

CALIFORNIA NATIVE PLANT SOCIETY

San Diego Chapter Newsletter

CHAPTER PRESENTATION

Designing Gardens in Harmony with Nature

By Carol Bornstein
Tuesday, September 14, 2021
7:00 p.m. to 8:15 p.m.



Carol Bornstein, an author and Director of the Nature Gardens at the Natural History Museum of Los Angeles County will be our speaker. Landscape professionals and home gardeners have the power to make a difference in conserving or restoring biodiversity by creating habitat for wildlife in urban areas. Residential, commercial, and public spaces are increasingly

dedicated to this rewarding and vital endeavor to support birds, beneficial insects, and other wild creatures whose natural habitats are threatened by development, pollution, toxic chemicals, and the unchecked spread of invasive species. This presentation features some of the best California native plants for Southern California gardens along with equally important ideas for sustainably designing and tending these spaces.



Toyon berries (top); manzanita berries bottom).



Lucy Warren, author and CNPSSD Native Garden Committee member, will moderate questions from the chat and comment sections of both Zoom and Facebook.

Carol Bornstein is former Director of Living Collections at the Natural History Museum of Los Angeles County, where she oversaw development and care of the museum's 3.5-acre Nature Gardens. For nearly 30 years, she was horticulturist at the Santa Barbara Botanic Garden. Carol is co-author of the award-winning *California Native Plants for the Garden* and *Reimagining the California Lawn*. She has selected and introduced several popular cultivars for California gardens, including *Verbena lilacina* 'De La Mina' and *Corethrogyne filaginifolia* 'Silver Carpet' and she continues to share her knowledge of plants native to California and other Mediterranean climate regions through her teaching, writing, and design work.

TWO WAYS TO WATCH

1) Zoom: To watch the presentation on your computer or phone via Zoom you must register in advance at this link. Registration on Zoom has a capacity so register now for the best 'seats'. You do not need a Zoom account to register or watch the presentation.

Register for the presentation:

https://us02web.zoom.us/webinar/register/WN_hh70zNR1S8iHcEJjn8G7ZQ

2) Facebook: If you want to watch the presentation without registration it will be live streamed to CNPS-San Diego Chapter's Facebook page beginning at 7:00pm. There is no limit to participants viewing the presentation on Facebook.

CNPS-San Diego Chapter Facebook Page:

[facebook.com/cnpssd](https://www.facebook.com/cnpssd)

California Native Plant Festival

Saturday, October 9, 2021

9 a.m. to 3 p.m.

Casa del Prado Courtyard

1600 Village Place

Balboa Park, San Diego

(see p. 3)

VOLUNTEER OPPORTUNITIES

FIELD TRIPS

Field Trips Team: Needs 2 team members with rotating guests as field trip guides (~4 hrs monthly per team member)

- * Field Trips Programmer (scheduling and contacting guides for monthly trips, posting information to webmaster and Meetup group)
- * Field Trips On-site Organizer (hosting the trips, checking in participants and guides, guidelines and announcements at the trip site)

Contact: fieldtrips@cnpssd.org

PUBLIC OUTREACH

Public Outreach Team: Needs 2 team members (~5 hrs monthly per team member)

- * Community Outreach Chair (projects, requests, outreach speaker presentations, diversity building)
- * Outreach Events Chair (scheduling/staffing information tables at county-wide events)

Contact: publicoutreach@cnpssd.org

SEEDS AND BULBS

* **In-Person Seed Sales Lead (~6 hrs monthly)**

The **CNPS-SD Seed and Bulb Team** is looking for a volunteer to be our **in-person seed sales lead** as our chapter opens up to events, starting with the October Native Plant Festival. This is a really fun member interfacing position that makes it possible for our members to take home native seeds to plant!

- You would be responsible for a portable subset of our inventory which you will take to events and chapter meetings, set up for sales, sell, then pack up and take home.
- You will report on total sales for each event, and coordinate with our Mail Order Seed Fulfillment lead on replenishing your stock.
- You can also coordinate with our other member volunteers who would like to help with the actual sales when needed.

If you like to attend our events regularly, this is a great position to take on to support our chapter!

Contact: seedsandbulbs@cnpssd.org

CNPS-SD BOARD NEWS

September Board Meeting

Wednesday, September 1, 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@cnpssd.org.

August Board Meeting Summary

The board approved the following:

- to add Christina Clark to the Board
- to fund \$5,000 toward the first-year salary of a CNPS Conservation Analyst who would focus on Southern California

Items discussed by the board included: revisions to the handbook and the Fall Native Plant Festival Meeting adjourned at 8:45 pm.

~ **Bobbie Stephenson**, Chapter Secretary

NATIVE GARDENING COMMITTEE

Native Garden Committee Meeting

Our next Zoom meeting will be a chapter event on September 14 with **Carol Bornstein**, renowned horticulturist and co-author of *California Native Plants for the Garden* and *Reimagining the California Lawn*. The presentation will be moderated by **Lucy Warren**, author and NGC member. See page 1 of this newsletter for more information about Carol's presentation and for the link to register.

