CALIFORNIA NATIVE PLANT SOCIETY
MARIN CHAPTER

January 2024 Newsletter

Marin Chapter of CNPS Turns 50

The Marin CNPS chapter is 50 years old this year! CNPS was founded as a non-profit organization in 1965, an outgrowth of efforts that saved the Tilden Botanic Garden in Berkeley. Originally there was an informal San Francisco Bay chapter; from that, various Bay Area regions founded more localized chapters as interest and membership increased. Thanks to the enthusiasm and efforts of Wilma Follette, in particular, Marin was established as a separate chapter in 1974, electing Bill Bortfeld president at the first meeting. Planning for plant sales, speakers, and field trips got underway almost immediately. Membership stood at 115 after just 3 months.

Fifty years on, our chapter is going strong:

- We have over 500 members.
- We are a leading voice for native plant conservation, respected by land use and management agencies in Marin and beyond.
- Plant lovers from around the Bay Area join our field trips to admire and learn about native species, to enjoy Marin's bountiful and biodiverse natural areas, and to meet new friends.
- Our monthly programs attract large audiences on Zoom, and we archive them on our own YouTube channel for later viewing.
- Our website is a major resource for information about Marin's native plants, gardening with native plants, and conservation. https://www.cnpsmarin.org/
- Our board of directors continues to attract new, younger voices with a variety of skills and expertise.

During 2024, as we celebrate 50 years of native plant conservation and appreciation, the Chapter Board is planning a slate of activities to mark the occasion, including an **August 24th gathering at the Corte Madera Community Center**.

We are also planning botanically-oriented challenges and events to encourage both greater familiarity with Marin's native plants in the wild and inclusion of more native plants in Marin gardens. First to be announced is the 50th Anniversary Challenge to Locate 50 Native Plants in the Wild. Using a special custom page on iNaturalist, participants will attempt to find, identify, and document 50 native plant species chosen from a larger list of target plants. This contest will run from March 1 to July 31, 2024. The February newsletter will announce details about the list, instructions, and helpful hints.

Whether you are a lover of Marin's open spaces or passionate about native gardening, deepen your connection with Marin's native flora by joining us this coming year! We hope to see you on the trail, at the upcoming events, and certainly at the 50th Celebration on August 24th!

Marin Chapter January 2024 Meeting

"Invasions stink: the response of *Dittrichia graveolens* to competition and disturbance, and its seed bank dynamics"

Guest Speaker: **Miranda Melen**

Monday, January 8 @ 7:30 pm

Invasive species significantly threaten global biodiversity, often disrupting ecosystems and impacting native communities. Stinkwort (*Dittrichia graveolens*), is a rapidly spreading invader in California. In this study, we develop an improved understanding of the factors influencing stinkwort's invasion in California. We conducted a combination of germination trials, and greenhouse, mesocosm, and field experiments to integrate insights from evolutionary ecology, response to competition and disturbance, and seed bank dynamics.

Miranda Melen prepares a field site for a competition experiment. Photo by Emma Snyder

Miranda Melen is a Ph.D. candidate specializing in plant invasion biology in the Department of Ecology and Evolutionary Biology at UC Santa Cruz. She is the recipient of the 2023 Howard-Kohn Memorial Scholarship from Marin Chapter CNPS. Her research focuses on understanding the spreading potential of invasive species and the underlying mechanisms that drive their invasion. Specifically, Miranda investigates stinkwort's (*Dittrichia graveolens*) competition dynamics, seed bank persistence, and whether populations are evolving rapidly.IMG 1215

In addition to her academic pursuits, Miranda has a diverse background encompassing restoration, vegetation management, plant conservation, and teaching. Outside of her scientific endeavors, she finds inspiration in weekend activities with her family, such as hiking, camping, kayaking, and baking.

IMG 6140Miranda's ultimate aspiration is to contribute to the academic community by teaching at a university. Her primary goal is to actively engage and support underrepresented students in STEM fields, fostering inclusivity and equity within higher education.

CNPS Marin Board News

We welcome in the New Year and a new Board of Directors for 2024 to CNPS Marin:

Co-President: David Long Co-President: Kristin Jakob

Vice-President: Open Treasurer: Bonnie Gosliner

Recording Secretary: Woody Elliott

Directors:

Eva Buxton Harriet Casserly

Paul da Silva Bayley Elenzweig

Ann Elliott Carolyn Longstreth

Laura Lovett Stacey Pogorzelski

Eddie Robertson Kate Wing

Aesculus californica - buckeye
Mt. Burdell OSP
Photo by Stacey Pogorzelski

Many thanks to our new and returning officers, and to our chapter members who elected them during the December 2023 meeting. We will publish profiles of our new members in upcoming newsletters.

