



California Naturalist Syllabus Sierra Foothill Conservancy - Spring 2015

Meeting Times and Location:

6-week Training Course from March 13th – April 24th

There will be no class the weekend of April 3rd and 4th

Fridays: 6:00pm-8:00pm at the UC Merced-Fresno Center; 550 E Shaw Ave #105, Fresno, CA

Saturdays: Field days are held at various locations with a 9:00am start time, and an end time of approximately 3:00pm (this may vary a bit depending on the hike involved).

Instructors:

- **Rodney Olsen** ... Instructor of Biology at Fresno City College, Independent Consultant, and long-time instructor for Sierra Foothill Conservancy and the San Joaquin River Parkway.
- **Rosanna Ruiz** ... Sierra Foothill Conservancy Associate Director, Instructor of Environmental Science and Math at Heald College, and California Naturalist.

About the Course:

California Naturalist is a program developed by the University of California Cooperative Extension to foster eco-literacy and a committed corps of volunteers. Upon completion of the course, naturalists and citizen scientists will be trained and ready to take an active role in natural resource conservation, education, and restoration. The course combines a rigorous science curriculum with guest lecturers, field trips and project-based learning to immerse you in the natural world of the Sierra foothills.

In its first year in Fresno County, this 6-week course provides participants with content specifically focused on the ecosystem linkages of the Sierra foothills. The course consists of presentations and lively collaborative discussions about individual components of the ecosystem, including influences on and interconnections with the whole system. Led by professionals in their fields, these sessions introduce and expand on the roles and importance of each entity. Examples from local ecosystems are used, while relating to California's unique ecology and natural history. Time in the field with researchers and professionals gives participants first-hand experiences in seeing nature from a scientist's perspective as well as an opportunity to interpret what they see to make meaning for themselves and others. In order to receive certification as a California Naturalist, participants are required to attend all presentations and mandatory field sessions.

Student Learning Outcomes:

By the end of this course, students should be able to:

1. Understand what it means to be a naturalist.
2. Understand the abiotic, biotic and cultural factors that make up the unique natural history and ecology of the Sierra foothills.
3. Demonstrate skills in making and recording natural history observations in a field notebook and on iNaturalist.
4. Demonstrate skills in communicating and interpreting natural resource information.
5. Apply knowledge of the foothill ecosystem to local and global environmental issues.

Readings and Homework

In preparation for lectures, all assigned readings from the California Naturalist Handbook should be completed before each class where they appear on the syllabus. There will also be a series of questions for you to complete as you read each chapter. Evening classes will be a mixture of lecture and discussion.

Field Days:

Saturday field days will run from 9:00am to approximately 3:00pm. Participants may not bring guests or children. We will be hiking, so dress appropriately and bring any gear you might find helpful – binoculars, hand lens, camera, etc. You will also want to pack a lunch and water.

Naturalist Field Notebook:

All participants are required to keep a field notebook during the course. Instructors may check field notebooks periodically during the class or at the end. We will be using these notebooks during class, on field trips, and hopefully on your own time. Keeping a field notebook, and better yet a detailed Field Journal, is one of the best ways of recording observations for future reflection and for fostering continued learning and development as an experienced naturalist.

iNaturalist

Over the course of the California Naturalist class, each participant will be responsible for registering for an iNaturalist account (<http://www.inaturalist.org>) and adding at least 3 observations to the Sierra Foothill Conservancy Fine Gold Creek project. We will go over the iNaturalist tool in class.

Capstone Project:

Certification also requires that each participant plan and complete a Capstone Project (see handout). We will provide examples and guidance in developing your project. No previous experience is required. This volunteer service project must fall into one of the following four areas: Stewardship, Education/Interpretation, Citizen Science, or Program Support. The Capstone project provides an opportunity for participants to integrate the in-class material with an applied work project that is done in conjunction with a natural resource agency or organization. Participants may work individually or in teams to design and implement their Capstone Project. You must submit your project by Week 3 for approval; a Capstone Project Proposal form will be provided. During the final evening of the course, students will present their projects to their peers. Further details on the presentation will be provided in class.

