CLA Engineers, Inc.
Civil • Structural • Survey

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July 15, 2025

Town of Montville
Inland Wetlands Commission
ATTN: Douglas K. Brush, Chair
Montville Town Hall
310 Norwich-New London Turnpike
Uncasville, CT 06382

Re: Ebdath Chowdhoury
Residential development
Glen Road
Montville, CT
CLA-8020

Dear Mr. Brush:

On behalf of Ebdath Chowdhoury, CLA Engineers has performed a delineation and functional evaluation of the inland wetlands at the referenced site and assessed the site to provide a basis for determining the potential for impacts associated with the proposed development of this parcel. Details of the proposed development of this parcel are presented on the site plans.

The inland wetland boundary was delineated by R. Russo (CLA Engineers) in January of 2025. The wetland boundary and proposed development are shown on the plans prepared by CLA Engineers dated 5/30/2025. These data were augmented with additional online information from CTDEEP, USFWS, USGS, and the Town of Montville GIS.

Site Setting

This site consists of mixed forest and wetland area which is located right at the end of Glen Road. There is a small stream that flows through the wetlands onsite which is a tributary to Stony Brook Stream. The wetland is divided by Connecticut Route 2A with culverts allowing water passage to the wetland on the other side. This surrounding area is relatively developed, consisting primarily of residential homes. This site is zoned as residential (R20) along with the other properties surrounding it.

Soils

The upland soils mapped by NRCS are listed in the table below. There are hydric soils mapped on the property by NRCS. These include the Raypol and Scarboro Series. Additional descriptive details are provided in an NRCS soil report included as Appendix A.

Table 1 - Soil Types and Properties at the Glen Road Site

Soil Series	Parent Material	Drainage Class	Texture/Characteristics
Raypol	Coarse loamy eolian deposits over sand and gravel glaciofluvial deposits	Poorly drained	Silt loam to stratified gravely coarse sand to loamy fine sand
Scarboro	Sandy glaciofluvial deposits	Very poorly drained	Muck to gravelly sand
Agawam	Coarse loamy eolian deposits over sand and gravel glaciofluvial deposits	Well drained	Fine sandy loam to loamy sand
Udorthents-Urban Complex	Human transported material	Well drained	Loam to very gravelly sandy loam
Ninigret	Coarse loamy eolian deposits over sand and gravel glaciofluvial deposits	Moderately well drained	Fine sandy loam to loamy sand
Tisbury	Coarse silty eolian deposits over sand and gravel glaciofluvial deposits	Moderately well drained	Silt loam to extremely gravelly sand

The Raypol series consists of poorly drained soils formed in eolian deposits overlaying glaciofluvial material. They are nearly level sloping soils formed in drainageways. The Scarboro series are very poorly drained soils formed in glaciofluvial deposits. They are nearly level soils found in drainageways depressions, outwash deltas, and outwash terraces. The Agawam series are well drained soils formed in eolian deposits overlaying glaciofluvial material. They are gently sloping soils found in outwash terraces. The Udorthents-Urban Complex series contains well drained soils formed by human transported materials. They are nearly level to steep sloping soils and can be found in areas in or near human disturbance. The Ninigret series are moderately well drained soils formed in eolian deposits overlaying glaciofluvial material. They are nearly level soils commonly found in outwash terraces. The Tisbury series contains moderately well

drained soils formed in silty eolian deposits overlaying glaciofluvial material. They are nearly level sloping soils which can be found in outwash terraces, deltas, outwash plains, and valley trains.

Wetland Characteristics

Classification

The National Wetlands Inventory (NWI https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/) does show the onsite wetland and it is classified as PFO1E. A description of this wetland group can be found below:

Classification code: PFO1E

System **Palustrine (P):** The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.

Class **Forested (FO):** Characterized by woody vegetation that is 6 m tall or taller.

Subclass **Broad-Leaved Deciduous (1):** Woody angiosperms (trees or shrubs) with relatively wide, flat leaves that are shed during the cold or dry season; e.g., black ash (Fraxinus nigra).

Water Regime **Seasonally Flooded/Saturated (E):** 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.

Wetland hydrology

There is one regulated area on the southern part of the project site where wetland is present. The wetland has many areas of pooling water and is underlain by sandy soils. This wetland discharges the water into a watercourse that starts right near CT-Route 2A and flows under through a culvert to another wetland. This unnamed watercourse is a tributary to Stony Brook Stream which drains into the Thames River and Long Island Sound.

Factors important to functional assessment

The following observations are important to the functional assessment and are listed here to provide context to the later discussion of functions and values.

