
Obispoensis

Newsletter of the San Luis Obispo Chapter of the California Native Plant Society



David Chipping

November 2017

Cover Story: Big changes at Shark Inlet

David Chipping

As a lot of you know, I am a retired geology professor who happens to be interested in plants and plant communities. Geology happens slowly most of the time, and thus its interaction with plants may seem to be unchanging to the human observer. It therefore was of great interest to me when, during the 2003 Paso Robles/San Simeon earthquake, there were some strange happenings along the western edge of Morro Bay.

The Morro Bay sandspit is gradually moving eastward, with wind transporting sand from the beaches to the slip faces where the dunes met the mudflats of the tidal bay. Over centuries the dunes advance over the mud, so that the high dunes are laid over the sticky mud of the old tidal marsh. During the earthquake, the seismic vibrations caused the weight of the dunes to compress down on the mud, which then squished out and upward from below the toe of the advancing dune. This carried the saltmarsh plant community upward, much like mud would squish up around the toe of a boot pushed into the mud. Since that earthquake, the plants that needed salty or brackish water died out, and the wedge of uplifted mud grew over with upland plants. Gradually the topography of the uplifted muds softened out and became less distinct under a thick mat of non-tidal marsh plants. I thought that was an end to all the action.

Sometime around the 4th of July, 2017, the southernmost of the dunes reactivated the 2003 slip planes below the original collapse, and parts of the floor of Shark Inlet rose as much as 6 feet vertically, and well over 50 feet horizontally, nearly closing off the southern most end of the inlet. As you can see from the cover photo, pickleweed marsh now lies on the hummocks that are pinching off the end of the bay. Big clumps of *Juncus acutus* are now six feet above any water source. The area south of the slump is pooling into a freshwater marsh, although it is possible that 'king tides' might reach in that far. One of the plants that survived the earlier uplifts was *Frankenia salina*, presumably because it can find enough salt in the uplifted clays.

Another interesting feature that took place in July was the collapse of the slip face of the dune itself. A sheet of sand swept down the dune face and over the top of the rising mass of mudflat at the base of the dune. It carried plants from the face of the dune, where large populations of yarrow, *Achillea millefolium*, manage to find a root hold. These plants slipped down with the sand sheet, and when the flow flattened out at the base of the dunes, the plants were left steeply tilted (see picture).

So what happened in July? Did fireworks scare the giant sand worms the government is keeping secret from us? Most likely it was our very wet winter. Groundwater easily soaks into the dunes sand, making the dune heavier. It also reaches the old slip surface above the impermeable mud of the long-buried mudflat. It could have been something as insignificant as a hiccuping snowy plover to get the whole thing moving again. Anyway, the easiest way to see this is to drive to the end of Butte Drive in Los Osos and walk the shore trail.



(left) Back-tilted yarrow that slid down the dune face (right) The floor of the old tidal channel now uplifted and fragmented
Both pictures taken in August, 2017, by David Chipping

Editor's Note: Readers of the paper version of *Obispoensis* will miss the color that you can see in our downloadable web site version. Visit the website at <http://cnpslo.org>

Carrizo Plain National Monument still safe?

Los Padres Forest Watch (LPFW) has had access to a 'leak' of the final report on the fate of our National Monuments. This apparently was a bunch of 'screen shots' of the document, but no-one seems to know what the final announcement will be. Apparently the Carrizo will not have boundary changes, but the management plan that many people worked on for years might be in jeopardy. I heard that 'hunting opportunities' have been discussed in the overall sweep of whatever is being prepared.

LPFW points out that Zinke is playing down the overwhelming number (98%) of responses that screamed 'hands off'. They state "....the leaked report contains a biased analysis of the 2.8 million public comments received during the formal comment period. The report dismisses attendees of public hearings associated with recent monument designations as "advocates organized by non-governmental organizations (NGO) to promote monument designations," and discounts most public comments received over the past few months as "form comments associated with NGO-organized campaigns."

Thus it would appear the CNPS comments are probably being ignored, and the 98% will become 'fake news'. Already BLM is feeling the effects of the new administration with a drop in staff levels. The Friends of the Carrizo Plain recently had to kick in funding so BLM could get the roads graded after the winter rains. David Chipping

Invasive Species Report

Mark Skinner

Yellow Star-thistle (*Centauria solstitialis* L.)

The annual, occasionally biennial, yellow star-thistle is widespread in San Luis Obispo County and the western US and has invaded 12 million acres in California. The University of California reports that it came from Southern Europe, and was accidentally introduced as a contaminant in alfalfa seed. It was introduced in California in the mid-1800s.

