

CONSERVATION BIOLOGY 505

- Instructor:** Dr. Jeff Karron email: karron@uwm.edu
- Lecture times:** Tuesdays 11:00 AM to 12:15 In-classroom discussions Chem 180
Thursdays Asynchronous recorded 75 min lectures available on Canvas as MP4 video and Powerpoint.
- Office hours:** *via Teams, by appointment*
- Course description:** Genetic and ecological approaches to the conservation of biological diversity. Topics include biology of rare plants and animals, design of nature reserves, and restoration ecology.
For more information on the Department of Biological Sciences, please visit our web home page: <http://www.uwm.edu/Dept/Biology/>
- Prerequisites:** Introductory Biology 150 & 152, Genetics 325 or equivalent.
- Required text:** Cardinale, Primack and Murdoch 2020. Conservation Biology. Oxford University Press. ISBN 9781605357140
Please complete all assigned reading prior to lecture !

- Lecture formats:** Lectures will follow 2 different formats as noted on the syllabus:
- TUESDAYS: Live classroom discussions** will engage the class in critical analysis of cutting edge papers in Conservation Biology. Live discussions will be held on Tuesdays from 11:00 AM to 12:15. I encourage each student to actively participate in these discussions. If you are absent from a discussion, please send me a short summary of the assigned reading.
- THURSDAYS: Prerecorded lectures** will highlight key concepts and will utilize considerable graphics and video content.

	Lecture Topic	Reading
Sept 2 (Thurs)	Prerecorded lecture "Introduction to Conservation Biology"	Cardinale <i>et al.</i> chapters 1 & 2
Sept 7 (Tues)	CLASSROOM DISCUSSION of assigned reading	Kiers <i>et al.</i> 2010
Sept 9 (Thurs)	Prerecorded lecture "What is biological diversity and where is it found?"	Cardinale <i>et al.</i> chapter 3
Sept 14 (Tues)	CLASSROOM DISCUSSION of assigned reading	Estrada <i>et al.</i> 2017
Sept 16 (Thurs)	Prerecorded lecture "Loss of biodiversity"	Cardinale <i>et al.</i> chapter 4
Sept 21 (Tues)	CLASSROOM DISCUSSION of assigned reading	Valiente-Banuet <i>et al.</i> 2015
Sept 23 (Thurs)	Prerecorded lecture "Vulnerability to extinction"	Cardinale <i>et al.</i> chapter 8
Sept 28 (Tues)	CLASSROOM DISCUSSION of assigned reading	Otto <i>et al.</i> 2018
Sept 30 (Thurs)	Prerecorded lecture "Genetic biodiversity"	Cardinale <i>et al.</i> 405-420

	Lecture Topic	Reading
Oct 5 (Tues)	CLASSROOM DISCUSSION of assigned reading	Kramer & Havens 2009 Haig et al. 2015
Oct 7 (Thurs)	Prerecorded lecture “Population bottlenecks and the loss of genetic diversity”	
Oct 12 (Tues)	CLASSROOM DISCUSSION of assigned reading	Bellinger et al. 2003 Fant et al. 2016
Oct 14 (Thur)	Prerecorded lecture “Inbreeding and inbreeding depression in small populations”	
Oct 19 (Tues)	CLASSROOM DISCUSSION – EXAM REVIEW	Complete sample midterm
Oct 21 (Thurs)	Prerecorded lecture “The demography of small populations population viability analysis, Allee effects”	Cardinale et al. 405-440
Oct 21-25	Midterm Exam (<i>covers all lectures, discussions and reading material thru Oct 12</i>) <i>Exam will be available Thurs. Oct 21 at 11:00 AM. You will have 2 hours to answer the essay questions, but the exam is intended to take 75 min. Your completed exam must be submitted by 5:00 PM on Monday Oct 25.</i>	
Oct 26 (Tues)	CLASSROOM DISCUSSION of assigned reading (Mon)	Fenster et al. 20
Oct 28 (Thurs)	Prerecorded lecture Plant-animal interactions, Allee effects, and implications for conservation biology	
Nov 2 (Tues)	CLASSROOM DISCUSSION of assigned reading	Kramer et al. 2017 Groom 1998
Nov 4 (Thurs)	Prerecorded lecture Invasions of natural communities by exotic species	Cardinale et al. Chapter 11
Nov 9 (Tues)	CLASSROOM DISCUSSION of assigned reading	Sakai et al. 2001
Nov 11 (Thurs)	Prerecorded lecture Application of island biogeographic principles to design of nature reserves	Cardinale et al. Chapter 9
Nov 16 (Tues)	CLASSROOM DISCUSSION of assigned reading	Whittaker et al. 2017
Nov 18 (Thurs)	Prerecorded lecture Limitations of the Endangered Species Act and hybridization between rare species and widespread relatives	
Nov 23 (Tues)	CLASSROOM DISCUSSION of assigned reading	Hirashiki et al. 2021
Nov 25 (Thurs)	Thanksgiving – no prerecorded lecture	
Nov 30 (Tues)	CLASSROOM DISCUSSION of assigned reading	Hallett et al. 2017

