

NORTHERN CALIFORNIA BOTANISTS

BOTANICAL LEAFLETS

ISSUE 30 SPRING 2023



PRESIDENT'S MESSAGE

With the abundant rain this winter we have had a wonderful spring with lots of wildflowers. I hope all of you have been able to get out and enjoy them! My extended family lost our cabin in the Dixie Fire in 2021 and now we are ready to build a new cabin. We have the permits, the plans and a contractor. Now we just need the 10 feet of snow to melt so we can access our cabin site!

We are planning to have our next symposium in January 2024. Our board is starting to plan the sessions now. We will keep you informed as we develop this upcoming symposium.

Joe Silveira has joined our board again. He was a board member from 2006 to 2014 and has now joined us again. Welcome Joe! Israel Boro-

kini has ended his time as a board member. Thank you Israel for all your hard work. He has taken an Assistant Professor position at Montana State University. Congratulations Israel!

We have awarded three people the Dean W. Taylor Botanical Exploration Memorial Award for the second year. This award is to honor Dean Taylor's goals of finding unknown botanical diversity in northern California. Each of these three people received this award of \$500.00 each. Hopefully each of these awardees will be able to add to the botanical diversity in northern California.

We again have solicited students to apply for our Barbara Castro Student Research Scholarships and re-

ceived many great applications. Twelve scholarships were awarded by Northern California Botanists this year. Two of these were awarded with money provided by the Shasta and the Sacramento Valley Chapters of the California Native Plant Society. Thank you very much to both of those chapters for providing money for scholarships! The twelve scholarships were awarded at \$1,000.00 each! Hopefully a new batch of botanists doing vital work in Northern California will develop from those scholarships.

Take care and enjoy the wonderful displays of wildflowers seen this year!
 –Linnea Hanson, President

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MYSTERY PLANT

This CRPR 2B species stumped me for quite a while, but now that I know what it is I feel silly about taking so long to figure it out. Even not being able to guess its family! Perhaps those of you who spend lots of time around sagebrush know this one right off, but seeing a bunch of these bright green plants, about a foot tall, popping out of sandy soil around the muted greens of the sagebrush was certainly new to me. While rare in California, this species is widespread in dry sandy places throughout the western U.S.



Answer on Page 5

FROM THE EDITOR

My apologies that it is mid-summer as this “spring” newsletter comes to you. This has been a particularly great field season this year and I have been taking as much advantage of that as possible. That,

and another difficult personal life change, have resulted in the delay in producing this newsletter.

One side effect of that delay is that some items that you read in this newslet-

ter report on results of activities carried out in this field season. All good information, though, and I hope you enjoy reading this issue. —Lawrence

DEAN W. TAYLOR BOTANICAL EXPLORATION MEMORIAL AWARD

Most of the conversations I had with Dean Taylor would start out being about botany, but would eventually wend their way into a discussion of geology and ecology. He loved to talk about the specific stressors that plants experienced as they grew on serpentinite, limestone, gabbro, recent lava flows and ancient soils, and how the plants that managed to survive these circumstances were often isolated

from their conspecific neighbors. He'd then dip into island biogeography, and note how every soil that provides strict limitations on what species could survive there was like an island, and that California's unique geologic diversity meant that botanically, it was like a dozen archipelagos occupying the same state -- one archipelago for the ultramafic-tolerant species, one for the seasonal wetland spe-

cies, one for the limestone-loving species. It was dizzying to think about all these island chains, locked in the rock, harboring incredible plant diversity. It continues to be fitting that our second year of awards in Dean's memory focus on exploring different geologic archipelagos throughout Northern California.

—Jane Van Susteren



Magdalene Lo: *Castilleja* species complex in under-collected areas of Humboldt and Mendocino counties. Magdalene and postdoc Adriana I. Hernández collected vouchers, tissue for genetic studies, and morphological data from several *Castilleja* populations in Mendocino and Humboldt Counties. These collections and data are part of the current research on *Castilleja*'s phylogenetic relationships, morphology, and ecology at the Sarah J. Jacobs Lab at the California Academy of Sciences.



