## Wildlife Research Techniques

## ESRM 351 – Spring 2023

*Instructor:* ***Laura Prugh*** *T.A.:* ***Danny Kosiba***

*Office hrs: 10:30-11:30 Th; WFS 204 12-1 Th; WFS 021*

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*Lectures: T Th 9:30-10:20, AND 022*

*Labs: F 12:30-5:20, WFS 105*

## Course Objectives

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

## Expected Learning Outcomes

Upon completion of the course, students will have gained knowledge and skills that are essential for careers in wildlife biology. Students will learn key principles of study design and be able to apply their knowledge to design new field studies. They will have gained hands-on experience using a variety of non-lethal methods of capturing and handling wildlife, as well as non-invasive methods of wildlife research that do not involve capturing animals. Students will be able to use field guides to identify common regional birds, mammals, amphibians, and reptiles. Students will gain experience conducting all steps of a wildlife field study, including generating a research question, designing a field study, collecting data on wildlife populations, keeping systematic field notes, and summarizing findings in the format of a scientific paper.

## Course Schedule

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| **Week** | **Date** | **Topic** |
| 1 | 28-Mar | **Lecture 1**: Course overview & organization |
|   | 30-Mar | **Lecture 2**: Sampling basics |
|   | 31-Mar | **Lab 1**: Field identification of birds  |
| 2 | 4-Apr | **Lecture 3**: Study design 1  |
|   | 6-Apr | **Lecture 4**: Study design 2  |
|   | 7-Apr | **Lab 2**: Camera trapping (field) |
| 3 | 11-Apr | **Lecture 5**: Sampling amphibians & reptiles |
|   | 13-Apr | **Lecture 6**: Natural history of amphibians & reptiles  |
|   | 14-16 April | **Field Trip 1:** Olympic Peninsula-amphibian surveys  |
| 4 | 18-Apr | **Lecture 7**: Distance sampling  |
|   | 20-Apr | **Lecture 8**: Bird surveys **(\*Field Journals due in class\*)** |
|   | 21-Apr | **Lab 3**: Bird point counts (**\*Project proposals due April 23\***) |
| 5 | 25-Apr | **Lecture 9**: Occupancy  |
|   | 27-Apr | **\*\* Midterm examination\*\***  |
|   | 28-Apr | **Lab 4**: Camera photo analysis (261 Bloedel)  |
| 6 | 2-May | **Lecture 10**: Mark-recapture |
|   | 4-May | **Lecture 11**: Habitat assessment |
|   | 5-7 May | **Field trip 2**: Dusty Lake-Small mammal trapping, habitat sampling |
| 7 | 9-May | **Lecture 12**: Bats |
|   | 11-May | **Lecture 13**: Carnivores |
|   | 12-May | **Lab 5**: Term projects (*independent work*)  |
| 8 | 16-May | **Lecture 14**: Ungulates |
|   | 18-May | **Lecture 15**: Survival estimation & telemetry  |
|   | 19-May | **Lab 6**: Radiotelemetry  |
| 9 | 23-May | **Lecture 16**: Data analysis  |
|   | 25-May | **Lecture 17**: Scientific writing 1 **(\*\*Species Accounts due in class\*\*)** |
|   | 26-May | **Lab 7**: Term projects (*independent work*)  |
| 10 | 30-May | **Lecture 18**: Scientific writing 2 |
|   | 1-Jun | **Course review**: Q/A session |
|   | 2-Jun | **Lab 8**: Term project presentations  |
|   | 2-Jun | **Bird ID quiz \*\*TERM PROJECT REPORTS DUE JUNE 4\*\*** |
| Finals | 7-Jun | **\*\* Final Exam \*\*** 10:30am - 12:20pm  |

## Learning Format

## This course will be taught 100% in person.

## Poll Everywhere

Poll Everywhere software will be used during lectures to engage students. Poll Everywhere is a free application that will connect to Canvas through your mobile device. You may use Poll Everywhere on a computer, but most students find the mobile app to work best. **Be sure to download the app onto your mobile device BEFORE the first lecture and set up your Poll Everywhere account USING YOUR UW EMAIL (NOT a different email address), or else you will not receive credit for the quiz!** See here for more information: <https://www.polleverywhere.com/>

## Field Trips/Labs

Hands-on experience is a central focus of this class. Most labs will be in the field, rain or shine. There are two 3-day field trips (to the Olympic Peninsula and Dusty Lake) and 7 labs. We will stay at the Olympic Natural Resource Center in Forks, Washington during the Olympic field trip. We will be camping at a primitive campsite with no facilities during the Dusty Lake trip. Appropriate camping gear and clothing for fieldwork is required. Camping gear can be rented from the UW Gear Garage (<https://www.washington.edu/ima/uwild/equipment-rental/>). **ALL FIELD TRIPS AND LABS ARE MANDATORY.** Missing a lab or field trip without my pre-approval is grounds for a failing grade in this class.

## Field Identification

A fundamental skill of wildlife research is accurate identification of animals in the field. For this course, students will learn to identify some common regional birds by sight and sound (call/song), as well as some herps and small mammals. There is a bird ID quiz.

