

**Exhibit I**

State-Listed Invertebrate Host Plant Survey Results



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Biodiversity Studies • Wetland Delineation & Assessment • Habitat Management • GIS Mapping • Permitting • Forestry

## **State-Listed Invertebrate Host Plant Survey Results**

Proposed Amaral Solar Facility  
254 Putnam Road  
Pomfret, CT

October 13<sup>th</sup>, 2021

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## Executive Summary

<i>Project:</i>	Amaral Solar Facility
<i>Location:</i>	254 Putnam Road, Pomfret, CT
<i>Survey Target:</i>	Hazelnuts ( <i>Corylus</i> spp.), laurels and blueberries ( <i>Kalmia</i> spp. and select <i>Vaccinium</i> spp.), bear oak ( <i>Quercus ilicifolia</i> ), dwarf chestnut oak ( <i>Quercus prinoides</i> ), and scrub oak habitat.
<i>Survey Area:</i>	215-acre parcel at 254 Putnam Road, Pomfret, CT
<i>Dates/Duration:</i>	August 18 <sup>th</sup> , 2021. 11 Person hours
<i>Survey Results:</i>	0.66 acres of host plants complex identified (see Appendix B). Beaked hazelnut ( <i>Corylus cornuta</i> ), Mountain laurel ( <i>Kalmia latifolia</i> ), blue ridge blueberry ( <i>Vaccinium pallidum</i> ), and highbush blueberry ( <i>Vaccinium corymbosum</i> ).

## General Site Characteristics

The survey area consisted of a 215-acre parcel at 254 Putnam Road in Pomfret, Connecticut (the “Site”). It is bound to the north by Putnam Road and to the south by Wrights Crossing Road. To the east it is bordered by forest, and to the west by private residences. It is located within the Southern New England Coastal Plains and Hills ecoregion.<sup>1</sup> It is within the Quinebaug River subregional basin of the Thames River. The Site is made up of portions of two drumlins, which create two large, north-south oriented hills in the eastern and central portions of the property. The eastern, and larger, drumlin includes the high point of the property, 502 feet above mean sea level (AMSL). From there the topography slopes greatly downward to Bark Meadow Brook reaching a low point of 339 feet msl at the southern end of Bark Meadow Brook near where it crosses under Wrights Crossing Road. From there the Site rises to another peak of 414 feet msl in the central hayfield before sloping downward to 338 feet msl, the lowest point on the property, in the southern terminus of a mesic forested area.<sup>2</sup> The Project area occupies

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<sup>1</sup> <https://www.plantmaps.com/interactive-connecticut-ecoregions-l4-map.php>

<sup>2</sup> <http://cteco.uconn.edu/viewer/index.html?viewer=simple>

the southern approximate half of the central hayfield with an access from Putnam Road to the north.

The Site is primarily made up of operational pastures and hayfields. Approximately 5% of the Site is made up of developed farm and residential area, the remaining 205 acres were surveyed for State-listed species, host plants, and habitat. Bark Meadow Brook, and accompanying wetland areas, runs through the western portion of the Site and is vegetated by shrubs and small trees, in addition to a similar herbaceous flora as is found throughout. This wetland corridor is situated between two large hills which are in use as pastures and hayfields. To the west the Site is bordered by a forested area that extends into the pasture at the high point of the Site. To the east, beyond the two large hills is a low forested area comprised of a wetland corridor with a drier steep slope in the southern corner of the Site. Along the eastern border there is one small additional hayfield, as well as a small portion of hayfield on the northern side of the northeast corner.

Site soil types consist primarily of Woodbridge fine sandy loam, Paxton and Montauk fine sandy loam and Ninigret and Tisbury soils making up the toeslopes of the drumlins. Rippowam fine sandy loam makes up the Bark Meadow Brook corridor, with Hinckley and Walpole sandy loams and the Ridgebury, Leicester, and Whitman soil complex, along with Scarborough muck making up the remainder of wetland areas. The high hayfield and forested area on the eastern side of the Site are made up of Charlton and Chatfield soils. All of these soils except for the alluvially derived Rippowam fine sandy loam are derived from melt-out or lodgement glacial till material.<sup>3</sup>

Aerial photography of the Site from 1934 shows nearly the same use footprint as present, with two exceptions. The forested area in the eastern portion of the Site is larger than its current size, and an approximately 14.5-acre area of modern hayfield, southeast of the farmyard, is forested as well. These forested areas appear sparser in places, as if being logged or regrowing after agricultural use.<sup>4</sup> By 1970 the Site has the modern land use

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<sup>3</sup> UCONN Center for Land Use Education and Research and CT DEEP "CT Environmental Conditions Online Simple Viewer" *CT Environmental Conditions Online*, UCONN. <http://cteco.uconn.edu/viewer/index.html?viewer=simple>

<sup>4</sup> University of Connecticut Library Map and Geographic Information Center - MAGIC. (2018). *Neighborhood Change in Connecticut, 1934 to Present*. Retrieved from [http://magic.lib.uconn.edu/mash\\_up/1934.html](http://magic.lib.uconn.edu/mash_up/1934.html).

footprint.<sup>5</sup> South of the property is the protected 146-acre Wyndham Land Trust's Duck Marsh Preserve.<sup>6</sup>

### Survey Protocol

The survey area and target species were determined by an overview of Project mapping and NDDB Determination No. 202103657, dated June 22, 2021. The NDDB determination included four invertebrates, the Corylus dagger moth (*Acronicta falcula*), the slender clearwing (*Hemaris gracilis*), the barrens buck moth (*Hemileuca maia maia*), and the barrens Metarranthis moth (*Metarranthis apiciaria*).

Prior to field surveys, information about target invertebrates, including host plants, was reviewed, as were identification information and representative photographs of host plant species.

