

Summary of Map Units

UNCONSOLIDATED SEDIMENTARY ROCKS

Quaternary **Qal** Alluvium - white to light-gray, unconsolidated clay, silt, sand, and locally, gravel associated with floodplains.

INTRUSIVE ROCKS

Jurassic **Jd** Diabase - fine-grained, dense, black to greenish-black dike rock.

Rg Rolesville granitoid - pinkish-gray, medium- to coarse-grained to megacrystic monzogranite, granite, and granodiorite. Igneous flow foliation is developed near the margins of the batholith. Pegmatites are common near the border of the granite and in the Raleigh gneiss. Averteite granitoid is massive, coarse-grained biotite + muscovite granitoid.

- ▲ Rolesville granitoid
- Averteite granitoid
- medium-grained granitoid
- pv-pavement

Late Paleozoic

Pzgg Gneissic biotite granitoid - foliated biotite granitoid and granitoid orthogneiss. Similar granitoids (Greshams Lake and Wake Forest) in the Wake Forest quadrangle have been given a Pb207/Pb206 age of 321 Ma (Horton and Stern, 1994). The Wyatt granitoid pluton in the Wake Forest quadrangle has been given a Rb/Sr date of 307 ± 3 Ma (Paul Fullagar, unpublished data).

Sof Linedale Falls leucogneiss - pinkish-gray, medium-grained, strongly lined, magnetite-rich, leucocratic orthogneiss. Contains some fine-grained facies. Composed of microcline, quartz, plagioclase, magnetite, +/- biotite, titanite, or chlorite. Horton and Stern (1994) reported a discordant 207Pb/206Pb age of 491 Ma for the leucogneiss. A Rb/Sr whole-rock age of 463 ± Ma was determined by Kish and Campbell (1986).

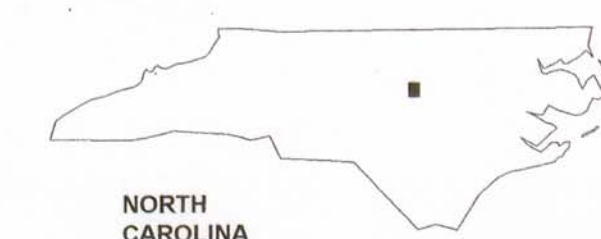
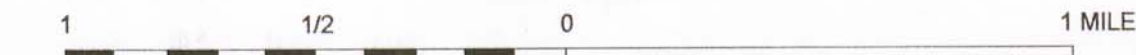
METAMORPHIC ROCKS

Late Precambrian to Early Paleozoic **rgn** Raleigh gneiss - biotite gneiss and schist, granitoid gneiss, biotite-hornblende gneiss and schist intruded by apatite and pegmatite dikes and sills. Phase A - Intermediate and mafic lithologies - include interlayered, medium- to coarse-grained, well banded and locally magmatic gneisses, ranging in composition from granitic to gabbroic in bulk composition, and containing biotite, hornblende, or both (Horton and others, 1994). Phase B - Felsic gneisses - fine- to medium-grained leucocratic gneiss with biotite as the typical accessory mineral. Biotite schist is present locally as are dikes and sills of apatite and pegmatite. Horton and Stern (1994) gave a preliminary 207Pb/206Pb age of 544 Ma for the Raleigh gneiss. Goldberg (1994) gave the Raleigh gneiss a 207Pb/206Pb age range of 461 to 546 Ma.

Symbols

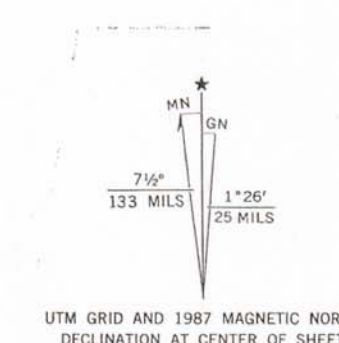
- Contact - well located
- - - Contact - approximately located
- ▲ Observation site in crystalline rocks
- ▲ Outcrop locality referred to in text
- ▲ Strike and dip of foliation
- ▲ Strike of vertical foliation
- ◇ DS - inactive dimension stone quarry
- 1 Raleigh gneiss - Phase A
- 2 Raleigh gneiss - Phase B
- 3 Raleigh gneiss - Phase C
- 4 Diabase
- 5 Rolesville granitoid
- 6 Averteite granitoid
- 7 Averteite granitoid
- RMZ 6 Geothermal test well
- SEIS 19 Seismic profile

SCALE 1:24000



References

- Goldberg, S.A., 1994, U-Pb geochronology of volcanic terranes of the eastern North Carolina Piedmont: Preliminary results in Stoddard, E.F., and Blake, D.E., eds., *Geology and Field Trip Guide, West Flank of the Raleigh Metamorphic Belt, North Carolina, Raleigh, Carolina Geological Society Field Trip Guidebook*, p. 13-18.
- Horton, J.W., Jr., and Stern, T.W., 1994, Tectonic significance of preliminary uranium-lead ages from the eastern Piedmont of North Carolina: *Geological Society of America Abstracts with Programs*, v. 26, p. 21.
- Horton, J.W., Blake, D.E., Wylie, A.S., and Stoddard, E.F., 1994, Geologic map of the Falls Lake-Wake Forest Area, North-Central North Carolina - A synopsis: in Stoddard, E.F., and Blake, D.E., eds., *Geology and Field Trip Guide, Western Flank of the Raleigh Metamorphic Belt, North Carolina, Raleigh, Carolina Geological Society Field Trip Guidebook*, p. 1-11.
- Kish, S.A., and Campbell, S.K., 1986, A middle Paleozoic plutonic terrane in the eastern Piedmont of North Carolina: *Geological Society of America Abstracts with Programs*, v. 18, p. 658.



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BEDROCK GEOLOGIC MAP OF THE RALEIGH EAST 7.5 - MINUTE QUADRANGLE, WAKE COUNTY, NORTH CAROLINA

By
J. Alexander Speer,
P. Albert Carpenter III, and Robert H. Carpenter

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