A 1944 USGS topographic map of Preston, Connecticut, showing contour lines, roads, and geographical features. The map is overlaid with a semi-transparent green rounded rectangle containing the title text. The map shows the town of Preston, with major roads like Route 154 and Route 166, and the Pachaug River. The text is centered on the map.

**Avalonia Land Trust
Old Mystic, Connecticut**

RUDE ROAD - PRESTON

Resource Inventory and Analysis

Environmental Review Assessment

October—December 2016

**Prepared and Submitted
by the
CTRC&D Environmental Review Team
Haddam, Connecticut**



Figure A-2: Satellite View of Rude Road –Source: Bing 2016

- A. Acknowledgements**
- B. Introduction - CTRC&D ERT Process and Project**
- C. ERT Review Summary**
- D. History of Property and Area**
- E. Professional Reports**
 - 1. Geology-Randy Steinen
 - 2. Soils - Edward Pawlak
 - 3. Archaeology—Brian Jones
 - 4. Herpetology—Dennis Quinn
- 5. Regional Planning and Transportation— Kate Rattan
 - 6. Context with State POCD– Jeanne Davies
 - 7. Agriculture Assessment—Kip Kolesinskas
 - 8. Landscape Ecology—Charlotte Pyle



Figure A-3 - CTRC&D ERT Team @ 15 Rude Road Property- Preston, CT—Photo: J. Davies—CTRC&D

Kendall Property, Rude Road, Preston, CT Avalonia Land Trust

Environmental Review Team Report

Prepared by the
Connecticut Resource Conservation and Development
Environmental Review Team

Report #1004 - January 12, 2017

CTRC&D Environmental Review Team
1066 Saybrook Road, PO Box 70
Haddam, CT 06438
(860) 345-3977
www.ctert.org

ACKNOWLEDGEMENTS

This report is originated from a request of the Avalonia Land Trust located in Mystic, Connecticut. The "Avalonia Land Conservancy, Inc. preserves natural habitats in southeastern Connecticut by acquiring and protecting lands and by communicating the value of these irreplaceable resources." The Avalonia Land Trust had identified one hundred and fifty (150) acres at 15 Rude Road in Preston, CT for potential acquisition with the possibility of acquiring an additional 300 acres of adjoining property in the future.

The CTCR&D Environmental Review program and service is currently a "no-cost" solution for Connecticut municipalities, including municipal and non-profit land trusts to obtain baseline environmental data and best management conservation practices for existing or future conservation land. The management, facilitation, and report writing costs for an ERT review are underwritten by CTCR&D.

CTCR&D would like to acknowledge and express their appreciation for the important work of the following professional ERT Review Team volunteer members. Their professionalism expertise were critical to the analysis and options available to the Avalonia Land Trust for a baseline assessment of critical natural resources present at the 15 Rude Road property and adjacent areas.

The field review was conducted on Wednesday, November 30, 2016.

Kendall Property—Rude Road– Preston, CT CTCR&D ERT Review Team members

- | | |
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Special thanks to Avalonia Land Trust Team: Sue Sutherland and Dennis Main for their maps, history and data contributions, including a comprehensive tour of the site on a very wet and cold November 30, 2016.



Figure A-4—ERT Team Member review ecology at Rude Road J. Davies —CTCR&D 2016

Prior to the review day, each CTR&D-ERT Team member receives a summary of the proposed project with various maps. During the field review and after Team members received additional information; some Team members made separate or additional field visits to the site. Following the reviews, reports from each Team member were submitted to the CTC&D ERT office for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions. The Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the municipality or land trust. This report identifies the existing resource base and evaluates its significance to the proposed use, and also suggests considerations that should be of concern. The results of this ERT Team action are oriented toward the development of better environmental quality, long term conservation and associated economic value of complementary land use practices.

The Connecticut RC&D Council hopes you will find this report of value and assistance in providing information as the Avalonia Land Trust moves forward toward potentially acquiring and conserving this property.

If you require additional information please contact:

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INTRODUCTION

In July 2016, the Avalonia Land Conservancy, Inc contacted CTRC&D-ERT Program to provide a natural resource inventory and analysis of a property they were interested in potentially acquiring. Avalonia Land Conservancy, Inc. is a land trust dedicated to the conservation via acquisition of natural areas. It is a non-profit, non-political, tax-exempt organization. Their mission is to conserve our natural resources for the benefit of wildlife, our present generation, and the generations yet to come.

Avalonia now holds more than 3500 acres of land, preserved in perpetuity as natural open space. Where it is appropriate, trails are maintained for 'passive' enjoyment, such as hiking, bird-watching, nature study and photography. Avalonia encourages educational activities and scientific studies on its preserves. Similar to other land trusts throughout Connecticut, Avalonia depends upon volunteer help and contributions.

Through online and phone discussions with member of the Avalonia Land Trust, CTRC&D staff, was able to create a scope for analysis of the property's natural resources and conservation use. In summary, the goal for this environmental review process for the property by the CTRC&D Environmental Review Team includes:

- ◆ A baseline understanding of the geologic history of the property and current geologic overview of the property
- ◆ Mapping and analysis of the soil characteristics of the property, specifically dominant soil types and best practices for those soil type based on topography and erosion potential based on use.
- ◆ An archaeological and cultural assessment of the property and potential mechanism for heritage, cultural and environmental mitigation, public education and preservation.
- ◆ Preliminary assessment and mapping of wetland soils, vernal pools, stream characteristics, and supportive characteristics for wildlife.



Figure A-6—Broadbrook flowing through property at Rude Road - Photo: J Davies—CTRC&D 2016

- ◆ Baseline herpetology assessment
- ◆ Baseline ecology inventory
- ◆ Assessment of transportation to and within site (access, parking, topography, municipal and regional connections)

CTRC&D worked to assemble a team of professional volunteers and met on November 30, 2016 to view and assess the property.

Rude Road Area—Preston History



Figure A-7 Fleming's Farm—Jewett City Road (1969?) -
Preston Historical Society— Photo: W. Fleming

Preston History Summary

"Migration from Norwich by settlers during the late 1600s, moved eastward across the Shetucket River. A number crossed the boundaries of Norwich to land farther east, still in the possession of the Mohegan's. In January 1687, a petition was granted creating the Town of Preston. Town government had much the same form as today. The major town officers were the townsmen, later called selectmen, and the recorder, later the town clerk. Other town officials such as fence viewers, branders, and surveyors reflected the concerns of a rural, agricultural community.

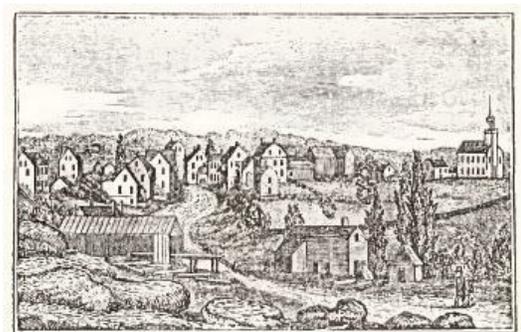
The primary economic activity in the town of Preston has been that of agriculture. Landforms, soil types, and climate have influenced the type of agriculture practiced in Preston. Farmhouses with outbuildings such as barns, silos, and sheds comprise the bulk of Preston's standing historic and architectural resources.

Although farm production for market was certainly well-established by the 18th century, farms in Preston were non-specialized until well into the 19th century. Food and other goods were produced for domestic use as well as for the marketplace.

Agriculture has had a major impact on the character of the town. The arrival of new immigrant

farmers from Eastern Europe and other areas, together with improved transportation and technology and the increased specialization of agriculture, all contributed to the continued viability of farming in Preston. The present appearance of Preston has been profoundly influenced by agricultural use. Patterns of field and forest, stone walls, irrigation ponds, and farm buildings all reflect past and present usage of the land.

The land currently being evaluate for acquisition is most likely part of the land upon which the Zachariah Rude home was built and part of the grants purchased from Oanaco by John Rude in 1683 and 1690." (Excerpt from Preston Historical Society website)



Western view of Poquetannuck, Preston.

Figure A-8—Western view of Preston, Source: Connecticut Historical Society

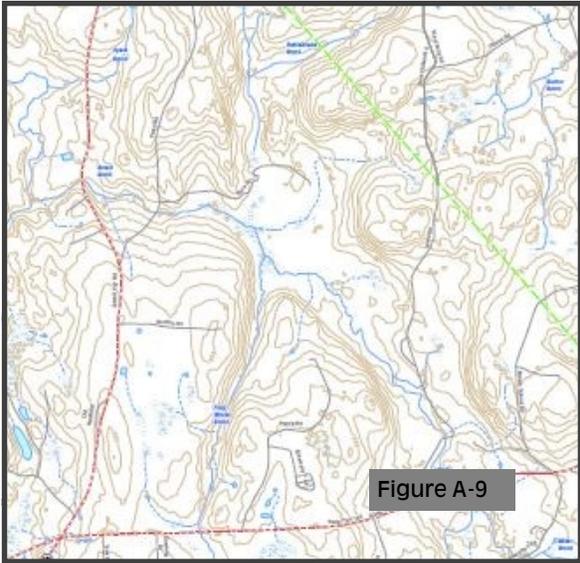


Figure A-9

- Figure A-9: Topographic map of Preston zoomed into area of Kendall Property potential open space property: Source: CLEAR 2015
- Figure A-10: Google street map depicting relative location of Kendall –Rude Road Potential Open Space Area in context with area features. Source: Google 2017