John McLaughlin: The Bryophyte Flora of Henry W. Coe State Park. John has completed his bryophyte fieldwork at Henry Coe State Park, and is currently editing his manuscript for publication.



Jen Pagel: Flora of the Snow Mountain Wilderness, North Coast Range, Mendocino National Forest. Jennifer Pagel had some access issues to the Mendocino National Forest due to road damage, but with backpacking, willpower, and amazing volunteers, has managed to visit her site twice. She's collected over 90 species, and hopes to make two additional trips this season.



2023-2024 STUDENT RESEARCH SCHOLARSHIP AWARDS

NCB provides scholarships for students doing research on botanical subjects in northern and central California. The Sacramento Valley and Shasta chapters of CNPS generously support this program by funding an additional scholarship each. There were many great research projects to choose from. Congratulations to these students and thank you to all that submitted applications!

| Recipient | Degree | College | Title of Research Project |
|-------------------|--------|--------------------------------------|--|
| Sage Ellis | MS | University of Nevada, Reno | Quantifying the status and long-term demographic trends of a Lake Tahoe alpine endemic, <i>Draba asterophora</i> |
| Ash Gill | PhD | Ohio State University | Investigating cryptic diversity in California pinefoot |
| Anjum Gujral | PhD | University of California, Davis | Investigating changes in forest structure through trait-demography relationships |
| Hugh Leonard | PhD | University of California, Santa Cruz | The role of drought stress physiology in shaping post-fire succession in a mixed vegetation community |
| Charlotte Miranda | MS | San Jose State University | Soil generalist, <i>Erysimum capitatum</i> , differential adaptation to serpentine soils of origin across California latitudinal gradient |
| David Mitchell | PhD | University of California, Davis | Improving native tree and shrub restoration by amending degraded soils, enhancing mycorrhizal symbioses and suppressing soil-borne <i>Phytophthora</i> disease |
| Halina North | MS | University of Nevada, Reno | Quantifying tree mortality effects on plant community composition and phenology in the Central Sierra Nevada |
| Hayley Reid | MS | University of Nevada, Reno | Aboveground and belowground limitations of <i>Pinus monophylla</i> establishment after a recent fire |
| Victor Rossi | U | Santa Clara University | The biochemistry of attraction: red flowers and their hummingbird pollinators in California |
| Philippa Stone | PhD | University of British Columbia | Systematics in <i>Triantha</i> (<i>Tofieldiaceae</i>) |
| Rachel Tageant | MS | Claremont Graduate University | A floristic inventory of the Owens River Headwater Area, Mono County, California |
| Brooke Wainwright | PhD | University of California, Davis | Proposing a novel drought trait framework for California grasslands and beyond |

NCB WELCOMES ITS FIRST STUDENT BOARD MEMBER

Last year the NCB board began exploring the possibility of adding a Student Board Member, to increase diversity and add energy to the organization. A call was then sent out soliciting interest in this position from students at northern California institutions. We are pleased to announce the appointment of Rebecca Nelson, from UC Davis to this position.

Rebecca Nelson is a PhD candidate in the Harrison and Valdovinos labs at the University of California Davis. Her research examines how human-caused changes to the environment affect serpentine plants and their relationships with pollinators in California grasslands. Her work focuses on serpentine plants in the North Coast Range. She is a freelance science writer and poet. She received her B.S. in Biology and a minor in creative writing from Stanford University.



Rebecca Nelson

MEMORIES OF BARBARA CASTRO

Barbara Castro passed away as last fall's NCB newsletter was being produced, so there was limited time to prepare the nice tribute that was included there. Since then there have been requests to include some personal thoughts about Barb, which we are including here. Of course, I am rather biased on this subject since I had the privilege to share 33 years of a personal relationship with her, which followed several years of general friendship which began when we each enrolled in the M.S. Botany program at Chico State in 1985. Through these many years we were able to work together during a number of periods of botanical employment, including at Plumas National Forest, CA Dept. of Water Resources, and other consulting projects. Plus we both felt compelled to collect many plant specimens for the Chico State Herbarium (now the Ahart Herbarium) over the years, which entertained us through many a vacation trip around northern California and elsewhere.

