



Ian Cole, LLC***Professional Registered Soil Scientist / Professional Wetland Scientist******PO BOX 619******Middletown, CT 06457******Itcole@gmail.com******860-514-5642***

March 15, 2026

Town of Ledyard
Inland Wetland and Watercourse Commission
Ms. Elizabeth Burdick, Director of Planning
741 Colonel Ledyard Highway
Ledyard, CT 06339

RECEIVED

JUN 23 2026

Land Use Department

**RE: WETLAND IMPACT EVALUATION
KINEO ESTATES – PROPOSED CONSERVATION RESUBDIVISION
12 HYDE PARK DRIVE & 975 LONG COVE ROAD
LEDYARD, CONNECTICUT**

Dear Ms. Burdick, Chairman, DeBrodt and Commission Members:

INTRODUCTION

On behalf of the Applicant, Mt. Kineo Builders, I have completed a wetland delineation and evaluation of the jurisdictional freshwater inland wetlands and watercourses at the above referenced residential development Project Site. This evaluation was completed to provide a basis for determining the potential impacts associated with the proposed conservation Resubdivision of the 35 acre parcel. Details of the proposed development are presented in the Project Site Plans and the wetland application.

This evaluation identifies the site's natural resources and provides a natural resource narrative to provide context for assessment of the potential for adverse impacts to regulated resources. Field surveys were conducted on the site in the summer of 2024, and spring and summer of 2025. The 2026 work builds upon the previous biological and wetland surveys conducted on the site. GIS software (ArcMap v10.0) was used to review open source GIS data layers in order to catalog abiotic resources and understand the significance of the study area in relation to the entire watershed.

PROPOSED ACTIVITIES

The Applicant is proposing to construct 14 new individual single family residential lots in a proposed conservation re-subdivision of land totaling 35.11 acres. The proposal will provide a dedication of 64% of the land or 22.46 acres to open space (24% more

preserved acres than the required 40% open space requirement). The lots will be accessed by a new 1,000 foot long road that ends in a cul-de-sac (to be named Ellie Rose Lane). The new proposed road will extend from the Hyde Park Road. Each new lot will be serviced by individual on-site subsurface sewage disposal systems and water will be provided from a Southeastern Connecticut Water Authority (SCWA) installed waterline. Utilities will be underground and co-located alongside the roadway. The open space layout clusters the development to a 12-acre development envelope positioned in the center of the overall 35.11 acre Project Site. Clustering the development in one area greatly reduces fragmentation of the overall property and provides a substantial open space area that extensively covers the southern limits of the site which hosts the main body of the wetland system that receives runoff from the streams on the property which originating from the north on Gungywamp Hill.

The site has been designed with a conventional drainage system and stormwater from the new roadway will be collected by catch basins with deep sumps in the road and directed into a 25' x 25' water quality basin to renovate stormwater and de-energize flows prior to discharge. The proposed roadway will require the crossing of a narrow watercourse / wetland. The roadway crossing will result in the disturbance of 2,500 SF of flagged wetlands. A 36" HDPE culvert will pass the stream flows under the new proposed road. The project will provide erosion and sedimentation controls during construction periods and will re-vegetate all disturbed areas for the long term stabilization of the site.

For more information, please refer to the plans entitled "*Plan Showing Kineo Estates Conservation Resubdivision Prepared For Mt. Kineo Builders 12 Hyde Park Drive and 975 Long Cove Road, Ledyard, Connecticut Scale 1"= 100',*" prepared by Dieter & Gardner dated March 2024, as amended.

EXISTING SITE CONDITIONS

The 35.5-acre Project Site is vacant, undeveloped, and forested. The property is accessed from a 50-foot strip of land that connects to Hyde Park Drive. The property has additional road frontage connecting to Long Cove Road and Bluebird Drive, but both access points would require significant wetlands and/or upland disturbance to be utilized. The proposed access alignment from Hyde Park Drive was selected to minimize impacts.

The upland habitat consists of a mature a deciduous Oak-Hickory forest community. Prominent tree species observed include white, black and red oaks, shagbark hickory, red and sugar maple, American beech, black cherry, black and white birch, aspen and tulip trees. Notable conifers include hemlock and white pine. Overall, where the forest community is dominated by large old growth trees the understory consists of a light shrub stratum of witch hazel, low-bush blueberry, green briar, and muscle wood. There are notable large mountain laurel shrub groves that neighbor the southern limits of the development extending into the open space conservation areas. The forest floor ground cover includes species such as Christmas fern, serviceberry, Canadian mayflower intermingled with beds of hay-scented fern, and marginal wood fern.

The site is not located in aquifer protection zone. Lastly, the site is not located in a Connecticut Department of Energy and Environmental Protection (CTDEEP) designated Natural Diversity Data Base (NDDDB) polygon per the CTDEEP 2026 NDDDB mapper.

WETLAND DELINEATION

The wetland delineation was completed in accordance with the standards of the Natural Resources Conservation Services (NRCS) National Cooperative Soil Survey and the definitions of inland wetlands and watercourses as found in the Connecticut General Statutes, Chapter 440, Sections 22a-36 through 22a-45 as amended. Wetlands, as defined by the Statute, are those soil types designated as poorly drained, very poorly drained, floodplain or alluvial in accordance with the NRCS National Cooperative Soil Survey. Such areas may also include disturbed areas that have been filled, graded, or excavated and which possess an aquic (saturated) soil moisture regime.