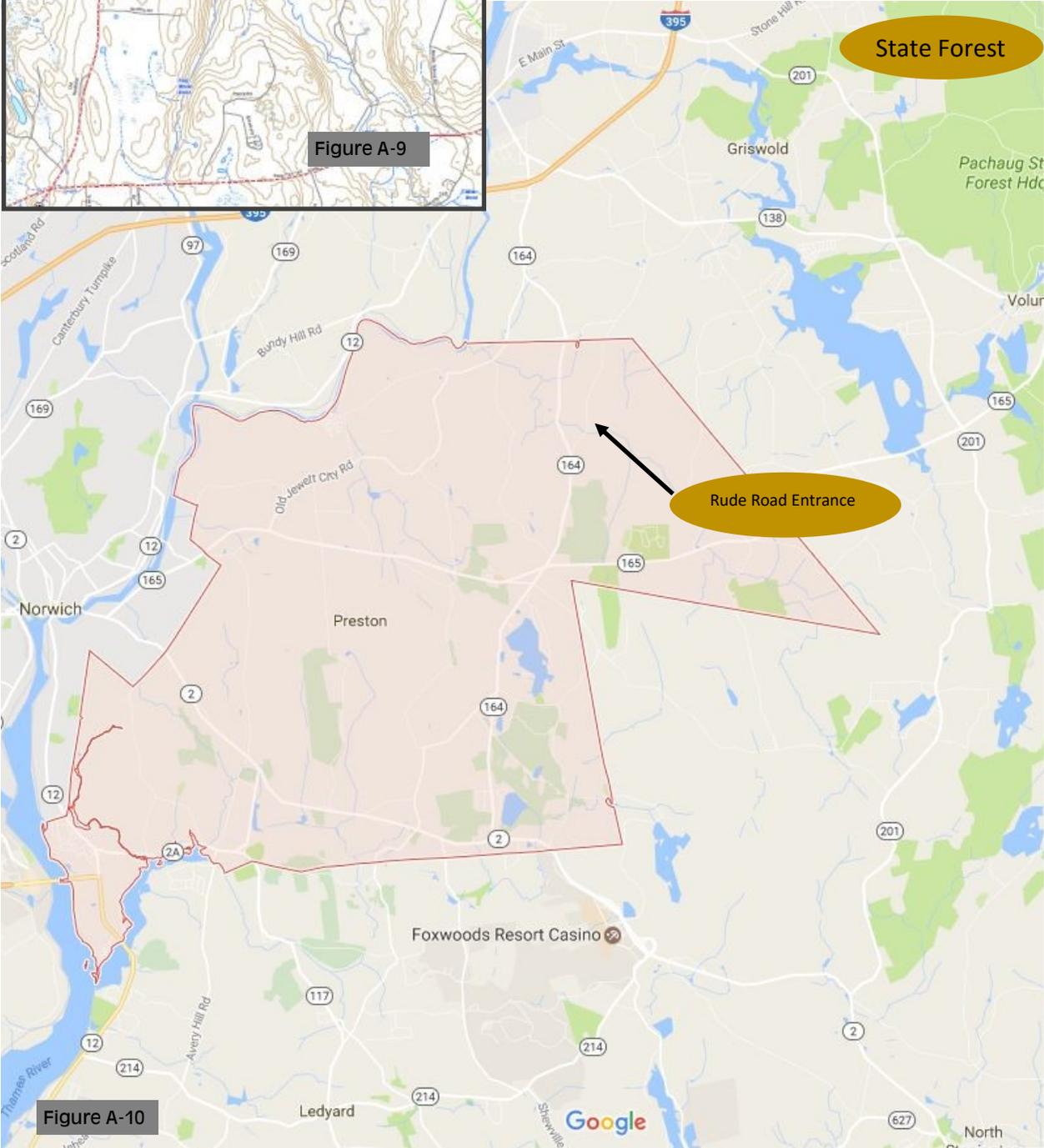
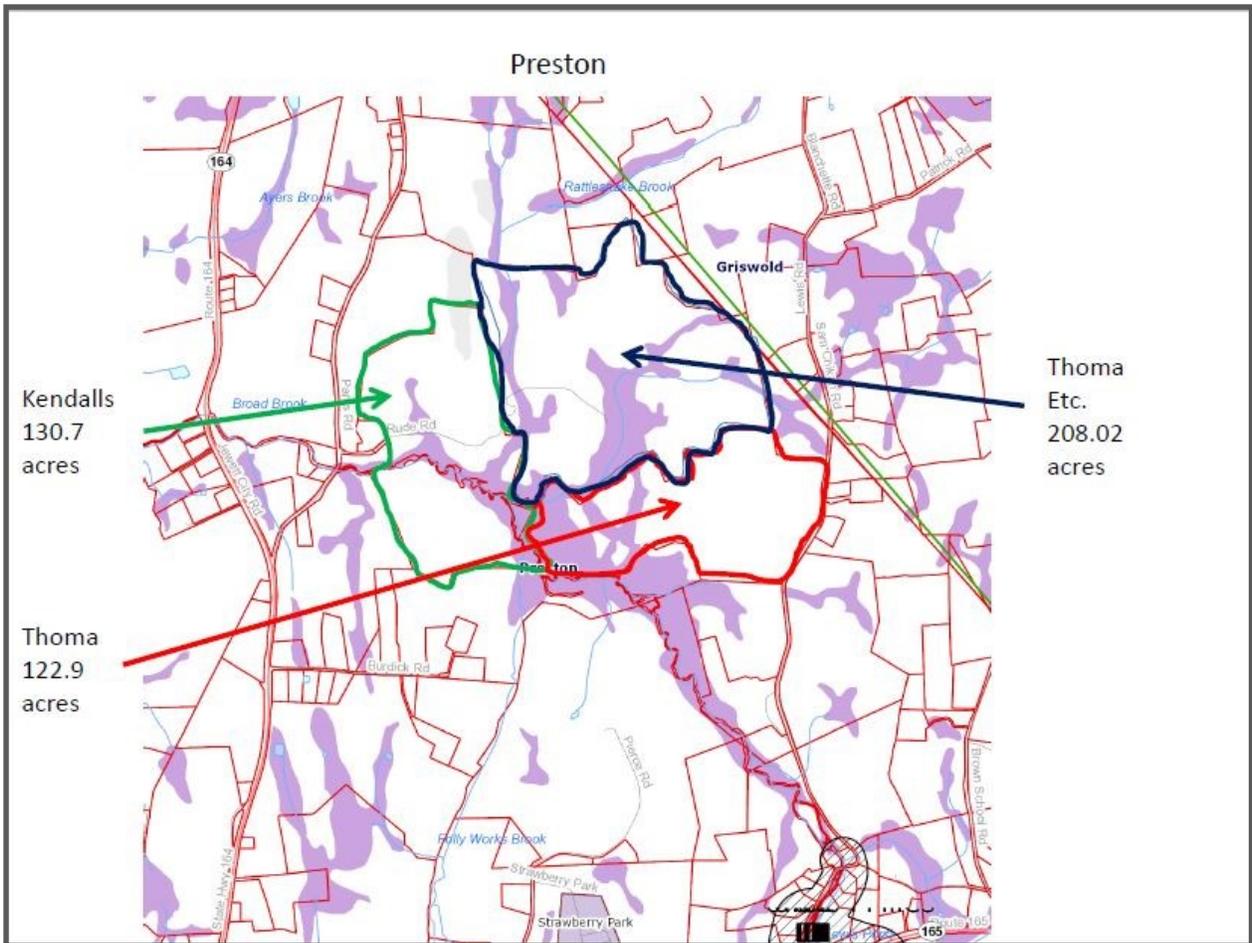
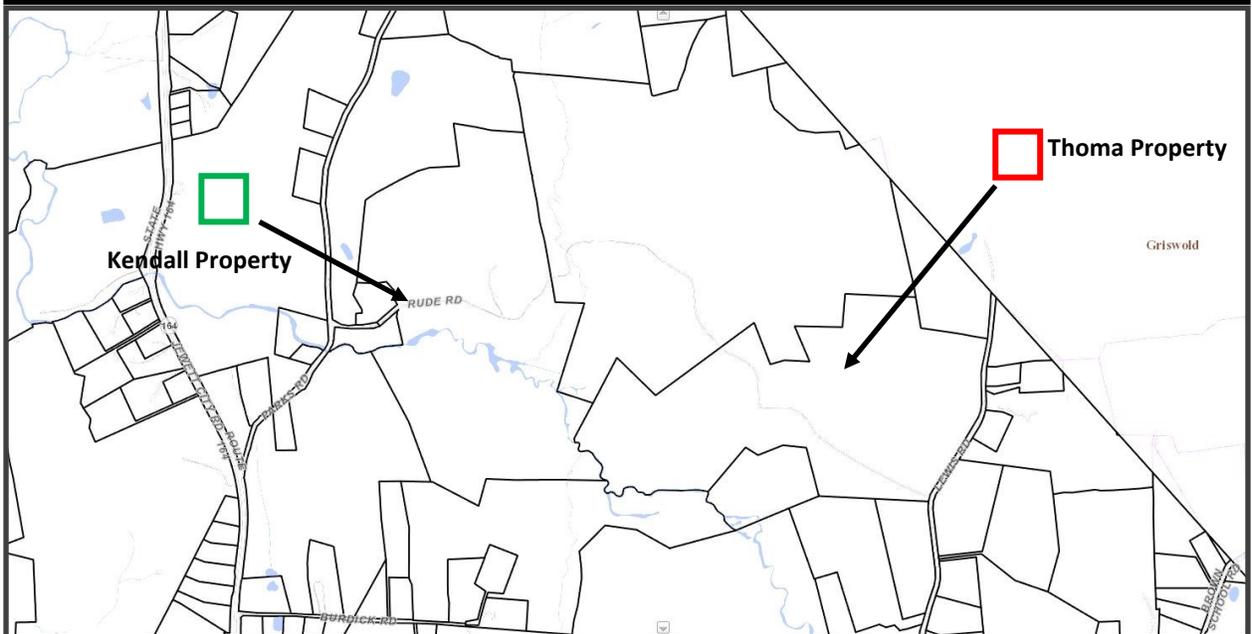


Figure A-10



Figures A 11 and 11a—Property location and acreage description and correlating town assessor parcel locations Source: Avalonia Land Trust and Town of Preston Online GIS Viewer 2017



Overview of Property Resources

Kendall Property– Rude Road Area Analysis

The ERT Team goal for the Kendall Property—Rude Road is confirmation of critical resources in need of protection, and concepts for property conservation and best practices. The property has potential regional significance as a connective are of open space area to the a system of open space property that may eventually link to the Pachaug State Forest and regional trail systems which link Preston to other communities in the areas of South-eastern Connecticut and the Last Green Valley region.

Geology *-Excerpt Randolph Steinen, Geologist/ View full report in Appendix A*

The area is bisected by Broad Brook and most of the area lies within the Broad Brook-Rattlesnake Brook drainage basin. Rattlesnake Brook drains the northeastern portion of the property and flows under Rude Road to join Broad Brook. The area is a contrast topographically with rather steep ridgy terrain to the north of Broad Brook, a valley bottom containing glacial outwash deposits with rather flat somewhat hummocky terrain, and then glacially sculpted, rather smooth hills south of Broad Brook (see Figures 1-3). The maximum elevation of slightly greater than 350' above sea level occurs in the northeastern part of the parcel and the minimum elevation, approximately 115' above sea level, occurs where Broad Brook leaves the property at the western bound.



Figure A-12—CTRC&D ERT Team with Avalonia Land Trust representatives before site visit/ Source J Davies, CTCRC&D 2016

Bedrock Geology

The area underlain by Ordovician aged metamorphic rocks belongs to two geologic formations: the Quinebaug Formation and the Preston Gabbro. The *Quinebaug formation* consists of a light colored felsic member and a dark gray layer. The felsic member is well layered and locally shows ductile folds and faults. It is composed of plagioclase, quartz, muscovite and biotite mica, and in many places, potassium feldspar (during the field reconnaissance microcline was observed). It was thinly layered where we saw it and appeared resistant to erosion, forming ridges and ledges.

The dark gray member is referred to as the Black Hill Member. It consists of plagioclase, quartz, biotite, commonly with green epidote and maroon garnet. It is fine grained and has a granofels texture where we observed it, but is reported to be schistose in some locations. It forms thin slabby layers in many places, but appears in thick layers where it is interlayered with the felsic Quinebaug member.

The Preston Gabbro was not observed during our field reconnaissance. It consists of a dark gray massive (poorly layered) rock consisting of medium to coarse grained pyroxene and plagioclase feldspar. In adjacent areas it commonly is susceptible to weathering and is altered. It is in fault contact with the Quinebaug Formation.

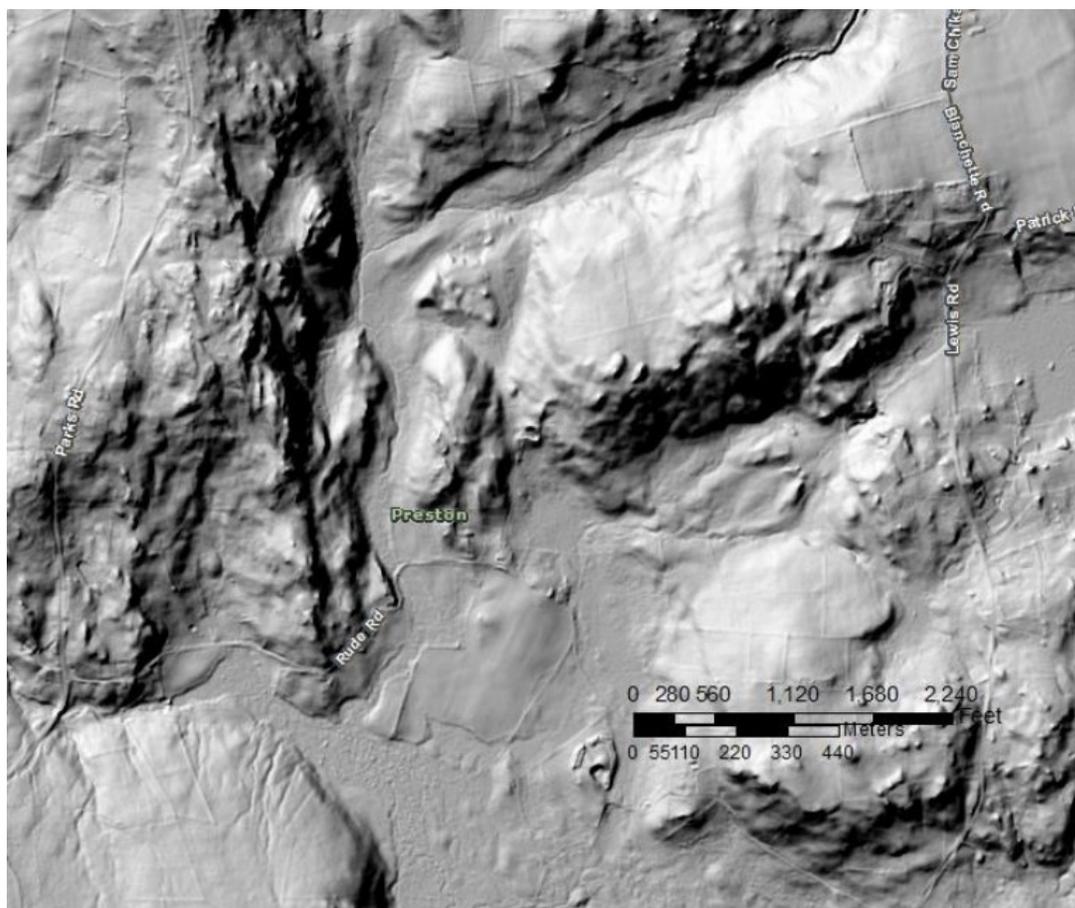


Figure A-13 (From R Steinen report)
Hillshade-Lidar digital elevation model illustrating the topography (relief) of the area around the Kendall and Thoma properties

