

## California Naturalists at American River Conservancy Course Schedule

**Instructor/Course Facilitator: Elena DeLacy, B.S. Environmental Biology & Management**

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Elena is the Stewardship Director at American River Conservancy. She is a biologist focusing on conservation biology and restoration of foothill habitats, especially oak woodlands, seasonal wetlands and riparian areas. Elena is particularly interested in geography, native plants, herpetofauna and the intersection of native culture and land management in California.

**Co-Instructor: Trevor Whiffin, M.A. Ph.D. Botany**

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Trevor is an Honorary Research Associate at Federation University, Victoria, Australia, and a Volunteer Program Leader at American River Conservancy. He has undertaken research and teaching in botany and conservation biology for over forty years. He has a particular interest in tropical rain forests and in plant biogeography, especially the origin and evolution of local endemic floras.

**Co-Instructor: Monique Wilber, B.A., M.A. Geography; Multiple Subject Teaching Credential**

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Monique is a Senior Environmental Planner/Scientist with the State of California, and has also worked for El Dorado County as a natural resources planner. She has worked on environmental policy implementation and analysis for over seventeen years, and taught elementary school and community college. She has great interest in California regional geography, watersheds, and sense of place; and the human experience and interaction with the environment, including sustainability, climate change, and working landscapes. She continues to research science communication and environmental education.

### **Course Description:**

The California Naturalist Program seeks to foster a committed corps of volunteer naturalists and citizen scientists trained and ready to take an active role in natural resource conservation, education, and restoration. The California Naturalist course will introduce you to the wonders of our local ecology and engage you in the stewardship of California's natural communities. The course will combine a rigorous science curriculum with guest lecturers, field trips and project-based learning to immerse you in the natural world of the Sierra foothills.

By the end of this course, participants will be able to:

- Understand what it means to be a naturalist
- Understand the abiotic, biotic and cultural factors that make California and the Sierra foothills natural history and ecology unique
- Demonstrate skills in making and recording natural history observations in a field notebook and on iNaturalist.org
- Demonstrate skills in communicating and interpreting natural resource information

- Apply knowledge of central Sierra foothills ecosystems to local and global environmental issues.

## **Components of the Course:**

### *Class & Readings*

The class will be held on 10 Thursday evenings from February 22 to May 10, from 6-8:30pm. Evening classes meet at the American River Conservancy's Nature Center at 348 Highway 49, Coloma, CA 95613, unless otherwise noted. In preparation for lectures, all assigned readings from the California Naturalist Handbook should be completed before each class where they appear on the syllabus. Evening classes will be a mix of lecture, discussion, eating and some outdoor exploration. Dress appropriately for the weather—you never know when the instructor may send everyone outside!

### *Field Trips*

Saturday Field trips (see below for dates) will run from 9am – 2pm, with the exception of one evening field trip. We will meet at the American River Nature Center unless otherwise noted. Participants may not bring guests or children on any field trips. Directions will be given at the first class meeting.

### *Graduation day*

Graduation day will be Thursday, May 10 from 6 – 9:00 pm at the American River Nature Center in Coloma.

### *Field Notebooks*

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 is one of the best ways of fostering continued learning and getting to know a place intimately.

### *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 established American River Conservancy California Naturalist project. We will go over the iNaturalist web tool on the first day of class.

### *Capstone Project*

Participants are required to complete a volunteer service project in one of four areas: Stewardship, Education/Interpretation, Citizen Science and 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 are encouraged to work in teams when appropriate, and in the final class will deliver individual or group presentations on the projects. Presentations will be 5 minutes long per person (i.e. 15 minutes for a 3 person group). The instructor will provide a Capstone

project proposal form, list of approved project ideas, and feedback as necessary. Participants who would like to propose a Capstone project that is not on the list will have an opportunity to do so.

### *Attendance*

Participants must attend all Thursday evening classes. If an evening class is missed, the participant will be expected to complete make-up activities on their own time at the direction of the instructor. Please talk to Elena if you are going to miss a class. Only one evening class session can be missed. One field trip can be missed without make-up work.

### *Homework*

Reading is assigned for each class meeting (check the class schedule below), based on the topic to be covered that day. Participants are expected to read the chapters assigned for that day before the class meeting times, so that the materials are more relevant as they are presented. There will be short quizzes or group exercises to reinforce the material in class.

### *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 a program like the California Naturalist Program.

### *Other Information*

Participants may opt to pay an additional \$80 to receive four UC Davis Extension undergraduate academic credits upon course completion and certification. More information will be provided. This is a zero waste class. Please bring a mug or water bottle for drinks. We will provide washable plates and utensils. There is a sink to wash dishes at the ARC office.

### **Required Items:**

- The California Naturalist Handbook by Greg de Nevers, Deborah Stanger Edelman and Adina Merenlender (included in registration fee)
- An e-mail account
- A field notebook for nature observations and drawings, pencil(s)
- Suggested but Not Required: hand lens (10x), binoculars, smart phone or tablet for iNaturalist program

### **Recommended supplemental reading:**

- *The Laws Field Guide to the Sierra Nevada*, Laws, J.M., Heyday Books: 2007
- *Ecosystems of California*, Mooney, H. and Zavaleta, E., UC Press: 2016
- *An Island called California*, Bakker, E., University of California Press: 1984
- *A Natural History of California*, Schoenherr, A.A., University of California Press: 1992
- *Introduction to California Plant Life* (California Natural History Guides, 69), Ornduff et al., UC Press: 2003

