

UC Santa Barbara

Newsletters

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UC SANTA BARBARA

North Campus Open Space Restoration Project

NCOS NEWS

October 2017



Aerial image of the NCOS site on September 19, courtesy of Bill Dewey.

PROJECT UPDATES

Documentary film sneak preview!

We're honored to have Michael Love and his film crew on site creating a documentary about the NCOS restoration project, and we're pleased to share with you a sneak preview of Michael Love's film, "From Golf Course to Wetland"! To watch, go to [this link](#) and enter the password: wetland



Documentary filmmaker Michael Love (left) and camera assistant Elliot Lowndes at NCOS.

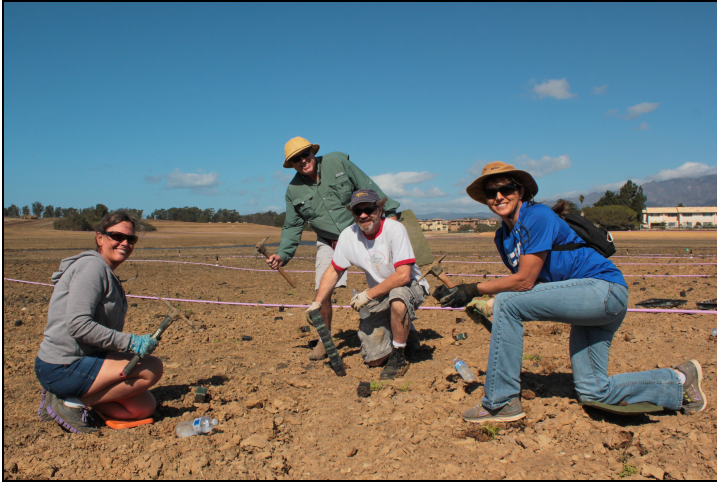
There's been a plethora of planting, and there's much, much more to do!

To date, we have planted 14,250 locally sourced and raised individuals of 22 species at NCOS - and that's just a drop in the bucket! We are grateful for the help of volunteers from the local community, including business and school groups that have participated in our recent planting opportunities. Here are some numbers of plants installed by our first volunteer groups in September:

- Second Saturday on September 9 - 735 plants
- Kollmorgen volunteer group on September 21 - 395 plants

We welcome any local school, work or other community group to come help us plant and take a tour of NCOS. See the Volunteer Opportunities section of this newsletter for more information.





The three photos above are from one of our first group volunteer days. Thanks again Kollmorgen corporation!



Local community members and CCBER staff at the first "Second Saturday" planting at NCOS on September 9th.

Construction Updates:

- The grading portion of the project is all but complete, and the contractor will be leaving the site in mid-October. The contractor that will build the bridges and finish the trails will start soon afterwards.

- The installation of [habitat features](#) is nearly complete, and hydroseeding of the hillside is planned for mid-October.
- The irrigation we've been installing on site is temporary and will be removed after the first year or two, once native plants have become established.



Photo of one of the habitat features, a snag, or standing trunk, installed on the newly graded hill slope of the NCOS restoration site.



Western bluebird making use of the temporary irrigation system (photo by David Levasheff).

FEATURE STORY

High Quality Water for your Home, and for Bird Habitat at NCOS!



A Solitary sandpiper (left) and Greater yellowlegs foraging in the main channel of NCOS (photo by David Levasheff).

Water has been filling the main channels of the NCOS restoration site over the past month. It is a pleasant sight on the newly graded landscape, and birds are already flocking to the water to feed, drink and bathe! So what's the story behind this water?

[This feature story is continued on page 10.](#)

VOLUNTEER OPPORTUNITIES

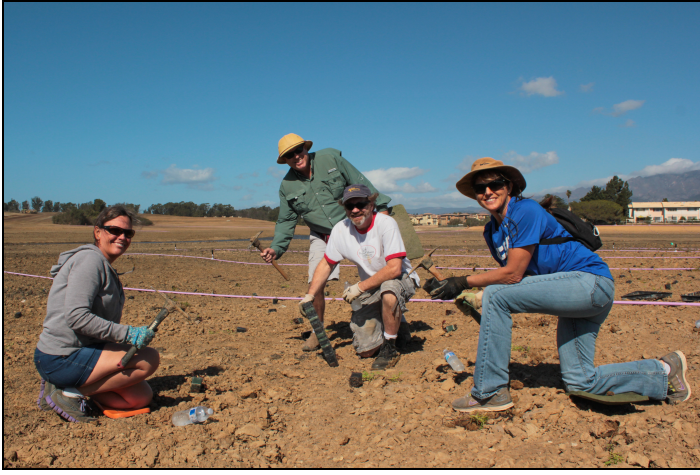


Second Saturdays - Planting at NCOS

Second Saturday planting days are getting into full swing! Come help us plant natives at NCOS on Saturday October 14, 9:30 – Noon! Bring water and wear a hat and good shoes! Please RSVP 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.



