






































QUATERNARY GEOLOGY

THOMPSON, CONNECTICUT

LIST OF MAP UNITS

POSTGLACIAL DEPOSITS - late Holocene, late Wisconsin		GLACIAL MELTWEATER DEPOSITS - late Wisconsin		Explanation of Map Symbols	
	Artificial Fill		Un differentiated Meltwater Deposits		Inferred Ice Margin Position
	Coastal Beach and Dune Deposits		Deposits of Major Ice-Dammed Lakes		Inferred Ice Margin Position
	Tidal Marsh Deposits		Deposits of Major Sediment-Dammed Lakes		Esker
	Floodplain Alluvium		Deposits of Related Series of Major Ice-Dammed Ponds		Glacial Striation or Groove
	Swamp Deposits		Deposits of Related Series of Major Sediment-Dammed Ponds		Drumlin Axis and Center
	Talus		Deposits of Proximal Meltwater Streams		Meltwater Channel
			Deposits of Distal Meltwater Streams		Inferred Glacial Spillway
EARLY POSTGLACIAL DEPOSITS - early Holocene, late Wisconsin		GLACIAL ICE-LAKE DEPOSITS - late Wisconsin, Illinoian			Inferred Glacial Spillway
	Stream Terrace Deposits		Thin Till Deposits		Location of Lower Till
	Inland Dune Deposits		Thick Till Deposits		Two-Till Outcrop
			End Moraine Deposits		Delusio Bedding Locality
Explanation of Map Symbols		Elevation Contours			Weathered Bedrock Outcrop
	Area of glaciofluvial deposits grading to glacial lake		100 Ft. Interval		Radiochron-Dated Locality
	Area of lake-bottom sediments		50 Ft. Interval		
	Drainage Divide - Boundary between major geologic basins.				
	Drainage Divide - Boundary within major geologic basin dividing it into north-draining and south-draining regions				

EXPLANATION

Quaternary Geology is a 1:24,000-scale data set that illustrates the geologic features formed during the last 10,000 years. The Quaternary Period has been a time of development of many of the features that are present in Connecticut today. The Quaternary Period includes the Pleistocene, Holocene, and Recent epochs. The Pleistocene epoch is the last of the Pleistocene, continental ice sheets swept across Connecticut from the north. Their effects are pervasive important to present-day occupants of the land.

The Quaternary Geology information illustrates the geology and history of the Quaternary Period. The Quaternary Period is the last 10,000 years of geologic time and includes the Pleistocene, Holocene, and Recent epochs. The Pleistocene epoch is the last of the Pleistocene, continental ice sheets swept across Connecticut from the north. Their effects are pervasive important to present-day occupants of the land.

Quaternary Geology map of Connecticut and Long Island Sound Basin. A compass, the Surficial Materials Map of Connecticut, emphasizes the surface and subsurface geology of the Quaternary Period. The Quaternary Geology map and surficial materials features portrayed on these two maps are very closely related.

The Quaternary Geology information illustrates the geologic history and the distribution of depositional environments during the emplacement of unconsolidated glacial and postglacial surficial deposits and the landforms resulting from those events. The Quaternary Geology data are derived from a variety of sources, including map thickness, overlie the bedrock surface and underlie the organic soil layer of Connecticut. Quaternary Geology is mapped without regard for any organic soil layer that may overlap the deposit.

The Connecticut Quaternary Geology information was initially compiled at 1:24,000 scale (1 inch = 2,000 feet) then recompiled for a statewide 1:125,000-scale map. Quaternary Geology Map of Connecticut and Long Island Sound Basin. A companion map, the Surficial Materials Map of Connecticut, emphasizes the surface and subsurface texture (grain-size distribution) of these materials. The Quaternary Geology and Surficial Materials features portrayed on these two maps are very closely related.

The Connecticut Quaternary Geology information was initially compiled at 1:24,000-scale maps (1 inch = 2,000 feet) then recompiled for a statewide 1:125,000-scale map. The Quaternary Geology Map of Connecticut and Long Island Sound Basin. A companion map, the Surficial Materials Map of Connecticut, emphasizes the surface and subsurface (to a depth of 10 feet) of surficial materials. The quaternary geology and surficial material features portrayed on these two maps are very closely related and each contributes to the interpretation of the other.

Most of Connecticut's surficial material is glacially derived, and can be divided into two broad depositional categories: Glacial Ice-Led Deposits (unsorted and generally nonstratified till, till, thick till, and end moraine) which are generally deposited on the uplands, and are the most widespread surficial deposit in Connecticut; and Glacial Meltwater Deposits (sorted and stratified deltaic, river bottom, lake bottom, and inland dune deposits) which are most commonly concentrated in valleys and lowlands.

Most of Connecticut's surficial material is glacially derived, and can be divided into two broad depositional categories: Glacial Ice-Laid Deposits (nonsorted and generally nonstratified till, thick till, and end moraine) which are generally exposed in the uplands, and are the most widespread surficial deposit in Connecticut; and Glacial Meltwater Deposits (sorted and stratified deltaic, river bottom, lake bottom, and inland dune deposits) which are most commonly concentrated in valleys and lowlands.

