



ASSOCIATION OF ENVIRONMENTAL & ENGINEERING GEOLOGISTS Carolinas Chapter

Field Course to Explore the Uwharrie Volcanics of the Albemarle Volcanic Island Arc in Troy, North Carolina Saturday, April 11, 2026 - 10:00 AM to ~3:00 PM

Field Course Leader:

Phil Bradley, PG - Senior Piedmont Geologist for the NC Geological Survey

Event: Explore the Uwharrie Volcanics of the Albemarle Volcanic Island Arc in Troy, NC.

Details: Geological hike along a portion of the Uwharrie Trail on Dark Mountain. We will walk over rocks associated with the Uwharrie Volcanics of the Albemarle volcanic island arc, look at rock textures along the way while discussing new geologic mapping results of the NC Geological Survey. Bring your own lunch for a stop while on the trail – bring your own backpack with water. The hike is of moderate difficulty and approximately 3 miles round-trip. Hiking boots are strongly recommended.

Location: Near the unincorporated town of Ophir in the Uwharrie National Forest. Meet at Jumping Off Rock/Dark Mountain Trailhead parking area. [Jumping Off Rock Trailhead](#)

2015 A Flint HI Rd, Troy, NC 27371

Cost: \$15 for AEG members and teacher members; \$25 for non-members; free for student members of AEG

Registration: Register online at www.aegcarolinas.org/news. **Reservation deadline: 5:00 PM, Wednesday, April 8, 2026**

Field Trip Waiver: Please sign/date and return field trip waiver to Andrew Beaty at andrewbeaty3@gmail.com by April 8th or bring it with you to the field trip.

Continuing Education Credits: 4 hours for North and South Carolina geology boards

Background:

The NC Geological Survey, partially funded by the USGS STATEMAP program, has been conducting geologic mapping activities and compilation work in the Chapel Hill and Southern Pines 100Ks for the last several years. In June 2025, the Piedmont program of the NCGS completed field work and produced a preliminary map of the northern half of the Southern Pines 100K. The field course is located in the northern portion of the Southern Pines 100K map. The mapping included compilation of multiple legacy data sources and new data collection at 100K-scale in an area equivalent to approximately eight 24K quadrangles. The main goal of the new data collection was to collect bedrock structural data (including systematic collection of bedrock fracture data to assist with groundwater resource evaluation and groundwater contaminant transport modeling), refine geologic contacts from previous reconnaissance level mapping and to edge-match with adjacent detailed mapping. There were significant edge-match issues with existing mapping that were resolved as part of the 100K compilation. The Piedmont program also worked toward finalizing the Henderson and Chapel Hill 100K maps to open file status. These maps were released at the end of 2025 and can be downloaded from the NCGS website.

As part of mapping activities, bedrock samples were collected for U-Pb age date analysis. Four bedrock samples from the northern half of the Southern Pines 100K were collected (2 for crystallization age and 2 for detrital zircon dating). In late 2025, 4 additional bedrock samples were collected from the southern half of the Southern Pines and Laurinburg 100Ks for age date analysis with the results expected in Spring 2026.

Past and new age dates coupled with the new mapping have significantly contributed to the understanding of the Carolina terrane in the Southern Pines and adjacent 100Ks and led to significant revisions to the area stratigraphy. The main outcomes of the new mapping and age dates is a better understanding of the nature of the Uwharrie Formation and its relationship to other units within the Carolina terrane. Tentatively, the Uwharrie Formation is being elevated to Group status with the reassigning of rocks of the Uwharrie Formation to the Uwharrie Volcanics and the establishment of a new major geologic unit - the Seagrove formation. The previously existing and new age data indicate that volcanism and sedimentation of the Uwharrie Volcanics and Seagrove formation spanned from ca. 560 Ma to ca. 523 Ma and was contemporaneous with the deposition of units in the Albemarle Group (i.e. Tillery and Cid Formations).

Field Trip Description:

Geological hike along a portion of the Uwharrie Trail on Dark Mountain. We will walk over rocks associated with the Uwharrie Volcanics of the Albemarle volcanic island arc, look at rock textures along the way while discussing new geologic mapping results of the NC Geological Survey. Lunch while on the trail – bring your own backpack with water. The hike is of moderate difficulty and approximately 3 miles round-trip. Hiking boots are strongly recommended.

Post-Field-Course Final Stop

For those interested, we will stop after the field course at Uwharrie Brewery in Albemarle, NC....and/or.....Thirsty Skull Brewing in Siler City, NC, for adult beverages.

<http://uwharriebrewing.com/>

<http://www.thirstyskullbrewing.com/>

Links:

Dark Mountain info:

<https://trlt.org/public-access-at-the-peak-of-dark-mountain/>