SUMMARY OF STATEMAP
GEOLOGIC MAPPING PROGRAM IN NEW HAMPSHIRE

Federal Fiscal Year	96	97	98	99	00	01	02	03	04	05	06	07
Federal Dollars Awarded to DES	$35,000	$50,000	$48,000	$60,000	$25,000	$52,465	$41,545	$45,000	$68,717	$53,556	$52,400	$72,112

TOTAL $603,795

What is a Geologic Map?

Geologic maps are an important source of natural resource information. They depict the underlying bedrock (solid rock near the Earth's surface) or surficial geologic materials (e.g. alluvium or glacial deposits), as if the soils and vegetation had been removed. In New Hampshire, bedrock consists of igneous and metamorphic (crystalline) rocks. Alluvium - unconsolidated sand, gravel, clay, and silt in stream valleys – is younger than the underlying bedrock. Glacial deposits consist of materials transported by glaciers and deposited by the ice (glacial till) or by glacial melt water (gravel, sand, silt and clay) on the bedrock. In some areas, these deposits can be hundreds of feet thick.

A geologic map shows the distribution of rock units and other geologically related information within a specific geographic area. Each rock unit is identified and named based on distinctive characteristics that can be mapped over large distances. Geologic maps may specify the horizontal distribution of bedrock and surficial deposits. They may also show the related geologic structures (faults, fractures, and folds) that would be exposed if the soils were stripped away. Geologic maps provide a way of presenting the three-dimensional shape of the bedrock geology on a flat piece of paper using lines, symbols, and colors.

Benefits and Uses

Geologic maps are usually the starting point for any geologically related investigation. They are useful in construction and engineering projects, city and county planning, and in a variety of environmental assessments. Large projects (dams, roads, bridges, and buildings) require detailed geologic analysis because of monetary, health, and safety concerns. Smaller projects, such as surface water impoundments, houses, and water wells, also benefit from an understanding of the surficial geology. For example, if a farm pond is located in porous glacial deposits (such as sand and gravel), these materials may function as a drain, and the pond will not hold water. If placed in a less porous unit (such as glacial till, which contains clay), the pond should not leak. This basic information about the local geology can be ascertained from a geologic map. Other examples of how geologic maps can be used are listed below:

- Evaluation of geologic hazards (flooding, landslides, earthquakes, and land subsidence)
- Environmental assessment and protection planning (underground storage tanks, landfills, and aquifer contamination)
- Site selection for public facilities, such as groundwater supplies, treatment facilities, waste-disposal sites, and public buildings.
- Natural resource assessment, exploration, development, and management (dimension stone, sand, and gravel deposits)
- Planning transportation and utility routes
- Development and protection of ground water aquifers
- Land-use planning and evaluation of land-use proposals
- Basic Earth-science research
- Assistance with public policy decisions

Geologic maps can be used to evaluate and predict the consequences of natural and human-induced activities on the environment. Using the information on geologic maps during a project's planning and design stage produces long-term benefits and reduces problems that may develop after the project is completed.

Geologic Mapping in New Hampshire

The New Hampshire Geological Survey (NHGS), a bureau of the NH Department of Environmental Services, actively participates in the U.S.G.S. Federal Cooperative STATEMAP program. New Hampshire has been glaciated several times in recent geologic history, and the resulting surficial geologic materials directly affect all forms of land use. As a result, NHGS mapping has focused on completing geologic mapping of these surficial materials. The engineering properties of these surficial deposits have significant implications for highway and building-foundation construction and for waste management. In addition, much of the water supply for the state's communities is derived from surficial deposits. Geologic maps are important sources of information for aiding in water-supply evaluation and protection, land-use planning, transportation design, resource evaluation, recreation, and seismic-risk evaluation. Comprehensive geologic information is needed to address these issues and to provide the foundation for proper planning and preventative measures to ameliorate these and other environmental problems in the future. To date, NHGS has completed surficial geologic mapping in 86 of the 213 quadrangles that encompass the state, which amounts to approximately 40% completion. The map on the opposite side shows the status of surficial mapping for New Hampshire.