Dec 2 (Thurs) **Prerecorded lecture** Habitat fragmentation and the spatial structure of populations

Dec 7 (Tues) **CLASSROOM DISCUSSION of assigned reading**

Haddad *et al.* 2015

Dec 9 (Thurs) **Prerecorded lecture** Restoration ecology

Ritchie *et al.* 2017

Dec 14 (Tues) **CLASSROOM DISCUSSION – EXAM REVIEW**

Dec 16 (Thurs) 10:00 AM – 12:00 Noon **FINAL EXAM** (covers entire course)

Exam will be available from Thursday Dec 16 at 10:00 AM PM thru Monday Dec 20 at 5:00 PM. You will have 3 hours to complete the exam, but it is intended to only take 2 hours. The exam must be submitted by 5:00 PM on Saturday Dec 20.

Grades for undergraduates will be assigned as follows:

Midterm Exam	40%
Final Exam (<i>cumulative</i>)	45%
Class participation	15%

If you need special accommodations in order to meet any of the requirements of this course, please contact Dr. Karron as soon as possible.

Learning objectives for this course

Scope and focus: This course explores the causes and consequences of the decline in biodiversity in natural communities. The first part of the course focuses on the genetic and ecological processes contributing to species extinction. The second part of the course addresses strategies for conserving natural communities and restoring ecological function in degraded habitats. The third part of the course addresses the management of habitats that are especially susceptible to human disturbance and degradation.

Students will read original research papers and reviews that highlight recent advances in this rapidly developing discipline.

This course addresses the following program objectives:

- 1) Students will gain experience reading and critiquing original research papers in conservation biology.
- 2) Students will interpret numerical and graphical data used in professional research.
- 3) Students will synthesize, integrate and effectively communicate scientific information both orally and in writing.
- 4) Students will learn how to incorporate conservation strategies into effective management practices.

Statement of Time Investment

This 3-credit course meets for 3 hours of lecture per week during the semester. Students are expected to put in 6 hours per week studying and working on assignments to achieve the learning goals of this course.

UNIVERSITY AND DEPARTMENTAL POLICIES:

