

## UC California Naturalist Certification Program- Pepperwood Preserve



### Syllabus for Fall 2019

#### Dates of the Class

This course will take place over 8-weeks (40 hours), consisting of a combination of lectures and field experiences during each session at Pepperwood Preserve. Classes will be held on Saturdays, from 9am-2pm from September 14 - November 2, 2019. All sessions will have a field component (approximately 3 hours), rain or shine.

**About Pepperwood Preserve:** Pepperwood Preserve is located at 2130 Pepperwood Preserve Road, approximately 20 minutes northeast of Santa Rosa off of Mark West Springs Road (next to Safari West). With over 750 species of plants and 150 species of wildlife, Pepperwood is a 3,200 acre nature preserve located atop the Mayacamas Mountains that form the border between Sonoma and Napa counties. Pepperwood is also home to the LEED-certified Dwight Center for Conservation Science, a place where science and community come together to solve today's critical environmental challenges. As a non-profit organization dedicated to conservation and education, Pepperwood is a living laboratory where researchers and partners from some of our nation's finest institutions are developing solutions to adapt to climate change and drought, maintain clean air and water, and effectively enhance and protect limited natural resources today and into the future.

## Course Requirements

- **Contact Time:** Each UC California Naturalist course consists of a minimum of 40 educational hours (classroom hours and field time), which includes a minimum of 8 hours in the field.
- **Required Reading:** Read the entire book “[The California Naturalist Handbook](#),” read any relevant bioregional or topical publication from the [UC ANR California Naturalist Series](#) available online, and complete assigned homework.
- **Class Attendance and Field Trips:** Participants must attend all classes and field trips. If one is missed, the participant will be expected to complete make-up activities on their own time at the direction of the instructor.
- **Capstone Project:** Participants are required to complete a Capstone Project in one of four areas: Stewardship, Education/Interpretation, Citizen Science or Program Support. The Capstone Project provides an opportunity for participants to integrate their own personal interests with the in-class material toward the development of an applied work project that is done in conjunction with a natural resource agency or organization. Participants must get pre-approval for Capstone Projects in the first two weeks of the course. Participants are encouraged to work in teams when appropriate. Participants will deliver an individual or group capstone presentations (5 minutes long per person) on graduation day. Participants are expected to spend a minimum of 8 hours on the capstone project and will add hours spent on the Capstone Project into the volunteer portal.
- **Using a Field Notebook and Journal:** All participants are required to create a field notebook with entries from all field days and preferably more. Field notebooks may be checked by the instructor periodically during the class or at the end.
- **iNaturalist Observation and Partner iNaturalist Project:** Over the course of the UC California Naturalist class, each participant will be responsible for registering for an iNaturalist account (<http://www.inaturalist.org/>) and adding at least 100 observations to the course iNaturalist Project. Our iNaturalist Project is Pepperwood Vital Signs.
- **Class Citizen Science Project:** Each participant must contribute to the citizen science project adopted by the class.
- **Evaluation:** Completion of the online post-course evaluation survey is highly encouraged. You will be provided with a link to the evaluation survey toward the end of the course.
- **Volunteering and Volunteer Portal (VMS):** Participants will be provided with an online 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 UC California Naturalist Program. Participants are strongly encouraged and hopefully committed to volunteering at least 40 hours a year in environmental stewardship, education, program support, or citizen science and recorded all hours of service in the Volunteer Portal. Pins are awarded each year for participants who meet this goal, and the pins differ from year to year. The portal website is <https://vms4.ucanr.edu/>. For guidance on using the portal, visit [http://calnat.ucanr.edu/Resources/VP\\_Help/](http://calnat.ucanr.edu/Resources/VP_Help/).

The California Naturalist Handbook, Greg de Nevers, Deborah Stranger Edelman, Adina Merenlender. (Must be purchased by the participants.)

Students are required to attend all 8 sessions of this course, for a total of 40 hours over the fall session. Participants are required to purchase “The California Naturalist Handbook” by Greg de Nevers, Deborah Stanger Edelman and Adina Merenlender. Students are asked to read the pertinent chapters prior to each Saturday session, and these will be assigned on the first day. Students are expected to be on time for each session, as we may be heading out into the field soon after the class starts, and will be carpooling around the preserve. Requests for reasonable accommodations for disabilities or limitations should be made prior to the date of the program or activity for which it is needed. Please make such requests as early as possible by contacting Jesse Robinson ([jrobinson@pepperwoodpreserve.org](mailto:jrobinson@pepperwoodpreserve.org)). All students are expected to be respectful of the instructors, each other, and the preserves’ plants and animals.

