

## **ARNR 555: RANGELAND WILDLIFE ECOLOGY**

**CATALOG DATA:** Fall, even years, 3 cr.

Course explores the history, ecology, and management of wildlife populations occurring on rangelands. Emphasis will be placed on habitat and population management with primary consideration of management issues facing wildlife populations in the West.

**PREREQUISITES:** Graduate student standing or consent of instructor

**CLASS SCHEDULE:** T,R 10:50am – 12:05pm

**COURSE WEB SITE:** D2L is used in this course for:

- Providing materials used in class
- Required readings
- Exam answers
- Assignment scores and course grade

**TEXTBOOK:** There is no suitable textbook that follows the content of this course. Course materials will be taken from chapters from several wildlife and range management books, peer reviewed journal articles, and published management plans or technical reports. Assigned readings will be made available through D2L and search engines supported by the MSU library are available to students for primary literature searches.

**INSTRUCTOR:** Dr. Lance McNew, 211 Animal Biosciences Building, 994-6645,  
[lance.mcnew@montana.edu](mailto:lance.mcnew@montana.edu)

Office Hours: Every T, TH after class, or by appointment.

### **LEARNING OUTCOMES:**

By the end of the semester, students will be able to:

- describe the life-histories, ecology, and habitat requirements of major wildlife populations occurring on the rangelands of Montana
- identify contemporary issues/problems related to wildlife management
- identify and develop appropriate habitat management techniques for rangeland wildlife
- integrate information from multiple competing interests to develop BMPs for rangeland wildlife
- develop a comprehensive wildlife habitat management plan or publication-quality review article of a contemporary issue facing rangeland wildlife

### **GRADING** (subject to change):

Class participation (discussions)	100 (14%)
Field trip participation	100 (14%)
Exams (1 @ 100 pts)	100 (14%)
Lab reports (4 @ 50 pts)	200 (29%)

Paper	200 (29%)
Total:	700

### **Exams:**

There will be only one final exam composed of a combination of short- and essay- answer questions that require students to integrate what they have learned throughout the semester.

### **Paper Discussions:**

The class will be highly interactive. Information will be presented in assigned readings and discussions. Students will lead 8-10 class discussions based on assigned readings. All students are expected to prepare and contribute equally to the conversation each week. To facilitate this, one student will be designated to lead a discussion, and discussion leaders will be determined at the start of the semester; leaders will be randomly assigned in the absence of volunteers. Discussion leaders should give a brief summary of the article, and stimulate conversation with questions and critiques. All students should prepare for discussion classes as if they were the discussion leader, having read the material carefully with a prepared list of their own discussion points. The portion of the overall grade for the course related to participation in the weekly discussion will not be based on the discussion leader's performance, but on each student's contribution each week.

### **Written Review or Wildlife Habitat Management Plan:**

Each student will develop a publication quality term paper in one of the following formats:

- *Review* – Students will identify a contemporary issue facing wildlife-related resource management on rangelands and write a succinct review of that issue. The primary function of a review is to organize and evaluate the literature on a topic and provide synthesis and critique to identify gaps in our knowledge. A quality review article provides a critical, constructive analysis of the literature through summary, analysis, and comparison; it is not simply a regurgitation of the literature.
- *Wildlife Habitat Management Plan* – Students will develop a wildlife habitat management plan for a property of their choosing; potential choices are their own family ranches, MSU-owned properties, etc. Students must understand wildlife food and habitat needs, movement patterns and restrictions; be able to assess the existing habitat components that are adequate and which need improvement; and be able to recommend wildlife or range management measures that will make the required improvements to the existing habitat.

### **Travel:**

Students may be required to attend one field trip during the semester. This year we will tour the Matador Ranch in Phillips County. The Matador is owned and managed by The Nature Conservancy and serves as both a working research ranch and conservation bank for neighboring private lands. This trip will require two overnights on the Ranch. We will depart Bozeman October 4 at noon and return to Bozeman the afternoon of October 6.