Watercourses means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs, and all other bodies of water, natural or artificial, vernal, or intermittent, public, or private, which are contained within, flow through or border upon the Town of Ledyard or any portion thereof not regulated pursuant to sections 22a-28 through 22a-35, inclusive, of the Connecticut General Statutes. Intermittent watercourses are defined as having a permanent channel and bank and the occurrence of two or more of the following characteristics: (a) evidence of scour or deposits of recent alluvium or detritus, (b) the presence of standing or flowing water for duration longer than a particular storm incident, and (c) the presence of hydrophytic vegetation.

The wetland delineation was completed in March of 2024.

WETLAND AND WATERCOURSE DESCRIPTIONS

The United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Mapper shows the onsite wetlands that will be impacted as part of palustrine and riverine wetland group that classifies the forested wetland areas as a PFO1F, designating the jurisdictional feature as a forested wetland that is semi-permanently flooded, and notes the watercourse as R4SBC. Generally, the wetland boundaries are sharply distinct, marked by an abrupt rise in topography as poorly drained wetland soils quickly give rise to sandy well-drained soils.

Three wetland areas are found in proximity to the proposed activities.

1. West of the site entrance is concrete headwall that issues road drainage onto the adjacent Town of Ledyard property. The stormwater runoff discharges to an eroded intermittent stream channel. The edge of the flagged watercourse parallels the proposed subdivision roadway for roughly 100' before veering to the west into the Town of Ledyard owned parcel.
2. The proposed roadway will cross over a narrow, rocky, unnamed watercourse demarcated by wetland flags 1E to 10E and 1D to 10D on the project plans. The

watercourse is very well-defined and flows through two notable topographic knolls which the roadway connects.

3. To the east of the proposed development are two narrow very ephemeral drainage paths that carry very seasonal flows south to the larger forested wetland system that extensively covers the proposed opens space conservation area. Portions of the drainageway are very shallow (1-foot deep) consisting of hand-dug ditches, particularly along the boundary of lots 11 and 12.

The wetland community exhibits classic Red Maple swamp habitat, including:

- Trees: Red Maple, yellow birch, swamp white oak, and shagbark hickory.
- Shrubs: Highbush blueberry, spicebush, Japanese barberry, winterberry, ironwood, witch hazel, and Mountain Laurel (*along the boundary not in the interior of the wetland*)
- Herbaceous: Tussock sedge, sphagnum moss, sensitive fern, marsh fern, cinnamon fern, skunk cabbage, false hellebore, jack-in-pulpit, and jewelweed.

The above is not an exhaustive list, but a sample of commonly encountered vegetation that characterizes the on-site wetland community. Representative photos of the site are attached below.

SOIL TYPES

The soils identified on the site are a refinement of the Natural Resources Conservation Service (NRCS) Websoil survey. The on-site soils originated from melt-out glacial till parent material.

Wetland Soils

The wetlands soils are classified as (3) Ridgebury, Leicester, and Whitman fine sandy loams. The poorly drained soils along the wetland boundary belong to the Ridgebury and Leicester soil series. Ridgebury and Leicester soils are found within drainageways and depressions on glacial till landscapes. Ridgebury and Leicester soils have a seasonal high-water table at a depth of about 6 inches. Very poorly drained Whitman soils are found in the lowest lying areas within the interior of the wetlands where the water table is at the surface thought most of the growing season.

Upland Soils

The bulk of the uplands in the vicinity of the proposed development are mapped and classified as well-drained Canton and Charlton fine sandy loams. In the lower level land covering the eastern side of the site are areas of moderately well drained Narragansett silt loams with inclusions of Sutton fine sand loams in areas where the ground conditions are notably stonier. Both Narragansett and Sutton soils are typically associated with a perched high seasonal watertable due to an underlying dense till layer.

RARE SPECIES HABITAT

Consultation and a review of the Connecticut Department of Energy and Environmental Protection (CTDEEP) Natural Diversity Data Base (NDDB) mapping indicates the site is not noted within a NDDB specific polygon layer. Regardless a preliminary site assessment query was completed which identified Northern Long Eared Bats, which ubiquitously occur across the state. The project will comply with NLEB best management practices to ensure there are no conflicts. A copy of the CTDEEP NDDB preliminary site assessment is attached for reference.

WETLAND FUNCTIONS AND VALUES

A wetland functional assessment was completed to assist in identifying impacts to the wetlands and the functions and services they provide. An evaluation of the wetlands functions and values was completed using the United States Army Corps of Engineers (USACE) Highway Methodology Workbook for Wetland Functions and Values: A Descriptive Approach, October 1993” (“Highway Methodology”) and best professional judgement. This wetland methodology describes the wetland functions and values holistically for the project area. The USACE Highway Methodology evaluates 13 functions and values assigned to wetlands which include:

1. Groundwater recharge/discharge (GWR/D)
2. Flood flow alteration (FFA)
3. Fish and shellfish habitat (F&SH)
4. Sediment/toxicant/pathogen retention (S&TR)
5. Nutrient removal/retention/transformation (NR&T)
6. Production export (PE)
7. Sediment/shoreline stabilization (S&S)
8. Wildlife habitat (WLH)
9. Recreation (REC)
10. Education/scientific value (ED/S)
11. Uniqueness/heritage (U/H)
12. Visual quality/aesthetics (VO/A)
13. Threatened or endangered species habitat (T&E)

