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Newsletters

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UC SANTA BARBARA
Cheadle Center for Biodiversity & Ecological Restoration

# Restoration Register

November 2024



**Fall sunset over the North Campus Open Space.**

## Updates

### *Burrowing Owls at NCOS*

Although several species of owls inhabit SB county, the most familiar are great horned and barn owls. While thousands of nest boxes have been installed for barn owls throughout agricultural properties in the region for gopher control, burrowing owls have been essentially ignored by the conservation community. The North Campus Open Space is all created and restored habitat, and acre for acre holds some of the highest densities of rare, threatened, and endangered flora and fauna in the region. The grassland mesa is the first and only site in Santa Barbara County to be largely designed, modified, and maintained for

burrowing owls, and is home to the first artificial burrows created for them in the county's history. The western burrowing owl (*Athene cunicularia ssp. hypugaea*), is one of the smallest owls in North America, and the only owl that nests underground. Their name is a bit misleading, as they do not make their own burrows, like the subspecies in Florida and the Caribbean Islands do, but rather depend on other animals, like prairie dogs, badgers, and here, California ground squirrels, to make their burrows for them.



**Burrowing owl photographed at the North Campus Open Space on October 17th, 2024.**

Once a common sight along California's coastline, mid to lower elevation foothills, and interior valleys, burrowing owls have experienced significant population declines due to obvious reasons such as habitat loss, urbanization, and agriculture. Other factors that are less intuitive have also been just as harmful. These include the intensive shooting and poisoning of ground squirrels, the extensive spread of tall herbaceous weeds like black mustard, and, perhaps most paradoxically, the planting of trees. Called afforestation, extensive planting of trees where they did not occur naturally in existing natural areas is as harmful to these owls as building cities. Especially considering that most of these trees are non-native, such as pines, acacias, and the abundant blue gum eucalyptus, and are several times taller than our most prevalent native upland tree, the coast live oak. Blue gum eucalyptus are actually the tallest flowering plant in all the Americas- taller than anything native to the Amazon Basin, and can reach over 250 ft in height. By contrast, coast live oaks are generally no more than 50 feet tall, and often wider than high. These tall trees tip the balance of power greatly in favor of comparatively common raptors like red-tailed hawks and great horned owls, which use them to prey on the owls that once used our expansive, relatively treeless places throughout California. These large raptors occur in every county, in every state in the USA and much of Canada and beyond, while burrowing owls need specific habitats such as short grass prairie and deserts.



**First burrowing owl seen at the North Campus Open Space - October 2018.**

In Imperial county, burrowing owls have done better than almost anywhere in California in recent years, where they can live in squirrel burrows along irrigation canals, and benefit from the associated rodents and insects from agricultural irrigation. However, these canals are increasingly being culverted with cement, and declines are occurring there now as well. Once a common, year-round resident in SB county, their breeding is now extinct, and we only receive infrequent winter migrants from Northern California, Oregon, Washington, and British Columbia. As stopover spots continue to decrease, and good winter habitat is rarer and rarer, populations further north are now crashing due to habitat modifications here. Burrowing owls sometimes fly up to two thousand miles to leave frigid winters in their northern ranges to spend the winter in Mexico or Southern California, so good winter refuge places are as important as ever. One owl fitted with a radio telemetry backpack by David Johnson, left Pasco, Washington and flew to Santa Barbara in 3 days, where it landed at midnight. After resting for an hour, at 1 am it flew to Santa Rosa Island where it spent the winter.



**Second year running! Burrowing owl at the North Campus Open Space - October 2019.**

Conservation of these and so many other imperiled taxa require us to think objectively, update, and let go of traditional biases and cliches like “plant more trees”. Imagining the California of hundreds, thousands, and hundreds of thousands of years ago (burrowing owls fossils in North America date back several million years, or the late Pliocene), and seeing their plight through their eyes is what is needed. A colleague recently reported seeing a burrowing owl in a parking lot in Oxnard - they have flown here for countless millennia and have every instinct to continue to do so. However now, they find few natural areas remaining, and when they do, vast areas are developed, and open spaces littered with trees and devoid of the once ample burrows they use to escape avian predators. What was once a winter haven is now an inhospitable, confusing landscape, and fewer and fewer return back north to breed after their winter migration.



