

# CALIFORNIA NATIVE PLANT SOCIETY

## *San Diego Chapter Newsletter*

### NATIVE GARDENING COMMITTEE

**Native Garden Committee (NGC)  
Zoom Meeting  
May 11, 6:30 - 8:00 pm  
Regenerative Landscapes and  
Climate Adaptation**



The NGC is pleased to announce co-presenters **Shawn Maestretti**, landscape architect and principal of *Studio Petrichor* and **Leigh Adams**, *Studio Petrichor* consultant and educator as our speakers for the May meeting. Continuing the conversation from David Newsom's March presentation, Shawn & Leigh will discuss hugelkultur<sup>1</sup> and more. Embracing real-life solutions, accessible to homeowners, garden enthusiasts, communities, municipalities, and landscape professionals, this timely and informative presentation immediately engages the audience to provide a blueprint for inspired actions.

This meeting is limited to 100 participants, so sign up now! And we will email you a Zoom link **3 days** before the presentation. [Zoom Meeting Sign Up](#). We will take a break from Zoom meetings over the summer, and will resume in September. Watch this newsletter for upcoming announcements.

<sup>1</sup>Hügelkultur is a horticultural technique where a mound constructed from decaying wood debris and other compostable biomass plant materials is later (or immediately) planted as a raised bed. Adopted by permaculture advocates, it is suggested the technique helps to improve soil fertility, water retention, and soil warming, thus benefiting plants grown on or near such mounds. (from Wikipedia)

### East County 360 Native Garden Tours

We hope everyone enjoyed the chapter events offered during "Native Plant Week" in April. Have you taken any of the 360 Native Garden Tours for a spin yet? It's like taking a virtual museum tour, except in a native garden! We have included plant lists, Calscape plant IDs, garden owner videos and more. NGC members and photographers **Chris Travers**, **Louise Russell** and **Christine Hoey** worked round the clock learning how to use the GoPro Max camera and Kuula editing software to create these five interactive gardens. We would also like to thank **David Bryant** with CNPS for his assistance and support. David also created ten 360 virtual native gardens from our statewide CNPS Ambassador gardens. Check them out on our website at <https://www.cnpsd.org/> and also on <https://www.cnps.org/>

### Bird Park Update

The NGC worked in collaboration with *Debra O'Leary of Coastal Landscape Design* to present our landscape design and native plant list to Balboa Park for their "Adopt-A-Plot" Program. Once plans have been finalized and approved, the NGC will form a Bird Park



Left: Cactus flowers with California poppies (*Eschscholzia californica*). Photo credit: **Christine Hoey**.

Workgroup to begin this phase of the project. This is a great opportunity to introduce more California natives into this park for public education and appreciation. The committee will follow current COVID county guidelines for group activities, including wearing masks during the work and maintaining social distance. Bringing your own tools is preferable; any shared tools will be sterilized before each use.

If you would like to be part of the workgroup, sign up here: [Bird Park Workgroup](#). Novices to experienced native gardeners are welcome! And don't forget to swing by anytime to see our other

Adopt-A-Plot garden at Zoro Canyon (behind Zoro Garden) in Balboa Park.

## Good Neighbor Gardens

Good Neighbor Gardens contacted NGC member **Jim Julius** to request help from the NGC on how to use natives in tandem with their urban farming/gardening work on April 10<sup>th</sup>. Jim was joined by **Christine Hoey, Sue** and **Karen Marchetti** at one of their community gardens for a presentation on planting natives in a food garden, Calscape plant lists, and native plant donations for their garden. We look forward to supporting more local community gardens interested in “rewilding” their food gardens.

Summertime is just around the corner, so it’s time to get the grill ready for cookouts. Speaking of culinary skills, are you inspired to cook with California native plants? Send us your recipes to share! What do you think about a CNPS chapter native plant recipe book? Drop us a line if you are interested, and here is a recipe to start you thinking...

### Cleveland Sage Pesto

by Antonio Sanchez

Recipe serves 5. Cook time 30 min.

#### Ingredients

- 2 cups loosely packed sage (*Salvia clevelandii* cultivars)
- 1 cup pine nuts
- 3 *Allium* bulbs (or garlic as a substitute)
- ¾ cup extra virgin olive oil
- Salt and pepper to taste

#### Directions

1. Blanch the sage leaves for 45 seconds in boiling salted water (to make tender).
2. Let leaves drain, pat dry and let air dry for 5 minutes.
3. In the food processor, process sage leaves, pine nuts, *Allium* bulbs until coarse.
4. Add a steady stream of olive oil to the mixture and process until smooth.

Happy Spring!

Christine Hoey, Judie Lincer & Nancy Levine, NGC Co-chairs

## Natives Contained

by Christine Hoey



Left: Desert Bells (*Phacelia campanularia*).  
Photo - **Greg Rubin**.

Native plants in containers are an easy way to add beauty while also creating a micro habitat for pollinators. Think of your native

container garden as a bird feeder, a bee and a butterfly diner!

Pollinators are not particular about whether their food source is out in the wild or on your front steps - just take pleasure in knowing you are nurturing your biodiverse visitors.

## Planting Natives in Containers - Keys to Success

1. **Location:** Is your space mostly sun, partial shade or full shade? This will help you select natives according to their lighting requirements. [www.Calscape.com](http://www.Calscape.com) can help you narrow down the list of natives that will thrive in your sun/shade location.



2. **Soil:** Use well-draining soil such as Kellogg cactus mix. **Justin Daniel** likes to add a little ground soil mixed in with cactus mix whereas Don Rideout has had success using coastal sandy soil. Just remember, traditional potting soil mixes hold onto too much water and can cause root rot in natives.

