Explanation

This data is part of a study that has produced the Digital Compilation of Surficial Geologic Map and Bedrock Centers for the Coventry Quadrangle, Eastern Connecticut. Mapping and analyses supported by the USGS National Cooperative Geologic Mapping Program, the UConn Cooperative Geologic Mapping Project, and the CT Department of Environmental Protection. The data is intended for the most basic information needs of environmental applications.

The primary products for the quadrangle are the Bedrock Surficial Elevation Map, Depth to Bedrock map, and Bedrock Elevation Confidence Isopleth map for the Coventry quadrangle.

Depth to bedrock elevations and depth to bedrock isopleths for the USGS Coventry Quadrangle in eastern Connecticut were mapped using cokriging estimation. Kriging works by developing statistical measures of spatial autocorrelation of the variable to be mapped (the variable). Kriging is used to estimate the variable's value where samples were not collected. Cokriging involves using the spatial autocorrelation of both a variable and one or more auxiliary variables (the covariates) with the variable to provide additional information. For mapping bedrock elevations, we determined depth to bedrock at roughly 3,500 locations by examining various well and corporation reports, which include core logs indicating a minimum depth to rock, which is our variable. We used LIDAR and LiDAR (LIDAR) data as a bedrock elevation covariate. Combining these data sets resulted in a statistically significant covariate, which yielded 20 internal bedrock contours. Subtracting the bedrock surface from the topographic surface yielded a depth to bedrock map. We produced a confidence interval map from the variance estimates, as well.

Note: contour gaps along the quadrangle boundary are attributed to interpretation processing.

Data Sources

Coventry Quadrangle boundary from 7.5 minute quadrangle index produced by Department of Environmental Protection in Connecticut State Plane, UTM, NAD83 from USGS Digital Line Graph data.

Surficial Materials Map from Stone et al, Surficial Map of Connecticut. 1993, USGS Quadrangle Map, 1:24,000 scale, digitized electronic format through the CT Department of Environmental Protection.

Outcrop locations digitized for the study are from Foyt, Richard J., Gravers, Maurice Harry, Bedrock Geologic Map of the South Coventry Quadrangle, Tolland County, Connecticut, 1977. USGS.


Depth to Rock Isopleths (feet)

- Swamp
- Swamp/Sand
- Swamp/Sand/Sand+Gravel
- Alluv/Sand
- Alluv/Sand+Gravel
- Alluv/Sand/Fines
- Alluv/Sand/Sand+Gravel
- Sand
- Sand/Fines
- Sand+Gravel
- Sand+Gravel/Sand
- Sand+Gravel/Sand+Fines
- Sand+Gravel/Sand+Gravel
- Gravel
- Till
- Thick Till
- Till, Sand+Gravel, Boulders
- Water
- Other
  - Well Location
  - Outcrop Locations
  - Major Roads
  - Local Roads