As its name suggests, the larval host plant of the State-listed species of special concern Corylus dagger moth are species in the genus *Corylus*.<sup>7</sup> There are two members of the genus *Corylus* found in Connecticut, American hazelnut (*Corylus americana*) and beaked hazelnut (*Corylus cornuta*). They can be identified by their growth form, doubly toothed leaves, and distinct fruit. The two species can most easily be distinguished by their fruit, with American hazelnut lacking the long beak which gives beaked hazelnut its name.<sup>8</sup>

The slender clearwing is a State-listed threatened moth which uses members of Ericaceous genera *Kalmia* and *Vaccinium*, particularly sheep laurel (*Kalmia angustifolia*), and blueberries, as larval host plants.<sup>9</sup> There are three members of the genus *Kalmia* in Connecticut, mountain laurel (*Kalmia latifolia*), sheep laurel (*Kalmia angustifolia*), and bog laurel (*Kalmia polifolia*). They can be recognized by their tough and waxy, simple, entire leaves and distinctive flowers.<sup>10</sup> There are nine members of the genus *Vaccinium* found in Connecticut, five of which are considered blueberries, and one of which is State-Listed

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<sup>5</sup> UConn Air Photo Archive, 1934, 1951, 1970.

<https://connecticut.maps.arcgis.com/apps/View/index.html?appid=044e8e6266aa44dc8ccc9b6e2eecacb4&extent=-74.8197,40.6374,-70.2054,42.4665>

<sup>6</sup> <https://www.wyndhamlandtrust.org/pomfret/>

<sup>7</sup> <https://mnfi.anr.msu.edu/species/description/11945/Acronicta-falcula>

<sup>8</sup> Haines, A., 2011. *Flora Novae Angliae*. New England Wildflower Society. Westford, MA. pg. 454.

<sup>9</sup> <https://www.sphingidae.us/hemaris-gracilis.html>

<sup>10</sup> Haines, A., 2011. *Flora Novae Angliae*. New England Wildflower Society. Westford, MA. pg. 454.

Endangered.<sup>11</sup> Blueberries are recognized by having alternate, simple leaves that are entire or nearly so and berries that are blue to black when ripe. Branchlet, bud scale, leaf, and flower characteristics can be used to distinguish between species.<sup>12</sup>

The barrens buck moth is a State-listed endangered species that is restricted to scrub oak-pine sand barrens and dry oak woods. The oak species scrub oak (*Quercus ilicifolia*) and dwarf chestnut oak (*Quercus prinoides*) are larval host plants for the barrens buck moth.<sup>13</sup> Likewise, the State-listed special concern barrens Metarranthis moth is restricted to pitch pine-scrub oak sand barrens. Its larval host plants are unknown.<sup>14</sup>

### Survey Results

Field surveys were conducted by botanists James Cowen and Aubree Keurajian on August 18<sup>th</sup>, 2021. Survey efforts are listed in Table 1 below and survey routes are shown in Appendix C. A full species list can be found in Appendix D.

Table 1: Survey dates, weather, and effort

Survey Date	Weather	Survey Duration (Total Person Hours)
August 18 <sup>th</sup> , 2021	Overcast, 79F	11 person hours

As described in the General Site Characteristics section above, most of the property is made up of hayfields and pastures (Appendix A: Photo 1, 2). The northern approximate half of the hayfield had been hayed too recently for plants to be identified at time of survey. It is contiguous with the rest of the large hayfield and appears to be made up of the same species (Appendix A: Photo 3). The hayfields, including the proposed Project area, are fairly uniform and low in diversity, with most of the species listed in Appendix D being restricted to the field edges (Appendix A: Photo 4, 5). These dominant species are primarily introduced species such as orchard grass (*Dactylis glomerata*), velvetgrass (*Holcus lanatus*), timothy (*Phleum pratense*), and meadow fescue (*Schedonorus*

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<sup>11</sup> Dreyer G.D., C. Jones, et al. 2014. Native and Naturalized Vascular Plants of Connecticut Checklist. Connecticut Botanical Society. New Haven, CT.

<sup>12</sup> Haines, A., 2011. *Flora Novae Angliae*. New England Wildflower Society. Westford, MA. pg. 561-3

<sup>13</sup> <https://www.butterfliesandmoths.org/species/Hemileuca-maia>

<sup>14</sup> Nelson, M.W., 2015. *Barrens Metarranthis Fact Sheet*. Massachusetts Division of Fisheries and Wildlife Natural Heritage & Endangered Species Program.

*pratensis*), with chicory (*Cicorium intybus*), English plantain (*Plantago lanceolata*), and fleabane (*Erigeron* spp.). Wetland areas are dominated by reed canary grass (*Phalaris arundinaceae*).

The pastures, although dominated by the same species, are somewhat more diverse. Wet areas in the northern part of the pasture are dominated by sallow, tussock, and fox sedge (*Carex lurida*, *stricta*, and *vulpinoidea*), and American barnyard grass (*Echinochola muricata*), where not dominated by invasive reed canary grass and purple loosestrife (*Lythrum salicaria*) (Appendix A: Photo 6, 7). There are also a greater number of non-graminoid herbaceous species, including sensitive fern (*Onoclea sensibilis*), German chamomile (*Matricaria chamomila*), selfheal (*Prunella vulgaris*), blue vervain (*Verbena hastata*) and fall blooming American Asters (*Symphotrichum* spp.).

The Bark Meadow Brook wetland corridor has the greatest species diversity on the property. It is vegetated primarily by a mix of native and introduced shrub and herbaceous species, with some trees, notably black cherry (*Prunus serotina*) and red oak (*Quercus rubra*). The shrubs are primarily dogwoods (*Swida amomum* and *racemosum*), elderberry (*Sambucus canadensis*), black raspberry (*Rubus allegheniensis*), and invasive multiflora rose (*Rosa multiflora*), and privet (*Ligustrum* sp.). The herb layer is made of many species, notably late goldenrod (*Solidago gigantea*), horse nettle (*Solanum carolinense*), catnip (*Nepeta cataria*), annual ragweed (*Ambrosia artemisiifolia*), devil's beggar-ticks (*Bidens frondosa*), rice cutgrass (*Leersia oryzoides*), true forget me not (*Myosotis scirpoides*), jewelweed (*Impatiens capensis*), boneset (*Eupatorium perfoliatum*), and numerous species of *Persicaria* including pinkweed (*P. pensylvanica*) and cespitose smartweed (*P. longiseta*). (Appendix A: Photo 8, 9)

Species growing just west of the western property line are included in the species list for the "Western Woods". A wooded area of approximately 1000 ft<sup>2</sup> extends into the pasture from this edge at the high point of the property (Appendix A: Photo 10). The canopy is almost entirely red maple (*Acer rubrum*), with a mix of native and introduced herbaceous species, including white wood aster (*Eurybia divaricata*), Indian tobacco (*Lobelia inflata*),

clearweed (*Pilea pumila*), rough-stemmed goldenrod (*Solidago rugosa*), and invasive Japanese stiltgrass (*Microstegium vimineum*) and garlic mustard (*Alliaria petiolata*).