Surficial Geology

During the last ice age, glaciers deposited a mantle of glacial soil of variable thickness over the entire area. The soils, referred to as glacial till (T on Figure A-4) are unsorted mixtures of rock, sand and mud that were left behind when the glacier melted (about 17,000 years ago in this area). In this area, the soils are generally thin (4-5 meters, 15 feet, or less) north of Broad Brook with many areas of ledge forming outcrops, some of which have cliffs (see Figure 2). South of Broad Brook, the area is covered by thick till (TT on Figure A-4) that generally is greater than 5 meters (15 feet) thick and may contain till that is considerably older to the thin veneered till. The topographic expression of thick till is smooth with few if any ledge exposures. Thick till generally forms streamlined hills that are oval shaped in the plan view (Figure A-14) and which are used to indicate movement of the glacial ice (parallel to the long axis of the hill).

During the melting of the thick ice sheets torrents of water were released which carried copious amounts of sand, gravel, and mud. In numerous areas the meltwater was impounded by natural causes and in those areas banks of sand were deposited on deltas that built into the ponds.

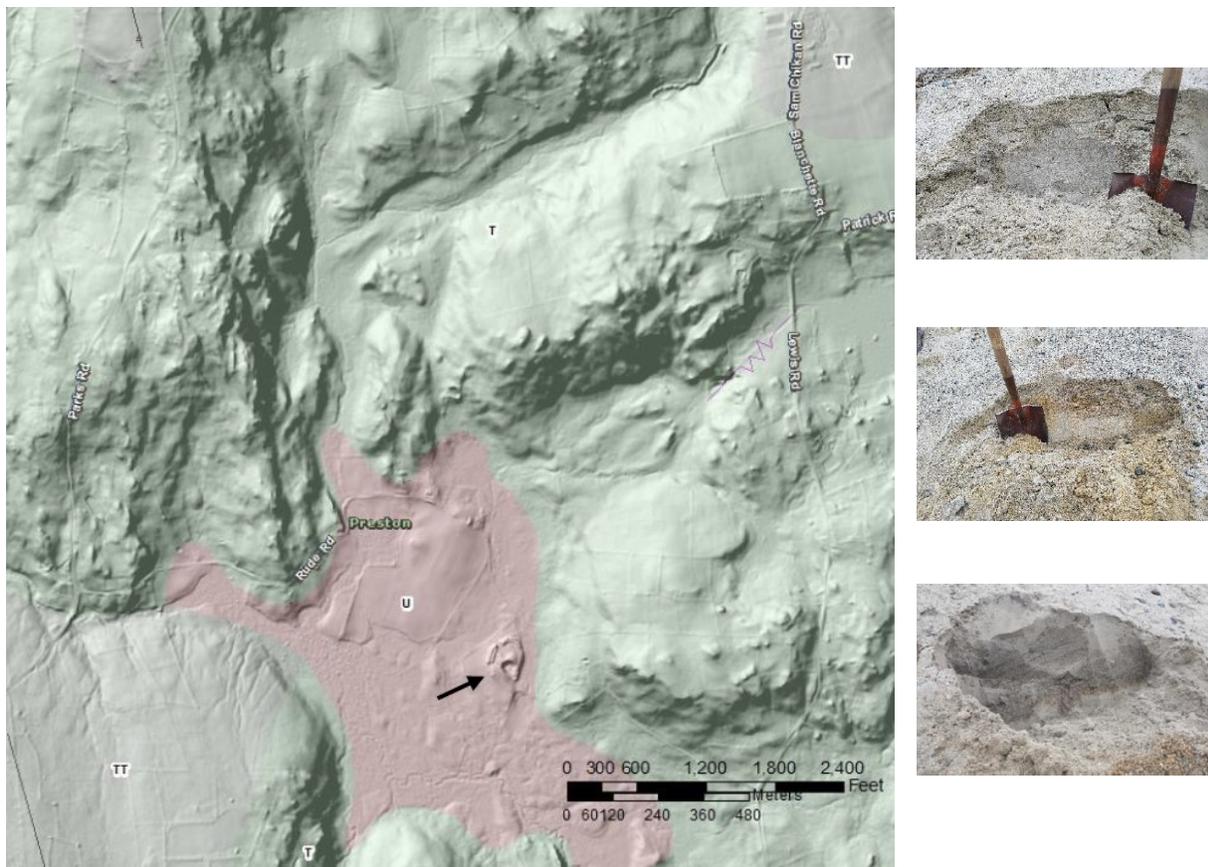


Figure A-14 (From R Steinen report) - Ice age deposits in area around Kendall Thoma properties. Areas colored green (labeled T) are covered by thin glacial soils (till); gray areas (labelled TT) are covered by thick glacial soil; area shaded cream color (label U) is sand and gravel deposit. Black arrows point to areas mined for sand and gravel at some time in the past. (Geology from Stone and others, 2005) Photos to the right illustrate sand layers at increasing depth in the deposit. Left image shows pit was dug near the top of the deposit; center slightly lower stratigraphically and right about 5-6' below the top. Note decreasing grain-size with increasing depth below the top of the deposit. Internal stratification shows cross-beds and climbing ripples, suggestive of rapid subaqueous deposition. These data are consistent with deposition on a delta rather than deposition as wind-blown sand.



Figure A-15—Photo of Broadbrook—area behind small dam on stream—Source: J. Davies, CTCR&D

Soils and Wetlands - Excerpt Edward Pawlak, MS, Connecticut Ecosystems LLC, Registered Soil Scientist, Certified Professional Wetland Scientist - View full report in Appendix A

“The subject property supports a very large and diverse wetland system and perennial watercourse that provide numerous hydrological, biological, recreational and educational services. Included on the property are a natural sand dune and several potential vernal pools. As a result, the property should be assigned a very high conservation value”

SOILS

According to the Natural Resources Web Soil Survey, the alluvial soils associated with Broad Brook and Rattlesnake Brook are classified as Rippowam fine sandy loam. Additionally, there are two large wetland areas that contain organic soils, which are classified as Scarboro muck, and the Timakwa/Natchaug complex. These organic soils developed in wetlands that are waterlogged for extended periods of time during the growing season, which inhibits the decomposition of organic matter. The presence of organic soils in the subject wetlands was confirmed during the site inspection.

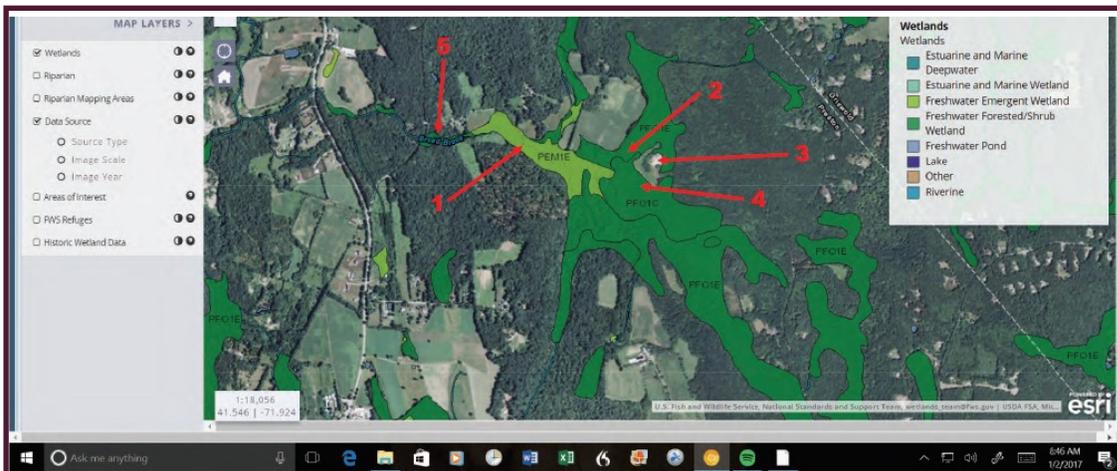


Figure A-16
See larger map and evaluation in full report in Appendices

WETLANDS

A large, diverse wetland system associated with Broad Brook is located on the Kendall property. Several discrete wetland areas and adjacent upland habitats were identified on the subject property on December 10, 2016. These areas are identified on Figure A-16, which was created from a National Wetlands Inventory (NWI) map developed by the Fish and Wildlife Service. (see Figure A-16 on previous page)

Area #1: The NWI map identifies this large area as “palustrine emergent persistent, seasonally flooded/saturated” (PEM1E). This area does indeed contain emergent marsh habitat, but it also includes large areas of dense broad-leaved deciduous scrub-shrub, mostly consisting of buttonbush. (Photo 2) The emergent and scrub-shrub habitats are interspersed within a matrix of open water. (Photo 1)

Area #2: The NWI map identifies this area as “palustrine forested broad-leaved deciduous, seasonally flooded/saturated”. This deciduous wooded swamp supports red maple, spicebush, highbush blueberry and tussock sedge, and displays prominent microtopography. Much of the swamp contained shallow inundation (Photo 3) and gray water-stained leaves, which are indicators of seasonal flooding. A seasonal watercourse flows south out of the swamp into Area #1 (Photo 4)

Area #3: A natural sand dune is located in this area. (Photo 5) This unique feature exhibits mostly bare white sand, and only sparse vegetation. At the base of the natural sand dune lies a small seasonally flooded basin depression, (Photo 6), which contained shallow water on the inspection date. Old field habitat (little bluestem, common milkweed, goldenrods) borders both of these features (Photo 7) .

Area #4: The NWI map identifies this area as “palustrine forested broad-leaved deciduous, seasonally flooded”. This swamp (red maple, high-bush blueberry, skunk cabbage, tussock sedge) contains embedded seasonally flooded habitats, which contained extensive surface water on the inspection date (Photo 8)

Area #5: Broad Brook is a perennial watercourse that flows across the subject property. Its watershed extends far off-site to the southeast, to near Route 165. It receives inflows from Folly Works Brook from the south, and from Rattlesnake Brook from the north. Broad Brook is classified as a Class A watercourse by the Connecticut Environmental Conditions Online website. The watercourse was viewed upstream of the bridge at Parks Road (Photo 9). In this general area the wooded channel banks are stable, and the channel is shaded by riparian trees. Instream habitat consists of shallow riffles and runs. Boulders and fallen logs in the channel provide cover and velocity shelters for fin-fish.



