

ECU STUDY ABROAD

TROPICAL BIODIVERSITY STUDY ABROAD FIELD-INTENSIVE, BIOL 4810, SPRING 2025

Sections TBA (SABR TBA Section TBA)

INSTRUCTOR: Dr. Jeffrey McKinnon

Meetings: Mondays 7-8:40pm, LSBB TBA; spring break in Costa Rica

Field Instructors: McKinnon, also TBA field instructor

Office hours: T 1:00-3:30 PM; F 3:00–5:30 PM, or (preferable) by appointment

Office: LSSB 3420 or <https://ecu.webex.com/join/mckinnonj>

Phone: 252-328-5258 **email:** mckinnonj@ecu.edu

Pre- / co-requisite: BIOL 2300 or permission of instructor.



COURSE MATERIALS:

Recommended: McKinnon, J.S. 2023. Our Ancient Lakes: A Natural History. Cambridge MA: MIT Press.

Optional: Kricher, J.C. 2017. The New Neotropical Companion. Princeton: Princeton University Press.

Papers from the primary literature will be assigned weekly, and possibly some videos.

COURSE DESCRIPTION/OVERVIEW: In Tropical Biodiversity, students will be introduced to the processes responsible for the diversity of living nature and to the extraordinary biological diversity of tropical regions, with an emphasis on three key classes of habitat/ecosystem: tropical forests (terrestrial); coral reefs (marine); ancient lakes (freshwater). In addition to readings, discussions, and a few lectures in Greenville, the course will take place at sites in Costa Rica. Students will gain field experiences and skills in a tropical setting and become familiar with participatory science methods and data bases. ***Hiking, swimming and snorkeling are required of participants.***

LEARNING OUTCOMES: By the end of this course, you are expected to be able to:

1. Discuss and explain the different ways biodiversity can be defined and quantified.
2. Discuss and explain current theories of adaptive radiation and speciation.
3. Discuss and explain patterns of extinction in the fossil, archaeological, and historical records.
4. Be familiar with the main features of, and the threats confronting, the three representative systems we will study: tropical forests (terrestrial); coral reefs (marine); ancient lakes (freshwater).
5. Identify common Costa Rica forest birds and coral reef fishes.
6. Submit to, and access, the participatory science data bases eBird and REEF.
7. Read, understand, critique, and explain the primary scientific literature in evolution and ecology.

DIVERSITY AND INCLUSION: Department of Biology statement: “The Department of Biology is committed to promotion and respect of diversity in all its forms. We recognize systemic racism, discrimination, and injustice are real and can no longer be ignored. As we believe our

students make us who we are, we are working to make this department welcoming and inclusive to everyone, particularly to those underrepresented in STEM fields and most affected by racism, discrimination, and injustice. This includes but is not limited to Black, Indigenous, and People of Color (BIPOC), Latinx, women, and the LGBTQ+.”

ACADEMIC INTEGRITY: East Carolina University is committed to fostering a vibrant community of scholars. Academic integrity is a fundamental component of achieving this goal. All ECU students are expected to complete their academic work honestly. I will not tolerate acts of cheating, plagiarism, falsification, multiple submissions, attempting or assisting with an academic integrity violation. If I become aware of a potential academic integrity violation, I will meet with you following the procedures outlined in the Academic Integrity policy. Should I determine that an academic integrity violation has taken place, I reserve the right to assign a grade penalty up to and including an F for the course. Relevant policies and procedures are available here: <https://osrr.ecu.edu/policies-procedures/>

GRADING POLICIES

Grades will be calculated and assigned based on:

Field Participation: 15%

Each day, you are expected to (often earning points): arrive prepared, on time and dressed properly; participate in the group activities; make good quality field notes; work independently or with a group on assignments; behave responsibly and safely; *especially* submit required forms, data, documents, etc. on time and without being reminded. Note: can be reduced to zero for seriously or persistently disruptive behavior or tardiness during trip.