3. **Yes, pot size matters!** The deeper the pot the better it will accommodate root growth. Make sure your pot has an opening in the bottom for water to drain. Unglazed terra cotta, glazed pottery, plastic or even redwood containers are good options.

4. **What, I need fertilizer?** Native plants in pots will need a little fertilizer because soil nutrients leach out over time. Using a diluted fertilizer ¼ strength, one to two times a year at the start of the growing season, will keep your plants healthy. Make sure you water your plant before feeding.

5. **Watering:** Potted natives dry out more quickly and will need regular watering. A good rule of thumb is to poke your finger in the soil - if it is dry 2-3 inches down, then water. Allow water to drain out of the pot bottom and if it drains out fast, it’s OK to water a second time. Water when temps are cool, leave no pots in standing water, and double pots in the summer to give natives a little insulation from the heat.



6. **Top Dressing - Be creative!** Dress up your natives with decorative rock, wood chips, pebbles glass chips or even pinecones! Top dressing also keeps the soil from drying out too fast.

Left: Dudleya with pinecone dressing. Photo: **Susan Kryswicki**.

7. **Grouping:** Choose pots with different heights and group them together for maximum pollinator visitors!

## Moosa Creek Nursery Update



Left: Native succulents grouped together. Photo: Susan Kryswicki.

### Examples of Native plants that do well in containers:

**Sunny locations:** Red Buckwheat (*Eriogonum grande*), Conejo Buckwheat (*Eriogonum crocatum*), Island Snapdragon (*Gambelia speciosa*), Verbena De La Mina (*Vervena lilacina* 'De La Mina'), Mint, Munz's Sage (*Salvia munzii*), Bush Monkey Flower (*Mimulus aurantiacus*), California Fuchsia (*Epilobium canum*), Manzanitas (shrub), Common Yarrow (*Achillea millefolium*), Beach Asters (*Erigeron glaucus*), Sky Lupine (*Lupinus nanus*), Margarita BOP (*Penstemon heterophyllus* 'Margarita Bop'), Bladderpod (*Peritoma arborea*), Woolly Blue Curls (*Trichostema lanatum*), Desertbells (*Phacelia campanularia*), *Allium* spp., Xerces Pollinator Mix (see CNPS-SD website at <https://www.canativeseeds.com/>)



Left: Nicolas Chamise (*Adenostoma fasciculatum* 'Nicolas') Photo: Pete di Girolamo.

**Part Sun/Shade:** Bush Sunflower (*Encelia californica*), Dudleyas, Woodland Strawberries

(*Fragaria vesca*), Coral Bells (*Heuchera sanguinea* 'Coral Bells'), Blue Eyed Grass (*Sisyrinchium bellum*), Wormleaf Stonecrop (*Sedum stenopetalum*), Common Yarrow (*Achillea millefolium*), Shootingstar (*Primula clevelandii*), California Buttercup (*Ranunculus californicus*), *Viola* spp., Miner's Lettuce (*Claytonia perfoliata*)

Shooting Star (*Primula clevelandii*) Photo: Greg Rubin.



This is not an all-inclusive list of native plants that do well in containers, so don't be afraid to experiment.

Now pull up a comfortable chair with your favorite beverage and enjoy watching who comes to visit your native container garden!

**Christine Hoey** is co-chair of the Native Garden Committee and a native plant enthusiast. All photos courtesy of CNPS-SD members.

Su and Hank Kraus recently announced that they have sold Moosa Creek Nursery to entrepreneur Jose Cohen. When we heard that, we decided to visit the nursery to learn more about what the future holds. Moosa Creek Nursery is one of the three large native plant nurseries serving San Diego County and it is an important source of native plants both for habitat restoration and residential and public gardens.

Moosa Creek Nursery started in 2004. Su and Hank had recently purchased a residence on several acres of land and were fascinated by the native habitat on the property. The property was managed at the time by a man who became the nursery's first employee. Su and Hank were their own first customer, but soon their plants began to find their way to nearby customers. They named the nursery after Moosa Creek, which runs through the property. They have steadily built the business into a recognized leader in native plant production and enlightened corporate responsibility (from the mission statement on their website).

Su and Hank had no knowledge of native plants when they started, but with research, hard work, and trial and error, they became proficient. With their business experience, Su and Hank implemented business systems to manage the nursery and to enable it to continuously improve. By 2015, the nursery had grown and needed more room, so they moved it to its present location that is also near Moosa Creek. Today, it is known for the high quality and diversity of its native plants.

Jose has much in common with Su and Hank. He has extensive business experience, including a successful orchid nursery, which he established four years ago. Like Su and Hank, Jose begins with little knowledge about our native plants, but he is just as fascinated by them as Su and Hank, so they are now busy sharing what they have learned over the years with Jose, including detailed and extensive documentation on how to propagate and grow the plants. Su will continue to work at the nursery during the transition. She works there full time as I write this. She will soon switch to part time, and then she will remain an advisor to Jose for years to come. Jose also inherits a skilled staff, and none of them are leaving.

We all expect demand for native plants to grow in coming years, and Jose plans to be right in the middle of it. He pointed out that the nursery property has considerable unused space, and he plans to expand. He intends to continue to develop the systems Hank and Su have already implemented, and he has ideas for even more. He wants to make it easier for people to succeed with natives. Most importantly, Jose is committed to Moosa Creek's focus on native plants.

Our takeaway from these conversations is that we should not expect any sudden shifts at Moosa Creek Nursery; it will continue to focus on native plants, and it will continue to develop, improve, and grow. We look forward to seeing what Jose does with Moosa Creek Nursery.

