



Rusty patched bumblebee.

(Photo Credit: Dan Mullen/Flickr.)

First bee to be listed under Endangered Species Act.

Biology 374 "Conservation Biology"

Website: All Course documents will be posted on the Canvas Course Website.

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Course Description: Conservation Biology is a multidisciplinary, applied science devoted to preserving the remaining biological diversity of our planet. We will study the foundational concepts and principles of conservation biology and use case studies and examples to illustrate these principles in practice. We will examine the causes and consequences of diversity losses; the genetic and evolutionary consequences of small populations; population viability modeling and other tools; and approaches to conserving diversity including reserve design, corridors, captive breeding, species reintroductions, and conservation laws.

The prerequisite for this course is either Bi213 or Bi253.

Course Objectives

- Learn the fundamental principles and concepts of conservation biology.
- Apply these principles to conservation strategies for species and ecosystem management.
- Independently and collaboratively research and evaluate conservation issues and actions.
- Improve scientific literacy skills such as interpreting graphs and analyzing journal articles.
- Improve verbal and written communication skills.
- Examine how conservation biology relates to our own lives.
- Gain an appreciation for the diversity of the natural world!

Readings, mostly journal articles from the scientific literature, are **required** reading for this course.

Readings will be available on Canvas. The readings will be announced in class and on Canvas. We will be actively engaged in discussing the readings during class so please read them *before* the due date. To get the most out of each of the assigned readings, you will be asked to bring to class a concept map that you have created or written answers to the guided reading questions. Either way, be prepared to answer and discuss the guided reading questions in class. Occasionally short TED talks will be assigned.

Course Format

Lectures. 2:00-3:20 MW in McKenzie 221

You will be responsible for all material presented in lecture. The course schedule is tentative and subject to change; adjustments will be announced in class.

Lecture meetings will be a mix of lecture and discussion. Discussions will include questions on any assigned readings, so I have a strong expectation that you will have read the material *before* coming to class and arrive ready to participate. There are group and writing activities that occur during lecture. It is our expectation that you participate in these activities. Your active involvement promotes understanding of the material and preparation for exam questions. *There is a strong positive correlation between attendance in lecture and class grades.*

Lecture PowerPoint slides are available on Canvas. Please keep in mind that these are outlines for your convenience in organizing notes. They are not meant to serve as a complete set of lecture notes when studying for the exams.

Questions are welcome and encouraged during and after lecture, during office hours, and via e-mail.

Discussion Sections Tuesdays (1, 2, or 3:00pm) B040 Price Science Commons. Please attend the section for which you are registered. Participation in discussion sections is a required part of this class and will count toward your final grade. Occasionally there will be short assignments associated with discussion section activities. These will be announced in class and on Canvas. Sections will provide an opportunity to explore some of the topics presented or to engage in participatory group activities. Project presentations will occur in section.

Grading Evaluation:

45% Assessment

- 20% Exam 1
- 20% Exam 2
- 5% Take Home Essay (Species Recovery Plan)

39% Projects

- 12% Endangered Species Group Project
- 20% Term paper (+Abstract)
- 2% Electronic discussion board comments, questions and answers on term paper abstracts
- 5% Multi-part Communication Assignment (due in discussion section)

16% Lecture Readings and Discussion

- 6% Discussion Section Participation and Assignments
- 10% Reading Quizzes/Concept Maps

Total = 100%

Exams: Exams will include material from the lectures, readings, in-class activities, discussion sections, and the video clips shown in class.

Exams will be mixed format (short answer, multiple choice, short essay). Details will be announced in class.

Make-up Exam Policy: There will be **NO make-up exams** except in the case of a documented severe medical condition or other extreme documentable emergency. It is your responsibility to contact the instructor as soon as possible.

Endangered Species Group Project

You will work in groups of three to create a presentation focused on an endangered species listed on the IUCN Red List. Your presentations will be evaluated to determine how well you have described the conservation needs of your focal species and developed a plan for their recovery. You will be expected to answer questions about your species and to be an inquisitive audience toward other groups. Presentations are due 4/25. Your group will be randomly assigned to one of the in-class presentation sessions. You will receive

more information about what your project should include and how it will be evaluated in discussion section and on Canvas.

Term Paper Project

Each of you will independently research a topic in conservation biology that results in an individually written six-seven page term paper which will be handed in as a hard copy *and* submitted via Canvas Vericite on 5/23. You will also post an abstract of your paper electronically on Canvas and will be expected to comment on some of your colleagues' abstracts and respond to comments from other students in the class. More details about the project requirements will be provided in class and on Canvas.

Discussion Activities Your score for each week will be determined by attendance, participation, and completion of any assigned exercises. May include check-in assignments on projects.

Communication Assignments Related to having conversations about potentially controversial topics and communicating with officials and the public about environmental issues.

Lecture Participation, Concept Mapping, and Reading Quiz Questions: We will present a short quiz on the readings and/or collect concept maps or written answers to questions based on the readings eleven times during the term. Ten of these will count toward your final grade. You can miss one without penalty. Make-ups will not be administered.

