

## ANBE/BIOL 415 – CONSERVATION BIOLOGY

Autumn 2008

<http://www.facstaff.bucknell.edu/abrahmsn/bi415/>

*"Teach your children what we have taught our children, that the earth is our mother. Whatever befalls the earth, befalls the children of the earth. If we spit upon the ground we spit upon ourselves. This we know. The earth does not belong to us; we belong to the earth...."*

Attributed to Chief Seattle, 1855

### Instructor:

Dr. Warren G. Abrahamson, Biology 308/309, Office 577-1155, Home 524-4306, [abrahmsn@bucknell.edu](mailto:abrahmsn@bucknell.edu)  
Web site: <http://www.facstaff.bucknell.edu/abrahmsn/>

### Course Objectives:

- To engender a sense of understanding of environmental problems, create a sense of purpose and direction for solutions to those problems, and develop an involvement in conservation biology
- To provide an up-to-date synthesis and understanding of the multiple disciplines relating to the conservation of living organisms
- To encourage thought, reflection, and action among students interested in fields related to conservation biology

### Expectations:

Class attendance for every class meeting is expected as is stated in the Bucknell University Student Handbook. Each student should be prepared for class by reading the assigned materials before class. Failure to adequately prepare for class will adversely affect students' performance in the course.

### Academic-honesty Policy:

I expect that every student has read and understood Bucknell's academic-honesty policy and technological-use policy and strict adherence to both of these policies is expected. Each student will need to carefully prepare assignments with these policies in mind. If there are any questions throughout the semester, please ask me BEFORE any assignment is submitted.

### Assignments:

Journal Summaries (3)	Sep 10, 17, 26
Student-led Discussions (8)	Sep 15, 22, Oct 1, 20, 27, Nov 3, 10, & 19
Term Project Outline & Bibliography due	Oct 3
Special Lecture Summary	Oct 8
Mid-term Examination	Oct 10
Letter to Congress or State Legislature	Oct 29
Oral Term-Project Presentations	Nov 21-Dec 8
Term Project Paper due	Dec 8
Final Examination (Comprehensive)	Week of Dec 11-18

**To reduce impacts on forest resources, all written materials must be submitted in single-spaced format with no more than 1" margins. Printing pages back-to-back is required.**

### Grading:

Journal Summaries, Letter to Congress, Special Lecture Summary	10%
Midterm Examination	20%
Class participation and leadership of assigned discussion	20%
Term Project including oral presentation of project	25%
Final Examination	25%

### Assigned Readings:

Primack, Richard B. 2006. *Essentials of Conservation Biology*, 4<sup>th</sup> Edition.  
Sinauer Associates, Sunderland, MA. ISBN 0-87893-720-X  
Original journal articles

**COURSE CONTENT:****Part I. Major Issues That Define Conservation Biology****Aug 27-Sep 3**

1. Course expectations
2. What is conservation biology?
3. What is biological diversity?
4. Where is the World's biological diversity found?

Readings:

Primack, R.B. 2006. Chapters 1, 2, and 3.  
 Leopold, A. 1933. The Conservation Ethic. *Journal of Forestry* 31: 634-643.  
 Leopold, A.C. 2004. Living with the Land Ethic. *BioScience* 54: 149-154.

**Part II. Valuing Biodiversity****Sep 5-17**

4. Ecological economics and direct economic values
5. Indirect economic values
6. Ethical values

Readings:

Primack, R.B. 2006. Chapters 4, 5, and 6.  
 Balmford, A., A. Bruner, P. Cooper, R. Costanza, S. Farber, R.E. Green, M. Jenkins, P. Jefferiss, V. Jessamy, J. Madden, K. Munro, N. Myers, S. Naeem, J. Paavola, M. Rayment, S. Rosendo, J. Roughgarden, K. Trumper, and R.K. Turner. 2002. Economic reasons for conserving wild nature. *Science* 297: 950-953.  
 Adams, W.M., D. Brockington, J. Dyson, and B. Vira. 2003. Managing tragedies: understanding conflict over common pool resources. *Science* 302: 1915-1916.

**Part III. Threats to Biodiversity****Sep 19-Oct 6**

7. Early mass extinction & current rates of extinction
8. Vulnerability to extinction
9. Habitat destruction, fragmentation, degradation, and global climate change
10. Overexploitation, invasive species, & disease

Readings:

Primack, R.B. 2006. Chapters 7, 8, 9, and 10.  
 Myers, N., R.A. Mittermeier, C.G. Mittermeier, G.A.B. da Fonseca, and J. Kent. 2000. Biodiversity hotspots for conservation priorities. *Nature* 403: 853-858.  
 Harris, G.M., C.N. Jenkins, and S.L. Pimm. 2005. Refining biodiversity conservation priorities. *Conservation Biology* 19: 1957-1968.

**Part IV. Conservation at the Population and Species Levels****Oct 8-20**

11. Problems in small populations
12. Applied population biology
13. Establishing new populations
14. *Ex situ* conservation strategies

Readings:

Primack, R.B. 2006. Chapters 11, 12, 13, and 14.

**Part V. Practical Applications**

**Oct 22-Nov 5**

15. Establishing protected areas
16. Designing networks of protected areas
17. Managing protected areas
18. Outside protected areas
19. Restoration ecology

Readings:

Primack, R.B. 2006. Chapters 15, 16, 17, 18, and 19.

Arendt, R.G., A.E. Hutchinson, H.M. Harper, and S. Kuter. 1997. Growing greener: putting conservation into local codes. *Natural Lands Trust*. 17 pp.

**Part VI. Conservation and Human Societies**

**Nov 7-19**

20. Conservation and sustainable development at the local and national levels
21. An international approach to conservation and sustainable development
22. An agenda for the future

Readings:

Primack, R.B. 2006. Chapters 20, 21, and 22.

McMichael, A.J., C.D. Butler, and C. Folke. 2003. New visions for addressing sustainability. *Science* 302: 1919-1920.

**Part VII. Student Term Project Presentations**

**Nov 21-Dec 8**