The eastern woods canopy is primarily a low wetland, dominated by red maple, with some areas dominated by introduced European larch (*Larix decidua*). The understory, especially throughout the wetland areas, is dominated by invasive species, particularly barberry (*Beberis thunbergii*), multiflora rose and privet (Appendix A: Photo 11,12). To the southeast it rises sharply, and becomes dominated by sugar maple, shagbark and butternut hickory (*Carya ovata* and *cordiformis*), and red oak (*Quercus rubra*) (Appendix A: Photo 13). The shrub layer in this area is dominated by target host species beaked hazelnut (*Corylus cornuta*) and Blue Ridge blueberry (*Vaccinium pallidum*), with a few mountain laurel (*Kalmia latifolia*) individuals (Appendix A: Photo 14, 15, 16). This complex of host plants primarily occurs on the upland slope to the east of the wetland, however, in the wetland and along the mesic edge there are also highbush blueberries (*Vaccinium corymbosum*) (Appendix A: Photo 17). This area of host plants occupies 0.66 acres as illustrated on the *Host Plant Location Map* included in Appendix B.

### Species Protection Measures

Host plants occur along the eastern portions of the Site, well outside of proposed Project area as noted on the *Host Plant Location Map* (Appendix B). Given the separation distance of the limits of disturbance from the plants, we do not anticipate any adverse impacts. Therefore, no plant protection measures are recommended.



## Appendices

A: Site Photographs

B: Mapping

C: Survey Route Map

D: Species List

E: Summary of qualifications

## APPENDIX A – Site Photographs

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Photo 1: Vista from the highest point on the property, looking north. Farmyard, main developed area, seen in the back right.



Photo 2: Vista from the highest point on the property, looking east across pastures and hayfields.



Photo 3: Northernmost portion of hayfield, recently mown. Photo taken from west side of Bark Meadow Brook, looking southeast.



Photo 4: Proposed Project Area. Photo taken from eastern edge looking west. Area a hayfield.



Photo 5: Proposed Project Area. Photo taken from western edge looking east. Note hayfield edge with higher species diversity, including goldenrods, queen anne's lace, and invasive reed canary grass.



Photo 6: Wetlands in pasture, vegetated primarily by sedges, soft rush, and mild water pepper.



Photo 7: Seep in pasture, vegetated primarily by American barnyard grass and yellow nutsedge.



Photo 8: Shrub-herbaceous corridor of Bark Meadow Brook. Photo taken looking east.



Photo 9: Shrub-herbaceous corridor of Bark Meadow Brook. Photo taken looking north.



Photo 10: Wooded wetland area on western edge of property.



Photo 11: Herbaceous wetland area at edge of western woods.



Photo 12: Western wooded wetland with barberry dominated understory and red maple canopy. Photo taken looking south.





Photo 13: Mixed hardwood forest, note ground rising to the right of the photo. Photo taken looking north from southern part of host plant complex polygon, note highbush blueberry in center of photo.



Photo 14: Beaked hazelnut (*Corylus cornuta*)



Photo 15: Dense patch of beaked hazelnut in northeastern part of host plant species complex.



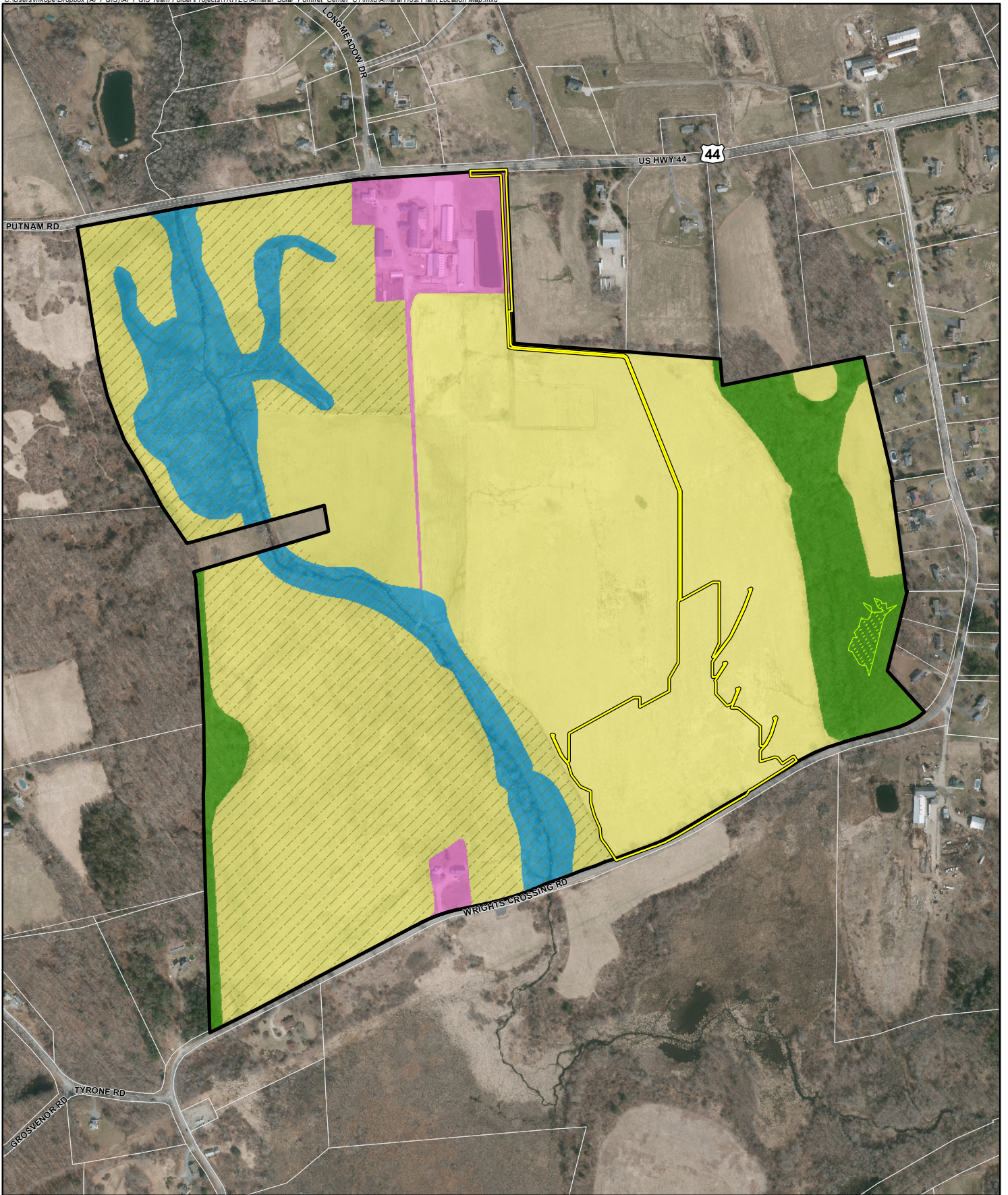
Photo 16: Blue Ridge Blueberry (*Vaccinium pallidum*).



