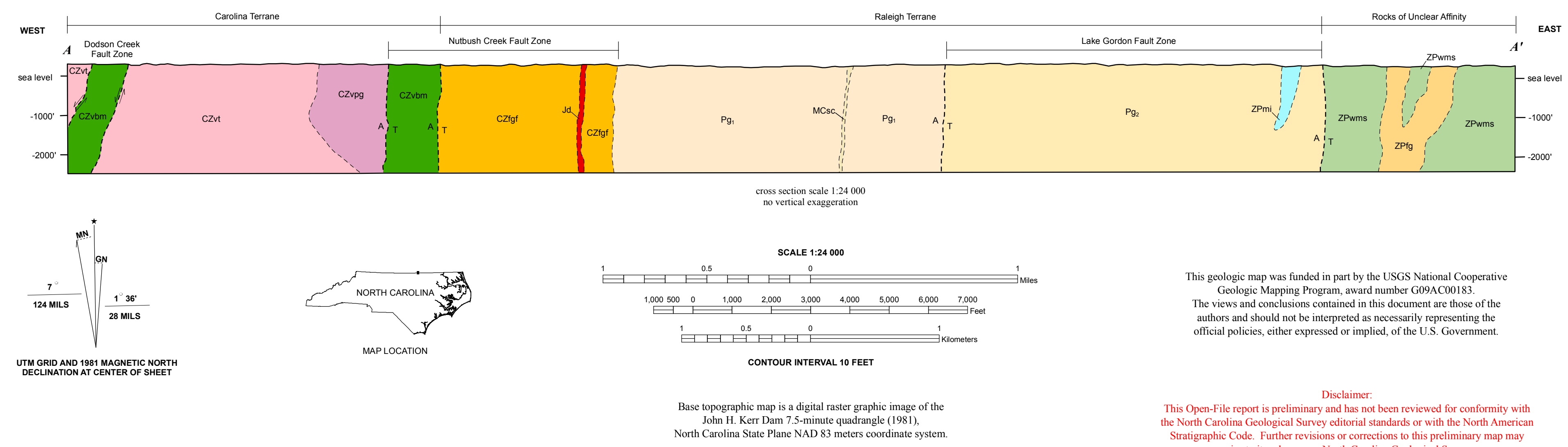


- ### Description of Map Units
- Qal** - **Quaternary alluvium:** Unconsolidated, poorly sorted and poorly stratified tan to light gray stream deposits of gravel, sand, silt, and clay.
 - Jd** - **Diabase dikes:** Steeply dipping to vertical, gray to blue-black, slightly to severely weathered, fine to medium crystalline, locally porphyritic plagioclase diabase that may be olivine-bearing.
 - MCsc** - **Cataclastic fault zone:** Silicified and highly fractured zone containing mm to cm scale silicified angular clasts. Extensional veins of rhombohedral quartz, prisms and local epidote common. Silicified and epidotized clasts of granitic gneiss locally preserved. Considered to be Mesozoic or Cenozoic in age.
- ### Rocks of Unclear Affinity
- ZPum** - **Ultramafic rocks:** Hypermelanocratic to melanocratic (CI greater than 65), green to black-green interlayers of massive, coarse-grained actinolite talc schist and medium-grained metagabbro. Locally associated with epidote-quartz rock. Appears as a large enclave in biotite granite.
 - ZPpg** - **Porphyroclastic plagioclase biotite hornblende gneiss:** Mesocratic (CI 35-45), black-gray to blue-gray, medium-grained to porphyroclastic gneiss. Biotite and hornblende define a foliation associated with mm-scale plagioclase and quartz compositional layers and larger plagioclase porphyroclasts. Grain size variations in part due to mylonitic overprint.
 - ZPg** - **Felsic Gneiss:** Leucocratic (CI less than 5-10), orange-gray and white-tan, dominantly very fine to fine-grained, well foliated, white mica quartz/feldspathic gneiss. Minor compositional layers vary in biotite and white mica content in chiefly a microcline, plagioclase, and quartz matrix. Mylonitic and ultramylonitic overprint obscures protolith relationships.
 - ZPwms** - **White mica sillimanite garnet chlorite schist:** Medium-fine to medium crystalline, gray to gray-tan, strongly foliated and lineated white mica + sillimanite + garnet schist. Medium crystalline, strongly foliated and lineated, green-gray, white mica + chlorite + sillimanite + garnet schist. Sillimanite is prismatic and occurs along the foliation plane. Contact with ZPg is often transitional. Flattened and rotated quartz and feldspar aggregates commonly occur as porphyroclastic minerals forming composite S-C surfaces and C' foliations defined by white mica. Often intruded by pegmatitic to coarsely crystalline, porphyroclastic white mica + biotite + quartz + feldspar gneiss metamorphosed sills that are locally migmatitic and often intruded along the foliation plane.
- ### Raleigh Terrane
- Pg** - **Foliated felsic mylonitic gneiss:** Leucocratic (CI less than 10-15), pink-tan and white-gray-tan, dominantly fine- to medium-grained, well foliated and lineated, white mica + biotite granitic gneiss. Some domains vary in biotite and white mica content in chiefly a pink-white microcline, plagioclase, and quartz matrix and may represent earlier enclaves or later intrusive granitoids. Mylonitic and ultramylonitic overprint obscures contact relationships. Flattened and rotated K-feldspar porphyroclasts form composite S-C surfaces and C-shear bands. Intruded by multiple generations of white to pink-gray-white pegmatitic quartz + K-feldspar dikes and sills. Locally contains amphibolite, hornblende gneiss, and biotite schist enclaves.
 - Pg2** - **Foliated felsic rocks 2:** Medium to coarsely crystalline and often megacrystic, porphyroclastic, strongly foliated, blue-gray to gray-tan, leucocratic to mesocratic, locally compositionally layered biotite + white mica + K-feldspar gneiss. Commonly protomylonitic to mylonitic and ultramylonitic.
 - Pg3** - **Foliated felsic rocks 3:** Medium crystalline, tan-gray to blue-gray, leucocratic to mesocratic, well foliated biotite + white mica metagranitoid and white mica + biotite + garnet leucocratic metagranitoid. Commonly protomylonitic to mylonitic and porphyroclastic. Also includes mylonitized pegmatitic to coarsely crystalline, porphyroclastic white mica + biotite + quartz + feldspar metagranitoid sills that are locally migmatitic and often intruded along the foliation plane.
