



Bristlecone Chapter

Dedicated to the Preservation of California Native Flora

The California Native Plant Society

Bristlecone Chapter Newsletter

Volume 42, No. 4
July–August 2021

President's Message

As I write this, we're about to enter a stretch of record-breaking temperatures here in the Eastern Sierra. Paired with extreme drought in the region, the theme for summer 2021 is dry and hot. On springtime hikes in the Owens Valley near Independence, I observed almost no wildflowers this year. Areas adjacent to creeks displayed a few patches of Inyo bush lupine, and that was it! But it's nice to see some California buckwheat flowering in the valley right now.

The lack of moisture is distressing. I worry about wildfire—I think we all do. I wonder, will wildlife have enough water and food to live? How will the pollinators survive? What about the trees that are already stressed from years of drought—will they continue to decline and die? Will we humans run out of good drinking water? It behooves us to always conserve water, and this year it is especially important.

Replacing lawns and exotic vegetation with native drought tolerant plants helps reduce unnecessary water use at your home. "Lawns present the furthest possible deviation from California ecology—consuming 30 gallons of water per square foot each year" writes an expert in native plant landscaping. Drought tolerant doesn't mean that you don't need to water; vegetation may require 3–5 gallons per square foot annually. Once the plants are established, you'll be able to water once weekly to once every few weeks depending upon the species and local climate.

Numerous resources exist to help you transition to a native plant garden. Check out the Bristlecone Chapter CNPS website, "Resources" page. Look for the "Native Plant Gardening" heading for links to excellent locally relevant information. You can also visit the Native Plant Demonstration Garden at the Bishop Community Garden or the Mary DeDecker

Native Plant Garden in Independence. At the DeDecker Garden, while some plants are showing drought stress, others such as desert willow, California buckwheat, desert olive, and Great Basin wild rye appear attractive and healthy.

Native plantings create beautiful environments. They attract and help butterflies, birds, reptiles, amphibians, small mammals, and bees and other pollinators. Over time they create a healthy natural ecosystem, without copious amounts of water. I hope you'll consider planting a native garden in your yard!

—Kelly Bahr

Get-together in Bishop City Park for a Casual Picnic & Presentation

**Wednesday, July 21st, Picnic 6:00 p.m.,
Presentation 7:00 p.m.**

Bishop City Park and Zoom Options for Attendance!

Speaker: Tamsen Dunn presenting *A Novel Mountain Rockcress of the Eastern Sierra*

In 2004, Dr. Alison Colwell, Yosemite Rare Plant Specialist (now curator of the UC Davis Herbarium) collected an inconspicuous, intermediate-looking mustard plant high in the Clark range in southeastern Yosemite. She sent seeds to her colleague Dr. Elizabeth Waters at SDSU to grow and analyze, who discovered that the plant had unusual heat tolerance, surpassing even its desert-dwelling relatives. Genetic analysis showed that this strange plant, labeled "FW1102", conformed to no known species, but contained subgenomes of three other *Boechera* lineages. Intrigued, graduate student Tamsen Dunn decided to investigate further. Tamsen's presentation will describe potential sites in Inyo and Mono counties where FW1102 may have been found in the past. She will share what we know of this interesting

find and may also bring a live specimen from SDSU to show the group and let chapter members know where they can keep a lookout for these special plants in the mountains!

Tamsen is a third year graduate student in the joint doctoral program at San Diego State University and the University of California Riverside where she is studying evolutionary biology with an emphasis on botany and genomics. After 10 years as a scientist at Illumina, Tamsen felt it was time to combine her interest in DNA with her love of native plants, conservation and remote mountains. Tamsen's current research interests include molecular evolution, polyploidy, hybridization and somatic variation. Tamsen enjoys rock climbing and collecting plant samples in the high Sierra with her young daughters.

Meet at Bishop City Park at 6:00 pm, Wed., July 21, under the veranda just west of the Senior Center (682 Spruce St). Picnic tables are available, but you may prefer your own chairs and/or picnic blankets. You may bring a dish to share, or if you are more comfortable not sharing food, bring your own food, snacks, and/or drinks.

