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Syllabus: Wildlife Habitat Management

Paige Warren

University of Massachusetts - Amherst

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NRC 564 Wildlife Habitat Management

4cr. (Fall 2014)

Instructor: Dr. Paige S. Warren
216 Holdsworth, 545-0061, pswarren@eco.umass.edu

Teaching Assistant:
Melanie Klein, mlklein@eco.umass.edu

Meeting time and place:

Lecture (74325)	TuTh 1:00PM - 2:15PM	Goodell 608
Lab 1 (74326)	Tu 2:30PM - 5:00PM	Goodell 608
Lab 2 (74335)	Th 2:30PM - 5:00PM	Goodell 608

Prerequisite: NRC 261

Course Description

This course provides an in-depth exploration of wildlife-habitat relationships, illustrated through basic field zoology and natural history, evolutionary biology, and ecological theory. We introduce you to quantitative tools used to explain ecological processes and their influence on wildlife and their environment. We will examine the dynamics and management of various habitats in New England, North America, and elsewhere through field visits and use of primary literature.

We will place particular emphasis on **managing wildlife habitat in an urbanizing world**. By one estimate, roughly 9% of the land area of the United States is in a zone of wildland-urban interface, but that figure rises above 60% for southern New England. In wildland-urban interfaces, homes intermingle with undeveloped wildland vegetation, and human activities can have profound impacts on animal species. Perhaps equally important, animals have the potential to affect humans, in both positive and negative ways. Human values, perceptions, and uses of open space become critical aspects of habitat management in wildland-urban interfaces. UMass campus provides us with a useful case study of managing habitat in places where people live and work. The campus is arguably the most 'urban' part of Hampshire County, with a residential population density higher than that of Springfield, MA and 6 of the 10 largest US cities. Yet, species like bobcats, fox, and peregrine falcons regularly occupy campus lands. In the lab component, students will work in teams to develop a habitat management plan for the UMass-Amherst campus. We will aim to provide real guidance to the Campus Sustainability Initiative and other long term planning efforts on campus.

We will use a **Team-Based Learning (TBL) approach** in this class. Teamwork is an essential skill to learn in the field of wildlife habitat management. I am regularly asked to comment on former students' skills at working in a team when I write letters of recommendation. In addition, I have seen that students working in teams perform better on quizzes and other exercises than even the highest performing students do on their own. In order to ensure fairness in grading, we will conduct regular peer evaluations of your team members, and these evaluations will contribute to the calculation of grades on all team-based assignments (see the section below on "Grading"). More information on TBL and the rationale behind this approach can be found at: <http://www.umass.edu/ctfd/teaching/team-based.shtml>

Course Objectives

The purpose of this course is to provide students with "hands-on" experience with habitat monitoring and habitat management planning. *All students should come to class motivated to work cooperatively and equally with other students as members of a team; in other words, all students are expected to contribute equally to the work load and engage in the process in a positive and proactive manner.* Students should complete this course with an in-depth

conceptual and practical understanding of the process and real-world challenges of wildlife habitat management.

The course is intended to provide students with opportunities to:

1. Increase understanding of basic principles of wildlife-habitat relationships
2. Increase understanding of the benefits and limitations of current strategies for natural resource management
3. Identify collect, analyze, and evaluate primary resources for research (i.e. journal articles)
4. Synthesize information to evaluate alternative management strategies
5. Identify approaches for breaking down a large, complex project into manageable stages and steps
6. Gain experience with collaboration and working in teams of people with different viewpoints
7. Prepare, present, and defend a project presentation

The campus habitat management plan module aims to address the following additional goals, with support from the UMass Sustainability Curriculum Initiative:

8. Apply systems-level knowledge to address the global challenge of urbanization
9. Evaluate multiple aspects of sustainability

Students are responsible for:

- Fully understanding all of the information presented in this syllabus. If you have any questions regarding this information, it is your responsibility to bring it to the instructor's attention before the second week of class.
- Attending all class meetings and labs, actively participating in all discussions, and completing all assignments
- Working outside of class to complete their projects, with an expectation that this will take about 4 hrs per week
- Completing assigned reading material or research is to be completed before the appropriate class session
- Asking questions anytime they need clarification (remember, there is no such thing as a bad question)
- Providing constructive and positive criticism of each other's work. Peer review is a very important part of the scientific process. It is often hard to hear criticism; so, each person in the course will be expected to both give and receive feedback on his/her work. Each student brings to the class a unique world view that has been shaped by their personal experiences and observations. By sharing this world view, each of us will develop appreciation for the diversity of approaches and motivations of our peers, as well as honing our communication skills.

Failure to do any of these things may result in failure of the course (see below).

Required Texts (available at the Textbook Annex) and other materials:

All students are required to bring an i>clicker to class. For more information on i>clicker's:

<https://www.oit.umass.edu/audience-response-system>

McComb, B.C. 2008. *Wildlife Habitat Management: Concepts and Applications in Forestry*. CRC Press.