Students must complete a **capstone project** to receive their California Naturalist Certification. This is 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. We highly encourage participants to fulfill this requirement by attending and assisting at Pepperwood’s volunteer work days. The instructor will provide a Capstone project proposal form with a list of potential project ideas, as well as dates that students can attend Pepperwood work days to fulfill this requirement. If students complete 80 hours (over two years) of volunteer work at Pepperwood, they have an opportunity to become a Pepperwood Steward (attend classes for free, access to the Preserve, and other behind-the-scenes opportunities).

### **What to Bring**

Students are encouraged to bring a cell phone if they have one, for iNaturalist observations. Other optional supplies are cameras, binoculars, and walking sticks. Additionally, students should bring a field notebook or journal (to be discussed the first day), any necessary medications, warm clothing and rain gear, a rain/sun hat and sunscreen, comfortable walking shoes, a reusable water bottle, and a lunch or snacks.

### **Course Credit**

Upon completing certification requirements, participants are eligible for four academic credits through UC Davis Extension for an additional nominal fee. Graduates who expressed interest in this opportunity with their instructor will receive a communication from the UC California Naturalist program post-course with information on how to obtain the optional credits.

**Staff contact information (phone/e-mail):** [jrobinson@pepperwoodpreserve.org](mailto:jrobinson@pepperwoodpreserve.org). 707-591-9310x123.

**California Naturalist online:** <http://calnat.ucanr.edu/>

## **Staff Biographies**

Jesse Robinson (Instructor of Record) - *MAT, University of San Francisco (Education)*  
*BA, Whitman College (Anthropology)*

Jesse loves helping people play and learn outdoors. Prior to finding Pepperwood in 2012, Jesse gained seven years experience working as a naturalist for the Kern Environmental Education Program and the Outdoor School at Rancho Alegre, both on California's central coast. At Pepperwood, he is a lead educator with our Students Conducting Environmental Inquiry (SCENIQ) and TeenNat programs. When he is not hiking, he spends time reading or in his garden, where he cultivates native plants, succulents, and orchids. He is an Eagle Scout and has completed course work and subject matter competency for a single subject teaching credential in biology and foundational sciences.

Dr. Tosha Comendant - *PhD, UC Santa Cruz (Ecology and Evolutionary Biology)*  
*BA, UC Berkeley (Integrative Biology)*

Dr. Comendant is a conservation scientist with over 15 years experience developing innovative methods, visualization tools, databases, and science-based solutions that increase knowledge-transfer, enhance stakeholder engagement, and inform natural resource management decisions. She is a Napa Valley native and completed her doctorate in Ecology and Evolutionary Biology at UC Santa Cruz. She joined Pepperwood as the Conservation Science Manager in 2017 where she conducts and manages complex research projects, supports monitoring and restoration initiatives, and cultivates impactful cross-sector partnerships. Additionally, she serves on the boards of the Napa Valley Watershed Information and Conservation Council, the Society for Conservation GIS, and the Steering Committee of the Conserved Lands Network Science Expansion.

Dr. Lisa Micheli - *PhD, UC Berkeley (Energy and Resources)*  
*MS, UC Berkeley (Civil Engineering, Environmental Water Resources)*  
*MPhil, Cambridge University, King's College (History and Philosophy of Science)*  
*AB, Harvard College (History and Science)*

Dr. Micheli joined Sonoma County's Pepperwood Foundation in October of 2009 as its inaugural Executive Director and now serves as the organization's President and CEO. She brings more than 30 years of experience applying her technical, policy, and fundraising expertise to the design and implementation of ecological restoration, research, and education programs. She started her career at the US Environmental Protection Agency and then completed her graduate studies at UC Berkeley as a NASA Earth Systems Research Fellow in 2000. She now focuses her research on relationships between climate, watershed health, and biodiversity and has published numerous peer-reviewed studies on river restoration, climate adaptation, and community-based approaches to biodiversity conservation.

Ryan Ferrell - *MS, UC Davis (Soils and Biogeochemistry)*  
*BS, UC Davis (Soils and Biogeochemistry)*

As a native of Santa Rosa and avid outdoorsman, Ryan has spent much of his free time on the rivers, the wetlands, farmlands and coastal mountain ranges of the Bay Area and greater California. After high school, Ryan attended the University of California – Davis where he

earned both his undergraduate degree and a Masters of Science in Soils and Biogeochemistry. His thesis work focused on mapping and modeling regolith thickness for the western slope of the Sierra Nevadas of California, and linking thickness to water storage and its effects on forest susceptibility to drought-induced mortality. As Pepperwood's Research Technician, Ryan is helping to lay the groundwork for Pepperwood's rapidly expanding wireless meteorological and soil sensor network, and is in charge of data management and acquisition from these systems.

