Biology 374 "Conservation Biology"

Instructor: Dr. Debbie Schlenoff
schlenof@uoregon.edu (Please include "374" or "conbio" in subject heading.)
Office: 15A Klamath
Office hours: Wednesdays 10:30-11:40 and by appointment

GTF: Noah Simons
nsimons@uoregon.edu
Office Hours: Tuesdays 1-3pm in CON 365/366 Black.

BULA: Shira Mali
smali@uoregon.edu

Website: All course documents will be posted on the **Blackboard** Course Website.

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
- Increase scientific literacy and communication skills.
- Independently and collaboratively research, explore, and evaluate conservation issues and actions.
- Think about 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. I will try to make most of these readings available on Blackboard. The readings will be announced in class and on Blackboard. We will be actively engaged in discussing the readings during class so please read them *before* the due date.

Optional Recommended Text: Primack, Richard B., Essentials of Conservation Biology, 5th edition, Sinauer. ISBN 978-0-87893-640-3. The text is on reserve at the science library.

Course Format
Lectures. 12:00-1:20 MW in 102 DEA
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 outlines containing the text of the PowerPoint slides are available on Blackboard. Please keep in mind that these are merely outlines for your convenience in taking and organizing notes. They are not meant to serve as a complete set of lecture notes when studying for the exams.
I appreciate feedback on the lectures. Questions are welcome and encouraged during and after lecture, during office hours, and via e-mail.

Discussion Sections Tuesdays, 129 HUE (10:00 or 11:00- 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 Blackboard. Sections will provide an opportunity to question and discuss some of the topics presented in the readings and lecture. Some weeks may be used to discuss readings from the primary literature or engage in participatory group activities. Project presentations will occur in section.

Grading Evaluation:

20% Midterm Exam
25% Final Exam

15% Poster project
20% Term paper
+3% Electronic comments, questions and answers on term paper abstracts

5% Discussion Section Participation
6% Assignments (due in discussion section)
6% Lecture Participation: questions on readings/short comments after class activities
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.

Poster Project
You will work in groups of three to create a poster focused on an endangered species listed on the IUCN Red List. We will use class time for a poster session where your posters will be evaluated to determine how well you have described the work done on your species and convinced the audience of the conservation needs of your focal species. You will be expected to answer questions about your own poster and to be an inquisitive audience toward other poster groups. Posters are due 10/29. Your group will be randomly assigned to one of the in-class poster sessions. You will receive more information about what your poster should include and how it will be evaluated in discussion section and on Blackboard.

Term Project
Each of you will independently research a topic in conservation biology that results in an individually written seven page term paper which will be handed in as a hard copy on 11/19. You will also post an abstract of your paper electronically on Blackboard and will be expected to comment on some other abstracts and

respond to comments from other students in the class. More details about the project requirements will be provided in class and on Blackboard.

Discussion Activities
Your score for each week will be determined by attendance, participation and completion of any assigned exercises.

Homework assignments will be due in discussion section. One of these assignments will ask you to share a report on "Conservation in the News" so keep your eyes open for interesting articles. Other assignments will be discussed in class.

Lecture Participation and Reading Quiz/Questions: We will collect short comments after class activities or present a short quiz or reading reflection seven times during the term. Six of these will count toward your final grade. You can miss one without penalty. Make-ups will not be administered.

Professional conduct
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 project papers and posters/presentations, 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.
Academic dishonesty is a serious offense. 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 11:50. If you have an unusual circumstance and must leave early, then please sit near the exit so you can 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 off during lecture.
- Please use computers during lecture 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 Blackboard.
This is a partial and tentative list of readings. All readings will be posted on Blackboard.

Most of the following topics are covered in the Primack textbook. Please ask if you need assistance locating readings.

WK	LECTURE TOPICS and READINGS	DISCUSSION SECTION (Fridays)
PART I: Identifying the Problems		
1	**9/30 L:** Introduction to Conservation Biology **Read the syllabus!** **10/2 L:** Biodiversity, Species concepts **Reading: What is Conservation Biology? Soule (on BB)**	**10/1 Discussion intro.** Project description *Activity: Measuring biodiversity*
2	**10/7 L:** Conservation values, Ecosystem Services **Reading: What to let go? Marris** **10/9 L:** Extinction and Threats to Biodiversity **Reading: Trends in conservation biology: Progress or procrastination in a new millennium? Griffiths and Dos Santos**	**10/8** Measuring biodiversity activity continued Finalize focal species for poster
3	**10/14** L: Threats to biodiversity I: Habitat loss & fragmentation **Reading: Ecosystem Decay of Amazonian Forest Fragments. Laurance et al.** **10/16 L:** Threats to biodiversity II: Overexploitation, Invasives, and Climate change **Reading: Human-induced evolution caused by unnatural selection. Allendorf and Hard.** **Reading: Flycatchers and phenological shifts**	**10/15** Discussion **Assignment Due:** **Conservation in the News (see Bb)** **Choose individual term paper topics.**
4	**10/21 L:** Conservation genetics and the problems with small populations **Reading: Considering threats to the viability of small populations…Lacy** **10/23 L:** More problems with small populations: Allee effect and inbreeding, Stochasticity and Ne **Reading: Inbreeding and outbreeding depression**	**10/22** **Work on poster presentations** **Check in on term paper topics.**
PART II: Conserving Species		
5	**10/28 L:** Modeling: MVPs, PVA, Protecting species, Establishment Programs **Reading: Effective population size in a bottlenecked fur seal population** 10/30 L: Conservation Behavior **Reading: Fallow Deer**	**10/29 All Posters Due.** **Poster presentations Session 1**
6	**11/4 Guest Lecture:** Josh Laughlin of Cascadia Wildlands (wolves and trophic cascades.) **Reading: Ripple and Beschta Restoring Yellowstone's aspen with wolves** **11/6 L**: **EXAM**	**11/5 Poster presentation Session 2**.

<u>PART III</u>: Conserving Ecosystems		
7	**11/11 L:** ESA and other laws protecting species **Conserving Imperiled Species ESA** **11/13** Protected Areas: Reserve Programs **Reading: Nature- Averting biodiversity collapse**	**11/12** Bring a draft of your term paper to section. **Peer review Term paper**
8	**11/18 L: Guest lecture**: Nicole Nielsen-Pincus from McKenzie River Trust. Protected areas and restoration **Reading: TBA** **11/20 L** Reserve planning, Corridors. Where to designate Protected Areas **Readings: Myers et al. Hotspots** **Kareiva and Marvier. Coldspots**	**11/19 Term paper DUE.** **Post abstracts.** *Activity: corridors*
9	**11/25 L**: GAP analysis, Conservation in the Matrix **Reading. Species Richness Bees.** **11/27 L:** NO Meeting. Video assignment (see Bb). Happy Thanksgiving	**11/26** **Due: Comments on Discussion Board** *Activity: reserves*
10	**12/2 L:** Urban Conservation **Reading: Motivations** **12/4 L:** Conclusions **Reading: Impact of conservation**	**12/3** Assignment due. **Activity:** Mock trial
	FINAL EXAM 10:15 AM, Tuesday, Dec 10	