To complement Carol Bornstein's presentation, this month's featured article "**Landscape Theory**" by landscape designer **Susan Kryzwicki** focuses on three basic principles in designing your native landscape. This commonsense approach will ensure you will have a plan that works according to your landscape requirements and the aesthetics you desire.



Above: Native Garden Committee at Bird Park.

Photo credit: **Christine Hoey**.

Our first in person **Native Garden Committee Meeting** Brunch/Potluck on August 15 at Bird Park included old and new members and even a few folks from the neighborhood. The discussion included a review of this year's activities and future events to look forward to. We finished the meeting with a tour of Bird Park and a look at the existing natives in the Adopt-A-Plots. (NGC continued on page 3)

CALIFORNIA NATIVE PLANT FESTIVAL

Saturday, October 9, 2021 / 9AM to 3PM
Balboa Park — Casa del Prado Courtyard
1600 Village Place

cnpssd.org for details

NATIVE
GARDENING, ART,
VENDORS, SEEDS &
BULBS, BOOKS,
EXPERT ADVICE



CALIFORNIA NATIVE PLANT SOCIETY
San Diego Chapter

First CNPS-SD

California Native Plant Festival!!!

The Chapter is pleased to announce that its first annual California Native Plant Festival will be held on **October 9 from 9 am to 3 pm in Balboa Park**. The Festival will feature a variety of native plant-themed activities for both kids and adults, including speakers, artists, vendors, exhibitors, and live music. A selection of chapter-grown native plants will be available for sale. This will be an opportunity to spotlight both the importance and the joy of California native plants for both enthusiasts and novices alike. Funds raised will benefit the activities of the CNPS-San Diego Chapter. Look out for more details to come. Hope to see you all there!

For those seeking to buy a full complement of native plants for their gardens, note that future sale events are in the works.

Do You Propagate California Native Plants?

Would you be interested in donating some of your propagated native plants to the chapter's first **California Native Plant Festival** for fundraising efforts? Well, we thank you in advance!

Contact:

nativeplantfestival@cnpssd.org to provide your details - name, phone, email, species and quantities.



(NGC continued from p. 2)



Bird Park "Feather" Adopt-A-Plot. Photo credit: **Christine Hoey**

Bird Park Update

The 2 Adopt-A-Plot gardens have been weeded and are now undergoing solarization for 6 weeks to (hopefully) prevent weeds from growing back - especially the dreaded nutsedge! Bluebirds have been seen roosting in the Engelmann oak (*Quercus engelmannii*) and playing in the nearby birdbath - must be a good omen for our project! We continue to work with Balboa Park regarding assistance with the hardscape before planting in the fall. In addition, there is a growing interest from the North Park Community to help with installation - sometimes, it takes a village!

CNPS Fall Native Plant Festival

Our chapter will be hosting an all-day *Native Plant Festival* on *Saturday, October 9*. The NGC will have 2 tables set up with native plants on display from Bloom! California, demonstrations on how to use Calscape, educational handouts and more!

This will be a *great opportunity for volunteers to staff our tables*. To allow time to enjoy the rest of the festival, shift work will be limited to 2 hours. A sign-up form will be sent to GNC members in early October for those wishing to participate. NGC members who are interested in potting up extra “volunteers” or propagating native plants to be sold by the chapter can contact plantsale@cnpsd.org. This would be a great way to share your extra natives and proceeds will go to our chapter.



"Western bluebird.
EXPLORED 06/11.2020"
by Lhallwildlife is licensed
with CC BY-NC-SA 2.0.

Merlin Bird ID app

We all love walking the trails to explore native trees and plants, but have you ever wondered “what bird is singing in that coastal live oak?” Well, now there is an app for that! Created by the Cornell Lab of Ornithology, this updated version of the [Merlin Bird ID app](#) allows you to ID birds by their song with almost a 100% accuracy. It also contains an extensive library of birds including photos and voice files of their calls. The New York Times

gave a favorable review this week (see link: [This 'Shazam' for Birds Could Save Them](#)) and the app is available from the App Store and Google Play.

The Native Garden Committee is open to anyone interested in learning more about gardening with native plants. We are a fun group of friendly folks who are all passionate about natives, especially growing them in gardens! If you are interested in joining us, drop us a line at nativegardening@cnpsd.org.

*Natively yours,
Christine, Nancy and Tish*

Landscape Theory The Big Three Questions

By Susan Krzywicki

Over the years, as I have learned about native plants, helped others use native plants in their garden, and taught classes, I have slowly built up a philosophy



on how to approach a home garden. When I first started gardening (non-native), I was always beset by the desire to “put something pink in that corner”—my theories reached only to aesthetic considerations.

Now, thanks to so many generous native plant experts (shout-out to **Greg Rubin**) and enthusiasts, I start with my philosophical mantra—and this is what I teach my students, clients, family, and friends.

Do these in order:

I design with three principles, and they must be accomplished in this order:

1. What grew in that area first?
2. What issues are highest priority?
3. What are your personal choices and aesthetics?

What grew in that area first?

Before thinking about my favorite species or problem-solving, I start right back at the beginning: find out what grew in that very location before there was a house and garden there. The building of a home, whether 100 years ago or last year, involves clearance and soil disruption. But, by using Calscape, a fabulous resource developed by Dennis Mudd and his team here in San Diego, you can build the strongest foundation possible for success.

