

# COAL OIL POINT RESERVE

*2019 Year in Review*



***Featuring  
COPR Staff  
Updates...***

***The Latest  
Research  
from Students...***

***Plus  
COPR Intern  
Experiences...***

**UC SANTA BARBARA**



# News and Highlights from COPR

by Dr. Cristina Sandoval

## Nature Center Updates

It is true what people say: "If you build it, they will come." Having the Nature Center to support classes, researchers, and community visitors has been a game-changer for the reserve. The new building has opened up many opportunities to collaborate with local partners, host events related to science and conservation, and enhance the experience for undergraduate student field trips. We dreamed that the Nature Center would become a hub for environmental problem solving, and our vision is becoming a reality.

## Research Updates

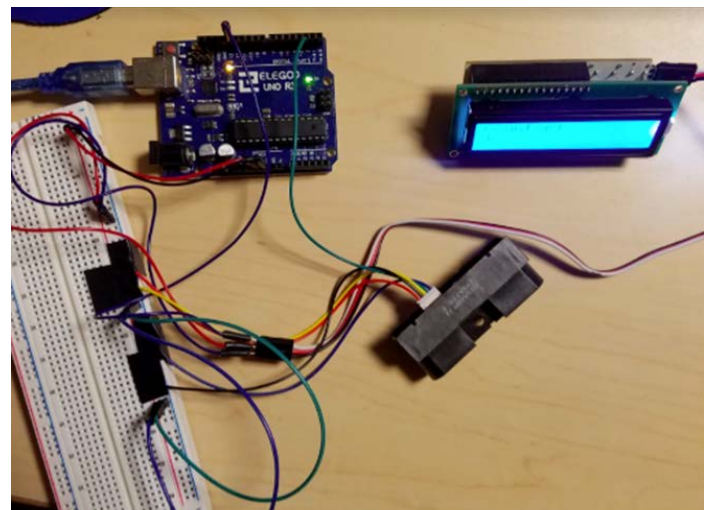
COPR is an excellent resource for undergraduate students to do field research because of the proximity of the reserve to campus. Student research projects this year included a study of leopard shark diet, the construction of a prototype pedestrian trail counter, and research about the effects of climate change on Snowy Plovers. In addition, the reserve staff supervised and provided stipends, thanks to the Coastal Fund, for 61 undergraduate students to gain practical skills in conservation, restoration, biological monitoring, and public outreach.

COPR is also an vital field site for graduate students working on their thesis projects. Thirteen graduate students used the reserve regularly last year. These studies help us better understand the biological and physical resources of the reserve. The generosity of Yulun and Sue Wang has enabled to offer scholarships for graduate student research at the reserve.

*(continued on next page)*



Audubon's Central Coast Council Meeting took place at the Nature Center in September 2019.



Trail counter prototype developed by engineering students under the supervision of Dr. Dahlen.



Undergraduate research on leopard shark diet was conducted at COPR.

Graduate student Samuel Bedgood, from UCLA, is a recipient of one of the 2019 COPR Graduate Student Research Awards. He is studying how the surface area of sea anemones affects the density of their algal symbionts and how sea anemone abundance and distribution affects other species living in the rocky intertidal zone.

Derek Pagenkopp, from UCSB, is another graduate student recipient of the 2019 COPR Graduate Student Research Award. He is studying the key factors that drive gas fluxes from coastal salt marshes and other wetlands.

## Unusual Updates

We had our share of excitement when a mountain lion decided to hang out around the reserve, and even on UCSB campus. The young individual eventually went back to the mountain.

A 40' sailboat washed ashore and became stuck on the rocky intertidal. After 5 weeks, it was finally removed.

A large Hoodwinker Sunfish, a very rare species not known to live in the northern hemisphere, washed up ashore at COPR and received the attention of international scientists and news media.



UCLA graduate student Samuel Bedgood is a recipient of the COPR Graduate Student Research Award.



UCSB graduate student Derek Pagenkopp is also a recipient of the COPR Graduate Student Research Award.



A Hoodwinker Sunfish, *Mola tecta*, was discovered washed ashore. Photo credit: Thomas Turner



# Snowy Plover Update

*by Jessica Nielsen*

The 2019 Snowy Plover season was full of highs and lows. Last year we had a record number of breeding plovers at Sands Beach, and this year the plovers beat that record by 14 with a whopping 68 breeding plovers! This is more than double the average for our site. While the plovers were here and nesting in full force, so were their predators. As any of our docents will tell you, the local crows were the main villain this year and were unaffected by our usual techniques of hazing and trying to scare them off. The result was an unprecedented level of crow predation on nests at our site.