- *Trees and Shrubs of California* (Calif. Natural History Guides 62), Stuart, Sawyer, UC Press: 2001
- *California Insects*, Powell and Hogue, University of California Press: 1980
- *Spring Wildflowers of California of the Foothills, Valley and Coast* (California Natural History Guides, 75), Munz, P.A., UC Press: 2004
- *Mammals of California* (California Natural History Guides, 66), Jameson and Peters, UC Press: 2004
- *The Sibley Field Guide to Birds of Western North America*, Sibley, D.A., Knopf Publishing: 2003
- *Tending the Wild: Native American Knowledge and the Management of California's Natural Resources*, M. Kat Anderson, University of California Press: 2005
- *Trees and Shrubs of Nevada and Placer Counties, California*, Redbud Chapter of the California Native Plant Society: 2014
- *Wildflowers of Nevada and Placer Counties, California*, Redbud Chapter of the California Native Plant Society: 2007
- *The California Field Atlas*, Kaufmann, Obi, Heyday Books: 2017

## Class Schedule

(C) = Confirmed Speaker

### **Week 1- Thursday, February 22 6:00-8:30pm**

*Introduction to Instructors; Introduction to the California Naturalist Program (Elena, Monique); California and its biodiversity (Trevor)*

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 is important
- To learn how to keep a naturalist's journal
- Introduce Capstone Projects and iNaturalist

Reading: Chapter 1 - California Natural History and the Role of Naturalists

### **Week 2- Thursday, March 1 6:00-8:30pm**

*Interpretation, Collaboration, and Art – Sustainability on the Landscape (Elena with special Guest Obi Kaufmann); The Impacts of Citizen Science (Trevor)*

Goals:

- To understand the basic principles of interpretation and telling your story
- To learn techniques for presenting to and communicating with different kinds of audiences.
- To explore the advantages of citizen science for participants and the advancement of science. Impacts of Citizen Science.
- Answer questions about the iNaturalist website and program.
- To solidify Capstone Project ideas

Reading: Chapter 8 - Interpretation, Collaboration, and Citizen Science

Familiarize yourself with and create an account on the iNaturalist website

<http://www.inaturalist.org>

### **Week 3- Thursday, March 8 6:00-8:30pm**

*Geology, Climate, and Soils – Geology and Soils (Elena); Guest Lecturer: (C) Byron Anderson, Geologist, Kleinfelder*

Goals:

- 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; introduce climate change basics

Reading: Chapter 2 - Geology, Climate, and Soils

**Week 4- Thursday, March 15 6:00-8:30pm**

*Water – Lead: Monique Wilber; Guest Lecturer: Melinda Frost-Hurzel – The Cosumnes River and Water Management Issues in the Sierra Foothills and Central Valley*

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

Reading: Chapter 3 – Water

**Week 5- Thursday, March 22 6:00-8:30pm**

*Plants – Introduction to Plant Structure and Function (Trevor); Plants of California (Trevor); Vegetation of California (Trevor); Plants and People (Elena)*

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 impact of human and natural disturbance on plant communities

Reading: Chapter 4 – Plants

***SPRING BREAK 2 WEEKS***

**Week 6- Thursday, April 12 6:00-8:30pm**

*Forests, Woodland, and Land Management – Fire Ecology, Conservation Biology and Adaptive Management (Trevor); Forests and Fire (Becky Estes, PhD-USFS); Oak Woodland Plant Community (Guest Lecturer Dr. Debra Ayres, Plant Ecologist, El Dorado Chapter of California Native Plant Society)*

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

Reading: Chapter 5 – Forest, Woodland, and Range Resources and Management

**Week 7- Thursday, April 19 6:00-8:30pm**

*Animals – vertebrates – Animals of California (Elena); Birds of the Sierra: Alissa Fogg, Sierra Nevada Program Biologist, Point Blue Conservation Science*

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

Reading: Chapter 6 - Animals

**Week 8- Thursday, April 26 6:00-8:30pm**

*Animals – invertebrates – Invertebrates of California (C) Dr. Gordon Frankie, UC Berkeley Urban Bee Lab*

Goals:

- 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

Reading: Chapter 6 - Animals

**Week 9- Thursday, May 3 6:00-8:30pm**

*Energy and Global Environmental Issues – Global Environmental Issues (Trevor); local environmental Issues; Food & Water (Monique)*

Goals:

- To become familiar with the 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

Reading: Chapter 7 - Energy and Global Environmental Challenges

**Week 10- Thursday, May 10 6:00-9:00pm**

*Graduation and Presentation of Capstone Projects*

Goals:

- To wrap-up the class and answer final questions about class content, volunteer hours and any other aspects of the California Naturalist program;
- To provide time for student presentation of Capstone Projects;
- To complete the end of class evaluation and assessment.
- To have a potluck and celebrate!

**FIELD TRIPS:**

**Wakamatsu Farm: Saturday, March 24<sup>th</sup> from 9:00 am to 2:00pm**

- Land Use & Management, Geology and Soils, Plants
- Guest Presenter Obi Kaufmann
- Free Hand Farm Presentation by Spencer and Melissa Tregilgas

**Ladies Valley: Saturday, April 14<sup>th</sup> from 9:00am to 2:00 pm**

- Cultural Resources, Citizen Science, Water, Plants, Forests and Woodlands, Wildlife (invertebrates)
- Guest Presenters: Melinda and Rick Frost-Hurzel; Kimberly Petree

**Field Trip 3 Location TBD: Saturday, May 5 from 1:00 pm – 8:00 pm (Evening)**

- Local Environmental Issues, Historical Resources, Wildlife (vertebrates)
- Guest Presenters from California Department of Fish and Wildlife: Shelly Blair and guest – acoustic survey(bats) and amphibian survey