Emerging star-thistle has soft gray-green rosettes of simple leaves covered with hairs. As it matures the taproot may extend deeply into soil tapping into moisture, giving it competitive advantage. The rosette leaves wither by flowering time when those spiny yellow heads develop. Ouch! The flower-heads are solitary on stem tips, and seeds develop quickly and may be viable 8 days after flower initiation. A large plant can produce almost 75,000 seeds. Germination follows rainfall. The seed-bank usually does not survive beyond 4 years but may survive up to ten years.

The young, soft plants are easy to remove by hand. If mowing or weed-whacking, wait until onset of flowering. Mow low: a two-inch plant can recover and produce seed. Don't mow if seeds are present. Two of the most effective insects to control yellow star-thistle are *Eustenopus villosus* (yellow star-thistle hairy weevil) and *Chaetorellia succinea* (tephritid fruit fly). Two of the best herbicides to use are Milestone (aminopyralid) or Transline (clopyralid). Both are safe for grasses, but not other members of the Asteraceae family.



(above) Yellow star-thistle with long 20-25 mm spines (photo Public Domain)



(right) Sometimes mistaken for star-thistle...*Centauria melitensis* - (Tocalote) with shorter spines (15-20 mm) (photo David Chipping)



February 1-3, 2018
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Los Angeles Airport Marriott

<https://conference.cnps.org/registration/>

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Every 3 years, the CNPS Conservation Conference brings together California's conservation community for the largest gathering of its kind. Scientific sessions cover a broad spectrum of topics, and special events provide time for collaboration, networking, and fun. The Preliminary Program is available now!

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Gardening Tips for Plant Propagations

John Nowak, Plant Sale co-Chairperson.

Over the last few years many of you have become aware of what seems to be an onslaught of plant diseases and pathogens. The most famous of these being Sudden Oak Death (SOD), being caused by *Phytophthora ramorum*. Most of these pathogens are in the water born mold family of *Phytophthora*.

For those of us who want to grow plants from seeds or cuttings, we are not exempt from losses caused by *Phytophthora*. So I thought with the plant sale coming up it might be a good time to go over tips to get your new seedlings and/or cuttings off to a good start.

Number one – Pots: Clean pots are like clean clothes; you can take a shower but put on dirty pants and you still stink. So wash your pots in a 1 part to 5 parts bleach to water solution. Let them soak overnight, then dry pots in the sun. Store clean pots in black sealed plastic bags for future use.

Number two – Soil: Clean, pathogen free soil is important. This can be a difficult step because many of our store bought soils contain compost and/or microbes. These may be beneficial to our vegetables, but to a native plant these soils may contain pathogens that might cause damping off. Check the soil bag label and buy only sterile pathogen free soil to ensure a good start.

Number three – Seeds and/or Cuttings: Clean seeds and/or cuttings thoroughly with a disinfectant, such as hot water, Physan 20, bleach, or alcohol. A clean seed or cutting means a clean start.

Number four – Raised Bench: Place pots on a raised bench. When pots are on the ground, they can become infected with pathogens from standing water.

Number five – Water: Clean water is a must. Most of us live in a municipality so this is not a problem. If you are using well water, have it tested for bacteria and pathogens.

Hope to see you all at the plant sale, until then Happy Gardening,



NATIVE PLANT ANNUAL SALE

SATURDAY-NOVEMBER 4th - 9am-2pm

Pacific Beach High School in San Luis Obispo
11950 Los Osos Valley Rd (at Target intersection)

SHRUBS TREES FLOWERS
SEEDS POSTERS BOOKS

Friendly advice from experienced native plant gardeners

The announcement features a green border, yellow flowers, and the California Native Plant Society logo.



Saturday, Nov. 11th, 8:30 am to 11:30 am, Work Crew, Old Prospector Trail, Irish Hills, SLO. Join hikers who want to help keep trails in good shape. We will be using loppers to remove branches of Ceanothus and other chaparral plants out of the trail, then cache the cut pieces off the trail. Meet in the Costco parking lot, adjacent to the Costco gas station, Los Osos Valley Road, SLO. From there, we will walk to the trail. The upper half of the trail was completed in October, so work will focus on the lower half. Total distance will be 3 to 4 miles with a 500 ft. elevation gain. Use a small backpack to bring water, snacks, and sunscreen. Wear sturdy shoes, bring gloves, a hat, and layered clothing, as needed. Contact Bill Waycott, (805) 459-2103, bill.waycott@gmail.com. Rain cancels.

