



Syllabus for BIOL 20 – **Ecology and Natural History of California**

Course Information

Semester & Year:	F2024
Course ID & Section #:	E8280
Course units:	4
Instructor's name:	Dr. Karen Reiss
Required meetings:	Lectures MW 10:05-11:30; SCI 210 Labs F 10-1:10; SCI 102 or OFF-CAMPUS
Office Hours:	TBA and by appointment, ZOOM or in-person

Instructor Contact Information

karen-reiss@redwoods.edu, but please *email through Canvas* for course-related queries.

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

Lecture:

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.

Lab:

1. Recognize the major biotic communities of California and analyze the biotic and abiotic factors responsible for the unique characteristics of each.
2. Name and classify plants, animals, fungi and macroalgae on sight and/or by using appropriate and available resources.
3. Maintain an organized field/ lab notebook that includes meaningful and accurate notes and data.

Prerequisites

NONE



Academic Support Services

The following online resources are available to support your success as a student:

- [CR-Online](#) (Comprehensive information for online students)
- [Library Articles & Databases](#)
- [Canvas help and tutorials](#)
- [Online Student Handbook](#)
- [Online Tutoring Resources](#)

The [Learning Resource Center](#) includes the following resources for students

- [Library Services](#) to promote information literacy and provide organized information resources.
- [Multicultural & Diversity Center](#)
- [Academic Support Center](#) – offers tutoring and test proctoring for CR students.
- [Student Tech Help](#) – provides students with assistance around a variety of tech problems.

Educational Accessibility

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, bipolar disorder, and ADHD
- 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
- A learning disability (e.g., dyslexia, reading comprehension), intellectual disability, autism, or acquired brain injury
- Vision, hearing, or mobility challenges

Available services include extended test time, quiet testing environments, tutoring, counseling and advising, alternate formats of materials (e.g., audio books, E-texts), assistive technology, on-campus transportation, and more. If you believe you might benefit from disability- or health-related services and accommodations, please contact [Disability Services and Programs for Students \(DSPS\)](#). If you are unsure whether you qualify, please contact DSPS for a consultation: dsp@redwoods.edu, Eureka: 707-476-4280, Student Services Building, 1st floor.

Community College Student Health and Wellness

Good information and clear communication about your needs will help you be successful. Please let your instructor know about any specific challenges or technology limitations that might affect your participation in class. College of the Redwoods wants every student to be successful.



If you are in distress or are with someone at risk right now, call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255) or TEXT 741-741

Timely Care When you're feeling under the weather physically or distressed mentally, you can find the help you're looking for in just a few quick taps. Students can schedule an appointment anytime via phone, video, and chat. [Visit TimelyCARE here](#)

Mental Health Counseling Students should text, email, or fax Shawna Bell directly for scheduling and/or services. Text: 707-496-2856, Email: shawnaabmft@gmail.com, Fax: 707-237-2318 (voicemail can be left via fax)

Wellness Central Resources, tools, and trainings regarding health, mental health, wellness, basic needs and more designed for California community college students, faculty and staff are available on the California Community Colleges Wellness Central.

Counseling & Advising can assist students in need of academic advising and professional counseling services. Visit the Welcome Center in the lower level of the student services building Monday –Friday 9am – 4pm (during the semester, summer hours may vary).

The Basic Needs Center provides for the health and safety of students by providing access to healthy food, financial resources, and referrals to safe and secure housing. Students can submit a request for services and information [here, or phone](#) 707-476-4153, or email: the-grove@redwoods.edu

Extended Opportunity Programs & Services (EOPS) provides services to eligible income disadvantaged students including: textbook awards, grants, career academic and personal counseling, transportation assistance, tutoring, laptop, calculator and textbook loans, priority registration, graduation cap and gown, workshops, and more!

The TRiO Student Support Services Program provides eligible students with a variety of services including academic advising, career assessments, assistance with transfer, and peer mentoring. Students can apply for the program in [Eureka](#) or in [Del Norte](#).

The Veteran's Resource Center supports and facilitates academic success for Active Duty Military, Veterans and Dependents attending CR through relational advising, mentorship, transitional assistance, and coordination of military and Veteran-specific resources.

CalWORKs – California Work Opportunity & Responsibility to Kids (CalWORKs). Provides supportive services to student parents with children under the age of 18, who are receiving cash assistance (TANF **benefits**), to become self-sufficient. Services include: transportation assistance, basic student supplies, tutoring, priority registration, laptop and calculator loans, career, academic, and personal counseling, and more!