**Burrowing owl sheltering in specially designed artificial burrow on the NCOS Mesa - November 2020.**

These declines have spurred increased conservation efforts. The burrowing owl is finally being considered for listing under the California Endangered Species Act (CESA). On October 10, 2024, the California Fish and Game Commission officially recognized the owl as a candidate species, granting it full protections under CESA, including restrictions on “take” (hunting, harming, or capturing). A final decision on its status is expected by late 2025 or early 2026.

Our first owl of the fall was first sighted in September, and no doubt arrived on one of the few clear, starry nights we had during the migration window. In addition we added another burrowing owl on site with an amazing backstory. On the morning of October 6, 2024, a crew boat transporting workers from Goleta Pier to Platform Holly encountered a surprising sight—a western burrowing owl, floating two miles offshore in the ocean. The reason for the owl’s unexpected journey remains unclear, but burrowing owls are known to migrate across the Santa Barbara Channel, and may relocate several times due to the difficulty of finding suitable habitat. Exhaustion can make them land in the water, or in places where they have little chances of survival. The So Cal Ship Services crew carefully maneuvered the boat and used a bucket to rescue the tired, cold owl. They wrapped it in towels and kept it in the engine room to warm and dry it during the return trip. Once back at Goleta Pier, a volunteer from Santa Barbara Wildlife Care Network (SBWCN) met the crew and transported the owl to the care center, where the SBWCN team conducted a detailed intake exam.




**So Cal Ship Services Boat arriving back to Goleta Pier. Photo by SBWCN Volunteer Angela Rauhut.**

The owl had minor oil contamination on its wings and chin, moderate dehydration, swelling in its left leg, and a small cut on its tongue. After receiving nutrition, supportive care, and wound treatment at their nop-notch facility, the owl was transferred to International Bird Rescue (IBR) in San Pedro for a full oil decontamination wash.



**Burrowing owl undergoing full oil decontamination at International Bird Rescue in San Pedro. Photo by Ariana Gastelum from International Bird Rescue.**

In the days following its rescue, the owl's condition varied, though it remained alert under close observation. By October 19, its weight had stabilized, allowing it to be transferred back to SBWCN. Over the following days, the owl grew stronger, demonstrating excellent flight stamina in SBWCN's outdoor aviary. After 16 days and nearing full recovery, the owl was successfully released into the Mesa grassland at NCOS on October 22nd.



**Burrowing owl in SBWCN's aviary. Photo by SBWCN Director of Rehabilitation Britt Rickmann.**

The owl was released into AB3, or artificial burrow 3, complete with a 10’ tunnel. It is a place owls have shown preference for and spent the winter in years past. After showing its feisty nature, upon noticing the dark tunnel, it darted in like a bullet. A dead mouse and half a gopher were left in the tunnel to further help the bird along. While we don't know if the bird stayed on site, it was all we could do. And the combined efforts from the entire cast from rescue, rehab, and release into specially created habitat gave it the best fighting chance to continue on its brave life’s journey. We wish it well.



**Burrowing owl released next to specially designed artificial burrow on the NCOS Mesa.**

It is worth mentioning that these birds are highly sought after by watchers and photographers, and they can be put in grave danger by members of the public searching for the birds for their “perfect shot”. Burrowing owls are very cryptic, and lay very low during the day. If an avian predator flies overhead, they disappear underground, but if a human or dog approaches, they fly- making them extremely susceptible to being caught and killed by one of our numerous and ever-present hawks. Venturing off trails is prohibited and the site is monitored by cameras, so please respect the owls' difficult situations and privacy, and give them their space!

