and weather extremes, and creates conditions favoring invasives. Any forest health concern that causes a high degree of mortality impacts both carbon storage and carbon sequestration (the active removal of carbon from the atmosphere). This is not a climate-adapted forest and shrubland environment, and will not improve its course without active intervention. A forest or other natural environment needs to be resilient in the face of the increasing challenges of climate change. The lack of well-established and developing regeneration of native tree species, without the disadvantage of stiff invasive competition, reduces the future carbon sequestration potential of the property and forest resilience. Any recommendations in this report to develop a healthier and more resilient forest and shrubland will generally make a forest more adapted to climate change and also make a better contribution to mitigating it. Some information on forest carbon and climate change: [Climate Change and Connecticut Forests](#)



While it is heartening to see this ash sapling at Coe Hill, species that demonstrate less long-term resilience (now including beech) are not helpful in producing a future healthy forest.

Recreation

Recreation is a use desired by the town on the property. Presently there are unmarked trails that traverse the dense vegetation of the fields from occasional mowing. It is possible that trails can be streamlined and reduced, but not established with any permanency until the extensive vegetation management has taken place on most of the involved acres. Trails do not have to be widespread and enter every area of the habitat. By reducing trails, or focusing on keeping trails closer to the edges of critical habitat work, the town will reduce disturbance to these habitats on the interior. It will also reduce the spread of invasives across as large of areas as in the past. Recreational trails are a vector for the more rapid spread of invasive plants. It is worth considering making the trail system interpretive regarding the habitat work and forest regeneration/resilience benefits that the town will be pursuing. Only foot traffic is recommended based on the size of the property and nature of the soils.

Hunting could be expanded to firearms (shotgun) to increase interest in hunting on the premises and therefore success rates. Note that hunting necessitates a thorough job of boundary marking for safety, with homes occurring on the east and southwest sides of the property. At present, boundaries are partially marked but not consistently. Marks should be thorough and visible from within the property.

Forest Vegetation Recommendations

The Forestry Division site visit assessment of the Coe Hill Property is that both the shrublands and surrounding forest have many issues such as tree health, low stocking of desirable native species, lack of stems in all size classes, and a heavy presence of invasives interfering with the resilience of both areas.

Invasive plant control will likely involve multiple entries and methods to attack these nonnatives. One suggestion from the site walk was that the shrubs across the 10 acres can all be mowed down low, outside of bird nesting season (Aug. 1 or later), as a first step. As the invasives attempt to re-emerge, the much smaller sprouts can be spot-sprayed with herbicide control by a licensed vendor. In the forested acres, an invasive crew can attack the understory clumps and stems with a combination of brush saws (if the plants are tall and dense) and backpack sprayers. Individual vendors or resource manager consultants may suggest differing combinations of mechanical vs. chemical controls, but this is an early critical step in management anywhere on the property.



The field will likely be easier to manage as a native shrubland, but that could be debatable. Grassland establishment would entail killing of all woody stems from these acres and planting native warm season grasses, which would involve even more work. Shrublands are already established and at this point, killing the invasives from the area is the biggest challenge. The option also exists to make this area a more ephemeral habitat by letting it establish young forest that will mature, rather than continually mowing it back. Grasslands would require keeping it as grasses and mowing or removing not only invasives but any encroaching woody stems.

Note that the invasives in the shrubland habitat can be mowed and treated in blocks or sections, rather than in entirety all at once. This reduces the amount of cost that has to be invested at a time, spreading it out, and also provides the benefit of giving wildlife already using this area a place to go for refugia while another portion is being cut and treated. The same pattern can be used to manage the forested acres. A consulting forester can subdivide the property in logical ways as part of management plan development and implementation.