Discussion Participation: 15%

Quizzes: 30%

You will take quizzes at every meeting and during the trip. These will cover readings, ID skills, and and/or prepare you for the activity; lowest dropped.

Assignments, Presentation(s): 40%

You will be asked to present a paper(s) and lead related discussion for at least one meeting; details will be provided. You will be asked to compile and upload to the appropriate participatory science databases the data collected by your team. You will develop a research proposal, taking advantage of participatory science data sets from tropical systems, which will be presented in class.

Note: You are expected to check the course website and your ECU email at least every weekday, better more often. You should respond to emails, etc., within 24 hours.

Grades will be assigned using a 10-point system:

A	4.0	93-100	A-	3.7	90-92.99
B+	3.3	87-89.99	B	3	83-86.99
B-	2.7	80-82.99	C+	2.3	77-79.99
C	2	73-76.99	C-	1.7	70-72.99
D+	1.3	67-69.99	D	1	63-66.99
D-	.7	60-62.99	F	0	Below 60

Course Schedule

(Note: students will be expected to respond promptly to planning emails etc. earlier in semester; delayed responses will affect attendance grade)

DATE	Time	Topic/Activity
Jan. 13	5-6pm	Organizational meeting, logistics; Biodiversity Lect/Disc
Jan. 20	NA (King Day)	bird ID videos
~Jan. 27	10am-5pm	Snorkel training / test (1/2 hour slots; date may change)
	7-8:40pm	Adaptive Radiation Lect/Disc; Quiz
Feb. 3	7-8:40pm	Speciation Lect/Disc; Fish IDs; Quiz
Feb. 10	7-8:40pm	History of Life, Extinction Lect/Disc; Fish IDs; Quiz
Feb. 17	7-8:40pm	Tropical forests 1 student presentation, discussion; Quiz
Feb. 24	7-8:40pm	Tropical forests 2 student presentation, discussion; Quiz
March 3	7-8:40pm	Coral reefs 1 student presentation, discussion; Quiz; Logistics
March 9	6:05am	Fly RDU to San Jose, Costa Rica (leave Greenville ~ 1:00am)
	1:13pm	Arrive San Jose, shuttle to La Selva, lodging La Selva
March 10	7:30 am	Introductory lecture, Introductory forest walk
	1:30 pm	Butterfly farm tour
	Evening	Night ecology walk; Lodging La Selva
March 11	5:45am	Bird citizen science exercise 1 (hikes and data collection)
	11am	Bird data checking, cleaning, entry
	1pm to ~4	River tour
	~7-9pm	Brief meeting, pack; Lodging La Selva
March 12	5:45am	Bird citizen science exercise 2 (hikes and data collection)
	11am	Bird data checking, cleaning, entry
	1pm to ~4	Transit to Cahuita (shuttle)
	Evening	Dinner with local conservationists, fishers; fish review quiz; Lodging: tentatively Cabinas Palmer Makanda, Cahuita
March 13	7:00am	Coral reef fish participatory science exercise (snorkeling)
	1:30-4	data entry; possibly some free time
	Evening	Dinner with local conservationists, fishers; Fish review quiz; Lodging: tentatively Cabinas Palmer Makanda, Cahuita
March 14	7:00am	Coral reef fish participatory science exercise (snorkeling)
	1:30-4	TBA (possibly Bird survey in Cahuita National Park and/or some free time); data entry
	Evening	TBA; Lodging: tentatively Cabinas Palmer Makanda, Cahuita
March 15	am	Transfer to San Jose by charter bus
(Sat)	pm	Depart San Jose for RDU 1:00PM ; Arrive RDU 11:47pm
March 16	am	Arrive Greenville approximately 2:00am
March 17	7-8:40pm	Tropical forests 3 student presentation, discussion; Quiz
March 24	7-8:40pm	Coral reefs 2 student presentation, discussion; Quiz
March 31	7-8:40pm	Coral reefs 3 student presentation, discussion; Quiz
April 7	7-8:40pm	Ancient Lakes 1 student presentation, discussion; Quiz
April 14	7-8:40pm	Ancient Lakes 2 student presentation, discussion; Quiz
April 21	7-8:40pm	Ancient Lakes 3 student presentation, discussion; Quiz
April 28	7-8:40pm	Student presentations

Please note: trip will start and end at RDU; some transport will be available from Greenville on a first come, first serve basis, but only for a minority of students.

