

UC Santa Barbara Newsletters

Title

NCOS News - July 2021

Permalink

<https://escholarship.org/uc/item/0094693q>

Authors

Clark, Ryan
Bender, Jeremiah
Fahrner, Oliver
et al.

Publication Date

2021-07-01

[We recommend viewing this email in your web browser](#)

UC SANTA BARBARA North Campus Open Space Restoration Project

NCOS NEWS

July 2021



Something is missing from this latest aerial image by Bill Dewey, can you tell what it is? Taken on June 16 2021.

UPDATES

Second Saturdays are back!

We are excited to announce that Second Saturday volunteer events are returning to NCOS! Come out and share smiles with your neighbors and plant with us 9-12 on Saturday July 10th! We'll meet at the Whittier entrance and walk over to the Mesa for planting. Please RSVP to ncos@ccber.ucsb.edu! We look forward to seeing you!



Come and help restore NCOS with your fellow community members!

NCOS All Terrain Wheelchair

With a recent grant from UCSB's Advisory Committee on Campus Access ([ACCA](#)) to improve disability access on campus, CCBER will be able to purchase an all-terrain wheelchair for NCOS. The wheelchair will be stored in an all weather bike locker on site which is funded by the [Wildlife Conservation Board](#) through our recently secured public access grant which will also be funding this summer's parking lot renovation.



The Vipamat Hippocampe is a pushed and self-propelled wheelchair designed to enhance access to nature trails and beaches.

T-shirt Art Contest

We have a winner! This design by Zoe Wood, which combined and colored photos from the NCOS newsletter into this artistic medley, will be featured on the new NCOS t-shirt. Final design details are being pulled together for a fall release of this gem. It includes a beautiful burrowing owl painting by Lauren Manzo, which may feature by itself as a limited edition t-shirt to celebrate the project's connection to this captivating and vulnerable species.



These Ventura marsh milk-vetch are covered in flowers - a sure sign of more vetch in the future!



This panorama shows the full population of Ventura marsh milk vetch within the south-eastern sandy area at NCOS.



These dense clusters of flowers typically last from June until October.



Young Ventura marsh milk-vetch are sprouting up throughout the sandy area.

Nature Guide Certification

The virtually trained NCOS Nature Guides held their first on-site meeting and are preparing to help enhance visitor experiences at NCOS by sharing their knowledge of the site and the insider information we share with them on the latest sightings in tours and casually along the trails. We hope to launch weekly tours later this summer.



Outdoor Classroom

We anticipate construction on the parking lot and outdoor classroom later this summer following bidding and contractor selection. This should align well with the return of Kids in Nature programming at NCOS as we all come out of pandemic-inspired virtual learning and get back into the dirt and share smiles.



FEATURE STORY

[Invertebrate Food Web at NCOS](#)



A native bee on Ventura marsh milk-vetch is just one of many interesting plant-insect interactions occurring at NCOS.

One of the best ways to gauge the progress of a restoration project is to study the food web interactions taking place as native vegetation and habitat are restored. On North Campus Open Space, wildlife frequently provides us with opportunities to see direct food chain interactions first-hand. If one were to observe the water near Phelps Bridge for a few minutes, they would likely see a heron or egret hunting for fish. Glancing up towards the Mesa, it is not uncommon to see a bird of prey feeding on one of the various rodent species that have made North Campus Open Space their home. While these examples are some of the first to come to mind when considering predator-prey relations on NCOS, there are hundreds more similar interactions taking place involving invertebrates. These invertebrates play an essential role in the food chain on NCOS, but they are often small in size and can be easily missed by the untrained eye. [This feature story continues on page 19.](#)

VOLUNTEER OPPORTUNITIES

"Second Saturdays" at NCOS

This month: July 10, 9-12

Please RSVP to 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.



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.

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@ccber.ucsb.edu. Thank you!



A mother and her very obedient ducklings! Photo By Susan Cook.



American Kestrel. Photo By Susan Cook.





© Susan T Cook

Red-shouldered Hawk. Photo by Susan Cook.



