



*Hesperocyparis
abramsiana*

THE CYPRESS CONE

CALIFORNIA NATIVE PLANT SOCIETY
SANTA CRUZ COUNTY CHAPTER



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The Evolution and Diversification of the Red Oaks (Agrifoliae) of the California Floristic Province

Speaker: **Al Keuter: Just a regular guy who became interested in California red oaks**

Chapter General Meeting:

Monday, September 10, 2018, 7:30 pm
UCSC Arboretum Horticulture Building

Keying Session: **5:30 pm - Al Keuter and
Deanna Giuliano will be teaming up to
help us identify those pesky California
red oaks.**

The native California red oaks (Agrifoliae) are comprised of only four species but they are often very difficult to identify because of gene flow among them.

A 2017 paper published in the American Journal of Botany reported that a useful approach to understanding the relationships and evolution of the California red oaks was to combine old-fashioned morphological measurements with modern cutting-edge DNA analysis. During the meeting, Al will briefly review the paper to provide us with a better understanding of the complexities of the Agrifoliae.

Since 2013, Al has made 785+ collections of vegetation and fruit from more than 450 red oaks in 31 California counties and has documented the collections in more than 20,000 photographs, micrographs, and high-resolution scanned images.

Al was a co-author of the paper “The evolution and diversification of the red oaks of the California Floristic Province (*Quercus* section Lobatae, series Agrifoliae),” (*American Journal of Botany*, 2017, 104(10):1581-1595), and more recently the author of “Observations of hermaphroditic late-season flowering in the red oak *Quercus agrifolia*” (*Phytoneuron*, 2018(19):1-5).



Of the two varieties of *Q. agrifolia*, the southern California variety (var. *oxyadenia*, sharp acorn oak, left) is less well known to many northern California botanists than that which occurs in Santa Cruz County (var. *agrifolia*, coast live oak, right).



Typical specimens of *Q. parvula* var. *shrevei* (Shreve’s Oak; bottom, left) and *Q. wislizeni* (interior live oak; top, right) are not too hard to tell apart because of obvious differences in leaves and acorns. Less typical specimens can be difficult to identify.

Paired photos are at the same scale.
Photos by Al Keuter

Fall Native Plant Sale is almost here!

by Julia Davenport

What's the best time to plant California native plants? A concise answer can be found in *California Native Plants for the Garden* by Carol Bornstein, David Fross, and Bart O'Brien (2011; page 27), an excellent reference.

"The optimal time for planting most California natives is autumn, except in the mountains, high deserts, and other cold-winter areas of the state. Planting during this period—at the beginning of the rainy season—gives natives many months to establish root systems that will be much better prepared to survive California's long, warm, dry summers. Plants installed in fall also produce [more] new growth and flowers the following spring or summer than those that are planted later."

This year the fall plant sale at the UCSC Arboretum and Botanic Garden comes at the perfect time to purchase plants for your garden. On our website, you will soon have the chance to check out what plants will be available at the sale. The fall sale is also a perfect time to help out your local CNPS chapter in its conservation efforts—the only source of regular income for the Santa Cruz County Chapter is the twice yearly plant sales. We can do a lot with just a little, so every little bit of your help goes a long way.

We will also have a variety of books for sale. Keep in mind that CNPS members get a discount.

CNPS members and members of the UCSC Arboretum and Botanic Garden can come to the sale starting at 10:00 am and shop until noon. If you don't have a membership to either organization, you can purchase one at the sale starting at 10:00 am. Non-members can start shopping at noon and we'll close up shop at 4:00 pm.

Saturday October 13

UCSC Arboretum and
Botanic Garden.