The functions and values of the wetland system is summarized in Table 1. The *Highway Methodology* recognizes 13 separate wetland functions and values. The degree to which a wetland provides each of these functions is determined by one or more of the following factors: landscape position, substrate, hydrology, vegetation, history of disturbance, and size. Each wetland may provide one or more of the listed functions at significant levels. The determining factors that affect the level of function provided by a wetland can often be broken into two categories. The effectiveness of a wetland to provide a specified function is generally dependent on factors within the wetland whereas the opportunity to provide a function is often influenced by the wetland’s position in the landscape as well

as adjacent land uses. For example, a depressed wetland with a restricted outlet may be considered highly effective in trapping sediment due to the long residence time of runoff water passing through the system. If this wetland is located in gently sloping woodland, however, there is no significant source of sediment in the runoff therefore the wetland is considered to have a small opportunity of providing this function.

A variety of wetland characteristics affect a wetlands overall functions and values. The most important wetland characteristic influencing a wetlands functions and values is hydroperiod (i.e. depth and duration of standing water). Hydroperiod is related to a wetlands micro - topography and location on the landscape. Wetlands with a short hydroperiod tend to provide only limited functions and values and are often small and occur on moderate - steep slopes. Wetlands with longer hydroperiods tend to provide a wide range of functions and values and are often located at the base of the slope in valleys and drainageways. The following site specific factors are important to the functional assessment and are listed here to provide context to the later discussion of functions and values.

1. Wetland dependent State Listed Species are not known to be present on the site per the CTDEEP NDDDB Mapper.
2. The wetlands are located in a glacial till landscape with well drained soils.
3. The regulated disturbances consist of piping a 100-foot segment of a watercourse.
4. The watershed at the crossing site is approximately 20 acres per the USGS Map.

Wetland Functions and Values	Groundwater Recharge/Discharge	Sediment/Shoreline Stabilization	Floodflow Alteration	Fish & Shellfish Habitat	Sediment/Toxicant/Pathogen Retention	Nutrient Removal/Attenuation	Production Export	Wildlife Habitat	Recreation	Educational/Scientific Value	Uniqueness/Heritage	Visual Quality/Aesthetics	Listed Species Habitat
WETLAND #1 (SITE ENTRANCE)	P	U	P	U	S	S	S	U	U	U	U	U	U
WETLAND #2 (STREAM CROSSING)	P	U	U	U	U	U	S	S	U	U	U	S	U
WETLAND #3 (EAST DRAINAGE)	P	U	U	U	S	S	S	S	U	U	U	U	U
Suitability P = principal function S = secondary function U = function unlikely to be provided at a significant level N/A = not applicable or unknown													

Groundwater recharge and discharge are a primary function of the wetland systems. All the wetlands show evidence of variable water levels, and while recharge / discharge of groundwater is a principle function, it is not anticipated that the proposed development will impact the groundwater levels.

The proposed activities will not negatively or adversely impact the functionality of the on-site wetland(s) as described above. These listed functions can be maintained and promoted by maintaining overall on-site drainage patterns, demonstrating a compliant septic systems, maintaining erosion and sedimentation controls through construction, stabilizing the bare ground with final vegetative cover and adherence to permit conditions.

IMPACT ASSESSMENT

The site development plans have been designed to provide a feasible residential development while providing a reasonable use of the property with minimal impact on the wetland resources and the environment.

DIRECT IMPACTS

The proposed development will have 2500 SF of direct wetland impact with the installation of the 100-foot long by 36 inch culvert pipe that will be installed to cross the stream. Short-term direct impacts during construction can be managed and reduced through measures to control sedimentation and erosion and adherence to BMPs. These controls as well as compliance with permit approvals will ensure that no long-term adverse effects will impact on the natural capacity of the wetlands or detract from the functions and services they currently provide.

INDIRECT IMPACTS

Indirect or secondary impacts to a wetland or watercourse can occur as a result of activities outside of the wetlands or watercourses. These impacts can be either short-term (*construction phase*) or long-term (*i.e., change in drainage patterns / whole-sale clear cutting*) and are typically associated with erosion and sedimentation during construction, removal or disturbance of vegetation in adjacent upland areas, alteration of ground / drainage patterns that could affect the flow regime of a watercourse, and the discharge of degraded or insufficiently treated surface or groundwater, which may adversely impact the water quality of the regulate resource.

The potential for any of these indirect impacts to occur at the site as a result of the development depends on the quality of the regulated resources, the sensitivity to said resources, the resource's physical and ecological characteristics, and the degree to which those resources provide recognized functions and values, and the nature of the activities proposed in areas surrounding or which contribute flow (either surface water or groundwater to the regulated resource). These potential impacts are described in detail below.

EROSION AND SEDIMENT CONTROLS

Short term impacts will be mitigated with standard construction best management practices and adherence to the erosion and sediment control plan. The development respects the watershed hydrology and will not direct discharge to the wetland features without proper treatment. The proposed site plan includes an erosion and sedimentation control plan designed following the 2024 Connecticut Guidelines for Soil Erosion and Sediment Control. Silt fencing, anti-tracking pads and other E&S measures are proposed to control sediment from construction activities.