We are currently working on an application to the SB Fish and Wildlife Commission to collaborate with large ranch owners to assess sites for suitable habitat, construct overwintering burrows where needed, and monitor the use of various suitable sites to understand what could be done to enhance their habitat. We welcome your collaboration and support in this endeavor.

## *Ellwood Marine Terminal Restoration Project*



**Aerial view of the EMT project site - 11/04/2024.**

Progress is continuing at the EMT project, and the oil and water tanks have been fully removed! Grading is expected to start soon after the below-ground infrastructure is removed. There has also been continued removal of invasive Pampas grass (*Cortaderia selloana*) along the western edge of the project site (bare area on the left side of above image) and work has started on the removal of pipeline on the beach at Coal Oil Point Reserve. The power lines and poles along Venoco Road and on the site, that have intercepted the flight of several swans, have been removed.



**Excavation of pipeline infrastructure at COPR beach.**



**Removal of power lines on Venoco Road.**

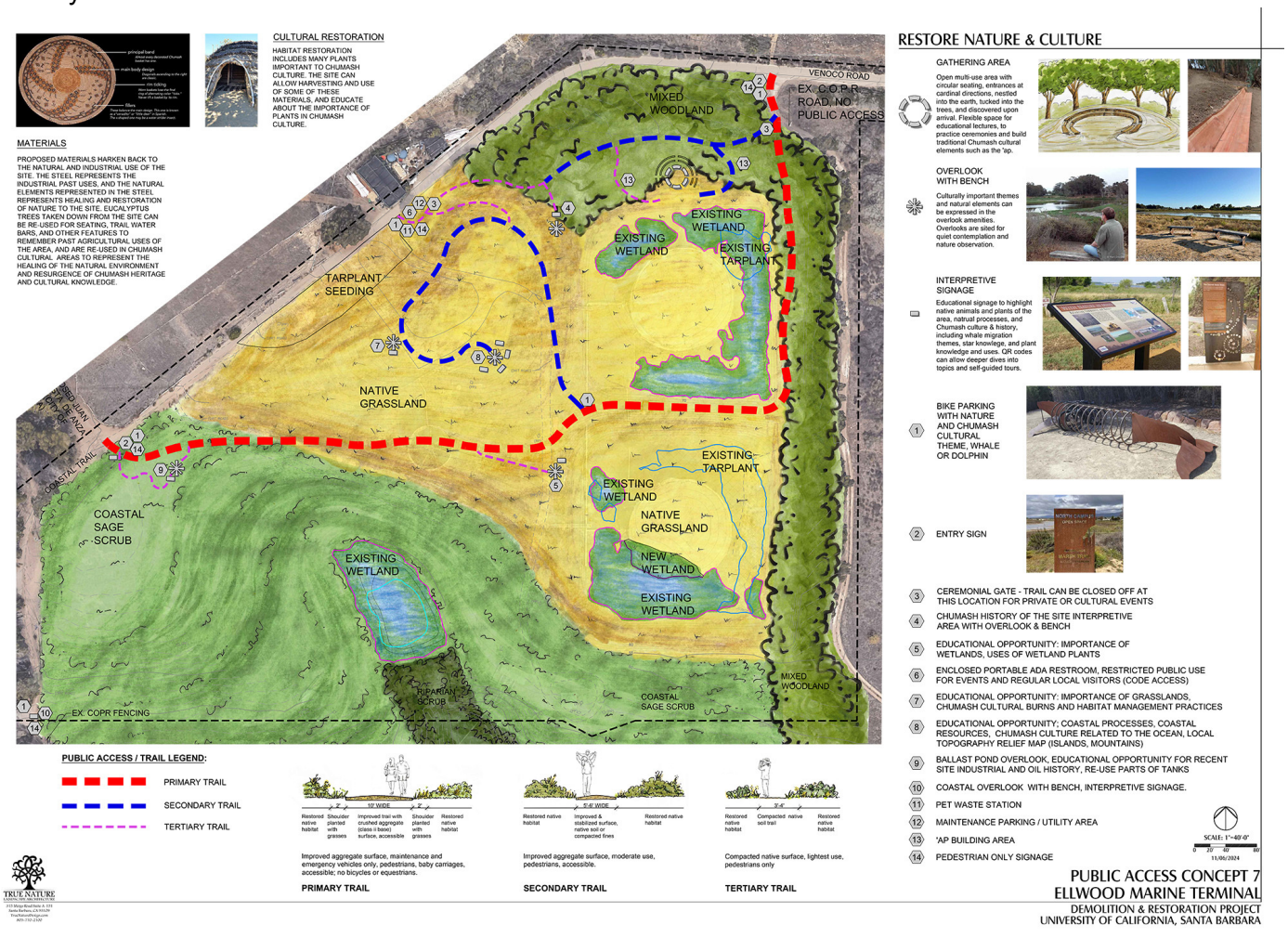


EMT Tank Demolition Timelapse - 9/20/2024.



EMT Post Tank removal - 10/24/2024.

Since May 2023, the Cheadle Center and Strategic Earth have been conducting an outreach program to design and develop a framework for public access at the Ellwood Marine Terminal site. This outreach included three site tours with Chumash listening sessions and public surveys in June, an open invitation for one-on-one discussions with the Chumash community, and a Chumash listening round table to explore cultural opportunities at the site. A public webinar followed, accompanied by an additional engagement survey available online.

