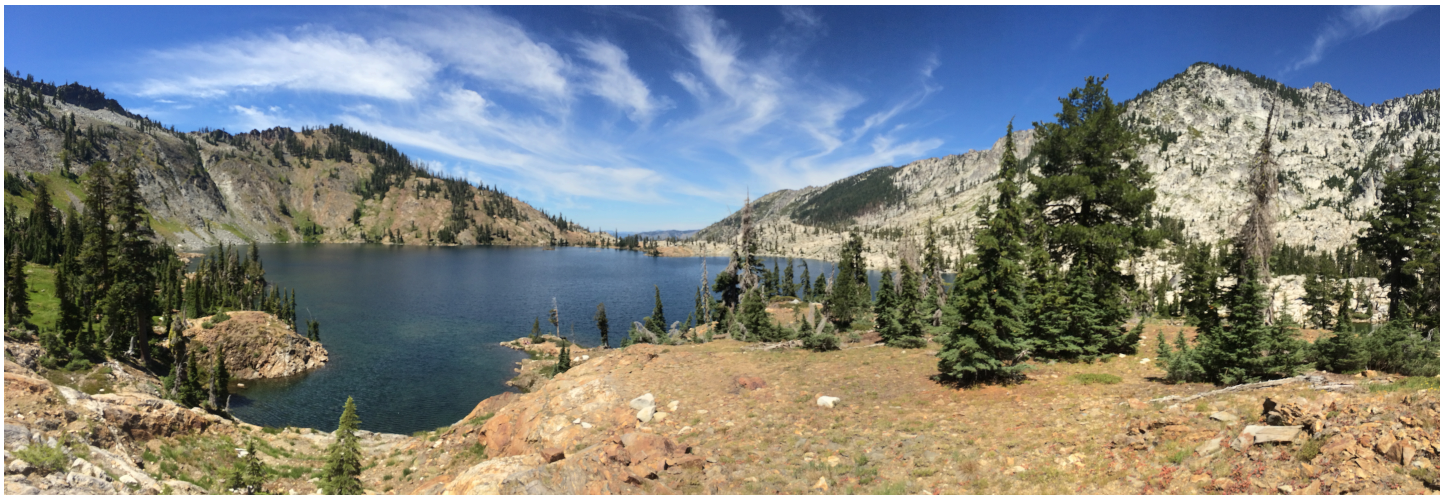
Fall 2025

Ecology and Natural History of California



Course Information

Semester & Year: **Fall 2025**

Course ID & Section #: **BIOL-20-E9327**

Instructor's name: **Dr. Karen Reiss**

Day/Time of required meetings:

- **LECTURES Monday and Wednesday at 10:05am-11:30am**
- **LABS Friday from 10am-1:10pm**

Location:

- **LECTURES SCI210**
- **LABS SCI102 or off-campus locations as indicated on schedule**

Course units: **4**

Instructor Contact Information

Office location: **SCI216B**
Office hours: **TBA and By appointment**
Phone number: **707-476-4220**
Email address: karen-reiss@redwoods.edu (mailto:karen-reiss@redwoods.edu) **BUT PLEASE use the Message function within Canvas to email me**

Catalog Description

An introduction to the biotic communities of California and the identification, ecology and life history of the organisms living there. Coverage includes organismal structure and function, principles of ecology and evolution, techniques for studying organisms in the wild, and methods of recording field data. Students who are successful in this course are eligible for UC California Naturalist certification.

Course Student Learning Outcomes

1. Describe the defining cellular characteristics and life history patterns of prokaryotic and eukaryotic organisms commonly encountered in the field.
2. Hypothesize ecological and evolutionary mechanisms that are responsible for specific examples of organismal adaptation and lineage diversification.
3. Recognize the major biotic communities of California and analyze the biotic and abiotic factors responsible for the unique characteristics of each.
4. Name and classify plants, animals, fungi and macroalgae on sight and/or by using appropriate and available resources.
5. Maintain an organized field/ lab notebook that includes meaningful and accurate notes and data.

Prerequisites / Co-requisites / Recommended Preparation

None.

