

Syllabus and Schedules

Conservation Biology - EEOB 661*

Conservation Biology is a field-oriented course for seniors and graduate students interested in ecology, wildlife conservation, and environmental studies. Conservation biology is the application of population and community ecology, population genetics, and biogeography to the study and conservation of biodiversity, threatened communities, and endangered species. Selected lecture-discussion topics include: Loss of global biodiversity, conservation genetics, metapopulation biology, population viability analysis, effects of exploitation, wetland ecology, tropical rainforest ecology and utilization, habitat fragmentation, and designing and managing nature preserves. The **goal** is to provide students with an understanding of the ways in which these topics are studied and how the resulting data can be used in the conservation of natural systems. Field trips to wetland, prairie, and forest communities in central Ohio meet the **objective** of providing students with experience in the theory and practice of sampling plant communities and animal populations. Data sets collected on field trips are analyzed and presented in written and oral research reports that cover a variety of topics including ecology of surface-dwelling arthropods, diversity and abundance of freshwater mussels, succession on a restored prairie, and waterfowl use of wetlands.

Schedules:

Lecture-discussion sessions meet Monday, Wednesday & Friday, at 1:30 pm,
Laboratory/Field Sessions meet Tuesday and Thursdays at 1:30 pm in Rm 4097 Smith Lab.
Field trips are scheduled for T-Th lab sessions and two Saturdays
EEOB 661, UG 5 credit hours, **Autumn Quarter**.
* Core Course in the Environmental Sciences Graduate Program

Course Requirements:

Reading: Groom, M.J., Meffe, G.K. and Carroll, C.R. 2006. Principles of Conservation Biology. Sinauer Associates, Inc. Sunderland, MA. 779pp. & Occasional outside readings
Harder, JD. 2007 A Manual for Conservation Biology. Dept. EEOB, OSU 56 pp

Active Learning is an instructional approach based on the use of recently acquired information and principles in oral and written communication. Active learning requires some structure and incentives to encourage full participation. Thus, one-fourth of the lecture grade is earned through participation in active learning exercises. Participation: Attendance at all lecture and laboratory sessions is expected; full participation in all field trips is required.

Research Reports: Data sets collected on field trips provide the basis for individual research reports that emphasize data analysis and presentation of results in tables and graphs. Students submit a final (revised) draft of the research report after the first draft (4 pages of text) is marked and edited by instructors. Students also present an oral report of their findings to the class.

Grade Criteria and Calculations:

Lecture Grade (weighted 2/3 of course grade): One midterm examination (120 points each), Active Learning (120 points) and the Final Examination (160 points). Laboratory Grade (1/3 of course grade): Assignments and general participation (50 points), Research Reports (150 points).

Academic Misconduct: Students at The Ohio State University are bound by the Code of Conduct (see <http://oaa.ohio-state.edu/coam/code.html>). Violations of this code in this class will be handled in accord with procedures set forth in that Code. All alleged cases of misconduct, e.g., plagiarism, will be referred to the Committee on Academic Misconduct.

Disability Statement: Any student who might need accommodation based on the impact of a disability should contact me privately to discuss specific needs and the Office for Disability Services at 292-3307, Rm 150 Pomerene Hall.

September 2007

**LECTURE SCHEDULE -
Conservation Biology - EEOB 661
Autumn Quarter 2007**

M-W-F 1:30 PM
Physical Education 0103
harder.2@osu.edu

Revised, 5 October

John D. Harder
392 Aronoff Lab
Ph. 292-8636, 2-8668

DATE	Number	TOPIC	READING *
19 September	1	Introduction	3-7, 15-25
21 September	2	History of Wildlife Conservation & Ethics	7-15, 111-115
24 September	3	Taxonomy & Species Concepts in Conservation Biology	31-41
26 September	4	Global patterns of Biological Diversity	27-31, E 2.1, 2.3** 41-62
27 September	5	Community Ecology	
1 October	6	Loss of Global Biodiversity & Conservation of Amphibians: Jennifer Sander	63-86, 91-98, E3.3 173-185
3 October	7	Wetland Communities	Mitsch & Gosselink (2007): pp. 25-35+39, 259-268
5 October	8	Population Genetics Dr. Fuerst (5-10 Oct)	375-383
8 October	9	Loss of Genetic Diversity	384-394, E 11.1
10 October	10	Conservation Genetics	394-415, E6C
12 October	11	Population Ecology and Determinants of N	Lancia et al. (2005) Harder (2007) 49-51
15 October	12	Natality and Mortality	419-222, & TBA
17 October	13	Population Models and Grizzly Bears	Schultz et al. (1999):61-71
19 October	14	Population Viability Analysis	433-446, 449-453, E12.3
22 October	15	Metapopulations and Dispersal	217-219, 424-432, E12.2