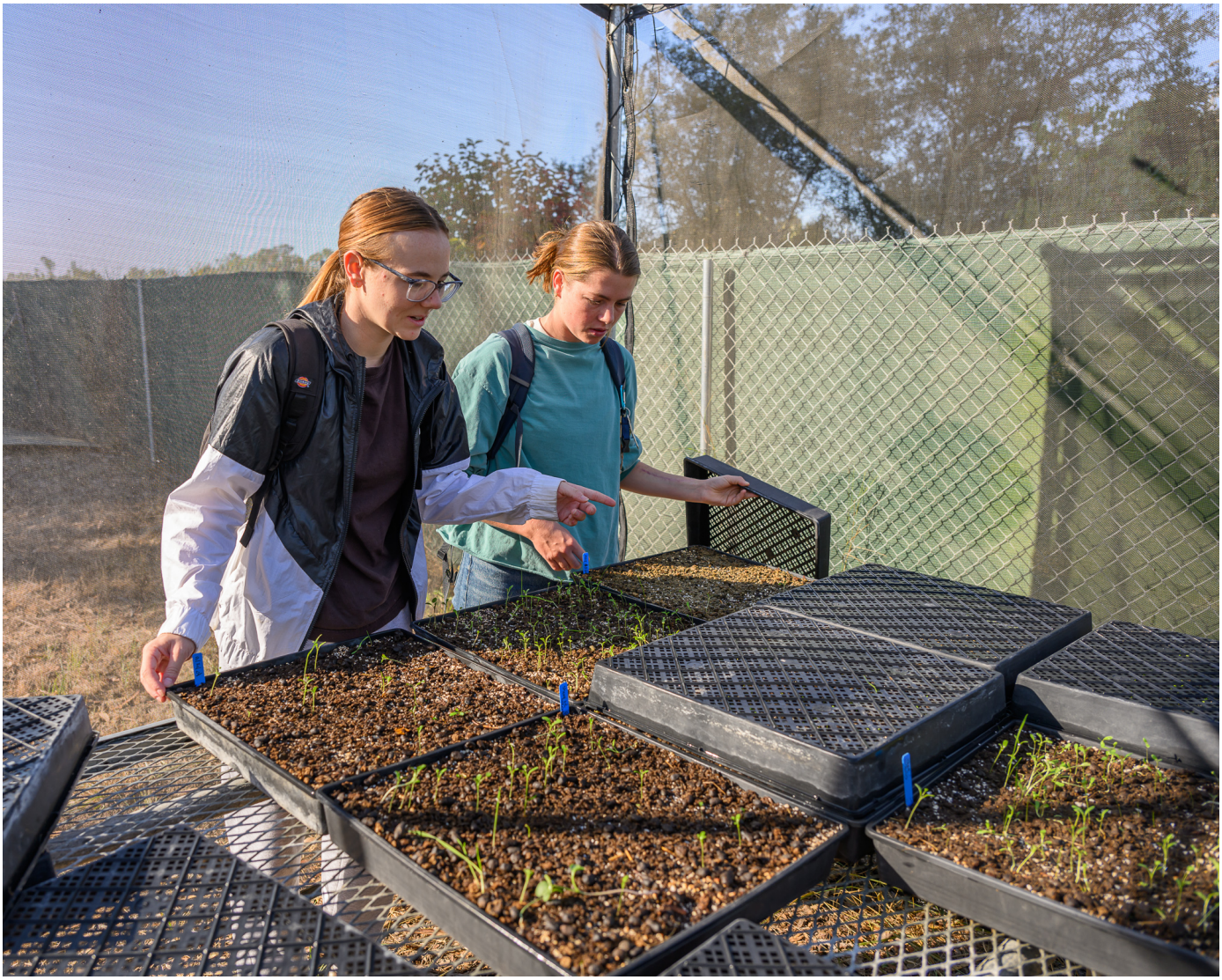



**EMT Public Access Plan**

In consultation with planners, a public access conceptual plan for the site was developed. This plan reflects a preference for low-impact amenities that maintain the site's tranquility while also providing space for private Chumash cultural activities and gatherings.

We welcome any further feedback and ideas on this concept at ncos@ccber.ucsb.edu.

## *Student Research Projects*



**Undergraduate students Abby Nestor and Viola Katona assess flats where sheep dung samples are being germinated to assess the viability of invasive seeds.**

The North Campus Open Space continues to serve as a hands-on research site for UCSB undergraduates, including Abby Nestor and Viola Katona, who are studying the impact of sheep grazing on mesa grassland restoration.



**Sheep grazing on the NCOS Mesa.**

Their project examines whether invasive seeds remain viable after being digested by sheep, using four dung sample groups: dung collected from sheep one week after grazing at Flores Canyon, three and five days after transitioning to an alfalfa diet, and ten days after grazing on NCOS. These insights will inform how managed grazing can support habitat restoration by potentially reducing invasive species.