Photo 17: Highbush blueberry (*Vaccinium corymbosum*).

## APPENDIX B – Mapping

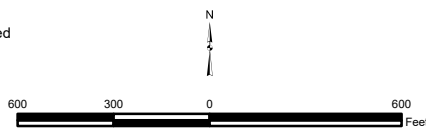
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- Legend**
- Site
  - Project Area
  - Host Plant Location (Corylus Vaccinium Complex)
  - Approximate Parcel Boundary

- Habitat Cover Type**
- Emergent/Scrub-Shrub Wetland
  - Wetland Forest
  - Hayfield
  - Pasture
  - Developed

Map Notes:  
 Base Map Source: 2019 Aerial Photograph (CTECO)  
 Map Scale: 1 inch = 600 feet  
 Map Date: October 2021



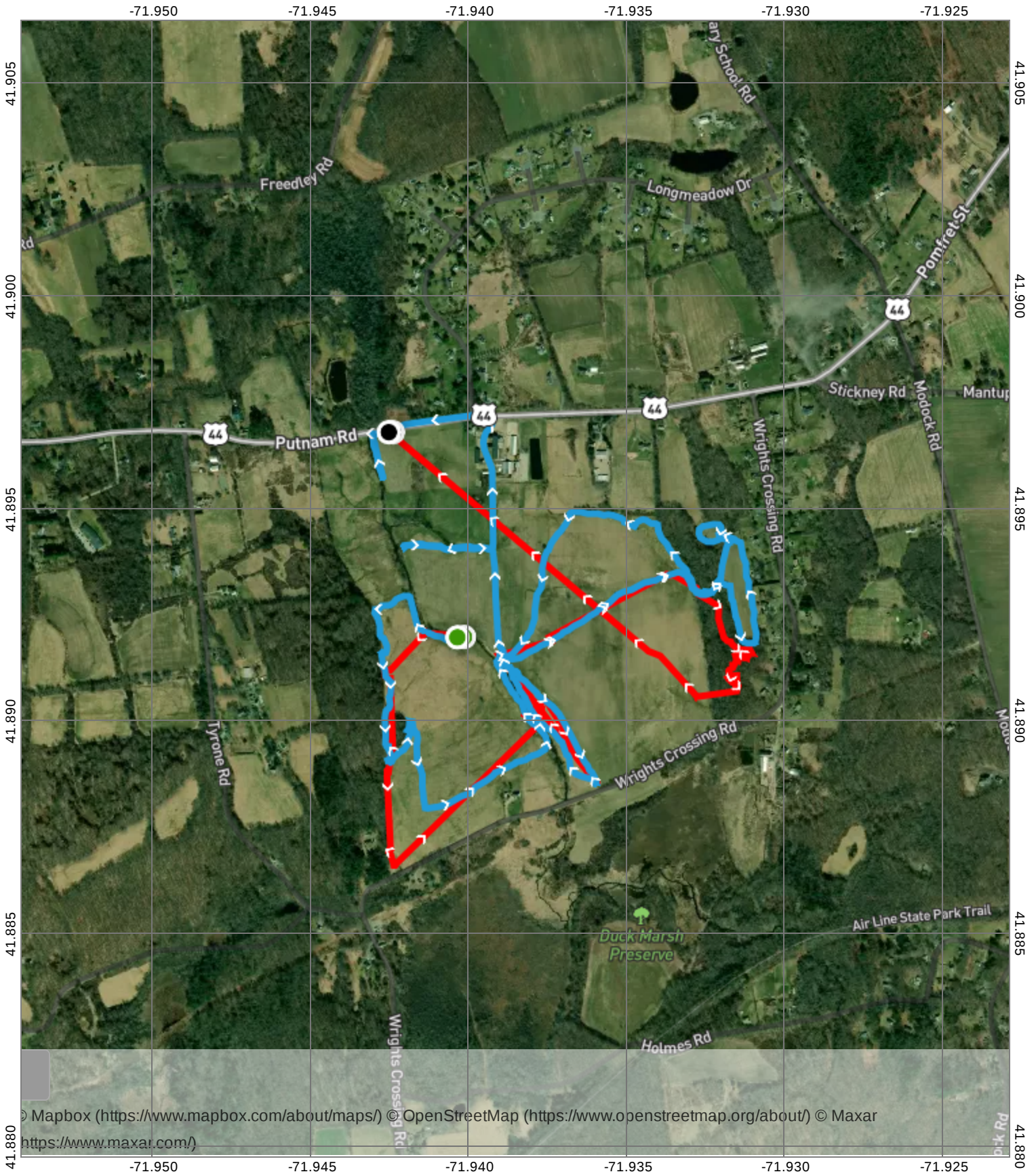
### Host Plant Location Map

Amaral Solar Facility  
 254 Putnam Road  
 Pomfret Center, Connecticut



## APPENDIX C – Survey Route Mapping

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© Mapbox (<https://www.mapbox.com/about/maps/>) © OpenStreetMap (<https://www.openstreetmap.org/about/>) © Maxar (<https://www.maxar.com/>)

