

GEOGRAPHY
3980
Biogeography
Spring 2026

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Course Details

Lecture: Tuesdays & Thursdays, 12:45-2:45 PM Denney Hall 262

Office Hours: **by appointment**

Course Materials

- Mark V. Lomolino, *Biogeography: A Very Short Introduction*
<https://academic.oup.com/book/28475?login=true>
Available as an Ebook at the library.
- C.B Cox, P.D. Moore and R.J Ladle., *Biogeography: An Ecological and Evolutionary Approach*. ISBN 9781118968574
- Glen MacDonald, *Biogeography: An Introduction to Space, Time, and Life* , Wiley, Inc. (ISBN: 978-0471241935)
- Readings made available to students on Carmen

Course Description

In this course, we will study the past, present, and likely future distribution of Earth's biological diversity. We will be concerned with understanding why species occur where they do and how they came to inhabit their current ranges, how species interact with one another through processes such as predation and competition, and how human societies impact biological diversity through species invasions, habitat fragmentation, and global climate change. In our consideration of these topics, we will focus on both historical and contemporary biogeographic patterns and processes. This course will emphasize local to continental scale environmental issues and critical thinking about the links between physical environmental conditions, biological processes, and human activity.

Learning Objectives

At the conclusion of the course, students will be able to:

- Describe the abiotic and biotic factors that determine species distribution and patterns of biodiversity.
- Describe, in general terms, the history and geography of life on Earth.
- Describe, in general terms, the current theories explaining the origin and dispersal of hominids with a focus on *Homo sapiens*.
- Discuss how human activities impact species distribution and patterns of biodiversity
- Explain the varied effects of disturbance in ecosystems.
- Apply biogeographic concepts and theories to environmental issues, in particular to themes related to conservation efforts.

Course Activities

Lectures: Part of the course content, particularly the basic principles of Biogeography, will be delivered via lectures. These are mostly based on material found in the suggested text books.

Short position papers: Based on texts provided by the instructor - and potentially other sources selected by the student, if they so desire - students will write two short (700-1200 words) papers in which they explain what, in their view, are the positive and negative aspects of a particular strategy related to conservation and species management. Students then take a substantiated position for or against the strategy. Of course, the stance might be qualified (for example: “for” in these particular cases but “against” in these other cases) but it must be substantiated by data and arguments coming from the scientific literature or other credible sources. A series of papers and other sources is provided by the instructor. One of the papers to be used will be selected by the instructor. Students should read the abstract of all papers provided by the instructor and choose at least one other source from those to base their discussion on. In short, position papers should be based on (cite) at least two sources. Students are welcome to base their discussion on sources not provided by the instructor, but if they choose to do so they should check with the instructor prior to adopting these sources for your arguments. This is an individual effort.

The two themes on which students will be asked to write position papers in are:

1. The protection or creation of pristine environments – here defined as those with no or minimal human influence – is a valid and desirable conservation goal.
2. The control, including the total extirpation, of invasive species is valid and desirable conservation goal.

Assigned readings reports: Two readings will be discussed during lectures. Prior to the lecture dealing with particular readings students must submit a very short report on those readings. In the report students should identify in their own words what they think is the author’s main point AND note 1-3 key passages that support this point. Please copy these passages into the reading report. The copied passages are not to be considered for the assignment's word count. Reading reports should have between 100-200 words. This is an individual effort due at 12:15 PM of the day the reading will be discussed in class.

Exams: There will be two in class, 55 minutes closed book, equal weight (5% each) exams covering content delivered in the lectures. This is an individual effort. Make-up exams are only allowed in the event of a documented emergency or through **PRIOR** consent of the instructor.

Class Project: Bird diversity along the Olentangy Bike trail. This will involve the whole class. It is to be designed and executed as a research project, and as with most scholarly research projects the final output is a document aimed at publishing the project’s findings. Ideally, the Class Project will result in a manuscript to be submitted to a peer-reviewed journal.

As with all research projects, we will start with a more or less general plan which is likely to be amended during the execution of the work. The provisory research questions and methodology at this point are:

Research Questions:

- Does songbird diversity change along the Olentangy Bike Trail?
- If so, can potential associations between songbird diversity and physical parameters along the trail?
- At what spatial scales are songbird diversity and physical parameters correlated?