Alternatively, attend online at 7:00 pm via Zoom:
Topic: Bristlecone Chapter Dunn presentation
Time: Jul 21, 2021 07:00 PM Pacific Time (US and Canada)

Link to join Zoom Meeting: <https://cnps-org.zoom.us/j/99219137426?pwd=cnV1U1BVeTZBa1lZck05SmFBS1RHZz09>

—Michèle Slaton

Alpine *Draba* Species of the Sierra Nevada

As a botany graduate student, I have spent the last two summers studying the plant diversity within the Coyote Ridge and Flat area just southwest of Bishop. Of the many amazing plants found in this area, one group which has captured my imagination as much as any other is the genus *Draba*, which is located within the mustard family (Brassicaceae, a.k.a. Cruciferae). Mustards tend to get a bad rap in California, probably due to a combination of their generally inconspicuous flowers and the many noxious weeds found within the family. Despite this (or because of it?), I have a

serious soft spot for our native mustards. I owe this wonder and appreciation for the family, in large part, to the incredible local diversity of groups like *Caulanthus*, *Streptanthus*, *Draba*, and *Boechea*. *Draba*, however, is my current favorite because of our shared interest for hanging out in the alpine.

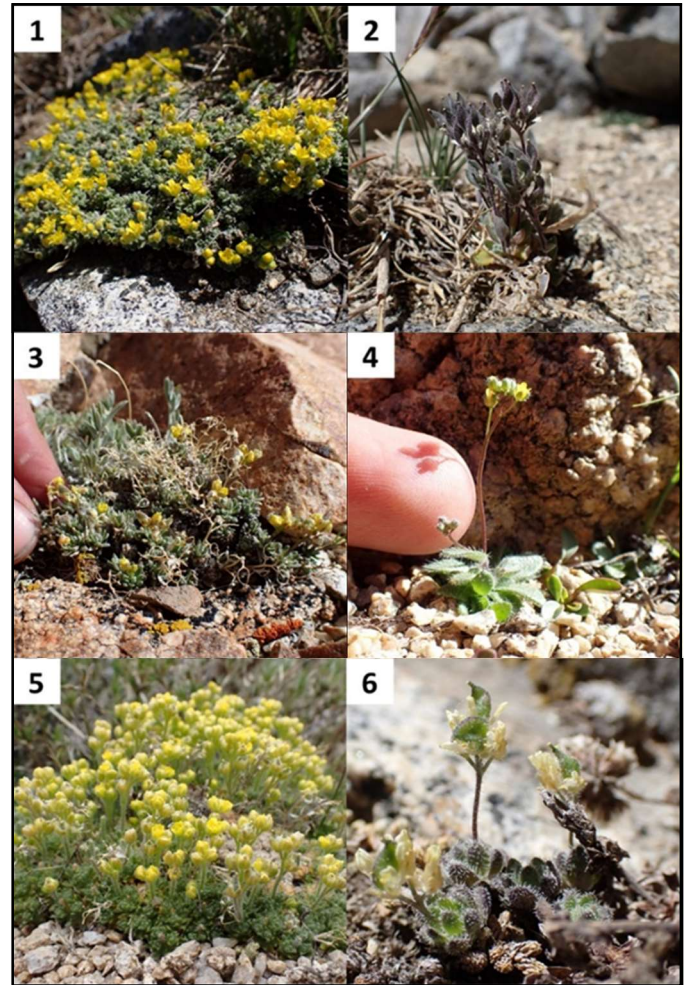


Figure 1. Six *Draba* species from the alpine Sierra Nevada: 1) *D. subumbellata*, 2) *D. breweri*, 3) *D. oligosperma*, 4) *D. albertina*, 5) *D. densifolia*, and 6) *D. lemmonii*.

With approximately 380 species worldwide *Draba* is the largest genus within the mustard family. *Draba* species are primarily alpine and boreal in habitat and found on every continent except Australia and Antarctica. In mountainous regions of western North America, *Draba* is famously diverse and difficult to identify with 121 species currently treated in the Flora of North America (<http://beta.floranorthamerica.org/Draba>). In alpine regions of the Sierra Nevada, *Draba* is the second largest genus with 14 species (behind only *Carex* which has 29!).



Figure 2. Diversity of leaves in six Sierra Nevada *Draba* species: 1) *D. subumbellata*, 2) *D. breweri*, 3) *D. oligosperma*, 4) *D. praealta*, 5) *D. densifolia*, and 6) *D. lemmonii*.

At first glance, many Sierra Nevada *Draba* species look very similar: they are typically low growing annuals or perennials with small white or yellow flowers and branched trichomes (trichomes = hairs in botany speak). Upon closer inspection, however, most species can be distinguished with some patience and a keen eye. Unfortunately, other species (often those which are closely related) can be more challenging to tell apart because the differences between them are microscopic. For instance, some perennial cushion-forming species that grow in the alpine Sierra Nevada (e.g., *Draba oligosperma*, *D. subumbellata*, *D. sierrae*) are distinguished by the number of times individual trichomes are branched on their leaves and fruits! These characters can make identifications challenging, but they also force you to look very closely and, for me, develop a deeper appreciation for these incredible plants and their life histories. Figure 3 shows scanning electron microscope (SEM) images of the highly branched leaf trichomes of *D. oligosperma* (few-seeded draba).