The risk for potential adverse impacts from erosion and sedimentation is considered low to moderate because 1.) A detailed erosion and sediment control plan has been prepared, 2) the site's in-situ undisturbed soils are for the most part low to moderately erosive. 3) the site is vegetated, and topography is easily managed, and 4) there is no need for large scale tree removal, only clearing to accommodate the proposed roadway and then sites under active construction will be cleared to keep the building area envelope to a manageable size. Therefore, it is my professional opinion that with coordination and watchful monitoring and maintenance of erosion and sediment controls until construction is completed and restoration activities have stabilized the ground conditions there will be no anticipated adverse impacts to the regulated resources resulting from sedimentation discharging from the development of the parcel as proposed.

VEGETATION REMOVAL AND HABITAT LOSS

Habitat loss associated with land clearing is a consequence of land development which has the potential of impacting wetlands and watercourses. Clustering the development in one area greatly reduces the fragmentation of the overall 35.5 acre property. As such the project reduces a significant landscape conversion. The proposed development will keep clearing limits to a minimum by clearing what is physically needed for facilitating the construction site improvements, dwellings and associated appurtenances. The conversion of the vegetation cover within the development envelope will not change or diminish the ecological integrity of the open space uplands and/or the wetland communities. The site clearing planned on the western side of the Project site and grading activities will not de-water nor flood the nearby wetlands or alter surface water drainage patterns in a significant manner that exacerbates erosion or causes downstream issues.

The project will result in the conversion of roughly 12 acres of forest to single-family residential suburban neighborhood. However, strategically clustering the development in an open space concept allows the Project to permanently preserve 22.46 acres of contiguous forest that connects to road frontages at both Long Cove Road and Bluebird Drive, both of which offer accessibility to the public. The open space will also encompass a large, forested wetland and extensive Mountain Laurel groves which cover large swaths of the uplands in the southern limits of the site.

IMPACTS TO HYDROLOGY

In Connecticut, the design and implementation of stormwater management measures are guided by the Connecticut Department of Energy and Environmental Protection (CT DEEP) Stormwater Quality Manual (2024), developed pursuant to Phase II of the federal

Clean Water Act (CWA). The Manual provides a framework of BMPs demonstrated through research and field performance data to effectively reduce pollutant loads and mitigate hydrologic alteration associated with land development. While these guidelines do not replace the engineering judgment or site-specific design developed by a licensed professional engineer, they establish performance criteria intended to preserve the physical, chemical, and biological integrity of receiving waters, including wetlands and watercourses.

The proposed site improvements will not impact overall drainage patterns. The site improvements will not increase the potential for downstream flooding. The proposed wetland crossing will utilize a 36 inch HDPE pipe with flared ends. There will be inlet and outlet protection at each respective opening of the pipe. The stream crossing occurs in the upper stretch of the watershed which drains roughly 20-acres of forested area north of Hyde Park Drive. The pipe has been sized so there is no change to the existing stream dynamics and the carrying capacity of the stream.

The stormwater management system for this site has been designed utilizing best management practices (BMPs) to meet or exceed the stormwater management standards in accordance with CT DEEP 2024 Connecticut Stormwater Quality Manual and the Ledyard Zoning Regulations. The proposed project will provide; pollutant reduction by providing via treatment of the water quality volume and water quality flows through stormwater BMPs; peak runoff attenuation through use of stormwater BMPs; and conveyance protection through structural stormwater BMPs.

All runoff from proposed impervious surfaces will be conveyed to the water quality system for detention and treatment. The site has been designed with a conventional drainage system. Catch basins with deep sumps will capture and convey stormwater runoff, via an underground pipe system, to the water quality basin. The treated discharge of this stormwater will issue onto a riprap scour pad and will beneficially infiltrate into the soil recharging the nearby watercourse baseflow. The proposed development will not holistically alter surface or subsurface flow conditions or directions in a substantially impactful way. The project engineer has certified for the record that the proposed stormwater management system as discussed herein and shown on the referenced plans is appropriate for the proposed development on the subject site, is consistent with Town and State requirements, and should not pose any detrimental impacts to the surrounding environment.

CLOSING STATEMENTS

The project has been designed to minimize direct impacts on wetlands and watercourses. Furthermore, it is my professional opinion that the project will not have negative secondary or indirect impacts to wetlands or watercourses. Strict adherence to the detailed erosion and sediment control plan and stormwater pollution prevention plan will minimize any impacts to water quality during construction.

The project will result in some loss of native upland forest habitat, as clearing and grading of approximately 12 total acres of the site will be required. This clearing will

result in the conversion of mixed hardwood forest habitat to residential single family subdivision neighborhood. Biological surveys did not reveal a unique wetland type, outstanding natural community or the presence of any State of Connecticut or Federally listed species. The impacts to habitat and wildlife are expected to be less significant when compared to impacts associated with a traditional residential development without open space and /or access from one of the other road connections would fragment the parcel and result in a larger disruption to the ecosystem. The proposed project will result in a concentration of activity and will preserve a large contiguous block of forest as undisturbed natural open space.