It was also suggested during the walk that the hedgerow of trees separating the smaller southern field from the northern field could be removed. This would improve the continuity of the habitat, increasing the likelihood of shrubland “obligate” bird species to use the area. Sometimes bigger is better! Hedgerows serve little purpose in an early successional area like this, and can be detrimental to nesting birds and small mammals or reptiles because they provide a refuge for predators and a launching point to attack animals and nests. To use bobolinks as an example, this grassland bird (provided the area has suitable managed habitat for this species) requires at least 10 acres of field. In reality, these fields appear to be closer to 9 acres and are pushing the edge of what they might use. But the division of the area by the hedgerow of trees completely eliminates this borderline-sized habitat, because now there is one 6-acre field and a 3-acre one, not one 9-10 acre area.

Apple and pear trees were originally planted in a portion of the field in the 1960s. If any of these are hanging on, it may be desirable to identify them and release any that are still alive.

The forest canopy of the majority of examined woods in the other 28 acres was consistently sparse due to mortality and lack of regeneration to provide future forest trees of smaller size classes. The forest lacks a healthy midstory or understory development, and there is a lack of diversity of age or size classes. This reduces health and resilience of the forest as a whole, and reduces wildlife habitat diversity. The overstory trees are “understocked” throughout, meaning the canopy is not closed and trees are not using the space productively. In these conditions, foresters usually recommend regenerating the forest and trying to start over “from the ground up”. Based on this current condition, it is recommended that clearcutting of most of the forested acres, either at once, or in sections over a few years, be seriously considered along with the understory invasive control. Cutting can be rotational, regenerating one section at a time and providing slightly different ages of forest and cover across the acres as the management progresses. The productive, moist soils of this forest have a lot of potential for healthy, quality tree growth but this potential is not being realized. There is very little in the overstory of current and future value, and therefore regenerating for a new forest is a beneficial prescription. Shade intolerant trees such as oak species, black walnut, black cherry, tulip-poplar, and hickory will benefit from the disturbance and full sunlight. The soils will also favor sugar maple, yellow birch, and other moisture-seeking species, as well, and the result could be a very desirable mixed native hardwood forest development. Additionally, this would allow expansion of the shrubland field into a much larger young forest habitat. Virtually the entire parcel could have a strong focus on early successional habitat.

Bittersweet vines that are climbing trees that will be retained should be cut. The best way to do that is to cut the vine in two places and remove 6” to 1-foot section to prevent possible reattachment. Bittersweet can kill trees by girdling them in its tight, spiral climb, and by overtopping and shading out even large trees.

The existing understocked forest canopy is not expected to provide enough income to support most of the needed work. While this venture will be costly, there is a great deal of potential on these growing sites to produce a future condition of dramatic improvement that could be an area example of stewardship diligence. It is highly recommended as the initial step that a consulting forester/land or resource manager be contacted for a more detailed evaluation and plan to outline the most effective steps for the town. A plan by a qualified forester would make the town much more eligible for any grant opportunities that may be available, as well. A plan to make a climate smart program of early successional habitat and young forest would bring much more health, ecosystem and human benefit, and resilience to this property.

Here is a list of certified professional foresters in CT, updated recently: [ForestPractitiCertificatExamAnnouncementReport](#)

Here is another version of the list from the Connecticut Forest and Park Association website (CFPA), that you will likely find in a more user-friendly organizing and formatting. You can find foresters by name, county, or even services offered: [CT Forestry Services Directory - Connecticut Forest and Park Association \(ctwoodlands.org\)](#)

Ferrucci & Walicki LLC is a consulting forestry service based right in Middlefield: [Ferrucci & Walicki, LLC - Home \(fwforesters.com\)](#). Connwood Foresters Inc. is another well-established forestry consulting firm that is also local and based in Middlefield. [CONNWOOD.COM](#)

The following are grant opportunities that you should consider:

