

BIOLOGY 375 H02: CONSERVATION BIOLOGY, Honors
Spring 2025, TUES and THURS 10:00am – 11:30am, FMH 313

Instructor: Dr. Maria Stanko
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Office Hours: Thurs 11:30 –
1:00, 2:15-3:45, or by
appointment

Conservation biology is a developing and complex field. It draws upon the biological disciplines of population biology, taxonomy, ecology, genetics, and resource management as well as the fields of economics, ethics, and politics to document, understand, and protect the world's biodiversity. This course will give students an overview of this discipline including the scientific methods employed, the biological principles behind conservation techniques and strategies as well as the complexities involved in attempts to influence and implement conservation-oriented policies. The Honors section of this course will focus on problem-solving and communication in conservation biology and will involve extensive reading and discussion of scientific and popular literature on conservation issues, exploration of conservation case studies, writing assignments, and a collaborative applied conservation project.



Endangered curly-grass fern (*Schizaea pusilla*), NJ Pine Barrens. ©M. Stanko

Prerequisites: Biology 205 & 206: Foundations in Biology: Ecology & Evolution lecture & lab

Required texts:

Sher, Anna A. 2022. *An Introduction to Conservation Biology*, 3rd ed. Sinauer Associates, Inc./Oxford University Press. ISBN: 9780197564370
Available as softcover book or ebook at NJIT bookstore or other retailers.
Use [this link](#) to rent an ebook directly from Oxford University Press with 10% discount.

Kolbert, Elizabeth. 2024. *The Sixth Extinction: An Unnatural History*, 10th Anniversary Edition. Henry Holt and Co. ISBN: 9781250887313

Additional readings: Throughout the semester, additional readings will be assigned to supplement the course text and to serve as the basis for class discussions. These readings will be posted to Canvas.

Learning outcomes:

Students are able to....

- Identify and explain important threats to biological diversity as well as the variety of approaches to protecting biodiversity.
- Describe the ways that human activity contributes to threats to biodiversity, including climate change.
- Read critically and be able to form and articulate opinions on complex issues in conservation biology.
- Explain the interdisciplinary nature of the practice of applied conservation biology.
- Collaborate with colleagues to conceive of a project on an applied topic in conservation biology.



Cloud forest, Monteverde, Costa Rica.
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Course schedule: Please note that this is the proposed schedule. I reserve the right to make changes to the schedule when needed; you will be notified of any changes. Readings should be completed before class on the date listed. Additional readings and assignments will be posted to the course website.

Week	Date	Lecture topic	Readings / Assignments
1	21-Jan	About this course; Defining Conservation Biology	ICB Chapter 1
	23-Jan	Biodiversity: Species Diversity	ICB Chapter 2.1
2	28-Jan	<i>Discussion:</i> 6 th Ex Prologue & Chap. 1, <i>Case Study:</i> Biodiversity of Spiders	6 th Ex Prologue & Chap. 1
	30-Jan	Genetic & Ecosystem Diversity	ICB Chapter 2.2-2.3
3	4-Feb	Patterns of Biodiversity Worldwide	ICB Chapter 2.4, Asgmt 1
	6-Feb	Valuing Biodiversity	ICB Chapter 3.1-3.2
4	11-Feb	Ethics & Economics	ICB Chapter 3.3-3.5
	13-Feb	Human Population Growth, Habitat Destruction	ICB Chapter 4.1-4.2
5	18-Feb	Fragmentation & Environmental Degradation	ICB Chapter 4.3-4.5
	20-Feb	Climate Change & Overexploitation	ICB Chapter 5.1-5.2
6	25-Feb	Invasive Species & Disease	ICB Chapter 5.3-5.5, Asgmt 2
	27-Feb	<i>Discussion:</i> 6 th Ex Chaps. 2-5	6 th Ex Chaps. 2-5
7	4-Mar	MIDTERM EXAM 1	MIDTERM EXAM 1
	6-Mar	Extinction	ICB Chapter 6.1-6.3
8	11-Mar	Extinct Species Presentations	Asgmt 3
	13-Mar	Problems of Small Populations, <i>Case Study:</i> Genetic Drift	ICB Chapter 6.4
9	18,20-Mar	SPRING BREAK - NO CLASS	
10	25-Mar	Applied Population Biology, Conservation Categories	ICB Chapter 7.1-7.2, Asgmt 4
	27-Mar	Prioritization, Legal Protection	ICB Chapter 7.3-7.4
11	1-Apr	Establishing New Populations, Ex Situ Conservation Strategies, Technology	ICB Chapter 8
	3-Apr	WELLNESS DAY - NO CLASS	
12	8-Apr	Protected Areas: Establishment & Design	ICB Chapter 9.1-9.4
	10-Apr	Protected Areas: Management & Challenges	ICB Chapter 9.5-9.6, Asgmt 5
13	15-Apr	<i>Discussion:</i> 6 th Ex Chaps. 6-11, Galápagos	6 th Ex Chaps. 6-11, Radiolab "Galápagos"
	17-Apr	MIDTERM EXAM 2	MIDTERM EXAM 2
14	22-Apr	<i>Project Activity – Happy Earth Day</i>	
	24-Apr	Conservation Outside Protected Areas	ICB Chapter 10
15	29-Apr	Restoration Ecology	ICB Chapter 11
	1-May	Sustainable Development	ICB Chapter 12
16	6-May	<i>Discussion:</i> 6 th Ex Chaps. 12-13 & Epilogue and the Future	6 th Ex Chaps. 12-13 & Epilogue, ICB Chapter 13
TBD	10-16-May	FINAL EXAM – Do not schedule travel until date is posted: https://www.njit.edu/registrar/exams/	FINAL EXAM