9



8



1



2



3



4



5



6



7

Wetland Functions and Values

The large, interconnected wetland system on the property provides numerous important biological, hydrologic, and social functions/ecological services:

- **Groundwater Discharge and Recharge** - Active groundwater discharges were observed at several locations in the wetlands during the site inspection (e.g., see Photo 4). These discharges support the baseflow of Broad Brook. Groundwater recharge likely occurs in the wetland during the drier summer months, when the groundwater table is lower and does not preclude infiltration.
- **Floodflow Alteration** - The very large, gently sloping, densely vegetated wetland system has the capacity to detain and slowly release a significant amount of stormwater runoff, protecting downstream properties along Broad Brook.
- **Pollutant Removal** - The gentle slopes, well-developed microtopography, dense vegetation, and in some areas, organic soils, that characterize the wetland system allow it to remove a variety of solid and dissolved pollutants from stormwater runoff.
- **Production Export** - Biomass generated by the dense vegetation in the very large wetland system decomposes and is seasonally exported into Broad Brook, supporting the biota in the river and in downstream aquatic systems.
- **Wildlife Habitat** - The large wetland system on the property provides a diversity of habitats: riparian (emergent marsh, scrubshrub swamp, deciduous wooded swamp), wet meadow, perennial and seasonal watercourses, open water and seasonally flooded depressions. These habitats occur within a large unfragmented landscape block of forests and agricultural fields, and have the capacity to support a diverse and abundant wildlife community.
- **Finfish Habitat (Streams and Rivers)** - Due to its instream habitat diversity (riffle, run), shaded channel, stable banks, cover habitat (instream boulders, fallen logs), and good water quality, Broad Brook very likely supports a diverse finfish community.
- **Recreation** - The wetlands on the subject property offer excellent recreation opportunities, in large part due to its wildlife resources. A large variety of avians, reptiles, amphibians and mammals can be observed in and near the wetlands.
- **Educational/Scientific Value** - The marshes and swamps on the subject property provide opportunities for a variety of aquatic and wildlife studies. The seasonally flooded depressions (potential vernal pools) and natural sand dune provide the setting for scientific investigations of these unique habitats.



Figure A-17—Plants on edge of Broadbrook Agriculture Field—Source: J. Davies, CTC&D 2016

Archaeology- *Excerpt Brian Jones, State Archaeologist/see full report found in Appendix A*

The Kendall/Toma properties express a rich cultural history reflecting thousands of years of use by both Native American and later Euro-American people supporting their families. Passive recreational use should not threaten the cultural resources associated with the property, but visible house ruins and their associated field systems should be protected from inadvertent damage. Signage explaining the history of these historic features will aid in their protection by raising public awareness of their significance. This would also provide an opportunity to summarize past land-use practices and explain how these have impacted the area we see today

The properties lie within the Broad Brook watershed between about 2.8 and 4.4 km south-east of the Quinebaug River. The properties range in elevation from about 120 to 320 feet. A broad, relatively level plain with an elevation of about 130 feet lies at the center of the properties along Broad Brook. This plain is associated with glacial meltwater deposits (bedded sand and gravel) deposited during deglaciation of the area about 16,000 years ago. The lower plain is flanked by till-draped hillsides dominated by much stonier soils. The quaternary soils map provides a rough model for archaeological sensitivity in the area (Figure A-18). Sandy, well-drained glacial meltwater deposits are considered to have high archaeological sensitivity, while the thin tills in the eastern and northern portions of the properties are considered to have moderate sensitivity. The dense thick till deposits in the southwestern area are considered to have low archaeological potential.

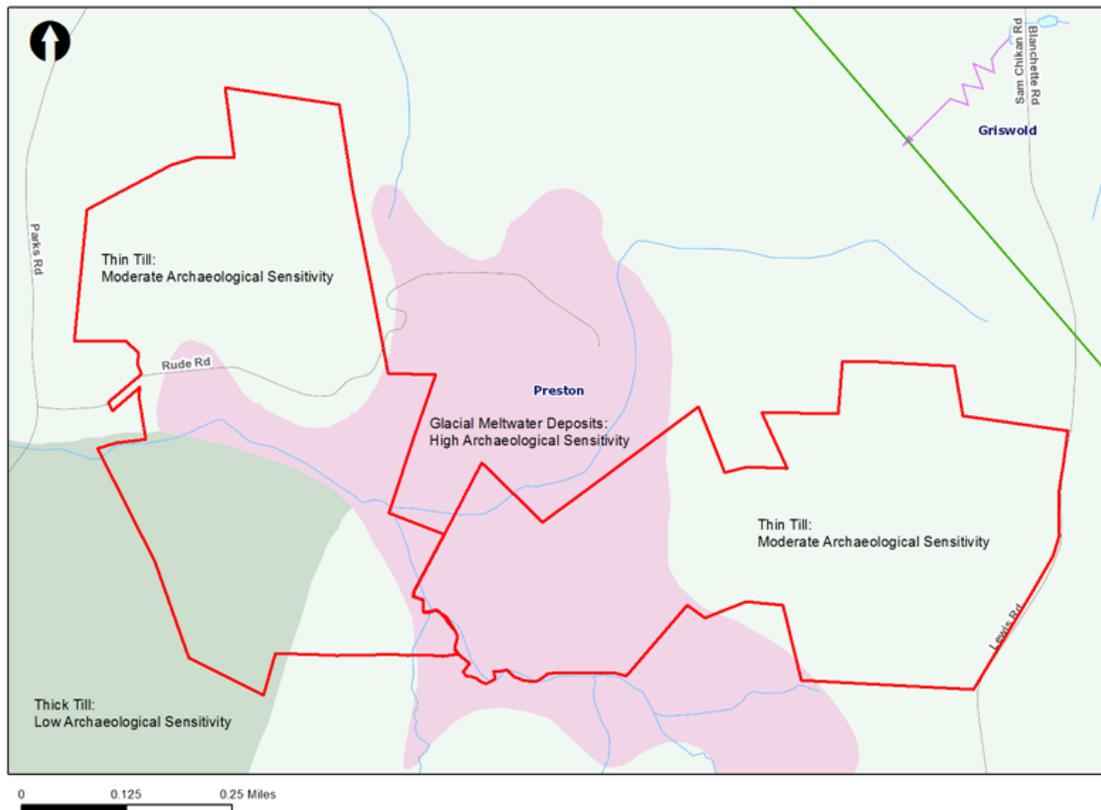


Figure A-18 Quaternary sediments and modeled archaeological sensitivity.

Figure A-19 shows known archaeological sites in the vicinity of the Kendall/Toma properties. These sites were all documented by Louis Bayer, a former DEP game warden who walked and inspected much of southeastern Connecticut during his long career in the mid-20th century. Site 114-57 lies within the proposed conservancy area. The site is mapped in the vicinity of a recent sand pit, and may have actually been located within that area of disturbance from the mining of Windsor fine loamy sand in this area. Documentation indicates a site area of ca. 5 acres, suggesting that artifacts were collected from a broad area within this area of former corn fields. Unfortunately, no specific details exist about the type or age of the artifacts collected here.

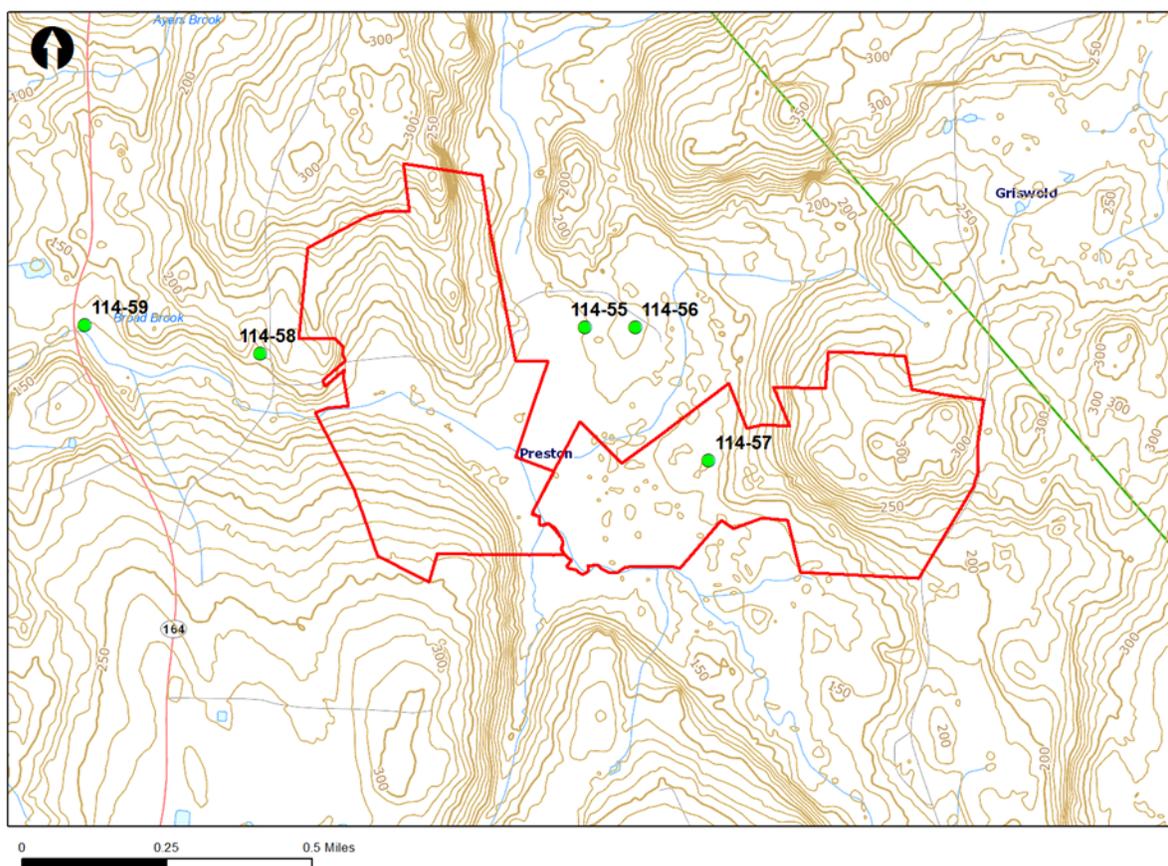


Figure A-19: Archaeological sites on file with the Office of State Archaeology in the vicinity of the Kendall/Toma properties.

Sites 114-155 and 114-156 lie in the large farmed field just north of the Kendall/Toma properties. This area of Sudbury sandy loam and Windsor loamy sand was used as a corn field when the artifacts were found on the surface. Site 114-55 is said to have contained at least 100 artifacts, including stone axes and celts. These had been in the collection of Bill Cray but are believed to have been sold and their whereabouts remain unknown. Bayer collected his own artifacts at nearby site 114-156. Photographs of some of the artifacts from this collection suggest site use during the Early Woodland period (2500 – 2000 years ago), and perhaps the Late Archaic (5000 – 4000 years ago). Sites 114-58 and 114-59 reflect locations where Bayer found artifacts in other nearby cornfields just west of the Kendall/Toma properties, but unfortunately no specific information is known about them.

Lidar imagery of the Kendall/Toma properties expresses important details about the landscape (Figure A-20). The ruggedness of the northwestern portion of the property is evident, as are the remains of probable early 19th century field systems on the smoother areas of upland till to the south and east. Evident features include the sand and gravel quarry area discussed above, as well

as other possible borrow pits along old roads in the eastern part of the property. To the northeast, the ruins of two abandoned residential farm complexes are evident. One of these appears as a standing structure in the 1934 Fairchild aerial survey (Figure 4). Two other possible areas of historic ruins are also noted. Ideally, these locations should be field verified, and historic background research conducted to determine the names of the families associated with prior farms located here.