- For the same location in the trail, does songbird diversity change with time?
- Are particular species associated with particular near-trail environmental conditions?

Methods:

- The number of different species of birds and physical parameters such as air temperature and time of day will be recorded at different points of the trail in the general proximity of the OSU campus.
- Bird identification will be performed using the Merlin Bird ID, a freely available app developed by the Cornell Lab.
- Physical parameters will be measured by a “Kestrel”, a hand-held meteorological instrument.
- The potential correlations between bird diversity and physical environment characteristics will be evaluated geospatially, using GIS and maps of commonly available parameters such as NDVI and population density.

As with most research projects, this will be a collective effort. Again, as in most research projects, this does not mean that all participants will contribute in the same amount to all components of the project. In close discussion with the class, and taking into account (as much as possible) students’ skills and interests, activities will be parsed out between group of students. For example, a group will be responsible for the background research and crafting of the introduction, another group will be responsible for the brunt of the GIS analysis, etc.. During in-class discussion sessions, groups will present their provisory results/findings to the whole class which will then contribute suggestions and feedback to that portion of the project.

80% of a student’s individual grade in the Class Project will be gauged by these group presentations. A rubric will be provided to each group prior to the presentation. The other 20% from the student’s overall participation in the project, including how active they are during the discussion sessions in which their group is not presenting.

Grade Break Up

Participation (attendance)	15%
2 Position Papers	20%
Readings Reports	5%
Exams	10%
Class Project	50%

Special Statement Regarding Absences

Based on the Office of the Provost recommendations on the current flu situation, students that feel ill are encouraged to stay home and isolate themselves from others. In addition, the "Explanatory Statement for Absence from Class" self-reporting form available online (<http://she.osu.edu/posts/documents/absence-excuse-form.pdf>) from the Wilce Student Health Center will be accepted as documentation of medical absence and reasonable efforts will be made to provide for make-up work opportunities. All make-ups from documented absences must be **completed within one week** of the original scheduled date.

Academic Misconduct

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term

"academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct webpage (http://studentaffairs.osu.edu/resource_csc.asp).

Disability Services

Students with disabilities that have been certified by the Office for Disability Services (150 Pomerene Hall, telephone 292-3307, TDD 292-0901) will be appropriately accommodated, and should inform the instructor of their needs at the **beginning of the term**

Schedule

The lecture schedule below is tentative. While exam dates will not change, the actual material presented in lectures at the time of any exam might not mirror the schedule precisely instructor.

Date	Lecture/Activity	Reading	Notes
13-Jan	Intro and Biogeography Basics		
15-Jan	Climate		
20-Jan	Climate		
22-Jan	Reading Discussion (IndKwn)/ content	Jessen, 2022	Submission Due
27-Jan	Phys Geography - Abiotic Factors		
29-Jan	Phys Geography - Abiotic Factors		
30-Jan	Short Position Paper 1 (prestine)	“Pristine” folder +	Submission Due
3-Feb	Bio Interactions		
10-Feb	Bio Interactions		
12-Feb	Succession and Disturbance		
17-Feb	Reading Discussion (Collab.) / content	Sachs et al., 2004	Submission Due
19-Feb	Dispersal, Colonization and invasion		
24-Feb	Catching up and review		
26-Feb	Exam 1		
3-Mar	Dispersal, Colonization and invasion		
5-Mar	Paleobiogeography		
5-Mar	Short Position Paper 2 (invasive)	“Invasive” folder +	Submission Due
10-Mar	Paleobiogeography		
12-Mar	Biogeography and Human Evolution		
17-Mar	Spring Break		
19-Mar	Spring Break		
24-Mar	Genetic Diversity and Biogeography		
26-Mar	Conservation Biogeography		
31-Mar	Genetic Diversity and Biogeography		
2-Apr	Conservation Biogeography		
7-Apr	Catching up and review		
9-Apr	Exam 2		
14-Apr	No lecture – in-class work on project		
16-Apr	No lecture – in-class work on project		
21-Apr	No lecture – in-class work on project		
23-Apr	No lecture – in-class work on project		
27-Apr	Individual component of class project		Submission Due