Type in your address, get a plant list, and winnow it down to a useful, manageable number. For people new to native plants, I start by cutting the list to the top 25 by “popularity,” without even considering plants below that cutoff. This is because a list of 400 plants, many of which are not available commercially, can be overwhelming. There is plenty of time later for collectors, enthusiasts, and completists to, excuse the pun, dig deeper.

What issues are highest priority?

Your garden might include some common San Diego County challenges: slopes, clay soil, sandy soil near the coast, patterns of sun and shade, or fire preparedness. This is where a blank sheet of paper and a pen or pencil come in handy. Make a drawing of your property, with north facing upwards, and lots of white space around the edges. Mark the big items, such as trees, and immovable objects that will stay, such as hardscaping and outbuildings. Make several copies. On one copy, in a bold sharpie, write on the drawing, making notes about issues you will need to address.

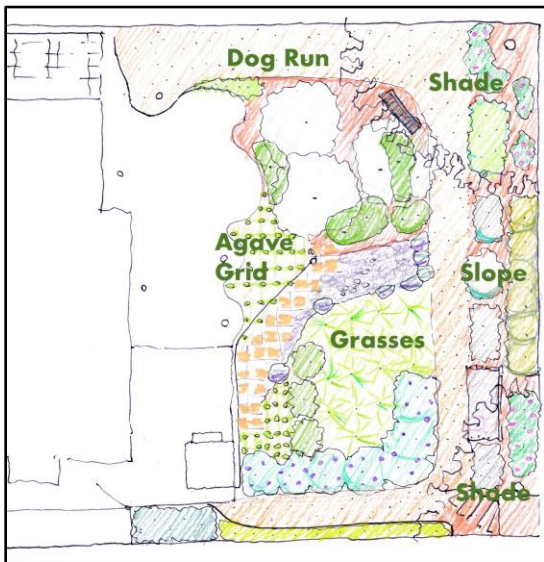
Then, take these notes to a separate sheet of paper so that you can think about how you will solve them: swales and basins for water retention, shade sails to create temporary filtered sun until plants grow in, vegetable beds that need full sun, etc. Then, put them in priority order and go back to your Calscape list to look for plants that will help address these issues. See the sample landscape plan and suggested Calscape native plant list below.

What are your personal choices and aesthetics?

Only now do you start to look at preferences and styles. San Diego gardens are usually warm-toned and casual. “Gorilla hair” shredded redwood bark and decomposed granite (DG) are the most frequently used mulches. Turf rebates may require specific coverage ratios, so do your math. Deciduous trees can be an example of a personal preference and how it influences

your design. Many San Diegans are from other parts of the world and deciduous trees are often seen as a cold-winter inevitability, so many gardeners avoid them. Do you like the look and have a space where the summer shade of leaves can be a help and where the winter sun will turn into an added benefit? Then, please do consider a deciduous tree. Is your home a typical California stucco? Exuberance is a fun way to design to complement this style. Or do you have a more modern, minimal design? Modern homes are often accompanied by a restricted palette. Mission and craftsman homes can take a lot of variety in the colors, leaf pattern, and range of tones.

Now, you are on your way to making a garden that enhances habitat, solves problems, and makes your home a personal expression of your commitment to a healthier future.



Susan Krzywicki is a landscape designer/consultant of Native Gardens...Green Living and is a member of the Native Garden Committee.

Embrace Dudleya Dormancy By Sue Jackson

Plants from the genus *Dudleya* are unlike many garden succulents in that they insist on a dormant period. The plant can be a show stopper during the cooler months, but when the heat comes, they are ready for a rest. Overwatering and trying to force them to stay vibrant invites root rot. These photos (left & right above) show the same plant growing robustly and in dormancy. The natural way the plant survives the dry heat of summer is to hunker down and allow the outer leaves to dry in order to preserve the plant center. The plant will be ready to grow again in the fall/winter. During the summer, this plant has been



kept mostly in the shade, given just an occasional dribble of water around the rim of the pot— never watering directly on the plant. The dried leaves can be trimmed off or appreciated for their sculptural quality and rich brown color. Here we have a perfect example of climate adaptation. *Let sleeping Dudleyas lie; If not, they will surely die.*

Susan Jackson is a member of the CNPSSD NGC.

CONSERVATION

Conservation Committee Meeting

Contact conservation@cnpssd.org for information regarding the September meeting.

IPCC 6 and Other Issues

This month's column is a mix of issues big and small.

First, a note to myself as much as to everyone else living in a high or very high fire hazard zone: Haul out your evacuation plan. Check it, update it as necessary, and test it out. Tis the season. Mine lives as a checklist on a clipboard on a nail in my bedroom. If you're in fire country and don't have one of these, make one. You can find advice from San Diego County or CalFire easily online.