Thursdays - CCBER Greenhouse Associates

Come help transplant seedlings of native plants with the CCBER team from 9am - 12noon. To join, please send an email to ncos@ccber.ucsb.edu.

COMMUNITY FORUM & PHOTOS

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

This month, we're excited to present some fantastic photos of wildlife at NCOS that were expertly captured and graciously shared with us by David Levasheff. Below are a photo of a Tropical Kingbird and a Blue-eyed Darner dragonfly. Check out this month's [Feature Story](#) for more of David's photos of birds at NCOS!



Tropical Kingbird (photo by David Levasheff)



Blue Eyed Darner (photo by David Levasheff)

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

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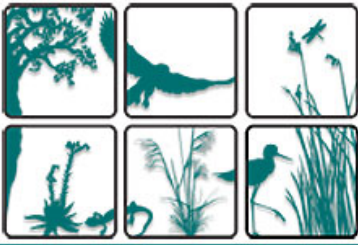
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HIGH QUALITY WATER FOR YOUR HOME, AND FOR BIRD HABITAT AT NCOS!



This aerial image, taken on September 19, shows the water in the east arm (lower-left) and main channel of the NCOS restoration site.

Like many of you, we are surprised and excited about the water that has filled the main channels of the NCOS restoration site over the past month. It is a pleasant sight on the newly graded landscape, and birds are already flocking to the water to feed, drink and bathe! So what's the story behind this water? Where did it come from? And what might be in store for the coming wet season?

One of the main tributaries, and sources of surface water in NCOS and Devereux Slough is Phelps Creek, which enters NCOS from the north and converges with Devereux Creek from the west (see map in Figure 1 below). A temporary dam was installed in Phelps Creek while the boulder-lined pools were constructed in July (Figure 2). This dam was removed early August, and a small amount of water in Phelps creek trickled into NCOS. However,

in late August, much more water appeared, enough to connect the main channel from Phelps Creek to Venoco Bridge, and fill the sub-tidal channel in the eastern arm. The source of this water turned out to be the result of maintenance on the Goleta Water District's (GWD) distribution system.



Figure 1. Map of the approximate boundary of the Devereux Slough watershed. The locations of Phelps and Devereux Creeks are indicated with arrows.



Figure 2. Picture of the boulder lined pools constructed where Phelps Creek enters the NCOS restoration project site.

The GWD's maintenance program involves a high power flush of the potable water distribution system to remove sediment and mineral deposits that build up over time. This is normally done every three years, but has not occurred since 2012 because of the long drought. During flushing, which occurs overnight between Monday and Friday, the water is released through fire hydrants and diverted to recreation or open space areas, where possible. The program is being carried out through early November across 9 sections of the GWD area, starting in the west, and moving eastward (more information about the program is on the GWD website: <http://www.goletawater.com/flushing>).

The water system flushing began in Winchester Canyon (Section 1) on August 28, and moved to the neighborhood just north of NCOS (Section 2) on September 6. Thanks to our hydrology monitoring equipment, we can see when the flushed, de-chlorinated water came through Phelps Creek. This was indicated by a half foot increase in the water level of Phelps Creek over a 12-hour period that began overnight on August 28. The chart below (Figure 3) shows the water level data recorded in Phelps Creek, and in two locations in Devereux Slough, between August 23rd and September 7th. The pulses of water that entered the system overnight from the GWD flushing program can be easily seen in the chart (green line), as well as the brief rise from a short burst of rain on the afternoon of September 3.

The total volume of water that entered NCOS was roughly estimated to be more than 300,000 cubic feet, and was calculated from flow rate curves measured in the Phelps Creek channel. The area of inundation in the project site is 3.7 acres of sub-tidal area, which is approximately 161,172 square feet (3.7 acres x 43,560 square feet per acre = 161,172). The site requires 161,172 cubic feet of water to inundate the sub-tidal channel up to a depth of 1 foot. Some portions of the site are inundated up to 1.5 feet, and some water carried on through the system and increased water levels in the downstream portion of Devereux Slough. This increase can be seen in the water level data from Devereux Pier, shown with a dark blue line on the graph, and from under Venoco Road bridge between the project site and Devereux Slough, shown by a pale blue line.

