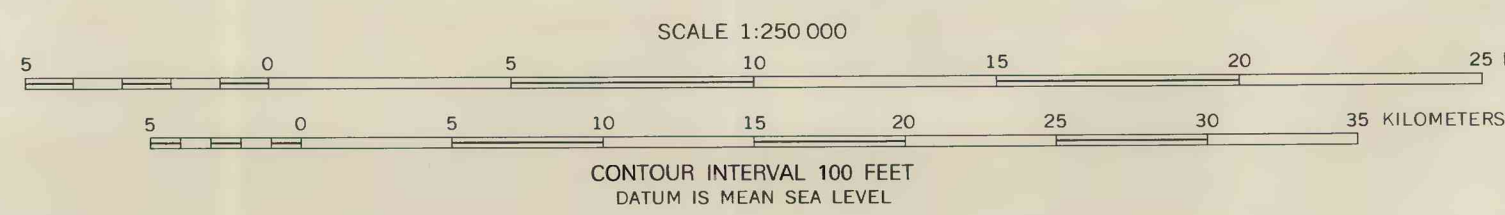




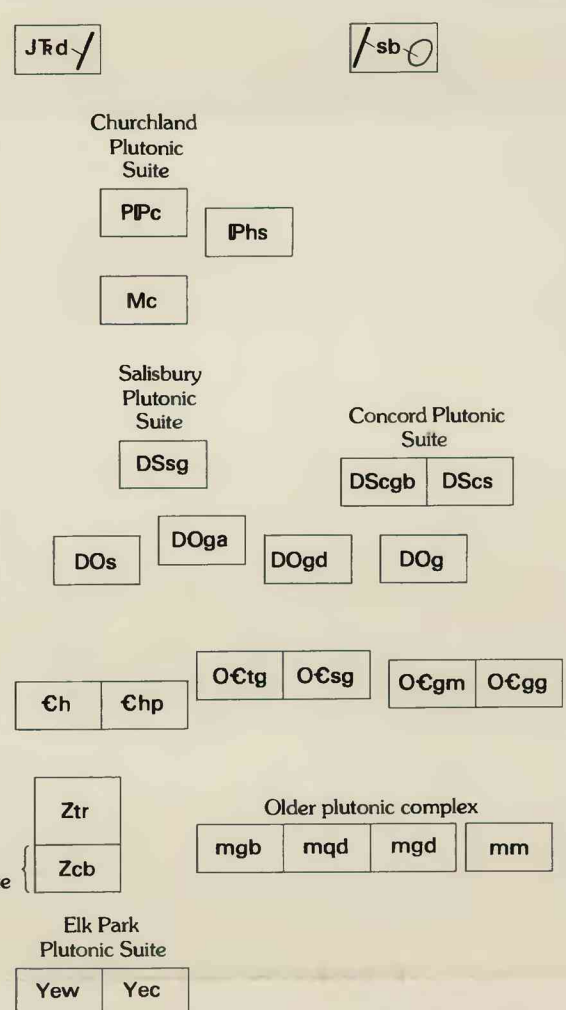
Base from U.S. Geological Survey, 1963
Photorevised 1974

Modified from Goldsmith and others (1988)

