

GEOGRAPHY 3980
Biogeography
Spring 2024

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Course Details

Lecture: Tuesdays & Thursdays, 12:45-2:00 PM Evans Lab 2002
Office Hours: **by appointment**

Course Materials

- Mark V. Lomolino, *Biogeography: A Very Short Introduction*
<https://doi-org.proxy.ohiolink.edu:9100/10.1093/actrade/9780198850069.003.0001>
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 provided by the student, if they so desire - students will write three 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. Check with the instructor prior to adopting non-peer reviewed scientific papers as sources for your arguments. This is an individual effort.

The three 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.
3. The expansion of human and other Terrestrial life forms to other areas of the Solar System (and beyond...) is a valid and justifiable goal for humanity.

Assigned readings reports: A series of 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, closed book, equal weight (10%) 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.

Term paper: Students will select a population, species, community, ecosystem or biome they believe will be impacted by anthropogenic climate change by at least the end of the 21st century. The term paper should 1) describe the selected entity, 2) how climate change might impact it (quantitative estimates of the impact are welcomed), and 3) what actions – if any – could be taken to mitigate this impact. The term paper must be based on information coming from at least 2 peer-reviewed papers. Other sources of information or additional peer-reviewed literature are, of course, also allowed. This can be an individual effort or completed by groups of two (2) students. The term paper will have from 2500 to 3000 words. A rubric describing term paper requirements and grading is available.

Grade Break Up

Participation (attendance)	10%
3 Position Papers	30%
Readings Reports	15%
Exams	20%
Term paper	25%

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. The material covered in each exam will be clearly defined and communicated to the class by the instructor.

Week	Date	Lecture/Activity	Reading	Notes
1	9-Jan	Intro and Biogeography Basics		
	11-Jan	Climate		
2	16-Jan	Climate		
	18-Jan	Reading Discussion / content	Jessen, 2022	Submission Due
3	23-Jan	Phys Geography - Abiotic Factors		
	25-Jan	Phys Geography - Abiotic Factors		
4	30-Jan	Short Position Paper 1 (prestone)	"Pristine" folder +	Submission Due
	1-Feb	Bio Interactions		
5	6-Feb	Bio Interactions		
	8-Feb	Succession and Disturbance		
6	13-Feb	Reading Discussion / content	Sachs et al., 2004	Submission Due
	15-Feb	Dispersal, Colonization and invasion		
7	20-Feb	Catching up and review		
	22-Feb	Exam 1		
8	27-Feb	Dispersal, Colonization and invasion		
	29-Feb	Paleobiogeography		
9	5-Mar	Short Position Paper 2 (invasive)	"Invasive" folder +	Submission Due
	7-Mar	Paleobiogeography		
10	12-Mar	Spring Break		
	14-Mar	Spring Break		
11	19-Mar	Biogeographic Subdivisions		
	21-Mar	Biogeography and Human Evolution		
12	26-Mar	Reading Discussion / content	Potter et al., 2018	Submission Due
	28-Mar	Genetic Diversity and Biogeography		
13	2-Apr	Conservation Biogeography		
	4-Apr	Short Position Paper 3 (space)	"Space" folder +	Submission Due
14	9-Apr	Catching up and review		
	11-Apr	Exam 2		
15	16-Apr	No lecture – work on term paper		
	18-Apr	No lecture – work on term paper		
16	22-Apr	Term paper due		