The 1934 Fairchild aerial survey maps provide some additional information and reinforce some of the

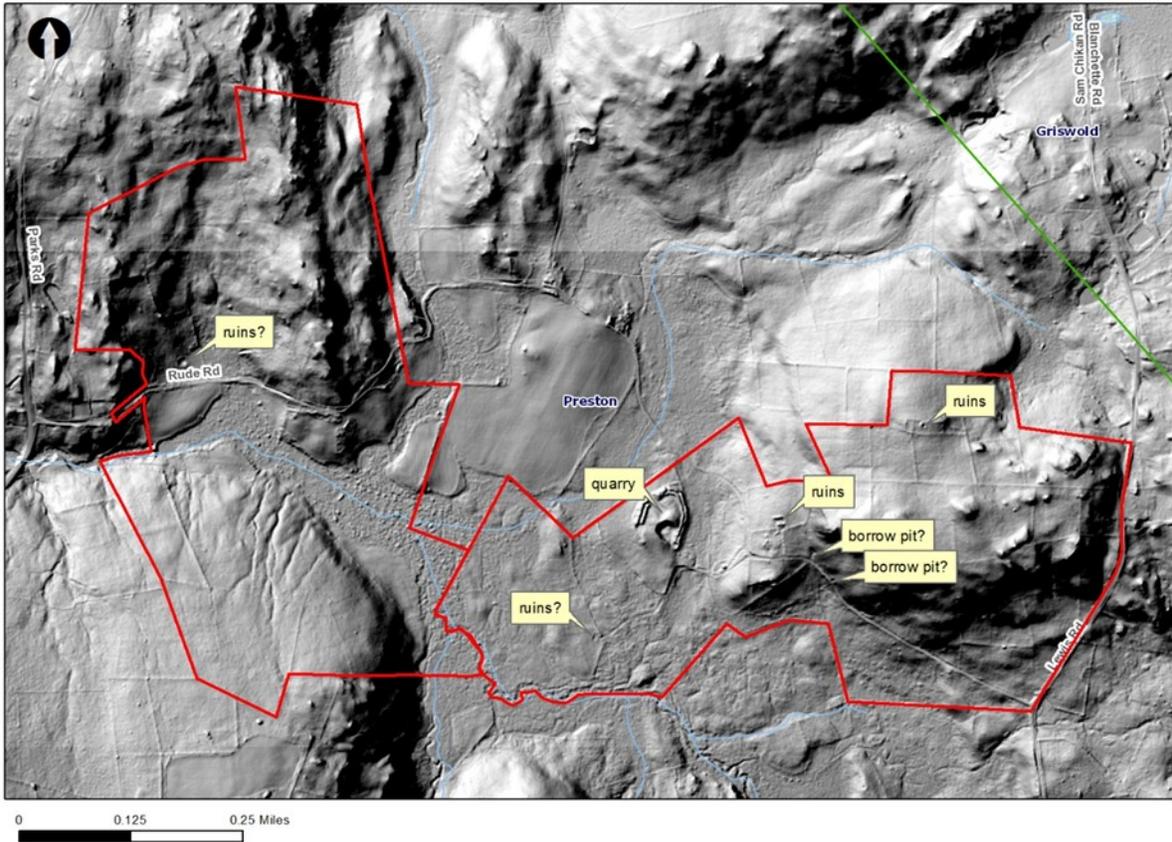


Figure A-20: Possible historic period features visible in Lidar imagery.

identifications made from the Lidar imagery. In the eastern portion of the Kendall/Toma properties, one set of ruins evident in the Lidar appears as an active farmhouse (Figure A-21). At this time, the eastern hills are transitioning from pasture to early successional forest growth. The probable farmhouse ruin in the north of this portion of the property is not visible, suggesting that it had been abandoned sometime during the 19th century.

In 1934 the western portion of the Kendall/Toma properties includes plowed fields, woodlot and prior pasture areas, but no evident residences (Figure A-22). Two structure, a house and probable barn, lie just west of the property, while a substantial farm is associated with the fields to the east.

The 1854 Baker Map of New London County provides some additional information about land use during the mid-19th century. Figure A-23 shows the nearby residences of Z.A. Williams, N. Rude, and a schoolhouse. No residences are evident in the eastern portion of the properties at this time. It is also worth mentioning that Pequot basketmaker Ann Wampey walked past this general area on her annual early spring rounds in the 1820s selling baskets between Mashantucket and Jewitt City. It is likely that she would have stopped by the Williams farm to sell her wares.

As a whole, the Lidar imagery, early 20th century aerial photography and historic maps suggest that the Kendall/Toma properties have a complex history of agrarian use. The area contains one or more abandoned residential sites, as well as former pastures areas, and complex field systems, many of which are marked by stone walls. Prior to the historic period agricultural use, artifact finds indicate the area was visited by Native people of the region for millennia.

The Broad Brook watershed offered a variety of resources - hunted, fished, and gathered - and lay near enough to the Quinebaug River that access was relatively easy. The broad central plain in the middle of the Kendall/Toma properties provided an opportune location to establish both temporary hunting camps and longer-term seasonal occupations. By about 1000 years ago, it is likely that the area was first farmed by family-based groups who may have established hamlets in the valley, occupied for a few years at a time before they were left to let the land recover its fertility.

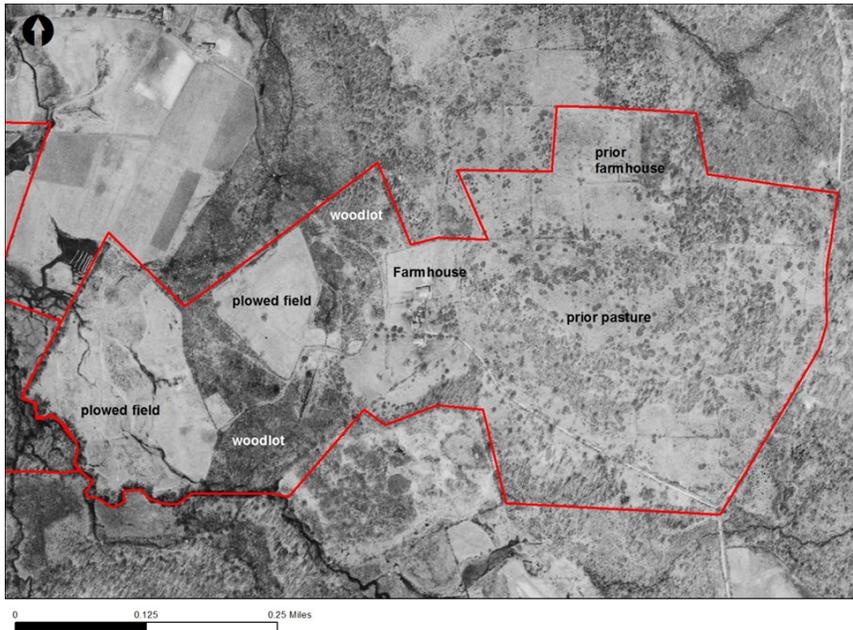
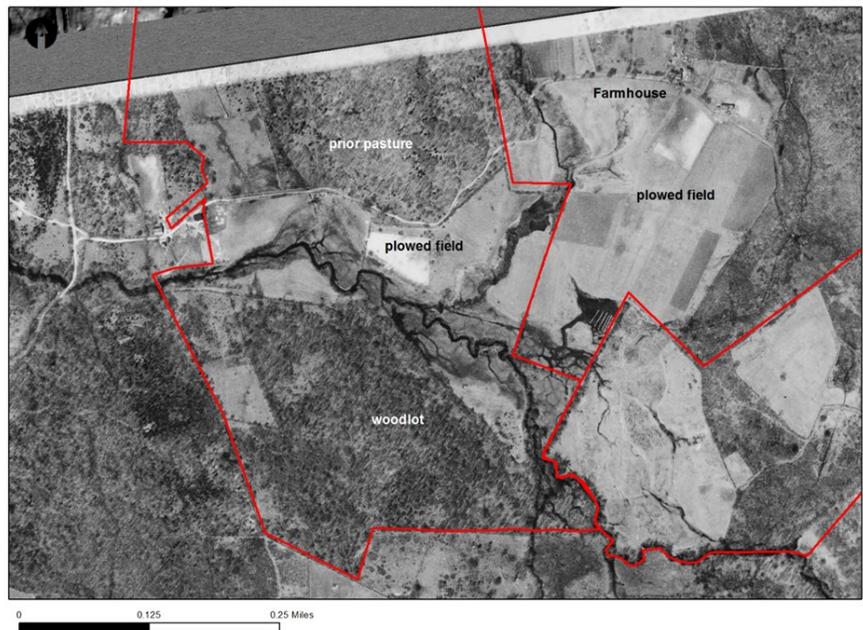


Figure A-21: 1934 Fairchild aerial map of the eastern property showing active farmhouse and associated fields and areas of prior pasture in an early successional state.

Figure A-22- 1934 Fairchild aerial map of the western property showing active farmhouses to the north and west. Associated plowed fields, woodlot and areas of prior pasture are also evident.



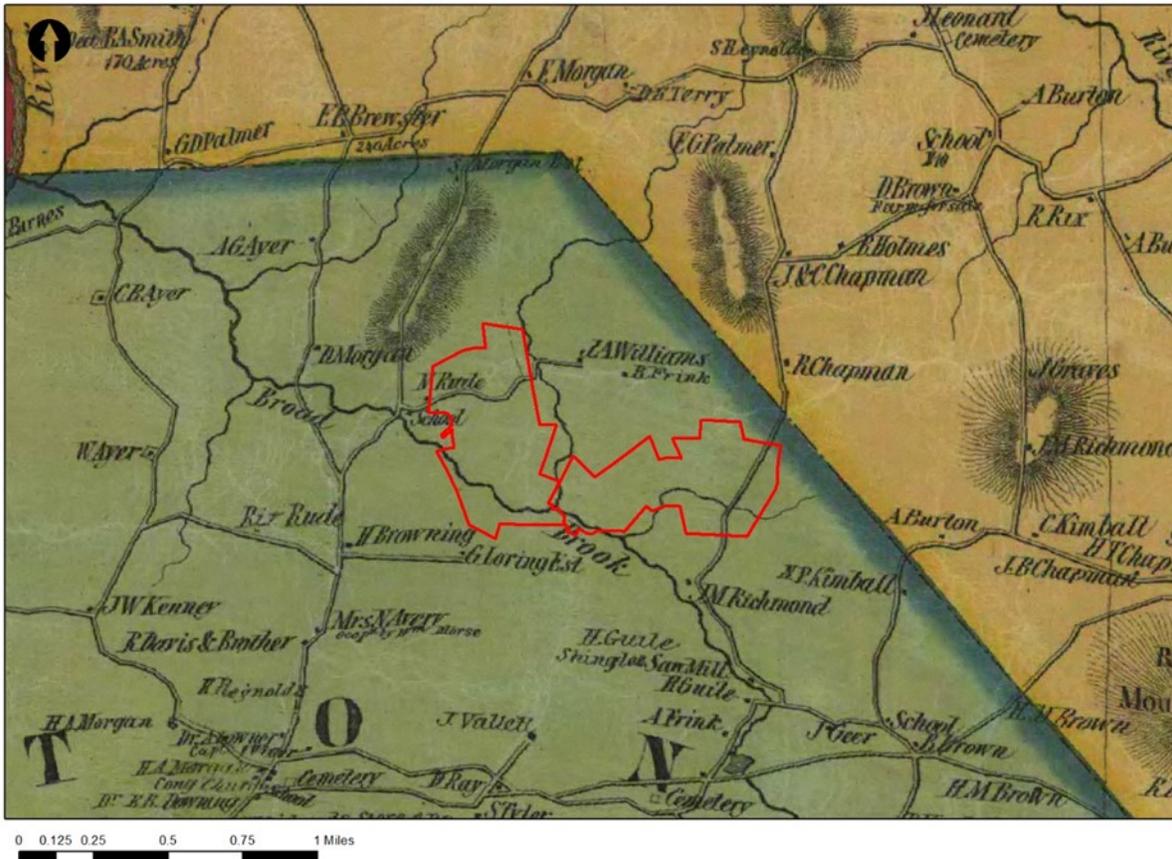


Figure A-23 Portion of the 1854 Baker Map of New London County, showing the nearby residences of Z.A. Williams, N. Rude, and a schoolhouse. Project overlay is approximate.

HERPETOLOGY - Excerpt from Dennis Quinn, Herpetologist - View full report in Appendix A

"The most significant find being the state endangered eastern spadefoot. It is very likely this species is breeding on this property and if documented would be only the second known breeding pool in the state for this species. For herpetology, this is an incredible property that likely has a diverse assemblage of amphibians and reptiles."

