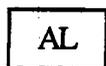


LEGEND TO ACCOMPANY GEOLOGIC MAP OF REGION H

This geologic map was compiled from published reports, theses, dissertations, and original mapping conducted as a part of the North Carolina Geological Survey's regional geologic mapping program. Some of the previous mapping was used without modification. Other maps were modified to various degrees, partly as a result of reconnaissance mapping and partly for commonality. The use of previous work is gratefully acknowledged; however, the Geological Survey Section assumes responsibility for any errors, omissions, or revisions. For previous work, refer to the Index of Geologic Mapping.

To achieve conformity throughout the map and to make the map more useful to the public, similar rock types were combined into generalized units which could be extended over large areas. However, even though the map was generalized, certain areas may falsely appear more geologically complex than others because of the variety of different scale maps used during compilation.

SEDIMENTARY ROCKS



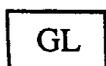
Floodplain alluvium

Gray, buff to brown, unconsolidated sand, silt, and clay with some gravel beds.



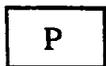
Terrace Alluvium

Both high and low terraces undivided, unconsolidated, gray, buff to brown gravel, sand, silt, and clay (T). Some terraces are mainly sand, silt, and clay, whereas others are conspicuously gravel rich. The highest terrace deposits (T₁) in the Pee Dee River appears similar to but is not Middendorf Formation.



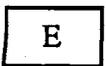
High-level Gravels

Buff to tan, fluvial, cross-stratified sands with intercalated stringers of gravel. Gravel is mainly quartzite and is distinct from gravel in floodplains, terraces, and Cretaceous deposits. Deposits overlie Middendorf Formation. Several workers have assigned most outcrops to "Citronelle" Formation.



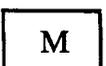
Pinehurst Formation

Buff to light brownish red, unconsolidated surficial sands. Primarily medium sand with small amounts of silt and clay. Planar cross bedding and horizontal bedding can be seen in some fresh cuts. Can be confused with soil formed on underlying Middendorf Formation.



Eocene undivided

Tan to reddish brown phosphatic sandstone, glauconitic sandstone, fossiliferous sandy opal claystones.



Middendorf Formation

Light-gray, buff to light-brown, fluvial, loose to poorly indurated, commonly cross-stratified silty sands with subordinate lenses of clay and pebbles; clay balls common in some sections.

- CF** Cape Fear Formation
Light-gray to buff, estuarine, poorly indurated, graded muddy sands and sandy muds.
- TU** Triassic undivided
Gray, brown to maroon, non-marine fanglomerate, conglomerate, sandstone, siltstone, claystone, and shale; for the most part in lenticular beds that are not consistently mappable. Commonly conglomeratic near border faults especially in Anson County.
- SA** Triassic Sanford Formation
Gray, brown to maroon, non-marine fanglomerate, conglomerate, sandstone, siltstone, claystone, and shale; for the most part in lenticular beds that are not consistently mappable.
- CN** Triassic Cumnock Formation
Gray to black, non-marine conglomerate, sandstone, siltstone, claystone, and shale. Contains coal beds and beds of carbonaceous shale.
- PK** Triassic Pekin Formation
Gray, brown to maroon, non-marine basal conglomerate and coarse-grained sandstone overlain by conglomerate, sandstone, siltstone, claystone, and shale; for the most part in lenticular beds that are not consistently mappable.