These small fish swim near the water surface at Venoco Bridge, but they better be careful...



This Black-crowned night heron is keeping a close eye on them! Photos by Jeremiah Bender.

Received this email from a friend? [Click here](#) to subscribe to our mailing list.



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

Copyright © 2021 Cheadle Center for Biodiversity and Ecological Restoration (CCBER), All rights reserved.



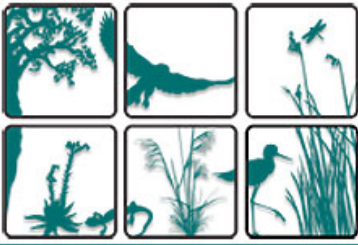
Want to change how you receive these emails?
You can [update your preferences](#) or [unsubscribe from this list](#)

This email was sent to <<Email Address>>

[why did I get this?](#) [unsubscribe from this list](#) [update subscription preferences](#)

Cheadle Center for Biodiversity and Ecological Restoration (CCBER) · Bldg 578 Harder South · UCSB, MC 9615 · Santa Barbara, CA 93106 · USA



[Home](#)[News](#) ▾[About](#) ▾[UCSB Natural History Collections](#) ▾[Ecological Restoration](#) ▾[Data & Research](#) ▾[Education](#) ▾[Home](#) » [Blogs](#) » [jeremiahbender's blog](#)

INVERTEBRATE FOOD WEB AT NCOS

One of the best ways to gauge the progress of a restoration project is to study the food web interactions taking place as native vegetation and habitat are restored. On North Campus Open Space, wildlife frequently provides us with opportunities to see direct food chain interactions first-hand. If one were to observe the water near Phelps Bridge for a few minutes, they would likely see a heron or egret hunting for fish. Glancing up towards the Mesa, it is not uncommon to see a bird of prey feeding on one of the various rodent species that have made North Campus Open Space their home. While these examples are some of the first to come to mind when considering predator-prey relations on NCOS, there are hundreds more similar interactions taking place involving invertebrates. These invertebrates play an essential role in the food chain on NCOS, but they are often small in size and can be easily missed by the untrained eye.



Spring flying *Anthophora* or digger bee on purple sage (left) and a frequently observed native yellow-faced bumble bee on seaciff buckwheat (right).
Photos by Karen Lunsford.

Restored native vegetation is not only providing the desired habitat-type for much of our area's native wildlife, it is also functioning as the primary basis of the food chain. Many aquatic and terrestrial invertebrates utilize both living and dead plant matter as their primary source of food, which in turn allows these invertebrates to provide essential nutrients to wildlife farther up the food web. While native plants provide invertebrates with the best available food sources, invertebrates in return play an important role in propagating native plants through pollination. Below are some photographs of this critical symbiotic relationship playing out, with various species of invertebrates pictured visiting some of our native flowering plants here at NCOS.



Fly on golden yarrow (left) and skipper on western vervain (right). Photos by Karen Lunsford.

While the invertebrates photographed above are utilizing pollen for food, predatory invertebrates will eat other invertebrates and occasionally larger animals. The Blue-Eyed Darner Dragonfly, pictured below, spends the first part of its life cycle as a naiad, eating aquatic invertebrates, tadpoles, and even fish as it spends its first few years of development in water. NCOS is also home to various species of spiders, a group of predatory invertebrates that employ a myriad of different tactics to capture their prey. Wolf spiders hunt for their food on foot rather than relying on a web, and their keen eyesight allows them to find and pounce on small insects that they then kill with their powerful jaws. Jumping spiders also forgo webs when hunting, and instead can jump up to 40 times their body length to catch prey that they spot with their excellent vision. Finally, crab spiders are known to sit and wait for their prey to come to them, often camouflaging themselves on flowers until a pollinating insect is close enough for them to grab with their strong front legs.