Volunteer Service:

After completing the California Naturalist Central Sierra training program, participants are expected to complete 40 hours of volunteer service relating to California's natural or environmental cultural history (stewardship, education/interpretation, citizen science or program support). Hours spent planning, developing and completing the Capstone Project count toward this 40-hour requirement. We provide information on local opportunities and students are encouraged to participate in and conduct activities with agencies within their own communities.

Attendance:

One excused absence is allowable with the understanding that it will be made up in an approved manner. Please note that, while we understand unexpected demands sometimes arise, it is very hard to substitute a make-up activity that can provide both the depth of information and experience gained in the scheduled session, so we ask that you make a commitment to attend all sessions.

Volunteer Management System (VMS)

Participants will be provided an on-line account to track their volunteer hours, including hours spent on their Capstone Project. Tracking volunteer hours is an essential way to prove need and impact of the California Naturalist Program.

UC Credits

Participants may opt to pay an additional \$80 to receive four UC Davis Extension undergraduate academic credits upon course completion and certification. Let the instructor know that you are interested in applying for the credits and more information will be provided.

Required Items

- Text: *The California Naturalist Handbook* authored by Greg de Nevers, Deborah Stanger Edelman, and Adina Merenlender.
- A field notebook for nature observations and drawings. *You may want to purchase your journal after we discuss journaling in class.*
- An email account.
- Suggested but Not Required: hand lens (10x), binoculars, smart phone or tablet for the iNaturalist program.

Course Outline and Schedule
Sierra Foothill Conservancy - Spring 2015

Week 1: Friday, March 13th 6:00pm-8:00pm ... UC Merced-Fresno Center

Instructors: Rodney Olsen and Rosanna Ruiz

Saturday, March 14th 9:00am-3:00pm ... Natural History on McKenzie Preserve

Instructors: Rodney Olsen (primary instructor)

Craig Poole ... Instructor of Geology at Fresno City College, Instructor for K-12 Alliance, long-time instructor for Sierra Foothill Conservancy and the San Joaquin River Parkway.

Allen Beck ... Retired instructor of Anthropology at Fresno City College (strong emphasis on Native American cultures), and long-time instructor for Sierra Foothill Conservancy and the San Joaquin River Parkway.

Topics: Introductions, field journals, Capstone projects, California Natural History and the Role of Naturalists, and Geology, Climate and Soils.

Goals:

- To understand the California Naturalist program and the role of a California Naturalist.
- To understand what is unique about California's natural history, human history, ecology and landscape.
- To understand what naturalists do and why it's important.
- To learn how to keep a naturalist's journal.
- Introduce the Capstone Project.
- To understand how the geologic history of California created the current landscape; with a focus on Mother Lode geology.
- To understand how the landscape influences the ecology of California.
- To be aware of the role that nutrient cycles and soils play in shaping plant communities.
- To understand California's climate diversity.

Required Reading:

Chapter 1 – California Natural History and the Role of Naturalists

Chapter 2 – Geology, Climate, and Soils

Week 2: Friday, March 20th 6:00pm-8:00pm ... UC Merced-Fresno Center

Instructor: Rodney Olsen (primary instructor)

Saturday, March 21th 9:00am-3:00pm ... Wildlife on the Martin Preserve

Instructor: Rodney Olsen (primary instructor)

Week 2: Continued

Topics: Animals, vertebrates, invertebrates.

Goals:

- To recognize the energy and evolutionary relationships among animals.
- To understand how animals are adapted to their environments.
- To understand the concepts of food webs, predator/prey relationships and trophic levels.
- To be able to identify the economic and social importance of wildlife species in your area.
- Become familiar with bird identification resources.
- To understand the importance of invertebrate species in the environment.
- To recognize the importance of beneficial insects to agriculture.
- To understand the concepts of life cycles and the use of benthic macroinvertebrates as indicators of ecosystem health.