METASEDIMENTARY AND METAVOLCANIC ROCKS

- AR** Argillite
Light-gray to bluish gray to brown, in part well bedded, consists mainly of clay and silt size particles with prominent bedding plane or slaty cleavage in most outcrops. Contains primarily quartz, plagioclase, sericite, rock fragments, and chlorite. Also present are beds of mudstone, novaculite, sandstone, conglomerate, and felsic volcanic rock; some portions are tuffaceous. Lithologically similar to but not necessarily correlative with the Floyd Church Member of the Millingport Formation, the Mudstone Member of the Cid Formation, and the Tillery Formation as mapped in the Denton quadrangle.
- VE** Volcanoclastic-Epiclastic Rocks
A heterogeneous sequence of complexly interfingering volcanic and sedimentary facies. Major rock types include volcanic graywacke, sandstones, siltstones, felsic sandstones, and tuffs(?). Minor rock types include conglomerates, argillites, felsic crystal tuffs, felsic flow banded rock, felsic crystal flows, phyllites, andesitic tuffs, and lithic tuffs. Grains or crystals in the various rock units include rock fragments (both sedimentary and volcanic), quartz, albite, microcline, sericite, calcite, chlorite, pyrite, epidote, magnetite, and tremolite. Much of this sequence is probably subaqueous in origin, although bedding is not visible in many outcrops.
- FV** Felsic Volcanic Rocks
Gray to dark blue-black felsic tuffs, crystal tuffs, lithic tuffs, and flows; minor amounts of epiclastic rocks. Major minerals present are quartz, albite, microcline, and sericite. Minor minerals include chlorite, pyrite, magnetite, and epidote. Most of this sequence is probably of subaerial origin--bedding rare.

IV**Intermediate Volcanic Rocks**

Medium- to dark-grayish-green tuffs and lithic and crystal tuffs with rare flows; possibly andesitic in composition. Mapped separately from mafic volcanic rock unit mainly by soil color. Soil is light to medium brown to medium red. Minerals present in major amounts are quartz, albite, epidote, chlorite, and sericite. Other minerals include magnetite, pyrite, calcite, tremolite, biotite, and leucoxene.

MV**Mafic Volcanic Rocks**

Medium- to dark-grayish-green tuffs, crystal tuffs, and flows; possibly basaltic in composition. Subordinate lithic tuffs. Soil deep brown to red. Major minerals are tremolite, epidote, chlorite, albite, and quartz. Other minerals include pyrite, leucoxene, sericite, and biotite.

SP**Phyllitic to Schistose Rocks**

Fine-grained, light-gray, silver-gray, greenish, and white phyllites and fine-grained schists with well developed cleavage. Includes hornfels in metamorphic zones around intrusions, phyllites associated with pyrophyllite mineralization, sericite phyllite, and phyllites in what may be shear zones. Many small shear (?) zones not mapped at this scale. Principle minerals are sericite and muscovite with subordinate amounts of quartz, chlorite, feldspar, and hematite.

FTA**Felsic Tuffaceous Argillite**

Buff to medium-blue, thin bedded, fine-grained felsic rock similar to thin-bedded argillite in texture and appearance but containing more quartz and possibly feldspar. This bedded unit is probably subaqueous in origin.

MG**Mica Gneiss and Schist**

Gray, medium- to coarse-grained, well-foliated biotite gneiss and sericite schist.

INTRUSIVE ROCKS**db****Diabase**

Dense, dark gray to black, fine- to medium-grained dikes and rare sills composed chiefly of augite, olivine, and plagioclase. Dikes range from 1 foot to 150 feet or more in width. Reinemund (1955) reports sills up to 400 feet thick from borehole data in the Deep River Coal Field, part of which crops out in northeastern Region H.

GB**Gabbro and Metagabbro**

Fresh, unmetamorphosed, massive, dark, coarse-grained gabbro composed chiefly of hornblende, pyroxene, olivine, and plagioclase crops out in Anson and Richmond Counties. Older(?) metagabbro sills crop out in Montgomery County. The principle mineral is hornblende. Other minerals include feldspar, sericite, epidote, calcite, pyrite, and leucoxene.

GR**Granite**

Post-metamorphic granitic rocks, coarse-grained and porphyritic. The Lilesville Granite is compositionally zoned and consists of quartz monzonite, granodiorite, and quartz diorite. Characterized by porphyritic rapakivi texture with a matrix of plagioclase, quartz, and biotite (Waskom, 1970). The Millstone Lake Granite northeast of Rockingham is porphyritic but has not been studied in detail.

Q**Quartz**

Quartz veins

The following sources were used in compiling the geologic map of Region H.

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