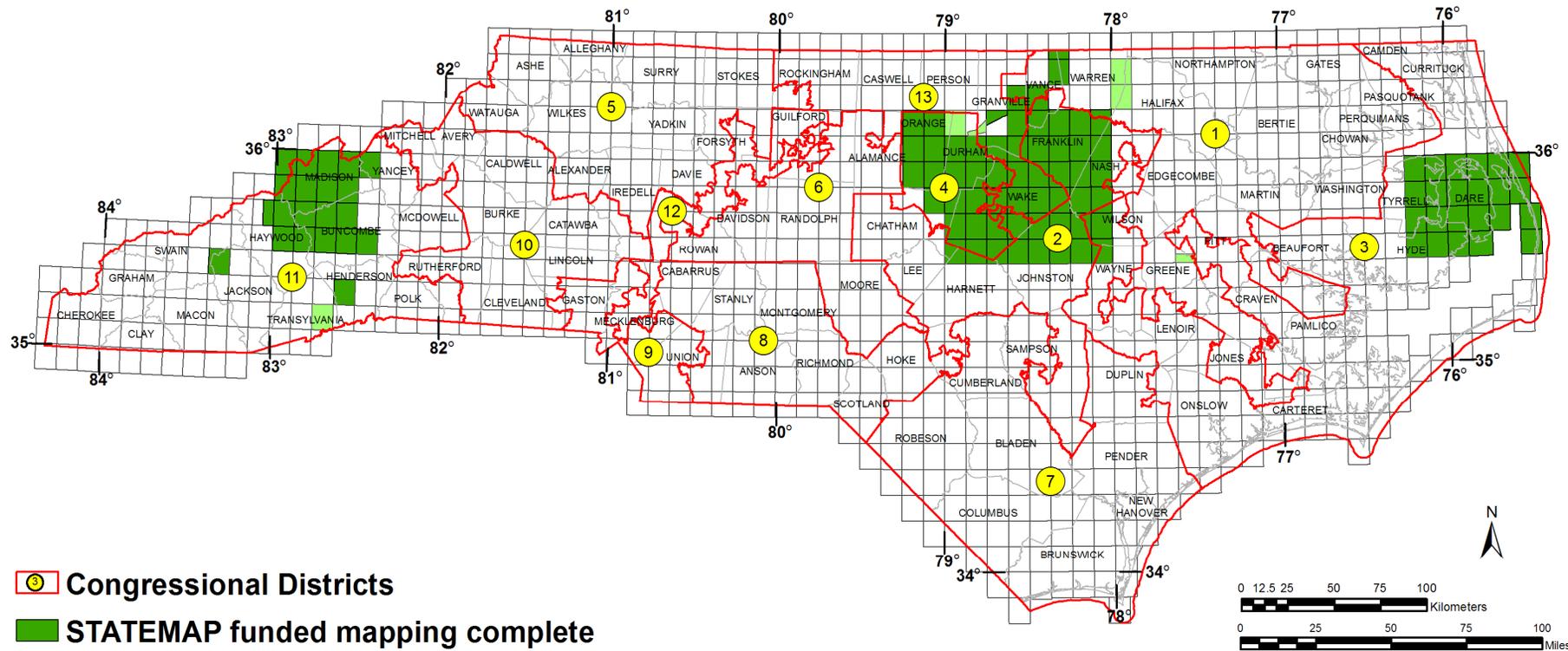




# National Cooperative Geologic Mapping Program

STATEMAP Component: States compete for federal matching funds for geologic mapping

## NORTH CAROLINA - 2010



### Contact information

North Carolina Geological Survey  
 State Geologist: James D. Simons (919/733-3833)  
 STATEMAP Contact: Kenneth B. Taylor (919/733-2423)  
<http://www.geology.enr.state.nc.us>

U.S.G.S. Geologic Mapping Program Office  
 Program Coordinator: Peter T. Lyttle (703/648-6943)  
 Assoc. Program Coordinator: Randall C. Orndorff (703/648-4316)  
<http://ncgmp.usgs.gov/>

## SUMMARY OF STATEMAP GEOLOGIC MAPPING PROGRAM IN NORTH CAROLINA

NCGS Project Year	Federal Fiscal Year	State Dollars	Federal Dollars	Total Project Dollars
1	93	\$21,000	\$21,000	\$42,000
2	94	50,000	50,000	100,000
3	95	60,000	60,000	120,000
4	96	112,436	112,436	224,872
5	97	146,264	146,264	292,528
6	98	122,009	122,009	244,018
7	99	117,302	117,302	234,604
8	00	123,577	123,577	247,154
9	01	232,506	232,506	465,012
10	02	240,250	240,233	480,483
11	03	160,868	160,503	321,371
12	04	130,390	128,519	258,909
13	05	114,653	109,893	224,546
14	06	154,543	127,053	281,596
15	07	150,559	143,678	294,237
16	08	185,855	185,071	370,926
17	09	205,932	195,415	401,347
18	10	202,593	202,202	404,795
	<b>Totals</b>	<b>2,530,737</b>	<b>2,477,661</b>	<b>5,008,398</b>

### BACKGROUND

The North Carolina Geological Survey (NCGS) receives federal funding for conducting detailed geologic mapping from the STATEMAP program, a component of the National Cooperative Geologic Mapping Program (NCGMP). The NCGS has received STATEMAP funding through a competitive grant process since the program's inception in 1992. To date the NCGS has received over \$2 million during the past eighteen years. Because the STATEMAP program requires that every federal dollar be matched by a state dollar, over \$2.5 million have been allocated by the NCGS for geologic mapping in this program. The NCGS has concentrated its 1:24,000-scale detailed mapping in three areas: the Research Triangle area,

Asheville/Mountains, and the Coastal Plain. These areas are some of the most populous and rapidly growing regions of the state. This rapid growth has accentuated many geologic-related problems including land-use and infrastructure planning; mineral resource identification; and environmental assessment and planning related to highway construction, waste disposal siting, and ground-water conservation and development. An adequate understanding of the geology and mineral resources of these regions is needed to help resolve these problems.

### BENEFITS AND USES

Geologic maps provide fundamental information useful in any large or small-scale project when rock type and geologic structures may have important ramifications on the long term success and viability of a project. Geologic maps are used for a variety of activities including: land-use planning, environmental assessments, evaluation of geologic hazards, site selection for public facilities, road construction and mineral resource exploration.

Data from STATEMAP funded mapping activities has been used in several recent projects to the benefit of the citizens of North Carolina.

- The city of Durham evaluated the feasibility of the use of an abandoned quarry as an emergency water supply reservoir for the City. Structural data (joints, fractures, bedding, and foliation measurements) for the entire quadrangle were utilized by the City's contractor to determine potential discontinuity orientations for modeling the water holding capacity of the quarry when filled above the local groundwater table elevation. Lithologic data in the immediate area of the quarry was utilized to determine compatibility and integrity of the sidewalls of the quarry with respect to long-term saturation.
- The Natural Resources Conservation Service of the USDA in the Southern Blue Ridge Soil Survey Office for Buncombe and Madison Counties, North Carolina utilized bedrock geologic data to classify and map different soil units.
- Bedrock geologic data from Raleigh area was utilized by researchers at Duke University to evaluate the probability of the occurrence of naturally occurring groundwater arsenic in specific geologic units.
- Orange County utilized detailed geologic data to develop a county-wide groundwater monitoring network with particular interest to drought monitoring and groundwater quality monitoring.
- Bedrock geologic data from Buncombe County is currently being used by the NCGS Land Slide Mapping Program for baseline geologic data for slope stability investigations.