Soil Catenas of Connecticut

The relationships between soils, landscapes, geology, and parent material

There are 104 major types of soils in Connecticut identified and named. Each type, or series, is named for the geographical area where it was first described. Each soil series has specific relationships to landscapes, regional geology, and parent materials. Related soils of about the same age, derived from similar parent material and occurring under similar climatic conditions, can be arranged into a sequence of increasing wetness. This sequence is called a soil catena.

The soil series of Connecticut have been arranged into the soil catena chart in this brochure. Each horizontal line in the chart represents an individual soil catena and each catena is in turn arranged vertically by differences in surficial deposits, lithology, and soil texture. There are 9 very-poorly drained soil series formed in organic deposits. These have been organized differently at the bottom of the chart.

Since the publication of the soil surveys for Hartford, Tolland, and Litchfield counties, the classification of soils has come to be based upon a different classification system that is continuing to evolve. When using the published soil surveys, one will encounter a variety of soil series names that are not currently in use. These series are noted at the bottom of the chart and are referenced by number to the most current name available at the time of this publication. For example, the soil mapped as Acton, if classified by today's standards, may be named Sutton.

The figure below is a simplified bedrock geological map of Connecticut. This map illustrates the regional distribution of bedrock types across the state. It can also be used to determine where a particular soil series may occur. For example, the central portion of Connecticut is a low-lying valley underlain by sedimentary red sandstones and shales. Soil series such as Holyoke and Manchester are found exclusively here. Similarly, soils such as Stockbridge and Nellis occur only in the narrow, limestone valleys located along the western border of the state. The remainder of the state is underlain by acidic gneisses and schists over which most of Connecticut's soils have formed.

The USDA Natural Resources Conservation Service (formerly Soil Conservation Service) has published a soil survey for each of the eight counties in Connecticut. These survey books were completed over a 35-year period. Since the eight county surveys were independent surveys and are of different vintages, they each differ in some respect.

Soils information is being updated throughout Connecticut as part of a multi year project that began in 1991. Field work was completed in 2002. The final product will be a statewide survey, with a single legend, on 1:12,000 quarter quadrangle maps. Once published, the new soils information will replace the older published surveys for Connecticut's counties and the old information will no longer be used. Where available, advance copy digital data may be obtained by contacting the Connecticut DEP.

Soils information must be updated to reflect land use changes and current quality control standards. The new information will be adjusted to orthography (true scale photographic base maps) and converted to digital form for use with geographic information system (GIS) and automated drafting software.

Each soil survey report contains detailed descriptions of the soil series, interpretive tables which can be used to determine the best use and management of the land, a collection of soil maps, and a description of the units displayed on the maps. The scale of the maps and the complexity of the terrain determine the types of soil map units used. A map unit in a simple landscape may be composed primarily of a single soil series and is then named for that series. Soil complexes and undifferentiated soil groups are mapped in areas with more intricate mosaics of soils and landscapes. An example of a soil complex is the Nellis-Farmington map unit. An example of an undifferentiated group is the Paxton and Montauk map unit. Portions of the landscape that do not have true soil or contain little or no soil are mapped as miscellaneous areas. Examples include urban land, beaches, and rock outcrops. Subdivisions of the soil series that are significant to land use and management are called phases. Soil phases reflect differences such as surface stoniness, slope gradient, surface texture, and rockiness. Examples of these are very stony, 3 to 8 percent slope, fine sandy loam, and very rocky soil phases respectively. Within most map units are "inclusions" or small areas of soils that differ significantly from the named soils. They are typically too small to be delineated separately.

The purpose of the chart in this brochure is to diagram the inter-relationships of the soils of Connecticut. This chart supplements all Connecticut soil surveys by referring to both current and previously used soil names. However, since there are some major differences in map units and soil series interpretations from survey to survey, it is necessary to refer to the narrative descriptions within the appropriate survey to obtain complete information concerning a particular soil.

For digital soil information, or other natural resource information, please contact:

The Environmental & Geographic Information Center
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, CT 06106
860/424-3540

For soil surveys, assistance in technical problems, and other natural resources conservation programs, contact:

Natural Resources Conservation Service
344 Merrow Rd., Suite A, Tolland, CT 06084
(860) 871-4011
www.ct.nrcs.usda.gov

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Connecticut Department of Environmental Protection
and
U.S. Department of Agriculture Natural Resources Conservation Service

