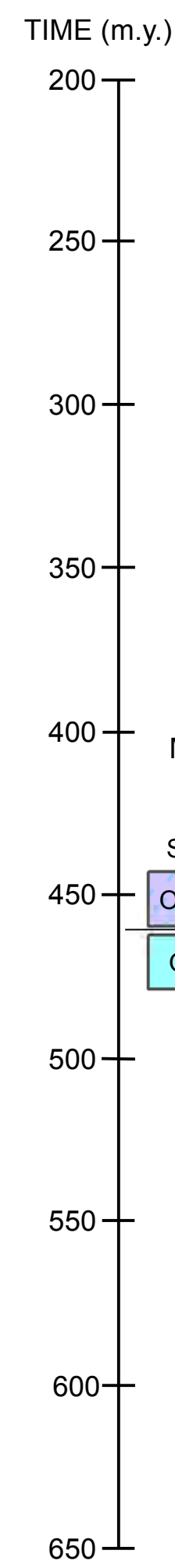
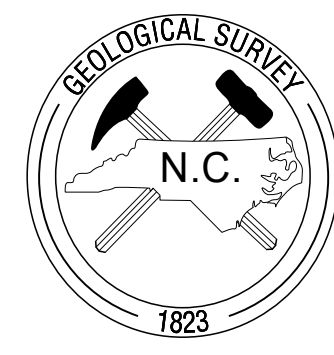


Geology of the Hyco Shear Zone in North Carolina and Virginia

Geologic compilation by: James P. Hibbard and Philip J. Bradley
 Digital Cartography by Michael A. Medina, Philip J. Bradley and Brandon T. Peach



ATLANTIC RIFT BASIN
 Trb MAINLY RED-GRAY CLASTIC SEDIMENTARY ROCKS

Jd DIABASE DIKE

ALLEGHIAN GRANITOIDS
 Mkg KILGORE GRANITE/ORTHOgneiss
 Pflg FARMERS LAKE GRANITE
 Mygg YANCEYVILLE GRANITE ORTHOGneiss

MILTON TERRANE

CAROLINA TERRANE

MILTON-CHOPAWAMSI ARC (c. 475-450 Ma)

SHELTON ORTHOGneiss SUITE

Ocgg CONNALLY CHURCH ORTHOGneiss
 Om MILTON SCHIST + PARAGneiss WITH LAYERS AND STOCKS OF FOLIATED GRANITOID

OMcc CUNNINGHAM COMPLEX

ALBEMARLE ARC (c. 550 - 530)