## TENTATIVE SCHEDULE

<b>Date</b>	<b>Subject</b>
8/28	Introduction, Syllabus, and Overview
BIOLOGY, ECOLOGY, & MANAGEMENT	
8/30	Ungulates 1 – Biology & Ecology
9/4	Ungulates 2 – Rangeland Management / Livestock Grazing
9/6	<i>Instructor AWOL; NRCS Range Tour</i> [Paper topics due]
9/11	Ungulates 3 – Population Management
9/13	Game Birds – Biology and Ecology
9/18	Game Birds – Habitat / Rangeland Management / Livestock
9/20	Game Birds – Population Management
9/25	<i>No Class; International Grouse Symposium</i>
9/27	<i>No Class; International Grouse Symposium</i>
10/2	Carnivores – Ecology & Population management
10/4	<i>Field Trip: TNC Matador Ranch</i>
10/9	Carnivores – Range management / Livestock interactions / Conflicts
10/11	Non-game birds – Biology / Ecology / Habitat
10/16	Threatened and Endangered Species – policy impacts
10/18	Catch-up / Topic TBD [Paper outlines and annotated bibliography due]
METHODS IN POPULATION AND COMMUNITY ASSESSMENT	
10/23	Species Occurrence and Distribution
10/25	Lab 1: Occupancy Models
10/30	Estimating Abundance and Density
11/1	Lab 2: Estimating abundance using hierarchical models
11/6	<i>No class; Election Day – VOTE!</i>
11/8	Community Composition and Diversity
11/13	Lab 3: Community analysis in R
11/15	Integrated Population Models
METHODS IN WILDLIFE-HABITAT EVALUATION	
11/20	Habitat Assessment & Management Plans
11/22	<i>No Class; Thanksgiving break</i>
11/27	Qualitative Methods (HSI, etc)
11/29	Quantitative Methods (RSF, RUF, TLoCoH)
12/4	Lab 4: 3 <sup>rd</sup> order habitat selection by grizzly bears
12/6	TBD [Papers Due]
12/10	<b>Final Exam</b>

## INSTRUCTOR POLICIES:

**Philosophy:** My goal in this class is to help students learn the principles and applied methods in rangeland wildlife ecology and management. In order to meet University requirements, I must evaluate the progress of students and assign grades. I provide longer test times, special testing facilities, and clarify test questions during exams to allow students every opportunity to do well. However, I believe the discussion and application of learned material is more important to learning than rote memorization; thus grading is weighted heavily toward discussions, labs, and

writing assignments that require students to synthesize the information learned in this class with their foundational knowledge of wildlife and rangeland ecology.

**Fairness:** My primary obligation is to insure that all students who are prepared for class on the assigned dates are not competing with other students who receive extra study time.

**Class Notes:** It is the responsibility of the student to copy any missed notes from other students.

**Assignments:** All assignments are due at the beginning of class. Any assignments turned in after that time, but within one day, will receive 50% credit. Students will receive a zero on any assignment turned in later than one day past its due date. There is no extra credit available to make up for missed assignments.

**Quizzes or Class Discussions** cannot be made up without an excused absence (see below). Students will not be allowed to make up quizzes and in-class discussion points for unexcused absences. Quizzes or discussions may be given at any time during the class. Students are expected to arrive on time and stay until the class is over.

**Exams:** All examinations are listed in the syllabus on the first day of class. Students who wish to receive credit for any quiz or exam must be present at the scheduled time and date.

## **UNIVERSITY POLICIES on STUDENT CONDUCT**

Montana State University expects all students to conduct themselves as honest, responsible and law-abiding members of the academic community and to respect the rights of other students, members of the faculty and staff and the public to use, enjoy and participate in the University programs and facilities. For additional information reference see:

[www2.montana.edu/policy/student\\_conduct/student\\_conduct-code\\_2008-2009.htm](http://www2.montana.edu/policy/student_conduct/student_conduct-code_2008-2009.htm)

### **Collaboration:**

University policy states that, unless otherwise specified, students may not collaborate on graded material. Any exceptions to this policy will be stated explicitly for individual assignments. If you have any questions about the limits of collaboration, you are expected to ask for clarification.

### **Plagiarism:**

Paraphrasing or quoting another's work without citing the source is a form of academic misconduct. Even inadvertent or unintentional misuse or appropriation of another's work (such as relying heavily on source material that is not expressly acknowledged) is considered plagiarism. If you have any questions about using and citing sources, you are expected to ask for clarification.

### **Academic Misconduct:**

Section 420 of the Student Conduct Code describes academic misconduct as including but not limited to plagiarism, cheating, multiple submissions, or facilitating others' misconduct. Possible sanctions for academic misconduct range from an oral reprimand to expulsion from the university.

### **Academic Expectations:**

Section 310.00 in the MSU Conduct Guidelines states that students must:

- A. be prompt and regular in attending classes;

- B. be well prepared for classes;
- C. submit required assignments in a timely manner;
- D. take exams when scheduled;
- E. act in a respectful manner toward other students and the instructor and in a way that does not detract from the learning experience; and
- F. make and keep appointments when necessary to meet with the instructor.

In addition to the above items, students are expected to meet any additional course and behavioral standards as defined by the instructor.