Second, a small correction from my August 2021 article. I wrote "There may even be talk of reintroducing beavers to San Diego, where they used to live 150 years ago. They would really rewild the creeks." I got that off a 2013 paper that claimed there was evidence of beavers in coastal southern California all the way to the Tijuana River, and the Kumeyaay had a word for beaver. A couple of weeks later I was contacted by a really nice beaver researcher who had read my article. He'd read the same paper, decided to check the evidence, and now has a paper in the publication pipeline claiming there actually is no evidence for beaver in cismontane southern California, even 150 years ago. Science marches on! Incidentally, there were very definitely beaver in the Colorado River all the way down, and we know the Kumeyaay made it out to the Colorado River occasionally. That's probably where they saw them.

A third item, not precisely native plant related, is a hot air balloon company seems to be in the business of landing on public open space and driving their big pickups out onto the space to retrieve their balloons. This problem goes back decades. If you know the CDFW area on Del Mar Mesa, with its fences and K-rails, my understanding is that these were installed to prevent balloon retrievals from the biggest vernal pools out there. You can still find heaps of old gravel, presumably discarded balloon ballast, on

the biggest pools, and these little hummocks are weed islands in a sea of endangered plants.

Anyway, the balloons still land in open spaces on occasion, even though they've been ordered not to. As we get into high fire season (formerly called fall) this is getting a bit dangerous, with everything tinder-dry, the balloons using propane burners, and the trucks occasionally driving cross country through dry grass. If you see such a landing, take pictures and contact the open space ranger (if you know them), your local park department, and/or your city councilmember. To be fair, no balloon landing has caused a fire to my knowledge, but we don't need that streak broken. And we definitely do not need more vernal pools illegally driven over, for that matter. Del Mar Mesa may be protected, but other pools are not.

A fourth item: the recall election on 9/14. CNPS does not endorse candidates as we do issues, so I will not tell you how to vote. Instead, I will talk about my summer reading, which was about the post-Civil War Reconstruction and the Civil Rights Movement. One historian noted that while the Black community has always advocated for equal treatment, whether they got anywhere depended on whether the people in power, in state and especially federal government, were on their side. From my experience, this is also true on environmental issues.

Environmental advocates have been speaking out on climate change for many decades. Right now, we're in a situation where the President, the Congress, our Governor, the State Legislature, the County Supervisors, most San Diego Mayors, and the San Diego City Council all want to act on climate change. Given the urgency of the situation, we need to keep all these bodies working hard on climate change for at least another decade, whether we think the candidates have perfect records or not. That's my advice for the recall election.

Now, about that IPCC 6 report. That's the Sixth Synthesis Report of the Intergovernmental Panel on Climate Change, who are so mainstream that 19 countries signed off on releasing the latest report. The report of Working Group 1 came out on August 9th, with the other two working groups publishing soon. You undoubtedly saw it in the news three weeks ago, and likely you've forgotten it by now, in the rush of whatever news came after.

Long story short, if we want to hit the 2015 Paris Agreement goal of GHG levels peaking around 1.5% of baseline, we have to make transformational changes in how we do this civilization thing by 2030, perhaps 2035 at the latest. In a total non-coincidence, this is why San Diego County and the State are pushing for rapid decarbonization.

To put this in context, we're in the neighborhood of a 1.5°C increase now, and climate change definitely is playing a part in the massive droughts and huge fires we're seeing now. We can also expect more frequent, and bigger, atmospheric river storms, with up to a meter of rain in a month here (google ArkStorm). We get a century of this if we meet the Paris goals, but we avoid climate change causing a mass extinction and wiping out the possibility for human civilization for the next 10,000-50,000 years (read my book

Hot Earth Dreams if you want more. The basic scenario has held up surprisingly well, mostly because I based it on the work of a really good climatologist).

The key thing to realize is that the problem gets progressively worse the more we dawdle. To quote the report now out: "With every additional increment of global warming, changes in extremes continue to become larger." Or as Dr. John Holdren, who taught me the rudiments about global warming back in the 1980s (!) put it back then: "the problem with global warming is not that the average temperature rises, it's that the extremes become more extreme." He went on to work in the Obama White House.

I'm not going to nag, because if that worked, we would have listened to Lyndon Johnson and Richard Nixon when they both spoke about how climate change was a serious threat to civilization, one that we needed to take seriously. We've used up our procrastination time, and now we're down to the wire.

If you want a positive view, that's what my August column was about, all the things we can do to actually make a change through a lot of hard work. Beavers aside, it is basically what I and a number of others are trying to get San Diego County to buy into, so that's more of a work plan than hopes and dreams.

This brings me to a more plant-related point: if we don't deal with our emissions now, we lose control of our ability to do much about the climate. This takes two forms. The big, scary one is permafrost melt and the release of greenhouse gases from there. That has already started, but if the process truly takes off in a positive feedback loop, we won't be able to control or stop it. Similarly, we could plant huge forests in, say Northern California. A few years ago, that was my favored solution to climate change. Now, as I watch Portland, Oregon, go over 100°F again and fires rage through Northern California, it's become obvious that planting trees alone will not work. They're too likely to die from droughts, storms, or fire. If we don't get our emissions down, we'll lose our current ability to get carbon out of the air by planting long-lived trees and shrubs, and counting on them to grow for decades or centuries. If we continue with business as usual, in about 20 years we'll be out of control and not just along for the ride, but trying to survive it for the next 100,000 years.

We can do a lot now, but our ability to do anything meaningful is slipping away. So cut your emissions already!