In response to the crow predation, we received approval from US Fish and Wildlife Service to construct predator exclusion cages to place on every plover nest as soon as eggs were laid. These exclosures were made with a mesh size just big enough for plovers to move in and out. They also had a plywood top to keep aerial predators, specifically owls, from stalking the plovers from above. After each cage deployment, we monitored individual nests to ensure that parent plovers returned quickly to incubate the eggs. They had no issue with their new "condos," and not a single caged nest was predated by crows. Luckily, a portion of caged nests successfully hatched before a high tide event, and before the skunks figured out that they could fit through the mesh to eat eggs.

Each year, we record the number of chicks that successfully fledge - meaning that they survive to the age when they can fly and be independent of their parents. At our site, we had a total of 8 plover chicks fledge in the wild this year. While this is a low number for Sands Beach, our overall



Photo credit: Adam Green

average remains steady at 31 fledged chicks each year. As a welcome supplement, 15 eggs from Sands Beach were fledged in the Santa Barbara Zoo's captive rearing program and were released back into their natural habitat.

Most of the captively reared chicks came from eggs rescued from a high tide event. One night in July, Reserve Director Cris Sandoval looked out over the slough mouth and noticed that it was reflecting the moonlight. She quickly realized it had been flooded and sprang to action to collect as many washed out eggs as she could, rinse away the salt water, and place them in the incubator. The eggs were transferred to our partners at the zoo, where they all hatched, fledged, and were released at Coal Oil Point Reserve.

This year, the zoo graciously hosted reserve staff and volunteers for a tour of their plover rearing facilities. Their dedicated zookeepers have done such a fantastic job with the program, and everyone enjoyed the field trip to see the cotton-ball chicks up close.

I want to thank our incredible team of Snowy Plover docents and tour guides for spreading awareness and educating visitors about the plover program and the reserve! Your efforts make all the difference.

# Habitat Restoration

*by Kipp Callahan*

This year was a busy year for the stewardship program at COPR. We received almost 25 inches of rain, which is well above average. The increase in rainfall, meant that it was a great year for planting. We were able to plant over 2,000 plants as part of our efforts to restore native grassland and coastal scrub communities on the reserve. We received a tremendous amount of help with planting from several student and community groups, including the Environmental Affairs Board, UCSB ROTC, the Community Affairs Board, UCSB Wildlife Society, UCSB Breakin', and REI.



Breakdancers from UCSB Breakin' volunteered to plant native plants.

In addition to all the planting we were able to do; we tackled a few other big stewardship projects at the reserve this year. As part of an effort to improve our restoration, we launched a soils mapping project. With the help of our Coastal Fund intern, Jae Rivera, we collected soil samples from over 50 locations around the reserve in order to map the different soil types that occur here. We also made a big push this year to reduce the amount of invasive Cape Ivy on the reserve. Several volunteer groups helped us with hand removal of Cape Ivy, including the UCSB Kite Boarding Club and the Latino Business Organization.



UCSB Alumni Day of Service at the reserve.

This year we had great interns and assistants that put in a lot of work to make the stewardship program a success. Alicia McCracken, our land steward assistant from 2017 to spring 2019, played a significant role in helping run smooth volunteer planting events and did some great work to help us figure out proper propagation techniques for additional species we want to add to our restoration palette. Alicia graduated this spring, and we are incredibly grateful for the work she provided to the reserve over the last two years. We are happy to announce that we hired a new land steward assistant this fall, Nicolas Tate. Nico has already put in a lot of work helping us on some fence removal projects, and we are glad to have him on board. We are also grateful for the work put in on various stewardship projects by our stewardship interns Angela Ma, Maritiza Vasquez, and Siobhan Kilackey.



UCSB interns in the Land & Resource Stewardship program are funded by UCSB Coastal Fund.



# Sampling the Slough

by Jacklyn Vo

Walking to our sample sites, volunteers can spot bunnies, egrets, and bird skeletons all over the Devereux Slough. As odd as this is, this is something many of us look forward to on every week. The Water Quality Monitoring Program has given us an occasion to be outside, evaluate our local ecosystem, and develop connections between how seasonal variations affect organisms living there. The overall goal of this program is to generate consistent, long term data to be used in assessing the health of the Devereux Slough and initiating restoration and conservation efforts. As an intern, I've been fortunate enough to be trained by Jessica Nielsen on how to use a YSI meter to collect various abiotic parameters and enter data.

