

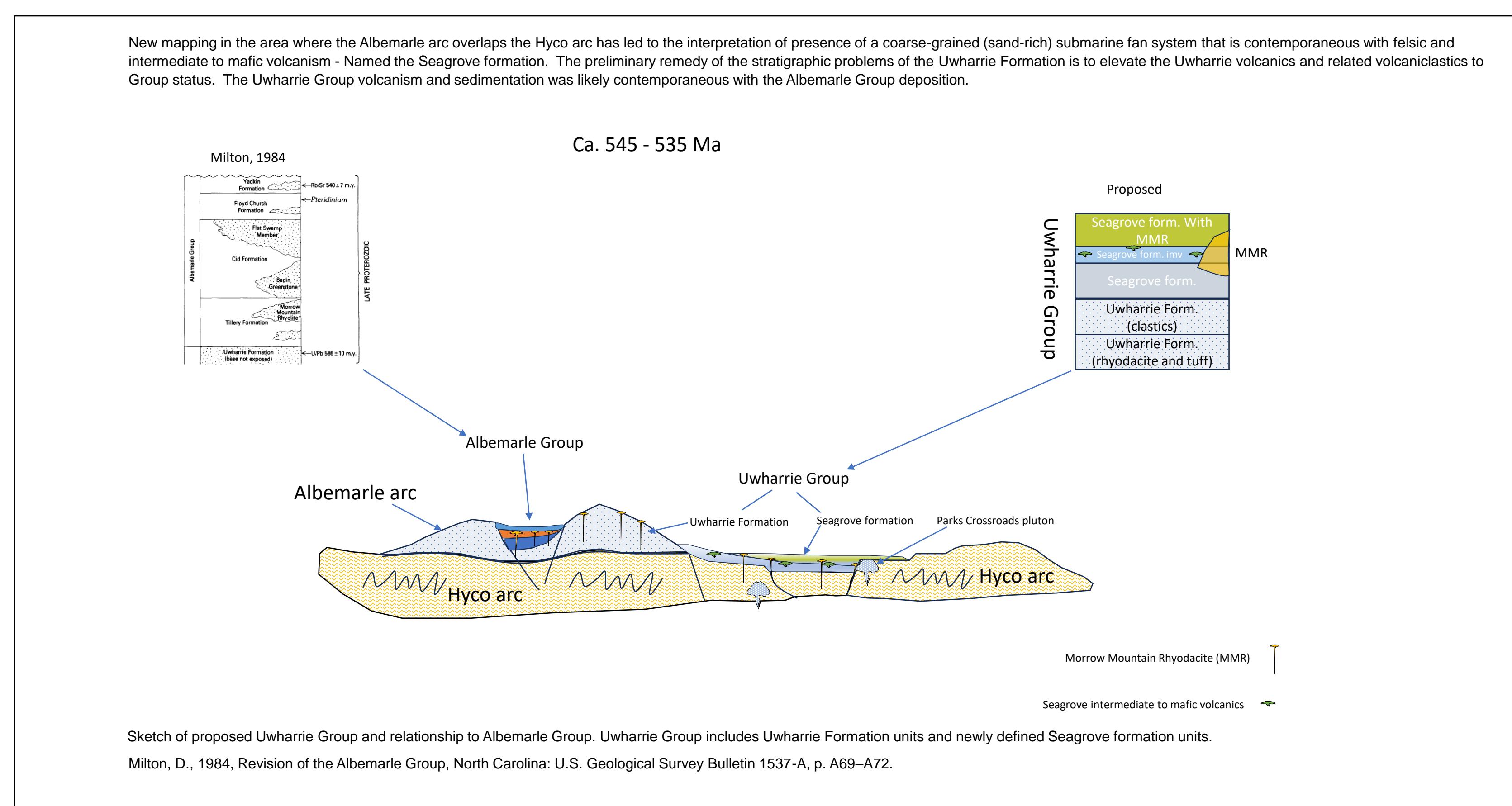
Preliminary Compiled Bedrock Geologic Map of the Southern Pines 100K (Northern Half), North Carolina

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The N.C. Geological Survey is currently in year one of a two-year project to compile the bedrock geologic map of the Southern Pines 100K Quadrangle in the North Carolina Piedmont. The goal of year one is a complete compilation of the northern portion of the 100K. The project is partially funded by the U.S. Geological Survey, National Cooperative Geologic Mapping Program under STATEMAP. Line work from multiple legacy sources is being utilized and modified according to new field observations and edge-matched with adjacent quadrangles. Legacy geologic data sources include NCGS reconnaissance-scale data, a USGS published map, multiple master's theses, and dissertations.

The northwest portion of the map area is underlain by the Neoproterozoic to Cambrian greenschist facies Carolina terrane, which includes the Hyco and Albemarle volcanic island arcs. The Hyco arc includes multiple subunits of the Hyco Formation. From oldest to youngest, the Albemarle arc consists of the Uwharrie, Tillery, and Cid Formations, and the newly proposed Seagrove formation (informal). The Sanford and Wadesboro sub-basins of the Deep River Triassic basin occupy much of the central to southwestern portions of the map. The eastern side of the map area is underlain by the Easternmost Carolina terrane (ECT), Crabtree terrane, and Spring Hope terrane. The ECT is separated from the rest of the Carolina terrane by the Jonesboro fault. Much of the map is overlain by Coastal Plain sediments. Bedrock beneath the Coastal Plain will be compiled using legacy boring and geophysical data and enhanced with new USGS Earth MRI funded airborne magnetic and radiometric surveys.

Recent age dates from rocks previously mapped as the Uwharrie Formation suggest that parts of the Uwharrie and the younger Tillery and Cid Formations overlap in age, thus bringing the established stratigraphy of the Albemarle arc into question. Additionally, recent detrital zircon dates indicate that large portions of the map area previously interpreted as Aaron Formation are linked to sedimentation related to the Albemarle arc. This compilation work, with additional age data collection, will hopefully bring a better understanding of a re-defined Aaron Formation and the relationship of the Uwharrie Formation with the younger units in the Albemarle arc.



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