Dare to dream, dare to decarbonize, dare to garden for a changing climate, and dare to plant trees. This is the time to plant oaks, even though they might well burn, or get killed by shothole borers, or die of drought.

But unless it's planted, an acorn, any seed, will die anyway. So, what better thing to do than to dare to plant a native tree in the face of climate change, and then to change your life, too, so that you and that seedling grow old together?

~ **Frank Landis**, Conservation Chair & Rare Plant Survey Chair

IN THE FIELD

Habitat Restoration Committee

During restoration work, this honey bee on California buckwheat (*Eriogonum fasciculatum*) was photographed at Lusardi Creek (right). Photo credit: Laura Olivas.



Drought Effects on *Pinus monophylla* (Single Leaf Pinyon Pine) in the Pinyon Mountains, San Diego County By Tom Oberbauer

In a relatively obscure area of Anza-Borrego Desert State Park is a mountain range called the Pinyon Mountains. It is far from any habitations and except for one dirt 4-wheel drive road, it is pristine. It has not been affected by human impacts other than the typical non-native species that inhabit all Southern California deserts and it has not had records of fires, fire suppression, or vegetation management of any kind. It is difficult to get to this area.

Pinyon pines form large forests in the San Bernardino Mountains, the San Jacinto Mountains, and the Sierra Juarez south of the border, but in San Diego County, they are much more limited. The Pinyon Mountains in San Diego County consist of an elevated range with an east-west trending valley at roughly just under 4,000 feet (1,209m) with a ridge of 4,400 feet (1,330 m) on the north side and a series of ridges on the south that range from 4,400 to 5,300 feet (1,209 m to 1,600 m). Whale Peak at 5,347 feet (1,616 m) is the highest point. Two major canyons drain into the valley from the ridges on the south side. Pinyon pines grow in open woodlands and forests on the north slopes of both the north ridges and south ridges and the pines extend down the canyons into the valley bottom in low numbers. From Google Earth, it appears that there was roughly 900 acres (350 hectares) of Pinyon Pine woodland/forest. It is or was of respectable size but perhaps not large enough to support pinyon species like Pinyon Jays. I was able to visit it a few times in the 1980's and 1990's, parking in the valley and hiking up onto the ridge to the south, though I never attempted to climb Whale Peak. The forest of *Pinus monophylla* (Single leaf pinyon) on the various levels of the ridges south of the valley was relatively dense and provided a good impression of how unique and striking the vegetation was.

During the extended dry period in the 1980s and again in the early 2000s, when large numbers of pines in San Diego County perished, *Pinus coulteri* on the south eastern end of Palomar



Mountain and *Pinus jeffreyi* in the area around Julian, it seemed that the desert mountains were not affected.

Pinus monophylla (left; Photo from CalFlora) grows in areas that receive between 8 and 18

inches of precipitation (Zouher 2001), and can grow for 350 years, but most are younger than 150 years. They are considered the most drought tolerant of all pines. They are dispersed by animals carrying the seeds and caching them where they can germinate when forgotten by the animals, including jays, chipmunks or squirrels. They are also slow growing, only two meters tall in 60 years and 150 years to reach 28 feet in height.

While it is possible that the Pinon pines in the Pinyon Mountains were dispersed there by animals across the desert floor, it is more likely that they are part of a population that has occurred there for thousands of years, probably back to the Pleistocene, when they would have grown at much lower elevations and there would have been opportunities for continuous forests and woodlands of *Pinus monophylla*.

Southern California has endured many droughts, including those already mentioned, but very severe drought has occurred in the desert more recently. While coastal mountain slopes and coastal mesas have had rainfall seasons that are significantly below normal, desert regions inland have suffered greater reductions of precipitation. When San Diego International Airport has had 40 or 50 percent of normal precipitation, such as the current 2021 season, the Anza-Borrego Desert has had 32 percent of normal. Between 2012 and 2017, accumulated percentage loss was very high. That drought was significant throughout the entire Western United States, just as the 2021 dry season.

It had been many years since I hiked up to see the Pinyon pine forest on the main mountain range. In December of 2020, a visit to one of the large canyons that trend to the north side of the ridge, illustrated a loss of at least 30% of the trees, but in the canyons themselves, there were still good numbers of healthy trees. The trees in the bottom of the valley were still apparently healthy as well. However, a glimpse of the ridge just south of the valley gave the impression that a larger number of trees died in the upper areas.

It seemed that a hike up onto Whale Peak, farther up into the center of the forest was warranted. In preparation for the hike, I examined and observed photographs that hikers posted on the

AllTrails web site and videos posted on YouTube. People who hiked up the mountain during and after 2016 made comments about the low numbers of living pinyon pines on the route up to the peak. Photographs from hiker's trip logs from 2011 showed the trees still growing, but after that, the numbers of live trees seemed to fall. It did not seem possible to me that the statement as quoted by one of the hikers "all of the trees were dead" could be correct.

I drove up into the valley in January following a snowfall and several inches were present on the valley floor. Then again in March on a warm, clear day, expecting to take assessment on how many trees were really lost and how many survived.