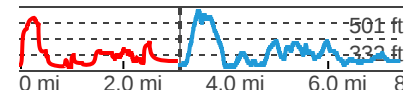


MN  
14°W  
10/15/21

200 0 200 400 600 M 800

0.2 0 0.2 MI 0.4

Scale 1:13441 Datum WGS84



## APPENDIX D – Species List

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SCIENTIFIC NAME	STRATUM	COMMON NAME	IND	STATUS	Hayfield and edge	Work area hayfield	Pasture	Bark Meadow Brook Wetland	Western woods	Eastern Woods	Eastern field
<i>Abutilon theophrasti</i>	Herbs	Velvetleaf	FAU	introduced		x					
<i>Acalypha rhomboidea</i>	Herbs	Common Copper-Leaf	FACU-	native			x		x		
<i>Ageratina altissima</i>	Herbs	White Snakeroot	FACU-	native					x		
<i>Agrimonia striata</i>	Herbs	Woodland Groovebur	FACU-	native			x	x			
<i>Agrostis gigantea</i>	Herbs	Redtop	FACW	native			x				
<i>Alisma subcordatum</i>	Herbs	Small Water-Plantain	OBL	native			x				
<i>Alliaria petiolata</i>	Herbs	Garlic Mustard	FACU-	invasive					x	x	
<i>Amaranthus hybridus</i>	Herbs	Green Amaranth	NC	introduced	x	x		x			
<i>Ambrosia artemisifolia</i>	Herbs	Annual Ragweed	FACU	native		x	x	x	x		
<i>Ampelopsis glandulosa</i>	Herbs	Porcelain Berry	NC	invasive		x		x			
<i>Anthoxanthum odoratum</i>	Herbs	Sweet Vernal Grass	FACU	introduced				x			
<i>Apios americana</i>	Herbs	Groundnut	FACW	native							x
<i>Aralia nudicaulis</i>	Herbs	Wild Sasparilla	FACU	native						x	
<i>Arctaea sp.</i>	Herbs	baneberry		native						x	
<i>Arctium minus</i>	Herbs	Common Burdock	FACU	introduced	x	x	x	x			
<i>Arisaema triphyllum</i>	Herbs	Jack-in-the-Pulpit	FACW-	native						x	
<i>Artemisia vulgaris</i>	Herbs	Common Mugwort	UPL	invasive							x
<i>Asclepias syriaca</i>	Herbs	Common Milkweed	UPL	native		x	x				
<i>Athyrium sp.</i>	Herbs	Lady-fern	FAC	native				x			
<i>Bidens frondosa</i>	Herbs	Devil's Beggar-ticks	FACW	native				x			
<i>Boehmeria cylindrica</i>	Herbs	False Nettle	FACW+	native						x	
<i>Bromus inermis</i>	Herbs	Smooth brome	UPL	introduced							x
<i>Calystegia sepium</i>	Herbs	Hedge Bindweed	FAC-	native	x	x		x			
<i>Cardamine hirsuta</i>	Herbs	Hairy bittercress	FACU	introduced						x	
<i>Cardamine impatiens</i>	Herbs	Narrowleaf Bittercress	FAC	invasive					x		
<i>Carex (laxiflorae group)</i>	Herbs	loose-flowered sedges		native					x	x	
<i>Carex lurida</i>	Herbs	Sallow Sedge	OBL	native			x			x	
<i>Carex stricta</i>	Herbs	Tussock Sedge	OBL	native						x	
<i>Carex vulpinoidea</i>	Herbs	Fox Sedge	OBL	native			x				
<i>Cerastium fontanum</i>	Herbs	Mouse-ear Chickweed	FACU	introduced		x					
<i>Chelidonium majus</i>	Herbs	Greater Celandine	UPL	introduced				x	x		
<i>Chenopodium album</i>	Herbs	Lamb's Quarters	FACU+	introduced		x		x			
<i>Cichorium intybus</i>	Herbs	Chickory	FACU	introduced	x	x	x	x			
<i>Cicuta maculata</i>	Herbs	Spotted Water Hemlock	OBL	native				x			
<i>Cinna arundinacea</i>	Herbs	Stout Wood-Reedgrass	FACW+	native							x
<i>Circaea canadensis</i>	Herbs	Enchanter's Nightshade	FACU	native					x	x	
<i>Cirsium arvense</i>	Herbs	Creeping Thistle	FACU	invasive			x	x		x	
<i>Cirsium vulgare</i>	Herbs	Bull Thistle	FACU-	introduced	x						
<i>Clematis virginiana</i>	Herbs	Virgin's Bower	FAC	native				x			
<i>Clinopodium vulgare</i>	Herbs	Wild Basil	NC	native					x		x
<i>Cuscuta sp.</i>	Herbs	dodder		native	x			x			
<i>Cyperus esculentus</i>	Herbs	Yellow nutsedge	FACW	invasive		x			x		
<i>Dactylis glomerata</i>	Herbs	Orchard Grass	FACU	introduced	x	x	x		x	x	
<i>Daucus carota</i>	Herbs	Queen Annes's Lace	NC	introduced		x	x				
<i>Digitaria sanguinalis</i>	Herbs	Hairy Crabgrass	FACU	introduced		x	x				
<i>Dryopteris cristata</i>	Herbs	Crested Shield-fern	FACW+	native						x	
<i>Echinochloa crusgalli</i>	Herbs	Barnyard Grass	FACU	introduced		x	x	x			
<i>Echinocystis lobata</i>	Herbs	Wild Cucumber	FAC	native				x			
<i>Eleusine indica</i>	Herbs	Goosegrass	FACU-	introduced				x			
<i>Elymus repens</i>	Herbs	Quackgrass	FACU	introduced	x	x	x				
<i>Epilobium coloratum</i>	Herbs	Purple-leaved Willowherb	OBL	native		x		x			
<i>Erechtites hieracifolia</i>	Herbs	Fireweed	FACU	native				x	x		
<i>Erigeron annuus</i>	Herbs	White-top Fleabane	FACU	native	x						
<i>Erigeron canadensis</i>	Herbs	Horseweed	FACU	native			x	x			
<i>Erigeron philadelphicus</i>	Herbs	Philadelphia Fleabane	FACU	native				x			

