is threatened. Centuries of impacts from extreme land use and modification activities, such as clear-cut logging and ag land development, has pushed them to the brink of extinction.” She noted that excess gravel coming downstream from the watershed continues to be a major threat to the estuary. Continuing land use mispractices in watersheds directly affects their estuaries, highly valuable and vulnerable environments already struggling with sea level rise.

**Celebrate the Coast, Garcia River Estuary Enhancement Walk**

By J. Larke

The Garcia River Estuary Enhancement Project walk and discussion at *Celebrate the Coast* on May 6 was one of the highlights of the event. Lauren Hammack, a geomorphologist with PCI Ecological, the environmental consulting firm that designed The Nature Conservancy’s project, spoke to over thirty people about the habitat structures created to allow juvenile salmon to hide from predators and to find shelter during winter floods. Figure 1 shows that the logjam structures survived the severe January 2023 floods, and Figure 2, taken months later, shows changes taking place in the river and estuary.

**Discover and Celebrate the Coast**

Leslie Dahlhoff, mayor of Point Arena 1998–2009 and a member of the Friends of Point Arena-Stornetta Lands, a group who initiated creation of a monument in 2008, says this about the photo below:

"In 2014, at the first Discover the Coast event, community members gathered to celebrate the formation of the Point Arena-Stornetta Lands Unit of the California Coastal National Monument."

The name of this event that is hosted by BLM, the Friends of Point Arena-Stornetta Lands and the Point Arena Lighthouse, was changed from "Discover the Coast" to "Celebrate the Coast" in 2023 after a three year hiatus during the Covid crisis.
**President’s Column**

By Nancy Morin

I have often mentioned in these President’s columns that the flora in our chapter’s area needs better documentation. If we don’t know what plants are where, we can’t know whether their populations are secure or need protection. CNPS’ updated Rare Plant Inventory adds new tools that are helpful in identifying plants that might occur in our chapter’s area, or that are known from only a few localities (sometimes the sightings are historic). In addition to general distribution and conservation status, the new version includes whether the plants have been seed-banked and what micro-habitats they are found in. It is easy to see which species have been reported from a particular geographic quadrant, or adjacent quadrants. Take a look at what might be near you. Everyone in our chapter can help define the locations of plants of conservation concern. Or confirm that although you’d think they should be there, in fact they seem not to be. When I searched on the quadrants that make up our chapter, selecting for State level rare or endangered plants, I got a list of 72. Some we know are attuned to specific habitats that are known from only a few places in our area. Others are in conditions commonly found here. You can find more California plant information at [http://calflora.org](http://calflora.org). Brief descriptions and identification keys are in the online Jepson Manual—[https://ucjeps.berkeley.edu/eflora/](https://ucjeps.berkeley.edu/eflora/). If there several species in your area, use the key to see which characters are important for telling them apart. You can get a continent-level overview at [http://floranorthamerica.org](http://floranorthamerica.org). If you are able, upload photos to [http://inaturalist.org](http://inaturalist.org) -- botanical experts check and can help with identifications, or you may find yourself in a dialog trying to determine just what the heck you saw.

The California Native Plant Society Rare Plant Index is at: [https://rareplants.cnps.org/](https://rareplants.cnps.org/). Click on “advanced search.” Click on “list/rank,” which gives you conservation options. You can choose more than one. I clicked on “1B, rare endangered.” Scroll down and click on “location.” You need to shift the map around a bit, and enlarge it. I clicked on Fort Bragg, which selected that quadrant, and then clicked “view all 26 plants.” You can click on any one of those plants to see where else it occurs, usually see photos, and always the information on its habitat and conservation status. Try it!

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**Watch for our Annual Plant Sales**

**New locations**

*Community Center of Mendocino*

October 14th, 10 a.m.–3 p.m.

Gualala Sale date TBD (October 7 or 21) Location TBD

We’ll let you know by email place and date.

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**FORT BRAGG LIBRARY CELEBRATES**

**NATIVE PLANT WEEK**

Dan Hess, Branch Librarian at Fort Bragg Library, likes to support California Native Plant Week and DKY member Julia Larke was happy to set up a display of local wildflowers. Art Morley, a long time weed warrior, was at the library enjoying the display.

