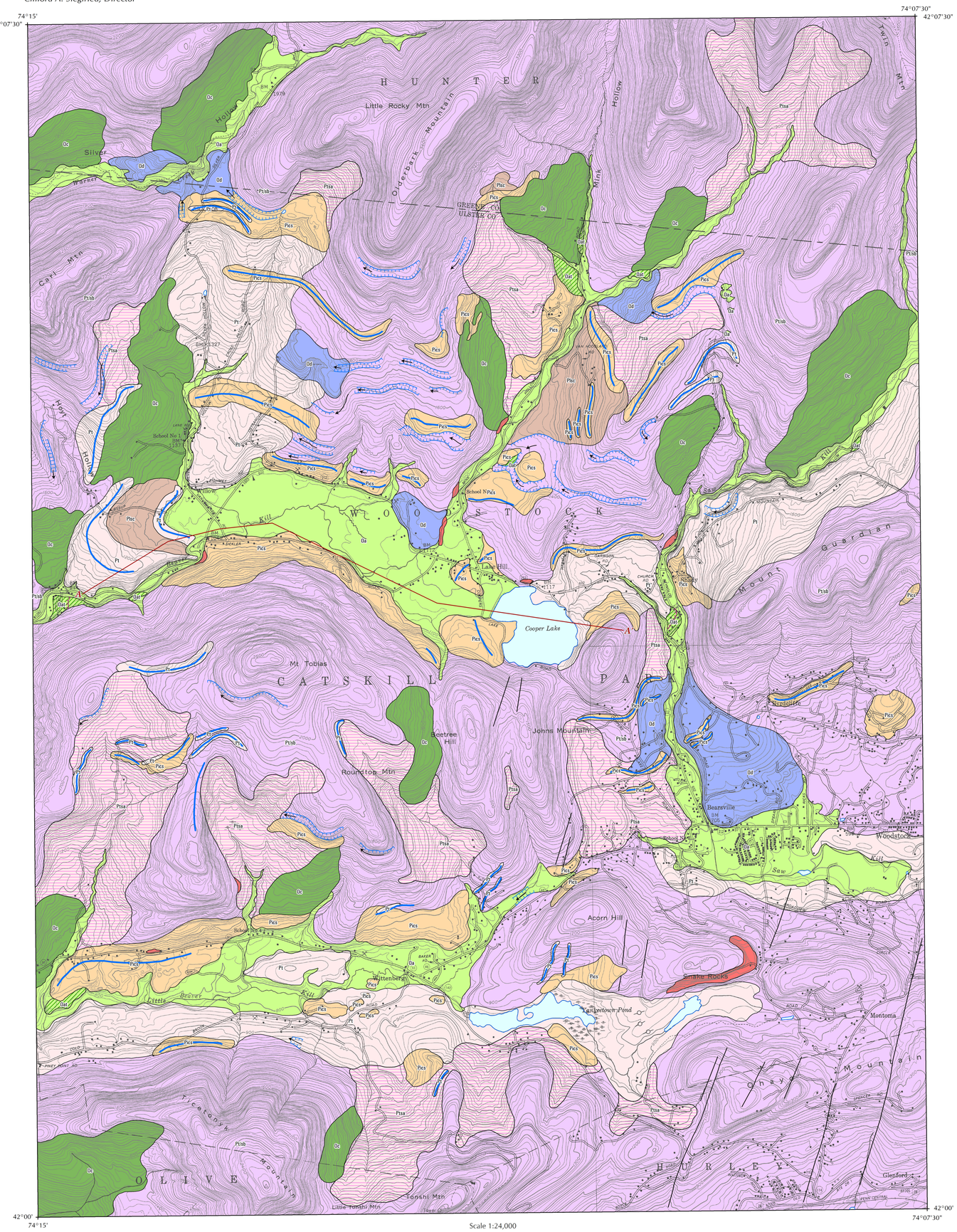
New York State Museum
Clifford A. Siegfried, Director

NYSGS
NEW YORK State Museum

New York State Geological Survey
Langhorne B. Smith, Acting State Geologist



Universal Transverse Mercator, Zone 18
North American Datum of 1927

Elevation contours, hydrography, and planimetry layers from the New York State Dept. of Transportation Raster Quadrangle separates for the Bearsville and Woodstock 7½ minute quads. DOT edition dates 1973 (Bearsville) and 1989 (Woodstock); USGS contour date 1945 for both.

Magnetic declination from the NOAA online Declination Calculator:
http://www.ngdc.noaa.gov/geomagmodels/Declination.jsp

MN TN

Calculated declination 13.4°W for the year 2011, at the center of the map.

Scale 1:24,000

0.5 0.25 0 0.5 1 1.5 Miles

0.5 0.25 0 0.5 1 1.5 Kilometers

Contour interval 20 feet

Surficial geologic mapping, 2010.
Digital data and cartography, J Manchester, 2011.

EXPLANATION

GEOLOGIC UNITS

Wetland deposit (Hw)
Peat, muck, clay, silt, and sand deposited in modern wetland environments. There is often a gradational change to alluvial or lacustrine deposits.