**Annabel Long measures the height of California sagebrush (*Artemisia californica*) on the NCOS Mesa.**

Moving to the slopes of the NCOS Mesa, Annabel Long is conducting research on native plant growth challenges in coastal sage scrub habitat. She is testing the hypothesis that higher soil bulk density, indicating compacted soil, may correlate with smaller, less vigorous California sagebrush (*Artemisia californica*), a keystone species in this habitat. Her research involves measuring the vigor and size of California sagebrush near areas where soil density data is available and counting nearby coastal sage scrub plants. Alongside her research, Annabel enjoys spotting local wildlife, including rabbits, great egrets, and hawks.



**Lauren Rapp assessing the vigor of Ventura Marsh Milkvetch (*Astragalus pycnostachyus var. lanosissimus*).**

Yet another research focus at NCOS is the endangered Ventura Marsh Milkvetch (*Astragalus pycnostachyus var. lanosissimus*), studied by undergraduate researcher Lauren Rappa. Lauren's primary role involves observational monitoring of the Milkvetch, where she tracks the count, maturity, and vigor of each plant to assess survivorship over time. Her work also includes investigating threats to the milkvetch, such as high soil nitrogen levels which promote invasive weeds like Rabbitsfoot grass (*Polypogon monspeliensis*), to inform effective restoration practices. Lauren enjoys working outdoors and gaining a deeper understanding of this unique ecosystem, particularly admiring the Milkvetch when it is in bloom.