~ Lee Gordon and Al Field, GNC Members

## CNPS SD Seed and Bulb Team Update

The 2020-2021 sales numbers are in and our seed and bulb sales equaled \$27,839.00 for the chapter! This is beyond any expectation I ever imagined and is the result of everyone's hard work and dedication to building our seed and bulbs offerings. It also reflects the success of our new website [www.canativeseeds.com](http://www.canativeseeds.com) to "move product" that launched early 2020. Many thanks are in order, as well there have been a few changes to the group. Here are the highlights.

**Cathy Long** has taken on the responsibility of mailing out our seed packets. She now has all of our "retail ready" inventory and fulfills all of the mail orders as they come in (in just March we sold 632 packs of seed to 173 people - that's 173 mailers that had to go out!). This is a huge job and we are lucky to have her! Thank you, Cathy!

**Ondina Moehl** has taken on the responsibility of making up labeled envelopes ready to fill - since we are making packs "by the 100s" now, having labeled envelopes ready to fill has eliminated a huge source of error on the packing end of things and made my life so much easier. Thank you, Ondina!

**Justin Daniel** is stepping in as our official "seed cleaner." This means, especially during the pandemic, anyone who has seed to donate but can't clean it enough for us to package, can get it to Justin to clean who then gives it to me to get packaged. He has also offered to come to your house to officially ID any plants you would like to donate seed from. This means if you have seed to donate, please contact Justin to coordinate ID/cleaning! Thank you, Justin!

**Joseph Sochor, Bonnie Nickel, Sora Haagenen, Don Rideout, Craig Denson, and Connie di Girolamo** have all been invaluable in helping build up the content on our website - from product descriptions, categorization, and photos. Their work includes bulking up the site to include plants for the plant sale too! Bonnie is also our go-to for new seed envelopes labels when we get new species. Thank you all!

During the pandemic I have been working with the National Charity League Seaside Chapter, a mother-daughter philanthropic organization, to package up the seeds. This has included giving them "packing jobs" that they pick up, do at home, and return to my house to keep the inventory stocked under social distance guidelines. They have kept our stores full and we have helped bring native plant awareness to young girls (and their moms) in San Diego.

I think that is about it for now. I've noticed many of my plants are going to seed so I would like to remind you that we still appreciate and need all of your seed donations this year. If you need help with cleaning, contact Justin Daniel at [vicepresident@cnpsd.org](mailto:vicepresident@cnpsd.org). If you have cleaned seed contact me, Cindy Hazuka at [seedsandbulbs@cnpsd.org](mailto:seedsandbulbs@cnpsd.org). As always, please let us know the scientific name, when the seed was harvested, where the mother plant is from (your garden, private

property in \_\_\_\_ city, etc.), and any other info. We would love bulbs too!

Not sure when seed packing parties or in person sales will be back on the docket - but we will keep you posted!

~ **Cindy Hazuka**, Seed and Bulb Coordinator

## CNPS-SD BOARD NEWS

### May Board Meeting

**Wednesday, May 5, 6:30 – 9:00ish p.m.** The meeting will be via Zoom. To add an issue to the agenda, or to get the link to the meeting, please email [president@cnpsd.org](mailto:president@cnpsd.org).

### April Board Meeting Summary

The following were approved:

- The 2021-2022 chapter budget.
- Award of a 1-year contract to Joseph Sochor for Social Media and Event Promotions.
- Donation of \$2,500 to CallPC for *Volutaria tubuliflora* (desert knapweed) control.

Frank Landis and Justin Daniel reported on the CNPS Chapter Council meeting that was held virtually the first weekend in April. They reported that CNPS staff will have diversity training this fall; the CNPS strategic plan will be updated; CNPS policies on plant collection will be updated; a sponsorship policy will come from CNPS soon; and CNPS will hire 14 new staff members during the next year.

Other items discussed by the board included: the results of the winter plant sale; volunteer needs for the 2021 Fall plant sale; refunds from Brown Paper Tickets who sold tickets to the CNPSSD spring garden tour that had to be cancelled; new CNPS COVID-19 guidelines; the Right of Entry Permit with City of San Diego Open Space Division that Justin and Joseph have been working on; revisions to the chapter Handbook and Bylaws that Bobbie has been working on; setting up a Board Vision Meeting; and the chapter's events for Native Plant Week.

~ **Bobbie Stephenson**, Chapter Secretary

### COVID UPDATE

As the state of California has been re-opening certain outdoor activities, CNPS has issued a document that details how chapters can choose to open up outdoor activities safely.

Activity status in our area can be determined at <https://covid19.ca.gov/safer-economy/>

## CONSERVATION

### Conservation Committee Meeting

Contact [conservation@cnpssd.org](mailto:conservation@cnpssd.org) for information regarding the May meeting.

### Rare Plant Conservation for 2021

I'm in a weird headspace at the moment. Supposedly, I should be thinking about how to recruit people to do rare plant surveys in 2021, despite the abysmal rain and general paucity of plants. On the other three hands (I recruited my wife to help), I'm doing conservation, so the question of "how to get interested citizens involved in rare plant science takes on a rather...different perspective. So, let's go with it. You, dear reader, want to get involved with California rare native plants. What should you do?

First, you need to understand the scope of the problem. According to **Jon Rebman** of SDNHM, San Diego County has around 1,700 native plant species (this is species, not subspecies or varieties, and not non-natives. Add that all in and the count goes over 2,700). According to the CNPS rare plants inventory, around 290 of those species are in some way sensitive, 16 are listed as rare threatened or endangered, and over 200 are listed as CRPR list 1B or 2B, meaning they could be listed as threatened or endangered in California.