The proposed activities are not likely to have a significant effect on the environment for the following reasons:

1. The proposed activities have reduced direct disturbance to wetlands and as such the project does not substantially change or negatively inhibit the natural dynamics or the natural capacity of the wetland system(s).
2. The erosion and sediment controls will protect the environment from the proposed activities and if appropriately installed, monitored and maintained will not likely cause or have the potential to cause substantial turbidity, siltation or sedimentation in a wetland or watercourse.
3. The proposed stormwater treatment system will collect and renovate stormwater quality and volume generated from the site development and therefore is unlikely to cause or have the potential to cause pollution of the wetland. Additionally, the project is providing a local and state compliant sewage treatment system which by approval is required to meet or exceeds health code requirements which will further eliminate pollution.
4. The wetland features are not unique, nor do they provide demonstrable scientific or educational value.

In considering feasible and prudent alternatives, the current proposal respects the integrity of the environment and minimizes impact on the wetland resources. The project implements best management practices that will protect the regulated areas. The open space design is a feasible and prudent alternative for the development of this property giving consideration to balancing the protection of the inland wetlands and watercourses while fostering reasonable development and use of the site for residential uses as zoned.

In my professional opinion there will be no significant adverse impacts resulting from the development of the project as proposed. The design has avoided wetland disturbance and reduced environmental impacts by:

1. Minimizing direct impacts to the wetland resources.
2. Providing and maintaining erosion and sediment controls during construction.
3. Providing stormwater management and treatment.

4. Commitment to adhering to permit conditions and construction industry standard BMPs.
5. Compliance with regulatory standards.
6. The plans are consistent with and satisfy the statutory factors for consideration provided by Section 22a-41 of the Connecticut General Statutes; and
7. Are consistent with and satisfy the criteria for consideration provided by the Town of Ledyard Inland Wetlands and Watercourses Regulations dated February 25, 2025.

If you have any questions or comments, please do not hesitate to contact me at itcole@gmail.com or (860) 514-5642.

Sincerely,



Ian T. Cole
Professional Registered Soil Scientist
Professional Wetland Scientist #2006

ATTACHMENTS

SITE PHOTOS

GIS MAP

USFWS NWI

NRCS SOIL MAP

USGS STREAM STATS

CTDEEP NDDB PRELIM SITE ASSESSMENT

KINEO ESTATES

SITE PHOTOS



Photo 1: General upland conditions in the centerline of proposed subdivision road.



Photo 2: General upland conditions in vicinity of proposed subdivision

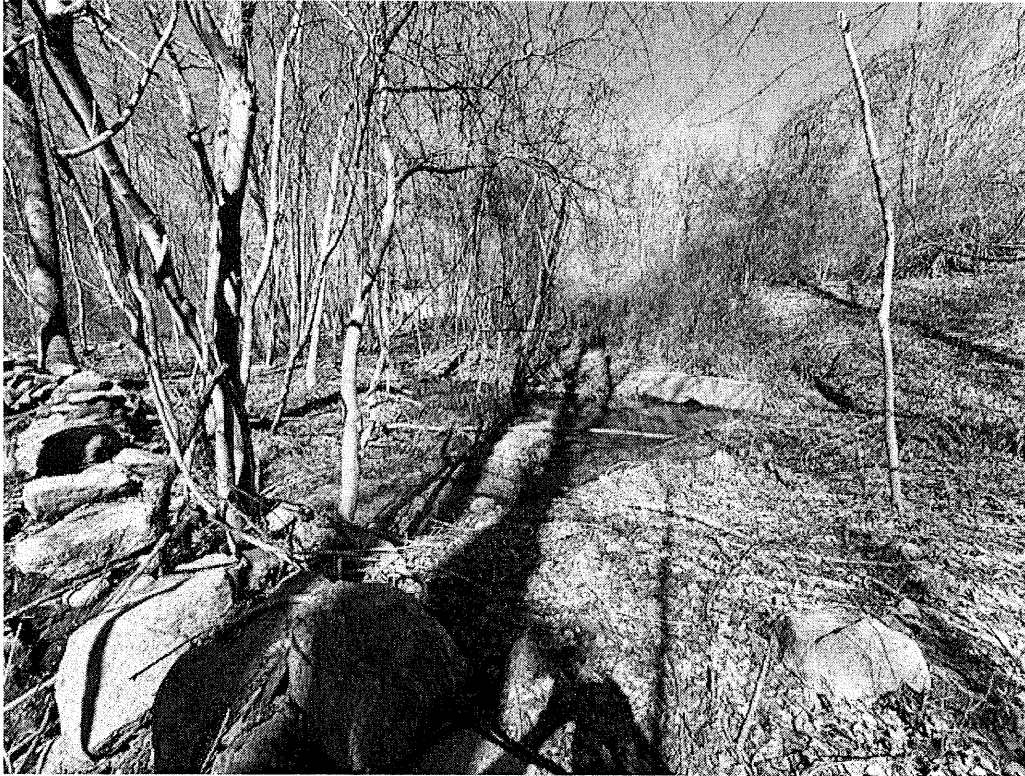


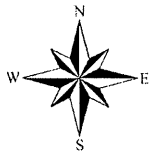
Photo 3: Example of the wetlands on The Town of Ledyard owned parcel west of the proposed access road entrance, this wetland was partly constructed to manage stormwater from Hyde Park Drive.



Photo 4: Example of the watercourse conditions at the proposed crossing



Photo 5: Example of the narrow, shallow, ephemeral drainageway and wetlands on the eastern side of the parcel.



Ledyard, CT

1 inch = 565 Feet



www.cai-tech.com

October 12, 2025



Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.



