

ENVIRST 651 Conservation Biology SYLLABUS
Version: Friday, January 20, 2012

Lectures: TR 230-345 pm in Room 1310 Sterling Hall
Discussions: R 4-515 pm in Room 360 Science Hall
(Discussions are mandatory for graduate students; not open to undergraduates)

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REQUIRED TEXT Key Topics in Conservation, eds. MacDonald & Service, Wiley-Blackwell
The textbook is also available on Learn@UW in pdf format, online at
<http://www.wisc.ebib.com.ezproxy.library.wisc.edu/patron/FullRecord.aspx?p=428093&target=patron&target=patron&userid=UW109F734&tstamp=1326644845&id=d5d3452d5d5e8666b1d1a29316b9168a> if you are on campus, and one hard copy on reserve in Steenbock Library <http://steenbock.library.wisc.edu/> Ph 262-1371

DESIRED LEARNING OUTCOMES

This course will cover the theory and practice of conservation of biodiversity with a focus on terrestrial systems, biological aspects of conservation, and systematic conservation planning. Students will gain expertise in the application of ecological principles and human dimensions to the conservation of biological diversity. Topics include biodiversity science; conservation planning; population ecology; habitat loss, species exploitation, invasive species, and pollution; human values, attitudes, and activities as they affect Earth's organisms; approaches to conservation monitoring and intervention. The course will be divided into approximately 60% biodiversity science and 40% human dimensions of biodiversity conservation, but fully integrated with each other. More specifically, within the unit on biodiversity science we will gain an understanding of the diversity of life on Earth and the abiotic life support system, as well as the implications of variation in individual behavioral ecology, population dynamics, and strong interactions between species. Within the unit on human dimensions of biodiversity conservation, we will explore the role of humans in nature including recent technology and land-use intensification. In the unit on threats to biodiversity we will learn about the four riders of the biodiversity apocalypse and the global reach and impact of human activities. We will analyze indirect threats and chains of cause and effect that drive biodiversity loss. In the last unit, our class will learn to plan conservation projects systematically with optimal participation of stakeholders and using adaptive management practices. In teams, students will engage in a service-learning project with the Lakeshore Nature Preserve here on campus to put classroom learning into practice. Prerequisite: An ecology course (e.g., Botany/Zool 460)

Skill sets we will develop

1. Absorbing information and nuance about complex systems
2. Critical analysis and constructive synthesis
3. Clear, logical, and persuasive communication
4. Quantitative thinking
5. Civic engagement through a service-learning project
6. Team collaboration on an oral presentation

ASSESSMENT

Graded over 400 points, with undergraduates and graduate students graded on separate scale. The highest total score in the class will receive an A. Scores below 50% will fail. The instructor will generate two curves for scores between A and 50% (one for grads and one for undergrads).

- 200 points for 2 midterm tests
- 50 points for participation in Q&A sessions (undergrads) or Discussions (grads) -- see syllabus
- 150 points for team project or service-learning project (varies by semester)

NO FINAL EXAM

Please note carefully the policy below for missed assignments / sessions.

INSTRUCTOR AND STUDENT EXPECTATIONS

Instructors expect students will arrive on time for class or notify us beforehand of planned tardiness or absences. If you unexpectedly encounter problems attending a session you MUST notify the instructors by email prior to the end of class or we cannot allow make-up of missed work. Failure to attend class or notify us of absences before they occur will result in loss of points from participation. Instructors expect all students will complete all assignments by class start on the day listed in the syllabus. Assignments must be based on your own original, creative thinking (see Fair credit warning below). Late assignments will lose 25% of their value immediately and 25% for each full day late. Appropriate reasons for late assignments include: medical emergency for self or immediate family or professional travel (this requires formal letter of explanation from the host or agenda showing student's name).

You may request re-grading of an assignment. However the instructors reserve the right to re-grade the entire assignment, which can mean loss of credit ultimately.