SCIENTIFIC NAME	STRATUM	COMMON NAME	IND	STATUS	Hayfield and edge	Work area hayfield	Pasture	Bark Meadow Brook Wetland	Western woods	Eastern Woods	Eastern field
<i>Erigeron strigosus</i>	Herbs	Prairie Fleabane	FACU+	native		x		x			
<i>Eupatorium perfoliatum</i>	Herbs	Boneset	FACW+	native				x			
<i>Eurybia divaricata</i>	Herbs	White Wood Aster	NC	native					x	x	
<i>Euthamia graminifolia</i>	Herbs	Flat-top Goldenrod	FAC	native						x	
<i>Eutrochium dubium</i>	Herbs	Coastal Plain Joe-Pye Weed	FACW	native				x			
<i>Fallopia scandens</i>	Herbs	Climbing Black Bindweed	FAC	native	x	x		x			
<i>Galium mollugo</i>	Herbs	Wild Madder	FACU	introduced	x	x	x				
<i>Geum canadense</i>	Herbs	White Avens	FACU	native					x		
<i>Geum laciniatum</i>	Herbs	Rough Avens	FAC+	native						x	
<i>Glechoma hederacea</i>	Herbs	Gill-over-the-Ground	FACU	invasive		x	x				
<i>Holcus lanatus</i>	Herbs	Velvet Grass	FACU	invasive	x	x	x		x		
<i>Hypericum canadense</i>	Herbs	Canadian St. John's Wort	FACW	native				x			
<i>Hypericum mutilum</i>	Herbs	Slender St. John's-wort	FACW	native		x					
<i>Impatiens capensis</i>	Herbs	Jewelweed	FACW	native	x			x		x	
<i>Juncus effusus</i>	Herbs	Soft Rush	FACW+	native			x	x		x	
<i>Juncus tenuis</i>	Herbs	Path Rush	FAC-	native			x	x		x	
<i>Lactuca biennis</i>	Herbs	Tall Blue Lettuce	FAC	native				x			
<i>Lactuca serriola</i>	Herbs	Prickly Lettuce	FACU	introduced		x					
<i>Leersia oryzoides</i>	Herbs	Rice Cutgrass	OBL	native				x			
<i>Leersia virginica</i>	Herbs	White Grass	FACW	native					x	x	
<i>Lepidium virginicum</i>	Herbs	Poor Man's Pepper-grass	FACU-	native			x	x			
<i>Lindernia dubia</i>	Herbs	Yellow-seeded false pimpernel	OBL	native				x			
<i>Lobelia inflata</i>	Herbs	Indian Tobacco	FACU	native					x		
<i>Lycopus virginicus</i>	Herbs	Virginia Bugleweed	OBL	native				x			
<i>Lythrum salicaria</i>	Herbs	Purple Loosestrife	FACW+	invasive			x	x			
<i>Maianthemum canadense</i>	Herbs	Canada Mayflower	FAC-	native						x	
<i>Malva neglecta</i>	Herbs	Common Mallow	NC	introduced			x				
<i>Matricaria chamomila</i>	Herbs	German chamomile	NC	introduced			x	x			
<i>Medeola virginiana</i>	Herbs	Indian Cucumber-root	FACU	native						x	
<i>Microstegium vimineum</i>	Herbs	Japanese Stiltgrass	FAC	invasive					x		
<i>Mimulus ringens</i>	Herbs	Allegheny Monkey-flower	OBL	native			x		x	x	
<i>Myosotis scirpoides</i>	Herbs	True Forget-Me-Not	OBL	invasive				x			
<i>Nepeta cataria</i>	Herbs	Catnip	FACU	introduced		x		x			
<i>Nuttallanthus canadensis</i>	Herbs	Oldfield Toadflax	NC	native			x				
<i>Oclemena acuminata</i>	Herbs	Whorled Aster	FACU	native						x	
<i>Oenothera biennis</i>	Herbs	Common Evening-primrose	FACU-	native				x			
<i>Onoclea sensibilis</i>	Herbs	Sensitive Fern	FACW	native				x		x	
<i>Osmunda cinnamomea</i>	Herbs	Cinnamon Fern	FACW	native						x	
<i>Oxalis stricta</i>	Herbs	Common Yellow Oxalis	FACU	native		x		x	x		
<i>Persicaria hydropiper</i>	Herbs	Mild Water-pepper	OBL	introduced		x	x	x	x		
<i>Persicaria lapathifolia</i>	Herbs	Dock-Leaf Smartweed	FACW	native				x			
<i>Persicaria longiseta</i>	Herbs	Cespitose Smartweed	FACU-	invasive		x		x	x	x	
<i>Persicaria pensylvanica</i>	Herbs	Pinkweed	FACW	native			x	x			
<i>Persicaria sagittata</i>	Herbs	Arrow-Leaf Tearthumb	OBL	native	x			x		x	
<i>Phalaris arundinacea</i>	Herbs	Reed Canary Grass	FACW+	invasive	x	x	x	x		x	
<i>Phleum pratense</i>	Herbs	Timothy	FACU	introduced	x	x	x	x	x		
<i>Phlox divaricata</i>	Herbs	Wild Blue Phlox	FACU	native				x			
<i>Phragmites australis</i>	Herbs	Common Reed	FACW	invasive				x			
<i>Phytolacca americana</i>	Herbs	Pokeweed	FACU+	native		x		x	x		
<i>Pilea pumila</i>	Herbs	Clearweed	FACW	native				x	x	x	
<i>Plantago lanceolata</i>	Herbs	English Plantain	FACU	introduced	x	x					x
<i>Plantago major</i>	Herbs	Common Plantain	FACU	introduced	x	x	x				
<i>Potentilla recta</i>	Herbs	Sulphur Cinquefoil	NC	introduced							x
<i>Prunella vulgaris var. lanceolata</i>	Herbs	Selfheal	FACU+	native			x		x	x	
<i>Ranunculus bulbosus</i>	Herbs	Bulbous Buttercup	FACW	introduced				x			

