

# UC Santa Barbara

## Newsletters

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# UC SANTA BARBARA

## North Campus Open Space Restoration Project

**NCOS NEWS**

*December 2017*



Isla Vista Elementary fifth graders and CCBER staff enjoying Kids in Nature 2 activities at NCOS.

### **PROJECT UPDATES**

***It's a most wonderful time of year at NCOS, with loads of fun educational and planting activities, and bridge building as well...***

Last week, CCBER staff initiated the first of a series of educational K-12 classroom visits to NCOS through the "Kids in Nature 2" program funded by the Coastal Conservancy. Fifth graders from Isla Vista Elementary and students from Righetti High School visited the project site to learn about topics

such as wetland ecology, plant adaptations, bird diversity, and ecosystem services, and they got hands-on experience planting native wetland plants and weeding.



**Fifth graders from Isla Vista Elementary (left) and students from Righetti High School (right) learned about bird diversity, wetland ecology and more at NCOS as part of the Kids in Nature 2 program.**

We had another fun and productive Planting Saturday on November 18th, with some dedicated local residents, members of Girl Up, and a UCSB men's club baseball team (pictured below), who all helped install some 1,500 plants. Thank you!



**Members of a UCSB club baseball team at the November NCOS Saturday planting event.**

Construction of the bridges and other crossings began in earnest after Thanksgiving, and is expected to continue through mid-February. Below are a couple of photographs of the installation of the supports for the bridge over Phelps Creek, and the Arizona Crossing over the inlet near the Sierra Madre apartments and Storke





Installation of bridge supports at Phelps Creek (two top photos), and Arizona Crossing by the Sierra Madre apartments.

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## **FEATURE STORY**

### ***Vernal Pools: Restoring a Rare California Habitat at NCOS***



**A restored vernal pool at UCSB's Manzanita Village.**

Vernal pools are small, shallow, seasonal pools that only occur under very specific conditions in Mediterranean climate regions. Over 90% of California's vernal pools have dissappeared, largely due to development and other land use changes. At NCOS, we're helping to reverse that trend with the creation of nine new pools in the southwest portion of the site.

[This feature story continues on page 9.](#)

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## **VOLUNTEER OPPORTUNITIES**



### **Second Saturday Planting at NCOS**

We're gearing up for the last Saturday Planting of 2017 on December 9, from 9:30 – 12:30. Bring water and wear a hat and good shoes! Please RSVP to [ncos@ccber.ucsb.edu](mailto:ncos@ccber.ucsb.edu). NOTE: this event may be canceled at short notice depending on air quality related to the Thomas fire.



## Tree planting with Your Children's Trees - in January!

[Your Children's Trees](#) will be back at NCOS in January to continue planting oaks, sycamores and willows. Come give them a hand on Saturdays in January. Please contact [yourchildrenstrees@gmail.com](mailto:yourchildrenstrees@gmail.com) to RSVP.



## Group Volunteer Opportunities

We gladly welcome local business, non-profit, school and other community groups to come out to NCOS to help with planting and other activities. For more information, please send an email to [ncos@ccber.ucsb.edu](mailto:ncos@ccber.ucsb.edu).



## Thursdays - CCBER Greenhouse Associates

Come help transplant seedlings of native plants with the CCBER team from 9:00 - 12:00. To join, please send an email to [ncos@ccber.ucsb.edu](mailto:ncos@ccber.ucsb.edu).

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## **COMMUNITY FORUM & PHOTOS**

Have a plant, wildlife, or other photo of the NCOS project site you'd like to share? We welcome submissions of photos of the project site and/or the adjacent Ellwood-Devereux area to share with NCOS News readers. Please email a photo you would like to share along with a brief description to [ncos@ccber.ucsb.edu](mailto:ncos@ccber.ucsb.edu).

It's hard to believe that the end of the year is nearly here, and this is our last newsletter for 2017! The

NCOS restoration project has been an incredible journey so far, and we have enjoyed sharing the exciting progress with you. We look forward to sharing more photos and stories with you in 2018. Best wishes for the holiday season and beyond!



Sunset at NCOS from the northeast, on November 15, 2017.

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**For more information on the  
North Coast Open Space Restoration Project, [Click here](#), or email [ncos@ccber.ucsb.edu](mailto:ncos@ccber.ucsb.edu)**

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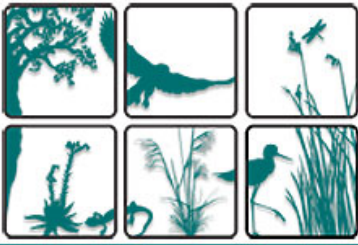
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## VERNAL POOLS: RESTORING A RARE CALIFORNIA HABITAT AT NCOS



Vernal pools are small, shallow, seasonal pools that only occur under very specific conditions in Mediterranean climate regions. Typically ranging in size from less than 100 to more than 10,000 square feet, and generally less than 15 inches deep, they form where surface depressions are underlain by an impermeable surface that prevents rainwater from percolating into the ground, resulting in seasonal ponds that flood with winter precipitation but dry completely in the summer. They harbor a diverse and unique suite of plants and animals that are adapted to these punctuated, low nutrient hydrologic conditions. Because of this, vernal pools are some of the most ecologically important and distinctive habitats in California. Vernal pools are threatened by agriculture and development, and it is estimated that over 90% of the vernal pools in California have vanished, largely due to human activities. As part of the NCOS restoration, we are helping to reverse that trend with the creation of nine new vernal pools in the southwest portion of the site (Figure 1).