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**2023 DKY WILDFLOWER SHOW**

**A Blooming Success**

By Nancy Morin

The Coast Life Support District Bill Platt Training Center was a new space for us, but the wildflowers and visitors were wonderful, as ever. While considerably smaller than our poor, burned out Gualala Community Center, we managed to make everything fit in the intimate space.

One of the pleasures of these shows is the opportunity for plant lovers to talk with each other—usually about the plants they are looking at, or have seen, or want to see. Given the location change, the almost 150 person turnout was great. Some spent several hours looking and chatting. Huge thanks to The District and the many people who made the show possible: Julia Larke, Kathleen Chasey, Mary Hunter, Bob Rutemoeller, Peter Baye, and Sue Triebs for collecting plants. Bob, Dave Shpak, Sue, Susan, Julia, and Kathleen did so much work getting everything set up. Sue, Mary, Susan, Julia, Peter, and Bob were on the spot to answer questions so there were two or three of us on duty at any time each day. Thanks to Susan for a great article in the Independent Coast Observer and for encouraging the local radio stations to promote the show. Many thanks to all of you who came!
Marge Anthony received her Ph.D. from the University of Michigan under the direction of Dr. Alzeda Clover. Her thesis was an “Ecologic and Systematic Analysis of Opuntia in the Big Bend Area of Texas,” completed in 1949, covering the ecology and distribution of 31 species of Opuntia. She published her thesis in the journal Ecology in 1954, with an additional publication in the American Midland Naturalist in 1956. Both papers and her thesis are still often cited. She began her teaching career in 1949 in the Department of Biological sciences at California State University, Chico, then Chico Teacher’s College.

Her interest in ecology, a relatively new area of study in the 1950s, grew. In addition to the course in ecology that she developed at Chico, she also designed a course in Radiation Biology and designed a radiation lab. Dr. Anthony made many important contributions to botany, and she taught many students, who continued in botany or related fields. Two of the most notable were the late John Sawyer, who went on to be a highly respected professor of botany at Cal Poly Humboldt, and Lowell Ahart, one of the most important plant collectors in northern California, who is still actively collecting plants. Marge was a member of the Dorothy King Young Chapter of CNPS, most likely from its founding in 1966 until her death. Even after she moved full time to Washington, she continued to have a lively interest in our chapter and in the natural history of The Sea Ranch.

We are grateful to have her niece, Sue Trieb, continuing her legacy and for her lovely biographical sketch of this amazing woman.

Marge Anthony, Remembered
by Susan Anthony Trieb

Marge Anthony, born Feb 23, 1924 and died April 29, 2023, was a lifelong naturalist and botanist. She spent most of her career at California State University at Chico and much of her free time and retirement at The Sea Ranch. She was an early and colorful role model for professional women. In fact, she was a grand niece of Susan B. Anthony. When working on her doctoral dissertation on the cactus Genus Opuntia in the wilds of Big Bend in Texas, she slept with a loaded pistol under her pillow. Later she used her small private plane to commute to her home at The Sea Ranch. Her early transportation while in residence was a motorcycle. She would have used her horse if allowed.

Marge operated very well in a man’s world and appreciated every opportunity she was granted. She described finding her first full-time faculty position as nerve-racking. She wrote many letters to universities west of the Rockies, and no one was interested in a woman candidate.
She finally applied for an opening at Arizona State University, even though the job description was for a man. She was offered the job as the first woman in the department, but turned it down for the chance to work, as she described, at the foot of The Sierra, at Chico State.

While at Chico State University, Marge was a popular Botany and Ecology professor, as she led her classes on many varied field trips. She said her great love was not just botany, but ecology instead. The problem was Ecology was not a recognized field of study until Eugene Odum wrote the definitive textbook on the subject. When this text was published, Marge lost no time in having the University invite the ecologist to speak. She showed Dr Odum and his wife Martha some of Northern California’s natural phenomena from the air. They subsequently visited The Sea Ranch and Martha, a skilled watercolorist, painted the Sea Ranch coast as a gift to Marge, which she treasured always. As ecology became a recognized field of study, Marge was able to further her training, and became an expert in Radiation Biology, and also taught that subject until her retirement in 1983.