Required Books

- The California Naturalist Handbook, Nevers, et al.
Use code UCPSAVE30 to get 30% at <https://www.ucpress.edu/book/9780520274808/the-california-naturalist-handbook>
- 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
- Other readings posted on *Canvas*

Additional Course Materials

REQUIRED:

- You'll need 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. You have an hour of required writing per week, and will also be keeping all your observations, illustrations, musings, etc. in it, so find a journal that you like, are comfortable carrying, and will enjoy using.
- You should invest in some **waterproof ink pens or pencil**. Your notebook will inevitably get wet at some point and traditional ink will run.

OPTIONAL:

- You *may* wish to invest in **binoculars** and/or a **hand lens** but speak to me before you purchase either.
- You *may* wish to invest in 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* wish to invest in 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 1/3 of the semester we'll cover earth history, California climate, geography, and geology, and basic principles of ecology and evolution. In the second 1/3 we'll discuss the major California habitat types and the environmental stresses that face the plants and animals that live there. In the third portion 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 in SCI 102 from 10:00am – 1:10 pm.** 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](#) 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, in particular, and we won't always have cell service when in the field.

READINGS:

· **Three "textbooks" supplement lecture content: the [California Naturalist Handbook](#), [CA's Changing Landscapes](#), and the [Natural History Supplemental](#).** Only the first needs to be purchased...PDFs of the other two will be provided at no cost. These texts are best read promptly *after* getting an intro to the subject in lecture.

· Other readings include articles posted on **Canvas** that will be discussed in the following lecture and/or lab.

· You will also need the field guide [Trees and Shrubs of California](#) for lab and this can usually be found used in local bookstores.

DISCUSSIONS:

· **We will have in-class discussions of all readings.** I expect informed participation by the entire class. I will notice if you are chronically silent or blatantly uninformed in these discussions and I will assume you have not done the readings and you will not only lose participation points but you will suffer on exam questions that refer to these readings.

JOURNAL:

· **You will keep a natural history journal for the duration of the semester.** I will be teaching you the well-known and widely used Grinnell journal format. A properly formatted nature journal gets you looking at the world and listening to your own thoughts and creates a scientifically useful record for yourself and others in perpetuity. I want to help you get started with meaningful, accurate, and appropriate journaling.

· **In this journal will go...**

- 1) *All lab lecture notes, observations, illustrations, and musings related to labs.*
- 2) *A properly formatted entry for each class field trip.*
- 3) *One additional properly formatted entry for a weekly outdoor excursion of your own.*

- **At least one half-hour of the weekly writing needs to be observational.** For example, this might include a description of how a spider spins her web, how a group of deer move across a meadow they're foraging in, how different trees bend differently in the wind, etc. The other half hour can include random thoughts, poetry, responses to our readings, drawing, or more observations.
- **I will inspect these journals regularly.** I will provide feedback, but I will not grade them until the end of the semester.

PARTICIPATORY SCIENCE PROJECT:

- **As a class, we will be participating in a Participatory Science (aka Citizen Science) project, a campus BioBlitz.**
- "Participatory science" is the use of observations by laypeople around the world to help generate data that can be used by researchers. It has become an incredibly powerful resource for investigators, and a super fun hobby for lay people.
- A "Bioblitz" is a time-constrained event when an entire community comes together with the sole aim of identifying every single life form in a specified area and uploading this information to the international biodiversity-recording platform, [iNaturalist](#). Our area will be the campus and the Biolblitz will run from Friday October 18 through Sunday October 20.
- You will be responsible for contributing at least 10 good observations.
- This project 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 resource management and environmental education.

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.

Commented [1]: Guessing the 10 iNaturalist observations occur during your bioblitz. It would be good to include this number in the syllabus in reference to requirements for certification.

We are also solidifying our process for all courses to add the UC ES iNaturalist project.
<https://www.inaturalist.org/projects/uc-environmental-stewards-certified-naturalists-and-stewards>
(It's okay if they join before they get certified)

- 1-2-3:
1- Create an iNat account
2- Add the partner's project and the UC ES project
3- Observe

Commented [MOU2R1]:



- 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.

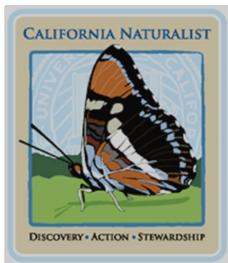
YOUR UC VOLUNTEER PORTAL ACCOUNT:

- 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> and resources to help you use it are available at http://calnat.ucanr.edu/Resources/VP_Help/ ...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 costs about \$100 depending on whether you are a full or part-time student, though CR sometimes picks up the expense.
- 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 <http://calnat.ucanr.edu/> for more info.



