

San José State University
Environmental Studies Department, College of Social Sciences
ENVS 173, Forest Ecology and Conservation, Fall 2022

Instructor: Dr. Will Russell

Office Location: Washington Square Hall 115E

Office Hours: Monday 1:30-2:30 (by appointment)

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Class Days/Time: This class will meet every Friday at a field location from 10:30 am until approximately 4:00 pm

Prerequisites: ENVS 01 and ENVS 10, or upper division standing

“Any fool can destroy trees. They cannot defend themselves or run away.” – John Muir

Catalog Description

A field-based course designed to provide students with the conceptual framework and practical tools necessary for understanding the ecology and conservation of local forest ecosystems. Topics covered include forest restoration, succession, wildlife, diversity, natural and human disturbance, and the history of forest management.

Prerequisite: ENVS 01, ENVS 10, or upper division standing.

Misc/Lab: Lecture 3 hours/lecture 2 hour/lab.

Course Overview

This course is designed to provide students with the conceptual framework and practical tools that are necessary for understanding the ecology and management of forests. Through this course, students will gain an understanding of basic forest ecology; disturbance and succession; forest community interaction; natives, endemics; invasive exotic species; and local variation of species and community types. In addition, the course will focus on historical and current forest management practices; impacts of timber management on forest ecosystems; and forest restoration. Field observation, and hands-on field techniques will be emphasized.



Required Materials

Textbooks and other Materials

- Forest Ecosystems. 2008. D. A. Perry. John Hopkins University Press. Baltimore and London. *Selections available on Canvas.*
- Coast redwood: a Natural and Cultural History. 2001. M. G. Barbour. Cachuma Press. *Selections available on Canvas.*
- Plants of the California Coast Redwood Region. 1988. By: K. Lyons and M. B. Cooney-Lazaneo. Looking Glass Press. *Recommended field guide.*
- Various journal articles available on Canvas.
- **Field Notebook** Spiral or hardbound notebook for: field activities and quizzes, daily plant list, drawings and descriptions of all plants (and other organisms) identified in the field, notes from all field lectures (including those by guest speakers).

Field Trips

All field trips will take place on Friday's beginning at 10:30 am and will continue well into the afternoon, and will often require moderate to strenuous hiking to reach field sites.

Transportation

Most of our field sites will take place in the Santa Cruz Mountains 60-90 minutes from San Jose State. Transportation to field sites will be the students' responsibility. Carpools are recommended, not only because they are more environmentally friendly, but also because there is a \$10-15 per-car parking fee at some of the sites.

Wilderness Preparation and Etiquette

To-do List

1. Always be on time – we will be leaving for our hikes promptly, and will not be waiting for stragglers.
2. Wear comfortable walking shoes and weather appropriate layered clothing.
3. Bring plenty of water and snacks.
4. Bring a field notebook, pens, plant guides, camera, etc.
5. Carry any medications or first-aid supplies that you might need on the trail (EpiPen, band-aids for blisters, etc.).
6. Be respectful of other park visitors at all times.
7. Be prepared to help/support your classmates when necessary.
8. Have fun, hug a tree, kiss a slug, learn a lot, etc.

Do-not-do List

1. Do not pee in the creek!
2. Do not drink water from the creek (see #1)!
3. Do not eat any berries, mushrooms, or other forest organisms without explicit instructions from the instructor!
4. Do not approach wildlife (deer, skunks, yellow jackets, rattlesnakes, etc.)!

5. Do not cut trail!
6. Do not play amplified music in the wilderness.
7. Do not make personal phone calls during field trips.
8. Do not experiment with mind-altering substances during the field trips. Save the party for later – we need to keep our wits about us!

Course Requirements and Assignments

Weekly Quiz

There will be a short quiz on the week's readings on Canvas.

Home Lab Exercises

Occasional Home lab exercises will be required with directions and a discussion on Canvas. Complete and upload your assignment by the end of the week, and engage in dialog with your classmates through the discussion.

Field Activity

Each class meeting in the field will include a formal activity and/or plant quiz. Results of the field activity should be turned in at the end of the day.

Field Presentation: Species Description and Fact Sheet

Students will conduct research on an organism of their choice that lives in the Santa Cruz mountains, and present an oral 10-15 summary in the field. The summary will include the ecology, life history, evolutionary history, habitat requirements, and distribution of the species. A 1-2 page (single spaced 12 point type) synopsis on the organism will be uploaded to Canvas, and will include a title with the species' name (common and scientific), and at least five academic references in APA style. Students may present individually, or as a pair, but each student will be graded inivually.

Field Exam:

A final field exam will be given **in the field** focused on the identification of plant species, but may include other site-specific material as well.

Final Content Exam:

A final exam on readings and concepts covered in the course will be given in on Canvas.

