

# GENERALIZED BEDROCK GEOLOGIC MAP OF CONNECTICUT

THE CONNECTICUT GEOLOGICAL  
& NATURAL HISTORY SURVEY  
Department of  
Environmental Protection  
1990  
reprinted 1996

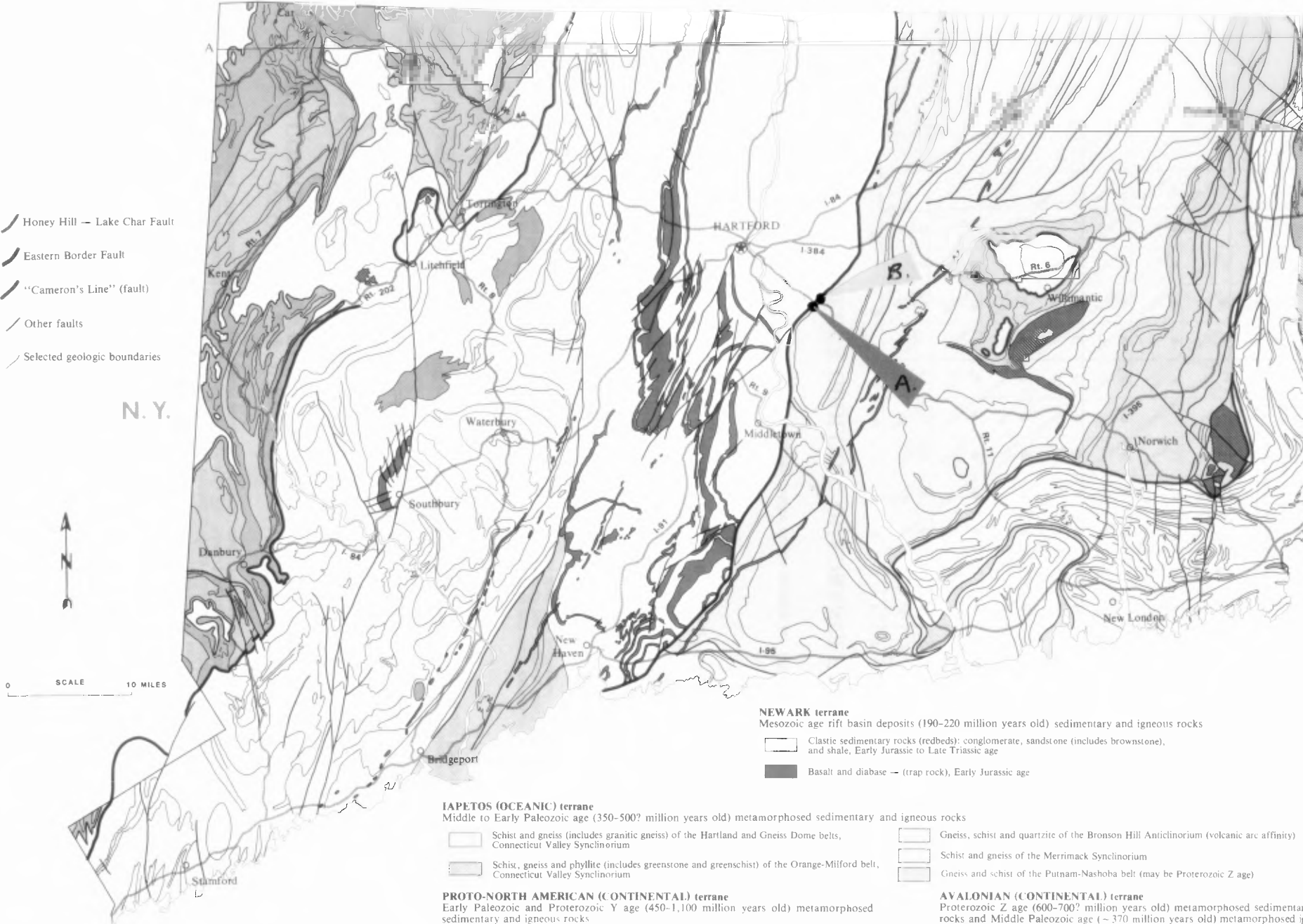


- Honey Hill - Lake Char Fault
- Eastern Border Fault
- "Cameron's Line" (fault)
- Other faults
- Selected geologic boundaries