A special, warm thanks is due to Kate Wing, who is stepping down after 6 years ably serving the Chapter in the role of Treasurer. Kate kept track of our income, expenses and reserves, compiled scheduled reports and provided extra support around our spring and fall plant sales, which always present challenges. Happily, she will remain on the board, and is training our incoming Treasurer Bonnie Gosliner, to whom we are also very grateful.

Kristin Jakob & *David Long*, Co-Presidents

Field Trip Planning Update

Pedicularis densiflora - Warrior's plume
Indian Tree OSP Photo by Ann Elliott

As January rains fall on our hills and valleys, we anticipate beautiful wildflowers again this coming year.

After Susan and Carolyn announced their retirement last month, a few people expressed tentative interest in helping lead the program, but more folks would still be very welcome. If you value our field trips, consider joining the team to plan, promote, and lead this very important part of our chapter's offerings.

Those who responded will be meeting this month. We hope to put a permanent team in place as well as plan field trips geared to the 50th Anniversary challenge to find 50 wild native plants. In addition, we hope to include more short and accessible hikes, including evening rambles as the days lengthen.

Contact *Carolyn Longstreth, Susan Schlosser, Ann Elliott*

cklongstreth@gmail.com scschlosser52@gmail.com annonfire@gmal.com

Air Plants

Botanical Bits *by Eva Buxton*

Growing on Air?

We know that plants and animals adapt to their habitats with survival features or behaviors that make life possible in many habitats, from deserts to the arctic. Yet, air plants (*Tillandsia*) are amazing flowering plants (angiosperms) that live without their roots anchored in any type of soil!

As a tourist in Costa Rica, I kept looking upwards hoping to see a three-toed sloth hanging from a tree branch or a powerline. However, in looking for sloths, I was more likely to see air plants attached to powerlines (Fig. 1). How can a plant survive in such a habitat?

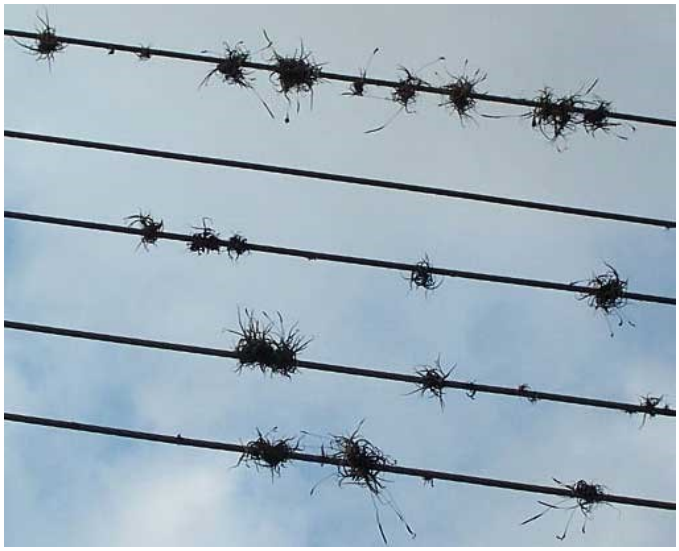

Fig 1 Air plants on powerlines

The genus *Tillandsia* in Bromeliaceae (Pineapple family) includes several hundred species of evergreen, perennial, flowering plants. They are epiphytes, meaning “upon a plant” in Greek. They attach to a substrate, commonly a tree or a rock and also powerlines, but derive no nutrition from the substrate (i.e. they are not parasitic). *Tillandsia* and about half of all known orchids grow epiphytically on “perches” that give them access to light. Tillandsia species are native from the South-Eastern U.S., Mexico, Central America, Caribbean Islands to Central Argentina and are found in many habitats, including forests, mountains, and deserts.

