

LIST OF MAP UNITS

Quaternary Geology is 1:24,000-scale data that illustrates the geologic features formed in Connecticut during the Quaternary Period, which spans from 2,588 to 0.0005 million years ago. The Quaternary Period is the most recent of the geologic eons and eras (geological) epochs. The Quaternary Period has been a time of development of many elements of the Connecticut landscape and all surficial deposits. At least twice in the last 100,000 years, the climate has shifted from warm to cold and back to warm. These effects are pervasive importance to present-day occupants of the land.

The Quaternary Geology information illustrates the geologic history and the distribution of depositional environments during the development of unconsolidated glacial and postglacial surficial deposits and the landforms resulting from these events. The Quaternary Geology surficial deposits range from very fine-grained silts and clays to thick, overbank sand and gravel deposits. The surficial deposits vary in thickness, overlie the bedrock surface and underlie the organic soil layer of the Connecticut Forest and Park Service. The Quaternary Geology surficial deposits are mapped regardless of whether any organic soil layer is present, which may overly 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. The Quaternary Geology Map of Connecticut and Long Island Sound Basin: A comparison of Quaternary Geology and Geologic History of Connecticut, 1997, includes a surficial texture (grain-size) description of these materials. The quaternary geology

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The Quaternary Geology information illustrates the geologic history and the distribution of depositional environments during the development of unconsolidated glacial and postglacial surficial deposits and the landforms resulting from these events. The Quaternary Geology surficial deposits range from the presence of thin ice-free thickness, overlie the bedrock surface and underlie the organic soil layer of the Connecticut State Soil Survey. The Quaternary Geology is mapped regardless of whether the Quaternary Geology is mapped regardless of whether any organic soil layer that may overly 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. The Quaternary Geology Map of Connecticut and Long Island Sound Basin: A comparison of Quaternary Geology and Lithology, published by the Connecticut Department of Environmental Protection, is available in hard copy and electronic format. The map shows subsurface texture (grain-size) distribution of these materials. The quaternary geology

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 unconsolidated) and Glacially Sorted Deposits (sorted and generally well-consolidated). The latter are the most widespread surficial deposits in Connecticut, and include Meltwater Deposits (sorted and stratified ditches, 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 and land use patterns in the state. The Meltwater Deposits of Connecticut are divided into six categories, six classes of deposits have been recognized based on the conditions that prevailed during their emplacement. Four of the seven indicate whether previously deposited material was remobilized during meltwater deposition. The remaining two indicate whether meltwater deposition occurred (see the meltwater deposit discussion below). Meltwater stream channel deposits are differentiated based on their distance (proximal or distal) from the ice sheet margin. The map of meltwater deposits in the meltwater map unit is reserved for deposits of undetermined provenance (unsorted).

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

North

Ice-Contact (collapsed)

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

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

Postglacial deposits provide locally important ecological, agricultural, commercial,

QUATERNARY GEOLOGY DATA – Quaternary Geology shown on this map are 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. Geological 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., Schärer, P.J., London, E.H., DiGiacoia, Cohn, M., Lewis, R.S. and Thompson, W.B., 2005, U.S. Geological Survey Special map, 1:24,000 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. Includes 5 minute boundaries, railroads, airports, hydrography, geographic names and geographic features. Roads and street names are from the "Auto Atlas" copyrighted data base. Base map information is neither current nor complete.

SCALE 1:24,000 (1 inch = 2,000 feet) when map is printed at original size

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

- × Weathered Bedrock Outcrop
- ⊙ Radiocarbon-Dated Locality

Glacial Ice-Laid Deposits (nonsorted and generally nonstratified thin till, thick till, and end moraine) were derived directly from the ice and consist of nonsorted, generally nonstratified mixtures of grain-sizes ranging from clay to large boulders. The matrix of most tills is predominantly sand and silt, and boulders can be sparse to abundant. Some tills contain lenses of sorted sand and gravel and occasionally masses of laminated fine-grained sediment. The lack of sorting and stratification typical of ice-laid deposits often results in poorly drained, difficult to dig in or plow, midwestern sources of groundwater and unsuited for septic systems. Till blankets the bedrock surface in variable thicknesses and commonly underlies stratified meltwater deposits. End moraine deposits (primarily ablation till) occur principally in southeastern Connecticut. Ice-laid deposits are inferred to be of Wisconsinan age except where exposures of older (probably Illinoian) till are shown. Drumlins are inferred to be composed of older till mantled by younger till.

The mapping presented here and on the Quaternary Geology Map of Connecticut and Long Island Sound Basin is based on recognizing single bodies of sediment or assemblages of glacial sedimentary facies that can be identified as mappable units known as morphosequences (Kotěff and Pessl, 1981). Different sedimentary facies are

South
Lake-Bottom

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 are reports are also available from CT DEP.