U.S. Fish and Wildlife Service
National Wetlands Inventory

KINEO ESTATES



March 15, 2026

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

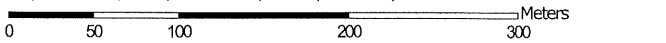
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Soil Map—State of Connecticut, Eastern Part



Soil Map may not be valid at this scale.

Map Scale: 1:4,480 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

3/28/2024
Page 1 of 3

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

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

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 1, Sep 15, 2023

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

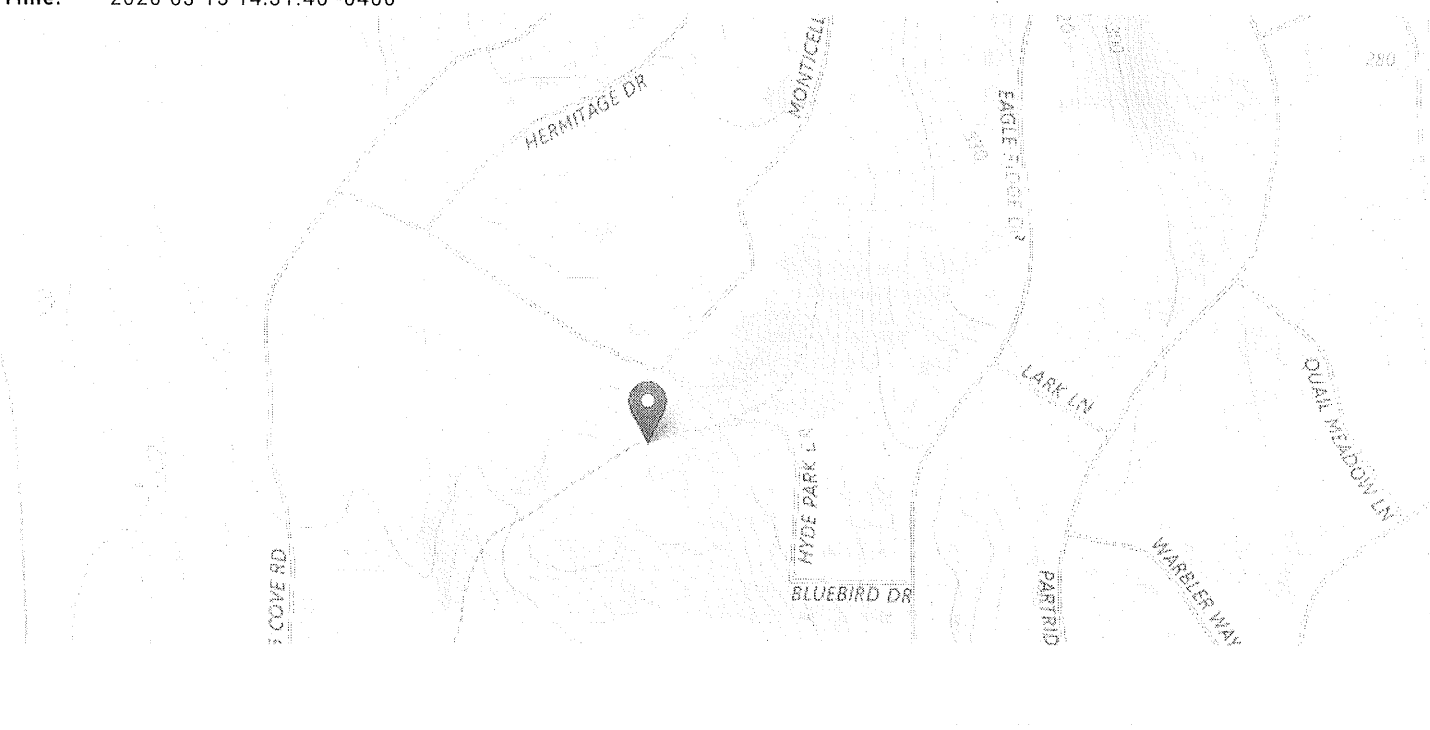
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	12.2	21.4%
50A	Sutton fine sandy loam, 0 to 3 percent slopes	2.9	5.1%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	4.6	8.0%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	11.6	20.3%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	10.0	17.6%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	1.4	2.5%
67B	Narragansett silt loam, 3 to 8 percent slopes, very stony	6.6	11.7%
68C	Narragansett silt loam, 3 to 15 percent slopes, extremely stony	2.4	4.2%
68D	Narragansett silt loam, 15 to 25 percent slopes, extremely stony	0.3	0.6%
74C	Narragansett-Hollis complex, 3 to 15 percent slopes, very rocky	4.0	7.0%
703B	Haven silt loam, 3 to 8 percent slopes	1.0	1.7%
Totals for Area of Interest		57.0	100.0%

StreamStats Report

Region ID: CT
Clicked Point (Latitude, Longitude): 41.41391, -72.06486
Time: 2026-03-15 14:31:46 -0400



StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at <https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release> (<https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release>).

+ Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
ALTELEV	Alternate mean basin elevation	234	feet
DRNAREA	Area that drains to a point on a stream	0.03	square miles
I24H100Y	Maximum 24-hour precipitation that occurs on average once in 100 years	7.74	inches
I24H2Y	Maximum 24-hour precipitation that occurs on average once in 2 years	3.17	inches
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	9.184	percent
LFLENGTH	Length of longest flow path	0.384	miles

Parameter Code	Parameter Description	Value	Unit
WETLAND	Percentage of Wetlands	0	percent

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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- Application Version: 4.31.1
- SSHydro Services Version: 1.1.1
- SSDelineate Services Version: 1.0.1
- NSS Services Version: 2.2.1
- GageStats Services Version: 1.2.1
- Pourpoint Services Version: 1.2.0
- Batch Processor Version: 1.6.1



Generated by eNDDDB on:
10/12/2025

Ian Cole
Towns: Ledyard
Automated Site Assessment: 963888211

Subject: LONG COVE

This is an automated site assessment and not a Natural Diversity Data Base determination. The information provided represents a snapshot that can be used for general planning purposes. **This letter cannot be used to fulfill Endangered Species Act compliance requirements.** Please see information below as well as our [FAQs](#) describing the appropriate use and limitations of the automated Site Assessment tool.

Current data maintained by the Natural Diversity Data Base (NDDDB) and housed in the DEEP ezFile portal, indicates that populations of the following State Endangered, Threatened, or Special Concern species (RCA Sec. 26-306) have been documented within or in close proximity to the area delineated. **Please see the attached table for detailed species information.**

HOW SITE ASSESSMENT SPECIES LISTS ARE COMPILED

Site assessment species lists include all information regarding listed species available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, landowners, private conservation groups and the scientific community. New and updated information is incorporated into the Data Base and accessed through the ezFile portal as it becomes available. The species list provided is not necessarily the result of comprehensive or site-specific field investigations.

WHAT PURPOSE DOES THIS SITE ASSESSMENT SERVE?

A site assessment is intended to provide a snapshot of the species that may be in the vicinity of your drawn area. It may be useful in project planning or to gain an understanding of the potential for listed species to utilize the site. The list is computer generated; it was not prepared or reviewed by program staff. Biologist review of your location may result in the addition of species not provided by the automated site assessment.

I'VE REVIEWED MY SITE ASSESSMENT, WHAT DO I DO NEXT?

If you are undertaking an activity that requires a state permit, utilizes state funding, or involves state agency action, you must demonstrate compliance with the CT Endangered Species Act. This is done through the full Natural Diversity Data Base review process. Please return to the DEEP's ezFile Portal and select [Natural Diversity Data Base Review](#) to begin this review process. Keep in mind that these detailed reviews may include additional species not identified in the automated site assessment. Program staff consider factors such as habitat characteristics, species life history and other

information to determine appropriate species of concern.

SURVEY WORK MAY BE NECESSARY

Suitable and potentially occupied habitat may extend beyond mapped NDDB areas and unmapped areas may represent potential habitat that has not been adequately surveyed for all taxa. If you are undertaking activities that involve significant ground disturbance, converting natural lands to development, or otherwise fragmenting or disturbing large areas, we recommend conducting comprehensive biological surveys and a full site habitat characterization for areas that have not been assessed through prior biological inventories. Survey work may be required as part of the NDDB review process; completing some or all of this work up front will allow the process to proceed more efficiently.

This survey and habitat characterization should be comprehensive and not strictly limited to species included in the site assessment. Field surveys should be performed by a qualified taxonomic expert with the appropriate scientific collecting permits. Surveys should be conducted at seasonally appropriate times.

A report summarizing the results of such surveys should include:

1. Survey date(s) and duration.
2. Site descriptions and photographs.
3. List of component vascular plant and animal species within the survey area (including scientific binomials).
4. Data regarding population numbers and/or area occupied by State-listed species.
5. Detailed maps of the area surveyed including the survey route and locations of State listed species.
6. Recommendations for management and protection of State-listed species with reference to project activities.
7. Statement/résumé indicating the taxonomic expert's qualifications.

Site survey reports should be sent to the CT DEEP-NDDB Program (deep.nddbrequest@ct.gov) for further review by program biologists.

SENSITIVE SPECIES

Please note that, for purposes of automated site assessments, certain sensitive species are not identified beyond their taxa. Additional information will be provided for those projects that will be conducting survey work in preparation for permitting ground disturbing activities or for other activities that might necessitate survey work. For these projects, please submit a Natural Diversity Data Base Review Request and we will provide information to your taxonomic expert.

ADDITIONAL RESOURCES

The following resources may be helpful when planning survey work

- State Listed plant species and Natural Communities documented within each CT town
- Thirteen of Connecticut's Most Imperiled Ecosystems (1998) - Metzler and Wagner
- The Vegetation of Connecticut - Metzler and Barrett
- Nature's Network identifies opportunities for conserving and connecting intact habitats and ecosystems and supporting imperiled species.
- Connecticut's Critical Habitat map. The Critical Habitat map project contains a subset of

known important natural community types and sites in CT. Refer to [Resource Guide](#) for a complete description and limitations of this product.

Additional sites of Critical Habitats and important natural communities exist, some of which are documented by NDDDB and some of which have not been identified, or fully mapped or field verified. You may [contact NDDDB](#) prior to conducting field reviews for more comprehensive information.

