

UC Santa Barbara

Newsletters

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NCOS News - September 2019

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UC SANTA BARBARA

North Campus Open Space Restoration Project

NCOS NEWS

September 2019



Great and Snowy Egrets in the Slough at NCOS on August 29, 2019.

UPDATES & EVENTS

2019 United Way Day of Caring

In lieu of our normal Second Saturday volunteer day, we will be hosting the [2019 United Way Day of Caring](#) at NCOS on September 14. Day of Caring is a community-focused project where more than 1,200 local volunteers work at local organizations. A big thanks to all those who signed up!

Celebrate estuaries and creeks at NCOS:



September 14-21 is [National Estuaries Week](#), a nationwide celebration of our bays and estuaries and the many benefits they provide to local communities. Come learn about these benefits right here at your local estuary during the Creek Week tour (information below).



Creek Week Is Back! - September 27th

As part of Santa Barbara County's 20th annual [Creek Week](#), we will be hosting a tour of NCOS on Friday, September 27, at 5:15 pm. The tour is open to the public. Meet at the parking lot on 6969 Whittier Drive. For more information or to RSVP, please email ncos@ccber.ucsb.edu

Why the weedwacking?

You may have noticed a bit of string trimming, also known as weedwacking, happening out at NCOS. This is an effort to

control some of the native plants on site that are doing a little **too** well. While these plants are native, they are fast growing annuals and form dense stands that shield light from the slower growing native perennial plants that we are trying to establish. The main species we have been trimming back are Eastern Annual Saltmarsh Aster (*Symphiotricum subulatum*), Canada Horseweed (*Erigeron canadensis*), and Coulter's Horseweed (*Laennecia coulteri*).



Eastern Annual Saltmarsh Aster forms dense stands on site that must be trimmed to increase available light and space for other natives.



This California Saltbush (*Extriplex californica*) now has some much needed room to grow.



Canada horseweed (*Erigeron canadensis*) was trimmed back using a mower on the Mesa Grassland.

Mesa Slopes Progress

The Mesa Slopes are nearly fully planted! Our student groups have been hard at work restoring a diverse mosaic of coastal sage scrub, oak woodland, chaparral, and grassland-wildflower plant communities. Species planted so far include California Sagebrush (*Artemisia californica*), Purple Sage (*Salvia leucophylla*), California Fuchsia (*Epilobium canum*), and Sticky Monkeyflower (*Diplacus aurantiacus*). As these plants fill in over time, the mesa slopes will be blanketed by beautiful purple, red, and orange flowers.



Sticky monkeyflower (*Diplacus aurantiacus*).



Purple sage (*Salvia leucophylla*) and a Bush Sunflower (*Encelia californica*).



This California Poppy (*Eschscholzia californica*) likely sprouted from a native seed mix spread by CCBER staff.

FEATURE STORY

[NCOS Water Quality Update](#)



With National Estuaries Week and Santa Barbara County's Creek Week happening this month, it's a good opportunity to update and review some results from our ongoing monitoring of one of the most important elements of the NCOS wetland restoration project - the water. [Read on \(continued on page 13\)](#) about the results from some of the water quality monitoring conducted at NCOS this past winter and how these results are influencing our future monitoring plans.

VOLUNTEER OPPORTUNITIES



"Second Saturdays" at NCOS

This Month's Second Saturday is dedicated to the 2019 UCSB Day of Caring. Stay tuned for next month's Second Saturday.

Saturday Tree Plantings

See in you in the Fall!



You can help Your Children's Trees plant oaks and other saplings at NCOS! Please contact [Your Children's Trees](#) for more information and to RSVP.



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.



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.

COMMUNITY FORUM & PHOTOS

We are interested in any observations of wildlife activity on NCOS. Please send your observations, with or without photos, to ncos@ccber.ucsb.edu. Thanks!



This bobcat was captured on video by staff at NCOS and may be the same individual that nearby residents have reported seeing close to Phelps Creek. The fence in the video is designed to maximize wildlife access to sensitive habitat areas while preventing human disturbance.



Parasitoid wasp in the family Pompilidae attacking an arachnid. [Click here](#) for more info on Pompilid Wasps.



Juvenile Red-tailed Hawk soaring over the salt marsh. Photo by Jeremiah Bender.



Egrets foraging in the Slough. Photo by Jeremiah Bender.

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For more information on the
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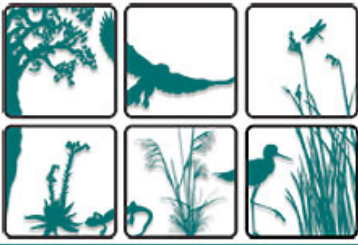
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NCOS WATER QUALITY UPDATE



A high flow from Phelps Creek empties into NCOS during a storm on February 1, 2019.