1. Connecticut protected species are not known to be present on the site per the December 2024 update of the CTDEEP NDDB. See Appendix C.
2. The local zoning is Residential (R20) per the Town GIS, and the surrounding parcels appear to be single-family residences.

3. The wetland has eolian deposits over glaciofluvial material along with glaciofluvial deposits around its edges per available online mapping. Detailed soil mapping from the U.S. Web Soil Survey is included within Appendix A.
4. The streams below the wetland onsite have good quality habitat for fish populations, including wild brook trout. Data collected by CTDEEP can be viewed in Appendix E.
5. This wetland is used for a variety of different species including coyotes, red-tailed hawks, red-winged black birds, and deer. See Appendix D for a full list of species.
6. There is multiple different wetland communities present onsite.

Principal functions

The functional assessment was conducted using the USCAE Highway Methodology (https://www.nae.usace.army.mil/Portals/74/docs/regulatory/Forms/HighwaySupplement6Apr2015.pdf). The assessment is included as Appendix B and it revealed that the wetland onsite with a small intermittent watercourse running through it has the following Principal functions:

1. **Groundwater Recharge/Discharge:** Wetland is underlain and borders sandy and gravelly soils and appears to discharge water into the unnamed watercourse which feeds into Stony Brook Stream.
2. **Floodflow Alteration:** This wetland is very flat, contains dense vegetation, has hydric soil and has standing water within it. CLA believes that this wetland would be able to store a lot of water during a significant storm event.
3. **Sediment/Toxicant Retention:** This wetland has multiple residential houses near its edge with moderate sized laws. Given that this wetland is broad, has organic and fine sandy soils, and can hold water for extended periods of time, CLA believes this wetland can retain toxicants.
4. **Nutrient Removal:** The wetland onsite is densely vegetated and has multiple different wetland communities within it which would allow for the attenuation of excess nutrients from fertilizer runoff from nearby homes.
5. **Wildlife Habitat:** CLA noticed deer tracks and scat, viewed red-tailed hawks, and saw a coyote using this wetland during the site visit on July 1st, 2025.

Potential for Impacts

As shown on the project plans, the following activities are planned.

1. Construction of a 5-bedroom home with a sunroom, 2 porches and a walkway
2. Installation of a 1,500-gal concrete septic tank with 2 D-boxes and leach fields
3. Construction of a retaining wall
4. Installation of a well
5. Installation of a curtain drain with 6” pvc attached to it.
6. Installation of a drainage basin with a 12” HDPE pipe which leads to a rip-rap drainage outlet.
7. Construction of a footing drain and a rip-rap footing drain outlet

Based on the plans, there will be 4200 square feet of disturbed wetland area due to the following:

1. Construction of the driveway
2. Installation of modified rip-rap inlet on the side of the driveways with a round 12" concrete pipe under feeding to a rip-rap outlet.

The proposed activities outlined above may impact the regulated resource's principal functions in the following ways:

1. **Groundwater Recharge/Discharge:** With the installation the driveway over existing wetland, the groundwater recharge will be slightly impacted as there is less land available for this function. The plan does include some disconnection of impervious surface by including a driveway circle of vegetated areas for runoff to infiltrate. The plans also keep a vegetated buffer between the proposed home and the wetland area.
2. **Floodflow Alteration:** The part of the driveway in the wetland with drainage pipes going under will lead to more direct runoff going into the wetland. Near the house, the runoff is being directed to riprap drainage areas at the edge and just within the 50' upland review area. There is a natural vegetated buffer that will remain between the wetland and proposed drainage point to promote infiltration. The plans to add flood water storage capacity in an upland area which will offset the loss of flood storage from filled wetlands.
3. **Sediment/Toxicant Retention:** The driveway constructed in the wetland will remove vegetation and decrease the potential for sediment and toxicant retention from surrounding runoff and push this function to occur further in the wetland. To mitigate this during construction, silt fence will be installed at the edge of the driveway and a proposed riprap outlet to catch any excess sediments during construction. Near the house outside of the wetland, silt fence will still be installed along the vegetated buffer to prevent excess sediments from accumulating in the wetland
4. **Nutrient Removal:** The driveway proposed in the wetland will reduce the amount of native vegetation and add impervious area which will reduce some of the wetland's ability to attenuate nutrients. However, appropriate sediment and erosion control measures will be implemented to reduce excess nutrients from the project entering the wetland. While the house outside of the wetland will have a lawn that could be a source of excess nutrients, there will still be a vegetated buffer to intercept and attenuate it.
5. **Wildlife Habitat:** With the proposed wetland disturbance from the driveway, some wetland habitat will be lost, providing less food and shelter for wildlife. The upper portion of the site where the home is located should not have any effect on this function given the proper erosion and sediment control measures and due to there being a vegetative buffer present.