WARNING -- BIBLIOGRAPHIES AND IMPORTANT ADVICE ON FAIR CREDIT TO OTHER AUTHORS: Plagiarism is the copying of someone else's work--whether it is your classmate or another author, whether it is written or spoken. Plagiarism can be avoided by combining ALL of the following steps in your oral or written presentations:

- Integrate information from multiple sources when you write or speak,
- Use your own words so the output is original and does not directly copy any other person's work,
- Credit the authors of work you used and do so appropriately. For written citations to others' work, use the format published online for the journal Conservation Biology.
- Always try to find the primary reference to a statement rather than someone else's repetition of it. This may not always be possible for obscure sources. Wikipedia and Google are not primary sources although they may lead you to appropriate references, which should be read in the original.
- Fair quotations are complete and not taken out of context. You may use another author's exact words if you fairly credit them. The format for doing so follows: "So, how many wildebeest do you need? How many elephants is enough? And what do you need them for? These are not trivial questions, for they focus attention on the need for some hard decisions." (Norton-Griffiths 2007, p. 41). For sources with more than two authors use the first author followed by et al.
- If your source is not written material but web content, you may quote it as above but cite it with a URL and the date of access, as follows (<http://www.nelson.wisc.edu> accessed Oct. 20, 2009).
- Your bibliographies should list each source in alphabetical order by the author, as follows: Agrawal, A., and E. Ostrom. 2006. Political science and conservation biology: a dialog of the deaf. *Conservation Biology* 20:681-682.
- For sources that do not list a person as author, use the name of the publishing institution (e.g., New York Times or IUCN), including sources from the web.

Assignments with evidence of plagiarism will receive zero credit regardless of whether the work is correct. Two incidents will result in communication of the case to the Dean of Students.

GUIDELINES FOR LEADING DISCUSSION

Peer discussion of current research is an important learning tool and critical professional skill to develop. Our goal is that the discussion component of the course will serve as an opportunity to explore and engage with the various themes of conservation biology. To accomplish this, all graduate students will lead the discussion of 1 reading and participate in all others. The following guidelines explain what to include when it is your turn to lead discussion. Please plan on sharing 45 minutes with another discussion leader. We welcome creativity, but please run your ideas by us if you plan to diverge from the following: Discussion leader goal: engage the class intellectually in your topic. Here's how:

- Review the major points of the reading(s)
- Identify and resolve any confusion or misunderstandings about the readings;
- Raise questions/topics that would benefit from the light of diverse viewpoints. For example, consider questions/topics that relate to individual values, perceptions, paradoxes, or interpretations of results that are not definitive.
- Any visual support or other media that will help with this are welcome (you are responsible for informing the TA if you need A/V equipment);
- Anything you can do to "break the ice" will be welcome. Get everyone to participate -- we're aware that some people are naturally shy and can't be drawn out but your efforts to do so are what count
- All opinions will be heard without interruption or disrespect.

SCHEDULE AND ASSIGNMENTS

Reading assignments: for everyone in plain text, *for grads in italics*, **for undergrads in boldface**

Jan 24 T Introduction to the course and Lecture: What is conservation biology?
For next class, everybody read Dickman et al. (pathology and practice)
Grads only: read Donlan et al. (2005) & Oliveira-Santos & Fernandez (2009)

Jan 26 R Lecture: Biological diversity & extinction
Discussion (grads only): Introduction and discussion of megafauna restoration

Jan 31 T Lecture: The human role in the biodiversity crisis
Grads only: read Estes et al. (2011) and Smith et al. (2001)

Feb 2 R Lecture: Extinction risk for small populations
For next class, everybody read Geffen et al. (genetics)
Discussion: Trophic down-grading

Feb 7 T Guest Lecture: Conservation genetics (Dr. Zach Peery, UW–Madison Assistant Professor, Forest & Wildlife Ecology)
For next class, everybody read Sillero-Zubiri et al. (living with wildlife)
Grads only: read Rooney & Anderson (2009) or Vucetich & Peterson (2009)

Feb 9 R Lecture: Top predators and the maintenance of healthy ecosystems.
For next class, undergrads only read: “The once and future tiger”
Discussion: Trophic cascades and ungulate population regulation

Feb 14 T Current event Q&A: The once and future tiger
(grad attendance optional but recommended if you study endangered species)
For next class, everybody read Feber et al (farming and wildlife)
Grads only: read Fischer et al (2008) and Treves & Jones (2010)