SCIENTIFIC NAME	STRATUM	COMMON NAME	IND	STATUS	Hayfield and edge	Work area hayfield	Pasture	Bark Meadow Brook Wetland	Western woods	Eastern Woods	Eastern field
<i>Rumex crispus</i>	Herbs	Curly Dock	FACU	introduced		x	x				
<i>Rumex longifolius</i>	Herbs	Yard Dock	FAC	introduced			x				
<i>Rumex obtusifolius</i>	Herbs	Bitter Dock	FACU-	introduced				x			
<i>Schedonorus pratensis</i>	Herbs	Meadow Fescue	FACU-	introduced	x	x	x				
<i>Scirpus atrovirens</i>	Herbs	Green Bulrush	OBL	native						x	
<i>Scirpus hatterianus</i>	Herbs	Mosquito Bulrush	OBL	native			x				
<i>Setaria faberii</i>	Herbs	Giant Foxtail	FACU	introduced		x					
<i>Setaria pumila</i>	Herbs	Yellow Bristle Grass	FAC	introduced	x	x			x		
<i>Sicyos angulatus</i>	Herbs	Oneseed Bur Cucumber	FACU	native		x		x			
<i>Silene latifolia</i>	Herbs	White Champion	NC	introduced	x	x		x			
<i>Solanum carolinense</i>	Herbs	Horse Nettle	FACU	introduced		x		x			
<i>Solanum dulcamara</i>	Herbs	European Bittersweet	FAC-	introduced				x	x		
<i>Solanum emulans</i>	Herbs	Eastern Black Nightshade	FACU-	native		x		x			
<i>Solidago canadensis</i>	Herbs	Canada Goldenrod	FACU	native	x	x	x			x	
<i>Solidago gigantea</i>	Herbs	Late Goldenrod	FACW	native				x		x	
<i>Solidago rugosa</i>	Herbs	Rough-stemmed Goldenrod	FAC	native		x		x	x		
<i>Stellaria graminea</i>	Herbs	Lesser Stichwort	FACU-	introduced			x				
<i>Stellaria media</i>	Herbs	Chickweed	FACU	introduced				x			
<i>Symphyotrichum ericoides</i>	Herbs	White Heath Aster	FACU	native			x				
<i>Symphyotrichum novi-belgii</i>	Herbs	New York Aster	FACW+	native				x			
<i>Symphyotrichum racemosum</i>	Herbs	White Old Field Aster	FAC	native			x				
<i>Symplocarpus foetidus</i>	Herbs	Skunk Cabbage	OBL	native						x	
<i>Taraxacum officinale</i>	Herbs	Common Dandelion	FACU-	introduced			x		x		
<i>Thalictrum pubescens</i>	Herbs	Tall Meadow-Rue	FACW+	native						x	
<i>Thelypteris noveboracensis</i>	Herbs	New York Fern	FAC	native						x	
<i>Trifolium hybridum</i>	Herbs	Alsike clover	FACU	introduced		x					
<i>Trifolium pratense</i>	Herbs	Red Clover	FACU-	introduced	x	x	x				
<i>Trifolium repens</i>	Herbs	White Clover	FACU-	introduced	x	x	x				
<i>Typha angustifolia</i>	Herbs	Narrow-leaf Cattail	OBL	native		x		x			
<i>Typha latifolia</i>	Herbs	Common Cattail	OBL	native	x			x			
<i>Typha X glauca</i>	Herbs	Narrow-leaf Cattail	OBL	aggressive hybrid				x			
<i>Urtica dioica</i>	Herbs	Stinging Nettle	FACU	introduced	x		x	x			
<i>Verbascum thapsus</i>	Herbs	Common Mullein	UPL	introduced		x	x	x			
<i>Verbena hastata</i>	Herbs	Blue Vervain	FACW+	native		x	x	x		x	
<i>Verbena urticifolia</i>	Herbs	White Verbena	FACU	native				x			
<i>Viburnum dentatum</i>	Shrubs	Smooth arrowwood	FACW-	native				x		x	
<i>Vicia cracca</i>	Herbs	Cow Vetch	NC	introduced				x			
<i>Alnus incana</i>	Shrubs	Speckled Alder	FACW+	native				x			
<i>Berberis thunbergii</i>	Shrubs	Japanese Barberry	FACU	invasive				x	x	x	
<i>Corylus cornuta</i>	Shrubs	Beaked Hazelnut	FACU-	native						x	
<i>Elaeagnus umbellata</i>	Shrubs	Autumn Olive	NC	invasive					x		
<i>Ilex verticillata</i>	Shrubs	Winterberry Holly	FACW+	native							
<i>Kalmia latifolia</i>	Shrubs	Mountain Laurel	FACU	native						x	
<i>Ligustrum sp.</i>	Shrubs	privet		invasive				x	x	x	
<i>Lindera benzoin</i>	Shrubs	Spicebush	FACW-	native				x	x		
<i>Lonicera morrowii</i>	Shrubs	Morrow's Honeysuckle	FACU	invasive					x	x	
<i>Rhamnus cathartica</i>	Shrubs	Common Buckthorn	FAC	invasive		x					
<i>Rhus hirta</i>	Shrubs	Staghorn Sumac	NC	native					x		
<i>Rosa multiflora</i>	Shrubs	Multiflora Rose	FACU	invasive			x	x	x	x	
<i>Rubus allegheniensis</i>	Shrubs	Allegheny Blackberry	FACU	native					x	x	
<i>Rubus hispidus</i>	Shrubs	Bristly Dewberry	FACW	native					x	x	
<i>Rubus occidentalis</i>	Shrubs	Black Raspberry	NC	native				x	x		
<i>Sambucus canadensis</i>	Shrubs	Common Elderberry	FACW-	native				x		x	x
<i>Spiraea alba</i>	Shrubs	White Meadowsweet	FAC+	native				x			
<i>Swida amomum</i>	Shrubs	Silky Dogwood	FACW	native				x			