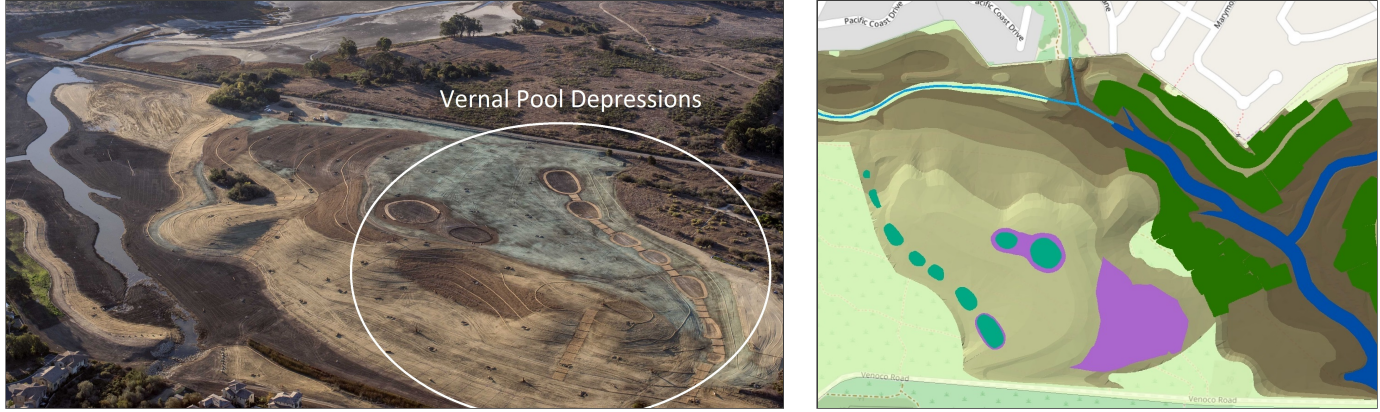


Figure 1. North Campus Open Space showing the vernal pool depressions: aerial photo by Bill Dewey (left) and map with vernal pools in turquoise (right). Note: In the aerial photo south is up, the reverse of the map.

Many of the species in vernal pools have specific adaptations for surviving in the harsh conditions of this special habitat. Coyote thistle (*Eryngium vaseyi*), a plant endemic to California vernal pools, has different growth forms that coincide with the different vernal pool phases (see Figure 2 for an example of a vernal pool in different phases). In the winter “wet phase”, when the pool is flooded, coyote thistle sends up long, tubular leaves like straws that reach toward the surface for oxygen collection (Figure 3). As the pool dries in the spring, the leaves open and flatten and spikey inflorescences (flower heads) form during the “flower phase”, while during the summer “dry phase”, the inflorescence sets seed and becomes a mass of painful spines that are resistant to herbivory (Figure 3). As an adaptation to the desiccation of the pool in the summer, the above ground vegetation dies back completely, but the roots remain alive underground to start the cycle again with the next winter’s rains. The tiny invertebrates that inhabit vernal pools survive the dry summer phase by forming desiccation resistant cysts or eggs that will hatch with the next winter’s flooding. Visit [CCBER's webpage](#) about vernal pools for more information and photos.



Figure 2. A restored vernal pool at UCSB's Manzanita Village in the spring “flower phase” (left) and summer “dry phase” (right).

CCBER will restore the NCOS vernal pools by planting giant spike rush in the center, and native meadow barley grass along the edges. An inoculum will be spread and rolled into the soil of the pools, and will consist of seeds, cysts and eggs gathered from remnant and restored vernal pools in the area. Many vernal pools in California are colonized by the endangered fairy shrimp; however, none of this species were found in a close investigation of all the pools in and around the campus in 2011. That study did find that restored pools are able to support 11 unique vernal pool plant species, and the life cycles of many interesting invertebrates such as the clam shrimp. Since these pools support a diverse array of species such as dragonflies, a predatory insect, they do not support populations of mosquitoes. The pools will also support Pacific chorus frogs, which can complete their life cycle from egg to tadpole and into adult frogs during the approximately 100-day wet stage of the seasonal vernal pools.



Figure 3. Coyote thistle (*Eryngium vaseyi*) in the tubular phase (left), flowering phase (middle), and prickly seed stage (right).

Date:

Monday, December 4, 2017 - 09:00

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