But wait, it gets worse. At 1,700 native species, San Diego County has more native species than the state of Hawai'i. Or either of the Dakotas. Or even Alaska, for that matter. At 4,207 square miles of land, we're not quite 200 square miles bigger than the Big Island of Hawai'i (4,028 square miles). And while the Big Island is home to around 185,000 people, San Diego's home to over 3,338,000 people, or not quite 20 times the population density.

According to Dr. Rebman, even the parks in the City of San Diego are home to around 700 native plant species, of which over 90 are sensitive in some way. The Florida Everglades have about this many native plant species, although to be fair they have around 160 sensitive ones. But places like Peñasquitos and Mission Trails, even Fiesta Island, are collectively on par with the Everglades in biodiversity terms.

That's why we have a rare plant problem. We're the most biodiverse county in the US, and also the fifth most populous county in the US. It's not that San Diego is home to a bunch of overly fussy environmentalists. We really do have more rare species in a smaller space than most states have to deal with.

With that in mind, here are some things you can do to help with native plant conservation, in no particular order:

1. Realize that you live in a place where endangered species like *Ambrosia pumila* occasionally grow out of the cracks in urban sidewalks. So, learn your local plants, rare and otherwise. Rare plants are not limited to the mountains or the desert. One of the best places to squash a really rare native plant is on the volleyball court on the bayside of Silver Strand State Beach (three list 1B plants grew on that sand in April). Learn your local plants.

2. Protect your local plants. This means things like not stepping on them, or sitting on them, or picking them, or cutting their branches down because they're slowing your bicycle run down. Keep your dogs and small children out of vernal pools, even though you splashed in mud puddle when you were a kid. Don't create play areas for your children in open space preserves. Or practice your survival skills there. Respect fences and signs. This is really simple stuff, but one of the reasons we have so many rare plants not doing well is people harm them.

3. Educate your friends and anyone who will talk to you. But you don't know anything about native plants, right? Well, how about park etiquette? Do you know that? In San Diego City, some lawyer ruled last year that the risk of the city being liable for COVID-19 exposure outweighed the utility of having volunteers in parks, so all organized volunteer activities were banned. These activities were the backbone of keeping the parks clean and in repair. Simultaneously, the beaches were closed, while people were told to get out in nature for exercise and recreation. You can guess what kind of mess they made, with no one to clean it up. In Peñasquitos, where I volunteer, you can now see over 20 trails going towards the stream, with toilet paper at the end of many. Often in poison oak. This is the level of education any outdoor person can help with: how many San Diegans have no idea what poison oak looks like? How many urbanites have no idea that in the big parks, there's not a bathroom every block or two, and don't think to go before they go to the park? How many don't know not to relieve themselves next to streams? Since there aren't any volunteers around to deal with this problem, or to repair fences, close amateur trails, wash off graffiti, or yes, explain that someone's standing on a rare plant...I can but hope that you'll step in. With three million people and more coming, everyone who cares about wild spaces needs to help educate people who just moved here from Kansas that they're literally not in Kansas anymore. Stuff that is perfectly acceptable in a rural state is hideously destructive in an urban preserve that's sheltering endangered species, and no one gets educated about this when they move here. Want to help?

And here are four more things you can do. The big threats to rare plants are habitat loss, invasive species, and climate change.

4. Losing habitat to development is the big problem, but once a rare plant is preserved in a park, it's not safe from vandals or flower collectors, or from politicians or planners who think that park is a perfect "blank space on the map" to put a new commuter bike path or a playground. Each of these problems demand different strategies, but the general mantra is that conserved has to mean conserved, not set aside for later use. Unless we live that way, nothing is safe. Anything you can do to help, from showing up at meetings to talking a kid of any age out of building a trail, is a step in the right direction.

5. Weeding as restoration is something our chapter is good at. While I DO NOT recommend weeding around rare plants if you don't know what you're doing, keeping the weeds from getting close to the rare plants is something that you can do. For example, there's a wave of Sahara mustard (*Brassica tournefortii*) breaking

over the patch of rare Nuttall's lotus (*Lotus nuttallianus*) on Fiesta Island, and you can pull a lot of Sahara mustard without getting anywhere near the tiny little lotus. Keeping weeds from taking over fields is a chore, but it's a necessary one. And if you have a knack for that sort of thing, join the CNPSSD restoration committee and get involved.

6. Climate change...that's the big lurking monster. While it's currently number three on the list, it will be number one in a few decades, unless we change our lifestyle. So keep working on that.

7. And then there's the last thing you can do: help everyone keep the other 1,500-odd native plant species in San Diego County from becoming rare. Rare just means a species is in dire need of help. But common species can become rare quite quickly. Look at the American chestnut (*Castanea dentata*), which went from dominating forests to functionally extinct in a few decades, due to an introduced fungus. This may sound alarmist, but consider our coast live oaks, currently facing both gold-spotted oak borer and two species of shothole borer. They could easily go the way of the American chestnut in the next few decades. What happens then to the hundreds of species that depend on them for food and shelter? Keeping oaks healthy and learning to monitor them for disease is one thing you can learn to do, if you love oaks. This needs to be done for the other 1,500 common species too. Don't just protect rarities.

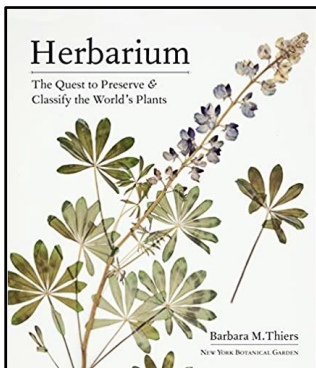
Oh, and if you want, you can contact me to learn how to count rare plants. As I hope you can see by now, while this is essential, it really is the tip of the iceberg when it comes to rare plant conservation in San Diego County. There's a lot for everyone to do. Please help out.