Saturday, Dec. 2nd, 9:00 am to 12:00 noon, New Reservoir Canyon Trail Plant Walk. Join us for a plant ID walk in Reservoir Canyon and the new trail that leads to Bowden Ranch. The focus of this fieldtrip will be riparian and serpentine plant communities, plants one would regularly encounter throughout much of the greenbelt surrounding the city of San Luis Obispo. It is 4 miles up and back, ascending 800 ft. The ascent is gradual, along a winding trail towards the top of the ridge. Come and learn the easy to identify species. Pick out plants that attract you. Bring native plant samples with you to be identified. Meet at Santa Rosa Park in SLO at 8:45 am (to car pool to the trailhead) or at the Reservoir Canyon trailhead at 9:00 am (parking can be limited). Make sure to bring water and snacks. Sturdy shoes, sunscreen, hats, and layered clothing are recommended. No RSVP needed and no dogs please. Also, bring paper and pencil to take notes, and a camera for a photo record. If you would like a preprinted copy of the plant list for this walk, let the hike leader know 24 hours in advance. For more information, contact Bill Waycott, (805) 459 2103, bill.waycott@gmail.com. Rain cancels.

SLO County's Defined Sensitive Natural Plant Communities

Melissa Mooney

Many of us might not know that we have several Plant Communities occurring in the County that are described in the California Native Plant Society's Manual of CA Vegetation (MCV), and have been given a rarity rank by the California Natural Diversity Database (CNDDDB). The rarity ranks are very similar to those given to rare plants (for example, List 1B, etc.), and, in general, they are as follows: G= Global rank; S= State rank; NR= not rated. A number is then ascribed based on rarity. A Plant Community rated S1 for example would be more rare; a plant community ranked S5 would be relatively secure. These rankings are all described very thoroughly in the MCV on page 45.

The Manual of California Vegetation, authored by Sawyer, Keeler-Wolf, and Evens (2009) presents a classification of vegetation based on the National Vegetation Classification, which is a hierarchical classification system containing eight levels, with the higher number (e.g., Level 7, the Alliance), being the most specific. The NVC classification, unlike some other more qualitative descriptions of plant communities (e.g., Holland 1990), is plot-based and quantitative. Much of the data used in defining the types is collected using the Releve/Rapid Assessment protocol, which is used by CNPS staff in Sacramento. This system is not without controversy.

SLO County has 11 Alliances that fall into the "Forest and Woodland Formation Class," 8 Alliances in the "Shrublands Formation Class," and 12 Alliances in the "Herbaceous Uplands Formation Class,"

Another Formation Class, Herbaceous Wetlands, includes alliances such as Salt marsh bulrush marshes, Needle spike rush stands, Alkali heath marsh, Pickleweed mats, and American bulrush marsh, but there are many more that have not been studied well enough for listing here. And there could be many additional possibilities that are not yet recognized in MCV, such as our Arroyo de la Cruz coastal prairie (West of Hwy 1) that we visit often to see the native grasses and beautiful displays of *Calochortus* and many other species in the spring.

Much work has been done in the Carrizo Plain to define these types, and there is a great deal of data and a corresponding detailed vegetation map for the area. In recognition of these Natural Community types, our Chapter has formed a Plant Community Committee to discuss and explore whether we can further define those types that may occur here. We began in July of this summer with a meeting of the committee, followed by two field visits to the coastal scrub habitats in the Los Osos area. Part of the reason we chose this area is that many of the participants know the species in this area well, it is easily accessed, and the County has mapped the area to the Alliance level. On July 22, 2017, a group of about 12 participants worked on collecting Rapid Assessment data in what we field-determined to be a *Ceanothus cuneatus*/*Ericameria ericoides* Alliance. On September 30, 2017, a group of nine met in the same general area, but in a different stand, and collected rapid assessment data on what we field-determined to be an *Ericameria ericoides*/*Horkelia cuneata* Alliance. As more data becomes available, and the forms are sent to Sacramento for inclusion in the statewide database, these names and perhaps maps may change to better reflect what we know is present. If you are interested in participating in this effort, please contact me at mjmoon@charter.net. We are even discussing doing further experimentation with drones!

