## Wildlife Research Techniques

## ESRM 351 – Spring 2016

*Instructor:*

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*Lectures: 11:30-12:20, 105 Winkenwerder Hall*

*Laboratory: 12:30-5:20, 105 Winkenwerder Hall*

*Web: Canvas*

## Course Objectives

The primary goals of this course are to: (1) introduce students to common techniques used to assess wildlife populations and their habitat, (2) provide hands-on experience with these techniques and species identification, and (3) sharpen abilities to observe nature and communicate observations through field journals and scientific writing.

## Expected Learning Outcomes

Upon completion of the course, students will have gained experience with non-lethal methods of capturing and handling a variety of wildlife species, as well as experience with non-invasive methods of wildlife research that do not involve capturing animals. Students should be able to identify a host of regional birds, mammals, amphibians, reptiles and plants. Students should be proficient at keeping detailed field notes and have a basic understanding of the scientific writing and publication process.

## Course Schedule

Mar 29 Lecture 1. Course overview & organization

Mar 31 Lecture 2. Wild animals & issues of human health (Guest lecture: Charles Easterberg)

Apr 1 Lab 1. (Lab/UW Field): Field identification & capture methods for birds; Sampling methods for bird populations, Part I.

Apr 5 Lecture 3. Sampling basics

Apr 7 Lecture 4. Small mammals

Apr 8-10 Field Trip 1. San Juan Island, Friday Harbor Labs: small mammal trapping, rabbit burrow counts

Apr 12 Lecture 5. Bats

Apr 14 Lecture 6. Ungulates (Guest lecture: Apryle Craig)

Apr 15 Lab 2. (Lab/UW field): Bird survey techniques

Apr 19 Lecture 7. Natural history of amphibians & reptiles (Guest lecture: Steve West)

Apr 21 Lecture 8. Sampling amphibians & reptiles

Apr 22-24 Field Trip 2. Olympic Peninsula: bird ID; amphibian surveys in terrestrial & aquatic habitats

Apr 26 Lecture 9. Scientific Methodology

Apr 28 Lecture 10. Noninvasive Techniques

Apr 29 Lab 3 (Lab/UW Field): Camera trapping

May 3 \*\* **Midterm examination\*\***

May 5 Lecture 11. Habitat sampling part 1; Teanaway point counts

May 6-7 Field Trip 3. Teanaway River Drainage: bird point counts; habitat measurements; ungulate pellet counts

May 10 Lecture 12. Carnivores

May 12 Lecture 13. Habitat sampling part 2

May 13 Lab 4. (Lab/UW Field): Radiotelemetry

May 17 Workshop 1. Class design of Mt. Rainier small mammal trapping study

May 19 Class Review Period: Bird ID, Lab Calculations, Plants

May 20-22 Field Trip 4. Mt. Rainier National Park BioBlitz: small mammal trapping, bat surveys, habitat measurements

May 24 Lecture 14. Principles of mark-recapture

May 26 Workshop 2. Field project reports

May 27 Lab 5. Mark-recapture estimation (program MARK)

May 31 Lecture 15. Scientific writing; journals & the review process

Jun 2 Course review: Q/A session

Jun 3 **\*\* Practical examinations \*\*:** Birds (morning survey, afternoon slides), Plant identification (afternoon lab). Remainder of day free.

Jun 8 **\*\* Final examination \*\*** at 4:30-6:20 in 105 Winkenwerder

## Field Trips/Labs

Field trips are a central focus of this class. Students will be housed at Friday Harbor Labs on San Juan Island, and at the Olympic Natural Resource Center in Forks, Washington during the Olympic field trip. The class will camp out during the Teanaway and Mt. Rainier field trips. Appropriate camping gear and clothing will be required.

## Field Identification of Flora and Fauna

A fundamental skill of wildlife research is accurate identification of animals and their habitat in the field. For this course students are responsible for leaning regional birds by sight and sound (call/song) as well as host of Washington state plants. We will also learn to identify some herps and small mammals.

## Field Notebook

Students will maintain a field notebook using the Grinnell System (named for biologist Joseph Grinnell) as a means to record a log of your field trip and lab activities (locations, dates, exercises) as well as observations you make of the wildlife you encounter (called *species accounts*). Labs and Workshops will highlight a range of field skills and sampling methods. Some labs will be associated with formal write-ups of results to be summarized in your field notebooks for credit.

## Readings

Readings for the course will consist of technical papers from the primary scientific literature (provided by instructors), a complete reading of ***How to Write and Publish a Scientific Paper***, and appropriate sections from the field guides listed below.

