



Rare Plant Survey Protocols

A Scientific Approach

Dates: March 21-22, 2018 (Wednesday - Thursday)

Location: Oxnard, CA & Point Mugu State Park

Instructors: Heath Bartosh, Senior Botanist, Nomad Ecology; Aaron Sims, Rare Plant Botanist, CNPS; plus a guest lecture from the California Department of Fish & Wildlife (CDFW)'s California Natural Diversity Database (CNDDDB) staff

Registration: \$399 CNPS Members / \$429 Non-Members

Target Audience: Professional botanists, ecologists, land managers, resource specialists, academics, and conservationists. Participants should have an understanding of plant terminology and capable plant identification skills.

Description: This course is designed to approach rare plant surveys using the best scientific information available. This scientific approach is built on conducting proper background review and literature searches, evaluating ecological information, assessing annual phenology, appropriate study design based on the scale of the survey area, survey execution, and adequate documentation of rare plant populations encountered.

This 2-day course will include classroom and field settings where the instructors will cover three topic areas: preparing for surveys, conducting surveys, and reporting findings. These topics will be discussed based on applicable botanical survey guidelines. Time spent in the field will be applying the concepts learned during classroom sessions. There will also be a homework assignment due at the beginning of the second day of class. A small amount of time will be spent on the proper methods of collecting voucher specimens. This course includes a certificate of completion for participants who complete CNDDDB forms satisfactorily and pass an open book exam at the end of the course.

Participants will learn:

- How to properly prepare and conduct background research prior to initiating rare plant surveys
- How to design and conduct rare plant surveys focusing on the size and topography of the study area, ecological niches, the importance of reference sites, etc.
- California Department of Fish & Wildlife, CNPS, US Fish & Wildlife, and other relevant botanical field survey protocols
- How to use online databases and resources such as: California Natural Diversity Data Base (CNDDDB), the CNPS Online Inventory of Rare and Endangered Plants, the Jepson eFlora/Interchange, Consortium of California Herbaria, and others
- To fill out CNDDDB forms correctly and thoroughly
- A brief overview of laws pertaining to rare plants
- A brief overview of voucher specimen collecting techniques.

Schedule (subject to change):

Day 1: Wednesday, March 21

Meet at CSUCI Boating Center classroom in Oxnard. Indoor lecture, classroom setting. Each of the topics covered will be discussed in relation to established rare plant survey guidelines.

8:00 am	Meet & greet; coffee and bagels provided
8:30 am	Introductions
9:00 am	Overview of laws applicable to rare plant protection
9:30 am	Preparing for Rare Plant Surveys: background research, evaluating the study area, and study design
12:00 pm	Break for lunch (please bring your own lunch and water)
1:00 pm	Conducting Surveys: survey techniques and field data collection
2:00 pm	How to fill out the more difficult parts of the CNDDDB field survey form
3:00 pm	Reporting Findings: CNDDDB forms and what the guidelines tell us
4:00 pm	Review of background research specific to study area at Point Mugu
4:30 pm	Wrap up discussion, review, and questions
5:00 pm	Break for the day



CRPR 4.2 Catalina
mariposa lily at Pt. Mugu

Day 2: Thursday, March 22

Meet at Point Mugu State Park, in the Sycamore Canyon parking lot. All day in the field. Spend the day learning the local flora, the importance of field keying, how to identify niche/specialized habitat, CNDDDB field form data collection, voucher specimen collection, transect and other surveying techniques based on target species.

8:30 am Meet at Point Mugu, hike to field site (approx. 3 miles round-trip, moderate terrain)
12:00 pm Lunch in the field (please bring your own lunch and water)
1:00 pm Resume field work
4:15 pm Q & A, Exam, Course Evaluations
5:00 pm Workshop concludes

Venue: Day 1 of this workshop will be held at the CSU Channel Islands Boating Center, located at 3380 Bluefin Circle, Oxnard, CA 93036, in classroom 2. Day 2 will be held in the field at Point Mugu State Park, about 20 minutes south of Oxnard on Highway 1 (note that there is a \$12 fee to park at the Sycamore Canyon lot). Maps and directions will be provided to registered participants about a week before the workshop.

Materials Required: Please bring...

- Hand lens
- *The Jepson Manual*, Second Edition
- Clipboard, notebook, and pencil
- Sturdy boots and field clothes appropriate for the conditions
- Drinking water, lunch, and snacks for both days
- Optional: digital camera, GPS unit, binoculars

Materials Provided: CNPS will provide handouts and a certificate of completion after successfully completing CNDDDB forms and passing an open book exam.



2016 Rare Plant Survey Protocols workshop at Pt. Mugu

Physical Requirements: Participants should be physically able to hike 3 miles over uneven terrain and remain in the field for up to 8 hours at a time. On Day 2 we will be hiking about 3 miles round-trip to the field site, and we will remain in the field all day. This workshop will be held rain or shine. We will spend approximately 50% of the time in the field.

About the Instructors:

Heath Bartosh is co-founder and Senior Botanist of Nomad Ecology, based in Martinez (CCo, SnFrB), and a Research Associate at the University and Jepson Herbaria at UC Berkeley. After graduating from Humboldt State University, Heath began his career as a professional botanist in 2002 and has been refining his survey methodologies over the past 10 years. In 2005 he became an active member of the California Native Plant Society, East Bay Chapter. He is currently Rare Plant Committee Chair for the Chapter. In 2009 he became a member of the Rare Plant Program Committee at the state level of CNPS. His role on these committees is to ensure these programs continue to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants; and helps to promote the use of this information to influence on site plant conservation in California.

Aaron Sims is the statewide Rare Plant Botanist for CNPS, with primary duties as implementer of the rare plant status review process and updating and maintaining the CNPS Inventory of Rare and Endangered Plants. He received a degree in Ecology and Systematic Biology with an emphasis in Botany from Cal Poly, San Luis Obispo, where he also assisted with David Keil's Field Botany course for five consecutive years. Prior to employment with CNPS in 2010, Aaron worked in environmental consulting and as a biologist for California State Parks on the Central Coast, performing rare plant and vegetation surveys, prescribed fire management, and producing a multitude of GIS maps pertaining to sensitive resources. Aaron has also contracted with the US Fish and Wildlife Service conducting sea bird monitoring, and with the Morro Bay National Estuary Program, producing the Atlas of Sensitive Species of the Morro Bay Area (2010) and the Green Infrastructure Network of the Baywood Fine Sands Community (2013).

Registration Information: Visit www.cnps.org/workshops to sign up for this class. Registration fees are discounted for CNPS members; please visit www.cnps.org/join if you would like to become a member. Class size is limited to 20 participants. The last day to sign up for this workshop is **Monday, March 12, 2018**.

Cancellation Policy: See full CNPS workshop cancellation policy at www.cnps.org/workshops. The last day to cancel your registration and receive any refund for this workshop is **Monday, March 5, 2018**. Refunds may be subject to processing fees. Please send cancellation requests by e-mail to Becky Reilly, breilly@cnps.org.