Members: 10:00 am to noon
Public: noon to 4:00 pm



Happy shoppers at the Spring 2018 sale.
Photo by Jackie Pascoe

Species Status: Santa Cruz Cypress (*Hesperocyparis abramsiana*)

by Ruthe Smith



Photo by Al Keuter

Our chapter's mascot, the Santa Cruz Cypress (*Hesperocyparis abramsiana*), is endemic to the Santa Cruz Mountains where there are five known populations. Four of these populations (*H. a.* var. *abramsiana*) occur in Santa Cruz County: Bonny Doon Ecological Reserve (reference population), Eagle Rock (Big Basin State Park), Majors Creek (Wilder Ranch State Park), and the largest one (estimated at 10,000–20,000 trees) on private land in the Bracken Brae area near the Boulder Creek Golf and Country Club (U.S. Fish and Wildlife Service [USFWS] 2013). A closely related variety, *H. a.* var. *butanoensis* (Bartel 2012a and 2012b), occurs in one population on Butano Ridge in San Mateo County.

The species is currently listed by the State of California as Endangered. The USFWS formerly listed it as Endangered as well, but downlisted it to Threatened in 2016. At the time of the original listing as Endangered in 1987, the USFWS estimated there were only 2,300 individuals with an areal extent of 280 acres. In 2012, new surveys revealed a much larger number of individuals (33,000–44,000) in a combined area of approximately 188 acres (USFWS 2013).

Current research needs include re-surveying the populations at Eagle Ridge, Majors Creek, and Butano Ridge, estimating long-term recruitment rates in both burned and unburned areas of the Bonny Doon site and in the other four unburned sites, and management methods that use either fire, or mimic a fire's effect on the species (thinning and/or mechanical scraping of soil), but do not pose a threat to developed areas (USFWS 2013).

Bartel, J.A. 2012a. *Hesperocyparis abramsiana* var. *butanoensis*, in Jepson Floral Project (eds.) Jepson eFlora. Available at: http://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=89292. Accessed August 2018.

Bartel, J.A. 2012b. *Hesperocyparis abramsiana* var. *abramsiana*, in Jepson Floral Project (eds.) Jepson eFlora. Available at: http://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=89293. Accessed August 2018.

U.S. Fish and Wildlife Service. 2013. Santa Cruz Cypress *Hesperocyparis* [*Cupressus*] *abramsiana* Species Report. Available at: <https://www.regulations.gov/document?D=FWS-R8-ES-2013-0092-0003>. Accessed August 2018.

U.S. Fish and Wildlife Service. 2016. Endangered and Threatened Wildlife and Plants: Reclassifying *Hesperocyparis abramsiana* (= *Cupressus abramsiana*) (Santa Cruz Cypress) as Threatened. Available at: <https://www.regulations.gov/document?D=FWS-R8-ES-2013-0092-0006>. Accessed August 2018.

Santa Cruz County Chapter Field Trips

Oaks of Henry Cowell with Deanna Giuliano Saturday, September 15, 10:00 am to 2:00 pm

We will explore some of the interesting oak species in the sandhills in the park and take a look at their adaptations. The hike will be a total of about five miles.

Bring water, layers, and a lunch. Meet at the Juvenile Hall public parking lot on Graham Hill Road.

Quail Hollow with Deanna Giuliano Saturday, October 20, 10:00 am to 1:00 pm

Come see some fall colors and late blooming plants. Species will include *Heterotheca* and *Solidago*. The hike will be a leisurely three miles.

Bring water layers, and a lunch. Meet at Quail Hollow County Park parking lot on Quail Hollow Road.

Contact **Deanna Giuliano** for any questions about either field trip at drosegiuliano@yahoo.com or call **831.278.2699**. Heavy rain cancels.

Habitat Restoration Team

Sunday, September 23, 10:00 am to 1:00 pm Sand Hill Bluff, Wilder Ranch State Park

Saturday, September 29, 10:00 am to 1:00 pm Seabright Beach State Beach

We are a volunteer group working to restore native habitat in the parks and protected lands in Santa Cruz County. Our program provides an opportunity for people to learn about the natural systems that surround them while helping to restore special and wild places. No prior work experience is necessary, just show up at the park. We welcome individual volunteers from 8 to 80 years, as well as special group projects. Wear comfortable layered clothing, bring something to drink, and lots of enthusiasm! We work rain or shine, but if things get particularly unpleasant, we call it a day. Tools provided; bring gloves.

