

**Principles of Fisheries and Wildlife Management
FIW 2114-Fall 2007**



COURSE OVERVIEW

Principles of Fisheries and Wildlife Management is a required course for most majors in the College of Natural Resources, for students in the Humanities, Science, and Environment major and it is also a Core Area 7 elective. Participants include all class levels from a diverse academic arena (e.g. math, engineering, humanities, agriculture, etc.). This diversity creates an opportunity for discussing natural resource issues from several perspectives and experiences, thus mimicking the “real world” context of resource management.

Throughout the semester, you will learn the basic scientific and ethical principles that natural resource professionals use to manage aquatic and terrestrial animals in wild habitats for the public trust. Approaches to managing organisms, habitats, and humans will be addressed in terms of biological, ecological, and sociological principles and practices. As a classroom community, we will utilize case studies and lecture-based examples to discuss a wide range of issues including local (Heritage Park Beaver management), national (hunting of Grizzly Bears in Alaska), and international (global warming) topics.

ULTIMATE COURSE LEARNING OBJECTIVES

**Unit 1: Scientific Principles of Fisheries and Wildlife (FIW) Management:
Vertebrate Populations and Communities**

- Describe the scientific method and demonstrate its application to FIW management.
- Identify the basic principles of ecology that influence FIW management and apply them to real case scenarios.

- Compare and contrast approaches to monitoring and manipulating the abundance and growth of animal populations and communities.
- Define the concept of biodiversity and explain its importance.
- Describe the importance of the Endangered Species Act to wildlife management.
- Explain what makes some animals common and some rare.
- Compare and contrast wildlife management and conservation biology.
- Discuss the roles of direct manipulation of animal communities (hunting, trapping, relocation) versus preservation.

Unit 2: Part A: Scientific Principles: Habitat; Part B: Ethical Principles and Human Dimensions

Part A:

- Identify important features of aquatic and terrestrial habitats and describe ways that they can be assessed and altered.
- Express the role of urban and farmland habitats to wildlife in contrast to habitats with a smaller “human footprint,” such as forests and wetlands.
- Compare and contrast threats to the integrity of different aquatic and terrestrial habitats.
- Identify mechanisms to indirectly manipulate wildlife through habitat.

Part B

- Identify and explain the multiple values of FIW resources to humans.
- Evaluate the role of ethical thinking and action in relation to responses to issues regarding FIW management.
- Comprehend what a land ethic is and express your own land ethic.
- Describe the roles of different agencies and laws in FIW management.

Unit 3: Emerging Issues in Fisheries and Wildlife Management: Domestic and International

- Compare and contrast various cultural viewpoints and approaches to FIW management.
- Debate the role of larger, more developed countries in assisting smaller, less developed nations in FIW management.
- Understand emerging issues in FIW management and the limitations of our current knowledge.
- Understand the concept of adaptive management and sketch an adaptive management scenario.

Objectives Spanning All 3 Units:

- Identify current national and international FIW issues and potential biological, societal, or cultural ramifications.
- Critically examine FIW management issues and develop informed opinions.
- Interpret and evaluate controversial issues from several distinctive and differing points of view.
- Develop skills to work in group settings to address FIW management issues.

- Understand the intersection of art, science, and history in FIW management, specifically through analysis of A Sand County Almanac.

Notes on Learning Objectives:

- Students may vary in their competency levels on these abilities.
- Students can expect to acquire these abilities only if they honor all course policies, attend class regularly, complete all assigned work on time and in good faith, and meet all other course requirements and expectations.

MEETING TIME AND LOCATION

11:00 a.m. -12:15 p.m., Tuesdays and Thursdays, LITRV 1670

INSTRUCTOR

Dr. Sarah Karpanty, Department of Fisheries and Wildlife Sciences, 150 Cheatham Hall, 231-4586, karpanty@vt.edu

Office Hours: Set hours TBA, Meetings outside of those hours are available by appointment.

TEACHING ASSISTANTS

Brian Gerber, Department of Fisheries and Wildlife Sciences, 124 Cheatham Hall, bgerber@vt.edu, Office Hours: TBA

Mary Kotschwar, Department of Fisheries and Wildlife Sciences, 124 Cheatham Hall, mkotschwar@vt.edu, Office Hours: TBA

REQUIRED TEXT & OTHER MATERIALS

Leopold, A. 1949, 1987. A Sand County Almanac and Sketches Here and There. Oxford University Press, New York.

You will be required to access assignments, surveys, quizzes and additional assigned readings through the class documents Blackboard page <https://learn.vt.edu>

A notebook with removable or loose pages is required for in class assignments.

OPTIONAL TEXT ON RESERVE AT LIBRARY

Bolen, E.G. & W.L. Robinson. 2003. Wildlife Ecology and Management, 5th edition. Prentice Hall, Upper Saddle River, NJ.

