

## Conservation Biology

*Course Syllabus*

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Course overview: This course is offered at the Pymatuning Laboratory of Ecology Field Station. This field course will focus primarily on the applied aspects of conservation biology by examining the degradation and loss of species, populations, and ecosystems due to human activities, and by considering alternatives for avoiding and/or mitigating these impacts. Topics range from local to global in scale, and connections between different scales are emphasized. The perspectives of science, management, and policy will be elucidated in the context of historical, current, and future strategies designed to conserve the diversity of life.

Course objectives include:

- Understand how human population growth and resource consumption drive environmental problems;
- Identify major environmental threats facing species, communities, and ecosystems;
- Clearly define terms and principles relevant to conservation biology;
- Learn basic tools for assessing and addressing environmental health and degradation, with an emphasis placed on field exercises;
- Understand the complexity of many conservation issues, and how conservation biology operates in a multidisciplinary manner; recognize the importance of economics, sociology, politics, and biology and their interactions in both causing and resolving environmental problems.

Class format: The class meets Monday through Friday, 9:00 – 4:00. We will begin most days with a short lecture with presentations on topics relevant to the day's field exercise, but the majority of our time will be spent in the field. Some trips will be off site and most trips will last all day. For many exercises we will work in small groups, and the group will work cooperatively to design and implement the study. Each student though will be responsible for recording data and their own field worksheets or reports. Because successful science is often a collaborative process that depends on open communication and participation, your active involvement in all phases of each exercise is needed.

You should also realize that there will be a fair amount of reading associated with this class. You should anticipate that you will need to spend time reading each day in order to keep up. I am assuming that students at Pymatuning want to spend most of

their time in the field, so lectures are kept to a minimum, and readings will be relied on to convey key points, theory, and background for the principles of conservation biology that will be demonstrated in field exercises.

Required books: Primack, R. B. 2010. *Essentials of Conservation Biology*, fifth edition. Sinauer Assoc., Sunderland, MA. There is no field exercise manual for this course at Pymatuning. Instead, we will provide you with the necessary written materials. You may, however, want to bring a 1", 3-ring binder in which to keep the distributed materials.

Other readings will be assigned daily.

Problem sets, Projects, Presentations, and Examinations:

Problem sets: Throughout the session a variety of worksheets, problem sets, short reports, or opinion pieces will be assigned to accompany daily field or classroom exercises. Some of these will involve data gathering in the field. In most cases you will be welcomed, or even encouraged, to work in small groups on these problem sets.

We will be taking several day-long field trips as part of this class. While this experiential learning is not likely to require data sets or analyses, I will ask each of you to submit three short answer/short essay questions (with answers) that summarize important points that you learned through this field trip. These questions and answers will be graded based on their quality and comprehensiveness. You are welcome to share these with your classmates, as some may also show up on the exam.

Project and Presentation: Each student will be expected to complete a project that focuses on defining approaches to address some issue relevant to conservation biology. Work will be done individually to research the issue and present the issue to classmates. Some possible issues include the future of the Endangered Species Act, salvage logging, the role of indigenous people within protected areas, or limits to human populations. You will first prepare an annotated bibliography summarizing key papers related to your subject. Presentations of your report will then be made to the entire class through a Powerpoint presentation or other format. Each student will also present a written report characterizing the issue. Some time will be made available for students to work on projects throughout the session, but you will also be expected to use your weekends wisely.

Examinations: There will be one final exam in the course which will be given on May 31. The exam will be worth 30% of your final grade and will consist of definitions, matching, and short answers. Material presented in lectures, derived from field exercises, appearing in problem sets or worksheets, or presented in assigned readings may be on the exam.

Grading: Your letter grade will be based on the points earned during the course.

Participation: 10%

Field trip reports, worksheets, exercises (10): 30%

Annotated bibliography 10%

Class project (written): 10%

Class project presentation: 10%

Final exam: 30%

The following scale will be used to convert your percentage into a letter grade:

|       |    |       |    |
|-------|----|-------|----|
| ≥97%  | A+ | 73-76 | C  |
| 93-96 | A  | 70-72 | C- |
| 90-92 | A- | 67-69 | D+ |
| 87-89 | B+ | 63-66 | D  |
| 83-86 | B  | 60-62 | D- |
| 80-82 | B- | ≤59%  | F  |
| 77-79 | C+ |       |    |

Please feel free to contact me to discuss any aspect of the class. I will be available during daily breaks, after class, or by appointment.

The less pleasant necessities: Attendance at all class sessions, while not required, is expected, and unexcused absences will affect the points you receive for class participation and problem sets. Due to the nature of the experiences, field exercises can not be made-up. If there is an unavoidable excused absence, a written report based on the primary literature will be assigned as make-up. Late assignments will lose one letter grade per day. Academic honesty is taken very seriously. Misrepresenting anyone else's work or ideas as your own can result in a failing grade for that assignment or for the course.