Alternatives Considered

When designing the driveway, multiple different options were considered on how to connect the planned house to Glen Road. Regardless of the different options, wetland disturbance on this site

is inevitable. Due to this, the path that would have the least amount of disturbance on the wetlands onsite was chosen.

Summary

The site plan does include impacts on the functionality of the onsite wetlands due to there being 4200 square feet of wetland disturbance for the installation of the driveway. There will be slightly more stormwater runoff entering the wetlands which could potentially carry slightly more nutrients and sediments. The clearing of the wetland for the driveway would also reduce some vegetation, food sources, and habitat for wildlife species. However, if proper sediment and erosion control measures are installed and inspected regularly and the vegetated buffer outside of the wetland is maintained, these impacts will be reduced to a minimal level.

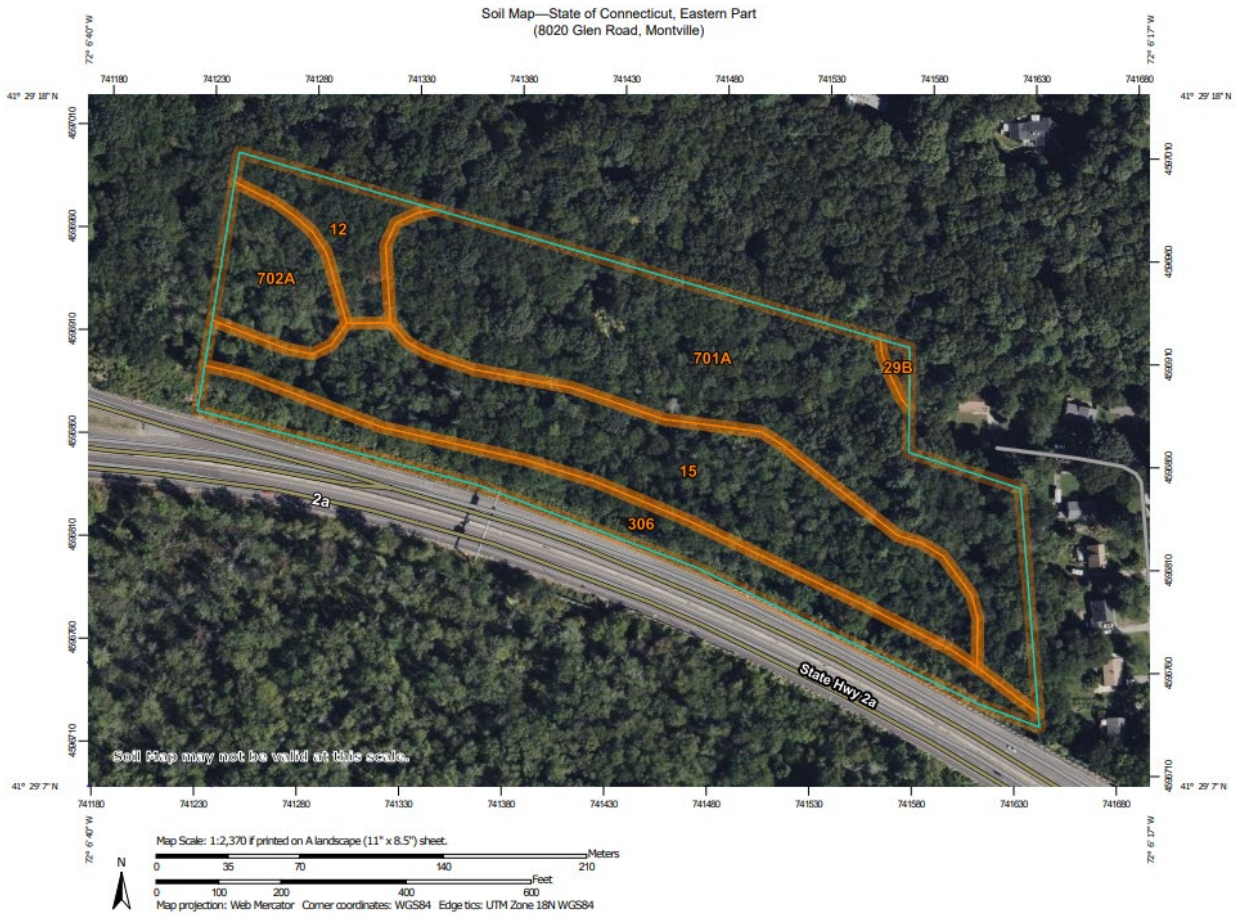
Sincerely,

Robert C Russo

Robert C. Russo
Soil Scientist, CLA Engineers
Norwich, CT

Appendix A: Soil Maps

From USGS Web Soil Survey



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Eastern Part
Survey Area Data: Version 2, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Raypol silt loam, 0 to 3 percent slopes	0.7	5.7%
15	Scarboro muck, 0 to 3 percent slopes	3.9	29.9%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	0.1	0.5%
306	Udorthents-Urban land complex	2.0	15.5%
701A	Ninigret fine sandy loam, 0 to 3 percent slopes	5.4	41.6%
702A	Tisbury silt loam, 0 to 3 percent slopes	0.9	6.8%
Totals for Area of Interest		**13.0**	**100.0%**

Appendix B: Army Corps Wetland Assessment Sheets

Wetland Function-Value Evaluation Form

Total area of wetland 7.2 Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? Yes

