SYLLABUS · SUMMER 2027 · HIGHLANDS BIOLOGICAL STATION

Salamander Conservation

WHEN

May 24–28, 2027
Monday to Friday

WHERE

Highlands Biological Station
Highlands, North Carolina

INSTRUCTOR

Dr. William E. Peterman
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About the *course*

The Appalachian region harbors the greatest diversity of salamanders in the world. This course will provide an overview of the unique ecology, life history, and diversity of plethodontid salamanders in the Appalachian region, with emphasis on how these factors affect salamander conservation and habitat management.

Students in this course will read and discuss seminal papers in salamander ecology and conservation, which will be reinforced through daily field excursions to see and experience salamanders and their habitats.

PREREQUISITES

Zoology, Herpetology or Vertebrate Biology; Ecology or Population Biology; or permission from instructor.

DISCUSSION TOPICS

- Overview of salamander diversity
- Salamander ecology and life history
- Conservation and management of salamanders
- Overview of landscape ecology
- Spatial heterogeneity and scale
- Habitat connectivity & configuration

What to *expect*

Students will be expected to have read all papers prior to class and to contribute to discussions. We will have daily field trips and some night outings. Some discussions of papers will occur during commutes or in the field. There is a lot to learn, see, and explore in a short period of time. We're going to make the most of our time and have fun doing it!

INSTRUCTIONAL MATERIAL

PDFs of all discussion literature will be provided. Students should bring a laptop or other device to read primary literature.

WHAT TO BRING

- High quality rain gear
- Hiking boots (Gore-Tex/waterproof preferred: it often rains in Highlands and we may be spending time in headwater streams)
- Field clothes

- Headlamp (weatherproof since we may be out in the rain)
- Suggested: a field notebook (Rite in the Rain)

SUGGESTED TEXT

A major focus of this course will be on the salamanders around Highlands. A relatively inexpensive and relevant text is:

Dodd, C. K. 2004. *The Amphibians of the Great Smoky Mountains National Park.* The University of Tennessee Press, Knoxville, Tennessee, USA.

Course *schedule*

Subject to change depending upon weather.

MONDAY Day 1	Morning	Course registration, introduction and course organization; introductions Lectures: Diversity and declines
	Afternoon	Organization of literature presentations Trip: Local excursion
	Evening	Discuss: Grant et al. 2016, *Scientific Reports* Night walk
TUESDAY Day 2	Morning	Lecture: Salamander ecology and life history Lecture: Altered climate and disturbance Discuss: Marsh & Trenham 2001, *Conservation Biology*
	Afternoon	Trip: Coweeta
	Evening	Nocturnal salamander observations
WEDNESDAY Day 3	Morning	Lecture: Introduction to Landscape Ecology Lecture: Scale in Ecology Discuss: With, Chapter 1; Wiens 1989, *Functional Ecology*
	Afternoon	Trip: Panther Creek
THURSDAY Day 4	Morning	Lecture: Wildfire Student presentations
	Afternoon	Trip: Brevard
FRIDAY Day 5	All day	Trip: Great Smoky Mountains National Park
SATURDAY Day 6	Morning	Student presentations Trip: Wayah Bald
	Afternoon	Work time
SUNDAY Day 7	Morning	Trip: To be announced
	Afternoon	Lightning talk presentations

Assignments and *grading*

LEADING DISCUSSION OF LITERATURE · 30 POINTS

Everyone will be required to lead class discussion on a primary literature article. When doing so, you should clearly identify the objectives that the author(s) had in conducting their study, the main questions or hypotheses that were addressed, the methods used, the focal study system / organism(s), and the major findings. Since everyone will have read the paper with the same questions in mind, we should be able to have a lively and fun discussion about each paper!

LIGHTNING TALK TOPIC PRESENTATION · 50 POINTS

Everyone will give a 5-minute lightning talk (15 slides, 20 seconds each slide) on an approved salamander conservation topic.

PARTICIPATION · 70 POINTS TOTAL; 10 POINTS EACH DAY

We are a small group, and we want to hear everyone's thoughts, opinions, and perspectives. Active participation and contribution to all discussions is expected. All questions are good; ask frequently and openly!

GRADING · 150 POINTS POSSIBLE

A	93–100	A–	90–92.9	B+	87–89.9	B	83–86.9
B–	80–82.9	C+	77–79.9	C	73–76.9	C–	70–72.9
D+	67–69.9	D	60–66.9	E	below 60		

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Schedule subject to change with weather and conditions.