A list of species that were confirmed present on the property and that likely or potentially occur is found in Figure A- . All the confirmed species were found during a very short survey period (one night trip and during the site walk) both of which occurred very late in the season and during sub-optimal surveying conditions for herpetology in CT. The most significant find being the state endangered eastern spadefoot. It is very likely this species is breeding on this property and if documented would be only the second known breeding pool in the state for this species. This is an incredible property that likely has a diverse assemblage of amphibians and reptiles. Further surveying efforts in the spring and early summer would be very beneficial in determining exactly which species occur on site. Recommended surveys and actions include VP minnow trapping, additional cover object and visual encounter surveys. For conservation, it is critical the open areas remain open and managed. The proximity of these fields to both open and closed canopy wetlands and upland forested areas makes for optimal habitat mosaics that are critical for amphibian and reptile conservation in Connecticut.

Herpetology Analysis - Dennis Quinn, Herpetologist Kendall Property, Preston, CT

Species List Detailing - Confirmed Occurrence, Likely Occurrence, Potential Occurrence and Out of Range

Species	Common Name	State Listing	Confirmed Occurrence	Likely Occurrence	Potential Occurrence	Out of Range
Salamanders and Newts						
<i>Ambystoma jeffersonianum</i>	Jefferson Salamander	Special Concern				X
<i>Ambystoma laterale</i> (complex)	Blue-spotted Salamander	Special Concern				X
<i>Ambystoma laterale</i> (diploid)	Blue-spotted Salamander	Endangered			X	
<i>Ambystoma maculatum</i>	Spotted Salamander			X		
<i>Ambystoma opacum</i>	Marbled Salamander			X		
<i>Desmognathus fuscus</i>	Dusky Salamander			X		
<i>Eurycea bislineata</i>	Two-lined Salamander			X		
<i>Gyrinophilus porphyriticus</i>	Spring Salamander	Threatened				X
<i>Hemidactylium scutatum</i>	Four-toed Salamander		X			
<i>Plethodon cinereus</i>	Redback Salamander		X			
<i>Plethodon glutinosus</i>	Slimy Salamander	Threatened				X
<i>Necturus maculosus</i>	Common Mudpuppy	Special Concern				X
<i>Notophthalmus viridescens</i>	Red-spotted Newt			X		
Frogs and Toads						
<i>Anaxyrus americanus</i>	American Toad		X			
<i>Anaxyrus fowleri</i>	Fowlers Toad			X		
<i>Hyla versicolor</i>	Gray Treefrog		X			
<i>Pseudacris crucifer</i>	Spring Peeper		X			
<i>Scaphiopus holbrookii</i>	Eastern Spadefoot	Endangered	X			
<i>Lithobates catesbeianus</i>	Bullfrog		X			
<i>Lithobates clamitans</i>	Green Frog		X			
<i>Lithobates palustris</i>	Pickerel Frog		X			
<i>Lithobates pipiens</i>	Northern Leopard Frog	Special Concern				X
<i>Lithobates kauffeldi</i>	Mid-Atlantic Leopard Frog					X
<i>Lithobates sylvaticus</i>	Wood Frog		X			
Turtles						
<i>Chelydra serpentina</i>	Snapping Turtle			X		
<i>Chrysemys picta</i>	Northern Painted Turtle			X		
<i>Clemmys guttata</i>	Spotted Turtle	Special Concern		X		
<i>Glyptemys insculpta</i>	Wood Turtle	Special Concern			X	
<i>Glyptemys muhlenbergii</i>	Bog Turtle	Endangered				X
<i>Malaclemys terrapin</i>	Diamondback Terrapin	Special Concern				X
<i>Terrapene carolina</i>	Eastern Box Turtle	Special Concern			X	
<i>Sternotherus odoratus</i>	Musk Turtle				X	
Snakes and Lizards						
<i>Plestiodon fasciatus</i>	Five-lined Skink	Threatened				X
<i>Carphophis amoenus</i>	Eastern Worm Snake			X		
<i>Coluber constrictor</i>	Northern Black Racer			X		
<i>Diadophis punctatus</i>	Northern Ringneck Snake			X		
<i>Pantherophis alleganiensis</i>	Eastern Rat Snake			X		
<i>Heterodon platirhinos</i>	Hog-nosed Snake	Special Concern			X	
<i>Lampropeltis triangulum</i>	Eastern Milk Snake			X		
<i>Nerodia sipedon</i>	Northern Water Snake			X		
<i>Opheodrys vernalis</i>	Smooth Green Snake	Special Concern			X	
<i>Storeria dekayi</i>	Northern Brown Snake			X		
<i>Storeria occipitomaculata</i>	Redbelly Snake					X
<i>Thamnophis sauritus</i>	Eastern Ribbon Snake	Special Concern			X	
<i>Thamnophis sirtalis</i>	Eastern Garter Snake			X		
<i>Agkistrodon contortrix</i>	Northern Copperhead				X	
<i>Crotalus horridus</i>	Timber Rattlesnake	Endangered				X
Total			10	17	8	12

Transportation, Regional and Local Planning Context- *Excerpt Kate Rattan, Senior Planner, Southeastern Connecticut Council of Governments - View full report in Appendix A*

The Southeastern Connecticut Council of Governments provides a context overview of the property in question. The goal of the information provided by the agency is to educate and not provide conclusions on the merits of the property for open space acquisition through the ERT Team member representative. The recommendations and merits of the property for open space or recreation use can be identified in the State, Regional, and Local Plans of Conservation and Development. This section provides an excerpt of research and summaries from those documents. Based on the transportation expertise of the ERT Team member as follows:

- Formalize public access parking area
- Provide signage both wayfinding and interpretation
- Provide an opportunity for archeological resource stakeholders to provide input on how archeological resources are conserved, curated and or utilized
- Regrade Rude Road and elevate some low spots that see frequent inundation.
- The washed out bridge hampers access and poses a potential safety risk, it is advised to fix or dismantle it. A prefabricated bridge would likely be the cheapest solution.
- Rude Road, while contiguous from Lewis Rd to Parks Rd, is private utilizing it as an accessible amenity may pose some legal challenges without acquisition of the Northerly parcel 114-4-0-RUD1-16, 16 Rude Rd. For instance: Preston is 1.6 miles south of the subject property on Rude Rd. A mountain biker or walker would be able to make a roughly 6 mile loop from Preston City Village North on Jewitt City Road, Parks Road, Rude Road, south on Lewis Road and west on Shetucket Turnpike back to the Preston City Village.



Figure A- 24 Photo of ERT Team Member with Avalonia Land Trust Representative—Broadbrook Area. Source: J. Davies, CTC&D 2016

Transportation Considerations

The Kendall and Thoma properties are currently being used as both a residence and farmland. The “paper road”, ([Rude Road, joins Parks Road and Lewis Road through the subject parcels](#)) could potentially form a connection, although this would not be finalized until all three parcels were conserved. Rude Road travels through a parcel which may be purchased at a later date. Until that time, it would remain private (unless an agreement were made with the owner).

While this was once a public road it now provides private access to the residences on the subject parcels. It is anticipated that this access would be continued if a proposed open space acquisition and conversion occurs. It is also anticipated that passive recreation and educational users would be able to access the parcel via Rude Road. A parking location accessible from Rude Road would need to be evaluated and laid out for public access to property.

It is not anticipated that proposed conversion of farmland to open space would have any negative traffic impact on the surrounding public roadways (Parks Road and Lewis Road). The few adjoining residences may likely see increased traffic on Rude Road for public access. In event of a conversion of the property to open space/conservation land, it is also likely that there would be an increase in pedestrian and bicycle traffic on adjacent roadways. However this would likely be minimal as it is more likely that users would drive to the open space to recreate.

Under current conditions, Rude Road would be passable with a hybrid bike or mountain bike. It is a gravel roadway exhibiting some rutting which would preclude road bikes at this time. Development of bike access may include improvement of the road (regrading, filling in low spots) and/or cutting new paths and offer some ADA accessible access for those with physical impairments assuming some minor road improvements are provided.

Hiking and walking through the property may be enhanced through trail clearing and interpretive signage and way-finding. There are, however, significant wetlands which serve as an impasse to hiking and walking. Some bridge or boardwalk development may allow greater access to the parcel while also protecting significant resources on the property. Access should be balanced with habitat preservation.

A bridge previously was utilized to access farmland to the south of Broad Brook on the Kendall property appears to have been impacted by flooding, rendering it non-functional for access and traffic. While bridge stringers remain, both deck and foundation damage making the crossing unsafe. Repair or removal should be considered for safety consideration. Conservation access for the public for recreational use would not necessarily require a replacement bridge of the same specifications, however a desire to continue farming fields south of the brook, yielding a partnership between Avalonia and farmer may necessitate more enhanced improvements to the bridge.



Figure A– 25– Photo of damaged Broadbrook crossing on south end near small dam. Source: J.Davies, CTC&D 2016

Regional Plans

The Southeastern Connecticut Regional Plan of Conservation and Development (POCD) recommends preservation of agricultural land for both the economic benefit as well as a means of preserving open space. The POCD also supports municipal prioritization for conservation of land which connects existing open space to improve ecological function; to create bicycle and pedestrian connections between park spaces; to improve access to parks; and to develop them as recreation tourism assets to support the tourism economy. Additionally, the POCD recommends preservation of critical habitats. While the CT Department of Energy and Environmental Protection (CTDEEP) Natu-

ral Diversity Base Map for Preston Connecticut does not list the area for “State and Federal Listed Species & Significant Natural Communities”, there are critical habitats along Broad Brook, and the professional ecologists, herpetologist and soil scientists who visited the site may have found additional critical habitats or species.

Local Plans

The Preston Conservation Commission has recommended the creation of five corridors or areas that should be protected, with land that could be acquired through outright purchase or the acquisition of development rights or conservation easement.

Broad Brook is listed as one of the five priority areas and is also depicted as local priority area on the interactive Connecticut Plan of Conservation and Development interactive map.

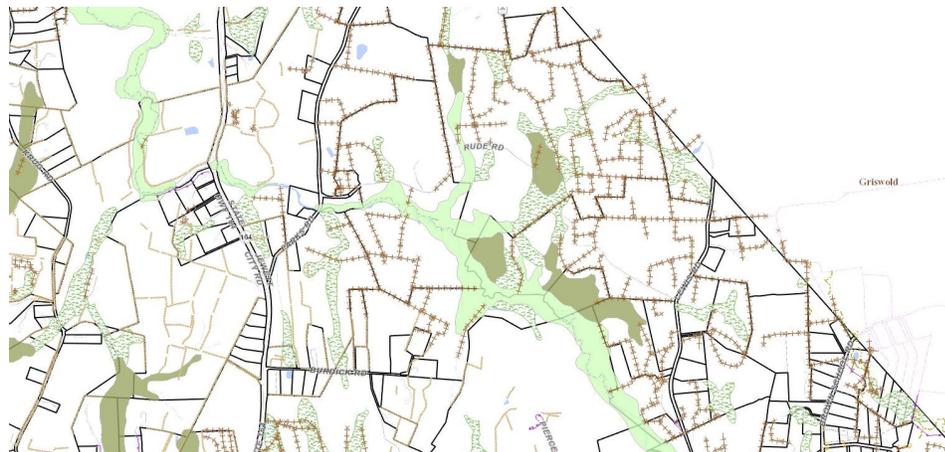
“Broad Brook Streambelt Corridor: Located north of Route 165 and in the area of Route 164, this corridor encompasses Broad Brook and its associated floodplain and wetland areas. Preston Plan of Conservation and Development (pg18) states:

“Broad Brook Streambelt Broad Brook originates at the outlet of Lewis Pond Dam near where Lewis Road meets Route 165. It continues northwest for 4.73 miles passing beneath Route 164. Before emptying into the Quinebaug River, it is joined by Hollowell Brook, Ayers Brook, and Sheep Barn Brook. Primarily, it borders forested and agriculture land. Most sections of Broad Brook are listed as environmentally sensitive areas due to the significant natural resources within its proximity such as wetland soils, 100 year floodplain, and aquifers.

The brook is stocked annually by the CT DEEP with brook and brown trout. The CT DEEP has determined that a portion of Broad Brook is impaired for recreation use due to elevated bacteria levels. In order to protect the brook, it is recommended that the area west of Route 164 and north of 165 be rezoned from R-60 to R-80, if development occurs in close proximity of the brook, conservation development techniques should be implemented, such as, low impact development techniques, Best Management Practices, buffers or conservation subdivisions; in areas where there are agricultural uses, work with farmers to minimize their impacts to the brook. Lastly the town should look to purchase land along the brook or acquisition of development rights.”