N. Y.



0 SCALE 10 MILES



A' Line of cross section

R. I.

**NEWARK terrane**  
Mesozoic age rift basin deposits (190-220 million years old) sedimentary and igneous rocks

- Clastic sedimentary rocks (redbeds): conglomerate, sandstone (includes brownstone), and shale, Early Jurassic to Late Triassic age
- Basalt and diabase - (trap rock), Early Jurassic age

**IAPETOS (OCEANIC) terrane**  
Middle to Early Paleozoic age (350-500? million years old) metamorphosed sedimentary and igneous rocks

- Schist and gneiss (includes granitic gneiss) of the Hartland and Gneiss Dome belts, Connecticut Valley Synclinorium
- Schist, gneiss and phyllite (includes greenstone and greenschist) of the Orange-Milford belt, Connecticut Valley Synclinorium
- Gneiss, schist and quartzite of the Bronson Hill Anticlinorium (volcanic arc affinity)
- Schist and gneiss of the Merrimack Synclinorium
- Gneiss and schist of the Putnam-Nashoba belt (may be Proterozoic Z age)

**PROTO-NORTH AMERICAN (CONTINENTAL) terrane**  
Early Paleozoic and Proterozoic Y age (450-1,100 million years old) metamorphosed sedimentary and igneous rocks

- Schist of the Taconic Allochthons (displaced Iapetos Terrane), Early Paleozoic age
- Marble, schist and quartzite of a continental shelf sequence, Early Paleozoic age
- Gneiss (includes granitic gneiss) and schist of "Grenville" basement, Proterozoic Y age (~1.1 billion years old)

**AVALONIAN (CONTINENTAL) terrane**  
Proterozoic Z age (600-700? million years old) metamorphosed sedimentary and igneous rocks and Middle Paleozoic age (~370 million years old) metamorphosed igneous rocks

- Gneiss (includes granitic gneiss), schist and quartzite - Hope Valley belt, Proterozoic Z age
- Gneiss (includes granitic gneiss) of Proterozoic Z age intruded by Middle Paleozoic granitic plutons - Esmond-Dedham belt

**SELECTED PLUTONIC ROCKS**

- Granite, nonfoliated, Late to Middle Paleozoic age (270-370 million years old)
- Gabbro and related rocks, Middle Paleozoic age (350-450 million years old)

# BEDROCK GEOLOGIC HISTORY OF CONNECTICUT

Geologic regions (terrane) on this map reflect the role of plate tectonics in the geologic history of Connecticut. Each terrane is named after its plate tectonics ancestry.

From 450 to 250 million years ago, during the Paleozoic Era, several crustal plates, including Africa and Eurasia, collided with the North American plate to create the Appalachian Mountains and the supercontinent Pangea. During this collision, Avalonia, a small continent believed to have been part of the African plate, was thrust against the continent of Proto-North America, closing and collapsing the intervening Iapetus Ocean. The collision deformed and metamorphosed both the continental rocks of Proto-North America and Avalonia and the oceanic rocks and sediments of the Iapetus Ocean floor. This process created the schists, gneisses, and granites exposed today in eastern and western Connecticut. Features of these metamorphic and igneous rocks show this complex geologic history, confirming the continental and oceanic origins and the processes of plate tectonics.

Shortly after the collision ended, at the beginning of the Mesozoic Era or about 235 million years ago, plate tectonics processes reversed. Pangea began to break apart, initiating the opening of the Atlantic Ocean and leaving Avalonia welded to North America. In the early stages of this breakup, rift basins formed along and on both sides of the zone where the Atlantic Ocean finally opened. The Newark terrane in central Connecticut is the eroded remnant of one of these rift basins. It contains 200 million year old sedimentary rocks (brownstone) and lava flows and intrusions of basalt (trap rock).