## Field Notebooks (Journals and Species Accounts)

Students will maintain a field notebook using the Grinnell System (named for biologist Joseph Grinnell) as a means to record a log of activities in the field (your “Journal”) as well as observations you make of the wildlife you encounter (your “Species Accounts”). The Journal component of your field notebook includes locations, dates, exercises, and observations about species observed in the context of ecosystems or habitats. The Species Accounts provide your in-depth personal observations of wildlife species.

**Lab Assignments**

Labs will highlight a range of field skills and sampling methods. Most labs will have short assignments due either at the end of the lab period or the following week.

## Term Project

Working in small groups, students will conduct independent field studies during the term. Students will gain experience conducting all aspects of a wildlife study: generating their research questions, designing their studies, collecting and analyzing data, and writing a final report in the format of a scientific paper. Students will present their research during short oral presentations at the end of the course.

**Exams**

## There are 2 exams in this course, a midterm exam and a final exam. The final exam is cumulative, but material is weighted towards the second half of the course. Both exams will be administered in person (see course schedule for dates). The format will be a mixture of matching, true/false, multiple choice, fill in the blank, short answer, and long answer.

## Required Texts

Individual Text (each student needs their own copy):

Bird guide (choose ONE of the following):

* Alderfer, J. and Dunn, J.L. 2017. *National Geographic field guide to the birds of North America.* 7th edition. National Geographic Society. 592p. ISBN-10 1426218354
* Sibley, D. 2016. *Sibley Birds West: Field Guide to Birds of Western North America.* 2nd edition. Scott & Nix, Inc. ISBN-10 0307957926

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

* Amphibian guide (chose one of the following – but Corkran is the best):
	+ Corkran, C. C. and C. Thoms. 2020. *Amphibians of Oregon, Washington, and British Columbia.* 3rd Edition. Lone Pine Press. ISBN-10 177213080X
	+ Jones, L.L.C., W.P. Leonard, and D.H. Olson, eds. 2016. *Amphibians of the Pacific Northwest.* Seattle Audubon Society. 227 p. ISBN-10 0914516167
* Reptile guide
* St. John, Alan. 2021. *Reptiles of the Northwest*. 2nd Edition. Lone Pine Press. 272 p. ISBN-10 1774510138

Further Resources

1. David Moskowitz, 2010. *Wildlife of the Pacific Northwest.* Timber Press.
2. 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

Lecture material

Lecture mini-quizzes 40 pts

Midterm Exam 80 pts

Final Exam 120 pts

Lab material

Lab assignments 110 pts

Species accounts 40 pts

Bird ID Quiz 20 pts

Term Project

 Proposal 20 pts

 Report 100 pts

 Presentation 20 pts

# **Total: 550 points**

Final grades will be assigned according to the following scale:

A = 3.5-4.0, 90-100%, 495-550 points

B = 2.5-3.4, 80-89%, 440-494 points

C = 1.5-2.4, 70-79%, 385-439 points

D = 0.7-1.4, 60-69%, 330-384 points

F = 0, < 60%, 0-329 points

**Note:** 60% -> 0.7 = the lowest passing grade

59% or lower = academic failure (no credit earned)

For more information on UW Grading system, you can visit: <http://www.washington.edu/students/gencat/front/Grading_Sys.html>

## Late Policy

Assignments turned in late will receive a 10% reduction in points PER DAY late, starting immediately after the assignment is due (i.e., if it is due at 5PM and turned in at 5:01PM, 10% would be deducted, and an additional 10% deducted for each 24-hour period thereafter).

## Attendance Policy

Students will not receive credit for missed quizzes or exams if they are missed without prior notification AND approval. If you have a valid reason for missing class (e.g., illness), you must email Dr. Prugh PRIOR to your absence to make arrangements for make-up assignments. **If you email Dr. Prugh *after* you miss class, your absence will not be excused and you will not be able to make up the missed work, even if the reason for the absence was valid.** *Failure to attend a lab or field trip without prior notification and approval by the instructor is grounds for a failing grade in this class.* Lab assignments will not be accepted if the student misses lab without prior approval.

## 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>

### PLEASE READ: Notice to Students - Use of Plagiarism Detection Software

## SimCheck is an educational tool that helps prevent or identify plagiarism by comparing each student’s submitted work to the entire Internet and to other students’ submissions from current and prior years. We will use SimCheck for written assignments to ensure material was not copied. Cases in which a student submits material that appears to have been plagiarized will be reported to the Office of Student Conduct, which could result in a 0 grade or worse. The SimCheck Report will indicate the amount of matching text between your submission and other sources. A match of 10% or less is typical and can be expected, but matches above this level can indicate problematic content. We strongly recommend that you view your SimCheck Report prior to submission! If your report indicates >10% match, make sure to carefully read your report, and revise and resubmit your paper if needed.

## Disability Accommodations

To request academic accommodations due to a disability, please contact Disability Resources for Students, 011 Mary Gates, (206)543-8924 (V/TTY), http://depts.washington.edu/uwdrs/. If you require academic accommodations, please coordinate with DRS and/or present your letter from DRS to the instructor so we can discuss the accommodations needed for this class.