Contact: **Program Leader, Linda Brodman**
831.462.4041, redwdrn@pacbell.net

Keep up with additions to field trips and restoration dates by checking our website at www.cnps.org.

Please Note: Carpooling is encouraged but not sponsored by CNPS.

Help us out and have some fun for a couple of hours or all day by volunteering at the plant sale on Saturday, October 13



Volunteers getting plants prepped for sale day. Photo by Jackie Pascoe

Volunteering is fun and informative—you get to know your fellow members, preview the plant selection, and learn so much more about our native plants. It's a fun group to hang out with, too. Positions are open for unloading plants before the sale (early morning shift), plant valets to help folks get their plants to their cars, plant sales, membership table, directing customers, and general help. If you come, you will be glad you did.

Volunteer shifts are short—just two hours each—so you can easily fit it in to your busy Saturday, and leave enough time to go to Open Studios! However, you are welcome to spend all day with us.

Please email Julia Davenport (juliad@cruzio.com) if you are interested in helping.



Registration is now open for the 2018 Cal-IPC Symposium and this year it will be held in nearby Monterey. Learn about the latest in invasive plant biology and management, and how Cal-IPC is stewarding biological diversity. For more information about scheduled talks, training sessions, field trips, and how to register, go to www.cal-ipc.org.



Hiking • Propagation • Keying Club • Conservation • Habitat Restoration • Field Trips • Herbarium Work • Talks

Membership News

The Santa Cruz County Chapter says “Welcome!” to our newest California Native Plant Society member:

Laurie Pera

Good for you, Laurie. It’s a smart time to join with the Fall Native Plant Sale right around the corner.

We’d love to see everyone at one of our upcoming meetings, out on the trail, or perhaps at one of the Habitat Restoration Team’s invasive plant removal days!

Remember, if you are not a member and would like to come to the plant sale before noon on October 13, you can purchase a membership at the sale.

Note: If you would prefer to receive a digital copy of the Cypress Cone rather than a hard copy, drop Ann Garside a line at annng@calcentral.com to make the switch.



Red Clintonia (*Clintonia andrewsiana*). Photo by Ruthe Smith

Join the California Native Plant Society

Your membership includes *Fremontia*, a journal with articles on all aspects of native plants; *Flora*, CNPS’s new magazine presenting a statewide report of activities and schedules; and *The Cypress Cone*.

Fill out the form below, or go to www.cnps.org and join or renew your membership online.

Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

Email: _____

Chapter Affiliation: _____

- Student/Limited Income \$25
- Individual \$45
- Family or Library \$75
- Plant Lover \$100
- Patron \$300
- Benefactor \$600
- Mariposa Lily \$1500

Make your check payable to CNPS and send to:

**Membership Chair, CNPS,
2707 K Street, Suite 1,
Sacramento, CA 95816**

Like us on Facebook

Contribute to our group! Search for “Santa Cruz County Chapter - California Native Plant Society.” Ask a question about native plants or post your own photos of native plants in your yard or on your hikes.

Opt for email

If you would like to receive your newsletter via email only, please contact Ann at annng@calcentral.com and let her know your preference.

CNPS is a 501(c)(3) non-profit organization dedicated to the preservation of California native flora.

CNPS has 34 chapters throughout the state and membership is open to all persons – professional and amateur – with an interest in California’s native plants and other activities such as natural history, botany, ecology, conservation, photography, drawing, hiking, and gardening.

Donations are tax-deductible and support special projects such as publication of the county Checklist, and conservation activities that preserve important habitats and species in our area. You may earmark gifts for specific areas. (Your membership is also tax deductible, minus \$12 for the journal *Fremontia*, three issues per year.) Make checks payable to CNPS and send to: CNPS, P.O. Box 1622, Santa Cruz, CA 95061.