

# UC Santa Barbara Newsletters

**Title**

NCOS News - January 2022

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## UC SANTA BARBARA North Campus Open Space Restoration Project

**NCOS NEWS**

*January 2022*



Aerial photograph of the Devereux Slough on Winter Solstice (12/21/2021). Photo by Bill Dewey.

### **UPDATES**

#### ***Year 4 Monitoring Report***

The North Campus Open Space [Year 4 monitoring report](#) covering 2021 is out! The top highlight is that restoration criteria are being met and exceeded. You can find out details about trends in bird use, how the ground water table is performing through wet and dry years, wildlife monitoring results and storm water sampling information that reveals, for example, that nutrients are generally lower when they leave the system than when they enter. You can also track particular weed and native species by year, as documented in the vegetation surveys, as well as bird species presence by year. [Get your details here!](#)



***Swallow Nesting Structure is finished!***

Construction has wrapped up on the cliff swallow nesting structure in the north-western arm of NCOS. CCBER started this project in order to reduce impacts to the surrounding houses while continuing to support these unique and beautiful birds. Throughout the building process we utilized excellent information reported by the [Cliff Swallow Project](#) as well as input from Rick Mexico, Nature Guide and volunteer, who helped work out the design details and mentored staff in building the mini-roof structures to be installed.



**Swallow nesting structure.**



Abandoned nests from last year are placed on the structure to help attract swallows.

### ***Vernal Pools***

Recent storms have filled up the vernal pools at NCOS! Vernal pools are seasonal wetlands that occur in depressions where there is an underlying impermeable layer that becomes saturated during the winter rains and ponds through the spring. Vernal pools dry up by early to late spring, depending on the season's rainfall timing and amount. These threatened habitats harbor a diverse and unique suite of plants and animals that are adapted to punctuated, low nutrient hydrologic conditions. Within the pools, tiny invertebrates that survive the dry summer phase by forming desiccation resistant cysts are now hatching. The pools support plant species such as Dwarf Woolly Heads (*Psilocarphus brevissimus*), Coyote Thistle (*Eryngium armatum*), and Lemmon's Canarygrass (*Phalaris lemmonii*), and provide important resting and feeding places for migratory waterfowl.





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**FEATURE STORY**

## Winter Break Storms at NCOS



Storm flow at Phelps Creek on 12/23/21.

Recent storms over the Winter break have once again illustrated how the increased wetland capacity of the restored system at NCOS provides flood protection and increases the tidal prism which expands and diversifies the wetland. [This feature story is continued on page 16.](#)

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## VOLUNTEER OPPORTUNITIES & SITE TOURS



**"Second Saturdays"**

**This month: January 8th, 9-12**

Please RSVP to [ncos@ccber.ucsb.edu](mailto: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.

**CCBER Greenhouse Associates**

**Every Thursday**

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).





### Nature Guide Tour

**This month: January 15th, 9:30 -11**

**Come take a walk around NCOS and learn about native plants and animals with a trained Nature Guide.**



### Ethnobotany and Chumash Baskets

**Next month: February 26th, 9:30 -11**

**Take an Ethnobotany tour of NCOS and learn about Chumash basket making.**

### **COMMUNITY FORUM & 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@cber.ucsb.edu](mailto:ncos@cber.ucsb.edu). Thank you!

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**Tropical Kingbird. Photo by Susan Cook.**



**Ruby-crowned Kinglet. Photo by Susan Cook.**



**Least sandpiper foraging on exposed mudflat. Photo by Jeremiah Bender.**



American coot feeding on Woolly Seablite (*Suaeda taxifolia*). Photo by Jeremiah Bender.



Double-crested Cormorant near Venoco bridge. Photo by Jeremiah Bender.



**Black-necked Stilt in seasonal pond. Photo by Jeremiah Bender.**



**Red-shouldered Hawk. Photo by Jeremiah Bender.**



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

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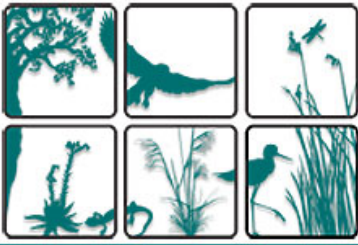
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## WINTER BREAK STORMS AT NCOS

The storms over Winter break have once again illustrated how the increased wetland capacity of the restored system at NCOS provides flood protection and increases the tidal prism which expands and diversifies the wetland. The main wetland channel at the North Campus Open Space is part of the Devereux Slough, which is an intermittently tidal system that is blocked off from the ocean for most of the year due to a sandbar at Sands Beach. If water levels in the slough rise above the level of the sandbar (approximately 9.5 feet above sea level), the slough breaches and the sandbar is washed away, allowing water from the Devereux Slough to flow into the ocean and enabling the key ecosystem service of sediment transfer from the mountains to the ocean. The storm system that came through Goleta on December 22nd and 23rd resulted in a breach at approximately 5:00 pm on December 23rd.