SCIENTIFIC NAME	STRATUM	COMMON NAME	IND	STATUS	Hayfield and edge	Work area hayfield	Pasture	Bark Meadow Brook Wetland	Western woods	Eastern Woods	Eastern field
<i>Swida racemosa</i>	Shrubs	Gray Dogwood	FAC	native			x				
<i>Vaccinium corymbosum</i>	Shrubs	Highbush Blueberry	FACW-	native						x	
<i>Vaccinium pallidum</i>	Shrubs	Blue Ridge Blueberry	NC	native						x	
<i>Viburnum acerifolium</i>	Shrubs	Maple-leaved Viburnum	UPL	native						x	
<i>Acer negundo</i>	Trees	Box Elder	FAC+	native						x	
<i>Acer platanoides</i>	Trees	Norway Maple	UPL	invasive				x			
<i>Acer rubrum</i>	Trees	Red Maple	FAC	native			x	x	x		
<i>Acer saccharinum</i>	Trees	Silver Maple	FACW	native				x			
<i>Acer saccharum</i>	Trees	Sugar Maple	FACU	native						x	
<i>Amelanchier arborea</i>	Trees	Downy Serviceberry	FAC-	native			x				
<i>Betula lenta</i>	Trees	Black Birch	FACU	native				x			
<i>Betula papyrifera</i>	Trees	Paper Birch	FACU	native						x	
<i>Betula populifolia</i>	Trees	Gray Birch	FAC	native			x	x			
<i>Carpinus caroliniana</i>	Trees	Ironwood	FAC	native				x	x		
<i>Carya cordiformis</i>	Trees	Bitternut Hickory	FACU+	native						x	
<i>Carya ovata</i>	Trees	Shagbark Hickory	FACU-	native				x	x		
<i>Fagus grandifolia</i>	Trees	American Beech	FACU	native							
<i>Fraxinus pensylvanica</i>	Trees	Green Ash	FACW	native				x	x		
<i>Larix decidua</i>	Trees	European Larch	NC	introduced						x	
<i>Malus sp.</i>	Trees	crabapple		introduced			x				
<i>Morus alba</i>	Trees	White Mulberry	FACU	introduced			x				
<i>Picea abies</i>	Trees	Norway Spruce	NC	introduced						x	
<i>Pinus strobus</i>	Trees	Eastern White Pine	FACU	native	x			x	x		
<i>Populus deltoides</i>	Trees	Eastern Cottonwood	FAC	native							
<i>Prunus serotina</i>	Trees	Black Cherry	FACU	native			x	x	x	x	
<i>Quercus alba</i>	Trees	White Oak	FACU-	native	x				x		
<i>Quercus rubra</i>	Trees	Red Oak	FACU-	native			x			x	
<i>Salix nigra</i>	Trees	Black Willow	FACW+	native			x				
<i>Sassafras albidum</i>	Trees	Sassafras	FACU-	native						x	
<i>Swida sp.</i>	Trees	dogwood sapling								x	
<i>Ulmus rubra</i>	Trees	Slippery Elm	FAC	native			x			x	
<i>Celastrus orbiculatus</i>	Vines	Asiatic Bittersweet	UPL	invasive	x	x	x	x	x	x	
<i>Parthenocissus quinquefolia</i>	Vines	Virginia Creeper	FACU	native			x	x	x		
<i>Toxicodendron radicans</i>	Vines	Poison Ivy	FAC	native			x	x	x		
<i>Vitis labrusca</i>	Vines	Fox Grape	FACU	native				x			

## APPENDIX E – Summary of Qualifications

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**Davison Environmental, LLC** provides consulting services in the areas of biological, wetland, and soil sciences. In addition to identification, description, and classification of natural resources, the firm also provides functional evaluation of wetlands and other biological systems, guidelines for mitigation of potential adverse impacts, and permit support through expert testimony and public representation. Services provided revolve around the impact of human activities on terrestrial, wetland, aquatic, and marine resources. The firm specializes in biological and wetland surveys, impact assessment, and mitigation planning.

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### **James Cowen**

James Cowen has over 20 years of experience conducting botanical surveys in Connecticut. He is a Registered Soil Scientist, Certified Professional Wetland Scientist, and has previously served on the Board of Directors for the Connecticut Botanical Society. Mr. Cowen maintains a Connecticut Department of Energy and Environmental Protection Scientific Collector's Permit for the collection of plants. He holds a bachelor's degree in Biology and master's degree in Landscape Design.

### **Eric Davison**

Eric Davison holds a bachelor's Degree in wildlife conservation from the University of Massachusetts. He is certified as both a Professional Wetland Scientist and Soil Scientist. Mr. Davison has experience conducting avian, amphibian and reptile surveys, evaluating and inventorying wetlands and conducting soil surveys in Connecticut. He has also experience conducted both Phase 1 and Phase 2 bog turtle assessments in Connecticut.

### **Aubree Keurajian**

Aubree Keurajian has a bachelor's degree in the Science of Natural and Environmental Systems from Cornell University. She has worked as a Forest Ecology Field Technician at Duke and Indiana Universities, as well as a Seed Collection and Arid Land Restoration Technician at the Southern Nevada District Office of the Bureau of Land Management. Ms. Keurajian's experience includes botanical and faunal surveys and forest censuses, as well as insect identification and databasing from her time as a Collections Assistant at the Cornell University Insect Collection.