Sinclair, R.E., J.M. Fryxell, and G. Caughley. 2006. Wildlife ecology, conservation and management. 2nd edition. Blackwell Publishing, Malden, MA.

Anderson, S.H. 2002. Managing our wildlife resources. 4th edition. Prentice Hall, Upper Saddle River, NJ.

Scalet, C.G., L.D. Flake, and D.W. Willis. 1996. Introduction to wildlife and fisheries, an integrated approach. W.H. Freeman and Co. New York.

** The required and optional text will be available on reserve at the main library.

TEACHING PHILOSOPHY

In the Department of Fisheries and Wildlife Sciences, we are guided by a philosophy that we are a community of teachers and life-long learners, contributing to natural resource conservation as professionals and active citizens. In this context, it is my goal to introduce you to the scientific and ethical principles that will empower you to make informed and thoughtful decisions regarding fisheries and wildlife resources. Each semester, I bring to the class material that is relevant to the current issues of fisheries and wildlife management. We will explore these issues together in an open, challenging, and interactive environment using classic studies as well as current events and case studies. I expect my students to be active participants and I welcome constructive feedback on how to engage you in the material.

ATTENDANCE POLICY

Attendance in lecture is strongly encouraged and a major part of your grade involves the completion of in-class assignments. We will have 27 class meetings, excluding exams. Over those non-exam meetings, 200 points will be awarded for in-class assignments and/or unannounced quizzes. The point value of in-class assignments will vary daily but will total 200 pts by the end of the semester. There will be no opportunity to make-up in-class assignments unless class is missed for an approved absence. Exam dates are listed on the following pages and attendance is required on those dates. Make-up exams will only be granted for extreme situations (see next paragraph) and arrangements must be made BEFORE the exam date.

There are only two acceptable forms of excuses for missed classes and rescheduled exams. I must receive a formal excuse letter from either 1) the Schiffert Health Center or Cook Counseling Center for personal medical issues or 2) the Dean of Students for family emergencies. I am sensitive to personal issues, health concerns, and family emergencies and I will work with you to make up the material as much as possible, but in such a large class I believe that it is necessary to have a strict policy for attendance and assignments. Student athletes should see the instructor in the first week of class to discuss any required absences.

OTHER FORMS OF ASSISTANCE

The Virginia Tech Writing Center has online resources as well as personal assistance to help strengthen your writing, which is crucial to success in ANY CAREER! If you feel that you are missing the mark or if your writing is not accomplishing what you want, check them out at <http://www.composition.english.vt.edu/wc/WC%20Home.html> or call 231-5436 or visit 340 Shanks Hall.

GRADING

Grading will be assigned as described in the Undergraduate Catalog. Final grades will include a “+” and “-.” We feel that a “C” indicates adequate performance and that a “B” or an “A” indicate “good” and “superior” work. Hence, most students will earn a “B” or a “C,” a few diligent students will earn an “A,” and unfortunately a few students will earn a “D” or even an “F.” Your grades are determined independently and you will not be competing against other students for the “curve.” Grades will be assigned according to a curve no stricter than the following schedule:

| Letter Grade | % of Total Points | Your grade will be determined by your performance on the assessments described in the following section. A maximum of 20 points extra credit MAY be offered at the discretion of the instructor. |
|--------------|-------------------|--|
| A | >93 | |
| A- | 90-92.9 | |
| B+ | 87-89.9 | |
| B | 83-86.9 | |
| B- | 80-82.9 | |
| C+ | 77-77.9 | |
| C | 73-76.9 | |
| C- | 70-72.9 | |
| D+ | 67-69.9 | |
| D | 63-66.9 | |
| D- | 60-62.9 | |
| F | <60 | |

ASSESSMENT DETAILS

Points will be earned according to the following schedule:

| Assessment | Points | Percent of Grade |
|-------------------------------|--------|-----------------------------------|
| Exam 1 | 100 | 10% |
| Exam 2 | 200 | 20% |
| Exam 3 | 200 | 20% |
| Group Wildlife Issues Project | 200 | 20% |
| In-Class Assignments | 200 | 20% |
| Blackboard Quizzes (7) | 70 | 7% |
| Nature Journal (3) | 30 | 3% |
| Total | 1000 | 100% |
| Extra Credit | 20 | Extra at discretion of Instructor |

Exams: You will have two midterm exams (Exam 1 = 100 pts, Exam 2 = 200 pts) and a final exam (200 pts). All exams are cumulative in the sense that the material builds throughout the semester. Because course content is new every year, there are no previous exams to study from (even more reason to come to class). Materials covered on the exam will be linked to learning objectives covered in class, readings, and assignments. Timeliness is an issue on exam days, and we reserve the right to NOT administer an exam to students that enter class after the exams have been distributed (> 5 minutes after the start of the class period).

