

# UC Santa Barbara

## Newsletters

### Title

The Nature Press, Vol. 1

### Permalink

<https://escholarship.org/uc/item/3n63165n>

### Authors

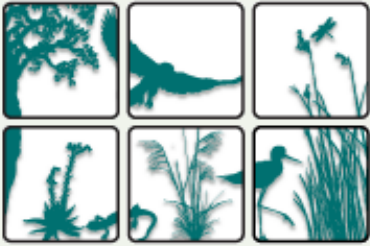
Thorsch, Jennifer  
Arellano, Daniela  
Sweet, Sam  
[et al.](#)

### Publication Date

2006-06-01

### Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>



# THE NATURE PRESS

CHEADLE CENTER FOR BIODIVERSITY AND ECOLOGICAL RESTORATION

## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

... a campus community dedicated to education, research and outreach of the region's biological diversity and restoration.

## Director's Foreword

**Jennifer Thorsch**

The office space under Harder Stadium recently evolved into a "hotspot" for biodiversity and ecological activity at UCSB. The Cheadle Center for Biodiversity and Ecological Restoration (CCBER) was formed in 2005 through the fusion of the Museum of Systematics and Ecology (MSE) and the Ecological Restoration Program. Founded by the former Director, Wayne Ferren, the restoration program grew from MSE's involvement in the study, preservation and restoration of rare wetland habitats in the vicinity of campus. The union of these elements into CCBER created a campus community dedicated to education, research and outreach of the region's biological diversity and restoration.

The founders of the Herbarium and the Vertebrate Collections, Drs. CH Muller and Mary Erickson, respectively, with subsequent contributors to the botanical and zoological collections and programs represent some of last century's leaders in ecology, behavior, plant structure and the development of modern systematics. For over 60 years these valuable collections have contributed to the research and education missions of the University

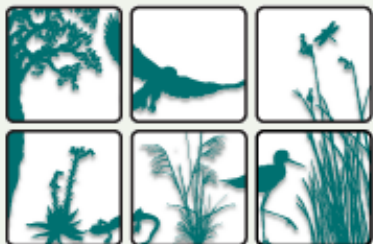
In August 2005, CCBER moved to the Harder Building near Storke Field. The newly renovated facility includes a state of the art classroom, CH Muller Conference Room and Library, separate rooms for the specimen collections and interpretative displays developed by the CCBER staff. We thank our many donors and friends both on and off campus who have contributed to the development of the Cheadle Center.

The role and mission of CCBER expanded during the past decade with new responsibilities for managing and restoring many of the biologically diverse natural areas on campus including the Lagoon, North Bluff, Storke Wetlands, Manzanita Village and most recently the San Clemente Housing project. This role enhances the academic interest in conservation and the teaching and research opportunities for faculty and students while providing a focal point for restoration ecology studies campus wide.



New Center for Biodiversity and Ecological Restoration at Harder South

Photo by Jim Bartsch



# Director's Foreword

## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

CCBER will continue to support:

- Teaching
- Research
- Natural lands management
- K-12 academic preparation and community education programs
- Public service and professional advising

... continued



Cheadle Esau collection room at the new Center

Photo by Tony Mastres

By housing a permanent repository of biological specimens, CCBER has developed the expertise to provide assistance with collection protocols, preparation and preservation techniques, and information on valuable research specimens. By providing access to these specimens, CCBER supports the teaching of diverse undergraduate courses in many departments on campus, as well as the research interests of faculty, graduate, undergraduate students and staff.

Natural Lands management of the campus native areas is coordinated and supervised by CCBER staff and fulfills the University's obligation to provide stewardship of biodiversity-rich campus lands. These areas serve as an on-campus living laboratory for studies in plant and restoration ecology, and vertebrate biology. Students gain internship credit by participation in restoration and management activities.

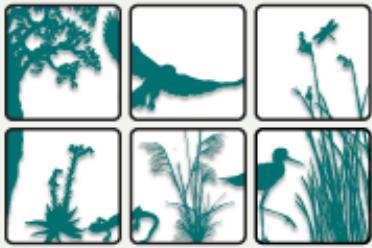
CCBER's academic preparation programs enhance the next generation's role in the study and preservation of biodiversity. The "Kids in Nature" program serves the educational and outreach mission of the university and brings hundreds of school children to our facilities each year. Community education programs are offered year-round through tours, workshops and a regular seminar series. Providing valuable scientific information and advice to public and private entities is also an important role provided by the CCBER's Staff and Faculty Curators.

As CCBER settles into its new campus home, we look forward to expanding our commitment to the educational and research missions of this unique campus. We thank our many donors and friends both on and off campus who have contributed to the development of the Cheadle Center.

The Nature Press is published by:  
The Cheadle Center for Biodiversity and Ecological Restoration. © 2006 CCBER, All rights reserved.