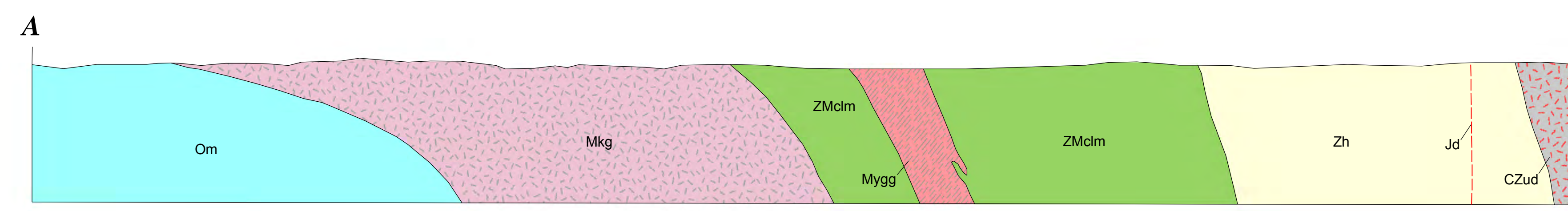
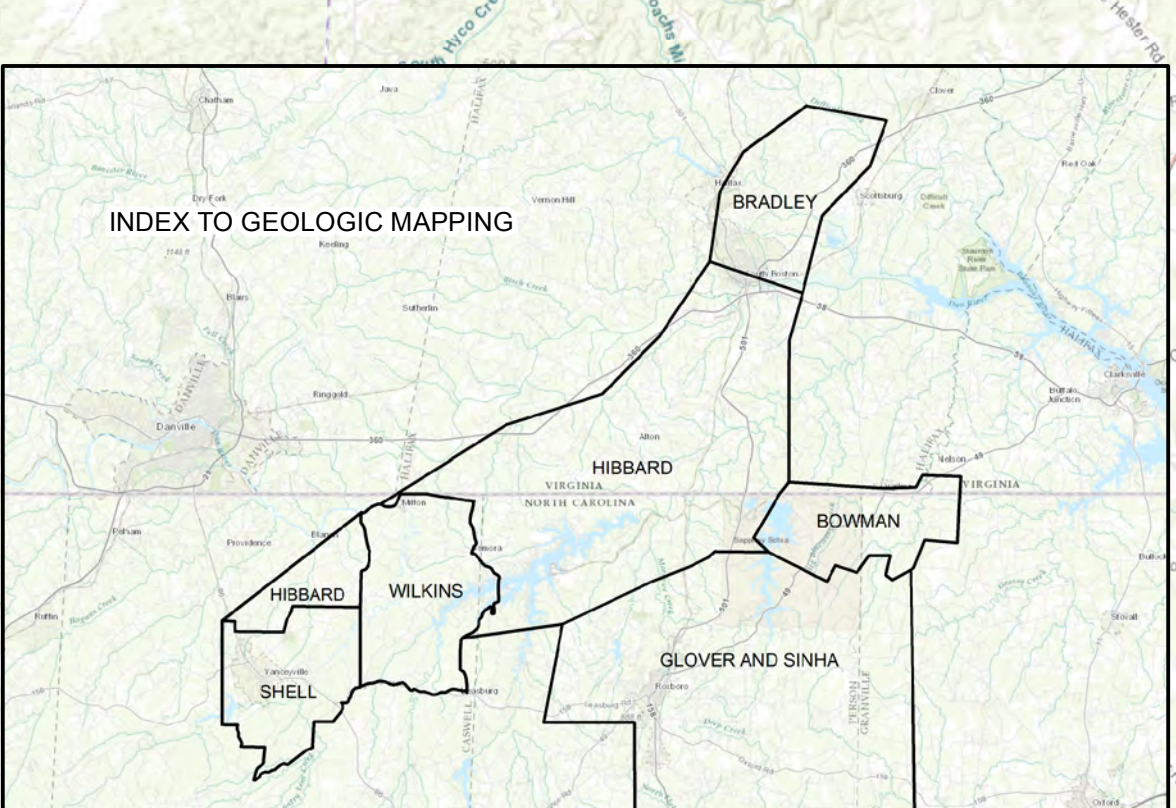
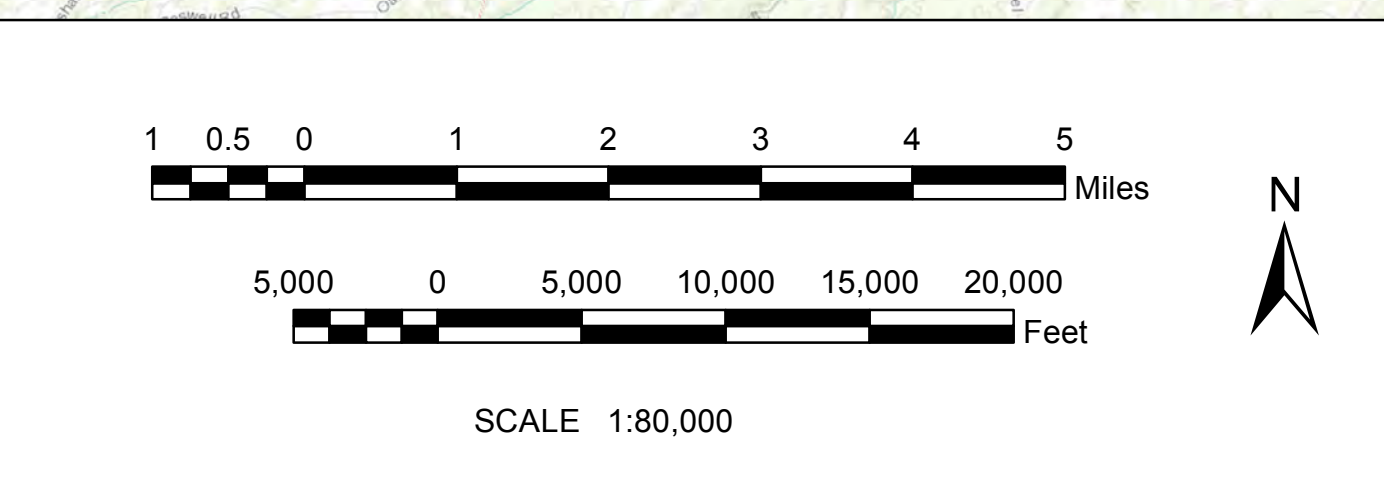
CZug UNSEPARATED GRANITIC (ug) - QUARTZ DIORITIC (ud) PLUTONS
 CZrp ROXBORO PLUTON

