

California Native Plant Society

CALIFORNIA NATIVE PLANT SOCIETY

SEQUOIA



November/December 2021

Wild is the music of autumnal winds amongst the faded woods. --William Wordsworth

Happy Holidays!

CONTENT

Recap of Virtual Herbarium Walkthrough

China Creek Report

Home School Group Tour

Modified Cotton Genes

2021 Online Plant Sale Recap

Note From the President

Leafing Through The Past Webinar Recap



--Reagen O'Leary

On October 12th, Dr. Kate Waselkov and Reece Riley provided the chapter with our first webinar “Leafing through the Past.” It was a lovely talk, where they shared with us the current happenings at the Fresno State College (FSC) herbarium (this is the original name of the herbarium, before Fresno State became a university). It started with a background on the history of herbariums (a systematically arranged collection of dried plants, a.k.a. a plant library) and why they are important. It was enlightening when Kate shared with us that the oldest dated plant press (a collection of flattened specimens) is almost 500 years old!

Herbariums were created to help medical doctors identify the medicinal plants with confidence so that they could treat certain ailments without causing inadvertent harm to patients due to plant misidentification. Herbariums are important for science in that they have whole specimens within its catalog that can capture genetic variation of species and can help explain evolutionary changes in geographical distribution. Why is the collection of plants necessary? Pictures may “paint a thousand words” but they cannot provide scientists with genetic and evolutionary data.

Kate and Riley provided us attendees a tour of the FSC herbarium and demonstrated how the specimens are labeled. The herbarium team (professor and students) are currently digitizing all the specimens in the herbarium to help the science community around the world.

Digitization means taking a high-resolution picture of each pressed plant specimen, and then uploading it to an online database and transcribing the data from the label on the specimen. This label data includes things like the plant collector, the location and habitat where the plant was found, the date it was collected, and its phenology (whether it is just leaves, or includes flowers or fruit). This phenology data is especially important because having a record of the historical timing of different flowering plant species can be used to study the effects of climate change on native California plants. Once university restrictions are lifted for visitors, the FSC will host herbarium work

parties again, which are a lot of fun!

China Creek Report - September Work Party

--Warren Shaw

Cool clean air, a beautiful California morning, with some good chores to do, followed by a potluck lunch: what could be better?

We put a fresh coat of paint on the kiosk; pulled, dug, and snipped a lot of nasty weeds; caged some Valley oak seedlings; and checked the trail signs (all intact).

At 11:00 we gathered at the kiosk. First, Vernon Crowder, Executive Director of the Kings River Conservancy, briefed us on the Conservancy's activities and plans; then, China Creek Volunteer Coordinator Chris Kurowski did a status report on the Park (best ever) and discussed plans for the upcoming year, including plans to continue work, especially weeding, through the summer. She cited the good effects of this summer's weeding by the Wednesday crews.

Then, we ate (and shared produce). It was, as expected, a great morning.

Our November Work Party (the last of 2021) will be Saturday, November 20, from 8am to 12pm. We'll be working mainly on planting Valley oaks in the northwest corner of the Park, "reforesting" a former grazing area.

Work will be followed by our annual "Thank you" lunch – on the Sequoia Chapter – from the Blossom Trail Café for all who have participated in the Project in 2021. Please plan to join us (more details to follow).



NOVEMBER WORK PARTY

Saturday November 20th

8 am - 12 pm

At China Creek

What to bring:

Water

Shovel and Gloves if you have any

Yourself!

Hope to see you there!

Feel free to contact us with any questions
cnpsequoiachapter@gmail.com

Home School Group Tour

--Warren Shaw

On October 15 we (Jane, Chris K. Kathy, and I) conducted our second tour of the China Creek Park for a group of home-schooled kids who meet regularly in the park.

We walked the trail (see NOTE below). And (mostly I) talked (probably too much) about things along the way, calling on Kathy for area history, and Jane and Chris for help with botanical details. We diverged from the signed trail to look at the "Mother Fig" where CalFire crews had cut away a lot of the lower branches, making access to the cave-like interior of the giant tree easier. To add to the fun, we were visited by a small group of cattle during that time.

The kids ranged from threeish to thirteenish, with a couple of moms (no dads this time). They were mostly pretty attentive, though some tended to straggle (understandably; see NOTE below) when they found something more interesting than my talk. We walked the entire trail, except for the "Oak Woodland Loop," which we had done last time, and I could tell we were running long. They were very cute, asked intelligent questions, and listened to the answers. It was fun for us to show off the park

a little, and the tour was, of course, perfectly in alignment with the CNPS goal of educating the public about native plants. I feel very strongly this is an example of something we should strive to do more often for groups of all ages, adapting (and polishing) our presentations a bit.

NOTE: I realized as we were winding up this tour that many of these kids had been on the first one we did several months ago, and a lot of what I was saying was repetitive, so when we do the next tour with this group, we (whoever leads it) should concentrate on different aspects of the park – perhaps walking the unsigned trail in the southeast part of the park, or if the timing works out, planting some seedlings in the northwest “reforestation” area.