Graphics Design:  
Kelly Campbell

Newsletter Consultant:  
Lynn Watson



## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

The impacts from past land uses left a legacy of disturbed soils. However, the site's restoration potential is just being realized.

This 'solarization' process heats and kills iceplant without disturbing the soil and exposing the seed bed.

## Campus Lagoon Restoration – Reviving the Neglected Gem

Lisa Stratton

Historical records indicate that the areas currently known as Campus Point and Lagoon 'Island' were valued by the Chumash as temporary village sites. The areas were later used by early westerners for agriculture, asphaltum mining, firewood collection, fill material, military structures, and experimental non-native street-tree planting sites. UCSB has since recognized the ecological value of this site for its coastal open space and potential to support increasingly rare native plant and animal assemblages. The impacts from past land uses left a legacy of disturbed soils dominated by near mono-cultures of non-native plants; however, the site's restoration potential to a range of plant communities is just being realized. In 1995 shore bird habitat was created adjacent to the UCEN and coastal sage and oak woodland plant communities were restored to the western slopes. In 2001 coastal dune areas were researched and restored by a restoration ecology class. This past year we initiated several large projects to establish oak woodland on north-facing slopes, increase dune habitat and restore coastal sage scrub on south-facing slopes. These projects would not have been possible without the help of many individuals and organizations.

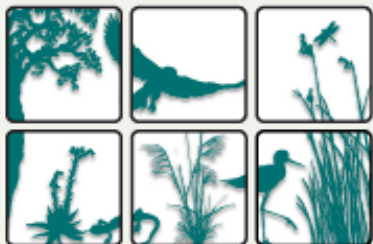
Campus Lagoon has been formally recognized by the University as an Environmentally Sensitive Habitat Area (ESHA). There is a general management plan and we are currently working on a \$100,000 planning grant for the area so that we can move towards implementing larger projects on the site.

### Coastal Bluffs

While annual grasses provide seed for mice and rodents, they provide few resources for California's diverse insect and bird fauna. Native coastal sage scrub and oak woodland plants support a higher diversity of native creatures that have evolved with the plant structure and steady stream of nectar and pollen resources. In addition, perennial plants don't dry up by mid-July the way annual plants do. West facing slopes of Lagoon Island were cleared, stabilized with coconut mat, to reduce run-off; and planted with over 850 plants from ten species of flowering coastal sage scrub shrubs, including: *Isocoma menziesii* (Coastal Goldenbush), *Mimulus aurantiacus* (Bush Monkey Flower), *Eriogonum parvifolium* (Seacliff Buckwheat), *Eriophyllum confertiflorum* (Golden Yarrow), *Epilobium canum* (California Fuchsia), *Rosa californica* (California Wild Rose), *Phacelia ramosissima* (Branching Phacelia), *Lotus scoparius* (Deerweed), *Encelia californica* (California Sunflower), *Scrophularia californica* (Figwort), *Rhus integrifolia* (Lemonade Berry), *Dudleya lanceolata* (Lance-leaved Dudleya) and *Sisyrinchium bellum* (Blue-eyed Grass). Shoreline Preservation Fund supported the student group, Sigma Chi Omega, who planted over 80 plants a piece on a Saturday morning.

### Campus Depressions – Sand dune restoration in progress

Another project is the restoration of West Depression from an iceplant dominated flat patch of land, to a more diverse habitat with small dunes, dune swales, salt marsh and coastal sage scrub bluffs. We placed black plastic over the iceplant from August to December. This 'solarization' process heats and kills iceplant without disturbing the soil and exposing the seed bed. The sandy site was planted during the March rains with over 250 *Camissonia cheiranthifolia* (Beach Evening Primrose) seedlings, plus seeded and planted with other dune species including: *Atriplex leucophylla* (Beach Saltbush), *Ambrosia chamissonis* (Beach-bur), *Abronia maritima* (Red Sand Verbena) and *Abronia umbellata* (Beach Sand Verbena).



## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

## Campus Lagoon Restoration – continued

A back dune and dune swale region includes *Juncus mexicanus*, *Juncus acutus*, *Jaumea carnosa* (Jaumea), *Frankenia salina* (Alkali Heath), *Eschscholzia californica* (California Poppy), *Deinandra increscens* (Tarweed), *Lupinus arboreus* (Bush Lupine), *Lotus scoparius* (Deerweed), *Isocoma menziesii* (Coast Goldenbush), *Distichlis spicata* (Saltgrass). Student interns and CCBER staff helped with this project.



Planting of coast live oaks on Lagoon Island and Campus point allow for the development of an oak woodland which supports a much higher diversity of plants, vertebrate and invertebrate organisms.