UC California Naturalist Program Goals

- 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

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 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.
- **Verifiable means** you have a doctor's note, a police report, or some other form of evidence.



Academic Dishonesty

Truth matters! Cheating sucks! In the academic community, the high value placed on truth implies a corresponding intolerance of scholastic dishonesty. Academic dishonesty of any kind will result in an instant F on the quiz/exam/assignment and a memo to the Dean of Math and Science and to the Chief Student Services Officer that will become part of your permanent record. Disciplinary action will be taken if they already have your name on “the list” of past offenders. In other words, you get one warning. The Student Code of Conduct ([AP 5500](#)) is worth reading.

A couple of common pitfalls:

- Many students don't realize that complicity...allowing or encouraging cheating...is as bad as being the one doing the cheating.
- Many students don't understand that using a Wikipedia or ChatGPT answer...even if you cite your source...is plagiarism.
- Many students don't realize that we professors KNOW that companies like Chegg will allow you to pay for access to answers to questions in popular textbooks like your lab manual. Not only is this cheating, but their answers typically suck!

It's far better to earn an F with integrity than pass the class through cheating!

Communication Guidelines

Communication needs to be regular, effective, and meaningful for teaching and learning to be successful.

If you have a question -

- **You can email me any time using the Message tool on Canvas.** This is ideal for questions that are personal and/or unique to you and preferable to using my campus email because it keeps my class related emails in one place.
- **You can post your question on the Questions for Karen Discussion thread on Canvas.** This is ideal for questions that may be relevant to other members of the class. I usually check these each weekday morning, and once on weekends, but much more frequently if there's an assignment due or a test coming up.
- **You can write them down and save them for lab or office hours.** This is ideal for questions that may require some discussion to resolve.

When you communicate -

- **Put the specific topic in the subject line** set off by a separate “Heading” font, e.g., “Question about lizard thermoregulation”, or “Help! Freaking out about exam.”
- **Use appropriate salutations, closings, and grammar** in your messages, e.g., Dr. Reiss, My name is Sam and I'm in your Natural History class. I'm worried because I have dyslexia and reading the textbook is really hard. Do you have any suggestions for how I should study? Thanks, Sam”. In other words, you're not texting.
- **Please be considerate of each other's questions and comments, both online and in the classroom.** It's important that we all feel safe commenting and questioning and discussing. A little tolerance goes a long way when a classmate is confused, or just spaced out when some important instructions were being delivered.



Necessary Skills

Even face-to-face learning requires some facility with basic computer-age skills. It's important to let me know sooner rather than later if any of these hold you up.

- Be able to reliably receive and respond in a timely fashion to messages sent to your CR email account.
- Be able to navigate the course and upload and download files in *Canvas*.
- Be able to use a phone or digital camera to take photos, videos, or make PDFs.
- Be able to access internet resources including online databases and fun stuff like YouTube.
- Be able to use a word processing program (such as Microsoft Word or Google Docs).
- Be able to use a data entry and/or graphing program (such as Microsoft Excel or Google Sheets).

Technology Requirements

HARDWARE:

Computer – Have access to a reasonably recent model notebook or desktop computer (Mac or PC). I don't recommend that you plan on participating in this class solely from a portable device.

Portable Devices - You can use recent model portable devices for some activities, and we will be learning about some cool apps that you may want to download. Minimally, be sure to acquire the free Canvas, Canvas by Instructure, available in iTunes or the Google Play Store.

Camera - Be able to take photographs and perhaps record videos. Minimally, you will need to be able to take pictures to upload to iNaturalist. A smartphone with a camera is ideal, but a digital camera and a computer will work too.

CONNECTION AND SOFTWARE:

High-speed internet - You'll need high-speed internet service from cable, DSL, or satellite providers in order to access course resources, e.g., Canvas. This is Humboldt County and outages happen! Don't wait until the last minute to print lab handouts, etc.

Browsers - You will need to use the most recent version of Mozilla, Firefox, and/or Chrome. Internet Explorer and Canvas don't get along.

Word Processing Software - You need Microsoft Word or a similar word processing program for writing assignments, and Acrobat Reader or a similar program to allow you to read and download pdf files. All students at CR have access to Office 365 (Word, PowerPoint, Excel, and OneNote) free with a valid @mycr.redwoods.edu email account. Go to [Office 365 for Education](#) to get started.