

BIOLOGICAL DIVERSITY

NR300 Spring 2018

INSTRUCTOR:

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TEACHING ASSISTANT:

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COURSE OBJECTIVES AND DESCRIPTION: This course focuses on conserving the diversity of life on earth. We will explore diverse species and ecosystems, review major threats to biodiversity and discuss approaches for overcoming these threats in ways that balance the needs of people and nature. Students will gain a greater understanding of classic principles and contemporary topics in Conservation Biology, and how these can be applied to the stewardship of natural communities. Although this is primarily a lecture-based course, there will be abundant opportunities to pose and respond to questions and to engage in discussion. Thus, student involvement and participation is strongly encouraged.

LECTURES: Tuesday/Thursday 12:30-1:45PM, Engineering 100

OPTIONAL TEXT (recommended): *Conservation Science: balancing the needs of people and nature*, P. Kareiva and M. Marvier, editors (available in the CSU bookstore; one copy on reserve in library).

REQUIRED READING: Scientific papers and/or popular articles on relevant topics will be assigned for most class periods. Please read the assigned paper before class and be prepared to take pop quizzes on the readings and discuss the content in small groups. All papers will be posted on the class web page.

WEB PAGE: The Canvas page for this course will contain links to the syllabus, copies of the lecture slides, PDFs of required articles, exam study guides, job and volunteer opportunities, and your grades. Please visit this page regularly! To login visit <http://info.canvas.colostate.edu/login.aspx>

LECTURE SLIDES: Lecture outlines will be posted on the course website the previous day. Downloading slides alone is NOT sufficient to perform well. You must come to class, take notes and engage in class activities to receive a satisfactory grade. If you miss a class, please ask a classmate for their notes.

COURSE REQUIREMENTS

Participation: Research shows that people learn best when they *hear it, write it and talk about it*. I encourage you to get the most out of this class by participating in all in-class activities. There will be frequent in-class exercises where you will work alone or with a classmate to answer thought questions, followed by class discussion. I will have you write down and turn in your answers and I will use these exercises to assign your participation grade (50 points). It will not be possible to make up these exercises if you are late to class or if you miss class, but I will allow two missed exercises with no penalty.

Quizzes: There will be timed online quizzes each week throughout the semester that draw on the assigned reading and the material from the previous week. Please prepare for these quizzes by being sure to read the assigned article and reviewing your notes. Because I will drop the two lowest quiz scores, there will be **no make-up quizzes**.

Poster: In groups of 4-5 students, you will prepare a professional poster on a topic of your choice related to the conservation of biological diversity. These posters will be displayed and evaluated by myself and your peers in a conference-style poster session during class. All group members will receive the same grade. More information on this assignment and a list of suggested topics will be provided in class.

Volunteer assignment: You will volunteer for a biodiversity conservation project (for 2 hours+) and write a 300-400 word summary of your experience. This assignment is due within two weeks of your volunteer day. A list of volunteer opportunities and sign-up sheet will be posted on the course website. Please contact the TA if you are aware of another opportunity that you think would be appropriate. More details on this assignment, including guidelines for the written summary, will be provided in class.

Exams: Most of your performance in this course will be based on two “midterm” exams and a final exam (100 points each). The final exam will be cumulative. The exams will contain short-answer and multiple choice questions. As with quizzes, there will be **no make-up exams** without written documentation.

GRADING	<u>Points</u>	<u>Percent</u>
Participation	50	10%
Quizzes	50	10%
Poster	50	10%
Volunteer assignment	50	10%
Midterm Exams (2 exams x 100 points each)	200	40%
Cumulative Final	100	20%
TOTAL	500	100%

Letter grades will be calculated as follows: A+ = 98-100%, A = 93-97%, A- = 90-92%, B+ = 88-89%, B = 83-87%, B- = 80-82%, C+ = 78-79%, C = 70-77%, D = 60-69%, F < 60%.

We are happy to answer questions regarding grading of quizzes and exams. Please adhere to the following guideline: If you would like to have a question re-graded, submit a written explanation of your arguments along with the exam/quiz within a week after it was returned. After this period, no grade changes will be considered, although we are always happy to discuss the material.