It is recommended that an analysis be focused the source of potential stream health impairments on the presumption that Broad Brook has a preliminary determination of “impaired waters” due to higher bacteria levels. This should be taken into account when developing management plans for forest and agricultural fields within the conservation area which feed Broad Brook. The Preston POCD notes that some portion of these properties is considered either Prime Farmland Soil or Statewide Important Farmland Soil.

Figure A-26—
Town of Preston Online GIS Viewer—Areas of fencing and wetlands



State Planning Context- *Jeanne Davies, AICP Planner, CTC&D –Excerpt of additional maps are provided in Appendix A*

The State Plan of Conservation and Development (POCD) provides a birds-eye view of recommended land use statewide. It is a guidance document for state agencies and works in collaboration with regional and local plans of conservation and development. The maps provided below are provide guidance only. In and outside of the focus areas for priority funding areas and priority conservation areas, it is also advisable to identify potential conservation-open space acquisition based on site specific data and ecological findings on site. While the Kendall Thoma parcel on Rude Road is not specifically designated as a priority conservation area, review of site data, the site's proximity to a priority conservation area, along with site specific resource findings identify this property as one of potential state significance.

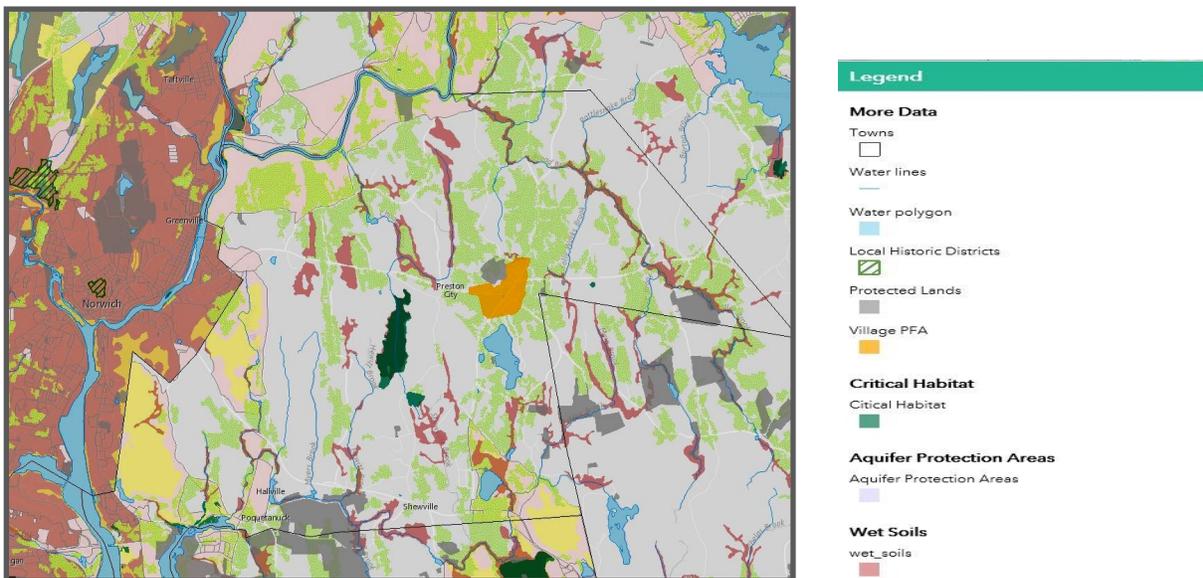


Figure A-27—CT POCD Interactive Map—Focus Area— Town of Preston, CT



Figure A-28—CT POCD Interactive Map—Focus Area— Rude Road—Preston, CT

The *2013-2018 Conservation and Development Policies Plan for Connecticut (State C&D Plan)* is Connecticut's planning framework for ensuring that state-sponsored actions and grants represent wise planning choices for Connecticut's future, as defined by six growth management principles. The State [Locational Guide Map](#), a component of the State C&D Plan used that is used for evaluating the characteristics of a particular property when determining consistency with State C&D Plan policies, shows the following conservation criteria present at the Rude Road (Kendall Thoma) parcels: priority conservation areas, prime agricultural soils; wetland areas; and core forest. Conservation Areas are delineated based on the presence of factors that reflect environmental or natural resource values. In contrast to Priority Funding Areas, which are based on man-made Census Blocks, Conservation Areas are based on existing environmental conditions, such as soils or elevation, which oftentimes have no visible boundaries.



Conservation Areas include any one or more of the following factors:

- Core Forest Areas Greater than 250 acres based on the 2006 Land Cover Dataset
- Existing or potential drinking water supply watersheds
- Aquifer Protection Areas Wetland Soils greater than 25 acres
- Undeveloped Prime, Statewide Important and locally important agricultural soils greater than 25 acres,
- Category 1, 2, or 3 Hurricane Inundation Zones 100 year Flood Zones,
- Critical Habitats (depicts the classification and distribution of twenty-five rare and specialized wildlife habitats in the state), or 1
- Locally important conservation areas (based on data authorized/submitted by municipalities)



The area of Rude Road and Broad brook is listed as a local priority conservation area and is also adjacent to a level 1-3 factor state priority conservation area. This may be due to a several factors including potential forest and habitat continuity with Pachaug State Forest nearby.



Figure A-29 —Photos of ERT Team at site visit—
Source: J. Davies, CTC&D 2016



Figure A-30 Photo of Agriculture Fields near parcels evaluated as part of ERT. Source: J. Davies, CTC&D 2016

Soils and Agriculture - Excerpt Kip Kolesinskas , Consulting Conservation Scientist— View full report in Appendix A

Easement language developed for the parcels should be working lands friendly, and allow agricultural and forestry activities under the direction of a Conservation Plan and/or Forest Management Plan. The two parcels don't have enough active agricultural land to qualify for the State or Federal Agriculture Easement programs as there is too high a percentage of forest land. The parcels may qualify for the USDA NRCS Healthy Forest Reserve Program, which is an easement program. The parcel is in a New England Cottontail priority area and has outstanding turtle habitat. Both of these habitats are currently USDA NRCS priorities at this time at the State and National level. A third piece that is not included in this ERT but may be considered for acquisition in the future contains a large field which may be suitable for one of the agriculture easement programs.

Soil Resources:

The soil resources of the Rude Rd. parcels are typical of eastern Connecticut landscapes. Parcel 1 is the western parcel; Parcel 2 is the eastern parcel.

Parcel 1:

The portion north of Rude Rd. is dominated by steep to very steep slopes of bedrock controlled soil landscapes dominated by a complex of shallow to deep glacial till soils over bedrock. Deeper soil areas are Charlton soils, moderately deep Chatfield soils, and shallow areas of Hollis soils. There are also areas of exposed rock outcrop. Soil map units are 76E, 75E, 73E. These areas are dominated by hardwood forest and are best suited to passive recreation and wildlife habitat. The southwest corner of this portion has a pocket of sloping deeper Charlton and Leicester and Whitman soils. Soil map units are 61C, 60C, 3. A portion of the Charlton and Leicester soils had been cleared and used for agriculture and are currently grown up to old field and early successional habitat. The area of Leicester and Whitman soils (3) is an area of wetland soils; the hydrology is driven by surface and subsurface water

from upland areas and bedrock fractures. Seepage areas like this are important sources of cool groundwater discharge to the brook.

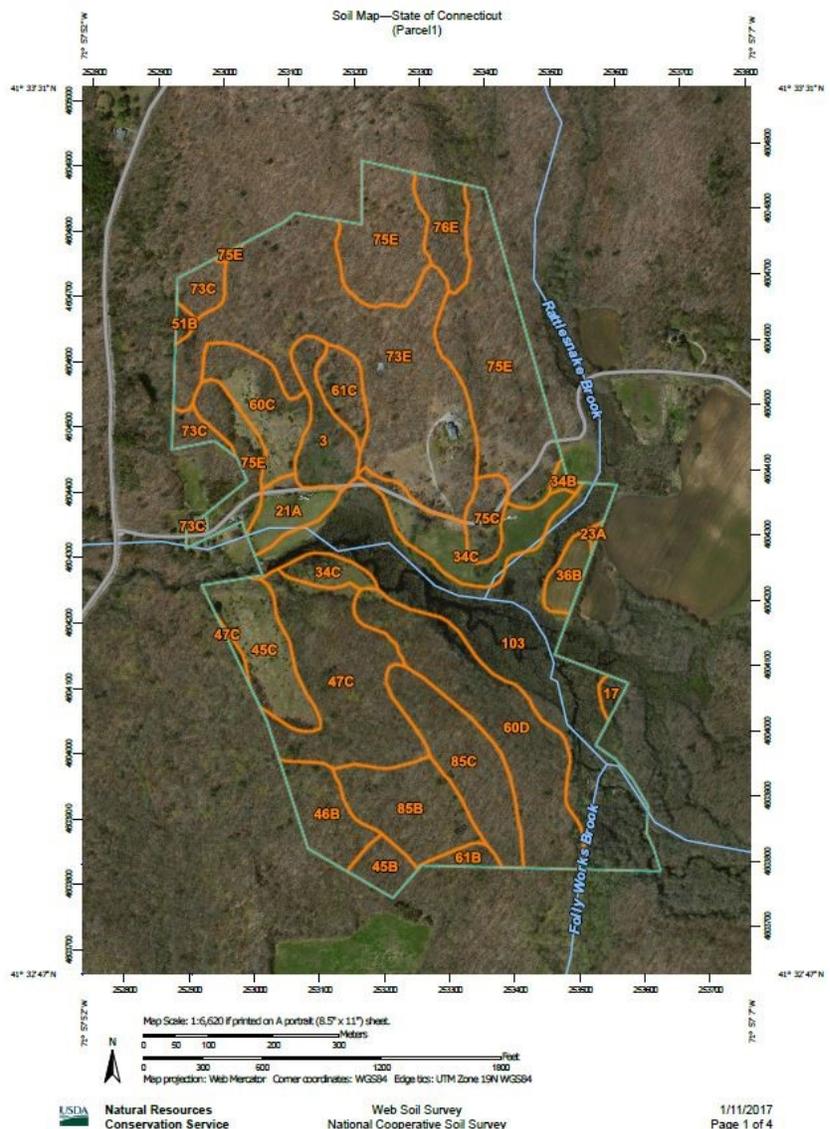
The portion south of Rude Rd. is dominated by deep gently sloping and sloping dense glacial till soils. The upper portion is dominated by moderately well drained Woodbridge soils and well drained Paxton soils. Many areas have very stony to extremely stony surfaces. Soil map units are 45B, 46B, 47C, 85B, 85C. A narrow band of steep well drained Charlton soils (60D) is on the side slope down to the Brook. Seepage from the dense till landform helps supply base flow to the brook. Some areas that had been cleared and were used for agriculture are currently grown up to old field and early successional habitat suitable for the New England Cottontail. The more gentle slopes and highly productive soils are suited to more intense forest stand management and agricultural use. The major limitation is access, which is currently by traversing over a failing dam/bridge.

The center of the parcel is dominated by a complex riparian corridor of nearly level sandy moderately well drained Ninigret and Sudbury soils to gently sloping to sloping somewhat excessively drained and excessively drained sandy Merrimac and Windsor glacial outwash soils.