~ Frank Landis, Conservation Chair & Rare Plant Survey Chair

## BOOK REVIEW

### Herbarium: The Quest to Preserve & Classify the World's Plants

I recently picked up a copy of *Herbarium: The Quest to Preserve & Classify the World's Plants* by Barbara Thiers of the New York Botanical Garden to see if CNPSSD should sell it. The Timber Press book covers collections and herbaria around the world but has tidbits throughout that should interest anyone with a curiosity



about early plant collectors and collections. I stopped to read a bit when I saw the name Torrey. I found out a botanist was at Hamilton's duel with Aaron Burr in 1804. Of course, botany was a sideline as the gentleman was also a physician but many early botanists/collectors primarily had other professions. You find out a bit about how the Missouri Botanical Garden came into

being. There is a section on pioneers of California herbaria: Brandegee, Eastwood, and Jepson, and tales of the Lewis and Clark herbarium specimens.

I slowed down during flipping through when I saw some algal sheets and read a bit about Job Bicknell Ellis, a pioneering North American mycologist. The following page had a photograph of the staff of the agricultural school at Tuskegee Institute with George Washington Carver in the center of the photograph. The text discusses that George Washington Carver discovered an interest in mycology while a graduate student in Iowa and sent specimens to Ellis, 60 of which were included in the Ellis and Everhart article, *New Alabama Fungi*. Carver had two species named for him from those collections.

Names show up that you know from species (John Clayton, Gotthilf Henry Muhlenberg, John Torrey, George Engelmann, Henry Shaw, Archibald Menzies, Albert Kellogg, Willis Linn Jepson) or "cabinet botanists" like Asa Gray, or from Southern California collectors (Thomas Nuttall, Mary Katharine Brandegee, Alice Eastwood). There is a discussion about digitization that has vastly expanded the use of herbarium specimens. The majority of the book covers areas beyond California's borders but it is an interesting read. Let me know if you would like to peruse a copy or purchase one. Eventually we will have meetings again.

~ Cindy Burrascano, Book Sales Chair

## NEWSLETTER

We could use some articles for this newsletter, anything you are interested in about native plants or in one particular species. Here's a suggestion: Write a brief article on your favorite California native plant. How/when you first discovered it, why you are fascinated by it, how you've shared it with others. Three paragraphs would be sufficient. If you have photos we would be happy to share them with your article. We can also, probably, find a photo to use if you don't have any.

## INVASIVE PLANT SPECIES

### Eucalyptus trees can be genetically modified not to invade native ecosystems

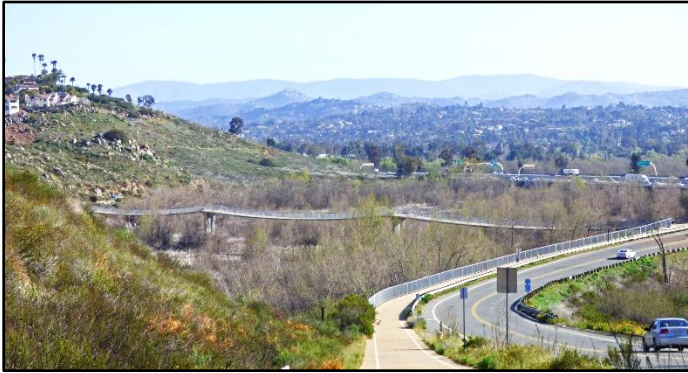
*Eucalyptus*, a pest-resistant evergreen valued for its hardy lumber and wellness-promoting oil, can be genetically modified not to reproduce sexually, a key step toward preventing the global tree plantation staple from invading native ecosystems. Researchers found that the CRISPR Cas9 gene editing technique could be used with nearly 100% efficiency to knock out LEAFY, the master gene behind flower formation so that the flowers never developed to the point where ovules, pollen or fertile seeds were observed. Read more at:

[www.sciencedaily.com/releases/2021/04/210407093228.htm](http://www.sciencedaily.com/releases/2021/04/210407093228.htm)

## IN THE FIELD

### A Spring Wildflower Walk by Jürgen Schrenk

For a spring wildflower walk without much driving, the San Diego area offers quite a selection of different habitats from seashore to foothills to mountains, all within easy reach from the city. On a day in March we picked the north shore of Lake Hodges, about 10 car minutes from our home in Poway and accessible, for instance, by a pedestrian bridge from Rancho Bernardo. The bridge (below) is a short walk from a parking area on West Bernardo Drive.



At its northern end the Coast to Crest Trail welcomes you with bush sunflowers (*Encelia californica*).



and wishbone bush (*Mirabilis laevis* var. *crassifolia*), both extremely frequent along the whole walk,



and, of course, of colorful flowers like the golden California poppy (*Eschscholzia californica*),



and bush monkeyflower (*Mimulus aurantiacus*).

Extensive thickets of coast pricklypear cactus (*Opuntia littoralis*) provide cover for birds (here Northern Mockingbird),



but are interrupted by open areas with huge chalk dudleyas (*D. pulverulenta*)



and (left) flowering bladderpod (*Peritoma arborea*).