AARON FORMATION
 Zav VIRGINIA VOLCANICS
 Za MAINLY CLASTIC SEDIMENTARY ROCKS
 Zac AARON CONGLOMERATE

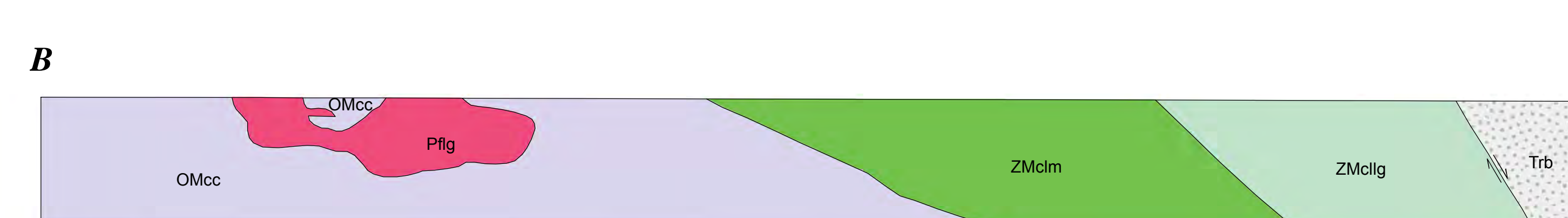
HYCO ARC (c. 635 - 610)
 ZMclg UNSEPARATED BIOTITE GRANITE ORTHOGneiss
 ZMclg INTERLAYERED MAFIC + GRANITE Gneiss
 ZMclm MAINLY MAFIC Gneiss + AMPHIBOLITE WITH MISSISSIPPIAN PEGMATITES

Zgphrg OSMOND GRANITE/HIGH ROCK GRANITE
 Zum CASWELL COUNTY MAFIC-ULTRAMAFIC SUITE
 Zh HYCO FORMATION

- Age Date Locations**
- 1 - U-Pb age date - 319.6 ± 0.7 Ma, Farmers Lake granite (Wortman et al., 1998)
 - 2 - U-Pb age date - 335.4 ± 2.2 Ma, Yanceyville granite orthogneiss (Wortman et al., 1998)
 - 3 - U-Pb age date - 327 ± 1.5 Ma, Kilgore granite/orthogneiss (Wortman et al., 1998)
 - 4 - U-Pb age date - 612.4 ± 5.2 ± 1.7 Ma, Osmond granite (Wortman et al., 2000)
 - 5 - U-Pb age date - 619.9 ± 4.5 ± 3.0 Ma, Hyco Formation (felsic gneiss) (Wortman et al., 2000)
 - 6 - U-Pb age date - 546.5 ± 3.0 ± 2.4 Ma, Roxboro Pluton (Wortman et al., 2000)
 - 7 - U-Pb age date - 616.92 ± 1.2 Ma, Hyco Formation (felsic tuff) (Bowman, 2010 and Bowman et al., 2013)
 - 8 - U-Pb age date - 613.9 ± 9.3 Ma, South Boston gneiss - mafic phase (Wortman et al., 1998)
 - 9 - U-Pb age date - 322.5 ± 2.7 Ma, South Boston gneiss - granitic phase (Wortman et al., 1998)
 - 10 - ⁴⁰Ar/³⁹Ar date - 322.9 ± 2.6 ± 7.8 Ma, South Boston gneiss - hornblende (Wortman et al., 1998)
- Geologic Symbols**
- geologic contact
 - - - - - concealed geologic contact
 - U - fault
 - - - - - diabase dike - inferred
 - - - - - approximate limit of shear zone (gradational)
 - - - - - approximate southern limit of detailed mapping in Virginia area by Bowman (2010)
 - antiform
 - overturned anticline
 - overturned syncline
 - main phase foliation (Sm)
 - bedding
 - overturned bedding



SCALE 1:24,000



APPROXIMATE SCALE 1:24,000

Disclaimer:
 This Open-File report is preliminary and has been reviewed internally for conformity with the North Carolina Geological Survey editorial standards. Further revisions or corrections to this preliminary map may occur.

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