 - CZfg** - **Foliated felsic gneiss:** Leucocratic (CI less than 2), dark to light pink-red-orange, fine- to coarse-grained felsic protomylonitic, mylonitic, and ultramylonitic gneiss. Variably foliated and lineated, and locally contains relict red-orange K-feldspar porphyroclasts and pegmatitic K-feldspar and quartz layers and bands. Form resistant lake-side outcrops and cobble and boulder fields that are highly fractured. Outcrops are reminiscent of the Rain Creek Gneiss or Falls Leucogneiss.
 - ZPahg** - **Amphibolite and hornblende gneiss:** Mesocratic (CI 50), blue-green-white to gray-green, foliated and lineated, medium-grained compositional layers of more mesocratic amphibolite and less mesocratic hornblende gneiss. Occur as local outcrops in Pg1 interpreted to be enclaves.
 - ZPbs** - **Biotite schist:** Silver-gray to silver-black, fine to medium grained, compositionally layered, and well foliated and lineated. White mica, biotite, quartz, and plagioclase define a lepidoblastic matrix for local gneiss porphyroclasts several mm in diameter. Occurs as elongate outcrops and enclaves in Pg1, Pg2 and Pg3.
 - ZPmi** - **Mixed suite of meta-intrusive rocks:** Melanocratic to mesocratic, and locally leucocratic, variably grained sized exposures gneiss and subordinate schist depending upon the presence of mafic, intermediate, or felsic metaplastic rocks. Local outcrops of biotite schist are interbedded with dark green-black, fine- to medium-grained biotite hornblende metagabbroic gneiss that are crossed by blue-gray to green-black, fine- to medium-grained meta-igneous. Both rock types are locally crossed by layers of fine- to medium-grained leucocratic metagranitoid having variable feldspar and biotite percentage. Outcrops are reminiscent of the Raleigh Gneiss.
- ### Carolina Terrane
- CZvm** - **Chlorite-white mica phyllonite, mylonite, and ultramylonite:** Light greenish-gray to dark green, foliated and lineated phyllonitic rocks developed primarily from recrystallized metamorphosed tonalite and granite of the Vance County pluton. Includes chlorite and sericite protomylonite through ultramylonite and phyllonite that form in distinctive relict igneous and high strain compositional layers. Iron and manganese oxide commonly coat fractured and foliated surfaces. Flattened and rotated polydeformed plagioclase and quartz common as porphyroclastic minerals that form composite S-C and C' foliations. Quartz, feldspar, chlorite, and white mica contribute to a mineral aggregate, mineral streak, and slickenside lineation. White mica and chlorite form conspicuous asymmetric fish structures ranging from mm to meters in scale.
 - CZvg** - **Vance County porphyritic granite:** Leucocratic (CI less than 5), white to white-tan to white-gray, medium-grained to porphyritic. Locally contains sparse biotite and commonly porphyritic quartz phenocrysts ranging up to 5.7 mm. Lake-side boulder fields and saprolic outcrops are common on Henderson Point. Biotite-free to biotite-bearing outcrops generally have a highly fractured, then crystalline protomylonitic to ultramylonitic or phyllonitic microstructure, grading upward into the Verobus Creek fault zone. Highly fractured and mylonitic outcrops also form resistant hillside and lake-side outcrops, and cobble and boulder fields.
 - CZvt** - **Vance County tonalite:** Mesocratic (CI greater than 10-20), intermediate gray-blue-green, and coarse-grained metamorphosed biotite + hornblende tonalite and minor granodiorite. Commonly forms medium- to coarse-grained boulder outcrops. Granular saprolic and saprolic lake-side exposures display a reddish salt-and-pepper appearance and bottoms of pure magnetite are common. Biotite phenocrysts are rimmed by prismatic hornblende join rounded to tabular, saussuritized and sericitized pale green plagioclase and gray to distinctly cobalt-blue quartz phenocrysts and give fresh outcrops a gray-blue-green tint. Locally contains foliated and unfoliated enclaves of fine-grained chlorite phyllite, megacrystic, and metadiabase. Cut by mm- to meter-scale metamorphosed tondalitic, monzonitic, and granodioritic dikes.