Alluvium (Qa)
Sorted and stratified silt, sand, gravel, and cobbles deposited by rivers and streams. Alluvium includes channel, overbank, and fan deposits.

Colluvium (Qc)
Poorly sorted sand, gravel, cobbles, and boulders transported down-slope by gravitational processes. Colluvium is composed predominantly of sediments reworked from till and includes all types of mass wasting including falls, slides, and flows.

Alluvial terrace (Qat)
Well-sorted and stratified sand, gravel, and cobbles deposited by rivers and streams flowing at levels higher than modern levels. Alluvial terraces may include channel, overbank, and fan deposits.

Lacustrine delta (Qd)
Stratified gravel, sand, and silt with lesser amounts of clay deposited at or near deltas fed by glacial meltwater channels or basin-contrained meteoric waters.

Lacustrine silt and clay (Plsc)
Stratified silt and clay deposited in deepwater settings of paleolakes.

Ice-contact stratified drift (Pics)
Well-sorted and stratified sand, gravel, and cobbles, deposited in contact with former glaciers. Stratified drift includes kames, kame moraines, and kame terraces.

Sub-aqueous till (Ptsa)
Massive diamicton composed of sediments ranging in size from clay through boulders deposited directly by glacial ice. Sub-aqueous till is generally sandier and less compact than basal till due to deposition in a proglacial lake.

Till (Pt)
Massive diamicton composed of sediments ranging in size from clay through boulders, deposited directly by glacial ice or as ice contact ridges. Sediments are highly compacted due to deposition beneath glacial ice.

Till over shallow bedrock (Pt/sb)
Thin (3 meters or less), discontinuous, highly weathered diamicton draping bedrock.

Bedrock

GEOLOGIC SYMBOLS

Contact

Fault
Surficial expression of displaced bedrock.

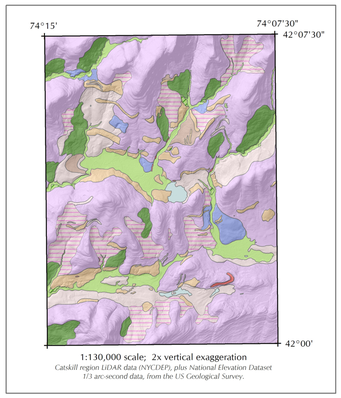
Ice flow indicator
Field or map observations indicating direction of ice movement.

Ice margin
Former equilibrium glacial margin delineated by either a moraine or outwash head.

Meltwater channel
Channels incised by flowing meltwater currents acting as spillways or outlets in front of, or along the margin or sides of, former glacier margins.

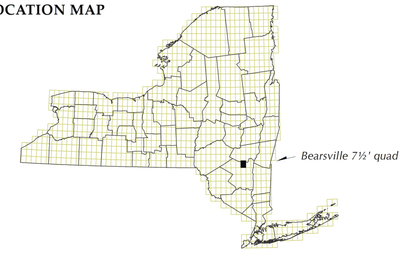
Quaternary terrace
Over-steepened slope caused by fluvial incision into alluvium.

SHADED TERRAIN MAP



1:130,000 scale; 2x vertical exaggeration
Catskill region LiDAR data (NYCDEP), plus National Elevation Dataset 1/3 arc-second data, from the US Geological Survey.

LOCATION MAP



NOTICE

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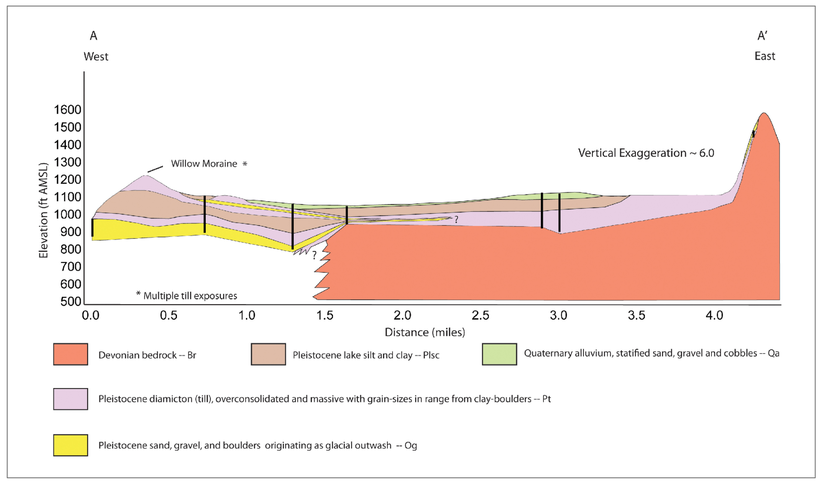
CROSS-SECTION A-A'



SURFICIAL GEOLOGY OF THE BEARSVILLE QUADRANGLE, NEW YORK

Andrew L. Kozlowski, Brian C. Bird, Colby A. Smith, Newton W. Krumdieck, & Paul A. Stefanik

2010

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