

UC Santa Barbara Newsletters

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Authors

Clark, Ryan
Stratton, Lisa

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UC SANTA BARBARA

North Campus Open Space Restoration Project

NCOS NEWS

January 2019

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Aerial photo of NCOS/Devereux Slough on January 3, 2019, courtesy of Bill Dewey. Hope you had a chance to see Devereux Slough with a higher water level (as in the aerial photo above). The rains over the past weekend were enough to breach the beach berm at the mouth of the slough Sunday night, and it has emptied into the ocean and become tidal. This might last for a few days, or possibly into next week with more rain in the forecast.

UPDATES & EVENTS

HAPPY NEW YEAR!



A frosty winter sunrise at NCOS.

As we enter the second full year of the North Campus Open Space Restoration Project, we want to share with you some of the goals for the project in 2019 and ways you can get involved:

Planting and Restoration

- Plant the north facing slopes of the mesa with a mosaic of native coastal sage scrub, oak chaparral and grassland habitats.
- Nurture the 10 acres of recently seeded native purple needle grassland.
- Control weeds in the 40 planted acres and fill in the gaps along the trail and houses with native plants.



UCSB students planting native oaks on the mesa slope.



Native purple needlegrass catching first light at NCOS.

You can help with the above goals by joining us on upcoming "2nd Saturdays" currently

scheduled for January 26th and February 9th, working in our nursery and greenhouse on Thursday mornings, or volunteering any day you want! More information is available in the Volunteer Opportunities section of this newsletter, or by contacting us at ncos@ccber.ucsb.edu.

Public Access and Interpretation, and Stewardship Facilities

- Construct the Visitor Plaza interpretive trailhead area and the five overlooks. **You can help review the text and design of interpretive signs - if interested, please contact us at ncos@ccber.ucsb.edu**
- Complete construction of our 'Gator Barn'. **Are you a retired carpenter or contractor? We are looking for help with constructing workbenches, shelves and cabinets since current funding only covers the building shell!**



Construction of the NCOS 'Gator Barn'.



Two garage openings allow for easy storage of the Gator vehicles.

- Gather public input and document trail use. CCBER team members have begun interviewing community members to understand what people value and understand about the project and to hear their suggestions and ideas for improvements.

Research and Education

CCBER will continue its program of training UCSB students in ecological restoration and research and leading groups of K-12 students to the site to learn and explore. Current studies include aquatic and terrestrial invertebrates, bird surveys, wildflower restoration, cryptobiotic soil crust restoration, weed control strategy assessments, hydrological patterns and stormwater quality monitoring.



UCSB students using a hand auger to take soil cores on the mesa.

Enhancing Habitat for Wildlife

A key goal of the project is to enhance the habitat for wildlife by reducing the impacts of pets and mesopredators. County and Campus regulations require dogs to be on a leash, which provides an important sense of safety to all trail users and to wildlife. Pet cats have been observed hunting birds at NCOS, and [recent studies](#) of [Birdsbesafe cat collars](#) suggest that they could reduce predation impacts of cats. ***We would be happy to provide one of these collars for your cat if you are unable to keep it indoors or off the project site.***



Birdsbesafe®

Future Projects

We are looking for financial support for projects like fixing up the visitor parking lot and installing solar panels, and long term support for the project site and educational programming. You can help by making a gift [here](#), and please don't hesitate to contact us if you would like to get involved in this arena or select a naming opportunity - we would love to hear from you (ncos@cber.ucsb.edu).

FEATURE STORY

Becoming Watershed Wise for a Healthy Wetland



The health of a wetland like Devereux Slough is inextricably linked to the health of the watershed that drains into it, and this can be impacted by inputs such as trash, excess nutrients, and sediment that ride into the wetland on stormwater runoff. [Read on \(continued on page 13\)](#) about how CCBER and others are working to understand and reduce these impacts.

VOLUNTEER OPPORTUNITIES

"Second Saturdays" at NCOS



Due to predicted rain, this month's "2nd Saturday" is rescheduled to January 26th, 9:30 - 12:00

Help us restore and create NCOS with plants and more! Meet at 6975 Whittier Drive at 9:30 am. Bring water, sunscreen, and wear a hat, clothes and shoes suitable for garden work.

Please RSVP to ncos@ccber.ucsb.edu



Saturday Tree Plantings

January 19 & 26

February 2, 6, 9, 23

March 9

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.



PHOTOS

A gaggle of geese and a dash of color!

This month's bird photos show some of the common avian visitors at NCOS, including Canada geese, American coots, and some colorful upland birds.



American Coots enjoy a freshwater bath in Whittier Pond.



Canada geese and Killdeer share one of the slough islands in the early morning.



A Western Meadowlark foraging along the edge of the Marsh Trail.



Western Bluebird.

Have a plant, wildlife, or other photo of NCOS 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.

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



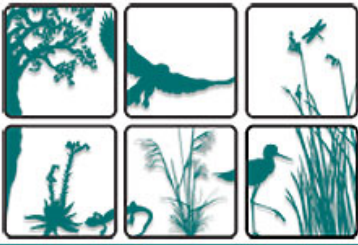
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BECOMING WATERSHED WISE FOR A HEALTHY WETLAND

The major work of excavating the wetland and planting the salt marsh at the NCOS Restoration Project is complete, but understanding how the watershed impacts the wetland and its many functions is an ongoing, long term focus of CCBER and UCSB faculty and students. The health of a wetland like Devereux Slough is inextricably linked to the health of the watershed that drains into it, and this can be impacted by inputs such as trash, excess nutrients, and sediment that ride into the wetland on stormwater runoff.