Adjacent land use Residential (R-20) Distance to nearest roadway or other development 80'-76 Glen Rd.

Dominant wetland systems present PFO1E Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? Middle

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 8020
Latitude 41.487 Longitude -72.107
Prepared by: KL Date 7/2/2025

Wetland Impact:
Type PFO1E Area 7.2

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y____ N ✓

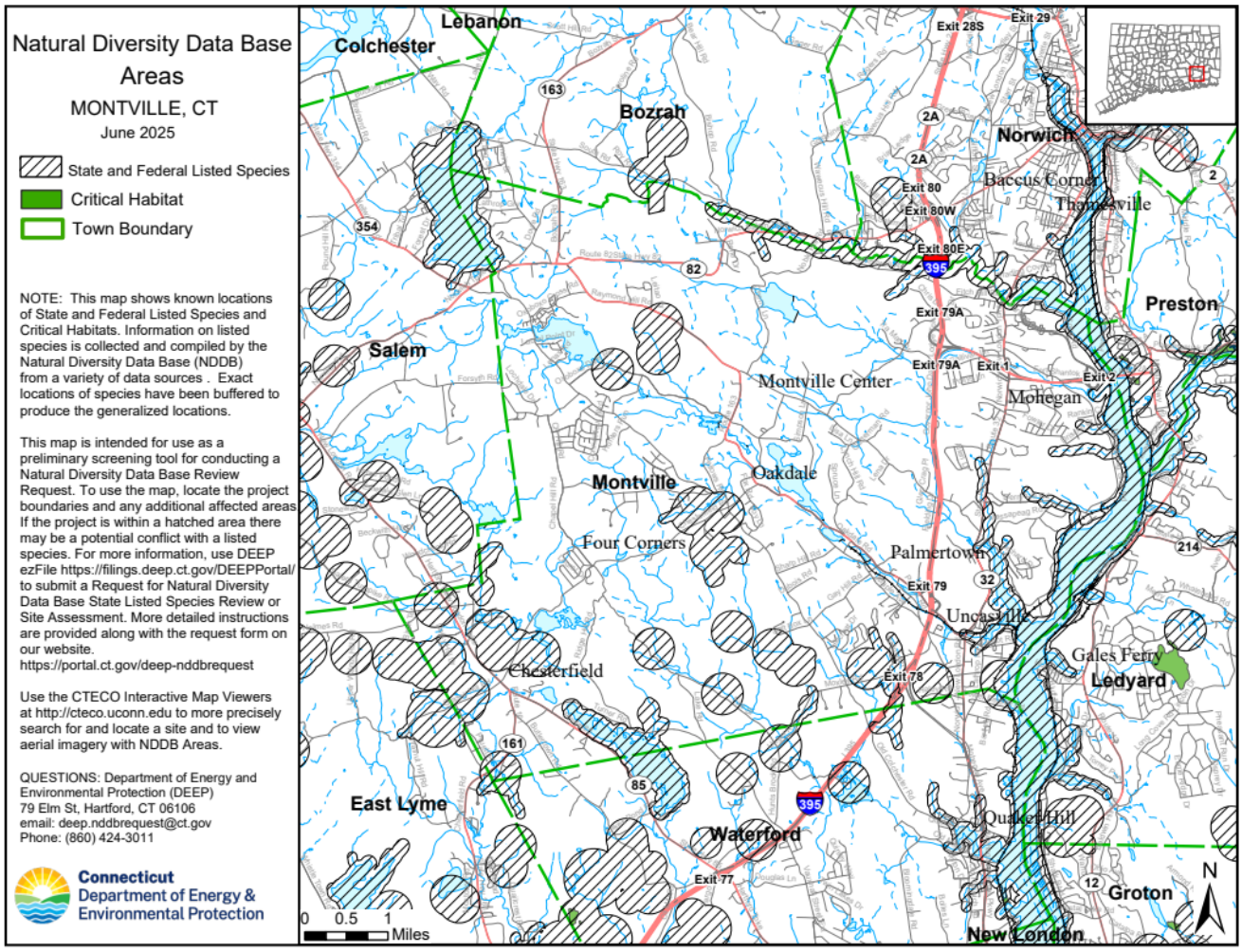
Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	2,4,5,7,10,12,15	✓	wetland appears to discharge water into watercourse. wetland is also underlain by sandy soils
Floodflow Alteration	Y	3,5,6,7,8,11,13,15,18	✓	wetland is very flat and can retain a lot of water
Fish and Shellfish Habitat	N			while fish habitat is available down stream, this wetland is constricted by a culvert and watercourse starts just at edge
Sediment/Toxicant Retention	Y	2,3,4,5,7,8,10,12,13,14,15,16	✓	No sediment sources present but fertilizer runoff could enter wetland and can be stored
Nutrient Removal	Y	3,4,5,7,8,10,11,12,14	✓	multiple residential homes upslope where fertilizer runoff could occur
Production Export	Y	1,2,4,5,7,8,14		very high primary productivity occurring in wetland
Sediment/Shoreline Stabilization	N			watercourse starts at the edge of wetland and is a low order stream
Wildlife Habitat	Y	2,5,6,8,9,10,11,13,14,15,16,17,19, 20,21,22,23	✓	multiple bird species spotted onsite along with coyotes. Deer tracks and scat present.
Recreation	N			Private property with no parking
Educational/Scientific Value	N			Coyotes present on site and pond is private
Uniqueness/Heritage	N			Hard to view and no historical significance
Visual Quality/Aesthetics	N			Can't see from road, no parking and private property
ES Endangered Species Habitat	N			No CT listed species present
Other				