blue-eyed darner



wolf spider



jumping spider



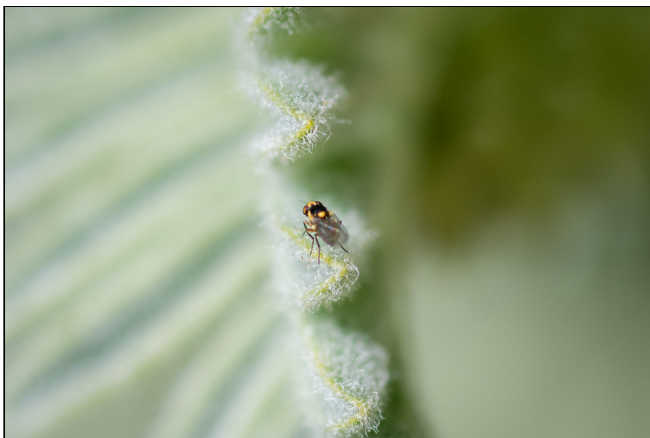
crab spider

For other non-predatory invertebrates, plant xylem, which is the transport tissue in plants that moves water and nutrients from a plant's roots to its stems and leaves, and phloem which moves sugar energy to the roots, are important food sources. Cicadas are a group of invertebrates that utilize plant xylem and phloem for food, tapping into roots while living underground and into stems after they emerge. While NCOS does not have any Brood X Cicadas like those recently discussed by the media, the signature buzzing sound of the cicada has been heard across the restoration site recently. These cicadas are a great source of food for many different species of birds, rodents, and reptiles that live on site.



cicada

One exciting area of study involving invertebrates is examining their interactions with rare and endangered native plant populations on NCOS. Over the summer, CCBER Student Intern Mary Cardogan will be looking at the invertebrates associated with the endangered Ventura Marsh Milk-Vetch. This plant was formerly thought to be extinct, but since its rediscovery has been slowly making a comeback, and North Campus Open Space's thriving population provides a unique opportunity to discover how different species of invertebrates interact with this plant. Another special status plant on NCOS, Southern Tarplant, also attracts a number of invertebrates, as seen in the photos below. For more information on the Southern Tarplant and the local wildlife community it supports, [click here](#).





Parasitoid wasp in action (upper left, note ovipositor position). Bees, beetles and flies use Southern Tarplant flowers.

Worldwide, over one million species of invertebrates have been described, but estimates for the total number of existing species range as high as 30 million species! This creates the potential for some groundbreaking discoveries to be made here on NCOS as we continue to study the invertebrates on site. One ongoing study that has been running for the last three years, the aquatic invertebrate monitoring program, involves student researchers studying the aquatic invertebrate species that are present at different wetlands around NCOS. This builds on the NCOS Arthropod Survey, which involved monitoring insect and other arthropod diversity before and after NCOS restoration. While the arthropod and native bee surveys utilized pitfall, malaise, and yellow pan traps to survey for terrestrial invertebrates, students working on the aquatic invertebrate study use a 250 um screen to filter invertebrates out of the water. More information on the aquatic invertebrate project can be found [here](#).



UCSB students conducting aquatic invertebrate monitoring in the seasonal pond at NCOS.

Overall, invertebrates make critical contributions to North Campus Open Space by serving as foundational species in the food web, pollinating native plants, and in the case of some predatory invertebrates, controlling the populations of pests that might otherwise decimate our native plants. While typically smaller and more concealed than some of the other wildlife on site, invertebrates make up an important biological group to focus on when assessing the success of our restoration site. We are excited about the invertebrates that [have already been identified on NCOS](#) and are looking forward to

discovering more of the intricacies of these critical species as we continue to research them. One research opportunity would be to dissect burrowing owl pellets we have collected on site to identify the insects and rodents they consumed on site.

This article was written by CCBER Restoration Assistant Oliver Fahrner and edited and formatted for the web by Jeremiah Bender. Photographs are by Jeremiah Bender and Karen Lunsford.

Date:

Wednesday, July 7, 2021 - 10:15

[Contact Us](#)

Cheadle Center for Biodiversity and Ecological Restoration • [Earth Research Institute](#)

Copyright © 2007-11 The Regents of the University of California, All Rights Reserved.

UC Santa Barbara, Santa Barbara CA 93106 • [Terms of Use](#)

[UCSB website](#)