An artist's representation of the watershed of Devereux Slough.

Trash

Much of the trash that finds its way into the streams and tributaries of the Devereux Slough watershed is eventually flushed down into the wetland during storms. Before the restoration of NCOS, this trash was mostly hidden within the choked

channels and vegetation of the Ocean Meadows golf course. Now it will be clearly on display on the banks and shores of the restored estuary. The primary sources of trash entering the system are Phelps Creek and the storm drains from the residential areas between the Camino Real mall and NCOS. That trash is primarily a mix of fast food and convenience store packaging, along with some larger debris that might be left in creeks by transients. CCBER, Channel Keeper, the Environmental Defense Center and other groups lead efforts to remove trash from creeks, storm drains and the wetland, but this is labor intensive and mucky work. Keeping trash from getting into the creeks and storm drains in the first place is smarter and safer, and better for wildlife, plants and the aesthetics of the landscape.



CCBER staff and volunteers have removed loads of trash and large debris from NCOS creeks and the wetland several times.

Through a Central Coast Regional Water Quality Control Board regulation called the "[Trash Amendment](#)", the City of Goleta is now required to reduce trash in urban run-off. CCBER has been working with the City to help make the Devereux wetland a priority, and recommends that the city initially install nets to catch trash at the southern end of the Phelps Creek concrete channel where it passes under Phelps Road (similar to the image below, though not as large). According to Councilmember Kyle Richards and the Public Works director, this is a priority, but with many steps involved, from securing funding approval to environmental review, implementation of these fixes may take some time. For now, we will continue our efforts to remove trash from the wetland, creeks and storm drains, and we ask you to please help keep an eye out and pick up loose trash while walking on the trails or in your neighborhood.



An example of a system of nets for capturing trash in creeks and storm drain channels.

Nutrients

Studies of urban watersheds have shown that "urban drool" from sources such as over-irrigated lawns and upstream golf courses can add excess nutrients such as nitrogen, phosphate and ammonium into wetlands. These can spur the growth of algae, reduce the diversity of aquatic fauna, and lower water quality overall. Wetlands, by their very nature, support natural nutrient cycling bacteria and plants that uptake nutrients and filter sediment. The design of NCOS integrates freshwater wetlands where each of the four main tributaries enter the estuary, and these should help the system perform these natural functions. CCBER is assessing these inputs and their effects on wetland functions through a number of studies.



A stormwater sample collection system recently installed on a tributary that drains into NCOS and Devereux Slough.

The first is a program for collecting incoming and outgoing stormwater and analyzing nutrient content in those samples. Stormwater samples have been collected by hand over the last couple years, and recently installed "auto-samplers" will

collect multiple samples over the course of a storm, providing more detailed data. These systems are being installed at the Phelps Creek and Whitter stormdrain channel inputs, and at the Venoco Road bridge where the restored upper wetland connects with the lower slough. In addition, the impact of nutrient inputs on measures of water quality such as dissolved oxygen are being monitored with weekly hand measurements at four locations in NCOS, and continuously in the lower Devereux Slough where a sensor records water quality parameters every 15 minutes. These measurements are then integrated and analyzed with data from monthly sampling of aquatic invertebrates in the restoration project and the lower slough that is being conducted by students with mentorship from UCSB professors and the [Santa Barbara Audubon Society](#).



UCSB Students collecting water quality data and aquatic arthropod samples in NCOS wetlands.

Sediment

Excess sediment, such as in debris flows or large erosion events, can be a serious problem, as many of us have experienced. The more chronic problem in the estuaries below many urban watersheds is actually insufficient sediment inputs from paved-over watersheds. The lack of sediment input limits the ability of the wetland to accrete sediment and for the plants to respond to the pressures of sea level rise, which can cause the wetland to drown or become un-vegetated. CCBER is monitoring sediment inputs with the newly installed auto-samplers to both document whether the project itself generates sediment from erosion, and to understand the sediment inputs from the watershed. The translation of sediment inputs to salt marsh growth, or accretion, will be measured using 50 feldspar plots established around the restored wetland and lower slough, where we will be able to measure actual accumulated sediment in the wetland. Hand collected "grab samples" of stormwater inputs and outputs from the two storm events in the winter of 2018 showed that Devereux Creek was the only significant sediment source.



Examples of feldspar plots for monitoring sediment accretion in Devereux Slough.

These various lines of inquiry will hopefully improve our understanding of how the restored wetland functions, and also provide evidence through data that encourages the City of Goleta and the community to prioritize the reduction of trash and other pollutants in the watershed. The removal of Ocean Meadows Golf Course has already enhanced water quality in the lower slough by reducing nutrient inputs from the irrigation of the golf course with nutrient-rich reclaimed water. We will continue to provide updates on studies and monitoring of the wetland through newsletters and other media. And you can always contact us by email (ncos@ccber.ucsb.edu) or through our [contacts page](#) for more information or if you would like to get involved.

Date:

Tuesday, January 8, 2019 - 06:00

[Contact Us](#)

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