Feb 16 R Lecture: Habitat loss & fragmentation
For next class, everybody read Macdonald et al (exotics)
Discussion: Wildlife-friendly farming and land sparing compared

Feb 21 T Lecture: Non-native species & pollution
For next class, everybody read Root et al (climate change)
Grads only: read Walther et al 2002 and Regehr et al. 2007

Feb 23 R Lecture: Climate change
For next class, everybody read Loveridge et al (sport hunting) and Fa et al (bushmeat)
Discussion: Climate change impacts on biodiversity generally and polar bears specifically

Feb 28 T Lecture: Species depletion & exploitation
For next class, undergrads only read: either Heberlein (2000) or Holsman (2000)
Grads only: read Holsman (2000), Loveridge et al (sport hunting), Treves (2009)

Mar 1 R Current event Q&A: Hunter stewardship in cross-cultural perspective
(grad attendance optional but recommended if you study hunting or stewardship)
Discussion: Hunting and conservation

Mar 6 T Midterm prep (led by TA). Attendance optional, come prepared to ask questions

Mar 8 R Midterm 1
Discussion cancelled

For next class, everybody read Open Standards for the Practice of Conservation
<http://conservationmeasures.org/initiatives/standards-for-project-management>
Grads also read: Mace et al. (prioritizing conservation action)

Mar 13 T Guest Lecture: Conservation Planning I—Introduction to Conservation Planning, Vision and Goals (Dr. Arlyne Johnson, Wildlife Conservation Society and Foundations of Success)
Grads only: read Salafsky et al. 2008 and Sutherland, et al. 2004

Mar 15 R Guest Lecture: Conservation Planning II: Situation analysis, critical direct threats and indirect threats (Dr. Arlyne Johnson)
For next class, everybody read Margoluis et al. 2009, Treves et al. 2009
Discussion: Participation in conservation planning

Mar 20 T Shared Lecture: Conservation Planning III: Results chains, strategy selection and intervening (Dr. Arlyne Johnson and Dr. Adrian Treves)
For next class, everybody read Grantham et al. 2009
Grads only: read Salzer & Salafsky 2006.

Mar 22 R Guest Lecture: Conservation Planning IV: Monitoring & managing adaptively (Dr. Arlyne Johnson)
For next class, everybody read Report on 651 service-learning 2011
Discussion: Service-learning Project Planning (extra-long session)

Mar 27 T Service-learning project introduced to entire class

Mar 29 R No class meeting: Fieldwork on service-learning project begins
Discussion: No class meeting, Fieldwork on service-learning project begins
For next class, everybody read Kremen et al. (2002)

Spring Break

Apr 10 T Lecture: Paying for Ecosystem Services
For next class, everybody read Pearce et al (economics) and listen to 7 audio files of A Sand County Almanac: The Good Oak (23m:47s)

Apr 12 R Video: Aldo Leopold and Green Fire
For next class, everybody read Macdonald et al. (alignment)
Discussion: Review s-l project outputs and data analysis (extra-long session)

Apr 17 T Lecture: Transfrontier wildlife conservation and a century of uneasy coexistence between people and large carnivores in Uganda
Grads only read Milner-Gulland et al (2010) and Muir & Schwartz (2009)

Apr 19 R Service-learning team work sessions
Discussion: Graduate training and disseminating your thesis findings

Apr 24 T Midterm 2

Apr 26 R TBA
Discussion: no class meeting, team prep for oral presentations
Due Monday April 30th: Data from service-learning (undergrads)

May 1 T Service-learning team work sessions (grads + undergrads)
For next class, everybody read Stan Temple's powerpoint on captive breeding and reintroduction

May 3 R Current event Q&A: Radiolab segment on zoos
(grad attendance optional but recommended if you study captive breeding, or reintroduction)
Discussion: No class meeting, team prep for oral presentations

May 8 T Grads present service-learning results orally to class (User Survey and Bird survey)
May 10 R Grads present service-learning results orally to class (Camera Trap Survey)
Discussion: no class meeting

No Final Exam