## GEOLOGIC INFORMATION AVAILABLE FROM THE CONNECTICUT GEOLOGICAL & NATURAL HISTORY SURVEY

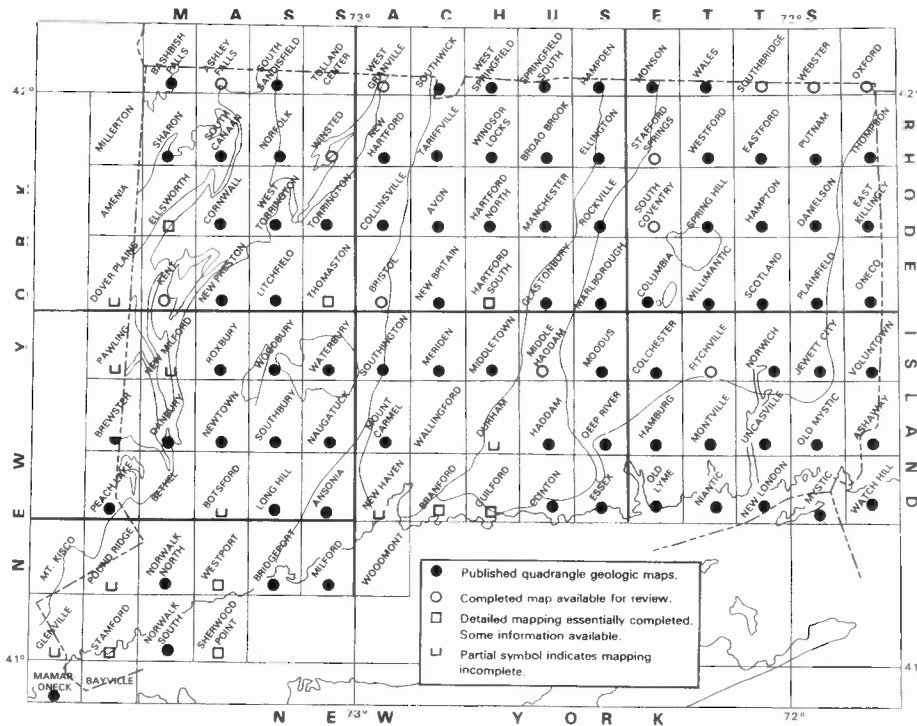
- Bedrock Geological Map of Connecticut by John Rodgers shows the bedrock geology of the entire state at 1:125,000 scale. It consists of two sheets: sheet 1 - the geologic map and sheet 2 - which includes cross sections, tectonic map, and references. Sheet 1 is approximately 42" x 55". Price: \$14.00.
- The Face of Connecticut: People, Geology and the Land by Michael Bell is a popular book about the geology of the state. (228 pages including color photos) Price: \$14.95.
- Bedrock Mines and Quarries of Connecticut (map [1:125,000 scale] plus booklet) by Robert Altamura shows the locations of more than 600 active and abandoned sites and identifies the major mineral commodity sought at each. The booklet gives reference information for each site. Price: \$10.00.
- Generalized Bedrock Geologic Map of Connecticut  
8.5" x 11" map: \$.25 each; Postcard: \$.40 each; quantity discounts available
- Bedrock geologic quadrangle maps are technical publications which include a 1:24,000 scale map and some explanatory text. Quadrangle maps are available for most of the 7.5' quadrangles in the state. Consult the List of Publications before ordering, or using index below, order by quadrangle as follows: "bedrock geologic map of the (blank) quadrangle." Order only those quadrangles shown as published. Price: \$5.00.
- Seven guidebooks to fieldtrips are available from the Survey. One guidebook is the Redbeds of Central Connecticut, and the remaining six include a number of fieldtrip reports covering many aspects of Connecticut geology. The cost of the guidebooks varies; consult the List of Publications. Many reports are technical.
- The Connecticut Valley in the Age of Dinosaurs: A Guide to the Geologic Literature, 1681-1995 by Nicholas G. McDonald. A comprehensive, fully indexed, bibliography of Mesozoic geology with a special introductory section: The Development of Geologic Thought, Theory, and Practice in the Early Mesozoic Connecticut Valley Lowland. Price: \$45.00 Hardcover; \$27.00 Softcover.