Many people didn't know that we were a couple although we attended many botanical events together. Each of us had a strong independent streak, especially Barb, and that individuality, combined with a very real personal caring for each person she interacted with is part of what endeared her to everyone. I remember incidents from before we were a couple when we would both be working in the herbarium on our own separate projects, hunched over dissecting 'scopes looking at one thing or another (me probably looking at a sedge, Barb probably looking at something in the mint family), and Rob Schlising would come in and make a comment like "two peas in a pod." Barb would bristle at that comment, taking it to imply that there was more of a connection between us than there was. Funny to look back at that now, since at the time neither of us had any hint that we would end up as a couple with 33 years of living together and sharing our lives. And much, much more, of course, but let's leave room for some other memories.

—Lawrence Janeway

Barb was an amazing mentor. She was extremely knowledgeable and understanding. She always showed passion about her job and was always excited to help in the office or in the field. Spending time with Barb was a treat professionally and personally. She taught me so much about our local vernal pool landscapes and vegetation, and about writing management plans. Barb was good at GIS, report writing, plant identification, and field surveys. Barb was also there for me personally when I started a family. She brought me groceries when I had a new baby and she helped me move into a new home when I had a 2 year old and was pregnant with my second child. She was a great friend and coworker. She touched so many people and is greatly missed. —Robin Carter-Ervin

Although botanically trained, a career in botany eluded me until I was fortunate enough to meet Barb. She was willing, even eager, to share her hard-earned botanical expertise with junior staff. Plus she was a true intellectual, fascinated by every aspect of the natural world. This made for captivating conversations, whether they were during our lunch break on a vernal pool mima mound, or while waiting for a sluggish ArcMap tool to run. She was a confident botanist, secure in her professional role, and prone to leadership. I once watched her conduct environmental awareness training for 20+ heavy equipment operators where she enthusiastically described the ecological importance of the rare Stony Creek spurge, an inconspicuous and rather homely plant, affectionately coined by sweaty surveyors as the "spurge scourge." If only every rare plant, especially the modest ones that wink into extinction without notice, had a champion like Barb. —Evan MacKinnon



Memories continued on page 6

NORTHERN CALIFORNIA BOTANISTS IN ACTION



John Bair is a botanist/plant ecologist that has focused on improving riparian vegetation and geomorphic function on regulated rivers for 30 years. John is the Senior Riparian Ecologist at McBain Associates - Applied River Sciences in Arcata, California. He completed his Master of Arts under Dr. John Sawyer and is a recognized expert in willow

and cottonwood taxonomy. John investigates the inter-relationship between riparian plant dynamics, geomorphology, and hydrology to recommend flow management and channel restoration approaches that would improve the conditions on regulated rivers. He has conducted numerous detailed field-based floristic inventories and oversees study design, field data collection, plant identification, mapping and classification, and analyses of environmental variables. John helps private, tribal, state, municipal, and federal agencies to clarify requirements and restrictions related to the implementation complex and large scale river restoration.



Amy Hiss works with Jacobs Engineering (formerly CH2M HILL) as a senior botanist and wetland ecologist. Her responsibilities at Jacobs include leading, managing, and completing rare plant surveys throughout California, mapping natural communities, preparing environmental reports, writing mitigation and monitoring plans, and completing permit applications. Amy earned her B.S. in Botany and Environmental Science at Humboldt State University and her M.A. from San Francisco State University, where she studied the systematics of the *Linanthus bolanderi* complex under Dr. Bob Patterson. Prior to working as an environmental consultant she worked as a botanist for CNPS and CNDDDB in Sacramento, TNC in Oregon, and Plumas National Forest. Amy loves finding and documenting rare plants, working with and mentoring junior staff, and helping Jacobs better understand rare plants.



Chelsea Morgan is a Botanist for the West-zone of the Tahoe National Forest with 15 years experience with botanical and ecological related federal public land management. After many years of glorious seasonal work in the great outdoors with many different agencies, Chelsea found that the Forest Service was where she belongs and botany was where her interests fit best. The challenges Chelsea enjoys with her job include working with diverse project teams to represent botanical resources, mapping fens while doing range monitoring, eradicating weeds from sensitive serpentine habitat, and continuously having to learn and be challenged by the species she manages.