Required Reading:

Chapter 6 – Animals

Week 3: Friday, March 27th 6:00pm-8:00pm ... Location TBD

Instructor: Rodney Olsen a(primary instructor)

Saturday, March 28th 9:00am-3:00pm ... Botany on Black Mtn. Preserve

Instructors: John Stebbins ... Retired Instructor of Botany at California State University of Fresno, Independent Consultant, Conservation Chair of the California Native Plant Society (Sequoia Chapter), and long-time instructor for Sierra Foothill Conservancy.

Topics: Introduction to plant structure and function, plants of the Sierra foothills.

Goals:

- To become familiar with the plants and plant communities in your local area.
- To understand how plants function, reproduce and adapt.
- To understand the differences among native, non-native, invasive, and noxious plants.
- To understand the impact of human and natural disturbance on plant communities.

Required Reading:

Chapter 4 – Plants

April 3rd and 4th: Skip ... Spring Break/Easter

Week 4: Friday, April 10th 6:00pm-8:00pm ... UC Merced-Fresno Center

Instructors: John Mount ... Retired Forester, Author, Interim Executive Director of the Central Sierra Historical Society, and Independent Consultant.

Jeannette Warnert ... UC Extension Public Information Representative, California Naturalist, and Sierra Foothill Conservancy Docent.

Saturday, March 28th 9:00am-3:00pm ... Rangeland Ecology and iNaturalist on the Fine Gold Creek Preserve

Instructor: Billy Freeman ... Sierra Foothill Conservancy Rangeland Manager, and Sierra Lands Beef General Manager.

Jeannette Warnert ... UC Extension Public Information Representative, California Naturalist, and Sierra Foothill Conservancy Docent.

Topics: Forests, woodland and land management; fire ecology; rangeland ecology, iNaturalist.

Goals:

- To appreciate the ecological and economic value of forests.
- To understand forest structure.
- To understand the role of fire in forest regeneration.
- To understand the various benefits that forests provide.
- To understand the challenges of balancing society's conflicting desires for forests.
- To explore the advantages of citizen science for participants and the advancement of science.
- To introduce the iNaturalist website and program.

Required Reading:

Chapter 5 – Forest, Woodland, and Range Resources and Management.
Familiarize yourself with and create an account on the iNaturalist website:
<http://www.inaturalist.org>

Week 5: Friday, April 17th 6:00pm-8:00pm ... UC Merced-Fresno Center

Instructors: Rosanna Ruiz ... (co-instructor)

Saturday, April 18th 9:00am-3:00pm ... Sierra Exploration

Instructor: Rodney Olsen (primary instructor)

Topics: Water, energy, global environmental issues.

Goals:

- To review the water cycle.
- To identify parts of a watershed.
- To describe the economic, ecologic and social functions of water resources.
- To become exposed to water management, water quality, and water distribution issues in California.

- To become familiar with forms and sources of energy.
- To understand how plants and animals use energy.
- To explore agricultural issues and their relationship with the environment.
- To consider how human activities and resource use affect the global environment.

Required Reading:

Chapter 3 – Water

Chapter 7 – Energy and Global Environmental Challenges

Week 6: Friday, April 24th 6:00pm-9:00pm ... UC Merced-Fresno Center

Instructors: Rosanna Ruiz ... (co-instructor)

Clary Creager ... Co-Founder of the San Joaquin River Parkway Trust, Veteran Docent (20+ years) with the San Joaquin River Parkway, and California Naturalist Instructor Workshop participant.

Topics: Interpretation, docenting – from the field to the classroom, collaboration, Capstones.

Goals:

- To understand the basic principles of interpretation.
- To learn techniques for presenting to and communicating with different kinds of audiences.
- To present Capstone projects to peers.
- To complete the end of class evaluation and assessment.