While two of the canyons that drain into the valley floor still had numbers of trees growing, I was absolutely shocked at the amount of forest on the upper slopes that was actually dead. It appeared to be more than 90% dead. Vast forests of trees were leafless and dead, clearly having died a few years ago. Individual trees that were still alive were rare and finding more than one was limited to a few locations. The area turned from being a beautiful, green forest of living trees into a ghost forest of dead, gray and blackened stems.



Above: Dead *Pinus monophyla*.

The trail first climbed up a narrow wash with large type *Nolina parryi* scattered on the slope and in flower. They usually are seen while growing with a rosette of leaves on or near the ground but with tall flowering stalks with orange, brown colored inflorescence. However, one in this canyon had a tall trunk that was approaching three meters in height.

The variety of plants increased when I saw *Ephedra aspera* (Boundary ephedra) and *Bernardia incana* (Western bernardia), a low shrub with small, oval, greenish brown leaves both growing very commonly on the slopes and flatter areas. *Quercus cornelius-mulleri* (Desert scrub oak) was also growing on the slopes of the canyon. The climb through that canyon over large boulders and rocks, mostly allowed one to stay standing, but occasionally required the use of hands to balance one's self. The rocks are old, weathered granitic of grayish tan color. *Cylindropuntia ganderia* (Gander's cholla) grew along the slopes and in a wide variety of other locations on the way.

Above the canyon on the north slope was a flat valley with another higher north facing slope on the south side of that upper valley. A few pinyon pines were still living around the edge of this valley bottom. It was not really a meadow because it lacked grassy cover, but as a flat bottom it had low *Bernardia* shrubs and sandy openings. *Juniperus californica* (California juniper) trees, were growing in various locations and did not seem to have been as seriously affected by the drought because they were mostly alive.



Left: Live junipers amid dead pinyon pines along the trail up to Whale Peak.

The oddly flowered *Thamnosma montana* (Terpentine broom) was growing along the way. The flowers (left; photo credit Calflora) are strange bluish-purple elongated structures with small openings on the end, appearing like elongated vases. The fruits are connected to dual, round structures. *Ambrosia salsola* (Cheesebush), and *Ephedra aspera* (Boundary ephedra; below) were also growing there.



The trail to the peak passed along the edge of the valley bottom before climbing up again on this north slope.



Flower: Image 84558 at PhytolImages.siu.edu

It was here that the shock of the magnitude of the death of the forest became truly apparent. The north slope trail climbed through mostly dead trees with only a few live trees. Shiny black Phainopeplas with flashes of white wing patches and red eyes flew by, making their "switt" whistley call.



Farther up the slope, I came across a very large *Arctostaphylos glauca* (Bigberry manzanita; above). Large portions of it were dead, indicating that it also must have suffered the adverse effects of the drought period that killed the pines; however, the portion that was still alive was flowering profusely and buzzing with bees. Other plants present were *Cercocarpus betuloides* (Mountain mahogany); *Ericameria pinifolia* (Pine goldenbush) with bright green needle-like leaves; and a few *Chaenactis stevioides* (Desert pincushion) represented this year's annual plant crop, but the plants were not very dense since the rainfall has been very low this season. Tiny examples of *Lomatium mohavense* (Mohave lomatium) with finely divided, ferny like leaves were also growing. White flowered *Mirabilis laevis* var. *villosa* (Hairy wishbone plant) was growing along the trail, as well as *Pellea mucronata* (Bird's foot fern) and *Sphaeralcea ambigua* var. *ambigua* (Apricot mallow).

Other shrubs on the slopes included *Ericameria linearifolia* (Narrowleaf goldenbush) with long, green needlelike leaves;



Prunus fremontii (Desert apricot: left) with its rounded, flattened leaves and cream or pinkish-cream flowers; *Opuntia basilaris* (Beavertail cactus); and *Salvia apiana* (White sage).

Annuals that were growing farther up included the blue flowered *Phacelia distans* (Wild heliotrope) and *Salvia columbariae* (Chia; left). The Chia, with purplish flowerheads and green crinkly divided leaves, was dwarf. Skeletons from last season were three times the size of these plants. *Rhus aromatica* (Skunkbrush) also grew there.



The rest of the hike up was similar. Occasional groups of living trees existed on the way to the peak, mostly three or fewer trees.



At the highest point, a few trees were growing as well. From the peak, views to the north extend to San Jacinto past the Santa Rosa Mountains and the Laguna Mountains created a dark chaparral covered wall on the west. South of the peak, the slope is so steep that it appears like a cliff.

One of the closest larger *Pinus monophylla* forested areas exists on the northeastern slopes of the Santa Rosa Mountains in the community of Pinyon Pine. A visit to that area recently indicated that the trees generally appear to be healthy and growing. A few scattered individuals were dead. The canyons that lead down into the desert from the woodland areas that support *Pinus monophylla* appear similarly not to have been significantly affected.