Joe Silveira is returning to the Northern California Botanists board of directors. He retired from the U.S. Fish & Wildlife Service after 29 years, mostly working on habitat conservation projects involving restoration, management, monitoring and research projects at Sacramento National Wildlife Refuge Complex. These included riparian floodplain forests, savannas, grasslands, uplifted basin and alkali basin vernal pool complexes, and highly managed constructed marshes, all supporting migratory birds, anadromous fish, other wildlife, including a surprising number of rare, threatened and endangered plants, Great Valley endemics, and other native plants long extirpated from this region of the Great Valley.

Answer to "Mystery Plant": Winged dock – *Rumex venosus* (Polygonaceae - Buckwheat family).
Honey Lake Basin, Washoe County, 6 July 2023. Photo by Lawrence Janeway.

MEMORIES OF BARBARA CASTRO – continued from page 4

Barbara Castro was a truly remarkable person. Brilliant yet unassuming, kind and joyfully eager to pass along her vast knowledge, Barb was the ultimate mentor and teacher to the botanically fluent and challenged alike. I, most definitely among the challenged, count myself so very fortunate to have been her coworker at DWR. I'm not certain whether she ever grew weary of my constant, "hey Barb, what's this?!" during our surveys, but if so, she never let on. Her love for plants was infectious and what used to go unnoticed on my walks and hikes is now the source of my own internal "what's this?" game, with the plant identification app I now rely on fittingly renamed "Barb". I have no doubt the app's knowledge pales in comparison. I honestly do think she was one of those rare people who left the planet better than she found it and she wanders into my thoughts often. —Alison Groom



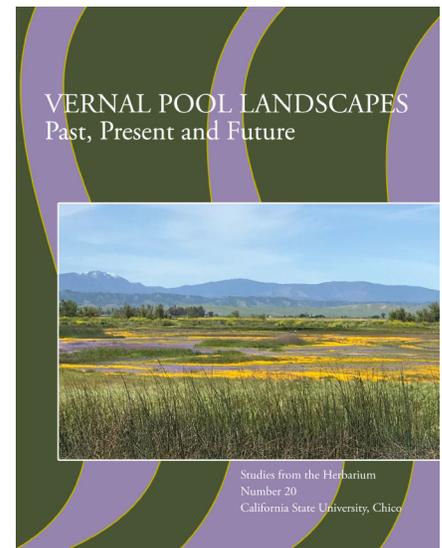
I had the pleasure to work with Barb, where I assisted her in conducting a variety of rare plant and elderberry surveys, vegetation mapping, and even a wetland delineation. I always enjoyed her enthusiasm and willingness to share her wealth of plant knowledge. She always took the extra time to educate co-workers in understanding plant biology, distribution, and identification of different plant species found in the field. Spending a day in the field or even in the office with Barb never felt like work for any of us, but more like having the privilege of learning and having a better understanding of plant biology and preservation. She was a very special person and you couldn't help but to notice how everyone in our office was touched by her kindness, patience, and passion for plants. I will always appreciate and miss the time I was able to spend with Barb. —Brian Humphrey

She was very knowledgeable and motivated about her work. That sort of attitude rubs off on others. And, she was such a real person. —John Nosacka

Barb always made time to visit when I came by her office door, to answer my vaguely posed questions about this plant or that, usually with a phone photo to help make my case, or just to catch up with a pleasant visit and chat. I always came away feeling good that we connected, and I miss her, as we all do. —Scott McReynolds

Part of Barb's legacy is reflected in her efforts for conservation of California's vernal pools. For many years she worked with a local conservation group, as a member of the U.S. Fish and Wildlife Service's "Vernal Pool Recovery Plan." Also, she was instrumental in organizing and carrying out four statewide vernal pool landscape conferences in Chico, from 2006 through 2018. She helped review conference speakers' written articles for the four conference proceedings books published by the Chico State University Herbarium. Barb was officially a co-editor for the last book (2019) in which she also co-authored a chapter describing all vernal pool research done on the Nature Conservancy's Vina Plains Preserve. —Rob Schlising

A lovely spirit, sweet friend, dedicated colleague, and environmentalist, I first met Barb as part of the vernal pool committee formed in the early 2000s. She worked for the Red Bluff office of the California De-



MEMORIES OF BARBARA CASTRO – continued from page 6

partment of Water Resources at the time, using her botanical skills and education. Barb brought an unequaled enthusiasm to every meeting, field trip, conference, and stroll.