After exploring the Bernardo Mountain Lake View Trail with more flowers, from tiny *Euphorbia* sp. (right)



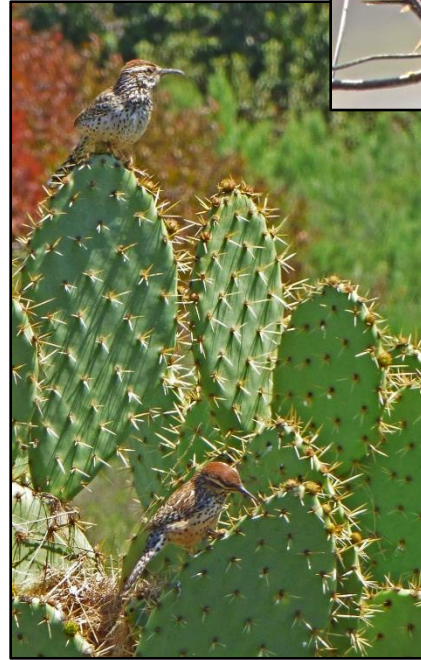
to (below) small tidy tips (*Layia platyglossa*)



we returned on the Coast to Crest Trail with Pricklypear and large Chaparral Yucca (*Hesperoyucca whipplei*).



and the ornithological highlight of the hike, several Coastal Cactus Wrens,



an endemic southern Californian subspecies of this giant desert wren.

To add at least one white flower: here is a Morning Glory (*Calystegia macrostegia* ssp. *tenuifolia*), on our way back to the bridge. Many more flowers than I could mention were present right by the trail, from Miners Lettuce to Fiddlenecks, from Shooting Stars to Deerweed, from Popcorn Flowers to Nightshade, and on and on. This was prime time to cure our Covid-enhanced cabin fever!





## PLANT SCIENCE

### Vegetation vs. Plant Communities, and Why It Matters

by Frank Landis

Just to be different, I thought I'd go back to my roots as a plant community ecologist and explain why I dislike that particular label so much. I will be going into what the words plant community and vegetation mean, and why vegetation community is such an ugly and ill-thought neologism.

First, vegetation: it simply means all the plants in a defined area. That's what Julie Evens (my former labmate and now CNPS Fellow) maps for CNPS, and I'm glad she does. Plant community also means all the plants in an area, but it comes attached to a rather problematic and disproved theory that I will describe below.

The third term I will add is ecosystem, which means all the organisms in a particular area, plus their abiotic environment. This may seem to be a non-sequitur, but if this is new to you, you're probably going to raise one of some very common objections. Most of those objections actually refer to ecosystems, not plant communities. Please keep this in mind. Plant community and vegetation refer only to plants.

The concept of plant communities was proposed by the pioneering ecologist Frederic Clements (1874-1945), and it's part of his climax theory of plant succession. He was a popular scientist with a number of students, and his ideas dominated the first half of the century and were resurrected by GIS boffins and planners in the late 20<sup>th</sup> Century. However, as we've learned with current politics, just because an old idea gets resurrected doesn't mean it was or is right, and that's why I'm going to go into some detail about what Clements meant by plant community.

Succession is change in the composition of a plant community through time. You're likely aware of this idea: after a disturbance, pioneer species come in. They're followed by species that grow up in their shade (herbs giving way to shrubs, which in turn give way to trees). In the absence of disturbance, the plant community comes to a climax state, where the plants in it continue to reproduce themselves. This climax state is determined by the climate, and lasts indefinitely unless the plant community is disturbed, at which point it undergoes succession again. And if the plant community is disturbed too often, it gets stuck in a "disclimax."

Does this sound reasonable? Unfortunately, it isn't, but to see why it's not just unreasonable but damaging, we need to walk through some history.

For one thing, Clements published about plant succession back in 1916. This was a point at which many biologists were rejecting Darwinian evolution, because Darwin's ideas didn't seem to gibe with Mendel's genetic theory. The "Grand

Synthesis" of the two was decades in the future. Moreover, Clements was a proponent both of Lamarckism (the idea that evolution happens through the inheritance of acquired characteristics) and superorganism theory. He'd also not heard of climate change or symbiosis. While both were known by then, anthropogenic climate change was thought to be an issue for the distant future and ice ages were in the distant past, while symbiosis was literally considered to be a communist plot that good capitalists rejected (that's a story for another day). This was the heyday of evolution via competition, the "nature red in tooth and claw" school.

Clements theorized that plant communities were literally superorganisms composed of multiple plant species. That superorganism, when disturbed, regenerated itself through succession. Since he also thought that climate was constant, he assumed that which plant community superorganism established itself on a site depended largely on climate, and that it took centuries to reach climax under a constant climate.

At this point, some people who know a little about mycorrhizae and have heard the expression "wood wide web" are getting angry, because a current incarnation of the superorganism is that all the plants in a forest are tied together by their mycorrhizal web, just like the internet ties us all together into one beautiful global community. The sarcasm is intentional, because the "wood wide web" metaphor popped up early in the days of the World Wide Web, and by now everyone who is online knows that the internet not only does not make civilization into a superorganism, it divides us. And that's true about plant-fungal relations too. They're complicated. To get back to the second paragraph, if you're invoking fungi to tie a plant community together, that's an ecosystem of plants and fungi, not a plant community. Plant communities are nothing but plants, and that's part of the problem with them.

One of Clements' most persistent critics was a botanist named Henry Gleason. He started off with Clementsian views, but by 1926, he objected to them. Gleason proposed instead the idea of vegetation in associations. Vegetation is simply all the plants growing in a defined area, while associations are repeated patterns of associating plants. This is purely descriptive, and no one theory is attached to why some associations are common, or why they occur where they occur. Gleason thought that plant species followed individualistic patterns, growing where they could on environmental gradients like light, moisture, and nutrients, and that there were no superorganismal plant communities. Clements' followers so hounded Gleason that he eventually left plant ecology altogether and went on to a successful career in plant taxonomy.

Now we turn to the University of Wisconsin, where I got my PhD. In 1959, John Curtis, a professor at UW and head of the Plant Ecology Lab, published *The Vegetation of Wisconsin: An Ordination of Plant Communities*. In it, he tested Clements' notion of succession to climax against Gleason's idea of plants acting individualistically. Curtis and his students did this by sampling putative plant communities along environmental

gradients across Wisconsin, and ordinating plant occurrences along the gradients. If Clements was right and the landscape was composed of superorganisms, Curtis expected to see multiple plant species following the same patterns on environmental gradients. If Gleason was right, each plant would have its own pattern of abundance along each gradient. Long story short, Gleason was right, and there aren't any plant superorganisms out there.