Notes:

* Refer to backup list of numbered considerations.

Appendix C: Natural Diversity Data Base Map

Town of Montville, CT



Appendix D: Species List

Plant Species:

Cinnamon fern (*Osmundastrum cinnamomeum*)

American beech (*Fagus grandifolia*)

Japanese barberry (*Berberis thunbergii*)

Wood fern (*Dryopteris carthusiana*)

Spicebush (*Lindera benzoin*)

American hornbeam (*Carpinus caroliniana*)

Broom forkmoss (*Dicranum scoparium*)

Wrinkleleaf goldenrod (*Solidago rugosa*)

Skunk cabbage (*Symplocarpus foetidus*)

Sweet pepperbush (*Clethra alnifolia*)

Devil's beggarticks (*Bidens frondosa*)

False nettle (*Boehmeria cylindrica*)

Royal fern (*Osmunda regalis*)

Common reed (*Phragmites australis*)

Jack-in-the-pulpit (*Arisaema triphyllum*)

Blue violet (*Viola sororia*)

False brome *(Brachypodium sylvaticum*)

Sensitive fern (*Onoclea sensibilis*)

Northern dewberry (*Rubus flagellaris*)

Black birch (*Betula lenta*)

American climacium moss (*Climacium americanum*)

Red oak (*Quercus rubra*)

Red maple (*Acer rubrum*)

Brome-like sedge (*Carex bromoides*)

Shallow sedge (*Carex lurida*)

American water plantain (*Alisma subcordatum*)

White pine (*Pinus strobus*)

Pincushion moss (*Leucobryum glaucum*)

Multiflora rose (*Rosa multiflora*)

Greenbriar (*Smilax rotundifolia*)

Bladder sedge (*Carex intumescens*)

Eastern hemlock (*Tsuga canadensis*)

Highbush blueberry (*Vaccinium corymbosum*)

Wineberry (*Rubus phoenicolasius*)

Virginia creeper (*Parthenocissus quinquefolia*)

Princess pine (*Dendrolycopodium obscurum*)

Animals confirmed:

Wood frog (*Lithobates sylvaticus*)

Red-tailed hawk (*Buteo jamaicenis*)

White-tailed deer (*Odocoileus virginianus*)

Red-winged blackbird (*Agelaius phoeniceus*)

Coyote (*Canis latrans*)

Possible species:

Spotted salamander (*Ambystoma maculatum*)

Red-backed salamander (*Plethodon cinerus*)

Ringneck snake (*Diadophis punctatus*)

Appendix E: CT DEEP Fish Community Data