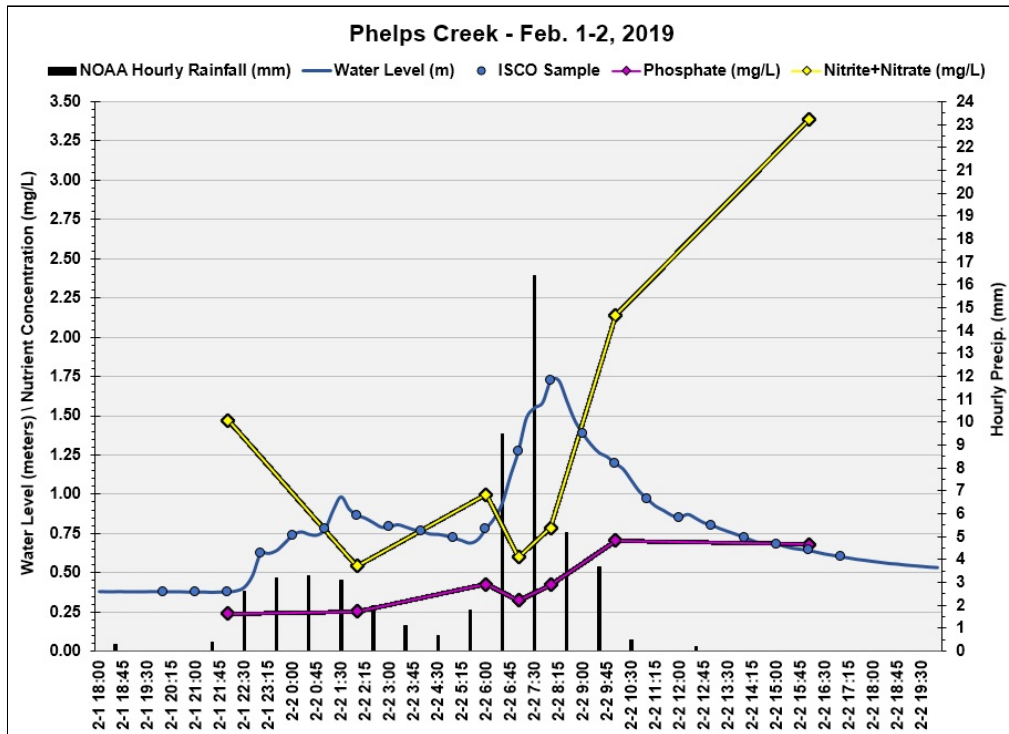
With [National Estuaries Week](#) and Santa Barbara County's [Creek Week](#) happening this month, it's a good opportunity to update and review some results from our ongoing monitoring of one of the most important elements of the NCOS wetland restoration project - the water.

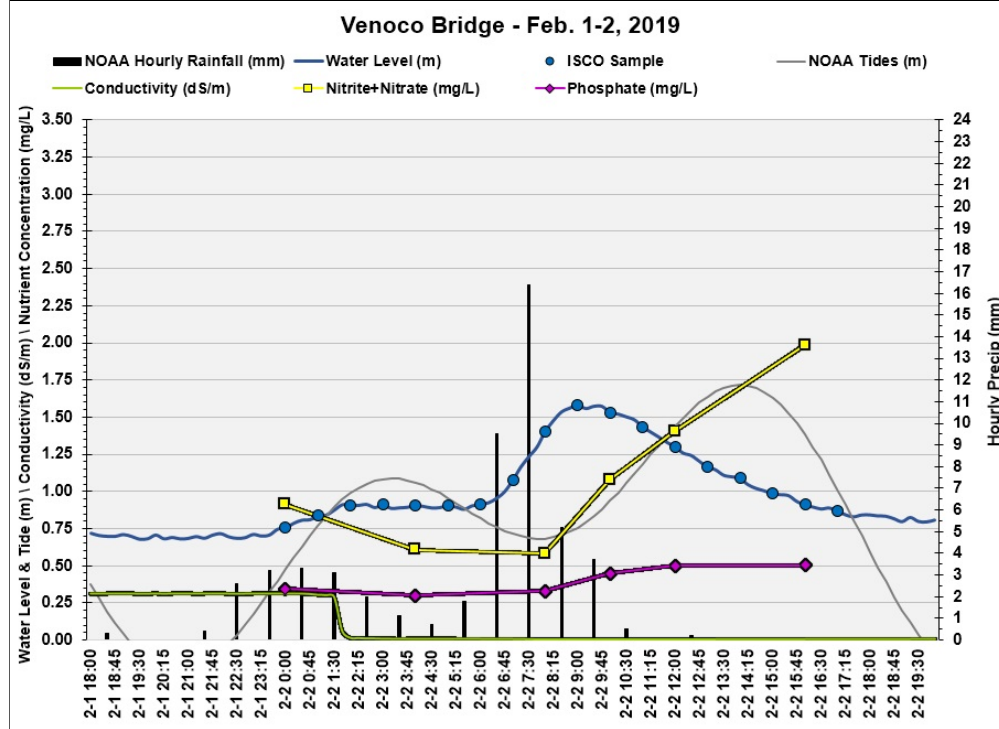
Earlier this year we described [three of the main impacts](#) a watershed can have on the health (or quality) of a wetland. Two of these impacts that we've been monitoring are the concentrations of nutrients (nitrogen, phosphate and ammonia) and suspended solids (primarily sediment) being flushed into the wetland during storms. We use two methods to collect stormwater samples for analysis: manual grab sampling and automated sampling using [portable ISCO pumps](#). Grab sampling usually captures only one or two samples per storm, while the ISCO pumps can be set to sample at intervals such as every hour and subsequently provide more information about what happens to nutrient and sediment concentrations in the tributaries and wetland during a storm.