Forest and Woodland Formation Class

Santa Lucia fir groves (*Abies bracteata*) G3 S3.2 (Pine Mtn region)
Madrone forest (*Arbutus menziesii*) G4 S3.2 (Santa Lucia'Mts)
Sargent Cypress Woodland (*Callitropsis sargentii*) G3 S3 (Cuesta Ridge)
Tanoak forest (*Lithocarpus densiflorus*) G4 S3
Bishop Pine forest (*Pinus muricata*) G3 S3 (San Luis Range)
Monterey Pine Forest (*P. radiata*) G1 S1 (Cambria)
Sycamore woodlands (*Platanus racemosa*) G3 S3
Fremont Cottonwood forest (*Populus fremontii*) G4 S3
Valley Oak Woodland (*Q. lobata*) G3 S3
Red willow thickets (*Salix laevigata*) G3 S3
CA bay forest (*Umbellularia californica*) G4 S3

Herbaceous Uplands Formation Class

Dune mats (*Abronia latifolia*); G3 S3
CA Oat Grass prairie (*Danthonia*) G4 S3 (Cambria?)
Clustered tarweed fields (*Deinandra fasciculata*) G3 S3
Blue wild rye meadows (*Elymus glaucus*) G3? S3?
Goldfields-saltgrass alkaline vernal pools (*Lasthenia*) G4 S3 (Carrizo)
Tidy tips-blow wives vernal pools (*Layia*) G3 S3? (Carrizo)
Creeping rye grass turfs (*Leymus triticoides*) G4 S3
Deer grass beds (*Muhlenbergia rigens*) G3 S2? (Lopez Lake)
Nodding needlegrass grassland (*Stipa cernua*) G4 S3?
Purple needlegrass grasslands (*Stipa pulchra*) G4 S3?
Curly bluegrass grassland (*Poa secunda*) G4 S3?

Shrublands Formation Class

Iodine bush scrub (*Allenrolfea occidentalis*) G4 S3 (Carrizo)
Morro Manzanita Chaparral (*A. morroensis*) G1 S1 (Los Osos)
Brittle-leaf-Woolly leaf Manzanita chaparral (*A. crustacea, tomentosa*) G2 S2 (Morro Bay SP)
Eastwood manzanita chaparral (*A. glandulosa*) G4 S4, but contains rare shrubs such as *A. obispoensis* (Santa Lucia'Mts, La Panza)
Hairy leaf Ceanothus chaparral (*Ceanothus oliganthus*) G3 S3 (Cuesta ridge)
Giant Coreopsis scrub (*Coreopsis gigantea = Leptosyne*) G3 S3? (Guadalupe area)
Narrowleaf goldenbush scrub (*Ericameria linearifolia*) G3 S3?(Carrizo)
Heather goldenbush scrub (aka central dune scrub) (*Lupinus chamissonis-Ericameria ericoides*) G3 S3

SLO Chapter November 2nd Meeting

7:00 social 7:30 program Vets Hall, SLO

Alpine plant diversity on Yosemite's Sky Islands

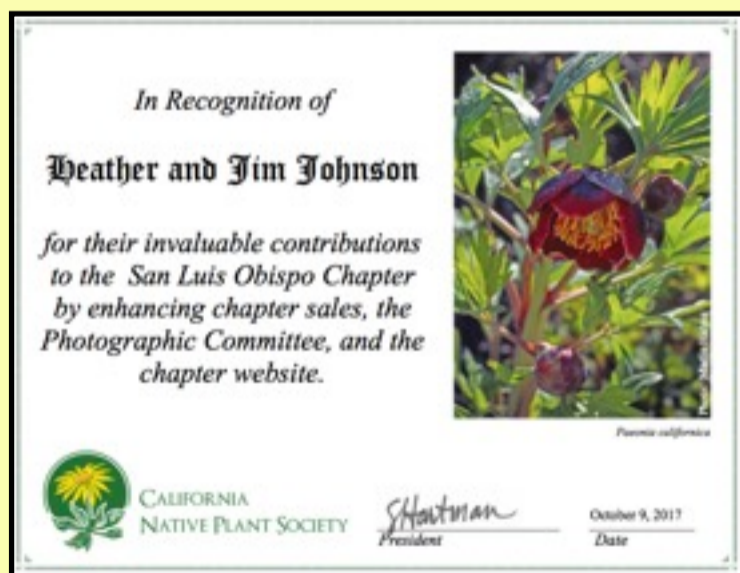
Dena Grossenbacher is a new Assistant Professor of Botany at CalPoly. She is broadly interested in how plant-environment interactions generate and maintain plant diversity, and the processes underlying the origin and extinction of species. She uses the California flora, especially monkeyflowers, to address these questions because of their astonishing variation both among and within species. Dena received a Bachelor's degree in Botany in 1999 from University of Washington, was a field botanist in the Pacific Northwest and the Yosemite region from 2000-2008, and received a Ph.D. in Population Biology from UC Davis in 2013 with Maureen Stanton. She did postdocs studying mating system evolution at University of Minnesota and at Washington State University before arriving at Cal Poly in January 2017.