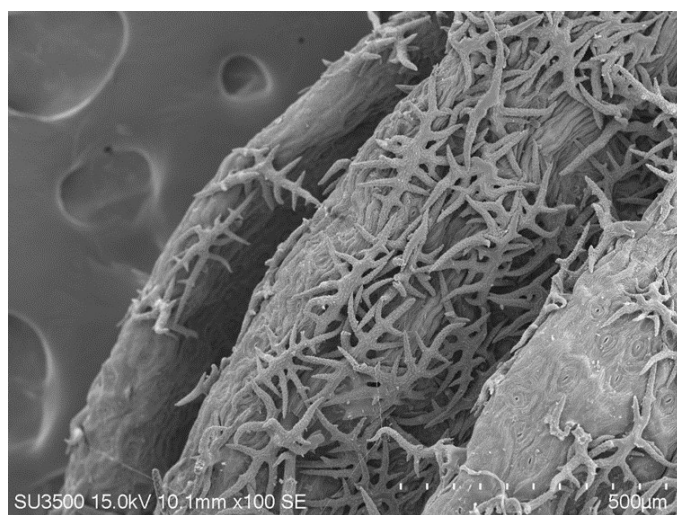


Figure 3. Scanning electron microscope image of *Draba oligosperma* leaves and trichomes. Photos by Marty Purdy.

The more time I spend looking at plants within the Eastern Sierra region, the more impressed I become with how resilient and adaptable they are. And *Draba* species, like many other alpine plants, are rock stars in this regard. They survive and thrive in the two extremes of our region: freezing cold and months of being buried in snow in winter and unrelenting high elevation sun, heat, and exposure in summer. The next time you're hiking in the alpine, I hope you'll keep an eye out for these remarkable plants.

—Marty Purdy

July Conservation Updates

New and improved CNPS Rare Plant Inventory website

Last month, CNPS announced several major and long-awaited updates to the Rare Plant Inventory database and website. The updated online database includes additions and changes in rare plant rankings for nearly 50 taxa. New details for each taxon include a map of occurrences, seed banking status, and up to three photos. Additionally, status information from Bureau of Land Management, US Forest Service, and IUCN Red List are included and updated regularly. CNPS states that photos from the previous website may be missing and experienced volunteers are needed to add diagnostic photos for numerous rare plant taxa. Check out the Rare Plant Inventory for yourself at <https://rareplants.cnps.org/Home/>

Gold exploration in Long Valley

KORE Mining's recently proposed gold exploration project in Long Valley threatens regionally important sagebrush habitat and several rare plant species including *Astragalus johannis-howellii*, *Astragalus lemmonii*, *Astragalus monoensis*, *Atriplex pusilla*, *Boechea cobrensis*, and *Crepis runcinata*. The project area is located north of Hot Creek on lands managed by the Inyo National Forest. In a public scoping letter, the Inyo National Forest stated the proposed project could be carried out under a Categorical Exclusion, which only requires minimal environmental review, due to the duration and nature of the project—"a short-term (less than 1 year) mineral exploration and incidental support activities". At least 1355 comments were submitted in response to this project, including one from the Bristlecone Chapter asking for further analysis of potential impacts to rare plants and sagebrush vegetation. As of June 20, 2021, the Inyo National Forest has not released any updates regarding the proposed mining exploration.

More pumice mining in the Coso Mountains?

Southwest Pumice LLC recently submitted a permit application to the Bureau of Land Management (BLM) to mine up to 100,000 pounds of pumice from the Coso Mountains, northeast of Coso Junction. The total area of impact is estimated at 25 acres, including 12.8 acres of new disturbance, and overlaps with California Desert National Conservation Lands. Two sensitive plants, Joshua tree (*Yucca brevifolia*) and Booth's evening primrose (*Eremothera boothii* subsp. *boothii*), are known to occur in the project area. Comments were due June 23, 2021 and a final decision from the BLM is forthcoming.

—Maria Jesus

Greenhouse Update

The Spring Plant Sale was quite a success and we are just about sold out of all the plants. It seems like the online sale is preferred as people can take a little time and research the plants they want before they buy them.

