

Rock Pool Community Ecology Course (June 17-28)

Instructors: Dr. Brian Byrd, Western Carolina University
Dr. James Vonesh, Virginia Commonwealth University
Dr. Michael McCoy, East Carolina University

Students in this inquiry-based field course will examine major theories of community ecology and test their applicability to understanding patterns of aquatic macroinvertebrate biodiversity in Southern Appalachian riverine rock pools. Through a combination of lecture, lab, and fieldwork, students will gain a foundational understanding of community ecology theory, macroinvertebrate sampling methods, and species diversity metrics while testing the roles of predator and community diversity on the presence of an invasive mosquito species.

Prerequisites: *introductory biology, ecology, or permission of the instructors*

Daily Schedule:

A tentative weekly schedule will be provided each Monday. We will be working with riverine rock pools, so daily schedules will vary based on weather, river levels, and a risk/safety assessment by the course instructors. Students should expect that daily activities may consist of seminars (didactic/discussion sessions), field work, laboratory research, and data analysis sessions (or a combination thereof).

The course is designed to synthesize conceptual topics in community ecology such as patterns of biodiversity, island biogeography, and the river continuum as students gain quantitative and taxonomic skills while conducting field work studying riverine rock pools.

Morning sessions will typically begin by 830 am. However, some travel days may require an earlier departure; instructors will notify students of any planned earlier departures. Field work and travel may require a lunch “on the road” or in the field. See information about meals below. The class will meet each day during the course (June 17th-28th) with Sunday, June 23rd as an option field/laboratory day. Guest lectures are planned from regional experts (e.g., hydrogeology (Dr. David Kinner, WCU), river stewardship and hydropower (Kevin Colburn, American Whitewater Association).

Assessment (Course Grade)*:

25%: Reading: quizzes, discussion (facilitation & participation)

25%: Lab Practical: Macroinvertebrate identification

50%: Team project Presentation (Includes assessment of analysis tools)

*Undergraduate/Graduate Course Credit may be awarded through WCU. If you are seeking undergraduate credit, please notify the instructors the first day of the course; undergraduate expectations for the course will be provided.

Important notes: Most field sites will require travel by vehicle (van provided) and some travel by foot. You will need to hike and wade across streams to access some rock pools. If you need reasonable accommodations or are concerned about the physical requirements for this course, please notify a course instructor as soon as possible. In addition, a one-day survey (via canoe) on a stretch of the Chattooga River is planned. This survey will be led by a professional river outfitter and includes a basic canoe clinic for the participants. However, if the river levels are unsuitable for beginners, we may not be able to conduct this survey. If you do not wish to participate or are unable to participate in the canoe trip, an alternative assignment will be provided.

Course readings and other materials will be housed on dropbox folder available at: <https://tinyurl.com/HBS-Rockpools>

You should have a housing assignment (see emails from the station).

Beds: The Station does not provide linens. You are advised to bring your own twin-sized linens (*fitted sheet, sheet, duvet or blankets, pillow, and towel*). Pillows are available but you may want to bring your own.

Kitchen: You are welcome to help yourself to our fully equipped kitchen facilities, but please utilize the kitchen/dining associated with your assigned residence. Please mark *all* of your food items with your name and the date of your departure as any unmarked items will be thrown out. Upon your departure please take all of your items (*food and otherwise*) with you, unless you make arrangements with someone else to assume ownership/responsibility. The station does not provide meals.

Cleaning: Our facilities have a lot of character, that's part of the experience of staying at a field station. We keep the dorms clean but also have to keep costs low. Our cleaning crew cannot do their job in a messy dorm. Please keep floors and surfaces tidy at all times. *Primary responsibility for cleaning falls upon residents*. If you leave the residence in worse shape than when you arrived, you may be billed for additional costs of cleaning.

Laundry: Laundry facilities are in the Weyman building through a separate exterior entrance. Residents must provide their own detergent. Please keep the laundry area clean and empty the lint collector in the dryer. Residents of Valentine and the Duplexes may use the washing machine and dryer in Valentine. Duplex residents should let the residents of Valentine know that they are using the machines.

Phone, Fax & Internet: The Highlands Biological office phone number is 828.526.2602 and our fax number is 828.526.2797. We have campus-wide free Wi-Fi and residents will need to provide their own computer.

Campus Use: We encourage all residents to take advantage of the Station and its facilities. The Botanical Garden is open seven days a week, we ask that you stay on the

trails as there are many rare plants on property. The Outdoor Classroom is also open to the public *outside of the reserved times it is used for teaching*. The fire pit is available on a first come, first serve basis and residents must clean up after themselves.

Additional Course Materials to bring:

- Laptop* for data analysis using R
- Small backpack/daypack
- Waterproof boots or trail shoes
- Shoes/Sandals for working in the river (e.g., “tevas” with heel straps)
- Rain gear
- Water bottle
- Hat
- Sunscreen
- Small (pocket sized) waterproof field notebook
(e.g., “Rite in Rain” notebooks: <http://www.rainwriter.com>)

*Please contact Dr. Byrd (bdbyrd@wcu.edu) if you are unable to bring your own laptop.

We will provide: Microscopes, forceps, collection/preservation vials, rearing containers, and other field/laboratory equipment.