- ### EXPLANATION OF MAP SYMBOLS
- #### CONTACTS
- Intolitic contacts - dashed where inferred, dotted where concealed
 - Qal contact - solid line
 - faults - dashed where inferred, dotted where concealed
 - Arrows indicate relative motion. In cross section, T indicates movement toward the viewer, A indicates movement away from the viewer.
 - diabase dikes - solid where location known, dashed where inferred, dotted where concealed
- #### LINEAR FEATURES
- Bearing and plunge of mesoscale fold hinge
 - Bearing and plunge of circulation lineation
 - Bearing and plunge of slickenside
 - Bearing and plunge of mineral rod or aggregate lineation
- #### PLANAR FEATURES
- Observation sites are centered on the strike bar or are at the intersection point of multiple symbols. Planar feature symbols may be combined with linear features.
- Strike and dip of inclined early S-C shear strain foliation (Ses)
 - Strike and dip of inclined undifferentiated shear strain foliation (Sic)
 - Strike of vertical undifferentiated shear strain foliation (Sv)
 - Strike and dip of inclined late C' shear band foliation (S'c)
 - Strike of vertical late C' shear band foliation (S'c')
 - Strike and dip of inclined foliation in enclave
 - Strike and dip of diabase dike, granitic dike or quartz vein
 - Strike of vertical diabase dike, granitic dike or quartz vein
 - Strike and dip of inclined fracture surface
 - Strike of vertical fracture surface
 - Strike and dip of slickenside surface
 - Strike and dip of axial surface of mesoscale fold
 - Strike of vertical axial surface of mesoscale fold
 - Strike and dip of kink band
 - Strike of vertical kink band
 - Observation station location
 - Diabase station location



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Disclaimer:
This Open-File report is preliminary and has not been reviewed for conformity with the North Carolina Geological Survey editorial standards or with the North American Stratigraphic Code. Further revisions or corrections to this preliminary map may occur prior to its release as a North Carolina Geological Survey map.

GEOLOGIC MAP OF THE NORTH CAROLINA PORTION OF THE JOHN H. KERR DAM 7.5-MINUTE QUADRANGLE, WARREN AND VANCE COUNTIES, NORTH CAROLINA

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Digital representation by Michael A. Medina and Heather D. Hanna

2010



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