Devereux Slough & Phelps Creek Water Level: 8/23/2017 to 9/7/2017

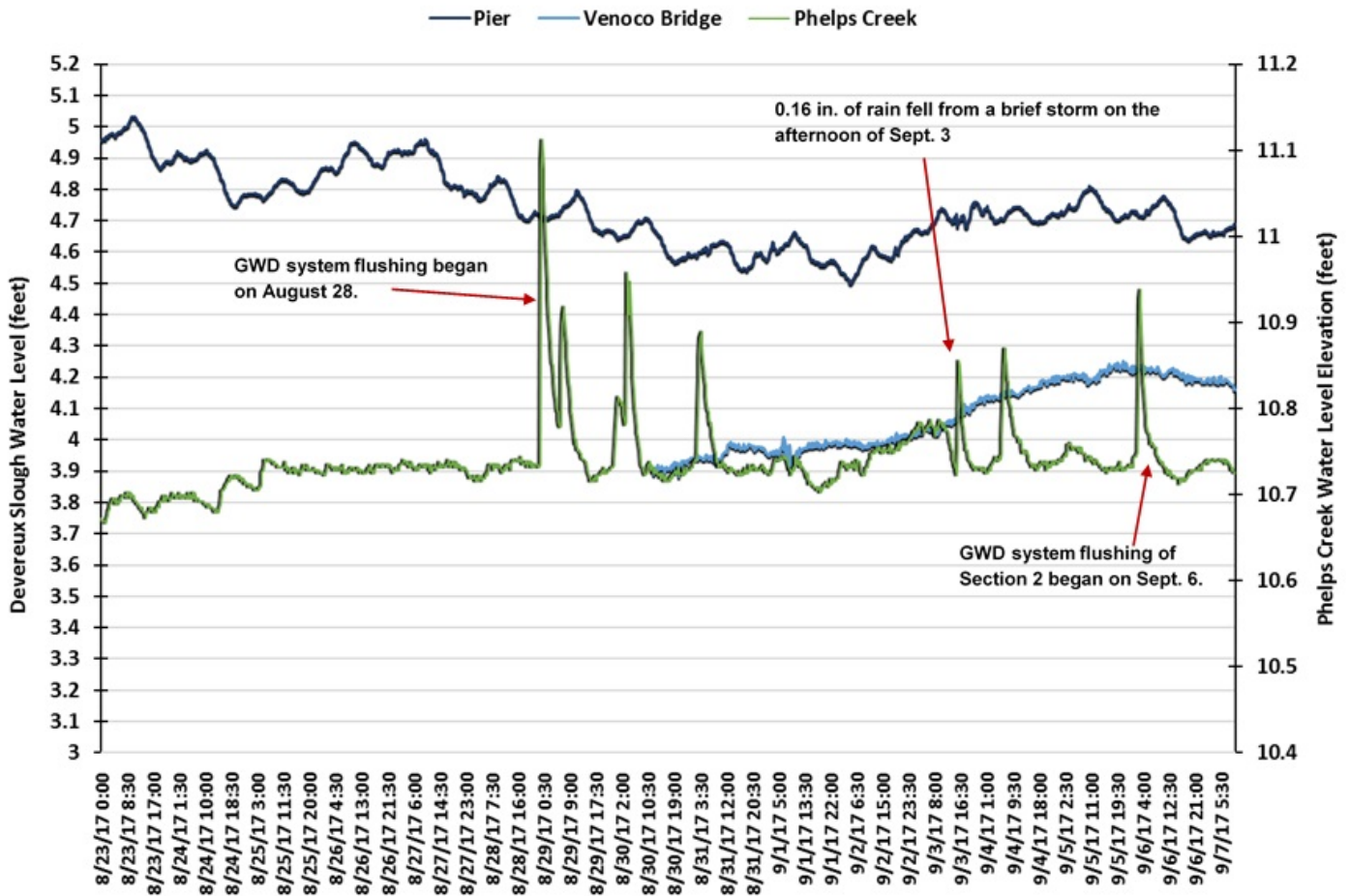


Figure 3. Graph of water levels (in feet above sea level) in Phelps Creek (green line), and Devereux Slough at Venoco Bridge (light blue line) and Devereux Pier (dark blue line) between August 23 and September 7, 2017.

The NCOS project is designed with very shallow slopes and a continuously inundated sub-tidal channel to support both ducks and shorebirds. A variety of shorebirds began migrating through the region in mid-September, and they have quickly spotted and made use of this newly available habitat resource. A recent bird survey of the site counted 18 least and 7 western sandpipers, 6 black necked stilts, 2 red-necked phalarope and 5 greater yellowlegs. Ducks are just beginning to show up this fall (such as the recently seen blue-winged teal), and we will continue to monitor the site for them in the coming months.





Recent photos by David Levasheff of migrating shorebirds and ducks visiting the NCOS restoration site: Top photo: Solitary sandpiper (left) and Greater yellowlegs; Middle photo: Least (left) and Western sandpipers; Bottom photo: Blue-winged teal.

We have various sensors located in the tributaries of NCOS and in Devereux Slough that together will help us document how the system handles rain events and how water quality characteristics such as salinity, temperature and dissolved oxygen change with the seasons. We will be able to correlate measurements from those sensors with the presence of aquatic plants, invertebrates, fish and birds. The project is designed to handle storm events, and to have water levels ranging from a low of 4.5 feet elevation (current level, not depth) up to 10 feet, which is the elevation of the sand berm at the mouth of the slough, on Sands Beach. When the water reaches that level, the pressure on the berm is so strong that it breaches and drains to the ocean, and water levels drop down to between 6 and 7 feet, depending on the tidal regime at the time (for reference, the elevation of the new trail around the wetland is 15 feet). Neighbors of the project site and other observers will be able to witness these changes in inundation over the seasons.

Date:

Monday, October 2, 2017 - 16:30

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