



## Fall 2013 Newsletter Contents

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## News and Highlights at COPR

*by Dr. Cristina Sandoval*

### **New Building**

The Reserve is getting a new building! UCSB has agreed to dedicate a building at the new west campus (old Devereux) for exclusive Reserve use. We will have meeting rooms, offices, classroom space, libraries and wet labs. We are now fundraising to restore the building to fit our needs. This building will allow staff and visitors to create new activities to fully explore the wonders of the Coal Oil Point Reserve and its adjacent open space.

### **Ocean Meadow Golf Course**

The Trust for Public Land finalized the purchase of the Ocean Meadows Golf Course earlier this year. We are very excited about the purchase of the golf course and its dedication to an open space. The land will be re-graded to restore the historical Upper

Devereux Slough marshes. The expanded wetland habitats adjacent to COPR could support more biodiversity and benefit the ecological value of the Reserve. For more information please visit: <http://www.tpl.org/our-work/land-and-water/upper-devereux-slough-ocean-meadows>

### **Natural History**

Did you know that Coal Oil Point Reserve has over 1,000 species cataloged and half (573) of those are insects? After insects, birds are the most diverse (295), followed by terrestrial plants (155). There are groups that haven't even been studied yet, such as fungi and lichen. The number of recorded species will keep growing as we continue to learn about the amazing diversity on the Reserve.

We keep records of rare sightings, not just because they are fun, but also because they may be of ecological significance. Of interest in 2013 were: mountain lion sightings, a burrowing owl (in Ellwood), and an American Pipit in breeding plumage in July.

### **The Offen Fund Internship**

This year the Offen Fund internship award was given to a UCSB student, Sadie Gill, to organize and develop the GIS database at COPR. GIS is an important resource for the Reserve to record and analyze spatial information. For example, by plotting the snowy plover nests on a map we can quickly see if there are areas of the beach where nests are more susceptible to predation or flooding. *Ed note: The Henry W Offen NRS internship celebrates the life of Dr. Henry Offen, Chemistry*



*Professor and Emeritus Professor at UCSB for more than 45 years, and inaugural Director of the UCSB NRS. Dr. Offen believed in the importance of hands on experiences for undergraduate students. We thank the Offen family and friends for providing this wonderful opportunity for both the Reserve and the interns.*

## **2013 Snowy Plover Breeding Season Recap**

*by April Price*

The 2013 snowy plover breeding season at COPR went smoothly with the help of all of our wonderful Snowy Plover Docents. The docents taught people on the beach about our special birds, and made sure that the birds weren't chased by dogs or disturbed by human activities. 2013 marked our 12th consecutive year of snowy plover breeding success at COPR.

This year, the snowy plovers at COPR made 65 nests on the beach and in the dried mudflats of the Devereux slough. About half of the nests hatched, and we counted 78 snowy plover chicks throughout the season. Thirty of those chicks matured into fledglings. Early in the season, chick survival was high, but as the season progressed, predation increased significantly. We plan to spend more time tracking the chicks and watching for predator behavior in the future.

Part of the plover recovery goal is to have one chick fledged per male per breeding season. This year, there were two fledged chicks per male. Thank you to all of the docents, plover advocates, SB

Audubon, and Pat Walker for her many hours monitoring the plover population.

## **The Friendliest Bird on the Beach**

*by April Price*

On August 6th, an employee at McGrath State Beach rescued a plover egg from being washed away, and brought the egg to COPR. After a short two-day incubation at Coal Oil Point Reserve, a fuzzy baby plover emerged and Raul was born.

Raul spent the first few weeks of his life in an open top terrarium. It was amazing to watch him grow, hunt beach hoppers, and to see his plumage change almost overnight. After about three weeks at the Reserve, Raul's wings had grown significantly and he was ready to move to the Wildlife Care Network's aviary where he would learn to fly.



Photo: Alexis Frangis

Friday, September 13<sup>th</sup> was Raul's lucky day. Other than his own reflection in the mirror, Raul had never seen another plover. On the 13<sup>th</sup> of September, we released Raul in front of the slough mouth at the Reserve, next to a large flock of other Snowy Plovers. As soon as we released him, he



took off flying, but quickly returned to the beach. He ignored the other plovers on the beach and stayed close to the group of people and his empty cage.

We don't know much about Raul's new life on the beach. He occasionally comes up to the docents for a quick hello, but doesn't say much else. Has he interacted with the other plovers? Has he explored new beaches? (Is he actually a female?!) We hope that his tame temperament fades, and that he learns to avoid people, dogs, and other dangers on the beach.

We hope that he sticks around COPR, and that some other plover digs his bright color bands (Pink Aqua, Yellow Yellow PA:YY) so that someday there will be little ones running around with Raul.

## Habitat Restoration

*by Tara Longwell*

The Reserve has an active restoration program restoring degraded habitats to improve their ecological functions. Restored sites support native flora and fauna that are used for research and education. Currently COPR is working on completing the final phase of a grant funded by the California State Conservancy to improve access and reduce the impacts of public use. This year COPR is planting native species along the pond trail to create a "green fence." The green fence will act as a biological buffer to reduce the impacts of trail usage to sensitive habitats and research areas. Thus far in 2013, COPR has offered restoration internships for 30 UCSB student interns,

installed 4,484 native plants and worked with 335 volunteers.