## *Oak Group Art Show*

More than 200 people attended the opening of the Oak Group show at the Faulkner Gallery on October 3rd and the paintings are selling fast!. You can see, and purchase, the work here through the end of November!



**Winding Water by Rick Drake, Oak Group member and long-term volunteer with the Cheadle Center.**

## *New Staff*




**New staff members (from left): Camryn, Calen, Zoe and Madi**

We have recently welcomed four new staff members to the ecological restoration and management team! Camryn, Calen, Zoe, and Madi are all great additions to our team and have been helping out at multiple projects including the restoration of the Ellwood Butterfly Grove.

### *NCOS Year 7 Report*




The North Campus Open Space Year 7 monitoring report is out! Click here to see the full report and read up on all things NCOS.

## Feature Story

### *Making the Most of an Urban Restoration Project*

When we were first developing the concepts and design details for the North Campus Open Space restoration project, we were focused on biodiversity support and ecosystem functions such as sea level rise adaptation space, flood control, carbon sequestration and water quality enhancement. Now that the project is seven years old, we are realizing the fruits of those design details in a resilient system, and building a body of research and monitoring studies that reflect this project's unique quality: it is on a university campus.



This living ecological laboratory provides amazing opportunities to cohort after cohort of students to gain hands on experience in ecological restoration, research, management and monitoring. Making that experience meaningful requires inspired, knowledgeable and talented mentors, which takes time and support. While initial support for North Campus Open Space centered on project funding, we are now focused on building programmatic funds. State and Federal grants, which funded the full project implementation phase over the first 5 years have been expended. Yet, they created an amazing spring board to catapult us forward because of all the monitoring programs we were able to develop and establish. In addition to providing important environmental information, these programs provide real-world learning opportunities for students, who can mine the data for comparative research and assessments of the degree to which the project is realizing the original ecological and social visions.





As we pivot to building and sustaining programs at NCOS for long-term management, monitoring and mentorship opportunities, we are shifting fundraising efforts to focus on current use and endowment support.

We are excited to celebrate some amazing news about our progress in developing an endowment to fund this vision into the future. This Fall, the NCOS endowment received a huge boost with over $1.5 million in new investments, bringing our endowment total to nearly $5.5 million!

This momentum feeds nicely into the Mellichamp family legacy challenge of $2.5 million for the NCOS endowment to ensure its long-term sustainability while inspiring others to get involved. All of this support builds upon the foundational NCOS endowment contributed to by generous donors over the last several years through naming various features at the site and supporting programs.




Investments in NCOS – both endowment and programmatic support - will mean that we can focus our attention on mentorship of students of all ages along many dimensions - restoration ecology, field work to data analysis, synthesis and presentations, and more. It also allows us to explore creative management practices such as our recent cultural burn and the use of grazing sheep to open the grasslands for wildflowers. In addition, philanthropic investment helps support communications – geared towards both scientific and general audiences - about the successes of this project with the world. Support for NCOS also enables staff to adaptively address ecological challenges, collaborate with resource management agencies, conduct public and academic tours and talks, and train UCSB students in environmental education for students from pre-K to high school.



We SO appreciate of the support we have received and revel in the role we get to play in so many people's lives, from students to community members. Students who helped us with the original project research are now professors, managers of ecological programs, agency leaders and environmental educators. Community members tell us of the opportunities this project provides for emotionally and physically recharging through the experience of the awe of nature and connecting to their community. Community members support us by adopting sites to help manage, by becoming nature guides, by volunteering in the greenhouse, by being our eyes and ears on the weekends and by documenting the natural wonders of the site. Thank you all for the connection!

You can support NCOS here or by contacting us at ncos@ccber.ucsb.edu.