After retirement, she split her time between her home at The Sea Ranch and a home on Puget Sound in Washington, commuting between the two homes in her tiny Cessna 150. Later, she moved fulltime to Panorama, a retirement community in Lacey, Washington. She enjoyed exploring the many natural wonders of The Northwest by plane, auto and foot.

Marge contributed many interpretive guides while living at Sea Ranch to help others appreciate the natural surroundings. One of her projects was Monarch butterflies. This quote illustrates her eloquent descriptions, “Hurray for these beautiful creatures on their gossamer wings, as fourth and fifth generation descendants unerringly navigate so well, sometimes hundreds of miles, without road maps or GPS, to exactly where their long-gone ancestors overwintered!” She once described getting a phone call from the Sea Ranch Association office that an outside visitor was there asking about Monarch Butterflies. She immediately drove to the office and guided the visitor to Monarch Glen and they both sat on a log admiring the overwintering butterflies with binoculars. She learned he was a researcher from Washington State University and had just tagged some Monarch butterflies in Washington. In a few minutes, they spied a butterfly he had tagged, who beat him down to California.

Marge's joy in opening the doors to further understanding and appreciation of our natural environment will be remembered always.

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**LOCAL CONSERVATION NEWS & UPDATES**

**Spotlight on Fort Bragg Reservoir at the Summers Lane Mendocino Cypress Woodland Parcel**

by Peter Baye

In the Jan-Feb 2023 Calypso, we reported the changing status of the 582 acre Summers Lane/Highway 20 parcel which the City of Fort Bragg has approved acquisition funds for a new water supply reservoir. The parcel supports extensive Mendocino cypress woodland, a rare vegetation type (*Hesperocyparis pygmaea* alliance, G2S2 Global and State Rarity ranking). The City voted to approve funding before an official project description, alternatives analysis, or environmental assessment was prepared. The parcel has been the subject of past proposals for recreational development by the Mendocino Coast Recreation and Park District, the landowner.

The City Engineer’s staff report in November 2023 stated “Both CDFW [California Department of Fish and Wildlife] Divisions are very supportive of this project,” giving City officials and the public the impression that the agency had provided preliminary approval of site selection and project formulation ahead of project proposals and environmental review. Public statements from the City of Fort Bragg through spring 2023 have continued circulating this inaccurate information.

Further misinformation about the underestimated extent of rare plant communities was repeated in the City’s official Request for Proposals (released May 25) to design and permit the reservoir project. Teresa Sholars, of CNPS DKY, has informed the City with CDFW vegetation mapping of the site, nearly 90% of the site supports special-status plant communities, not just a local patch of rare plant species.

Last February Sholars met with the Fort Bragg City Engineer, John Smith and CDFW Senior Environmental Scientist Supervisor, Angela Liebenberg, to provide expert background on Mendocino cypress woodland distribution on the site and its vicinity. Liebenberg confirmed that CDFW has provided no official comments or approvals on the parcel acquisition or the-yet-to-be described reservoir project. continued on pages 6 and 7
It is understandable that nightshades (Solanum) would not normally elicit a lot of native plant curiosity on the Mendocino-Sonoma Coast. Most of the species in the huge genus — over 1400 species worldwide — commonly encountered are non-native weeds here. But one very beautiful native nightshade is a regionally rare or very uncommon part of our flora: Xantus nightshade, which has traditionally been treated as a distinct species, Solanum xanti. Unlike many of the common non-native weedy herbaceous Solanum species found in disturbed habitats, S. xanti is a semi-evergreen lax to semi-scandent woody shrub or subshrub. It is ecologically adaptable, growing in a wide range of mature, native vegetation types, including woodland, coastal forest gaps, scrub, and chaparral, in both moist and dry environments, and in sun or semi-shade. Mendocino is near the northern limit of its patchy distribution along the California coast, and it qualifies as a regionally rare plant here.

Solanum xanti is closely similar to — or more likely part of — the wide-ranging, highly variable species, Solanum umbelliferum, which is otherwise absent on the North Coast. The two traditional species also share folk names, which is to be expected for species that are questionably separated by very subtle and overlapping microscopic differences relevant only to botanists. Even early California botanists who worked on these species, like S.B. Parish, expressed doubts about the geographic separation and reliability of the morphological characters used to separate these similar species. Modern molecular genetic studies indicate that S. xanti is part of the S. umbelliferum complex in western North America, and David Keil has recently recognized it as one of many distinct California varieties within S. umbelliferum.