Group Wildlife Issues Project: For this exercise, you will work with 3-4 of your classmates, in a group assigned based on experience and potential meeting times, to identify a major current fish or wildlife management issue with significant application to the scientific and ethical principles that we are covering in class. Ultimately, your group will present a 15-minute presentation to a sub-group of your peers, the instructor, and the teaching assistants during an agreed upon time outside of the normal class meeting during the week of November 13th. During this presentation, your group will present the issue, identify and discuss relevant scientific and ethical principles, and speculate on resolutions or further information needed. Your sources for identifying the issues will be newspapers, journal articles, magazines, credible web sites, etc. Over 50% of your points for this project will come from individual effort. The group wildlife issues project will be presented in detail, along with an assessment rubric, in class on September 6th. Details are already posted on Blackboard in the Assignments folder.

In-Class Assignments/Quizzes: Success in this class will require active participation in classroom activities, case studies, and occasional quizzes. You will be assigned to a small group (2-3 students) that will be your partners throughout the semester in classroom activities and case studies. There will be no required out-of-class work for these small groups, but it is my hope that you can serve as a small support system for each other in this large class. To encourage participation in class, questions, quizzes, and activities will be rewarded with up to 200 points over the course of the semester. The point value for each assignment will be clarified at the time of the assignment. In the case of an excused absence, students will be allowed to make-up the assignment. You will be asked to sign your name on assignments as an indicator of attendance and the Honor Code should guide your participation.

Blackboard Quizzes: For this class to function smoothly, I will expect that you read the assigned readings BEFORE coming to class. To encourage this behavior, I will assign 7 quizzes over the course of the semester on Blackboard, with a value of 10 points each. These quizzes will simply assess whether or not you have read the material, and you are allowed to use the material to answer the questions. These quizzes will BE OPEN AT LEAST 72 HOURS PRIOR TO CLASS AND CLOSED AT 10:30 AM ON THE CLASS DAY. To receive credit, you MUST TAKE THE QUIZ BEFORE 10:30 AM ON THE CLASS DAY.

Nature Journal: Many of us have entered the field of fisheries and wildlife management because of our love of the natural world and of activities in the natural world such as hunting, fishing, bird-watching, and herp-ing. All too often, we get caught up in our school and work activities and do not have time or incentive to take the time to observe nature and do what we love. To encourage appreciation of Leopold's keen naturalist skills as well as your creative energy, I will assign three 200-word journal assignments, each worth 10 pts, over the course of the semester. In class on August 28th, we will provide an example journal and a simple grading rubric. Information is already posted on Blackboard under the Assignments folder.

Late-Policy: I will not accept late project assignments, quizzes, or journals unless there is a written excuse from 1) the Schiffert Health Center or Cook Counseling Center for personal medical issues, or 2) the Dean of Students for family emergencies. Final times for turning in projects, assignments, quizzes, and journals will be clarified throughout the semester.

If you ever have doubts about our expectations, please talk with the instructor or teaching assistants.

HONOR CODE

We follow the Virginia Tech Honor System in this class. Please make yourself familiar with the Honor System practices and the various definitions of plagiarism, etc. All assignments submitted should be considered graded work, unless otherwise noted. For more information on the Honor Code, please see <http://www.honorsystem.vt.edu> .

DISABILITIES

Students in need of special accommodations due to a disability recognized by the Americans with Disabilities Act should contact the Services for Students with Disabilities in the Dean of Students office. Students with disabilities are responsible for self-identification. See <http://www.admiss.vt.edu/apply/transfer/policies.php>. If you require any special arrangements or considerations for the class, please contact the instructor immediately to arrange an appointment to discuss accommodations.

CLASS SCHEDULE

Key: B& R = Bolen and Robinson; SCA = Sand County Almanac, all other readings are available on Blackboard.

| Date | Class Topic | Readings to be completed BEFORE class unit | Assignments Due at BEGINNING/or BEFORE class | Optional Readings and Other Notes |
|--|--|--|---|--|
| Unit 1: Scientific Principles: Vertebrate Populations and Communities | | | | |
| 21-Aug | Introduction to FiW Management? | | | |
| 23-Aug | FiW history and Biodiversity Concepts | -Scalet et al. Ch. 1 | 1) Blackboard Survey | -B&R: Chapter 1-3 |
| 28-Aug | Properties of Ecological Systems, Introduction to Population Ecology | -B&R: Chapter 4 -The Search for the Missing Sea Otters | 1) Blackboard Quiz on The Search | - The Search Case Study - Journal Example |
| 30-Aug | Population Ecology: The Basics and Life History Traits | -B&R: Chapter 5 -Meine 1998 -SCA: Intro Pp xv-xxviii | | - The Search Case Study |
| 4-Sep | Population Ecology: Predation and Experimental Design | -B&R: Chapter 9 -SCA: August-October, Pp 51-65 | | - The Search Case Study |
| 6-Sep | Community Ecology and Experimental Design | -Noss 1998 -SCA: Thinking Like a Mountain, Pp 129-133 | | -B&R: Chapter 21 - The Search Case Study - Group Project Intro |
| 11-Sep | Community Ecology, Endangered Species, and Conservation Biology | -Czech et al. 2000 | | -Group Assignments Posted |
| 13-Sep | Population Management: Fishing, Hunting, Stocking, Trapping, Relocations | -Scalet et al. Ch. 10 | 1) Journal 1-September theme | -B&R: Chapter 10 -Storyboard & Presentation Details |
| 18-Sep | Population Assessment | -Anderson Ch 4 | | |
| 20-Sep | Exam I | | | |