But Clements didn't fade into history. *The Vegetation of Wisconsin* is still a standard textbook in Wisconsin, but most people outside the state haven't read it and don't realize that it was actually testing Clements against Gleason. So, plant succession to climax is still taught, even though it was debunked back in 1959.

Succession theory causes trouble. For example, it's behind the long-held belief that Sierran "climax" forests shouldn't burn at all, while chaparral "disclimax" has to burn frequently, or it will get overgrown by later-successional trees. We know this is wrong now, as billion-dollar fires sweep California due to mismanagement prompted, in part, by Clements' ideas.

Clements' theory also assumes that climates are stable over a scale of centuries. Now we know they never have been. The longest-lived trees survive fairly drastic climate changes, and only reproduce successfully when the climate is favorable for seedlings to survive. This is the exact opposite of what Clements thought, as is our modern realization that disturbance is normal, not an aberration.

Those are a few of the many reasons why I much prefer vegetation, and why CNPS and CDFW use vegetation, not plant communities. It's a more correct, neutral term.

As for "vegetation community?" That bureaucratic neoplasm apparently emerged from the GIS and planning worlds. The people pushing this phrase had to deal with arguments about whether to use plant community or vegetation. Apparently because they didn't have the time to understand the history, they made Solomonic decisions to split the baby and thereby begat "vegetation community." It's a meaningless buzzword that makes trained people cringe, the more so because vegetation is the neutral term, while plant community is loaded and problematic. Unfortunately, the well-intentioned folk using vegetation community control things like funding and employment opportunities, so it has spread invasively throughout the bureaucracies. It is cringeworthy bad science, and it would be nice to see it discarded with so many other problematic terms.

## Short-lived plant species are more climate-sensitive

Short-lived plant species are more sensitive to climate change than long-lived ones, researchers found out. The international team compiled comprehensive worldwide available data on how plant populations react to climate change and could show

that plant characteristics such as generation time can predict how sensitive species are to changing climates. More at: <https://www.sciencedaily.com/releases/2021/03/210323103823.htm>

**(Editor's Note:** I review the Science Daily listings to find current articles that pertain to California native plants, could apply to ecosystems in our chapter's area, and might be interesting to newsletter readers. If you know of other such peer-reviewed science articles, please send the link to [newsletter@cnpsd.org](mailto:newsletter@cnpsd.org). Thanks!)

## RELATED ACTIVITIES



The agency to which you pay your water bill is your water agency for this contest. The agencies accept digital or paper submissions to the contest. Contact your representative to learn more or to submit a paper entry form and other required items. Your application materials are due by **May 14, 2021**. For more information and to find your agency's representative for the contest, visit:

<https://landscapecontest.com/>

## Calflora Needs Photos Please Help!

Every photo you add informs the database as a whole, thus helping users develop a deeper regional understanding. Photos of any wild plant species are welcome. Photos document that a particular taxon occurred at a particular place and time, providing baseline knowledge for which to track change. Some photos document the plant phenology —when it was budding, flowering, fruiting, senescent. Your photos help educate other plant enthusiasts and encourage them to botanize. They may also provide locations for researchers seeking voucher specimens. Here is the link for how to upload and publish your photos in Calflora: <https://conta.cc/3pF5sbC>

<https://www.eventbrite.com/e/vernal-pools-of-the-santa-rosa-plain-virtual-panel-presentation-registration-142977600853>

## Xerces Society

### Supporting Pollinators Over Time: How to Maintain Wildflower Diversity

May 6, 10:00 AM - 11:30 am PDT  
Webinar

Visit here for more info and to register:

<https://xerces.org/events/oregon/supporting-pollinators-over-time-how-to-maintain-wildflower-diversity>

## California Wildlands Grassroots Fund Applications

The [California Wildlands Grassroots Fund](#) was established to support the efforts of activists working to preserve California's wildlands. The fund focuses on small nonprofit organizations and individual activists who show a demonstrated ability and commitment to conserve California's natural landscapes. **Application Deadlines are quarterly: May 15, August 15.** Learn more at: <https://rosefdn.org/calwildlands>.

## ESA 2021

### Vital Connections in Ecology August 1-6, Long Beach, California

If public health conditions allow, the 2021 Annual Meeting will be a hybrid meeting in Long Beach that combines in-person and virtual elements. If in-person elements are not possible, the meeting will be virtual (with all sessions online). Contributed presentations will be entirely virtual in both scenarios with an on-demand presentation (uploaded talk or e-poster) and a live virtual discussion scheduled for the session during the week of the meeting. For more information visit [www.esa.org/longbeach](http://www.esa.org/longbeach).

**Ceanothus species were beautiful this year!**



Jürgen Schrenk photographed at least two species of blooming California Lilac (*Ceanothus* spp.) at Daley Ranch.



(Above & below) Mountain lilacs (*Ceanothus* sp.) along the west side of I-15 near SR-76 in March 2021. Photos by Bobbie Stephenson.



The CNPS-SD Newsletter is generally published 12 times a year. The newsletter is not peer reviewed and any opinions expressed are those of the author identified at the end of each notice or article. The newsletter editor may edit the submittal to improve accuracy, improve readability, shorten articles to fit the space, and reduce the potential for legal challenges against CNPS. If an article, as edited, is not satisfactory to the author, the author can appeal to the board. The author has the final say on whether the article, as edited, is printed in the newsletter. Submissions are due by the 10<sup>th</sup> of the month preceding the newsletter; that is May 10 for the June newsletter, etc. Please submit items to [newsletter@cnpsd.org](mailto:newsletter@cnpsd.org).