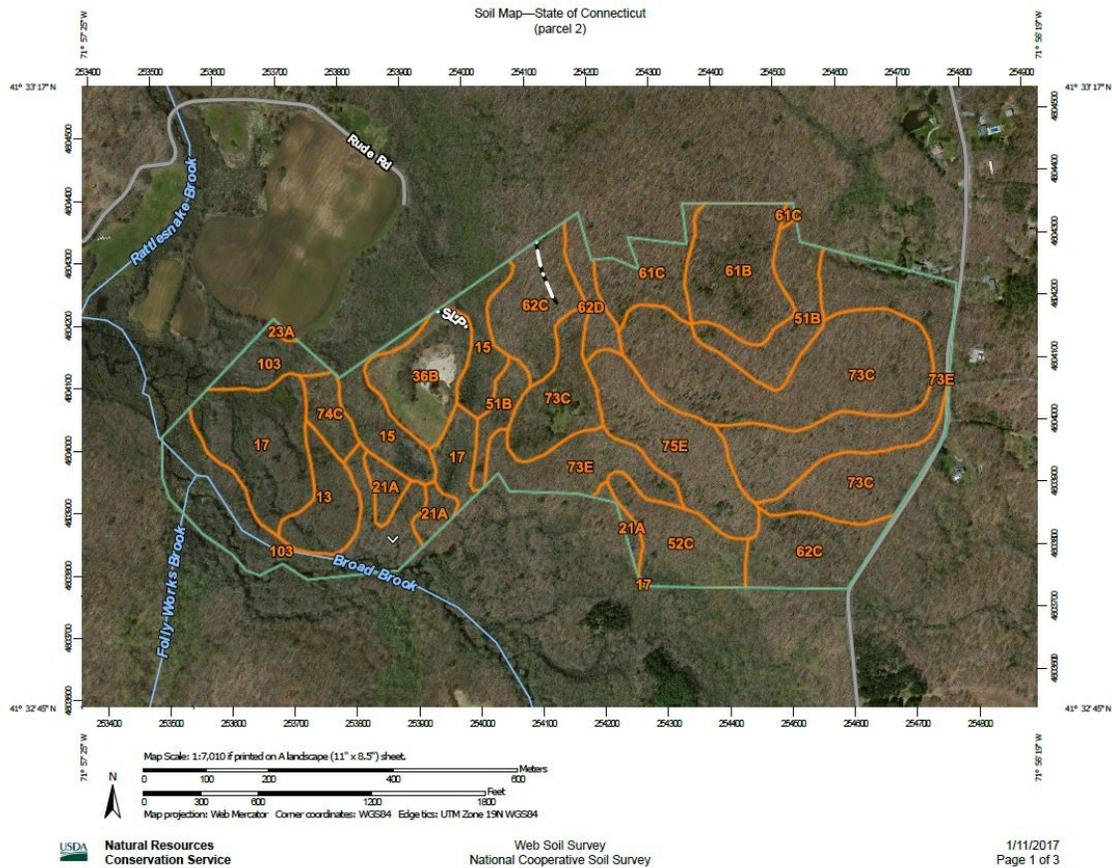
Most of these soils are actively farmed and in either hay or corn production. They are highly productive agricultural soils suited to a wide variety of crops. Areas of 8-15% slopes are best suited to hay, pasture, or fruit/tree crops. There are a number of farms in close proximity to these parcels. It is recommended the fields continue to be available for agriculture, with management under a conservation plan.

The floodplains along Broad Brook and Rattlesnake Brook are dominated by poorly drained Rippowam soils (103), and unmapped areas of very poorly drained Saco soils, open water, and small areas of very poorly drained organic Timakwa and Natchaug soils (7). The hydrology of this portion of the landscape is largely controlled by the dam at the western end of the parcel which has increased the depth of water and changed the flooding regime.

A brief examination of the dam and infrastructure shows there is piping and degradation, with the possibility of the dam being breached from a storm event at some point. This landscape is dominated by shrubby wetlands,



emergent wetlands, and open water habitat. I would expect this section of Broad Brook and tributaries to offer outstanding turtle habitat for a variety of species due to the habitat in near vicinity to the open fields with sandy soils which offer preferred nesting sites.



Parcel 2

A few areas of rock outcrop and an area of bedrock controlled soils from shallow to deep (74C) are also present. This complexity of different soil textures, drainage classes, topography, and hydrologic regime offer a diversity of habitats and vegetative communities, dominated by forested wetlands and shrub/scrub vegetation. Similar to areas in Parcel 1, sandy open fields in close proximity to the wetland systems would be important turtle habitat. Much of this area is difficult to traverse, and it is difficult to design trails to overcome the soil limitations.

The western portion of the parcel is dominated by loose glacial till soils. The southern portion is dominated by steep to very steep slopes of bedrock controlled soil landscapes dominated by a complex of shallow to deep glacial till soils over bedrock. Deeper soil areas are Charlton soils, moderately deep Chatfield soils, and shallow areas of Hollis soils. There are also areas of exposed rock outcrop. More gently sloping to sloping areas are dominated by Charlton and Chatfield soils (73C). The southwest corner of this portion has a pocket of sloping deeper very stony well drained Charlton and extremely stony moderately well drained Sutton soils. A few inclusions (too small to map out) of seep areas with the associated very stony to extremely stony poorly drained and very poorly drained Leicester and Whitman soils are also present. More gentle slopes and productive soils make much of this portion suitable for passive recreation and active forest management. These soils are currently dominated by hardwood forest.

Landscape Ecology *Excerpt Charlotte Pyle, PhD, Ecologist — View full report in Appendix A*

The Kendalls and Thoma East parcels would be valuable parcels to preserve and also would strongly complement (and be complemented by) future acquisition of the middle parcel. The middle parcel, currently is not under consideration, but (it is to be hoped) may play an important role in the ultimate management of the property.

The Kendalls and Thoma East parcels, taken together, offer a valuable slice of the Connecticut landscape. There is a wide diversity of habitats including open pasture, shrub swamp, red maple swamp, riparian woodlands, shrubby wooded fencerows, upland woodlands, and a sand barren area (the remains of a sand quarry). Current and past human land uses have shaped the landscape contributing to habitat diversity and features of historical interest.



Rude Road connects the Kendalls and Thoma East parcels, bisecting them both as well as bisecting the middle property. **However, it is important to note that without the middle parcel, there is no upland connection between the Kendalls and the Thoma East parcels.** An upland right-of-way along the portion of Rude Road that runs across the middle property is highly desirable. In the absence of such right-of-way, there is separate access to both the Kendalls and Thoma East properties from Parks Road and Lewis Road, respectively. And, both parcels independently have value not contingent upon being able to walk from one to the other.

Rude Road is an important feature within the property. It is accessible to cars, hikers, and people with large-wheeled baby strollers and, conceivably (to my admittedly inexperienced eye), to people in motorized wheelchairs. Looking south from the vantage point of Rude Road in the Kendalls parcel, one gets a strong sense of place, very much in the character of the small rural valleys of Connecticut where agriculture, woodlands, and a sense of history are intertwined. Views from the road lack the intrusion of modern subdivisions; and the shape of the land's surface and presence of forested wetlands protect it from the sight of any nearby future development. (In particular, steep slopes on the southern end of the Kendalls parcel, upland woods and wooded wetlands south of the Thoma East parcel, and steep topography and forest cover north of Rude Road cushion the road from sight of any future development.)

Historical Human Land Use

Evidence of historical human land use abounds. The forests on the property are characterized by a dense network of well-built stone walls that outline areas of past agriculture use. Where Rude Road enters the western boundary of the Thoma East parcel, a southwest-running wall leads toward an area where it appears that the topsoil was pushed up and crowded into a berm to enable mining of the sand beneath the area. From the east side of the sandy area, a rock-retained, old, wide, roadbed links the sandy area to Rude Road. Forking from this roadbed is what appears to be a logging skid trail that intersects Rude Road east of the sand quarry road.

On the north side of the flat, high point of Rude Road (located on the Thoma East parcel), the remains of an old home place include a house foundation (and out buildings?) with an apple tree in

the door yard and a barn foundation behind. (I will refer to this site as the house/barn foundations.) The rockwork in the sunken barn foundation is interesting; it includes large worked rocks and what appear to be Inca-like steps in one wall (Photos 1 and 2). (An archaeologist's opinion might yield light on the "steps".)



notebook at base of barn foundation is 13" tall



foundation wall with 3 flat, extruded steps" (3rd step touches tree trunk)

East of the house/barn foundations and north of Rude Road, steep slopes and some ledge lead to a high flattish area with multiple rock walls. This area had scattered trees in 1934 (as seen on Fairchild aerial photo 02609). More recently there has been logging. Despite being quite obstructed by trees, the winter view from the south edge of the upland (above the ledge) offers a pleasing sense of being at an elevated overlook.

Within the flattish area are two piles of carefully stacked rocks. Further investigation by an expert as to whether or not they are of Native American origin is recommended.



Rock pile in elevated flat north of Rude Rd on Thomas East parcel

Notes on Vegetation and Natural Habitat

An existing inventory (I believe of the entire property, *i.e.*, the three parcels) lists 330 plants, of which 82% are native, a proportion far greater than the State-wide average (*possibly reflecting more time spent in the natural portions of the landscape?*). Virginia Three-seeded Mercury (*Acalypha virginica*) is listed as *Special Concern* by the State of Connecticut.

The steep topography east of the house/barn foundations and north of Rude Road includes a small section of south-facing ledge on which Common Polypody (*Polypodium virginianum*), a somewhat unusual, but not rare, fern present. Below this ledge, there has been recent logging. The ledge is too dry for the moisture-loving plants found in ledge systems with moss or dripping water.

Sand barrens such the old sand quarry are inhospitable habitat for many plants, thus allowing certain plants that can tolerate the dry conditions to survive without being outcompeted. In the growing season, the plants of the sand quarry area should be examined more thoroughly if they have not already been catalogued. In addition, Tiger Beetles and Turtle egg-laying sites are to be looked for.

The extensive shrub wetlands bordering Broad Brook are valuable wildlife habitat. Shrub lands are a habitat type lacking in Connecticut. These wetlands are well-buffered by the strips of upland trees and shrubs growing between the wetlands and open hay fields. The presence of upland buffer vegetation helps support the water quality. It should be noted that on the 1934 aerial photo, the streamside shrub lands do not appear to have standing water (and in fact, in some places appear to have been hayed) -- thus, per Kip Kolesinskas, today's standing water is dependent on the presence of the downstream dam on the Kendalls parcel.



from Fairchild 1934 aerial photo 02609

Open areas of Broad Brook in 1934
Kendalls, middle parcel, and Thoma East parcels

Invasive Species Recommendations

The 58 non-native species reported for the property include species officially listed by the State as *Invasive* (21) and *Potentially Invasive* (2). {With reference to the species list, note that *Phalaris arundinacea* [Reed Canary Grass] in Connecticut is believed to be derived from Introduced sources and is listed as *Invasive* by the State.} The presence of invasive species, while something that should be addressed, is not an overwhelming factor on either of the two parcels.

For the future, some invasive species which merit immediate attention include the Autumn-olive (*Elaeagnus umbellata*) found in the sand quarry area (which if not removed will shade out other plants dependent upon a sunny, infertile, sandy site). Scattered *Phragmites* (noted particularly in the wetland associated with Rattlesnake Brook bordering the hayfield west of the brook should be controlled before it spreads. {Note this may be on the middle parcel.} Garlic Mustard (*Alliaria petiolata*) and Japanese Barberry (*Berberis thunbergii*; and Common Barberry [*B. vulgaris*] as well) are easily-recognized and respond to mechanical control, making them suited to *ad hoc* volunteer efforts. Mugwort (*Artemisia vulgaris*), more typically found in disturbed agricultural areas is tenacious and should be controlled promptly in natural areas. Where Multiflora Rose (*Rosa multiflora*) and other invasive shrubs are found between agricultural fields and wetlands, their value in buffering the wetlands should be taken into account before deciding to remove them.

Euonymus fortunei (Climbing Spindle-tree; Wintercreeper), an evergreen/semi-evergreen perennial that creeps across the ground until it finds something to climb, was noted in trees along Rude Road in the old house/barn foundations area. Although not officially listed as invasive in Connecticut, there are increasing reports of this species appearing in native woodlands. As a precaution, it should be pulled where encountered. Note that it is used horticulturally; and there are multiple cultivars, some of which may be more invasive than others. (Vines in treetops may be controlled by cutting and then pulling [or chemically treating] the roots. The portion in the treetops may be left in the tree tops rather than pulled down to avoid damage to fine twigs.)



Figure A-31 ERT Site Visit. Source: J. Davies, CTC&D 2016

**APPENDIX A
ERT TEAM—INDIVIDUAL REPORTS**