## My Experience at COPR

*by Christian Correa*



Photo: Tara Longwell

Interning at Coal Oil Point Reserve has exposed me to the ins and outs of ecological restoration and has given me insight into what it takes to manage a Reserve. I have been a restoration intern at COPR since the spring of 2012. COPR is an ecological treasure, and that is why I keep coming back. Restoration requires commitment and patience, and to truly appreciate what is being accomplished, one has to stick around all year long, if not longer. The changing of the seasons dictates what must get accomplished, from planting in the fall and winter to rearing next year's seedlings in the greenhouse throughout the summer. You come to understand that years are necessary to meet the habitat restoration goals.

Spending time in the field has also improved my plant identification skills, which are essential in restoration work. Native California sage brush can look just like fennel when the two are mere inches



out of the ground. Purple needle grass can disappear in the blankets of annual weedy grasses. But with enough time at the Reserve the phenology of the plants begins to stand out; you understand the seasonal patterns in the field.

COPR gives me the opportunity to apply what I learn in my environmental studies classes at UCSB, but equally significant are the influences that COPR has on my academics. My experiences outdoors, in the elements, feeling the soil, and working with my hands, compliment the lessons that I take away from the classroom. The combination of these experiences has been instrumental in the development of my environmental ethic. More importantly, these lessons encourage me to keep exploring the discipline of ecological restoration.

Ed Note: *Christian is one of 30 UCSB students that were funded by the State Coastal Conservancy in 2013.*

## Current Research Projects at Coal Oil Point Reserve

### Who Uses Sandy Beaches? More than Meets the Eye

*by John McLaughlin*

We are assembling a complete food web for the sandy beaches on Coal Oil Point Reserve. Food webs function as ecological maps by tracing the flow of energy through systems. Sandy beaches are important recreational habitat and comprise the

majority of the world's ice-free coastlines. Yet, no sandy beach food web exists for North America.

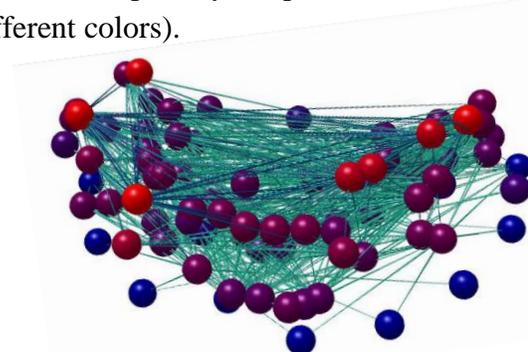
The sandy beach habitat is home to a surprising diversity of species, including shorebirds, crabs, insects, and polychaetes. Some of the major players in the system are shown below.



The sandy beach is an intertidal system extending from the subtidal swash zone to the base of the cliffs and dunes that back the beach. The sandy beaches exhibit a vertical stratification of habitats along this extent. These habitats have overlapping but discrete fauna.

In addition to identifying and quantifying the abundances of free-living organisms on the sandy beaches we are also examining their parasites and infectious diseases. To this end, we have identified two parasite species that appear to be new to science.

If we look at our food web for the whole system (below) we see that it is actually composed of a series of spatially explicit subwebs (balls of different colors).





We are exploring how differences in habitat determine the structure of food webs at small spatial scales and how this will influence our predictions of system's response to perturbations such as beach grooming. Further, examining food webs as groups of subwebs may inform our understanding of the processes and networks that stabilize food webs in general.

### **Tsunami Research at Coal Oil Point Reserve**

Dr. Alex Simms' research group has identified a potential tsunami deposit within cores from Dune Pond. Pollen data from the cores suggest that the sand layer was deposited between the 1780s and the 1870s, consistent with a historical tsunami that hit the area in 1812. It is amazing to imagine a wave so large that it went over the dunes and into the dune pond!

### **Education at COPR**

Coal Oil Point Reserve is an outdoor laboratory for college students to experience hands on methods in field biology. A special attraction of this Reserve is its proximity to campus. Even classes without overnight field trips can take advantage of visiting the Reserve for a few hours. Classes such as fish ecology, invertebrate zoology, geography, painting, environmental studies, botany, have been using the

Reserve for many years, some for 40 years.

The Reserve hosted over 50 field trips last year, including K-12 classes, agencies, corporations, and non-profits. With support from "The Coastal Fund," COPR provided bus transportation and stipends to UCSB student tour guides. Fifth and sixth grade classes enjoyed half day environmental education programs in the spring. Students learned about our

local ecosystems, focusing on plant adaptations, watershed functions, bird populations, and restoration. Most of the students saw a snowy plover chick for the first time. We plan to continue this program in the Spring of 2014.

### **Support COPR!**

We need additional support to renovate the new building. Other needs include fellowships for students interns, bus rides for K-12 field trips, support for restoration projects, and displays for the new building.

Donations are tax deductible. Checks should be made to **UC Regents**. Mail your gift to:

Attn: Donna Moore  
COPR/ Marine Science Institute  
University of California  
Santa Barbara, CA 93106

### **Upcoming Events**

- **End of Year Party:** Save the Date! December 14, at 6:00 PM. Details to be announced
- **Snowy Plover Docent Training:** Dec 7<sup>th</sup> 9am-12noon RSVP: [copr.conservation@lifesci.ucsb.edu](mailto:copr.conservation@lifesci.ucsb.edu)
- **Habitat Restoration Workday:** Jan 11<sup>th</sup> 9am-12noon RSVP: [longwell@lifesci.ucsb.edu](mailto:longwell@lifesci.ucsb.edu)
- **Schedule for trainings and restoration days:** <http://coaloilpoint.ucnrs.org/Calendar.html>
- **Tours of Coal Oil Point Reserve:** First Saturday of each month from 10am-12pm.RSVP: [copr.conservation@lifesci.ucsb.edu](mailto:copr.conservation@lifesci.ucsb.edu)