Photos by Kathy Yamamoto



Once again home-schoolers participated in a docent-led tour of the China Creek Park on October 15.

Modified Genes May Disrupt Ecosystem

--Jane Pritchard

Gossypium hirsutum (cotton) appeared and diversified 2 to 1.5 million years ago in Mexico, where native varieties still grow but in the most inhospitable locations (edge of cliffs, municipal dumps, and highway right-of-ways). Cotton in its native range has a shared positive relationship with aggressive ant species that feed on its nectar, while in return the ants fend off cotton eating herbivores (an exchange for bodyguard services). In the last 25 years, vast fields of genetically engineered cotton have been planted in northern Mexico. In 2018, Ana Wegier, plant geneticist at the National Autonomous University of Mexico, and a group of her students studied wild cotton genes in the Ria Lagartos biosphere reserve in southeastern Mexico's Yucatan Peninsula.

They collected and analyzed DNA from 61 wild growing cotton plants with the following results: 24 had no transgenes, 21 had the transgene that has resistance to the herbicide glyphosate, 7 had the transgene to produce a toxin that kills insects, and 9 had both transgenes.

Under chemical stress in the laboratory, the glyphosate-tolerant plants produced less nectar than wild ones and looked ragged before being sampled. Less nectar resulted in attracting fewer ants and more herbivory. Slathered with the same chemical, plants with the insect killer transgene exuded more nectar than wild ones, all the time. More nectar attracted more protective ants but decreased the number of pollinators and reproduction.

The long-held idea was that genetically modified genes introduced into the wild had a neutral effect or benefitted weeds. This study demonstrates genetically modified plant variants can disrupt whole ecosystems. Mexico is the reservoir of cotton's genetic diversity. Wegier says more genetic varieties of cotton should not be introduced there because the ecological effects of the transgenes are irreversible. Escaped genes' behavior and where they go can't be controlled. However, wild cotton with the escaped transgenes struggled more to survive. Maybe they will be eliminated by natural selection.

Summarized from February 16, 2021, ScienceNews article written by Emiliano Rodriguez Mega.

2021 Online Plant Sale Recap

--Reagen O'Leary

This year's online plant sale was another success! We sold 196 California native plants to 26 good homes. The number of plants sold were down from last year due to a couple of factors, such as increased plant prices and the move from Clovis Botanical Garden to our own native plant supplier, Intermountain Nursery in Prather (just a bit farther than Clovis), for pick-ups. Considering these changes, our chapter earned close to the same amount as last year's online sale.

Plant Pickup Booth at Intermountain Nursery (photos by Gavin O'Leary)



It was a beautiful day that felt like we were in a fall wonderland. The weather was comfortably overcast, which enhanced the glow of the mature trees changing color amongst the many multicolored nursery plants that served as an understory smorgasbord. We had freebies as well! Native plant seeds were up for grabs, as well as unsold member grown plants and pots and stands from Thelma and Nye's place that needed inhabitants.

Chris Velez Native Plant Care Talk



Our own Education Chair, Chris Velez, shared his wealth of knowledge on the care and maintenance of native plants to attendees. Thank you, Chris! Bev Schubert, owner of Intermountain Nursery, was graciously supportive of our event by supplying us with hot tea and donating a portion of the nursery's gift shop native plant sales from that day to our chapter! Thank you, Bev! John Buada provided some member grown plants, including the ever-popular bush lupine (*Lupinus albifrons*) and California fuschia (*Epilobium canum*). Thank you, John! And, a big thank you to Maya Argaman, CNPS Horticulture Outreach Coordinator, for setting up our online sale and providing technical support.

Many folks were blessed by red bud (*Cercis occidentalis*) youngsters from Thelma's mother tree. If you're not familiar with Thelma Valdez, I recommend that you take a look at our January 2021 newsletter http://www.cnps-sequoia.org/files/5916/1628/5449/January_2021_newsletter.pdf

Thelma passed away in December 2020, which was a great loss to our chapter, community, and mother earth. She is the reason why I stepped up to leadership within the chapter. She was the ringleader of the chapter's plants sales for as long as I can remember, plus some, I can only hope that I'm serving in her native plant sales spirit adequately. Thelma you are greatly missed!

Note From the President

--Reagen O'Leary

The October rains are most welcome, and our planted perennials are already perking up. Although every fall, I'm sad to say goodbye to the Central Valley summer annual wildflowers. Salt heliotrope (*Heliotropium curassavicum*), Fitch's Spikeweed (*Centromadia fitchii*), alkali mallow (*Malvella leprosa*), Great Valley Gumweed (*Grindelia camporum*), and vinegar weed (*Trichostema lanceolatum*) have been my delight during this hot summer of field work. Their absolute hardiness through the incessant summer heat, leaves me ever appreciative of their presence and beauty. Are there summer wildflowers that tug at your heart strings? Please email us and we will feature them in our 2022 summer newsletters when we're all feeling tired of the ever-increasing summer heat.

Photos by Reagen O'Leary





2707 K Street, Suite 1, Sacramento, CA 95816-5130 | Tel: (916) 447-2677
California Native Plant Society ©2021 All rights reserved.