She was an instrumental part of four vernal pool conferences held in Sierra Nevada Brewing Company's Big Room and the field trips that followed. Barb and Rob Schlising's 2018 conference presentation, The Vernal Pool Landscape at The Nature Conservancy's Vina Plains Preserve, was a marvelous history of the work done at The Nature Conservancy's Vina Plains Preserve over 35 years.

Our vernal pool committee was later named the vernal pool landscapes committee, which then added a Vernal Pool Recovery Implementation Working Group designation to its tasks and planning. Barb took this new responsibility to heart and brought her GIS skills to the discussion about preserving valuable vernal pool landscapes.

In March 2022, Barb and I took a vernal pool field trip. She was juggling health challenges, but we both were determined to make our trip happen. We wandered around Stilson Canyon Road looking for late signs of Butte County meadowfoam, which we found. It was such a dry and warm start to 2022 that the plants came and went quickly. We looked at other land in southeast Chico, also home to Butte County meadowfoam, and discussed the planned litigation to protect the habitat and species there. It was a treasured time. I am grateful for the many ways that Barb and I shared time together. What a joy and a privilege. –Barbara Vlamis

Photo credits:

- 1 Lawrence Janeway and Barb Castro at Glacier Point, Yosemite National Park, 6 November 2016, on our way home from the Cal-IPC Annual Symposium held just outside of the Park that year. Photo by a friendly tourist.
- 2 Herbarium volunteers Barb Castro and Noelle Davis filing specimens at the Ahart Herbarium. 17 September 2021. Photo by Lawrence Janeway.
- 3 DWR crew helping Barb with plant community mapping at Lower Thompson Valley, 10 July 2015 – Lawrence Janeway, Robin Carter-Ervin, Barb Castro, and Brian Humphrey. Perhaps Barb's favorite project during her career with DWR. Photo by Mike Berry.
- 4 This is Robin Carter's favorite photo of Barb, 16 May 2018, when Robin was helping her with her annual monitoring of the rare *Monardella venosa*, perhaps Barb's favorite plant. Photo by Robin Carter-Ervin.
- 5 Barb Castro with DWR coworkers 13 July 2013 at a co-worker's retirement party – Lawrence Janeway, Barb Castro, Tom Boullion, Jessica Boyt, Aric Lester, Amy Lyons, Margie Graham.
- 6 "Vernal Pool Landscapes: Past, Present and Future," by Robert A. Schlising, Erin E. Gottschalk Fisher, C. Matt Williams and Barbara Castro, editors. Studies from the Herbarium, Number 20, 2019. A collection of articles derived from talks presented at the vernal pools conference "Vernal Pool Landscapes: Past, Present and Future," Chico, California 11-13 April 2018. Lawrence Janeway, editor-in-chief, Studies from the Herbarium.
- 7 Barbara Vlamis: I love this photo of the vernal pool conference team in 2006 at the Vina Plains preserve. Happy times and a job well done. From L to R: Barb Castro, Rob Schlising, Doug Alexander, Betty Warne, Jenny Marr, Joe Silveira, and Barbara Vlamis.
- 8 Barb Castro on a collecting trip with Lawrence Janeway near Knoxville, Napa County. 12 May 2002.
- 9 Barb Castro collecting plants in Coon Hollow, Butte County, with Rob Schlising and Lawrence Janeway (not pictured). 19 July 1987.
- 10 *Monardella venosa*, perhaps Barb Castro's favorite native species. 1992 photo by Rob Schlising.





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