1. *Students with disabilities.* The Accessibility Resource Center at the University of Wisconsin Milwaukee is dedicated to providing equal access to students with disabilities in all academic, social, cultural and recreational programs. Please notify the Professors, and see this link: <http://uwm.edu/arc/>
2. *Religious observances.* Students who will miss class due to religious observances should make arrangements with the Professors or Lab TAs to make up missed work. https://www4.uwm.edu/secu/docs/other/S_1.5_ACCOMMODA_OUS_BELIEFS.pdf
3. *Students called to active military duty.* If you are called to active military duty, please contact the Professors to make arrangements for accommodations for absences. Students: <http://uwm.edu/active-duty-military/> Employees: <https://www.wisconsin.edu/ohrwd/download/policies/ops/bn9.pdf>
4. *Incompletes.* A notation of "incomplete" may be given in lieu of a final grade to a student who has carried a subject successfully until the end of a semester but who, because of illness or other unusual and substantiated cause beyond the student's control, has been unable to take or complete the final examination or to complete some limited amount of term work. https://www4.uwm.edu/secu/docs/other/S_31_INCOMPLETE_GRADES.pdf
5. *Discriminatory conduct.* Discriminatory conduct will not be tolerated by the University. It poisons the work and learning environment of the University and threatens the careers, educational experience, and well-being of students, faculty, and staff. https://www4.uwm.edu/secu/docs/other/S_47_Discrimina_duct_Policy.pdf
6. *Title IX/Sexual Violence.* Title IX is a federal law that prohibits sex discrimination in education program or activities, and UWM policy prohibits such conduct (see Discriminatory Conduct, above). This includes sexual violence, which may include sexual harassment, sexual assault, relationship violence, and/or stalking in all educational programs and education-related areas. UWM strongly encourages its students to report any instance of sex discrimination to UWM's Title IX Coordinator (titleix@uwm.edu). Whether or not a student wishes to report an incident of sexual violence, the Title IX Coordinator can connect students to resources at UWM and/or in the community including, but not limited to, victim advocacy, medical and counseling services, and/or law enforcement. For more information, please visit: <https://uwm.edu/sexual-assault/>.
7. *Academic misconduct.* Cheating on exams or plagiarism are violations of the academic honor code and carry severe sanctions, including failing a course or even suspension or dismissal from the University. <http://uwm.edu/academicaffairs/facultystaff/policies/academic-misconduct/>
8. *Complaint procedures.* Students may direct complaints to the head of the academic unit or department in which the complaint occurs. If the complaint allegedly violates a specific university policy, it may be directed to the head of the department or academic unit in which the complaint occurred or to the appropriate university office responsible for enforcing the policy. https://www4.uwm.edu/secu/docs/other/S_47_Discrimina_duct_Policy.pdf

9. *Grade appeal procedures.* A student may appeal a grade on the grounds that it is based on a capricious or arbitrary decision of the course instructor. Such an appeal shall follow the established procedures adopted by the department, college, or school in which the course resides or in the case of graduate students, the Graduate School. These procedures are available in writing from the respective department chairperson or the Academic Dean of the College/School.
https://www4.uwm.edu/secu/docs/other/S_28_Grade_Appeal_by_Students.pdf
10. *LGBT+ resources.* Faculty and staff can find resources to support inclusivity of students who identify as LGBT+ in the learning environment. <http://uwm.edu/lgbtrc/>
11. *Smoke and Tobacco-Free campus.* UWM prohibits smoking and the use of tobacco on all campus property.
https://www4.uwm.edu/secu/docs/other/S_49_Smoke_Tobacco_Free_Policy.pdf
12. *Synchronous Online Class Recording*
Our class sessions will be audio-visually recorded for students who are unable to attend at the scheduled time. Students who participate with their camera engaged or who utilize a profile image are agreeing to have their audio/video or image recorded. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded.
13. *Navigate Student Success Platform and Mobile App*
Students are encouraged to use a tool called Navigate. This tool can help you learn about academic resources, set up study groups in your courses, make appointments with your academic advisor, get reminders on important dates, and much more. In addition, Navigate allows instructors to send Progress Reports to students throughout the term, allowing for updates on your academic progress in a course in addition to your grade. You can log into the platform here: <https://uwmilwaukee.campus.eab.com/> or by finding the Navigate link under the Current Students tab on the [UWM home page](#). More information on how you can use Navigate and the app, including tutorials, can be found on [UWM's Navigate website](#).
14. *Panther Community Health and Safety Standards:* UWM has implemented reasonable health and safety protocols, taking into account recommendations by local, state and national public health authorities, in response to the COVID-19 pandemic. As a member of our campus community, you are expected to abide by the Panther Interim COVID-Related Health & Safety Rules, which were developed in accordance with public health guidelines. These standards apply to anyone who is physically present on campus, UWM grounds, or participating in a UWM-sponsored activity:
 - All individuals visiting UWM facilities must wear face coverings while indoors;
 - Unvaccinated students coming to campus are required to test weekly for COVID-19; and,
 - You should check daily for COVID-19 symptoms and not come to campus if you are feeling sick.Additional details about student and staff expectations can be found on the UWM COVID-19 webpage.