Particular attention has been paid to understanding the distribution and characteristics of stratified meltwater deposits because they have historically influenced development patterns and groundwater availability throughout the state. Within the meltwater category, six classes of deposits have been recognized based on the conditions that prevailed during their emplacement. Four of the seven indicate whether previously deposited sediment, or the glacier itself, impounded the lake or pond where emplacement occurred (see the meltwater deposit discussion below). Meltwater stream deposits are differentiated by distance (proximal or distal) from the ice sheet where they were emplaced, and a separate meltwater map unit is reserved for deposits of undetermined provenance (uncorrelated).

Postglacial Deposits were emplaced by various processes after the melt back of the last ice sheet. Some of these deposits were emplaced early in post-glacial time and have been grouped together as Early Postglacial Deposits. Later deposits, resulting from processes that are still active (or are manmade), have been grouped together as Postglacial Deposits.

Glacial Ice-Laid Deposits (nonsorted and generally nonstratified thin till, thick till, and end moraine); **Glacial Meltwater Deposits** (sorted and stratified deltaic, river bottom

North
Ice-Contact (collapsed)

Figure 1: A morphosequence is a body of meltwater deposits composed of a continuum of terrace, delta plains), that were deposited simultaneously at and beyond the margin of a glacier through sand and gravel and sand beneath delta plains and foreset slopes to silt and clay in lakes.

Deposition of the morphosequences that progressively filled bedrock valleys and lowlands as the last glacier melted northward required the presence of impounded lakes and ponds. The nature of the impoundments and the resulting distribution of the meltwater deposits on the landscape were controlled by the topography of the area being deglaciated. Where a northward succession of ice positions was established in south-draining basins, previously deposited sediment formed the dams, and the oldest morphosequences occupied the lowest, widest parts of the valley. Deposition then

North

North-1

Narrow Basin

South-I

Figure 2: Scenario for morphosequence development in ice-dammed (Top) and sediment-compositions of the deposits are related to the orientation of the basins relative to the direction Map Units (after Stone and others, 2005).

Postglacial Deposits (flood-plain alluvium and swamp deposits, but also including stream-terrace, talus, dune, tidal-marsh, beach, channel fill, marine delta deposits, and artificial fill) are less widely distributed and are typically thinner than the glacial deposits that they overlie. The oldest postglacial deposits occur in Long Island Sound and in southeastern Connecticut because these areas were deglaciated first. Many of the depositional processes that were initiated as postglacial conditions began to prevail are still operative today.


Postglacial deposits provide locally important ecological, agricultural, commercial,

DATA SOURCES

QUATERNARY GEOLOGY DATA – Quaternary Geology shown on this map is from the Quaternary Geology Poly. Point Feature, and Line Feature dataset intended to be used at 1:24,000 scale. Based on Connecticut Quaternary Geology digital spatial data published in 2005 by the U.S. Geologic Survey, in cooperation with the Connecticut Department of Environmental Protection. These data were digitized from the 1:24,000-scale compilation sheets prepared for the statewide Quaternary Geology Map of Connecticut, (Stone, J.R., Schafer, J.P., London, E.H., DiGiacomo, Cohen, M. L., Lewis R.S. and Thompson, W.B., 2005, U.S. Geological Survey special map, 2 sheets, scale 1:125,000).

BASE MAP DATA - Based on data originally from 1:24,000-scale USGS 7.5 minute topographic quadrangle maps published between 1969 and 1992. It includes political boundaries, railroads, airports, hydrography, geographic names and geographic places. Streets and street names are from Tele Atlas® copyrighted data. Base map information is neither current nor complete.

CONTOUR DATA - Derived from Connecticut's 2000 statewide LiDAR, (Light Detection And Ranging), dataset by the University of Connecticut, College of Agriculture and Natural Resources, Department of Natural Resources and the Environment. These data are a Beta product intended for research and demonstration purposes. NOTE: Contour line data is known to be incorrect in some areas due to anomalies in the underlying elevation data used to generate those specific contour lines. Areas where contour lines are too straight or angular, do not naturally curve where expected, or don't exist where they probably should are good indications of erroneous data.



STATE OF CONNECTICUT
DEPARTMENT OF
ENVIRONMENTAL PROTECTION
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Hartford, CT 06106-5127

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RELATED INFORMATION
This map is intended to be printed at its original dimensions, (48 x 36 in), in order to maintain the 1:24,000 scale (1 inch = 2,000 feet).

QUATERNARY GEOLOGY AND SURFICIAL MATERIALS DATA - 1:24,000 scale digital spatial data of Connecticut Quaternary Geology and Surficial Materials combined into one dataset, published by the Connecticut Department of Environmental Protection, in cooperation with the U.S. Geological Survey. These data were digitized from the 1:24,000-scale compilation sheets prepared for both the Southern New England and the New England Provinces, by E.H. Lorden, E.H. and Thompson, W.B., 1992, U.S. Geological Survey Special Map 2, sheets, scale 1:125,000, map and pamphlet, 71 p.) and the Quaternary Geologic Map of Connecticut and Long Island Sound Basin (Stone, J.R., Schaffer, J.P., Lorden, E.H., DiGiacoio-Cohen, M.L., Lewis, R.L., and Thompson, W.B., 2005, U.S. Geological Survey Scientific Investigation Map 2784, 2 sheets, scale 1:125,000).