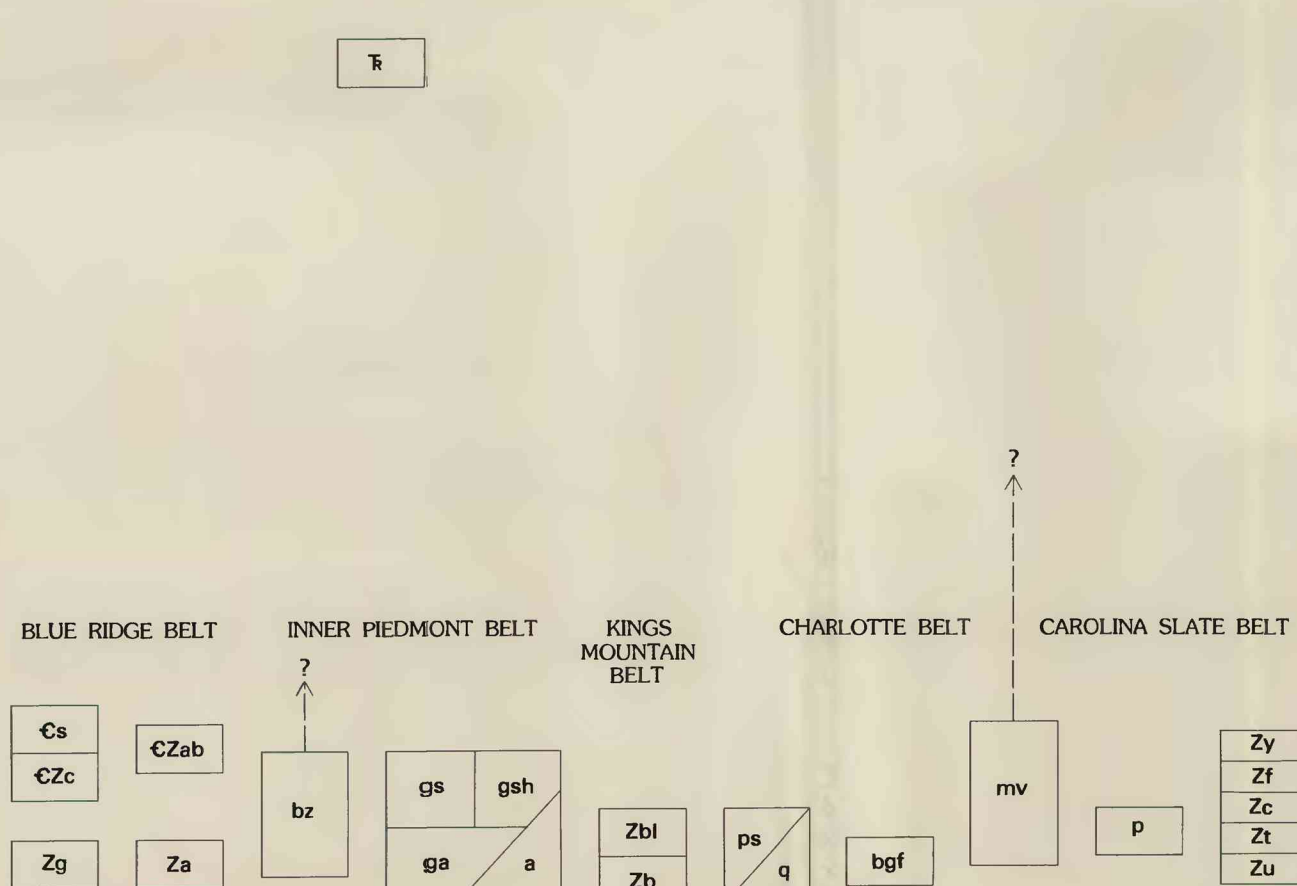


CORRELATION OF MAP UNITS

Intrusive and altered rocks



Sedimentary and volcanic rocks and their metamorphic equivalents



DESCRIPTION OF MAP UNITS

This map is generalized from Goldsmith and others (1988) in order to make an appropriate base for mineral resource assessment as part of a project in the Continental United States Mineral Assessment Program. Most of the plutonic rock units and all localities of ultramafic rock are shown. Minor stratiform rock units and subdivisions of major stratiform rock units have not been shown.

Sedimentary and volcanic rocks and their metamorphic equivalents

Ts	Sandstone, siltstone, and conglomerate
Cs	Shady Dolomite (Early Cambrian)
CZc	Chilhowee Group (Early Cambrian to Late Proterozoic)—Quartzite, arkosic quartzite, and phyllite
CZab	Alligator Back Formation (Early Paleozoic and/or Late Proterozoic)—Laminated quartzofeldspathic gneiss, mica schist, and amphibolite
bz	Rocks of the Broad zone—Variably sheared biotite gneiss, mica schist, quartzite, metaklastic rocks, phyllite, and marble. Includes rocks of several formations
gsh	Muscovite schist, layered biotite gneiss, and subordinate quartzite and amphibolite; contains narrow zones of Henderson Gneiss
gs	Biotite gneiss, biotite-muscovite schist, sillimanite mica schist, and subordinate layers of calc-silicate rock, quartzite, metabasite, and many small masses of granite and pegmatite
bgf	Fine-grained biotite gneiss—Strongly foliated but commonly massive rock of granitic to tonalitic composition. Minor amphibolite and muscovite schist. Probably metamorphosed intermediate volcanic rock
ga	Biotite gneiss, amphibolite and hornblende gneiss; minor sillimanite and mica schist, and many small masses of granite and granite gneiss locally forming migmatite
a	Amphibolite
ps	Phyllite and mica schist, minor quartzite
q	Quartzite; subordinate mica schist and phyllite. Probably includes both metamorphosed sandstones and metamorphosed hydrothermally leached and silicified rock
mv	Metavolcanic rocks, undivided—Includes mafic, intermediate, and felsic volcanic rocks and Flat Swamp Member of the Cid Formation and metavolcanic rocks of the Battleground Formation
Zg	Grandfather Mountain Formation (Late Proterozoic)—Arkose, siltstone, phyllite, conglomerate and felsic volcanic rocks
Za	Ash Formation (Late Proterozoic)—Muscovite-biotite gneiss, commonly sulfidic; mica schist, and amphibolite
Zy	Yadkin Formation (Late Proterozoic)—Graywacke
Zf	Floyd Church Formation (Late Proterozoic)—Siltstone and argillite
Zc	Cid Formation (Late Proterozoic)—Mudstone member
Zt	Tillery Formation (Late Proterozoic)—Laminated siltstone and mudstone