The shade house is full of good-looking plants for the fall sale. Due to the early heat wave, I had to move them out of the greenhouse, and unfortunately, before the nearby cottonwoods were done spreading their seeds. To avoid having to weed out a lot of little cottonwood seedlings, I used the netting that Loraine

Masten had procured from Ben Franklin and given to plant buyers at the spring sale. The netting did help to keep the unwanted-seed numbers down. It also kept out larger bugs and birds from feeding on the little seedlings. Helpful in many ways, the netting now make the tables look like they are ready for a wedding. We will have more netting available at the fall sale for free.



Protected by donated netting, plants will be ready for the fall sale. Photo by Katie Quinlan.

Other items available for purchase at the online store will be Julie Fontaine's compost tea. We will also have our Chapter t-shirts for sale at the online store and also in person if you want to wait and try them on before buying one.

Just like in the spring, I will post on our website a list of plants that will be at the fall sale a few weeks before the sale event. The sale will be online again with members getting the URL on August 15th and the general public getting it on the 16th. The sale will run through the 20th, and the pick-up day will be August 21st. If you can't pick up your order on that day, please arrange for someone else to pick it up or let me know ahead of time so we can arrange a time for you to get it. Contrary to popular belief I do not live at the station, nor do I work out there full time.

With this spring sale we found that, just like the in-person sale, there is a rush of orders that come in the first day. Online, people were having trouble with items disappearing out of their carts as they shopped because another shopper who had the same low-stock items in their carts checked out ahead of them. So the items in your basket are not safely yours until you pay for them. One way to get around this issue is to make small orders and pay for them, and then go back and do another order. That way you get through

the checkout fast enough to get your plants before someone else pays for them first. Ah, the lessons of how to shop online is a new one for us all.

—Katie Quinlan

Welcome to Those New to the Bristlecone Chapter

It's our pleasure to welcome new members Susan in Cameron Park; Mary in Carlsbad; Alison in Weldon; Libby and Michael in Ridgecrest; Heritiana in Belvedere Tiburon; Aaron and Phoebe in Big Pine, Tom, Heather, Margaret, Michael, Tiffany, and Sarah in Bishop; Brian in Lee Vining; Paul in Monterey; Charles in Sonoma; Spenser in Temecula; Laura in Ventura; Justin in Nevada City; Jean in San Jose; Michael in Sonora; and Susan in Springville to the Bristlecone Chapter. Thank you for joining CNPS and choosing our chapter.



First *Asclepias speciosa* blooms from a plant purchased at the Bristlecone Chapter native plant sale a couple of years ago. Photo by Kim Cash.

Up-Coming Events

(For updated information, visit www.bristleconecnps.org/events)

Chapter Events

Wednesday, July 21, 6:00 pm

Bristlecone Chapter Picnic & Presentation

See details on page 1 of this issue.

Monday, August 16 – Friday, August 20

Native Plant Sale, ONLINE

See details on page 7 of this issue.

Other Events

Wednesday, July 7 – Saturday, July 10

***Manzanar, Diverted: When Water Becomes Dust*
Lee Vining, Bishop, Big Pine, and Lone Pine**

From the majestic peaks of the snow-capped Sierras to the parched valley of Payahuunadü, “the land of flowing water,” *MANZANAR, DIVERTED: WHEN WATER BECOMES DUST* poetically weaves together memories of intergenerational women. Native Americans, Japanese-American WWII incarcerated and environmentalists form an unexpected alliance to defend their land and water from Los Angeles.

A free screening tour of this documentary film includes panel discussions, featuring director and producer Ann Kaneko and local community organizers. Screenings will be held for one evening at each of four eastside locations:

- Wed., July 7, 7:30 pm, Solar Pavilion, Lee Vining
- Thurs., July 8, 7:30 pm, Tri-County Fairgrounds, Bishop
- Fri., July 9, 6:30 pm, Alan Spoonhunter Memorial Gymnasium (1050 S. Richards St.), Big Pine
- Sat., July 10, 7:00 pm, Tribal Gym, (975 Teya Road), Lone Pine

For additional information, visit:

<https://sierrawave.net/manzanar-diverted-when-water-becomes-dust-comes-to-payahuunadu-for-screening-tour/>

Up-Coming Events

(For updated information, visit

www.bristleconecnps.org/events)

Saturday, July 17, 8:00 am

Bodie Mountain Summit Hike

Join Jora Fogg and Wendy Schneider from the Bodie Hills Conservation Partnership for a spectacular hike with panoramic views of Mono Lake and the Bodie Hills. Hikers will learn about the plants and species that call this area home, and the coalition's efforts to protect the area from industrial open pit gold mining. This high elevation landscape is important habitat for the Bi-state Sage Grouse, pronghorn, and many other species. There is a limited number of participants so please go to <https://friendsoftheinyo.org/event/bodie-mountain-summit-hike/> to sign up soon and then receive the event's updates.