## Required Texts

Individual Texts (each student should have their own copy):

1. Dunn, J.L. and J. Alderfer. 2011. *National Geographic field guide to the birds of North America. 6th edition. National Geographic Society*. 576p
2. David Moskowitz, 2010. *Wildlife of the Pacific Northwest*

Group Texts (can be shared among a group of 4-5 students):

1. Jones, L.L.C., W.P. Leonard, and D.H. Olson, eds. 2005. *Amphibians of the Pacific Northwest. Seattle Audubon Society*. 227 p.
2. St. John, Alan. 2002 *Reptiles of the Northwest*
3. Day, R.A. and B. Gastel. 2011. *How to write and publish a scientific paper.* 7th edition. Greenwood. 300p.
4. Parish, R., R. Coupé, and D. Lloyd. 1999. *Plants of Southern Interior British Columbia and the inland Northwest*. B.C. Ministry of Forests and Lone Pine Publishing. 464p.
5. Pojar, J. and A. MacKinnon. 2004. *Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia, and Alaska*. B.C. Ministry of Forests and Lone Pine Publishing. 528p.

Further Resources Texts

Silvy, N.J., ed. 2012. ***The wildlife techniques manual***, 7th edition: vol. 1: Research. Vol. 2: Management. Johns Hopkins University Press. 1,136pp.

## Course Grading

Midterm Exam 100 points

Field Notebook 100 points

Participation 30 points

Computer lab assignments 10 points

Bird Practical Exam 60 points

Plant Identification Exam 50 points

Final Exam 150 points

# **Total: 500 points**

Final grades will be assigned according to the following scale:

A = 3.5-4.0, 90-100%, 450-500 points

B = 2.5-3.4, 80-89%, 400-449 points

C = 1.5-2.4, 70-79%, 350-399 points

D = 0.7-1.4, 60-69%, 310-349 points

F < 0.7, < 60%, 0-309 points

## Academic Integrity

Plagiarism, cheating, and other misconduct are serious violations of your contract as a student. We expect that you will know and follow the University's policies on cheating and plagiarism. Any suspected cases of academic misconduct will be handled according to University regulations. More information, including definitions and examples, can be found at: <http://depts.washington.edu/grading/pdf/AcademicResponsibility.pdf>

## Disability Accommodations

To request academic accommodations due to a disability, please contact Disabled Student Services, 448 Schmitz, (206)543-8924 (V/TTY). If you have a letter from Disabled Student Services indicating that you have a disability which requires academic accommodations, please present the letter to the instructor so we can discuss the accommodations needed for this class.

## Alcohol Policy

The University has declared itself to be a drug-free work and educational environment. To help ensure the safety and well-being of faculty, staff, students, and the general public, the University is committed to maintaining a campus environment that is free of illegal drugs, and of drugs and alcohol that are used illegally. Accordingly, the University prohibits the consumption of alcoholic beverages on University property, except in accordance with state of Washington liquor license procedures; a further exception is made by Housing and Food Services in the case of individually sized containers consumed by adult (over-21) students behind closed doors in residence hall rooms or apartments. The University also prohibits the unlawful possession, use, distribution, or manufacture of alcohol or controlled substances (as defined in Chapter 69.50 RCW) on University property or during University-sponsored activities (Chapter 478–124 WAC). Violation of the University's alcohol and drug prohibitions is cause for disciplinary or other appropriate action, up to and including termination or dismissal, fines, and imprisonment; students found in violation of this stated prohibition are also subject to discipline in accordance with the requirements and procedures of the Student Conduct Code (Chapter 478–120 WAC). The complete University of Washington Policy, including available support services, is at <http://www.washington.edu/admin/rules/APS/13.07.html>.

In compliance with UW Policy, the consumption of alcohol is prohibited at all SFR-sponsored events, including field trips, at any SFR facilities (including UWBG, Pack Forest, ONRC, and the Wind River Canopy Crane, as well as wherever the field trip(s) take place), with two exceptions:

1. private possession and use by adults (21 years and older) behind closed doors in a dorm room, apartment, house (private space), or tent, and

2. adult use at a social event appropriately licensed by the Washington State Liquor Control Board through a Banquet Permit acquired through University channels and complementary to and part of a planned program.

Responsibility for implementing UW and School policy rests with each member of the SFR community. In the specific case of courses or field trips, instructors will assure that the possession and use of alcohol is prohibited, as well as invoke the Student Conduct Code to initiate disciplinary proceedings in any cases where students' private use of alcohol violates acceptable Standards of Conduct in a public setting (WAC 478-120-020 2.b and 2.c).