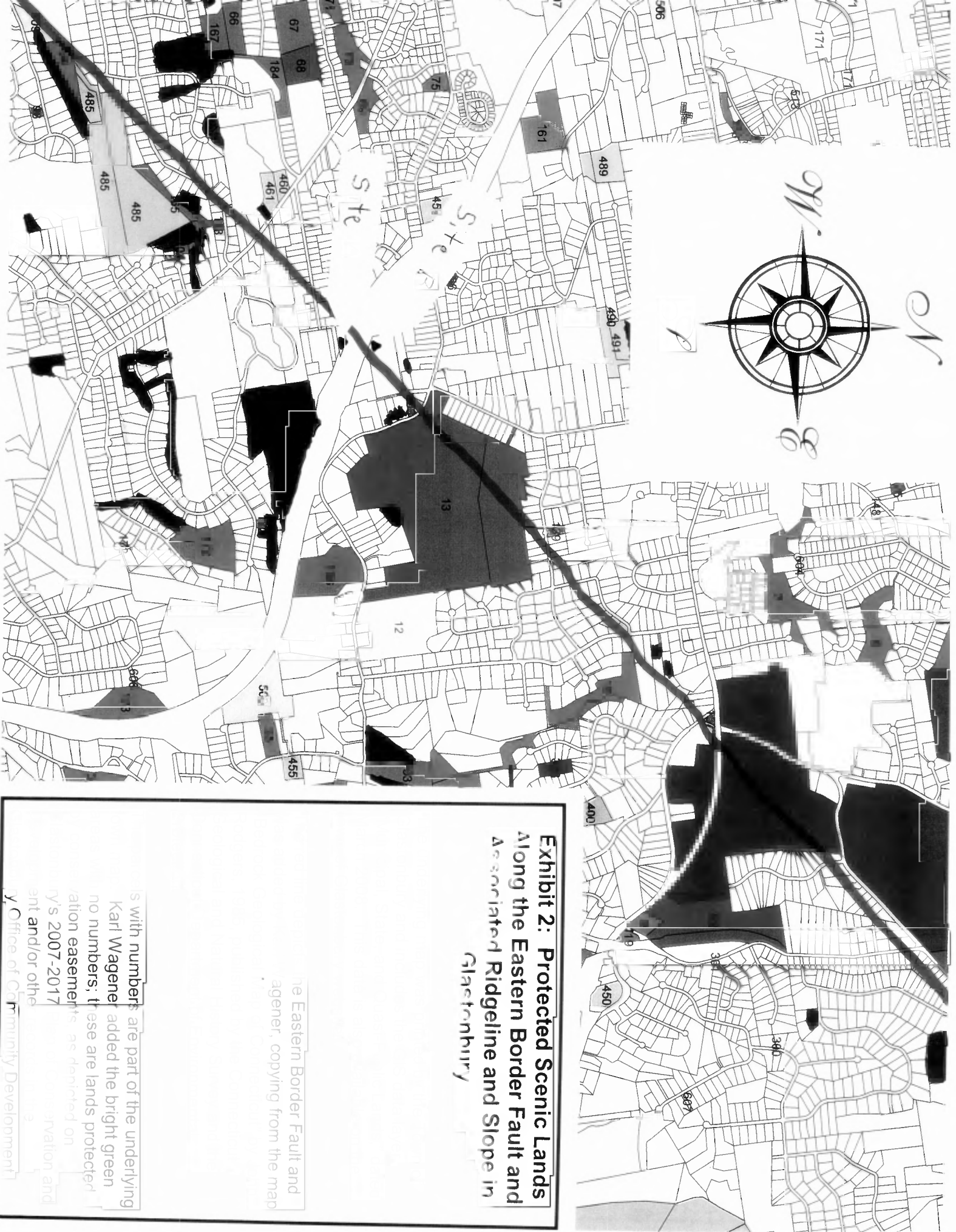
These publications and others on the geology and natural history of Connecticut are listed in the Natural Resources Information Directory & List of Publications. The List of Publications and individual maps can be obtained from:

DEP-Publications  
79 Elm Street, Store Level  
Hartford, CT 06106-5127  
(860)424-3555

Orders should include 6% sales tax for Connecticut residents; \$4.00 handling fee. Make checks payable to: DEP-Publications.

## INDEX OF BEDROCK GEOLOGIC QUADRANGLE MAPS





**Exhibit 2: Protected Scenic Lands  
Along the Eastern Border Fault and  
Associated Ridgeline and Slope in  
Glacetonbury**

The Eastern Border Fault and  
ridge, copying from the map

lots with numbers are part of the underlying  
Karl Wagene added the bright green  
no numbers, these are lands protected  
ation easement as decided on  
ry's 2007-2017  
ent and/or other  
y Office of Community Development