How Air Plants Got Their Generic Name

Elias Tillander (1640-1693) was born in Sweden about 70 years before Linnaeus. He studied botany and medicine at the University of Uppsala, Sweden and the Academy of Turku, Finland. He got his doctorate in Holland in 1670 and shortly thereafter became Professor of Medicine in the Academy of Turku. When Tillander was a student, he got so seasick in a violent storm on a voyage from Turku to Uppsala that he never traveled by boat again. He returned to Turku by walking around the Gulf of Bothnia (northern part of the Baltic Sea), a distance of about 1000 miles. He changed his name to Elias Tillandz (‘till lands’ meaning ‘by land’ in Swedish).

Many decades later, Linnaeus honored the memory of his fellow Uppsala alumni by naming a large genus of American plants capable of growing away from water *Tilllandsia* after Professor Tillandz because of his fear of water. Linnaeus was known for naming plants to celebrate botanists as well as to insult those that he had quarreled with.

Some Morphology, Anatomy and Physiology

Air plants have no true roots, but rather a “holdfast” allowing the plant to hold on to a substrate. Water and nutrients must come from the surrounding air, rain, or fog and are absorbed by the leaves instead of through a root system. Some species have a compressed stem axis so that the rosettes of leaves are close together. The bases of the leaves are often flared, overlapping with each other, and forming a funnel or cup that collects and holds rainwater (Fig. 2). The leaves of other air plants hang loosely from their aerial perches (Figs. 3a & 3b).from their aerial perches (Figs. 3a & 3b).

Scale-like trichomes, minute outgrowths of the epidermis on the leaves, absorb water that is used by the plant in various processes, including photosynthesis. Nutrients in the form of dust are also taken into the leaf by trichomes. Decomposed debris from the surrounding air can accumulate around leaf bases, where it is absorbed by these minute epidermal outgrowths.

Fig 2 Cardinal air plant (Tillandsia fasciculata) with broad leaf bases. Bv Usien

Fig 3a Small ballmoss (Tillandsia recurvata) By Juan Carlos Fonseca Mata. Wikipedia

Recent studies have shown that in many epiphytic species, bacteria play a great role in fixing atmospheric nitrogen. *Tillandsia recurvata* (Fig. 3a), a widespread species in North and South America, has been shown to have its leaf surfaces covered by nitrogen-fixing bacteria. Nitrogen-fixing bacteria in root-nodules that produce ammonia and nitrates used by the host plants is common in Fabaceae (Pea family) which includes beans, peas, lupines, and brooms.

The flowers are showy in some *Tillandsia* species (Fig. 4) and inconspicuous in others. The foliage can vary from green to a white, silvery color, and in some species changes to a bright color when the plant is blooming, helping to attract pollinators such as moths and hummingbirds. The seeds have hair-like appendages, so they can be blown away by the wind. Air plants also reproduce vegetatively by growing offsets called “pups” at the base of the plant.

Fig 3b Tillandsia sp. By Eva Buxton

Tillandsia ionantha - Blushing bride tillandsia in bloom with reddish foliage By Mokkie

Spanish Moss

The lacy-looking, grey “stuff” hanging off trees and shrubs in Marin County is often erroneously referred to as Spanish moss. However, it is either lace lichen (*Ramalina menziesii*) or Methuselah's beard lichen (*Usnea longissima*). Lichens consist of a fungus and an alga in a symbiotic relationship. Spanish moss (neither from Spain, nor a moss) is an air plant in the genus *Tillandsia*. Its specific epithet is *usneoides* (oides means “look like”) because it resembles the lichen *Usnea*. My first encounter with Spanish moss (*Tillandsia usneoides*) (Fig. 5) was in Jacksonville, FL, where it was hanging from the most magnificent oak I have ever seen, a Southern live oak (*Quercus virginiana*). Although the Spanish moss was not in bloom when I saw it, its greenish-yellow flowers are inconspicuous.

Santa gave me a *Tillandsia juncea* with a flowering stalk. I can’t wait for it to bloom!

Send comments to evabuxton@sbcglobal.net

Fig 5 Spanish moss (Tillandsia usneoides)

Ring Mountain Wildflower Docents - Spring 2024

Our first Ring Mountain Docent Program launched last spring and was a great success! Become part of the second group of Ring Mountain Preserve Wildflower Docents. Join the Marin Chapter of CNPS and Marin County Parks for this fantastic opportunity to share your love of Ring Mountain’s unique ecology, wildflowers, and unusual serpentine grassland habitat with the general public, while also fostering stewardship of this Marin landmark.