The overall issue of drought caused die off of *Pinus monophylla* in other parts of the West began before 2008 (Greenwood and Weisberg 2008) and other species of pinyon pine, including *Pinus edulis* (Two needle pinyon pine), suffered losses from drought (Meddens et al. 2013; Clifford et al, 2013). As described above, the major loss of the pines in the Pinyon Mountains appears to coincide with a regionwide drought of enormous significance throughout the Southwest from 2012 to 2016. However, a recent study (Hantson et al, 2021) examined the change in vegetation density within a portion of San Diego County that includes much of the Anza-Borrego Desert State Park, including the Pinyon Mountains and the Peninsular Ranges. Using remote sensing data over the past 40 years, a reduction in overall density of vegetation in the study area was documented, and it was especially pronounced in the drier portions of the study area. Furthermore, they analyzed the correlation of vegetation loss with precipitation loss and drought. They found that drought alone was not significant enough to explain the reduction in vegetation but that warming temperatures appeared to be better correlated with the vegetation change than precipitation alone. The record temperatures of the current and past summers for high temperatures in the region but particularly the number of days in the desert areas that have exceeded 120°F provides a small glimpse into the existence of the warming problem on top of the cumulatively higher temperatures that have occurred year to year in this area. The decimation of an entire forest that has

probably grown in the Pinyon Mountains for thousands of years is another graphic illustration of the impact of climatic change that has already occurred.

References

Clifford, M. J., Royer, P. D., Cobb, N. S., Breshears, D. D., and P. L. Ford. 2013. Precipitation thresholds and drought-induced tree die-off: insights from patterns of *Pinus edulis* mortality along an environmental stress gradient. *New Phytologist* (2013) 200: 413–421.

Greenwood, D. L. and P. J. Weisberg. Density-dependent tree mortality in pinyon-juniper woodlands.

Forest Ecology and Management 255 (7): 2129-2137

Hantson, S, Huxman, T. E., Kimball, S., Randerson, J. T. and M. L. Goulden. 2021. Warming as a driver of vegetation loss in the Sonoran Desert of California. *JGR Biogeosciences* 126 (6)

Warming as a Driver of Vegetation Loss in the Sonoran Desert of California - Hantson - 2021 - *Journal of Geophysical Research: Biogeosciences* - Wiley Online Library Accessed August 2021

Meddens, A. J. H., Hicke, J. A., Macalady, A. K., Buotte, P. C., Cowles, T. R. and C. D. Allen. 2014. Patterns and causes of observed piñon pine mortality in the southwestern United States. *New Phytologist* 206 (1):91-97.

Patterns and causes of observed piñon pine mortality in the southwestern United States - Meddens - 2015 - *New Phytologist* - Wiley Online Library Accessed August 2021

Zouher, K. L. 2001. *Pinus monophylla* In: *Fire Effects Information Systems* (online). U. S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer) Available at: <https://www.fs.fed.us/database/feis/plants/tree/pinmon/allhtml> accessed May, 2021.

CNPS BRYOPHYTE CHAPTER

The Bryophyte Chapter aims to increase understanding and appreciation of California's mosses, liverworts and hornworts, and to protect them and the habitats in which they grow.

Upcoming Events

- **Virtual Workshop**, "Introduction to Bryophytes," **Saturday, March 12, 2022.**
- **SO BE FREE 26** Coming up **March 25–28, 2022**, in the Mojave Desert.

Also, a special bryophyte issue of *Madroño, A West American Journal of Botany*, published by the California Botanical Society (CBS), will appear later this year as Volume 68, Issue 3, 2021.

For more info, visit: [Home - CNPS Bryophyte Chapter](https://bryophyte.cnps.org/) or <https://bryophyte.cnps.org/>

NATIVE PLANT ARTICLES & BOOKS (AND RELATED READINGS)

Poachers Are Collecting Succulent Plants in South Africa as well as in California

Just as California has been the victim of *Dudleya* species poaching, South Africa succulents are also being stolen, even endangered species. Read more at:

<https://www.nytimes.com/2021/07/31/world/africa/south-africa-poachers-tiny-succulent-plants.html>



There are dozens of species of *Conophytum* in South Africa, many rare or endangered. Left is a *Conophytum ficiforme* plant in bloom in South Africa.

Photo Credit: Tommy Trenchard for The New York Times

Mycorrhizae

Don Rideout came across this interesting article that looks at the connection between mycorrhizal diversity and stress on host plants, with implications for climate change. Read it at:

[Ancient Alliance | The UCSB Current](https://www.news.ucsb.edu/2020/020119/ancient-alliance?utm_source=newsletter&utm_medium=email&utm_content=Read%20More%20%E2%96%B6&utm_campaign=December%2010%2C%202020) or https://www.news.ucsb.edu/2020/020119/ancient-alliance?utm_source=newsletter&utm_medium=email&utm_content=Read%20More%20%E2%96%B6&utm_campaign=December%2010%2C%202020

RELATED ACTIVITIES

California Biodiversity Day September 7

September 7 of each year is California Biodiversity Day, a day to celebrate our state's unique biodiversity and encourage actions to protect it. **Events will occur September 4-12.** This year will be the third celebration of California Biodiversity Day. In 2020, there were 39 hosts for California Biodiversity Day.

Biodiversity (or biological diversity) refers to the variety of life from ecosystems to species to genes. California is a global biodiversity hotspot and is home to more species of plants and animals than any other state in the U.S. California's people and economy depend on the complex ecosystems that make up our landscapes and seascapes.

