Remapping the Cranberry Ultramafic Body of the Blue Ridge Mountains

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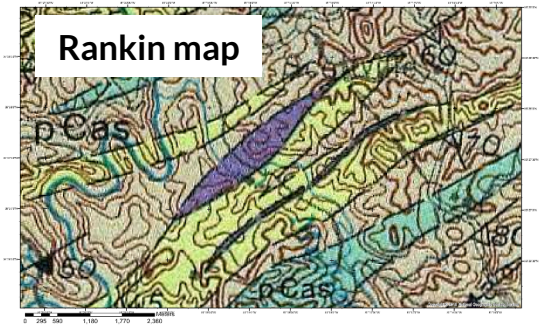
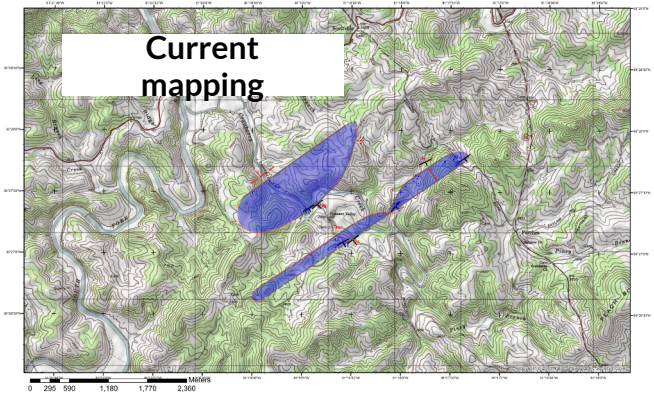
Were the ultramafic slices in the NC Blue Ridge Mountains formed through one major heating and deformation event, or many smaller fluctuations?

Ashe Metamorphic Suite(AMS)

Highly deformed section of the Appalachian Mountains. Mostly metamorphosed mafic rock matrix with small ultramafic bodies scattered throughout.



I have remapped some of the geology of North Carolina centered around ultramafic bodies in a mostly mafic matrix found in the AMS of the Blue Ridge Mountains. My findings differ from previous mapping of the area done in 1972

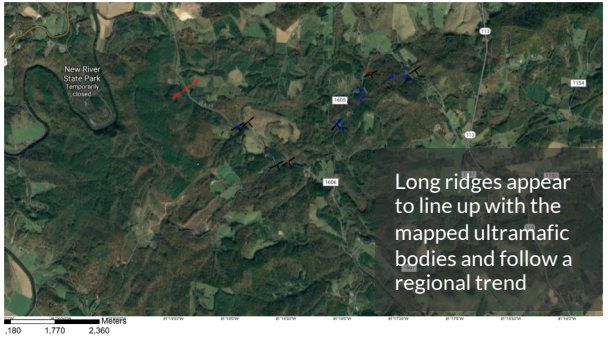


Difference from Rankin et al.

- Rankin et al. (1972) shows the Cranberry body significantly larger than the Woodrow Bare and single layers for Mount Jefferson and Rocky Ridge
- Our mapping,indicates the bodies are of a similar size.
- Mount Jefferson, Rocky Ridge, and Peden bodies show similar pairs of parallel layers that differ from Rankin's map.

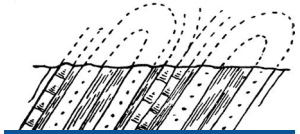
Regional trends

- Parallel pairs of the bodies in at least 3 sites
- Alignment between MJ and these bodies
- Possible large isoclinal fold that was once connected



Future Study

- Do other bodies in the region share this isoclinal folding pattern? More mapping.
- Analyze samples to determine metamorphic history and microstructure.



Acknowledgements
Michael Wimer, Carson Dietiker, Katharine Johanesen, Adam Ianno

Mafic rock- dark coloration with 45-52% silica with high Fe and Mg content

Ultramafic rock- green coloration and <45% silica and higher Fe and Mg

Isoclinal Folds- Major deformation can cause folding severe enough that the limbs parallel themselves

References Cited:
Rankin, D.W., Espenshade, G.H., and Neuman, R.B., 1972, Geologic map of the west half of the Winston-Salem quadrangle, North Carolina, Virginia, and Tennessee: U.S. Geological Survey, Miscellaneous Geologic Investigations Map I-709-A, scale 1:250,000.
Abbott, R.N, and Raymond, L.A., 1984, *The Ashe Metamorphic Suite, Northwest North Carolina: Metamorphism and Observations on Geologic History*: American Journal of Science, v. 284, p. 350E375.