Dedicated to the Preservation of California Native Flora

The California Native Plant Society

Bristlecone Chapter Newsletter

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President's Message — *Stephen Ingram*

The transition from summer to fall is an alluring time of year. As I write this in late August at the end of "meteorological summer," the hottest days are mostly behind us, and temperatures are notably cooler in the morning. Most flowers in the high country have either withered or transformed into fruits. As nights lengthen and temperatures drop, photosynthesis slows down, chlorophyll production wanes, and other more stable pigments become visible within leaves. Fireweed leaves are already becoming deep red and young aspen trees are sporting their first yellow leaves of the coming fall season. Make sure you get out there to see the last flowers and first fall color of 2025.

Another sign of late summer/early fall is the empty tables at the Deepest Valley Native Plant Propagation Center. On August 16, more than 120 customers purchased over 1,300 plants, and took them home to plant. Our chapter will use most of these proceeds to support the DeDecker Botanical Grant Program. Thanks to all of you who purchased plants and a huge thank you again to Katie and her cadre of volunteers!

See more about the plant sale on page 4, and read another installment of botanical research news by one of our DeDecker Grant recipients on page 5. And a note from the DeDecker Grant Chair — Allison and two of our other grant recipients, Charles Boissavy and Matthew Yamamoto, gave some great presentations for our chapter on their projects. Watch our website for upcoming events so you don't miss future programs!

General Meeting

Monday, September 22 at 7pm in the George Lozito Conference Room at Jill Kinmont Boothe School, 166 Grandview Drive in Bishop

Speaker: Dr. Diana Macias will discuss *From Seeds to Stewardship: Collaborative Science for Sustaining Pinyon Woodlands*

This talk shares the story of how PiCCA (Pinyon Community Climate Action Network) developed, and what we are learning from it. I'll begin with a broad survey of reproductive trends and needle traits across the range of pinyon pine, showing how climate stress shapes both cone crops and the ways trees balance water use.

I'll then turn to Wunupu, an Indigenous-led community science monitoring program that is documenting woodland health and resilience through hundreds of community observations in traditional gathering areas. I'll also share new genomic results from Colorado Pinyon that highlight the critical role of chemical defense in survival — and how the optimum defense from beetles appears to shift when trees are under drought stress.

Singleleaf pinyon cone with nuts.

Photo by Stephen Ingram

Finally, I'll touch on a more sensory and collective dimension: a pine nut taste test, where seeds from different regions invite us to think about how ecology, genetics, and culture all converge in something as simple, and profound, as flavor.

Dr. Diana Macias is a Postdoctoral Researcher at UC Berkeley.

July Field Trip Report *by Sue Kelso*

Sunday July 13: Horseshoe Meadows with Steve Matson

Eriastrum densifolium
(Giant woolystar)

On Sunday, July 13, the CNPS Bristlecone Chapter hosted a field trip to Horseshoe Meadows, about 25 miles outside Lone Pine and at nearly 10,000 feet elevation. Participants included 12 people, 4 cars, 3 Steves, 2 Sues, and as I like to add, a partridge in a pear tree. Participants hailed from Bishop (Bristlecone Chapter), Los Angeles County (San Gabriel Mountains Chapter), and the San Francisco Bay Area (Santa Clara Valley Chapter). We caravaned up Horseshoe Meadows Rd with two stops before reaching Horseshoe Meadows. Additional stops could have been possible with fewer cars, but it was great to have diverse participation.

The first stop was at about 5400 feet elevation. Notable sightings included *Eriastrum densifolium* (giant woollystar), *Greeneocharis circumcissa* (cushion cryptantha), and *Loeseliastrum matthewsii* (desert calico).