Read more about the California Biodiversity Initiative at <https://wildlife.ca.gov/Science-Institute/Biodiversity>. CNPS events had not been advertised when this newsletter was prepared, so check www.CNPS.org for details.

San Diego Natural History Museum Canyoneer Hikes Resume

After a year-long hiatus due to the pandemic, the Canyoneers are back for another season of in-person guided hikes that bring people closer to nature in our region.

The season kicks off on **Saturday, September 12, 2021**, with hikes scheduled nearly every weekend (and sometimes midweek) **through June 26, 2022**. In total, the Canyoneers are offering 57 hikes that cover diverse terrain, ranging from the coast to Anza-Borrego Desert State Park, and from the Tijuana Estuary to Palomar Mountain.

The outings range from short loops on paved trails to challenging hikes with substantial elevation changes.

The Canyoneers' popular online recommendation, which were launched last year, will continue to be offered for those who prefer to hike on their own.

See a list of hikes at:

<https://www.sdnhm.org/education/canyoneer-hikes/>

UCCE Master Gardener Garden Tour September 18, 2021

The UCCE Master Gardener San Diego Program is hosting a fall garden tour in Carlsbad on September 18, 2021. Their last garden tour in 2019 included several gardens with California natives. Tickets are available now at:

<https://www.mastergardensd.org/>

Southern California Botanists Save the Date!

The 2021 Virtual SCB Symposium will be Saturday, **October 16, 2021**. Program and registration information coming soon at www.socalbot.org.

Cal-IPC 30-Year Anniversary Symposium (online) October 26-29, 2021

<https://www.cal-ipc.org/resources/symposium/>

Connect with colleagues from across the state – and beyond – to get the latest updates on effective tools, relevant research, and strategic management approaches. Registration button at the bottom of this page.

SYMPOSIUM FEATURES:

Join session talks, discussion groups, and posters covering a wide range of topics related to invasive plant biology and management. Chat with sponsors/exhibitors, engage during discussion groups, talk to poster presenters, and meet with friends and colleagues.

SPECIAL SESSIONS:

- Invasive plant management to protect biodiversity in California and beyond
- Strengthening conservation by broadening community access
- Lesson learned from 30 years of invasive plant management
- New mapping tools to increase project effectiveness

ALSO FEATURED:

- **Statewide WMA Meeting** – Representatives from California's Weed Management Areas (WMAs) shared information about securing grants, designing projects, researching plants, selecting tools, reporting finds, acquiring permits, and engaging communities.
- **Herbicide Laws & Regulations** – Session designed to provide 2 hours DPR credit
- **Early Career Panel** – Students and early-career professionals, learn more about careers in weed management with representatives from non-profits, academia, consulting firms, and government agencies.
- **Poster Session** – Join in discussion with poster presenters.
- **Exhibitor Gallery** – Connect with sponsors and exhibitors.

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 10th of the month preceding the newsletter; that is August 10 for the September newsletter, etc. Please submit items to newsletter@cnpsd.org

CNPS-SD Activities Calendar September 2021

9/1: Board Meeting via Zoom, p.2

9/14: Chapter Zoom Presentation, 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

September 2021 Newsletter

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

www.cnpsd.org info@cnpsd.org facebook.com/cnpsd instagram.com/cnpsd twitter.com/cnpsd
youtube.com/cnpsd.org

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
Christina Clark.....christina.clark@cnpsd.org
Sheila Kirschenbaum.....sheila.kirschenbaum@cnpsd.org
Frank Landis.....frank.landis@cnpsd.org
Torrey Neel.....torrey.neel@cnpsd.org
Leon Scales.....leon.scales@cnpsd.org

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
E-MAIL ANNOUNCEMENTS:
Kendra Saad.....announcements@cnpsd.org
FIELD TRIPS: OPEN.....fieldtrips@cnpsd.org
GARDEN TOUR: OPEN.....tour@cnpsd.org

HABITAT RESTORATION: Arne Johanson..... (858) 759-4769 &
Bob Byrnes.....habitatrestoration@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
MEDIA: Joseph Sochor.....media@cnpsd.org
MEMBERSHIP: Bonnie Nickel.....membership@cnpsd.org
NATIVES FOR NOVICES: Torrey Neel
.....nativesfornovices@cnpsd.org
NATIVE GARDENING: Nancy Levine, Christine Hoey &
Tish Bergenativegardening@cnpsd.org
NEWSLETTER: Bobbie Stephenson.....newsletter@cnpsd.org
(619) 269-0055
ON-LINE ARCHIVING: Birda Hussey Nichols
ON-LINE INQUIRIES: Don Rideout.....info@cnpsd.org
PERSONNEL: Justin Danielpersonnel@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: OPEN.....publicoutreach@cnpsd.org
RARE PLANT SURVEYS: Frank Landis & Justin
Daniel.....raresurveyS@cnpsd.org
SEEDS & BULBS: Cindy Hazuka.....seedsandbulbs@cnpsd.org
VOLUNTEER COORDINATOR:
Jasmine Duran.....volunteer@cnpsd.org
WEBMASTER: Tim Thornton.....webmaster@cnpsd.org
WORKSHOP – OPEN.....workshop@cnpsd.org