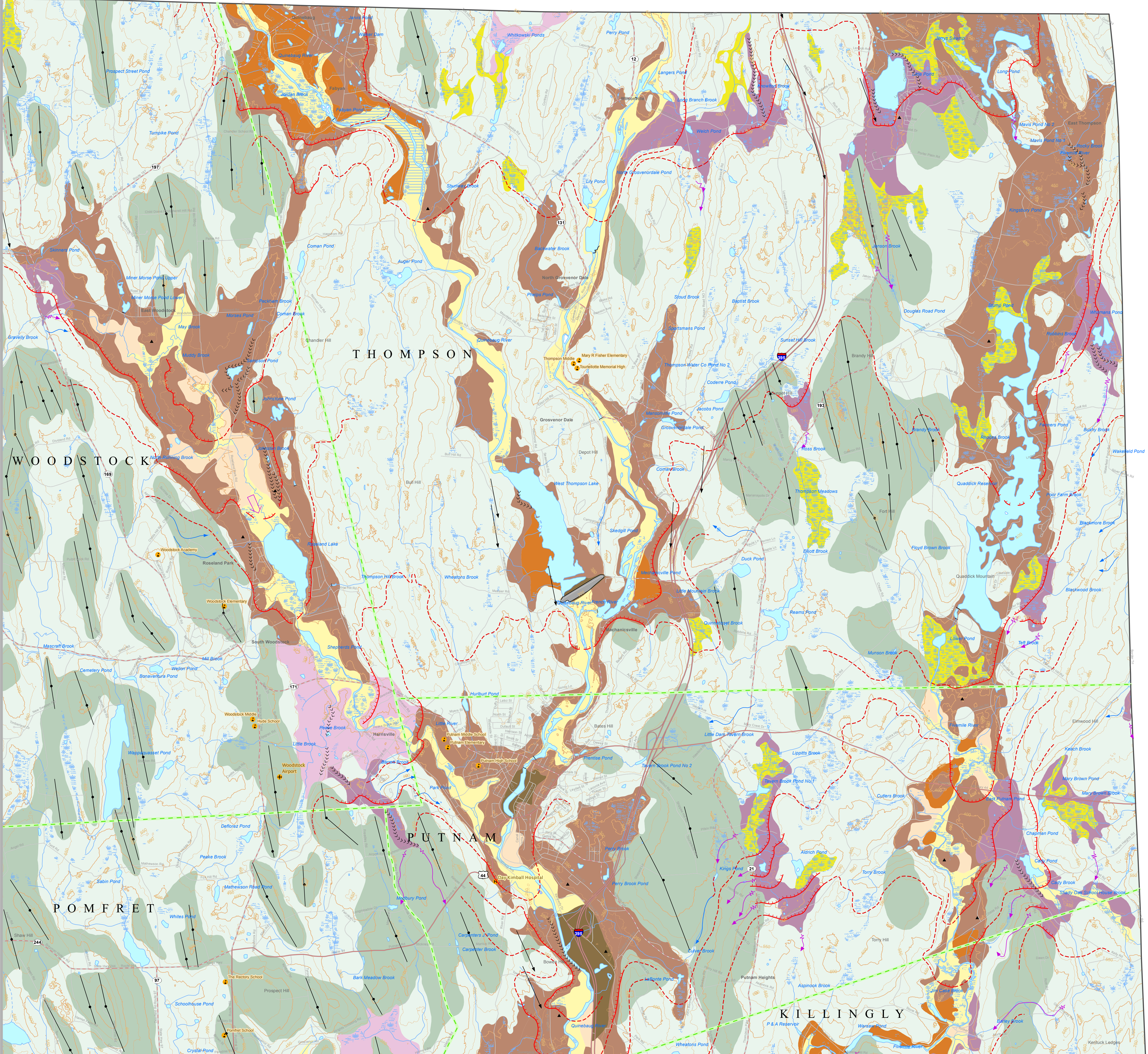
OTHER GEOLOGIC MAPS - This map is also available for individual USGS topographic quadrangles of Connecticut. This map is intended to be used with other bedrock, surficial, and quaternary (glacial) geology town maps and reports published by the Connecticut Geological and Natural History Survey, USGS, and others. Those maps and reports are also available from CT DEP.

MAPS AND DIGITAL DATA - Go to the CT ECO website for this map and a variety of others. Go to the CT DEP website for the digital spatial data shown on this map.

MAP LOCATION

6 in)

State Plane Coordinate System of 1983, Zone 3526
Lambert Conformal Conic Projection
North American Datum of 1983



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79 Elm Street
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Map created by CT DEP
December 2010

Map is not colorfast
Protect from light and moisture