The second stop was at 9600 feet elevation and involved a bit of scrambling — alas, a special *Erythranthe* was not to be found — but there were quite a few interesting plants. Among them were *Eriogonum* (buckwheats: at least 3 taxa per my notes), *Chamaebatiaria millefolium* (fernbush), a very impressive specimen of *Holodiscus discolor* (oceanspray), and *Pinus flexilis* (limber pine), which I'd only recently discovered really does have flexible branches. And there were a few smaller plants we observed: *Ivesia saxosa* (rock mousetail), *Orochaenactis thysanocarpha* (mountain pincushion), *Nama rockrothii* (Rockroth's nama), and *Keckiella rothrockii* (Rothrock's keckiella).

Nama rothrockii
(Rothrock's fiddleleaf)

Castilleja praeterita
(Salmon Creek paintbrush)

The main stop was Horseshoe Meadows, where we had lunch before starting a 2 mile walk across the meadow at 9900 feet elevation and seeing many interesting plants. My favorites included *Frasera tubulosa* (Kern frasera), *Hulsea vestita* (pumice alpinegold), *Diplacus mephiticus* (skunky monkeyflower), *Castilleja praeterita* (Salmon Creek paintbrush), *Eriogonum ovalifolium* var *nivale* (Sierran cushion buckwheat), *Pedicularis attolens* (little elephant head), and *Botrychium simplex* (little grape fern or moonwort). Arguably the most unusual was *Ranunculus aquatilis* var *diffusus* (white water buttercup), which actually grows in/under the surface of the stream that runs across the meadow.

All in all, it was a delightful and informative field trip, with an always welcome opportunity to meet new people and plants. I personally lost track of how many new life plant observations I made. Several of us capped it off with a visit to the Eastern Sierra Ice Cream Company in Independence.

Photos by Sue Kelso

In Memory of Del Wiens *by Wendy Wiens and Michèle Slaton*

Botanist, Sailor, and Son-in-law of Mary DeDecker

Delbert "Del" Wiens, scientist, sailor, and storyteller, passed away in Boise, Idaho, on March 21, 2025, at the age of 92. Born on July 9, 1932, in Munich, North Dakota, Del is survived by his three daughters — Paula, Wendy, and Alison — and four grandchildren, all of whom remember him as a storyteller, a thinker, and a restless explorer. He was preceded in death by his beloved wife Carol in 2022. Del carried a personal kind of certainty — one he once shared through the words of Laurens van der Post: "The only thing you have to do is follow the meaning. The meaning will take you where you need to go."

Del held a B.A. in Botany from Pomona College, an M.A. from the University of Utah, and a Ph.D. from Claremont Graduate University in California. His scholarship carried both depth and vision, uniting scientific precision with a lifelong wonder of life's inventive strategies. He often said with quiet humor that plants "can do everything we can do, and they don't even have to move."

Del's professional career began at the University of Colorado in Boulder, where he served as an Assistant Professor of Biology. He was later awarded a prestigious Fulbright Lectureship in Ecuador, where he taught and held the title of honorary professor at the University of Guayaquil. Afterward, he joined the University of Utah as a Professor of Biology, Curator, and Director of the Garrett Herbarium. His research — spanning chromosomal variation, plant systematics, and mechanisms of extinction — was matched by a natural gift for teaching.

Del believed that real knowledge began in the field, eyes trained on the living world. His field research took him across six continents. With Carol and their three daughters by his side, he traveled overland in a Land Rover from the north of Africa to the Cape of Good Hope, documenting pollination systems and chromosomal patterns in mistletoe plants. His fieldwork extended from the Galápagos Islands to Papua New Guinea, from the Canadian Arctic to the highlands of Nepal. Among his favorite discoveries were the long-nosed rodents of South Africa, which pollinate Protea plants in a rare and surprising example of non-flying mammal pollination—a subject that captivated both his scientific imagination and his delight in nature's ingenuity and that undoubtedly intrigued many botanists over the decades.