This volunteer opportunity will run weekends from April through mid-June 2024. Participation in virtual and in-person training is required for all new volunteers. Virtual weeknight training will be held Tuesday evenings in March and early April. Two site visits to Ring Mountain will be on Saturday 3/23, and Sunday 4/6, from 10 am – 2 pm. A third optional site visit will be offered on 5/18. Some familiarity with native plants is helpful.

For additional details, questions, or to sign up, please contact Amanda Magallanes at Amanda.Magallanes@marincounty.gov.

Castilleja densiflora ssp. *densiflora* *owl’s clover* on Ring Mountain Marin County Parks & Open Space

Broom Service Visits Maurice Thorner Preserve

A dedicated crew who call themselves Broom Service are tackling patches of French and Scotch Broom mostly in San Geronimo Valley. Recently they addressed some patches just off the Thorner Ridge Trail above the Lagunitas School District's upper campus.

If you would like to join the efforts of Broom Service, they supply tools and instruction (if needed). Bring gloves.

Contact Mel Wright ospreyflight@gmail.com Text: 415-999-4736

Al Brewster removes all the branches before getting at a very stubborn root system. Photo: Mel Wright

Plant Diversity And Viability In Uncertain Times

Northern California Botanists will host its 12th botanical symposium on **January 8-9, 2024** on the campus of California State University in Chico. The sessions will also be available online. Optional workshops will be held on Wednesday, January 10. A 2-day schedule of presentations by working botanists will include sessions on Vegetation Classification, Climate Change, Grassland Restoration, Bryophytes, Locally Rare Plants, Now the Good News, New Discoveries, and a session of Lightning Talks.

The symposium will also include an evening reception, banquet, and keynote speaker John Vollmar, of Vollmar Natural Lands Consulting, addressing "The Heart of Conservation-Engaging Human Passion for Conservation Success." The symposium is open to anyone: botanical enthusiasts, professionals, and students.

Read more. . .

Upcoming Marin Chapter Events

- **1/8 7:30 pm** Chapter Meeting: "Invasions stink", Guest Speaker: **Miranda Melen**

Other Activities in Marin and Nearby

- **1/6 9 am - noon** Broom Busters of Old St. Hilary's
- **1/7 10 am - 1 pm** Family Walk: Blackstone Canyon
- **1/11 7:30 pm** Resolving Tradeoffs Between Biodiversity and Human Health Support in Native Planting Yerba Buena Chapter CNPS
- **1/13 10 am - 2 pm** Feeding your Ecosystem Demonstration and activities at the Randall Museum, Yerba Buena Chapter CNPS
- **1/14 9 am - noon** Planting at Stafford Lake

Dittrichia graveolens - stinkwort growing among senesced grasses in the summer heat in Santa Clara County, CA By Andrew Lopez

- **1/14 10:30 am - 1 pm** Mycoblitz Mushroom Foray
- **1/16 10 am - noon** Senior Stroll: Corte Madera Creek
- **1/21 10 am - 2 pm** Deer Island
- **1/24 10 am - 2 pm** Estero Trail
- **1/27 10 am - 1 pm** Ring Mountain Grassland Restoration
- **1/28 9 am - noon** Restoration at Hal Brown Park
- **1/28 11 am - 3 pm** CNPS Garden Ambassador Seasonal Garden Visits
- **1/30 11 am - noon** Local Fungi Presentation at Fairfax Library
- **2/3 9 am - noon** Broom Busters of Old St. Hilary's
- **2/4 9 am - 2 pm** Indian Tree Preserve
- **2/11 10 am - 1 pm** Family Walk: Indian Tree OSP
- **2/12 7 pm** California Water Culture North San Joaquin Valley Chapter CNPS
- **2/13 10 am - 2 pm** Carson Falls
- **2/18 10 am - noon** Bothin Marsh Cleanup
- **2/24 10 am - 1 pm** Ring Mountain Grassland Restoration

Be sure to periodically check CNPS.org/events for interesting talks and field trips sponsored by CNPS Chapters and staff throughout the state.

February Favorites

Got a favorite wildflower or native plant? Stretch your wings as a writer, photographer, or artist. **Please send me** a short article or image to highlight your pick for a special ***February Favorites*** newsletter issue (sort of like a pet issue, but for native plants.)

Ann Elliott, Newsletter Editor

annonfire@gmail.com

Grindelia stricta var. *platyphylla* - coast gumplant
Abbott's Lagoon, Point Reyes NS by Ann Elliott