Professional conduct

Academic dishonesty is a serious offense. *Plagiarism will not be tolerated.* You are expected to do your own work on assignments, projects, and exams. When writing up your assignments and papers, you are expected to paraphrase (use your own words). When writing up your projects and assignments, give credit to the sources of your information. You are encouraged to discuss ideas with each other and to study together, but don't copy someone else's work, or allow them to copy yours.

Please refer to the University of Oregon Student Conduct Code by which all students are expected to abide.

Classroom Etiquette:

1. Please arrive on time.
2. Please don't leave early. This is very disruptive to everyone. In turn, I will not lecture beyond 3:20. If you have an unusual circumstance and must leave early, please sit near an exit and leave unobtrusively.
3. Please refrain from engaging in activities that could be distracting to your fellow students.
 - We ask that you not converse with your neighbors when someone else is talking (instructor or classmate) as this interferes with the ability of other students to learn.
 - Please turn your cell phones to silent/off during lecture.
 - We discourage the use of laptops in class. If you must use them for note-taking during lecture, please use them *only* to take notes. Other laptop activities have been reported to be distracting to your fellow students.
 - Please do not pack up your things early as this makes it difficult for students around you to hear the end of the lecture.

If you are having a problem that interferes with your ability to do the work in this class, please tell us about it as soon as you can. We may be able to refer you to someone for help or to make special arrangements if the need is real and if you have done your best to deal with the situation in a timely manner.

The University of Oregon is working to create inclusive learning environments. Please notify me if there are aspects of the instruction or design of this course that result in barriers to your participation. You may also wish to contact Disability Services in 164 Oregon Hall at 346-1155 or disabsrv@uoregon.edu

The following tentative schedule is a work in progress and is subject to change. Changes will be announced in class and on Canvas.

This is a partial and tentative list of readings. Check Canvas for assigned readings and reading questions.

WK	LECTURE TOPICS and READINGS	DISCUSSION SECTION (Tuesdays)
PART I: Identifying the Problems		
1	<p>4/3 L: Introduction to Conservation Biology Read the syllabus! 4/5 L: Biodiversity, Species concepts Reading: What is Conservation Biology? (Soule) Assigned TED talk: The Power of belief -- mindset and success Eduardo Briceno https://www.youtube.com/watch?v=pN34FNbOKXc</p>	<p>4/4 Discussion intro. Endangered Species Project description. Form project groups. Activity: <i>Measuring biodiversity</i></p>
2	<p>4/10 L: Conservation values, Ecosystem Services Reading: Check Canvas for information What to let go? Marris 4/12 L: Extinction and Threats to Biodiversity Reading: Check Canvas for information Ecosystem Decay of Amazonian Forest Fragments.</p>	<p>4/11 <i>Measuring biodiversity</i> activity continued. Finalize focal species for project. Identify a reference with a relevant data figure.</p>
3	<p>4/17 L: Threats to biodiversity I: Habitat loss & fragmentation Reading: Check Canvas for information Human-induced evolution caused by unnatural selection. 4/19 L: Threats to biodiversity II: Overexploitation, Invasives, and Climate change Reading: Check Canvas for information</p>	<p>4/18 Check-in on presentations-- Bring worksheet. <i>Activity</i></p>
4	<p>4/24 L: Conservation genetics and the problems with small populations Reading 4/26 L: More problems with small populations: Allee effect and inbreeding, Stochasticity and N_e Reading</p>	<p>4/25 All Presentations Due. Presentations Session 1 Identify potential individual term paper topics.</p>
PART II: Conserving Species		
5	<p>5/1 L: Modeling: MVPs, PVA, Protecting species, Establishment Programs Reading 5/3 L: Conservation Behavior Reading</p>	<p>5/2 Presentation Session 2. <i>Communication assignment Part 1 due.</i> <i>Submit term paper thesis with data figure and relevant citation.</i></p>
6	<p>5/8 L: Conserving Imperiled Species-- ESA and other laws protecting species Reading 5/10 EXAM 1</p>	<p>5/9 Genetic Drift Simulation. Review for exam.</p>

PART III: Conserving Ecosystems

7	<p>5/15 Protected Areas: Reserve Programs Reading 5/17 Guest Lecture: Josh Laughlin of Cascadia Wildlands (wolves and trophic cascades.) Reading: (Ripple and Beschta) Restoring Yellowstone's aspen with wolves</p>	<p>5/16 Assignment due: Bring a <i>complete draft</i> of your term paper to section for assignment credit. Peer Review Term paper</p>
8	<p>5/22 L: Protected areas and restoration Reading: marine reserves 5/24 L Reserve planning, Corridors. Where to designate Protected Areas Readings</p>	<p>5/23 Term paper DUE. See schedule for abstract postings and comments. <i>Activity: marine reserves</i></p>
9	<p>5/29 L: Memorial Day- NO Meeting. Work on communication assignment 5/31 L: GAP analysis, Conservation in the Matrix Reading * Due Fri 6/2 Take Home Essay- Species Recovery Plan</p>	<p>5/30 Due: Communication assignment Part 2. <i>Activity TBA</i></p>
10	<p>6/5 Urban Conservation and Conclusions Reading 6/7 L: EXAM 2</p>	<p>6/6 Due: Communication assignment final form. Urban Conservation and Review</p>
	<p>NO FINAL EXAM during Finals Week</p>	