Required Materials

Books

- *The California Naturalist Handbook*, Nevers, et al.
- *Trees and Shrubs of California*, Stuart and Sawyer; hardcopy preferred; used is fine
- *California's Changing Landscapes*, Barbour et al.; free PDF provided
- *Natural History Supplemental*, OpenStax; free PDF provided

Additional Course Materials (some are optional)

- *You must have* a **bound journal** (NOT spiral) for field observations and journal writings. *Your lecture notes need to go elsewhere!* The best inexpensive choice is either an unlined or graph-lined black "Composition" notebook. The just-as-good but more elegant choice is a blank bound artist's sketchbook or Moleskine. Find a journal that you like, are comfortable carrying, and will enjoy using.
- *You must have* some **waterproof ink pens** or **pencil**. Your notebook will inevitably get wet at some point and traditional ink will run.

- *You may want* **binoculars** and/or a **hand lens** but speak to me before you purchase either.
- *You may want* an insulated **pad** to sit on or a portable **stool** since we will frequently be outside and one of the cardinal rules of doing natural history is *get comfortable*!
- *You may want* other field guides for the taxa of your choice. Consult with me for a list of recommended options.

Course Organization

LECTURES:

- **Each week you will have two lectures, each with associated reading assignments.** The lecture topics and associated reading are on your paper schedule and in the Canvas Module.
- **The lecture portion of the class is divided into three units**. In the first third of the semester we'll cover earth history, California climate, geography, and geology, and basic principles of ecology and evolution. In the second third we'll discuss the major California habitat types and the environmental stresses that face the plants and animals that live there. In the last third of the semester we'll cover the organisms themselves, their basic biology and some specific aspects of their natural history.

LABS AND FIELD TRIPS:

- **When on-campus we will meet Fridays in SCI 102 from 10:00am-1:10pm**. We will usually be learning skills that help us identify major plant and animal groups in preparation for ID'ing them in the field. Then we will go into the field on campus to practice. Some of our on-campus forays will be **Outdoor Campus Collaborative (https://redwoods.instructure.com/courses/20532/pages/info-the-cr-outdoor-campus-collaborative)** projects.
- **When on field trips we will meet at 10:30am at the field site**. Detailed instructions and maps will be made available on *Canvas* each week. In the field we will be exploring a variety of local habitats and the organisms that live there.
- **You need to provide your own transportation to field meeting sites.** Carpooling works great! *Please* talk to me if you're worried about transportation to field trips. It's important that you are on time for field trips because we will typically leave promptly, on foot, to explore. It's also important that you dress appropriately…*plan* on rain, wind, cold, and wet feet.
- **Bring your journal** and indicated resources **to every lab and every field trip**! Please PRINT OUT the lab handouts posted on Canvas…it is really difficult working from phone copies. Also know that we won't always have cell service when in the field so plan accordingly.
- Upload photographic and other observations that are georeferenced and searchable. It can be used to identify unknown organisms, create your own personal list of observations, search

for what's found in a particular place you might be visiting, or as a data-source for a scientific project. See what's been found on the CR campus at **College of the Redwoods Biodiversity (https://www.inaturalist.org/projects/college-of-the-redwoods-campus-biodiversity)**

- These projects will help you appreciate how even novice naturalists can facilitate scientific progress.

VOLUNTEER WORK:

- **You are expected to participate in a single volunteer activity, for a minimum of 4 hours.**
- Volunteer activities must relate to climate communication, education, interpretation, mitigation, adaptation, or community or ecosystem resilience in California.
- The activities should occur in association with an organization or natural resource agency. This can be for the *Outdoor Campus Collaborative* project or an organization like Friends of the Arcata Marsh, Friends of the Dunes, Humboldt Baykeeper, Humboldt Botanical Gardens, California Native Plant Society, Northcoast Regional Land Trust, Redwood Region Audubon Society, PacOut Green Team, Trinidad Coastal Land Trust, Sequoia Park Zoo, Humboldt Fish Action Council, Humboldt Surfrider, Northcoast Environmental Center, Humboldt Trail Stewards, California State Parks, HSU Natural History Museum, HSU Natural Resources Club, the Wiyot, Yurok, Hupa, or Karuk…etc. The organization and activity that you volunteer for is up to you.
- This activity will help you appreciate the importance of community members in environmental stewardship.

INDIVIDUAL STEWARDSHIP PROJECT:

- **Each of you will carry out an individual project that will take no more than 8 hours of time over the course of the semester.**
- It is up to you to define this project. It must fit under one of the following six categories: Community Resilience & Adaptation, Conservation/Restoration, Education/Interpretation, Environmental & Climate Justice, Participatory Science, or Program Support.
- Your project must include a deliverable…a collection of specimens, an inventory of plants found in a particular place, a set of illustrations, signage identifying trees on campus, a poster showing the results of an experiment, etc.
- Your project needs to be approved by me. I will show you some past projects, help you brainstorm ideas, and shepherd you through the early stages…just let your curiosity flow and you will arrive naturally at a good project for you.