EEOB 661 Lecture Schedule – 2007 (continued)

DATE	Number	TOPIC	READING
24 October	16	Wildlife Management and Regulation of Hunting	255-264
25 October		Midterm Examination (Topics 1-15)	
26 October	17	Effects of Exploitation	253-254, 265-277, Bolin & Robinson (2003): 57-58
29 October	18	Hunting by Indigenous Peoples	70-74, 280-283
31 October	19	Temperate Forest Ecology and Island Biogeography	Cox (1997): 52-61 48, Box 3.3
2 November	20	Forest Fragmentation & Avian Ecology	213-251, E7.1, E7.2
5 November	21	Tropical Rain Forests	Cox (1997): 82-91
7 November	22	Management of Resources in Tropical Rainforests	283-291
9 November		Veteran's Day – no classes	
12 November	23	Biological Impacts of Global Climate Change	333-374
14 November	24	Endangered Species: Concepts and management	Box 3-2, 104-106, 462, 635- 637, 674-675
16 November	25	Conservation of Invertebrates, Dr. Horn <i>First draft or Research Report due.</i>	TBA
19 November	26	Gap Analysis & Predicted distributions	517-521
21 November	27	Designing Protected Areas	509-531
22 November		Thanksgiving Holiday	
26 November	28	Managing Nature Preserves	467-507, 531-545
28 November	29	Zoos, Captive Breeding, and Reintroduction	TBA
30 November	30	Restoration of Damaged Ecosystems Conservation Biology & Future of Natural Systems	553-590
5 December		Final Examination - 11:30 am - 1:18 pm, 103 PE	

* Readings are from Groom et al. 2006 Principles of Conservation Biology.
Sinauer Associates, Inc. Sunderland, MA. 779pp.

** Read Essays only as assigned, but read all Box text, unless instructed otherwise.

FIELD & LABORATORY SCHEULE

Conservation Biology – EEOB 661

Autumn Quarter 2007

Tues.-Thurs., 1:30-3:30 PM
Rm 230 Jennings Hall

Revised, 5 October

Graduate Teaching Associate

DATE	TOPIC	PREPARATION
20 September	Introduction, Sampling Exercise and Field Trip Orientation	Manual Sections 1 & 2 ** and Calculator
25 September	Local Field Trip: Pitfall sampling for animal diversity & abundance	Manual 3, Procedural questions due
27 September	Statistics and Preparation for Field Trip with Dr. Tom Watters	Manual 6, Draft data forms Deadline for choosing topics
29 September	Field trip to Battelle-Darby Metro Park	Know procedures
2 October	Data Analysis I and Statistics <u>Meet in Rm 50 Jennings Hall</u>	Manual 1, 2, & 5 Field Notebooks due
4 October	Local Field Trip: Avian diversity in suburban habitats	Manual 4 Research topics due
9 October	Class cancelled, compensatory time	
11 October	Analysis of pitfall specimens Preparation for Highbanks Trip	Manual 9 Manual 7
13 October	Field Trip to Highbanks Metro Park	Know Manual 7
16 October	Analysis of Field Trip Data Rm 50 Jennings Hall	Manual 8
18 October	Computer simulation – PVA Computer Lab, Kunz Hall	PVA Handout: Manual 11 Field notebooks due
23 October	Review for Midterm Analysis of pitfall specimens	Manual 9
25 October	Midterm Examination	

** Harder, J.D. 2007. A Manual for Conservation Biology. EEOB, OSU. 56 pp.

EEOB 661 – 2007 Field & Laboratory Schedule (continued)

DATE	TOPIC	PREPARATION
30 October	Analysis of pitfall specimens or if completed: open	Manual 9
1 November	Open for project data analysis	
6 November	Tables and Figures Creating graphs with Excel	Manual 8
8 November	Visit Mussel Research Facility	
13 November	Research Report Workshop: & Project Consultation	Manual 12
15 November	Active Learning Session	
16 November	First draft of Research Report due by Friday 16-Nov.	Manual 12
20 November	Discussion of Forest Management and Climate Change <u>Also:</u> Review of editorial marks on Draft 1 of Research Report	TBA By appointment 29-21 November
22 November	No Classes - Thanksgiving	
27 November	Project Seminars	Manual 12
29 November	Project Seminars	Final Draft of Research Report due

FINAL GRADE CRITERIA AND CALCULATIONS

Final Grade: two thirds from lecture and one third from laboratory

<u>Lecture Grade:</u>	Mid-term Examination	120 points
	Active Learning	120 points
	Final Examination	<u>160</u> points
	Total Lecture:	400 points

<u>Laboratory Grade:</u>	Assignments, notebook and general participation	50 points
	First draft of Research Report	40 points
	Final Draft of Research Report	70 points
	Oral Research Report	<u>40</u> points
	Total Laboratory:	200 points