Obispoensis is published October through June except January. Items for submittal to *Obispoensis* should be sent to dchippin@calpoly.edu. The deadline is the 10th of each month. Botanical articles, news items, illustrations, photos, events and tidbits are welcome! Visit the websites www.cnps.org and www.cnpslo.org

California Native Plant Society

Volunteer Recognition Award



Heather and Jim Johnson have been involved in the San Luis Obispo Chapter of CNPS since they moved to the county in the late 1990's, bringing a strong love of the environment with them. Heather stepped into a vacant Chapter Sales position in 2005, where she immediately began to ramp up both the inventory and the presentation of sales tables. At this time Jim was working behind the scenes, helping Heather in setting up an inventory storage, building weather protection and logistics. Jim had expertise in publications, being a well regarded technical editor. In 2007 he headed the publications committee that was considering creating new local photograph based floras. He also headed up the Photographic Committee, which had become dormant. In 2008 he set up the chapter's first decent web site and made sure that it was kept up to date. He continued this work for many years. He also continues to work on membership issues, and several committees including the chapter membership roles and in newsletter mailing. In recognition of their work, the Chapter gave them the Hoover Award in 2009.

PRESIDENT'S NOTES

California's Important Plant Areas (IPAs)

To save something, first we need to know it exists. It seems obvious, but it's not so simple when talking about plants. Despite California's rich history of botanical exploration, millions of acres remain undocumented. And, even on lands that are familiar, what grows at any one time may not be growing there (at least above surface) 20 years later. More than ever before, we now have the chance to find, appraise, and save these species. Incredibly, we are now regularly discovering new native species as well as plants once thought to be extinct. Two never-seen-before species were identified in San Luis Obispo Co. within the last six months, one in a burn area near the headwaters of Lake Nacimiento and the other in the Irish Hills. Thanks to conservation and scientific breakthroughs, we are beginning to unlock clues our native plants may hold for climate change, global pandemics, and even life in space. But with land development and population at an all-time high, we are now in a race against time to assess and document our natural resources before we pave over or otherwise obliterate them for good.

Forward-thinking conservationists and leaders understand these realities and have rallied botanists and land stewards throughout the state to participate in regional, multi-stakeholder efforts to review land management and determine which lands are prime candidates for IPAs. At its best, the designation of IPA is made using the preeminent science on water, soils, animals, plants, and other critical resources. Two regions have begun this process already – the Southern San Joaquin Valley and the Modoc Plateau. Region by region, CNPS is now using big data disciplines, geospatial mapping, and its network of science and land-use experts to build the state's first comprehensive map of the plant places we most need to save and why. And, once completed, this valuable tool will serve as a definitive, scientific guide for generations to come. It's a map for the future!

BILL WAYCOTT

Membership Corner

The brilliant red of many a poison oak shrub heralds the arrival of autumn on the Central Coast. The cottonwoods, Big leaf maples, sycamores and Valley Oaks are also turning and their leaves are starting to scatter to the wind. The advent of fall marks the end of seed collection for our natives. Acorns, milkweeds, snowberries, honeysuckle and goldenrod are among the last to let go. And within each seed is a new beginning...the promise of the continuation of life.

Each and every new and renewing membership to CNPS also promises continuity of a different kind. It enables us to work together to ensure that our native plants have the protections they need to thrive and continue to set seeds for many tomorrows.

We owe all of those who took that step last month a very sincere thanks:

Jesse Arnold
Heather Budnarowski
Marlin Harms
William Johnson

Valerie Levulett
Karen Osland
Barbara Renshaw
Michaela Robbins

THE GOOD PEOPLE WHO MAKE THE CHAPTER 'HAPPEN' AND HOW TO FIND THEM

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WE ALWAYS NEED PEOPLE TO HELP OUT. OUR MISSION IS VITAL AND OUR FLORA IS AT RISK

Dedicated to the Preservation of the California Native Flora

The California Native Plant Society is a statewide non-profit organization of amateurs and professionals with a common interest in California's plants. The mission of the Society is to increase understanding and appreciation of California's native plants and to preserve them in their natural habitat through scientific activities, education and conservation. Membership is open to all. Membership includes the journal, *Fremontia*, the quarterly Bulletin, which gives statewide news and announcements of the activities and conservation issues, and the chapter newsletter, *Obispoensis*.



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California Native Plant Society
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