

ECOLOGY OF ROCK OUTCROP COMMUNITIES

Highlands Biological Station, June 15 – June 27 2009

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PROPOSED SCHEDULE (12 DAYS). Changes in schedule possible.

Monday June 15. Introduction to course, students, instructor, objectives, tasks. Hike to Sunset Rock for initial introduction to flora of high altitude outcrops. Return to HBS for examination of herbarium specimens, group discussion. Introduction to reading list.

Tuesday June 16. Lecture on geological processes in Southern Appalachians and montane granite outcrops specifically by Steve Yurkovich, Professor of Geology at WCU. Travel to Whiteside Mtn for examination of local geology, exfoliation processes, outcrop microhabitats with Prof. Yurkovich. Return to HBS, discussion of assigned paper (TBD).

Wednesday June 17. Hike to Fodderstacks (local, protected outcrop community) with Gary Wein of the Highlands Trust. Discussion of conservation value, rare plants, endemics of outcrops. Discussion of independent field projects, assigned reading at HBS.

Thursday June 18. All day trip to Panthertown. Examination of diverse outcrop habitats. Field exercises quantifying vegetation “island” physical and biotic characteristics. Introduction to field techniques and GPS measurements.

Friday June 19. Lab practicum and field test (Sunset Rock) on plant identification. Afternoon lecture and discussion of island biogeography and its application to outcrop communities. Evening discussion of possible research projects, introduction to *Danthonia* complex.

Saturday June 20. Travel to Table Rock SC. Hike to top. Collect data on *Danthonia* complex as function of abiotic conditions, and patterns of infection with shared fungal disease. Evening discussion of assigned paper and consultations on proposed student independent projects.

Sunday June 21. Day of rest, independent research projects.

Monday June 22. Lecture on successional process, models of succession, applications to outcrop communities. Introduction to Stone Mtn. area. Afternoon hike to Bald Rock NC, Cedar Cliffs, GA. Further discussion on possible research projects. Evening discussion of papers on outcrop succession.

Tuesday June 23. Early morning departure to Atlanta region. Morning presentation by resident naturalist and nature center tour. Guided hike onto Stone Mtn. Later travel to Mt. Arabia flatrock for comparison and contrast with local naturalist. Return to HBS in evening, dinner on the road.

Wednesday June 24. Description of cyclical succession hypothesis. Hike to Fodderstacks or Sagee Mtn. from HBS. Examination of primary and secondary succession. Afternoon open for independent research projects. Evening discussion of data, ecological patterns, relation to theory of island biogeography. Discussion of papers.

Thursday June 25. Return to Panthertown. Field exercises and data collection on species richness in vegetation "islands" as a function of size, soil depth, and proximity. Examination of primary and secondary succession. Evaluate theory of cyclical succession by collecting data on tree size, species and distribution among outcrop islands.

Friday June 26. Fodderstacks or Sunset Rock for student independent projects. Afternoon analysis of data and report preparation. Evening presentation of student projects.

Saturday June 27. Short written exam at HBS. Final group hike on Bartram Trail to outcrop vistas. Course farewell and departure.