The lightly fragrant lavender-blue to purple flowers of Solanum xanti are produced on umbel-like clusters of up to 5-6 flowers developed on lateral and terminal branches. The petals are fused together into a single lobed bell-shaped flower with a short tube. The base of each lobe has a pair of spots or blotches with a rich green center and a light green to whitish margin, contrasting with the lavender-blue to darker purplish-blue corolla. The contrasting green spots, sometimes called “pseudo-nectaries” presumably function as pollinator cues or guides. Flowers are showy, up to about 3 cm across. The bright yellow anthers encircle the style as a single, prominent column of stamens. The ripe fruits, the size of peas, like perfectly round pale green tomatoes, grow up to 1.5 cm in diameter.

The flowering period is unusually long for a native shrub here, lasting for months from late winter to early summer, and occasionally longer in favorable moist conditions for continued growth. Mature fruits, flowers, and flower buds can be produced together with continued shoot growth in summer.

The flowers of Solanum are specialized for “buzz-pollination” by bees that vibrate their wings to force pollen to eject from anthers. Bees apparently use the column of stamens, with bright yellow, firm anthers, as a landing platform, as well as a colorful beacon to signal the floral resources, more attractive than the larger blue-purple corolla. Recent experiments by Gregory Anderson and colleagues showed that Solanum xanti flowers with corollas removed, but the staminal column intact, set fruits at the same rate as intact flowers, while flowers with the prominent yellow staminal column removed produced low levels of fruits and seeds. Bees and people have different floral esthetics and perceptions of Solanum flowers.
All parts of nightshades, including *S. xanti*, contain high concentrations of toxic alkaloids, and are legendary for their lethal effects. The fully ripe berries, however, were reportedly eaten raw in early historic times by some Northern Pomo, Ohlone, and Sierran Miwok people. The alkaloids in all tissues of the plant can have narcotic effects, as well as toxic effects on the nervous and digestive systems, so prudent native plant herbalists should avoid of ingesting any parts of the plant.

*Solanum xanti*, along with other varieties and hybrids within the *S. umbelliferum* complex, are favorites of native California gardeners. Some named cultivars are selections of particularly ornamental wild clones. *Solanum xanti* is a moderately slow-growing shrub compared with its rampant weedy non-native relatives adapted to riparian or disturbed habitats, like the classic woody nightshade, *S. dulcamara*. *Solanum xanti* can be propagated in winter or summer by cuttings of vegetative shoots. Successful cuttings are best prepared with rooting hormone and bottom heat applied to the rooting medium, grown in bright shade. Although *S. xanti* is adaptable to quite harsh environments like eroded banks and road cuts in dry chaparral, it performs best as an ornamental specimen with some supplemental watering and thrifty doses of fertilizer, to keep continuous production of the sweet-scented flowers and fruits through the summer. It can persist in shade, but flowering is promoted by at least partial sun, or full sun on the coast.

**Local Conservation News & Updates** - continued from page 4

DKY understands that state agencies cannot issue prejudicial comments or decisions on projects over which they have jurisdiction, but which have not been formally proposed, described or analyzed. Apparently, the City of Fort Bragg, in its zeal to promote public support for the project, is refusing to acknowledge that pre-project endorsement is not something that CDFW can officially provide. Official agency comments, decisions, and approvals are always written, never merely oral communications. CDFW technical support on conservation outside of the permit or CEQA (California Environmental Quality Act) process is only advisory guidance, and unless it is in official correspondence, it does not reflect the agency’s position. The City’s statement that “both CDFW Divisions are very supportive of the project” was an interpretation of unofficial conversations with CDFW staff, not official agency endorsements of the project, or conceptual design of a “public forest” promoted by the City.