Del's research was supported by grants from the National Science Foundation, the Smithsonian Institution, the National Geographic Society, the U.S. Forest Service, and others. He co-authored definitive works on mistletoes and evolutionary biology, including Dwarf Mistletoes: Biology, Pathology, Systematics and Mistletoes of Africa. He authored or contributed to more than 100 scholarly articles, including publications in two of the most prestigious scientific journals: Science (U.S.) and Nature (U.K.). He was also honored by having a monotypic genus colorfully named for him *(Delwiensia*), a taxon that has been subsequently classified as a sagebrush *(Artemisia).*

Del brought keen insight and a hands-on approach to everything he did. He served on the Utah Governor's Environmental Advisory Committee, delivered public lectures on human ecology, and never stopped challenging others to think in new ways about the natural world. Among my (Michèle's) own warmest memories of Del were conversations trading observations of rare shrub populations, in which he would invariably inquire as to whether I had taken the time to count the seed to ovule ratio — and to which he would chuckle "Bah, ecologists…" after I answered no.

After retirement, Del remained a Research Associate at the UC White Mountain Research Center, continuing his studies with undiminished zeal. Much of his work centered on the shrub July gold (*Dedeckera eurekensis*), a plant with personal connection for Del because it was discovered on July 4, 1974, by his mother-in-law, Mary DeDecker, the well-known and self-taught botanist and pioneering plant conservationist in the Owens Valley. Mary was only the second botanist to have a new plant genus named in California since 1949. As Del studied

continued on page 4

continued from page 3

the fragile genetic dynamics of July Gold decades later, his research carried forward her legacy — linking two generations of field botanists through a shared passion for understanding and protecting the plants of the Inyo Mountains and beyond.

Even in his final years, Del continued to challenge assumptions and expand the boundaries of scientific thought. At the age of 88, he published a major paper in the Quarterly Review of Biology (June 2020, Volume 95, No. 2, pp. 109–124) entitled "Validating the New Paradigm for Extinction: Overcoming 200 Years of Historical Neglect, Philosophical Misconception, and Inadequate Language." The work reflected his enduring interest in how scientific paradigms shape knowledge and how outdated frameworks can blur what the evidence is trying to show.

Del's life with Carol Wiens (formerly DeDecker) spanned nearly 65 years — a partnership shaped by love and an unrelenting drive to explore. After retiring, they embarked on a global sailing voyage that would span nearly a decade, from 1996 to 2005. Del lived his life in search of what was just beyond the next ridge — looking for the next idea, the next unanswered question. Del will be remembered not only for what he discovered, but for the depth of his longing and the way he followed it with wonder.

Native Plant Sale News *by Native plant propagator Katie Quinlan*

Despite the rodents' attempt to decimate our plant inventory, the fall plant sale was a resounding success. I managed to have 1800 plants for sale. Since 2018 we have averaged 87 customers, and this year we had 122. The number of pollinator grantees has stayed steady for the last few years and that trend continued this year as well. There was a steady stream of customers from 8 until about 9:30 and then it tapered off, but we were selling right up to 11 am, when the wind picked up and gave us the signal that it was time to be done.

Between the Gardenfest plant sale and the fall sale we had 232 customers and sold 2076 plants. We have made about $8,000 for the student scholarships.

Plant of the Season *by Stephen Ingram*

Sierra Gentian (*Gentianopsis holopetala*)

Photo by Stephen Ingram

Sierra gentians flower late in the summer and bring bright spots of bluish-purple to grassy mountain meadows. Trumpet-like, tubular flowers up to two inches long tower above the basal and lower cauline leaves on a peduncle longer than the stem it arises from. The tips of the four petals curl outward like an open door that welcomes pollinating bumblebees. When a bumblebee enters a Sierra gentian flower to gather pollen, it dives in headfirst, struggling into the tight-fitting flower.