Class Participation:

Attendance on all field trips is an essential part of the class. Please be respectful of your classmates by listening quietly when the instructor, guest speakers, or student presenters are speaking. We are a big group, often on a narrow trail, it is very difficult for students to hear when extraneous conversations are competing. Please do not come to class if you have a fever or feel like you might be getting sick!

Grading

Your grade in this course will be based on field assignments, online quizzes, group presentations, and the final exams. See chart below.

| <i>Assignment</i> | <i>Points</i> |
|--|---------------|
| Field Assignments and Home Lab Exercises | 20 |
| Online Quizzes | 20 |
| Field Presentation | 20 |
| Final Field Exam | 20 |
| Final Content Exam | 20 |

| <i>Grade Percentage Breakdown</i> | |
|-----------------------------------|----|
| 97% and above | A+ |
| 90% - 96% | A |
| 87% - 89% | B+ |
| 80% - 86% | B |
| 77% - 79% | C+ |
| 70% - 79% | C |
| 60% - 69% | D |
| 0% - 59% | F |

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo) at <http://www.sjsu.edu/gup/syllabusinfo>

Tentative Course Schedule – ENVS 173, Fall 2022

SUBJECT TO CHANGE -Check for updates before heading to field sites!

| Field Dates | Topic | Field Trips/Home Labs | Readings | Assignments |
|-------------|---|--|--|--|
| 8/19 | Course Introductions Class Logistics | On campus planning meeting | | |
| 8/26 | Forest Ecology and Community Types | Field Trip: - Henry Cowell State Park. 101 N Big Trees Park Rd, Felton, CA 95018 | Perry Ch-5 Evarts and Popper Ch-1 | Quiz on Canvas Field Activity |
| 9/2 | Historic Management of Redwood Forests | Field Trip – Pogonip County Park. Led by David Benterou (TA) | Evarts and Popper Ch-5 | Quiz on Canvas Field Activity |
| 9/9 | Redwood Forest Ecology | Home Lab Exercise 1 | Evarts and Popper Ch 2 & 3 | Quiz on Canvas Home lab Exercise |
| 9/16 | Disturbance and Succession | Field Trip: Big Basin State Park. 21600 Big Basin Way, Boulder Creek CA, 95006 | Perry Ch 7 & 8 Mahdizadeh and Russell 2021 | Quiz on Canvas Field Activity <i>Student field presentations</i> |
| 9/23 | Forest restoration and conservation | Field Trip: Fall Creek Unit. 1400 Felton Empire Rd, Felton, CA 95018 | Evarts and Popper Ch-7 Russell et al. 2014 | Quiz on Canvas Field Activity <i>Student field presentations</i> |
| 9/30 | Community interactions | Field Trip: Bonny Dune Ecological Reserve. 975 Martin Road, Santa Cruz, CA 95060 | Perry Ch-11 | Quiz on Canvas Field Activity <i>Student field presentations</i> |
| 10/7 | Indigenous Forest Practices | Field Trip: Quiroste Valley Cultural Preserve. 1 New Years Creek Rd., Pescadero, CA 94060 | 3 Videos- on Canvas Cuthrell 2021 | Quiz on Canvas Field Activity <i>Student field presentations</i> |
| 10/14 | Indigenous Forest Practices, continued | Field Trip: Castle Rock State Castle Rock Trail, Saratoga, CA 95070. | Long et al. 2017 Carson et al. 2018 | Quiz on Canvas Field Activity <i>Student field presentations</i> |
| 10/21 | Wildlife | Field Trip: Portola Redwoods State Park. 9000 Portola State Park Rd, La Honda, CA 94020 | Evarts and Popper Ch-4 | Quiz on Canvas Field Activity <i>Student field presentations</i> |
| 10/28 | Non-natives and Invasive plants | Field Trip: Forest of Nisene Marks State Park. 100 Aptos Creek Rd, Aptos, CA 95003. | McGraw and Rutherford (2007) McGraw and Rutherford (2011) | Quiz on Canvas Field Activity <i>Student field presentations</i> |
| 11/4 | Harvest & Utilization | Field Trip: Byrne-Milliron Forest 809 Browns Valley Rd, Corralitos, CA 95076 | Thornburgh et al. (2000) | Quiz on Canvas Field Activity <i>Student field presentations</i> |
| 11/11 | Veterans Day --- No Class | | | |
| 11/18 | Fire in the redwoods | Field Trip: Butano State Park 1500 Cloverdale Rd, Pescadero, CA 94060 | Jones and Russell (2015) Lazzeri-Aerts and Russell (2014) | Quiz on Canvas Field Activity <i>Student field presentations</i> |

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|-------|--|---|---------------------------|
| | | | |
| 11/25 | <i>No Class – Thanksgiving Holiday</i> | | |
| 12/2 | <i>Field Final Exam</i> | Field Trip: Henry Cowell State Park. 101 N Big Trees Park Rd, Felton, CA 95018 | <i>Final Field Exam</i> |
| 12/12 | <i>Final Content Exam</i> | On Canvas | <i>Final Content Exam</i> |