This letter is computer generated from our existing records and carries no signature. If however, any clarification/error is noted, or, if you have further questions, please contact the following:

CT DEEP Bureau of Natural Resources
Wildlife Division
Natural Diversity Data Base
79 Elm Street
Hartford, CT 06106-5127
(860) 424-3011
deep.nddbrequest@ct.gov

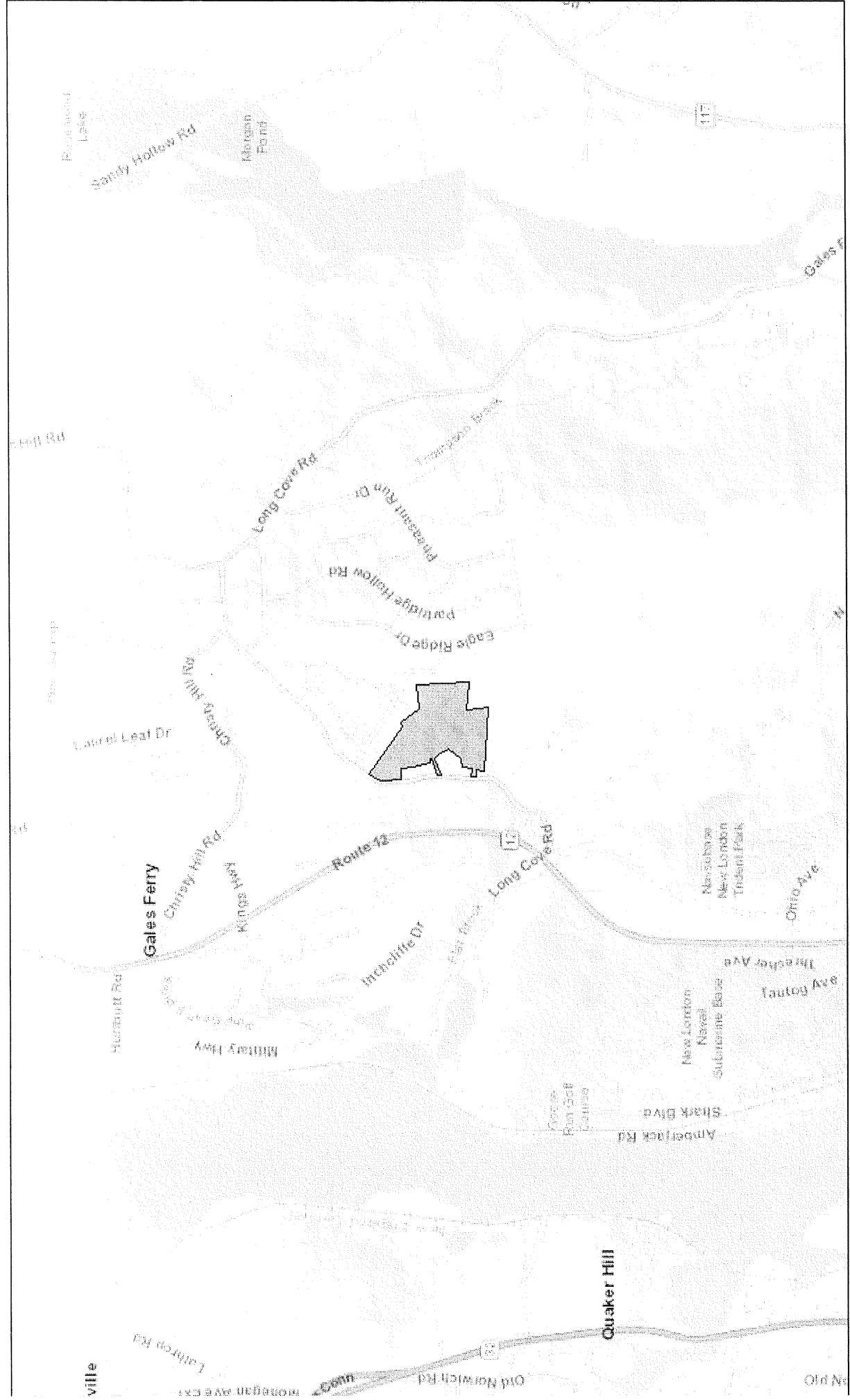
Please include a snapshot of the map, your last name, and the subject area town when you e-mail or write. Thank you for consulting the Natural Diversity Data Base.

Common Name	Northern long-eared bat
Scientific Name	<i>Myotis septentrionalis</i>
Listing Status¹	FE
Taxa	mammal
General Ecology	The Northern long-eared bat is one of the species most impacted by White Nose Syndrome. Populations in Connecticut have declined by over 90%, and it has been Federally listed as Endangered. During the summer northern long-eared bats roost singly or in maternal colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. Northern long-eared bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. This bat has also been found rarely roosting in structures, like barns and sheds. Northern long-eared bats spend winter hibernating in caves and mines, called hibernacula. The presence of northern long-eared bat (<i>Myotis septentrionalis</i>), a federally endangered and state endangered species, may require consultation with the US Fish and Wildlife Service Ecological Field Office in order to be in compliance with the Federal Endangered Species Act if the proposed project requires federal permits or uses federal funds. For more information on federal requirements as well as guidance on the latest management recommendations including development projects, wind energy development, sustainable forest management, and other tools and FAQs, please visit:

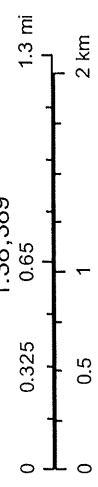
	https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis
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¹E = State Endangered, T = State Threatened, SC = State Special Concern, FE = Federally Endangered, FT = Federally Threatened, NA = Not applicable.

LONG COVE Map



1:38,389



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

12, 2025