Intrusive and altered rocks

Jkd	Dibase (Jurassic and Triassic?)
sb	Silicified breccia zones
PPc	Churchland Plutonic Suite (Permian and Pennsylvanian)—Predominantly porphyritic granite containing microcline phenocrysts
Phs	High Shoals Granite (Pennsylvanian)—Porphyritic gneissic granite
Mc	Cherryville Granite (Mississippian)—Biotite-muscovite granite; some associated pegmatites contain spodumene
DSag	Salisbury Plutonic Suite (Devonian and Silurian)—Leucocratic granite
DSgb	Concord Plutonic Suite (Devonian and Silurian)—Gabbro, norite, gabbro-norite, and hornblende gabbro
DScs	Syenite of Concord Plutonic Suite
DOga	Alaskite granite, fine-grained
DQgd	Granodiorite, non- to weakly foliated
DQ	Gneissic metagranite—Medium- to coarse-grained gneissic biotite granite
DOs	Spruce Pine Alaskite (Early Devonian to Late Ordovician)—Biotite-muscovite granite and granodiorite; associated pegmatites are a source for feldspar and muscovite
OCtg	Toloca Granite (Early Ordovician and Cambrian)—Medium-grained gneissic to non-gneissic granite and granodiorite; garnet and monazite common accessories
OCsg	Granite of Sandy Mush—Porphyritic gneissic granite probably genetically related to the Toloca Granite
OCgm	Migmatitic granitoid gneiss and quartz-diorite gneiss containing inclusions and screens of biotite gneiss, amphibolite and metagabbro, and masses of gneissic and non-gneissic granite to quartz diorite similar to the Toloca Granite
OCgg	Granitoid gneiss—Layered gneissic biotite granite to hornblende-biotite quartz diorite
Ch	Henderson Gneiss (Cambrian)—Inequigranular, granitic to granodioritic biotite gneiss. Typically contains lensoid microcline megacrysts and microcline-plagioclase aggregates parallel to foliation
Chp	Garnetiferous phase of Henderson Gneiss—Granite to granodioritic biotite gneiss containing tabular to lensoid feldspar megacrysts in garnetiferous matrix

Zu	Uwharrie Formation (Late Proterozoic)—Felsic volcanic rocks
p	Phyllite (Late Proterozoic)—Probably equivalent to Tillery Formation (Zt) and Cid Formation (Zc)
Zbl	Blacksburg Formation (Late Proterozoic)—Sericite phyllite or schist and subordinate beds of marble, micaceous quartzite, and amphibolite
Zb	Battleground Formation (Late Proterozoic)—Quartz-sericite schist and phyllite, and subordinate beds of quartz-pebble conglomerate, quartzite, kyanite or sillimanite quartzite, and mangiferous schist. Metavolcanic rocks of the Battleground Formation are included in mv.
Ztr	Metamorphosed trondhjemite and biotite tonalite (Late Proterozoic)
mgb	Metamorphosed gabbro, diorite, and diabase
mqd	Metamorphosed quartz diorite, diorite, and tonalite; locally porphyritic
mgd	Metamorphosed granodiorite; locally porphyritic
mm	Mafic and ultramafic complex—Metamorphosed gabbroic and ultramafic intrusives, hypabyssal and probably extrusive basalts
u	Ultramafic rocks, variably altered to soapstone and serpentinite
Zcb	Brown Mountain Granite (Late Proterozoic)—Medium- to coarse-grained leucocratic granite, locally heteromylonitic
Yew	Wilson Creek Gneiss and Blowing Rock Gneiss (Middle Proterozoic)—Equigranular granite to diorite gneiss; coarse-grained granite augen gneiss
Yec	Cranberry Gneiss (Middle Proterozoic)—Equigranular granite and layered granite, granodiorite, and biotite gneiss

EXPLANATION OF MAP SYMBOLS