- Visit CT DEEP’s [grants website](#), as the list of funding opportunities is updated as they become available. If eligible, Middlefield may have particular interest in the Land and Water Conservation Fund: Outdoor Recreation and Legacy Partnership Program ([Land and Water Conservation Fund Grant Program \(ct.gov\)](#)).
- Visit [CT DEEP’s Urban & Community Forestry Program’s grants website](#), as the list of opportunities is updated as they become available. You can contact deep.ucf.grants@ct.gov with specific questions.
- If applicable, Middlefield Land Trust properties are eligible to apply for the [Connecticut Land Conservation Council’s Climate Smart Grant Program](#). It may be wise to engage your land trust and schedule a site visit for one of their properties while this grant is active.
- Contact the Connecticut Botanical Society assess viability for their small grant program: [Grants – Connecticut Botanical Society \(ct-botanical-society.org\)](#)
- Engage the Lower Connecticut River Valley Council of Governments (RiverCOG): [Lower Connecticut River Valley Council of Governments | Connecting Communities in the Lower Connecticut River Valley \(rivercog.org\)](#). This should be a valuable resource to inform landscape-scale planning efforts – free consultant services may be available, grant opportunities may exist, and valuable information and services can be provided. Their grant list can be found: [Grants List | Lower Connecticut River Valley Council of Governments \(rivercog.org\)](#)

The DEEP website has many educational materials available on numerous aspects of managing for healthy forest resources: <https://portal.ct.gov/deep/forestry/ct-forestry-division>

Here is a valuable link to the Connecticut Forest Action Plan from 2020, which is a companion piece to the previously-referenced Wildlife Action Plan. Most recommendations and missions by the DEEP Forestry Division can be linked to this current statewide Forest Action Plan: [CT Forest Action Plan](#)

CONCLUSIONS

Here are some possibilities for Coe Hill:

- Contact a private consulting forester ASAP and get on their work schedule to write a plan for this property.
- Research grant opportunities as listed in this report.
- Have property boundaries marked, with the above forester's help if needed.
- Remove/kill invasive plants on the property.
- Review benefits and considerations regarding increased hunting.
- Establish trails in limited areas of the property, but only after heavy vegetation management has already occurred through your management plan.
- Consider identifying any remnant apple and pear trees to save for posterity and wildlife food source.
- Clearcut the forest, except as advised by the forester for buffers near homes, boundaries or sensitive sites such as a stream. All work, including the logging and invasive control can be done in sections or management units over time.

Want to learn much more? Become a Master Woodland Manager! Annual application deadline for landowners and land trust members is July 15, so you have nearly a year to consider and apply for the next available round. More information: <https://portal.ct.gov/-/media/deep/forestry/mwm-flier.pdf>.

Please feel free to share this report!



Town of Middlefield
Coe Hill Property
(Steucek Parcel)
38 acres on School Street
Middlefield, CT


Route 66

Jackson Hill Road

School Street



Prepared by David Irvin
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6/25/2024

 School Street Parcels

500 250 0 500 Feet



Town of Middlefield
Coe Hill Property
LiDAR Elevation/Hillshade Map
38 acres in Middlefield, CT