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Grading: Grades will be assigned based on the percentage (rounded to a whole number) of points you earn out of the total possible, following this grade scale: 90%+ A, 85-89% B+, 80-84% B, 75-79% C+, 70-74% C, 60-69% D, <60% F. Slight changes may be made to this point distribution; you will be notified of any changes. Assessment will include the following components:

Assignments (5x15+20)	95
Reading Quizzes (4x5)	20
Midterm Exams (2x75)	150
Final Exam	100
Project	75
Total	440



Endangered ring-tailed lemur (*Lemur catta*), Nashville Zoo.
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1. Assignments – Students independently complete assignments and upload to Canvas by due date. Some assignments include a brief class presentation. In addition, one assignment during the course will be a presentation on one recent Good News story and one recent Bad News story in conservation. Students will sign up for the week to present.
2. Reading Quizzes – To ensure that students arrive prepared for discussion on days when we discuss chapters from *The 6th Extinction*, a brief quiz on the assigned chapters will be given at the beginning of class.
3. Exams - Exams will be predominantly short-answer style. The Final Exam is cumulative, with a stronger emphasis on the material covered since Midterm Exam 2.
4. Project - As a class, we will work together throughout the semester to design and implement a collaborative project that has application to a conservation problem on our campus or local environment. Project assessment will involve largely independent work contributing to the group project. Tasks may vary depending on the nature of the project chosen.

Course policies:

- You must check Canvas regularly and ensure that you regularly check the email address associated with your Canvas profile.
- All course materials (including recordings of lectures) are for students' own use only (no sharing or posting anywhere).
- I expect you to attend all the class meetings; you are responsible for all material covered in class. If you miss an exam or an assignment deadline due to an excusable absence, contact Dr. Stanko as soon as possible and submit documentation of your absence via the [Student Absence Verification Request](#) at the Office of the Dean of Students. If your absence is related to university sports, please submit the relevant documentation to Dr. Stanko. This course will follow the NJIT Biology Policy on Absences: <https://biology.njit.edu/policy-absences>.
- Lectures may sometimes be recorded and shared with the class via Canvas. These recordings will not be used beyond this semester.
- Late assignments will be accepted but penalized 10% per day late.

Academic Dishonesty: Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: <http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>. Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu.

Generative AI: This course expects students to work without artificial intelligence (AI) assistance unless specifically stated in the directions of an assignment. For assignments in which AI use is permitted, the AI must be cited as shown within the NJIT Library AI citation page (<https://researchguides.njit.edu/AI>). If you have any questions or concerns about AI technology use in this class, please reach out to your instructor prior to submitting any assignments.