Teresa noted that the City’s previous reservoir projects constructed in Mendocino cypress woodland were completed before the vegetation type was classified and ranked as highly sensitive and rare. That circumstance has passed, and past projects impacting the rare vegetation are cumulative to proposed ones. Teresa also explained the difficulty and low feasibility of compensatory mitigation for Mendocino cypress woodland, which depends on very distinctive and rare soil types. Past (token) mitigation of planting Mendocino cypress trees like a landscaping project would not meet agency standards for mitigating rare vegetation today.

**What is next for the acquisition and project review process?**

A pivotal issue for proper environmental review of the project will be alternatives analysis. Since the project is located in sensitive vegetation and “may” impact a rare plant, CEQA compliance will presumably require a full Environmental Impact Report (EIR) for any new reservoir project on the site. Unlike a Mitigated Negative Declaration, an EIR requires a rigorous alternatives analysis, not just a mitigation plan.

**Alternatives to reservoirs for climate-resilient water supply?**

Project alternatives under an EIR must consider feasible alternative sites for the same project with less environmental impact plus other types of projects that can serve the same basic purpose and need with less impact.

The core problem is the imbalance between secure water supply and demand during major droughts. Project alternatives that provide recycled water for either irrigation or mixing in potable water supply use reverse-osmosis (the process used in seawater desalination, which Fort Bragg has already invested in) would be relevant. The City currently directly discharges wastewater with only secondary treatment (sludge solids removed) directly to the Pacific Ocean, continued page 7
wasting its freshwater resources entirely, while loading polluting nutrients to near shore marine environments. Nutrients from wastewater can potentially fuel toxic algae blooms in warming ocean waters.

Recycled water requires tertiary wastewater treatment, and can be supported by constructed subsurface water quality treatment wetlands that can remove intractable contaminants like pharmaceuticals – something that even tertiary treatment cannot do. San Francisco Bay tertiary wastewater treatment and water recycling are becoming a “new normal,” and are widely viewed as an inevitable future for California’s future drought management. Recycled water can be used for park and residential landscape irrigation even during drought restrictions, offsetting almost 30% of residential water use for landscape irrigation by coastal towns and cities statewide, and almost 10% of total water use. State regulations governing the use of highly treated recycled water in potable water have been in place since 2014. The State Water Resources Control Board has a grant program for Small Community Clean Water/Wastewater (SCWW) Funding.

Far-sighted alternatives to end wasting wastewater in Fort Bragg could integrate Mendocino cypress woodland conservation, marine conservation, improve water quality, and inaugurate water recycling – all important public co-benefits for resilience to climate change. CNPS DKY and its many allied environmental advocacy organizations will be well-prepared to engage in the analysis of alternatives, as well as impacts, when the Fort Bragg reservoir project proceeds to the EIR stage.

Local Citizen Scientists Embrace Sudden Oak Death (SOD) Research Project
Contributed by Cristina Winters, RFFI

We had an amazing turnout for the SOD Blitz event. There were seventeen of us – three RFFI (Redwood Forest Foundation, Inc) employees and community members who heard about the event on the radio or on social media. It was extremely rewarding to engage members of the public with my work place, especially since the point of the event was community stewardship and improving forest health. There was a wide range of ages and everyone ended up collecting data and having fun. People chose property regions and team leaders based on terrain difficulty. One of the best aspects of the event is it is so accessible. Five volunteers from the community and I drove down one of the major roads on the USAL property seeking out specific tanoaks and bay laurels suspected by a USAL forester to have Sudden Oak Death. We navigated GPS points for those trees with the side-by-side UTV (super fun) and then by walking. Once we identified the trees, we inspected them closely and discussed whether we agreed the leaves fit the description of SOD signs. We placed the leaves carefully in individual envelopes and filled out a brief, but descriptive, data card to be mailed back to UC Berkeley. We found some trees that looked strongly... continued on page 8
like potential SOD. I am waiting eagerly to find out the results of our efforts. I was very impressed by the energy and enthusiasm of the entire group. People were genuinely curious about not just SOD but also about the USAL forest. It was extremely rewarding to share my love of the place and get people talking about forestry and forest health. In our mission statement, RFFI places a strong emphasis on community engagement, so it was unbelievably cool to have such a fun and successful public event. At the end of the day, everyone was in high spirits and enjoying the (very impressive) spread of snacks that Alicia Bales provided for the group.