Tuesday, October 5 – Thursday, October 7

The Second Conference on the Research and Management of High Elevation Five Needle Pines in Western North America

Virtual Conference

Scientists, management professionals and outdoor enthusiasts—join us in exploring the latest techniques, research findings and land management recommendations on High-Elevation Five-Needle Pine Ecosystems. Register at www.highfivepines.org

Saturday, October 26 – Tuesday, October 29

Cal-IPC 30-Year Anniversary Symposium Online or in-person still TBD

Connect with colleagues from across the state—and beyond—to get the latest updates on effective tools, relevant research, and strategic management approaches. Join for special session talks on invasive plant management to protect biodiversity in California and beyond, strengthening conservation by broadening community access, lessons learned from 30 years of invasive plant management, and new mapping tools to increase project effectiveness. Symposium features also include discussion groups, and posters covering a wide range of topics related to invasive plant biology and management.

Register now before early bird rates end August 20.
www.cal-ipc.org/resources/symposium/register/

**Please send any submissions to us by
August 15, 2020 for the next issue.**

Bristlecone Chapter Directory

President: Kelly Bahr kbahr@cnps.org

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Chapter Council Delegate: Stephen Ingram

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Conservation/Partnerships: Maria Jesus

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Education: Martin Purdy education@bristleconecnps.org

Programs: Michèle Slaton vicepresident@bristleconecnps.org

DeDecker Grants: Michèle Slaton grants@bristlecone.org

Field Trips: Sue Weis treasurer@bristleconecnps.org

Bishop Plant Sales: Katie Quinlan

plant_sale@bristleconecnps.org

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Newsletter: Elaine Chow newsletter@bristleconecnps.org

Membership: Elaine Chow membership@bristleconecnps.org

Website: Maggie Riley webmaster@bristleconecnps.org

T-shirt Sales: Katie Quinlan plant_sale@bristleconecnps.org

DeDecker Gardener: Kelly Bahr kbahr@cnps.org

Historian: **OPEN**

Mammoth Plant Sales: **OPEN**

Hospitality: **OPEN**

We need volunteers to help keep our chapter going and growing. Please contact any one of us to find out how you can volunteer as a committee chair and other ways to be a more active member.



California Native Plant Society
Bristlecone Chapter



Native Plant Sale

Online Sale August 16th – 20th

Pick-up Saturday, August 21st

Where: White Mountain Research Center, 3000 E. Line St., Bishop

A complete list with quantities is available on our website

<http://bristleconecnps.org>



Plant Prices

Small tree pots	\$5.00
Cactus pots	\$5.00
Gallon Pots	\$8.00
Tall tree pots	\$10.00
5-gallon pots	\$25.00
10-gallon pots	\$35.00

The California Native Plant Society

Bristlecone Chapter

P.O. Box 364

Bishop, CA 93515-0364

RETURN SERVICE REQUESTED

Note: If you still receive this newsletter via US Mail, please help the Bristlecone chapter save money, energy, and trees by sending your email address to newsletter@bristleconecnps.org so you can receive the electronic version.

Membership

The California Native Plant Society is an organization of laypersons and professionals united by an interest in the plants of California. It is open to all. The society, working through its local chapters, seeks to increase the understanding of California's native flora and to preserve this rich resource for future generations.

To join or renew online: Go to www.cnps.org and select JOIN/RENEW (at the top of the webpage or select it after clicking the menu button) or mail the form below:

Name: _____

Address: _____

City: _____ **State:** _____

Zip Code: _____ **Phone:** _____

Email: _____

I wish to be affiliated with the Bristlecone Chapter: _____

Other: _____

Mail To / Make Payable To:

California Native Plant Society, Attn: Membership

2707 K Street, Suite 1

Sacramento, CA 95816

Gift Contribution: _____ Wherever needed ☐
Specific Area: _____

Membership Category

<input type="checkbox"/> Student / Fixed Income	\$25
<input type="checkbox"/> Individual	\$50
<input type="checkbox"/> Plant Lover	\$120
<input type="checkbox"/> Supporter	\$500
<input type="checkbox"/> Patron	\$1,000
<input type="checkbox"/> Benefactor	\$2,500
<input type="checkbox"/> Steward	\$5,000
<input type="checkbox"/> Guardian	\$10,000
<input type="checkbox"/> Additional Contribution	_____

Go Perennial! To become a monthly sustaining (perennial) member, join or renew online at www.cnps.org/perennial

Membership Type: ☐ New Member
☐ Renewal