- You will give a short presentation/demonstration on your project on the last day of class and will have become the expert on something.

QUIZZES AND EXAMS:

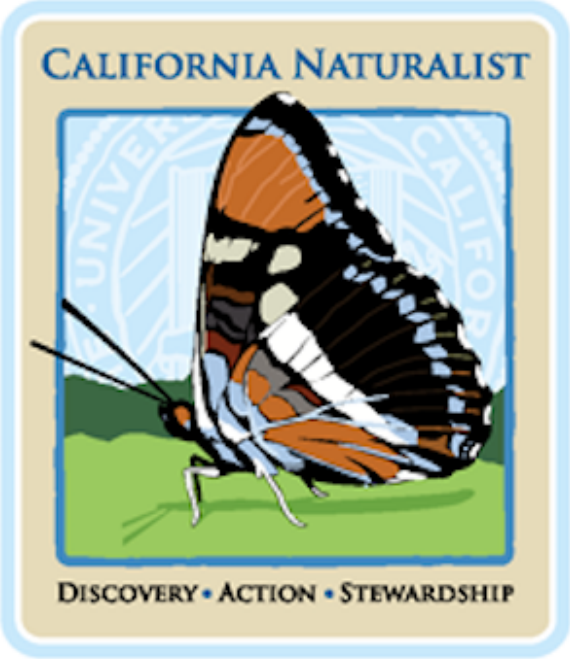
- **You will have regular small online lab quizzes** (roughly, every other week and noted on your schedule). Typically, each lab quiz covers recent skills learned and recent field trips.
- **Twice during the semester you will have midterm exams that cover lecture material**. You will receive a study guide one week prior to each exam. If you've been taking good lecture notes, are caught up on your reading, and participate earnestly in class discussions, there should be no surprises on the review sheets.
- **During Finals Week you will have your third midterm exam and a comprehensive lab exam that covers all labs and field trips of the semester.** You will receive a study guide for the final.

YOUR UC VOLUNTEER PORTAL ACCOUNT:

- The UC Volunteer Portal is an online platform to keep track of your Volunteer hours and your Stewardship Project this semester, and all future volunteer service as a Certified California Naturalist, should you choose to become certified.
- *All* students will use the Portal during the semester; certified California Naturalists will continue to use the Portal indefinitely.
- You will receive an introductory email invitation to log into the Volunteer Portal, set your password, and create your profile. When you engage in Volunteer Work you will log your hours and the nature of the work in the Portal. When you decide on your Stewardship Project you will log its title and the hours you worked on it (up to a maximum of 8) in the Portal.
- The Volunteer Portal link is **https://apps.ideal-logic.com/ucanr (https://apps.ideal-logic.com/ucanr)** and resources to help you use it are available at…but wait till your invitation to start entering your information!

University of California *California Naturalist* Certification

- **This is an optional certification for students who pass this class with a C or better**, completing all requirements. Certification currently costs $55 for a full time student but the College may have funding to cover your certification fees.
- This certification is offered by the University of California Division of Agriculture and Natural Resources and is part of their Environmental Stewards program. Certification indicates that you possess the background and skill set to be a naturalist guide, and also offers opportunities for personal and professional development and social engagement with other Naturalists. At the very least, it is a line on your resume that makes you a preferred candidate for positions -- volunteer, paid, or educational -- in environmental science and environmental education. See **Environmental Stewards - California Naturalist Program (https://calnat.ucanr.edu/)** for more info.



- To promote environmental literacy and stewardship of California's natural resources
- To increase participation in resource conservation and participatory science projects throughout the state
- To develop a core constituency of committed and educated citizens motivated and trained to participate in resource conservation, preservation, and restoration efforts
- To provide participants with the knowledge, skills, and confidence they need to educate others and participate in many aspects of resource management, such as public education, resource planning and public decision-making
- To provide the communication experience and critical thinking skills necessary to grow a citizen base that supports environmental protection and sustainable growth in California.