# Volunteer Opportunities

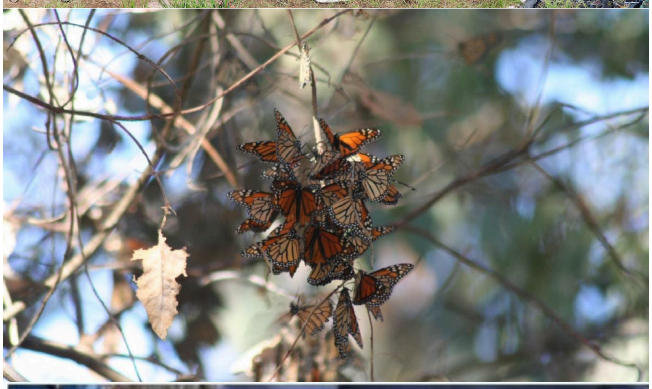
**"Second Saturdays" at NCOS**

**December 14th, 9:00 - 12:00**

Please RSVP to ncos@ccber.ucsb.edu



Help us restore and create NCOS with plants and more! Meet at 6969 Whittier Drive at 9am. Bring water, sunscreen, and wear a hat, clothes and shoes that are suitable for outdoor work.



### Saturdays at Ellwood

**Saturdays, 8:15 - 12:00**

From October 5th to November 30th, you can join Your Children's Trees to plant trees in the Monarch Grove every Saturday from 8:15 a.m. to noon. Meet at the Ellwood Parking Lot. Please RSVP using this link.



### Thursdays - Greenhouse Associates

**Thursdays 9:00 - 12:00**

Come help transplant seedlings of native plants with the CCBER team. To join, please send an email to ncos@ccber.ucsb.edu.



### Nature Guide Tour

**November 23rd, 9:30 - 11:00**

Come take a walk around NCOS and learn about native plants and animals with a trained Nature Guide. This month's tour will be a Creek Week event! Check out the events calendar for more fun outdoor events.

## Community Photos

We are interested in any observations of wildlife activity on NCOS, as well as plants and landscapes. Please send your observations, with or without photos, to ncos@ccber.ucsb.edu. Thank you!



Black Phoebe at NCOS. Photo by Daniel Forseth.



Dark-eyed Junco at NCOS. Photo by Daniel Forseth.



White-faced Ibis in the Devereux Slough at NCOS. Photo by Daniel Forseth.



Male Green-winged Teal in Whittier Pond at NCOS. Photo by Lynn Scarlett.



Greater Yellowlegs at NCOS. Photo by Pamela Viale.



Great Egret hunting in the Devereux Slough at NCOS. Photo by Pamela Viale.



Cooper's Hawk with a recently caught brush rabbit on Venoco road. Photo by Pamela Viale.



American Kestrel enjoying a snack on the NCOS Mesa. Photo by Pamela Viale.



House Wren at NCOS. Photo by Jeremiah Bender.



Scrub Jay at San Clemente Restoration Site. Photo by Jeremiah Bender.



A white-crowned sparrow takes a break from foraging on the Marsh Trail at NCOS. Photo by Jeremiah Bender.



A crab spider rests on Gum Plant (*Grindelia camporum*) with a recently caught hoverfly. Photo by Jeremiah Bender.



Tiny leafhopper on Ventura Marsh Milkvetch (*Astragalus pycnostachyus var. lanosissimus*). Photo by Jeremiah Bender.

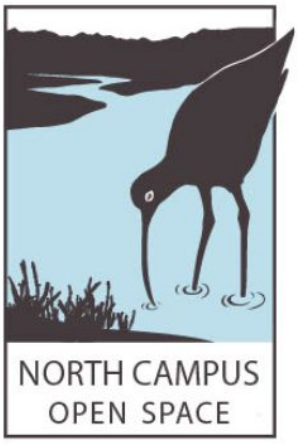
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