Route 66

Jackson Hill Road

School Street

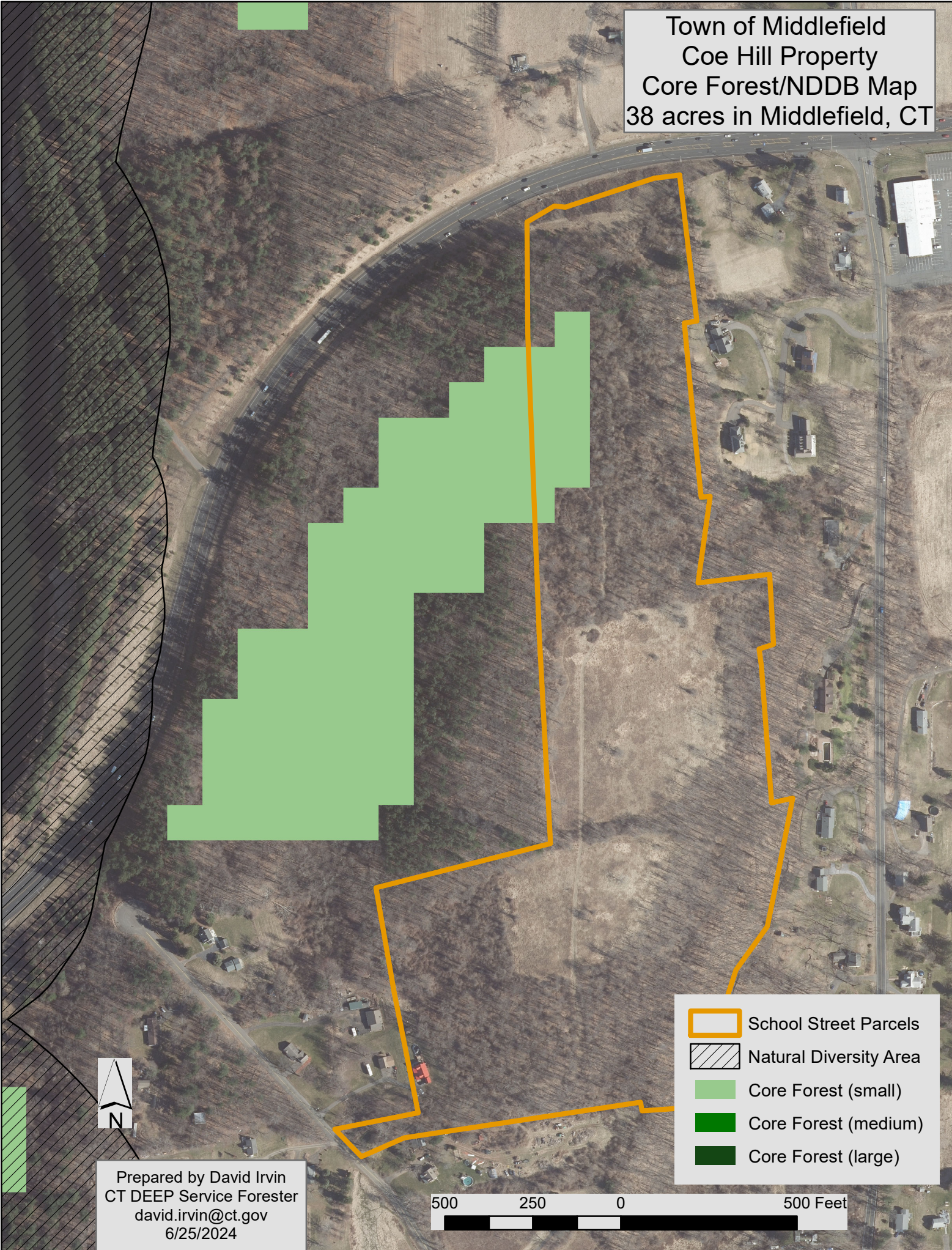


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6/25/2024

School Street Parcels

500 250 0 500 Feet

Town of Middlefield
Coe Hill Property
Core Forest/NDDDB Map
38 acres in Middlefield, CT



- School Street Parcels
- Natural Diversity Area
- Core Forest (small)
- Core Forest (medium)
- Core Forest (large)

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Town of Middlefield
Coe Hill Property
Soils Map
38 acres in Middlefield, CT

- School Street Parcels
- Wetland Soils
- Floodplain Soils
- Prime Farmland Soils
- Statewide Important Farmland Soils
- Locally Important Farmland Soils



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500 250 0 500 Feet

Town of Middlefield
Coe Hill Property
1934 Aerial Photo Map
38 acres in Middlefield, CT

NOTE: The scale projection 90 years ago does not exactly match what we use for aerial imagery today. Therefore, 1934 photos never exactly line up to features.



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6/25/2024

500 250 0 500 Feet