Infrastructure for automated ISCO samplers at Whittier stormdrain outflow (left) and Phelps Creek (right).

The watershed that feeds into NCOS and Devereux Slough is [relatively small and mostly urbanized](#), and consists of four main tributaries: Devereux Creek from the west, Phelps Creek from the north, and the Whittier Drive and Storke Road stormdrains from the east. Phelps Creek drains the greatest area of the watershed and is likely the largest source of run-off that enters the wetland. This past winter, we collected samples during four storms at Phelps Creek as well as Whittier stormdrain outfall, and at Venoco Bridge - where the NCOS wetland enters lower Devereux Slough. In general, the results from this year's monitoring indicate that overall nutrient concentrations tended to be higher in the tributaries entering NCOS than downstream in the wetland. Nutrient concentrations were lowest during the highest stormwater flows at all sampling locations.

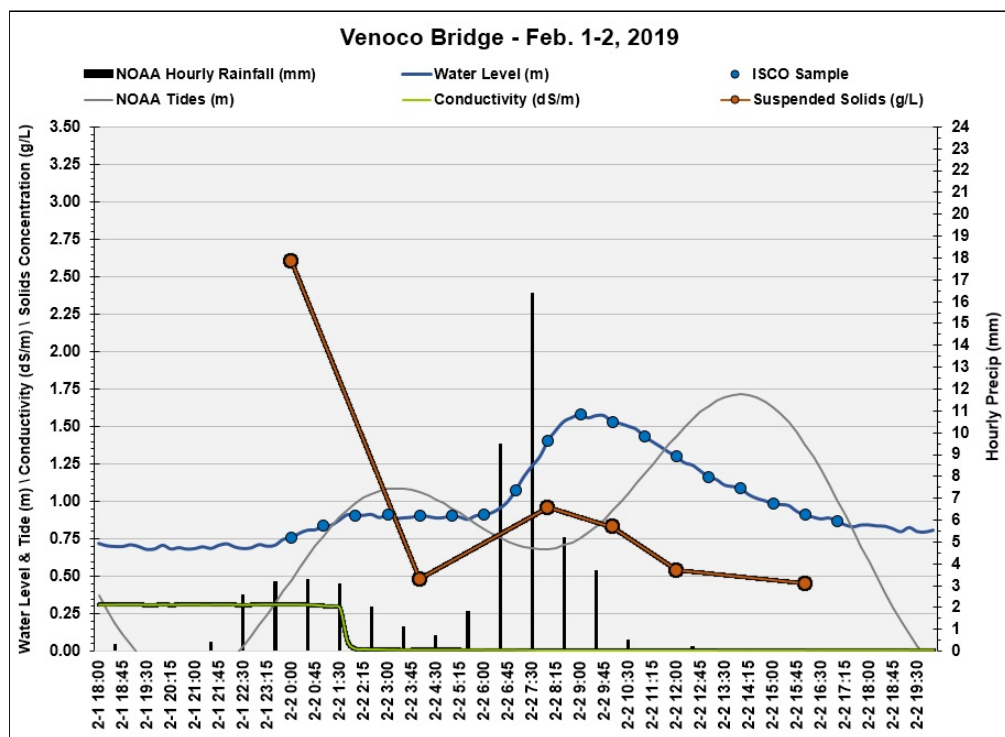
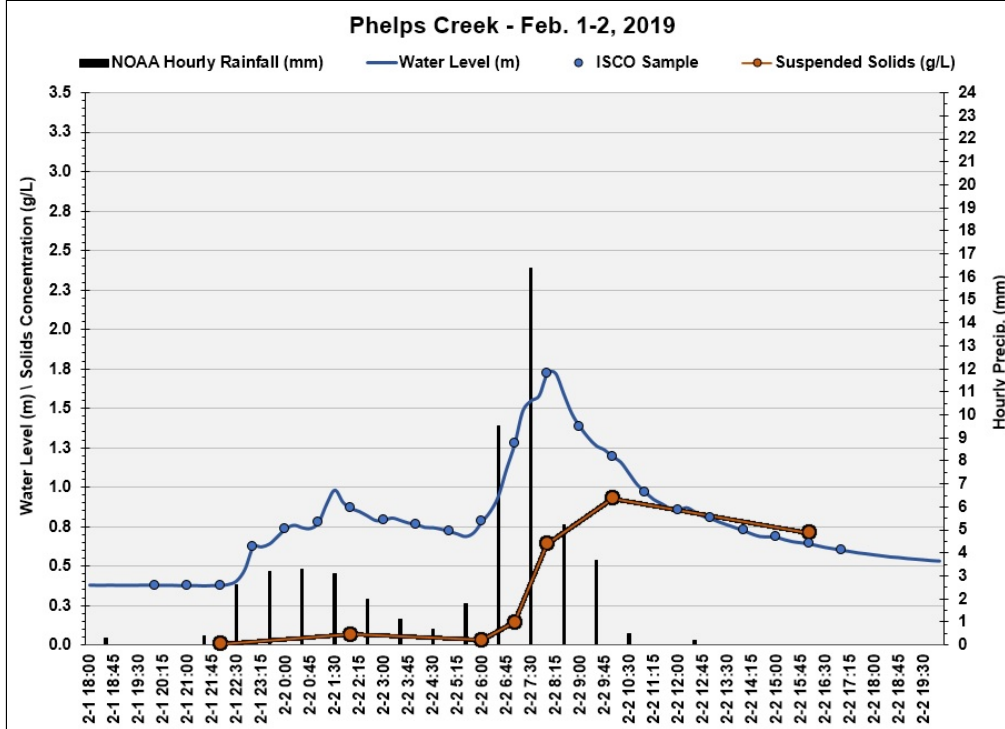