Also note that this is a tentative course schedule. I will keep changes to a minimum, but with international field work and studies, it is critical to be flexible and adaptable, and have a positive attitude. Planes can be late, weather can change plans, etc.--especially in a developing country. But with the right perspective, these surprises and adventures can be learning opportunities and make the experience a richer one.

ATTENDANCE AND LATE WORK POLICY: Students are expected to participate in all discussions and activities at ECU, online, and during the study abroad program. That said, please do not come to class if you have a communicable illness, especially a respiratory illness, and regarding Covid it is best to follow CDC [recommendations](#). Late submissions may not be accepted and will be substantially penalized, in the absence of a compelling explanation—normally a documented university-approved one. Make-up exams will be administered only with a valid University excuse and are left to an instructor's discretion. Note that for reasons of cost, safety, and minimizing disruption, *accommodation and meal arrangements cannot be changed*. If you have questions about these, please ask in advance.

RESPIRATORY ILLNESSES: We will be travelling at a time of year when respiratory viruses are common. To minimize risk to myself, my fellow travelers, and of a disrupted trip, I keep my flu and covid (and all other) vaccinations up to date and always wear a mask in airports and on buses and airplanes (the only time I have contracted Covid was when I let my guard down on an airplane). I will be especially careful in the week preceding the trip, in particular avoiding crowded indoor spaces and occasionally wearing a mask. To ensure you are able to make and complete the trip without difficulties, you may wish to adopt similar practices.

COURSE COMMUNICATION:

Contacting Me:

- If you wish to speak with me, by phone or WebEx during office hours, you should schedule an appointment in advance via e-mail. But if I have not been scheduled I will also meet with little notice during office hours.

Contacting Classmates:

There might be times that you need to contact classmates directly. Please always be polite and be sensitive of cultural or personal differences.

COMPUTER, INTERNET REQUIREMENTS: Students will need to access high-speed internet using computers to complete course assignments, and especially for exams; *exams will be taken in class on a laptop (a phone may work for quizzes)*. Equipment—including computers, webcams, headsets, and hotspots—is available for checkout at both ECU libraries:

- Equipment Available for Checkout from the main campus library ([link](#))
- Equipment Available for Checkout from Laupus Library ([link](#))

Please plan ahead. If you have last minute tech issues that could have been anticipated, a second chance is unlikely. *Keep laptop batteries charged and bring an adaptor!*

EMERGENCY WEATHER POLICY: In the event of a campus emergency that disrupts academic activities, course requirements, deadlines, and grading percentages are subject to change. Information about changes in the course will be communicated as soon as possible by email, and on Canvas. If we are not able to meet face-to-face, students should log onto Canvas and read any announcements and/or access alternative assignments. (<http://www.ecu.edu/alert>).

ACCOMMODATION: East Carolina University seeks to comply fully with the Americans with Disabilities Act (ADA). Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must be registered with the Department for Disability Support Services located in Mendenhall Suite 109, 252-737-1016. Accommodation Information & Processes:
<https://accessibility.ecu.edu/students/dss-guidelines/>

FROM ECU COPYRIGHT POLICY 7.1.3: Notes of classroom and laboratory lectures, syllabi, exercises and other course materials taken by Students shall not be deemed Student Works, may only be used for personal educational purposes, and shall not be used for commercialization by the Student generating such notes or by any third party without the express written permission of the author of such Works. Violation of University Policy may be grounds for disciplinary action pursuant with the ECU Student Conduct Process.