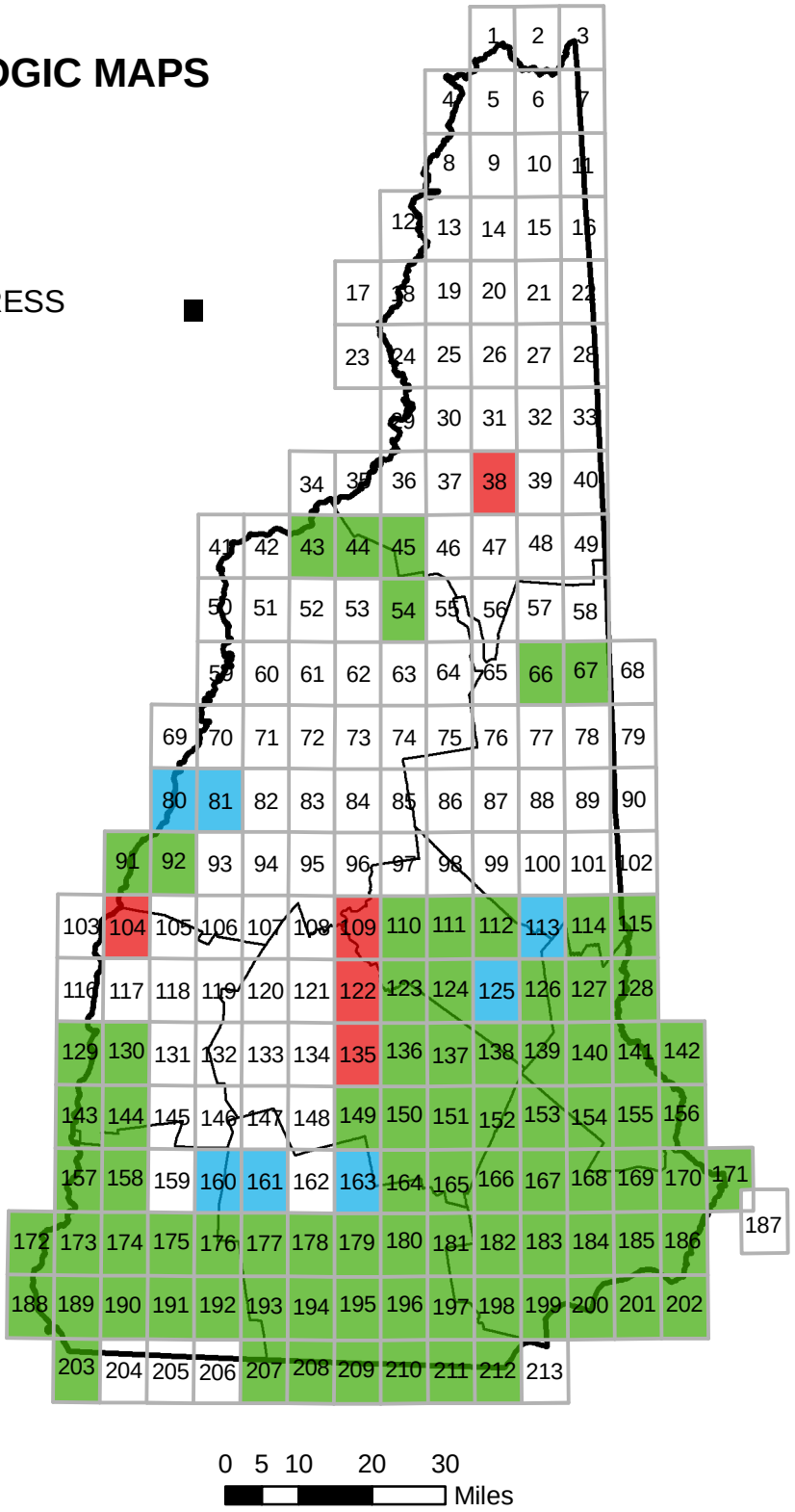
March 2008

National Cooperative Geologic Mapping Program

NEW HAMPSHIRE
INDEX OF SURFICIAL GEOLOGIC MAPS

Status

- PROPOSED MAPPING
- CURRENTLY IN PROGRESS
- COMPLETE
- County Boundaries



TILE NO.	QUAD NAME
38	PLINY RANGE EAST
43	LITTLETON
44	BETHLEHEM W
45	BETHLEHEM E
54	SOUTH TWIN MTN.
66	NORTH CONWAY WEST
67	NORTH CONWAY EAST
80	LYME
81	SMARTS MOUNTAIN
91	HANOVER
92	ENFIELD
104	NORTH HARTLAND
109	BRISTOL
110	WINNISQUAM LAKE
111	LACONIA
112	WEST ALTON
113	WOLFEBORO
114	SANBORNVILLE
115	GREAT EAST LAKE
122	FRANKLIN
123	NORTHFIELD
124	BELMONT
125	GILMANTON IRONWORKS
126	ALTON
127	FARMINGTON
128	MILTON
129	SPRINGFIELD
130	CLAREMONT SOUTH
135	WEBSTER
136	PENACOOK
137	LOUDON
138	PITTSFIELD
139	PARKER MOUNTAIN
140	BAXTER LAKE
141	ROCHESTER
142	SOMERSWORTH
143	BELLOWS FALLS
144	ALSTEAD
149	HOPKINTON
150	CONCORD
151	SUNCOOK
152	GOSSVILLE
153	NORTHWOOD
154	BARRINGTON
155	DOVER WEST
156	DOVER EAST
157	WALPOLE
158	GILSUM

TILE NO.	QUAD NAME
160	STODDARD
161	HILLSBORO
163	WEARE
164	GOFFSTOWN
165	MANCHESTER NORTH
166	CANDIA
167	MOUNT PAWTUCKAWAY
168	EPPING
169	NEWMARKET
170	PORTSMOUTH
171	KITTERY
172	PUTNEY
173	SPOFFORD
174	KEENE
175	MARLBOROUGH
176	DUBLIN
177	PETERBOROUGH NORTH
178	GREENFIELD
179	NEW BOSTON
180	PINARDVILLE
181	MANCHESTER SOUTH
182	DERRY
183	SANDOWN
184	KINGSTON
185	EXETER
186	HAMPTON
188	BRATTLEBORO EAST
189	HINSDALE
190	WEST SWANZEY
191	TROY
192	MONADNOCK MOUNTAIN, NH
193	PETERBOROUGH SOUTH
194	GREENVILLE
195	MILFORD
196	SOUTH MERRIMACK
197	NASHUA NORTH
198	WINDHAM
199	SALEM DEPOT
200	HAVERHILL
201	NEWBURYPORT WEST
202	NEWBURYPORT EAST
203	NORTHFIELD MA
207	ASHBURNHAM
208	ASHBY
209	TOWNSEND
210	PEPPERELL
211	NASHUA SOUTH
212	LOWELL

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