Nicole Barden - *BS, Northland College (Biology)*

Nicole grew up spending many summers and weekends in Sonoma County on the Russian River before studying Biology with an Environmental Education minor at Northland College in Wisconsin. Before Pepperwood, Nicole worked as a naturalist and educator at various institutions including SCICON and the Cable Natural History Museum. She also has experience working with animals and volunteered for 3 years at the California Raptor Center. As Environmental Educator, Nicole helps develop Pepperwood's education curriculum, leads field trips, and visits our neighboring school systems to teach children about science and conservation. In her spare time, Nicole enjoys birding and dancing the Lindy Hop!

Michelle Halbur - *MS, Purdue University (Plant Biology)*

As a native to Sonoma County, Michelle Halbur greatly values the biodiversity of the region and is honored to work on conservation and land management research at Pepperwood. She has an M.S. from Purdue University where she studied the conservation genetics and ecology of a rare vernal pool plant that occurs in the Santa Rosa Plain, Sebastopol meadowfoam. Since 2011, Michelle has served as Pepperwood's Preserve Ecologist where she oversees Pepperwood's Citizen Science and Visiting Scholars programming. She manages the majority of on-site research projects including the Wildlife Picture Index, grassland monitoring, plant phenology, breeding bird surveys, pond monitoring, the Stephen J. Barnhart Herbarium, and more. Michelle also helps to translate Pepperwood's science for a variety of audiences, including students, interns, and the public.

Steven Hammerich - *BA, Sonoma State University (Environmental Studies: Conservation and Restoration)*

Steven is a lifelong resident of Sonoma County. He grew up on a small farm in northwest Santa Rosa and has always had a connection to the land. He was introduced to Pepperwood in 2010 through classes taken at the Santa Rosa Junior College. The preserve captured his interest and he immediately became a Pepperwood volunteer. After taking the California Naturalist classes at the SRJC, he became a Pepperwood Steward and began working on the wildlife camera project. Now a member of the Pepperwood staff, Steven coordinates volunteers, manages data and equipment, and performs field work on the Wildlife Picture Index research project. He has since graduated from SRJC and then Sonoma State University where he earned a bachelor's degree in environmental studies. Steven enjoys hiking on and off trail in our local hills.

## **Course Description and Student Learning Outcomes**

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

1. Describe the role of the scientific method in understanding natural history.
2. Relate knowledge of natural history to becoming a naturalist, a nature preserve docent, and/or a Land Steward.
3. Integrate knowledge about the interconnectedness of abiotic and biotic factors (including human) and their influence on the natural history of Pepperwood Preserve.
4. Demonstrate skills in making and recording natural history observations in a field journal and via iNaturalist.
5. Apply knowledge of the Pepperwood ecosystem to local and global environmental issues.

Session 1 - Sept. 14: Introduction to the class and general overview, Pepperwood history and land use, nature and field journaling, introduction interpretation and citizen science, including iNaturalist. Lead teacher, Jesse Robinson.

Session 2 - Vegetation Ecology: focus on Oak woodlands, grasslands, and rangeland. Lead teacher is Michelle Halbur.

Session 3 - Reptile and Amphibian Ecology. Lead teachers are Jesse Robinson and Tosha Comendant.

Session 4 - Soil Science and Geology. Lead teachers are Jesse Robinson and Ryan Ferrell.

Session 5 - Bird Ecology. Lead teacher is Nicole Barden.

Session 6 - Mammal Ecology. Lead teachers are Jesse Robinson and Steven Hammerich.

Session 7 - Climate, Hydrology, and Weather Science: Focus on Pepperwood as a Sentinel Site. Lead teachers are Tosha Comendant and Lisa Micheli.

Session 8 - Nov. 2: Wrap up, capstone presentations, and potluck. Sign ups for getting CalNat pins and fulfilling community hours at Pepperwood. Lead teacher is Jesse Robinson.

### **Additional Resources**

- [CalNat YouTube Channel](#): View videos from UC California Naturalist conferences, meetings, and more. The "Ecosystems of California" video series with Erika Zaveleta, is also available on the channel.
- [CalNat Volunteer Portal Help](#): There are resources available to help you familiarize with the UC California Naturalist volunteer portal and commonly used features. Check out our help guides and videos geared toward users and program administrators.

### **Statement on Inclusion and Accommodations**

Pepperwood is responsible for providing reasonable accommodations to program participants with disabilities. If you have a learning or physical need that will require special accommodations in this class you will need to notify your instructor in writing of your

accommodation needs. Please notify us at least 30 days prior to the first class if you require any special accommodations. This will allow us ample opportunity to provide suitable accommodations. We make reasonable accommodations for persons with documented disabilities. Materials will be available in alternate formats (Braille, audio, electronic format, or large print) upon request.