2003

SOIL CATENAS OF CONNECTICUT

DEPOSIT	LITHOLOGY	TEXTURE GROUP	DRAINAGE CLASS: EXCESSIVELY	SOMEWHAT EXCESSIVELY	WELL	MODERATELY WELL	SOMEWHAT POORLY	POORLY	VERY POORLY
GLACIAL TILL Unstratified Sand, Silt & Rock	GRANITE & SCHIST	SANDY		**GLOUCESTER**					
	SCHIST, GRANITE & GNEISS	LOAMY		*** WESTMINSTER #**					
					**** MILLSITE #**				
				*** HOLLIS [28]**					
					**** CHATFIELD**				
					CHARLTON	**SUTTON [1]**		**LEICESTER**	
					CANTON				
					BICE #	**SCHROON #**			**LOONMEADOW #**
					+ PAXTON + MONTAUK	**+ WOODBRIDGE**		**+ RIDGEBURY**	**+ WHITMAN**
					+ SHELBURNE #	**+ ASHFIELD #**			
	MIXED LIMESTONE & CRYSTALLINE ROCKS				**FARMINGTON**				
					PYRITIES #	**+ HOGANSBURG #**		**MUDGEPOND [18, 20]**	**ALDEN [19]**
					STOCKBRIDGE	**GEORGIA**			
					NELLIS [11]	**AMENIA**			
	RED SANDSTONE, SHALE, CONGLOMERATE & BASALT				*** HOLYOKE [29]**				
					**** YALESVILLE**				
					CHESHIRE [24, 29]	**WATCHAUG [6]**			
					+ WETHERSFIELD	**+ LUDLOW**		**+ WILBRAHAM**	**+ MENLO**
	BROWN MICACEOUS SCHIST			*** BRIMFIELD**	**BROOKFIELD**				
	PHYLLITE, SCHIST & SLATE			*** TACONIC #**	**** MACOMBER #**				
					+ BERNARDSTON				
					+ LANESBORO #	**+ FULLAM #**		**+ BRAYTON #**	
					DUMMERSTON #				
	SHALE, SANDSTONE, BASALT & CRYSTALLINE ROCKS	SILTY / SANDY			**+ BROADBROOK [24]**	**+ RAINBOW**			
					NARRAGANSETT	**WAPPING**			
GLACIOFLUVIAL Stratified Sand & Gravel	ACIDIC CRYSTALLINE ROCKS	SANDY & GRAVELLY	**HINCKLEY [17]**	**MERRIMAC**		**SUDBURY**		**WALPOLE [3]**	
			BOSCAWEN #					**MOOSILAUKE #**	
		SANDY	**WINDSOR**			**DEERFIELD**			**SCARBORO [15, 32]**
		LOAMY / SAND & GRAVEL			**AGAWAM**	**NINIGRET**			
		SILTY / SAND & GRAVEL			**ENFIELD [16]**	**TISBURY**		**RAYPOL**	
					HAVEN				
					BRANFORD	**ELLINGTON**			
	ACIDIC, RED SANDSTONE, SHALE, CONGLOMERATE	SANDY & GRAVELLY	**MANCHESTER**	**HARTFORD**					
		SANDY	**PENWOOD**						
	MIXED LIMESTONE & CRYSTALLINE ROCKS	SANDY & GRAVELLY	**GROTON**						
		LOAMY / SAND & GRAVEL			**COPAKE**	**HERO**		**FREDON**	**HALSEY [7]**
GLACIOLACUSTRINE Stratified Sand Silt & Clay	MIXED CRYSTALLINE & SEDIMENTARY ROCKS	SILTY				**BELGRADE [27]**		**RAYNHAM [31]**	
		LOAMY / CLAYEY				**ELMRIDGE [13, 21]**		**SHAKER [30]**	
		SILTY & CLAYEY				**BRANCROFT [9]**		**SCITICO [26]**	**MAYBID [5,33]**
						BERLIN			
ALLUVIAL Stratified Sand & Silt	GNEISS, SCHIST, GRANITE & QUARTZITE	SANDY	**SUNCOOK**						
		LOAMY			**ONDAWA #**	**POOTATUCK [23]**		**RUMNEY #**	
					OCCUM [4]			**RIPPOWAM**	
	MIXED CRYSTALLINE & SEDIMENTARY ROCKS	SILTY			**HADLEY [14]**	**WINOOSKI [12]**	**BASH [8, 25]**	**LIMERICK**	**MEDOMAK #**
								LIM	**SACO**

ORGANIC Peat & Muck	WETLAND TYPE	FIBERS	THICKNESS	SUBSTRATE	SOIL SERIES
	FRESH (INLAND)	FEW	>51"	VARIABLE	**CATDEN [10]**
					FREETOWN
					BUCKSPORT #
			16-51"		**NATCHAUG [22]**
			16-51"	LOAMY	**WONSQUEAK #**
					TIMAKWA [2]
	SALT & BRACKISH (TIDAL)	COMMON		SANDY	**PAWCATUCK**
				VARIABLE	**WESTBROOK**
			>51"		**IPSWICH**

+ Indicates soils underlain by compact till.

* Indicates shallow soils less than 20 inches to bedrock.

** Indicates moderately deep soils 20 to 40 inches to bedrock.

\# Indicates soils with mean annual soil temperature less than 8°C (>1,300 feet in Litchfield County).

SOIL SERIES NO LONGER USED IN CONNECTICUT

1. Acton
2. Adrian
3. Au Gres
4. Bermudian
5. Biddeford
6. Birchwood
7. Birdsall
8. Bowmansville
9. Buxton
10. Carlisle
11. Dover
12. Eel
13. Elmwood
14. Genesse
15. Granby
16. Hartland
17. Jaffrey
18. Kendaia
19. Lyons
20. Massena
21. Melrose
22. Palms
23. Podunk
24. Poquonock
25. Rowland
26. Scantic
27. Scio
28. Shapleigh
29. Sunderland
30. Swanton
31. Wallington
32. Wareham
33. Whately