### Phelps Creek Storm Flow 12/23/21

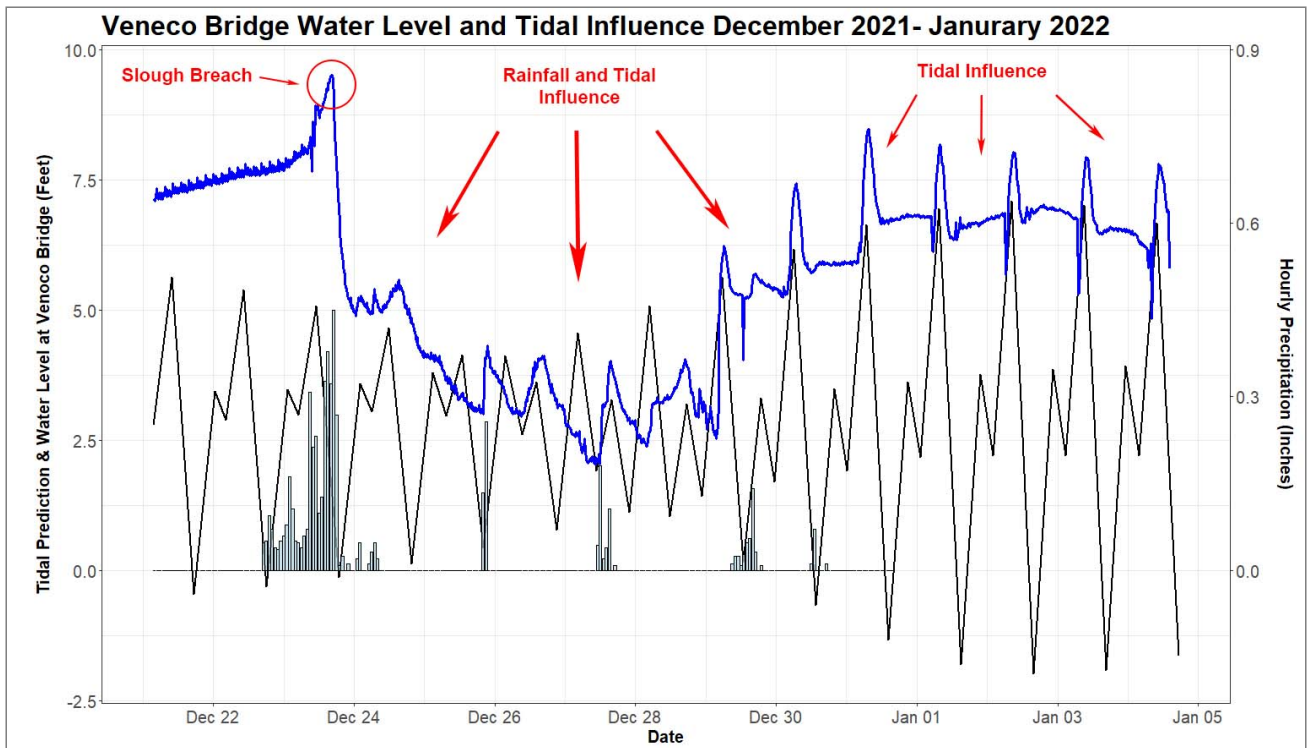


Storm flow at Phelps Creek on 12/23/21 approximately 3 hours before the slough breach.

# Storm flow at eastern arm of NCOS on 12/23/21



Storm flow in the eastern arm on 12/23/21.



The water level in the Slough was influenced by continuing rainfall and ocean tides after the breach on December 23rd. After the rain stopped on December 30th, ocean tides became the dominant influence with a 2.5+ foot change in depth over the tidal cycle.



The mouth of the Devereux Slough following the breach event. Photo taken on 1/03/22.

The resulting period of tidal influence following the breach event corresponded with the 2022 King tide events on January 2nd and 3rd. The water level changes in the slough, clearly visible in the photographs below, create a dynamic habitat of exposed mudflats and open water. This tidal influence will continue until wave action re-builds the sandbar at the slough mouth, a process which can take between a week and two months depending on the intensity of the initial breach and the tidal range. In this case the system will likely be tidal for at least a month given the extreme king tides of early January. An open mouth provides the opportunity for the endangered Tidewater Goby to enter the system. This small, finger-length, fish is known to 'wink' in and out of systems depending on the frequency of mouth opening and the salinity and water levels in the lagoons. Tidewater gobies are less frequently found in fully tidal systems where they may be more vulnerable to predation by larger fish. They have been found in Devereux Slough intermittently since 2005 when they were first discovered here. The tidal pulses also transfer seeds of various plant species, which could include seeds from the recently established population of the endangered Ventura marsh milk-vetch (*Astragalus pycnostachys* var. *lanosissimus*) and the newly re-introduced pink flowered Vericose Sea Purslane (*Sesuvium ventricosum*). Vericose Sea Purslane was extirpated from Santa Barbara County in the 1950s and has been establishing on NCOS since it was introduced from Machado Lake in LA County two years ago. Tracking the spread of these special status species will be interesting in the years to come.



During the King tide event on January 3rd, water level in the Slough rose up to 7.08 feet at 9:30 AM (left) and fell to 4.9 feet (NAVD) at 4:30 PM (right).

## Tidal flow at Venoco Bridge on 1/05/22



Incoming tidal flow can be seen at Venoco Bridge on 1/03/22.

**Date:**

Tuesday, January 4, 2022 - 15:45

**Tags:**

[NCOS](#)

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