DeGraaf, R.M., M. Yamasaki, W.B. Leak, and A.M. Lester. 2005. *Landowner's guide to Wildlife habitat: forest management for the New England region*. University of Vermont Press.

Grading

This is a 4 credit course with a single final grade. The lecture portion and lab portions contribute equally to your final grade and are designed to provide you with an integrated exposure to wildlife habitat management. There are 200 total points available for the class. To calculate your grade out of 100%, you can simply add together the points from all your assignments and divide by 2.

Attendance - Students will be expected to attend class regularly as the exam material will be from lectures as well as the text.

Tests – There will be 2 non-cumulative exams worth 30 points each, a midterm and a final. No early finals will be given.

Quizzes – 5 quizzes, one at the start of each unit worth 5pts each; lowest quiz grade is dropped (total=20pts). For each quiz, an online version will be posted to be completed individually before class, and a team-based version will be administered in class.

Team exercises – In both the lecture and lab periods, we will carry out roughly one graded exercise per week. These either reinforce concepts from the lecture or help you to develop portions of your habitat management plan. Most of these exercises will be completed and turned in during the class/lab period. Some outside coordination will be necessary as a team. We will discuss strategies for coordinating outside teamwork in class/lab to ensure that all team members participate.

Papers & final presentation – The lab focuses on developing a habitat management plan for the UMass campus. We will do this in stages with background research, data collection on campus, field trips to other habitats, and then lab work sessions to compile this information and propose management strategies. From this, you will write 2 short papers *individually* (3-5pages, 15pts each) and give final presentation *as a team* (20pts).

Peer evaluation – You will have the opportunity to evaluate your team members' contributions three times during the semester (peer evaluation score, ranging between 70-100%). You are required to do these evaluations (10pts of final grade). Individual grades on team assignments will be calculated as:

$$\text{Team total score} \times \text{peer evaluation score} / 100 = \text{Individual assignment score}$$

For example:

Student	Team Score	Peer Evaluation	Individual Score
A	20	100	20
B	20	80	16

The point values for all assignments in the class (lecture + lab) are as follows:

Assignment	Due Date	Type	Points
Paper #1 Habitat Suitability Analysis	6-Oct	Individual	15
Midterm exam	21-Oct	Individual	20
Paper #2 Management Recommendations	17-Nov	Individual	15
3 Evaluations of team members	TBD	Individual	10
Weekly team exercises (4pts each)	*	Team	80
5 Quizzes (online individual / team in class)	Start of unit	Team	20
Final presentation	6-Dec	Team	20
Final Exam	11-Dec	Individual	20
TOTAL POINTS			200

*Usually assignments are due at end of class/lab period. Some will be due the next class period.

Individual assignments – 45%

Team assignments – 55%

Final grading

There are 200 total points possible (100 from lecture and 100 from lab). The total points (summed across lab and lecture scores) will be converted to a percentage of the maximum available points (max=200). Letter grades will be assigned approximately as follows:

A = 94-100%	C+ = 77-79%
A- = 90-93%	C = 72-76%
B+ = 87-89%	C- = 69-71%
B = 83-86%	D+ = 66-68%
B- = 80-82%	D = 60-65%
	F = <60%

If the average score is less than 75% (150pts), the average score will be assigned a letter grade of "C" and other scores will be scaled in proportion to the percentages outlined above and letter grades assigned accordingly.

Make up Exams: NO make up exams will be given except under very special circumstances. Students must make prior arrangements with the instructor.

Violation of Academic Honesty Policy of the University: Cheating and other forms of academic dishonesty are a violation of the spirit and the regulations of the University. Students who violate the Academic Honesty Policy of the University in this class will be subject to review of that action under the Policy and Appeal Procedure described in the Undergraduate Rights & Responsibilities Guide of the University. If violation of the academic policy is confirmed once the procedures are completed, the student will receive a grade of zero on the test/quiz on which the violation was carried out.

For more information about what constitutes academic dishonesty, please see the Dean of Students' website: http://www.umass.edu/dean_students/codeofconduct/acadhonesty/

Course Safety: One of the key objectives of the lab portion of this course is to introduce students to the effective use of methods and equipment commonly used to sample and monitor wildlife populations and their habitats. Safety in the field and appropriate use of all sampling equipment will be stressed. By enrolling in this course, students agree to indemnify and save harmless the instructors, the Department of Natural Resources Conservation, and the University of Massachusetts of, from and against any and all claims, including personal liability or medical claims, demands, suits, actions, other legal proceedings, and damage, which may be brought or asserted against or suffered or sustained by the instructors, the Department of Natural Resources Conservation, and the University of Massachusetts and which may arise out of or may be connected in any way with action done or suffered by the student in connection with this course.

Disability Services: The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented physical, psychological, or learning disability on file with Disability Services (DS), Learning Disabilities Support Services (LDSS), or Psychological Disabilities Services (PDS), you may be eligible for reasonable academic accommodations to help you succeed in this course. If you have a documented disability that requires an accommodation, please notify me within the first two weeks of the semester so that we may make appropriate arrangements.