The two charts above show the water levels, rainfall, and the nitrogen and phosphate concentrations in Phelps Creek (top) and in the NCOS wetland at Venoco Bridge (bottom) during a storm on February 1, 2019. The chart for the Venoco Bridge site also includes the tides and conductivity, which is a measure of salinity and indicates when fresh rainwater reaches the sampler. The nutrient levels we've observed this year do not appear to be different than what has been observed in a [previous study](#) that was part of the Santa Barbara Coastal Long-term Ecological Research network. We will continue collecting samples for further analysis, including baseline samples in periods between stormwater flows.

The flow of sediment and other suspended solids down a watershed can potentially impair a wetland if the sediments settle and build-up over time. However, sediment flows in coastal watersheds can play a beneficial role for beaches as a natural form of beach nourishment, provided that the sediment is not impeded from reaching the ocean. Devereux Slough is an intermittently tidal estuary that is typically closed off from the ocean by a beach berm during the summer and fall months, and is usually tidally connected with the sea for a period of time during the winter and early spring, depending on how much rain falls and how high the tides and surf erode the beach berm. This year saw a greater amount of rain than we've seen in recent years, and this led to more than a month of tidal connectivity.

For the four storms we monitored this past winter, suspended solids concentrations entering NCOS were below one gram-per-liter (g/L). Concentrations entering the lower slough at the Venoco bridge site tended to be initially above 1 g/L, but rapidly dropped to lower concentrations as stormwater flows increased. This suggests that suspended sediments in the wetland were likely being flushed out to sea during periods of tidal connectivity.



The two charts above show the water levels, rainfall, and concentration of suspended solids in Phelps Creek (top) and in the NCOS wetland at Venoco Bridge (bottom) during a storm on February 1, 2019. The chart for the Venoco Bridge site also includes the tides and conductivity, which is a measure of salinity and indicates when fresh rainwater reaches the sampler. One of the challenges with analyzing the samples collected at the Venoco bridge site is that some of the samples may contain sea water instead of stormwater runoff when the slough is open and tidally influenced by the ocean. Therefore, the high concentration of suspended sediment in the sample collected near the beginning of the storm in the chart above could be due to a tidal influx of seawater carrying suspended sand from the beach. We intend to examine this further by collecting more stormwater as well as baseline samples in between storms this coming winter season. Stay tuned!

Date:
Friday, September 6, 2019 - 11:30

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