Since Winter quarter 2019, I've trained about six volunteers on these techniques and have been consistently monitoring the Devereux Slough for parameters like dissolved oxygen, conductivity, and turbidity. We collect these parameters at four various sites throughout the area once a week and at the pier an additional 1-2 times a week. While some of the sites are pleasant, others are mucky. We're lucky enough that we haven't fallen in yet! Either physically standing in the water or carefully reeling the YSI meter down, we ensure that we are meticulously reading results as accurately as possible. Once this is done, we enter the parameters in a shared spreadsheet to communicate our findings.

Before I got involved, I had no idea if I was interested in fieldwork and research. This experience has opened my eyes to embracing our local ecosystems and realizing that we are fortunate to have an open space to learn and experience collaborative and cohesive conservation efforts.



Undergraduate intern, Jacklyn Vo, is funded by UCSB Coastal Fund to monitor the water quality in Devereux Slough.

“

*We are fortunate to have an open space to learn and experience collaborative and cohesive conservation efforts.*

”



# Communicating Science

by Kelsey Husted

After working for Coal Oil Point Reserve (COPR) for almost two years, I've quickly come to realize the impact that COPR has had on many UCSB students' college experiences. Coal Oil Point Reserve has provided UCSB students with a plethora of opportunities, including fieldwork, research, volunteer-work, writing internships, and much more. All these distinct experiences have allowed students to gain in numerous skill-sets that permit each to begin defining individualized career paths for the future. I have been fortunate enough to be involved within a few ongoing projects at COPR that have indefinitely impacted my undergraduate years at UCSB for the better.

At the beginning of summer 2018, I began working at COPR for the writing internship position. From previously working within research labs on campus, I had always been accustomed to formal, scientific writing. As a science major, I believe it is essential to communicate about ongoing research and about the local environment within communities to promote sustainable practices. The writing internship with COPR provided me the ability to do just that.

While my role was to write about the diverse array of species found within the reserve for the COPR



Photo credit: Kevin Lafferty

website, I also had the opportunity to work as a docent within the COPR Nature Center. My job for the writing internship was to inform the general public about the various organisms of the reserve. Even so, as a docent I gained invaluable knowledge about the history and environment of the reserve from simply talking to the weekend visitors who were mostly locals.

As my writing internship unfortunately came to an end, I received yet another opportunity to work with COPR. This job encompassed subtidal monitoring at Coal Oil Point as a scientific diver. While diving, fish species, algal species, and marine invertebrates were surveyed along multiple transects within a given week. While COPR has given me the chance to practice communicating science to the public, I was also given the amazing opportunity to explore the marine ecosystem just outside of the Nature Center COPR.

I am forever grateful for my personal experience working for COPR. By undertaking the writing internship, other job opportunities became available through the reserve such as the seasonal scientific diving position. These experiences have truly impacted my years as an undergraduate and have diversified my skill-sets that will make me a strong applicant for graduate schools.



Kelsey worked on several projects at the reserve funded by Coastal Fund.



## **GUIDED TOURS**

**First Saturday of Every Month:  
10:00 am - 12:00 pm**

**Tours focus on history,  
ecology, and wildlife.**

**RSVP Required:  
[copr.conservation@nrs.ucsb.edu](mailto:copr.conservation@nrs.ucsb.edu)**

## **NATURE CENTER VISITING HOURS**

**Public Visiting Hours at  
the Nature Center**

**The First Saturday of Every Month:  
9:00 am - 1:00 pm**

## **SUPPORT COAL OIL POINT RESERVE**

***Donations are tax deductible***  
**Give Now**

**Mail your check made out to  
UC Regents:**

**Natural Reserve System  
Attn: Sarah Sikich  
4219 Cheadle  
Santa Barbara, CA 93106-2013**

## **THANK YOU TO OUR GENEROUS DONORS:**

**Jostens Inc.  
Jane Nielsen and Russell Nielsen  
Ann Steinmetz and Steven Senesac  
Brian Smith and Charlotte Smith  
Angela Towle  
Ann Walker and Jon Demeter  
Dr. Yulun Wang and Susan Wang  
Jan Wienpahl  
Suzanne Zemer**