Most plants of the high Sierra are trees, shrubs, or perennials because of the harsh climate and short growing season. Sierra gentian is one of the few annuals to grow here, but some botanists note it can also grow as a short-lived perennial. Joy England, author of Vascular Flora of the Upper Rock Creek Watershed (and former DeDecker Grant recipient), notes that annuals or short-lived perennials, like Sierra gentian, make up 12.5% of the flora.

Sierra gentian is found most often in moist meadows, but it also grows in lodgepole and whitebark pine forests. Although this species can be found as low as 6,000 feet, in the Eastern Sierra region it is most abundant from 9,000 feet up to 12,000 feet or so. Sierra gentian is almost a Sierran endemic, found throughout most of the Sierra, but it also grows in the White-Inyo Range of western Nevada.

DeDecker Grant News

Progress Report from 2024 DeDecker Grant recipient Allison Autry, PhD Botany Student, California Botanic Garden and Claremont Graduate University: *Conserving Rare and Disjunct Orchids in a Changing American West*

Thanks to the Bristlecone Chapter's generosity in awarding me the Mary DeDecker Botanical Grant, I was able to make significant progress in my research on the population genetics and conservation of Spiranthes orchids in California and Nevada in 2024 and 2025. My research aims to gather information on, and ensure the continued survival of, the rare and under-researched *Spiranthes infernalis*. This project will provide valuable population-level information for disjunct and isolated *Spiranthes* occurrences via a study that integrates population genetic and taxonomic research, demographic monitoring and surveys, life history studies, seed banking, propagation trials, and restoration planning.

Spiranthes infernalis

Spiranthes infernalis with (Gray hairstreak) pollinator

Author Allison in Ash Meadows Spiranthes habitat

Over the course of the last two field seasons, I visited both known *Spiranthes infernalis* populations in Nevada, the Fish Slough *Spiranthes* population near Bishop, CA, and a variety of other *Spiranthes* populations in Northern California and the Sierra Nevada for outgroup sampling. The 2024 DeDecker grant made it possible for me to travel to Fish Slough, McGee Creek, El Dorado National Forest, Inyo National Forest, and Sequoia National Forest to conduct surveys and gather samples for my research. The Fish Slough *Spiranthes* population had last been surveyed in 2023 by a team of botanists from California Botanic Garden, and that year they managed to re-locate only a single individual. I was able to find a total of three plants at the site in July 2024, which I relocated in 2025. Tissue samples for genetic analysis were collected from all three plants.

In total, I collected tissue samples from over 300 individual plants during the course of my field work. So far, I have been able to successfully extract DNA from nearly 200 of these samples using standard CTAB protocol, and have since prepared and sent out two 96-sample libraries for ddRadseq sequencing at UC Riverside's lab. These data have provided me with information on the genetic diversity and population structure of *Spiranthes infernalis* across its range. I will also be able to make phylogenetic assessments that will provide some clarity on the identity of the Fish Slough *Spiranthes*. These assessments will use Nevada *S. infernalis* samples and identifiable California *Spiranthes porrifolia* and *Spiranthes romanzoffiana* samples to gain information on the placement of the taxonomically challenging Fish Slough plants.

I have analyzed the data from my first two ddRadseq libraries. The preliminary data resulting from this analysis show clear genetic differentiation between *S. infernalis* in Ash Meadows and Railroad Valley, but genetic connectivity and a lack of differentiation between the subpopulations at both of these sites. Currently, I am beginning lab work to extract DNA from the tissue samples I collected this summer. Once this DNA has been extracted, sequenced, and analyzed, I plan to generate Bayesian and Maximum Likelihood phylogenetic trees comparing relationships between known populations of *S. infernalis* and *S. porrifolia* to the Fish Slough *Spiranthes*.

INSIDE:

- General Meeting: Monday, September 22nd at 7pm
- In Memory of Del Wiens
- Horseshoe Meadows Field Trip Report
- Fall Plant Sale Report:
- Plant of the Season:
  Sierra Gentian *(Gentianopsis holopetala)*
- DeDecker Grant Progress Report: Allison Autry

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