## CNPS-SD Activities Calendar May 2021

5/5: Board Meeting via Zoom, p.  
5/11: NGC Zoom Meeting, p.1

## MEMBERSHIP APPLICATION

<https://www.cnps.org/membership>

\_\_\_ Student/Limited Income \$25; \_\_\_ Individual \$50; \_\_\_ Plant Lover \$120; \_\_\_ Supporter \$500; \_\_\_ Patron \$1,000; \_\_\_ Benefactor \$2,500; \_\_\_ Perennial Monthly Sustainer Memberships starting at \$5/mo provide much needed predictable income for our programs. Your indicated gift will be automatically repeated each month. Pls see <https://www.cnps.org/membership> to sign up for this membership level.

Name(s): \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ e-mail: \_\_\_\_\_

Mail check payable to "CNPS" and send to: CNPS, 2707 K Street, Ste 1, Sacramento, CA 95816-5113.

## CALIFORNIA NATIVE PLANT SOCIETY

San Diego Chapter  
C/o San Diego Natural History Museum  
P. O. Box 121390  
San Diego, CA 92112-1390



NonProfit Org.  
U.S. Postage  
**PAID**  
Permit No. 2686  
San Diego, CA

May 2021 Newsletter

Dedicated to the preservation of the California native flora  
*CALIFORNIA NATIVE PLANT SOCIETY – SAN DIEGO*

[www.cnpsd.org](http://www.cnpsd.org) [info@cnpsd.org](mailto:info@cnpsd.org) [facebook.com/cnpsd](https://facebook.com/cnpsd) [instagram.com/cnpsd](https://instagram.com/cnpsd) [twitter.com/cnpsd](https://twitter.com/cnpsd)

### **BOARD MEMBERS**

PRESIDENT: Joseph Sochor.....president@cnpsd.org  
VICE PRES: Justin Daniel.....vicepresident@cnpsd.org  
TREASURER: Andrea Rae.....treasurer@cnpsd.org  
SECRETARY: Bobbie Stephenson.....secretary@cnpsd.org  
Cindy Burrascano.....cindy.burrascano@cnpsd.org  
Bob Byrnes.....bob.byrnes@cnpsd.org  
Frank Landis.....frank.landis@cnpsd.org  
Torrey Neel.....torrey.neel@cnpsd.org  
Leon Scales.....leon.scales@cnpsd.org

Two OPEN positions on the board.

### **CHAPTER COUNCIL DELEGATE**

Frank Landis.....chaptercouncil@cnpsd.org

### **Email DISCUSSION GROUP**

Craig Denson, Moderator  
To join, email: CNPSSanDiegoDiscuss+subscribe@groups.io

### **RARE PLANT BOTANIST**

Fred Roberts.....rarebotanist@cnpsd.org  
(760) 712-7604

### **APPOINTED COMMITTEE CHAIRPERSONS**

BOOK SALES: Cindy Burrascano.....booksales@cnpsd.org  
(858) 342-5246  
CONSERVATION: Frank Landis.....conservation@cnpsd.org  
(310) 883-8569  
EDUCATION: OPEN  
FIELD TRIPS: Justin Daniel.....fieldtrips@cnpsd.org  
HOSPITALITY: Kye Ok Kim.....hospitality@cnpsd.org  
INVASIVE PLANTS: Arne Johanson (858) 759-4769 &  
Bob Byrnes.....invasiveplants@cnpsd.org

LIBRARIAN: Maggie Loy.....librarian@cnpsd.org  
MEMBERSHIP: Bonnie Nickel.....membership@cnpsd.org  
NATIVES FOR NOVICES: Torrey Neel  
.....nativesfornovices@cnpsd.org  
NATIVE GARDENING: Judie Lincer, Nancy Levine, &  
Christine Hoey.....nativegardening@cnpsd.org  
GARDEN TOUR: OPEN.....tour@cnpsd.org  
HABITAT RESTORATION: Arne Johanson..... (858) 759-4769 &  
Bob Byrnes.....habitatrestoration@cnpsd.org  
MEDIA: Joseph Sochor.....media@cnpsd.org  
NEWSLETTER: Bobbie Stephenson.....newsletter@cnpsd.org  
(619) 269-0055  
OLD TOWN NATIVE PLANT LANDSCAPE: Peter St. Clair &  
Kay Stewart.....OldTownLandscape@cnpsd.org  
PERSONNEL: Justin Daniel.....personnel@cnpsd.org  
PLANT SALES: .....plantsale@cnpsd.org  
POSTER SALES: OPEN.....postersales@cnpsd.org  
PROGRAMS: Torrey Neel, Joseph Sochor,  
Kendra Saad.....programs@cnpsd.org  
PROPAGATION: Amy Huie.....propagation@cnpsd.org  
PUBLICITY: OPEN.....publicity@cnpsd.org  
PUBLIC OUTREACH: Leon Scales, Justin Daniel  
.....publicoutreach@cnpsd.org  
RARE SURVEYS: Frank Landis.....rareurvey@cnpsd.org  
SEEDS & BULBS: Cindy Hazuka.....seedsandbulbs@cnpsd.org  
SPONSORSHIPS: Leon Scales.....sponsorship@cnpsd.org  
VEGETATION: OPEN.....vegetation@cnpsd.org  
VOLUNTEER COORDINATOR:  
Jasmine Duran.....volunteer@cnpsd.org  
WEBSITE: Joseph Sochor.....webmaster@cnpsd.org  
WORKSHOP – OPEN.....workshop@cnpsd.org