CLASSROOM ETIQUETTE: Do not talk amongst yourselves or send text messages during class – this is very distracting to your classmates and to the instructor and will most certainly interfere with your learning. But, please do raise your hand to ask questions or contribute ideas!

ACADEMIC INTEGRITY: I take academic integrity very seriously. Please note that this course adheres to the CSU Academic Integrity Policy as found on the Student' Responsibilities page of the [CSU General Catalog](#) and in the [Student Conduct Code](#). At a minimum, violations will result in a grading penalty and a report to the Office of Conflict Resolution and Student Conduct Services.

SPECIAL NEEDS: If you have special needs for lectures or test taking, please contact the instructor as soon as possible. Please also speak with her anytime if something should develop later in the semester.

**Please note that the syllabus and course schedule are subject to change at instructor's discretion.*

Date	Topic	Required Reading	Optional Text Reading
Biodiversity and Extinction			
T Jan 16	Introduction to class	Soule 1985; Kareiva & Marvier 2012	Text 1-17
R Jan 18	Diversity of life	<i>Conservation</i> : Letting biodiversity get under our skin	Text 23-33, 45-48
T Jan 23	Rarity and Extinction	<i>Conservation</i> : TV as birth control; Ceballos et al. 2017	Text 33-38, 44-45
R Jan 25	Assigning value to nature	<i>Conservation</i> : There will be blood	Text 49-50; 60-67
T Jan 30	Ecosystem services	Boyles et al. 2011; McCauley 2006 & replies	Text 52-60, 67-79
Causes and Consequences			
R Feb 1	Habitat loss and fragmentation	<i>Conservation</i> : Do trees grow on money?	Text 316-326, 336-338
T Feb 6	Case study grasslands: A. Davidson (guest lecture)	TBD	None
R Feb 8	Invasive species and novel ecosystems	Davis et al. 2001 & replies; <i>Conservation</i> : The new normal	Text 412-434
T Feb 13	Invasive reptiles: A. Yackel-Adams (guest lecture)	TBD	None
R Feb 15	Climate change and assisted colonization	McClachlan et al. 2007; Wynes and Nicholas 2017	Text 435-461
T Feb 20	MIDTERM EXAM #1		
R Feb 22	Case study freshwater: Y. Kanno (guest lecture)	TBD	None
T Feb 27	Overexploitation and pollution	Brashares et al. 2004	Text 366-379
R March 1	Case study deserts: T. Laverty (guest lecture)	TBD	None
The Toolbox: Genes, Species and Populations			
T March 6	Case study Island ecosystems	Benning et al. 2002	None
R March 8	The problem with small populations	None	Text 157-162, 171-176
T March 20	PVA and intro to conservation genetics	<i>Conservation</i> : imposter fish	Text 162-171, 202-208
R March 22	Metapopulation dynamics	None (outdoor lab)	Text 251-258
T March 27	Cons. genetics: C. Funk (guest lecture)	TBD	None
R March 29	MIDTERM EXAM #2		
The Toolbox: Communities and Ecosystems			
T April 3	Island biogeography, reserve design and parks	Simberloff & Wilson 1969; <i>Conservation</i> : Cons. & poverty	Text 110-141, 241-251
R April 5	Conservation social science: S. Lischka (guest lecture)	TBD	None
T April 10	Private lands conservation	Fischer et al. 2008	Text 121-128
R April 12	Case study marine: M. Bowers (guest lecture)	TBD	None
T April 17	Captive breeding, reintroduction, rewilding	<i>NYT Magazine</i> : The mammoth cometh; Donlan et al. 2006	Text 272-295
R April 19	Conservation policy and science communication	TBD	Text 81-109
T April 24	Movie: <i>Racing extinction</i>	None	None
R April 26	Movie discussion & workshop posters	None	None
T May 1	Poster presentations	None	None
R May 3	Synthesis and review: Where do we go from here?	Arlettaz et al. 2010	Text 462-478
W May 9	FINAL EXAM: 9:40-11:40am		