| Date | Class Topic | Readings to be completed BEFORE class unit | Assignments Due at BEGINNING/or BEFORE class | Other Notes |
|--|--|--|---|---|
| Unit 2, Part A: Scientific Principles: Habitat | | | | |
| 25-Sep | Habitat: Food and Cover, Assessment | -Scalet et al. Ch 13 | | -B&R: Chapter 7 - Group Meetings M-W |
| 27-Sep | Habitat: Forests | -Wilson et al. 1998 -Bishop 1998 -SCA: The Good Oak, Pp 6-18 | | -Hansen et al. 1991 -B&R: Chapter 15 |
| 2-Oct | Habitat: Wetlands | -First in Flight -Bourne 2007 -SCA: Marshland Elegy, Pp 95-101 | 1) Blackboard Quiz on First in Flight 2) Individual References Due for Group Project | -B&R: Chapter 11 -First in Flight Case Study |
| 4-Oct | Habitat: Rivers, Lakes, and Oceans | -The Fish Kill Mystery | 1) Fish Kill Blackboard Quiz | -The Fish Kill Case Study |
| 9-Oct | Habitat: Rivers, Lakes, and Oceans | -Stutz 1994 -Anderson Ch 19 | | -The Fish Kill Case Study |
| 11-Oct | Habitat: Urban and Farmland | -Puckett 2000 -Scalet et al. Ch 15 | 1) Journal 2-October theme | -B&R: Chapter 13 & 17 -Mid-term course eval. |
| Unit 2, Part B: Ethical Principles and Human Dimensions | | | | |
| 16-Oct | Human Dimensions, Uses & Values | -SCA: Esthetic to Wilderness, Pp.165-201 | | -B&R: Ch 20, 22.11 -Anderson Ch. 14 |
| 18-Oct | Bioethics | -Nelson 1998 -Orth 1998 | 1) Group Storyboard Due | -Byers 1999 |
| 23-Oct | Land Ethic | -SCA: The Land Ethic, Pp 201-226 | | -Rappaport-Clark 1998 |
| 25-Oct | Wildlife as a Public Trust & The Future of Hunting and Fishing | -Organ & Mahoney 2007 | | -Storyboard Returned -B&R: Ch 22 |
| 30-Oct | Exam II | | | |

| Date | Class Topic | Readings to be completed BEFORE class unit | Assignments Due at BEGINNING/or BEFORE class | Other Notes |
|---|---|---|---|--|
| Unit 3: Emerging Issues in Fisheries and Wildlife Management: Domestic and Global Perspectives | | | | |
| 1-Nov | Invasive Species and Wildlife Disease | -Invasive Species Case | 1) Blackboard Quiz on Invasive Species Case | -B&R: Ch 8 -Unger 2007 |
| 6-Nov | Animal-Human Conflict | -Gilbert & Dodds 2001 -Williams 2007 | | |
| 8-Nov | Animal-Human Conflict continued | -Scalet et al. Ch. 17 -SCA: November Pp 66-77 | 1) Journal 3-November | |
| 13-Nov | Ecosystem Management I | -Grumbine 1998 -Suminoe Oysters Case | 1) Blackboard Quiz on Suminoe Oysters | -Group Presentations this week -Chesapeake Bay Case Study |
| 15-Nov | Ecosystem Management II | -Jackson et al. 2001 -Montaigne 2007 | | -Chesapeake Bay Case Study |
| 20-22 Nov | Thanksgiving.....Break | | | |
| 27-Nov | Global Warming | -Global Warming Case Study, Readings TBA | 1) Blackboard Quiz on Global Warming | -Global Warming Case Study |
| 29-Nov | Alternative Energy Development & Impacts on FiW resources | -Abhat 2007 -O'Neill 2007 | | -Global Warming Case Study |
| 4-Dec | Future of Fisheries & Wildlife Management | -Pister 1998 | | |
| 10-Dec | Final Exam (Monday, 7:45-9:45AM) | | | |

** The above schedule, policies, and assignments in this course are subject to change in the event of extenuating circumstances or by mutual agreement between the instructor and the students.