Evaluation & Grading Policy

Point Breakdown

Lecture Exams	3 X 100	300
Lab Quizzes	5 x 20	100
Comprehensive Lab Final	100	100
Volunteering	100	100
Participatory Science	100	100
Stewardship Project	100	100
Journals	150 completeness and 50 quality	200

1000 total points possible

If you receive 90-100% of total points you will receive some flavor of A; 80-89% earns a B; 70-79% earns a C; 60-69% earns a D; < 60% results in a grade of F. There is no curving or otherwise creative grading.

EXAM MAKE-UP POLICY

- **There will typically be a multi-day window during which online lab quizzes are available.** It is up to you to find a good time within this window that doesn't conflict with other aspects of your life and you can work in an uninterrupted fashion.
- **You MUST have a serious and verifiable excuse to miss a lecture exam.** Ideally, you will contact me before the exam begins.
- ***Contact me*** by leaving a message on email or phone voicemail.
- ***Serious excuses include*** emergency room visits, quarantine due to contagious infectious disease, and deaths in the family.
- ***rifiable means*** you have a doctor's note, a police report, or some other form of vidence

Educational Accessibility & Support

College of the Redwoods is committed to providing reasonable accommodations for qualified students who could benefit from additional educational support and services. You may qualify if you have a physical, mental, sensory, or intellectual condition which causes you to struggle academically, including but not limited to:

- Mental health conditions such as depression, anxiety, PTSD, or bipolar disorder
- Common ailments such as arthritis, asthma, diabetes, autoimmune disorders and diseases
- Temporary impairments such as a broken bone, recovery from significant surgery, or a pregnancy-related disability
- Neurodevelopmental disorders such as a learning disability, intellectual disability, autism, acquired brain injury, or ADHD
- Vision, hearing, or mobility conditions

Available services include extended test time, quiet testing environments, academic assistance and tutoring through the **LIGHT Center (https://www.redwoods.edu/services/sass/light.php)**, counseling and advising, alternate formats of course materials (e.g. audio books or E-texts), assistive technology, learning disability assessments, approval for personal attendants, interpreters, priority registration, on-campus transportation, adaptive physical education and living skills courses, and more. If you believe you might benefit from disability- or health-related services and accommodations, please contact **Student Accessibility Support Services (SASS) (https://www.redwoods.edu/services/sass/index.php)**.

If you are unsure whether you qualify, please contact SASS for a consultation: **SASS@redwoods.edu (mailto:SASS@redwoods.edu)**.

SASS office locations and phone numbers

Eureka campus

- Phone: 707-476-4280,
- Locations: Student Services building, first floor SS113

AI Use Class Policy

Recent advancements in generative artificial intelligence (AI) have made large language models such as ChatGPT and Google's Bard widely available. However, overuse of these tools can curtail the development of your critical and creative thinking skills. Also, AI outputs are unreliable and subject to bias. The policy of this class is that **AI cannot be used at any point in the completion of class assignments unless you have received written instructions which explicitly direct you to use AI in a particular assignment.** Any or all of your assignment submissions may be screened by AI detection software, but the real penalty for AI misuse is that you will miss out on an opportunity to learn.

Academic Integrity

In the academic community, the high value placed on truth implies a corresponding intolerance of scholastic dishonesty. If an instructor determines that a student has demonstrated a lack of academic integrity, the student may receive a failing grade for the assignment and/or exam and may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of the Redwoods website. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the 2024-2025 College Catalog and CR Board and Administrative Policies.

Disruptive Behavior

Student behavior or speech that disrupts the instructional setting will not be tolerated. Disruptive conduct may include, but is not limited to: unwarranted interruptions; failure to adhere to instructor’s directions; vulgar or obscene language; slurs or other forms of intimidation; and physically or verbally abusive behavior. If an instructor determines that a student has disrupted the educational process, the student may be temporarily removed from [illegible] and may be reported to the Chief Student Services Officer or designee. Additional [illegible]mation about the rights and responsibilities of students, Board policies, and administrative procedures is located in the **2024-2025 College Catalog**

(https://redwoods.elumenapp.com/catalog/2024-2025/home) and CR Board and Administrative Policies (https://go.boarddocs.com/ca/redwoods/Board.nsf/Public?open&id=policies) .

Disclaimer

The information contained in this syllabus is subject to change at the discretion of the instructor. We strive to stick to the schedules and policies outlined in this document but unforeseeable circumstances may yield a need for updates or changes to the course. You will be notified of any syllabus changes.