**Campus Lagoon supports a diverse array of habitats despite its small size.**

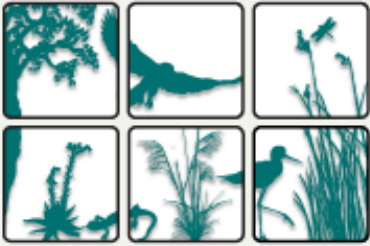
### Oak Woodland... in 20 years!

CCBER initiated four restoration projects around the Campus Lagoon this year designed to enhance the lagoon area so it supports a higher diversity of native species. Because of the coastal influence and the steep slopes, Campus Lagoon supports a diverse array of habitats despite its small size (94 acres). The two coastal mesas (Campus Point and Lagoon Island) have north-facing slopes with deep loamy soils capable of supporting California's coast live oaks. Reference sites - nearby areas with similar physical features and more intact plant communities - for this habitat include the Douglas Preserve and More Mesa. Acorns were collected in September and planted after the early rains in November and December at 1000 sites. Nearly 20 members of the campus ROTC volunteered on a Saturday to clear sites and install weed cloth and blue tubes. The tubes surround the acorns above and below the ground to protect the young oaks from predation by squirrels and gophers. Weed cloth around each planting site reduces competition by non-native annual grasses and radish. Elementary students from Montessori Center School helped plant over 250 sites with acorns.



Tree tubes and weed cloth protect germinating acorns from squirrel and gopher damage and competition from weeds for water and light





## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

## Campus Lagoon Restoration – continued

### From leaf litter to coastal sage scrub

Coastal Sage Scrub assemblages have also been planted in two large south-facing areas overlooking Campus Lagoon where a number of Eucalyptus trees were removed behind San Nicholas Dorm and below parking lot five adjacent to the Chancellor’s house. Eucalyptus trees are not native to Southern California and can greatly reduce biodiversity because their leaf litter is dense and contains compounds that restrict the growth of other plants. However, the structure these trees provide serves as valuable habitat for roosting and nesting raptors and cormorants. The top row of Eucalyptus which supports these birds was not disturbed, while the second tier of trees was cleared to reduce impacts from leaf litter, shade, water loss and increased fire risk associated with dense stands of Eucalyptus trees.



University groups and La Colina Jr. High School students work together to plant coastal sage scrub seedlings in areas where eucalyptus trees were thinned.

Shoreline Preservation Fund facilitated connections with the Chinese American Association, the Girls Club Volleyball team, and the Hurricane Katrina Relief group who helped with planting and clearing the thick leaf and seed litter from the slopes. Because these slopes face south, the species mix includes the more-drought adapted species in the coastal sage scrub pallet used on Lagoon Island as well as *Artemisia californica* (California Sage Brush), *Atriplex californica* (California Saltbush), *Gnaphalium canescens* (Everlasting), *Hazardia squarrosa* (Saw-toothed Goldenbush), *Deinandra increscens* (Tarweed) and *Antirrhinum nuttallii* (Snapdragon).

The UCSB Facilities Maintenance department has been instrumental in all of these projects by helping to pick up large debris piles, clearing sites and helping to fund projects with the Housing and Residential Services Department. Together we are making a difference.

**Eucalyptus trees are not native to Southern California and can greatly reduce biodiversity.**



# Education

## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

## Kids in Nature - Inspiring Future Ecologists

**Daniela Arellano**

Jose Razo is a restoration ecologist. Standing just over four feet, this slender 5th grader towers over the fields of the Sedgwick Reserve as he proudly walks and observes his recent contribution to the environment. Through Kids in Nature, Jose learned that planting a tree enhances the landscape's splendor while increasing oxygen emissions that produce the crisp, clean air of the Central Coast. He also discovered that restoring local habitats to their natural state preserves the diversity of the existing environment. "I have learned about flowers, trees, erosion, and even how to decorate a t-shirt with leaves and flowers!" says Jose with a big smile.

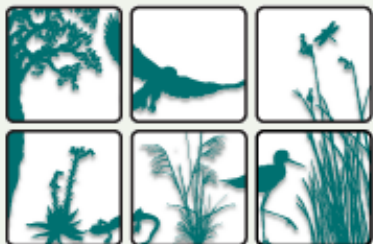
According to a University of California Santa Barbara (UCSB) outreach initiative, Jose and his classmates are part of an under-represented and under-funded school district from low-income neighborhoods in Northern Santa Barbara County. Rarely are these students introduced to environmental outreach programs such as Kids in Nature or institutions of higher learning like UCSB. Statistics show that minority children from disadvantaged families seldom enter ecological studies or careers, due to lack of exposure and academic and financial support.



Founded by Jennifer Thorsch and Mike Williams in July 2001 with a Faculty Outreach Grant from UC Santa Barbara, Kids in Nature (KIN) was developed as an outreach program modeled after the scientific methods of actual restoration ecologists. The goal of KIN is to teach 4th-6th graders from local elementary schools about the importance of environmental awareness and sustainability. KIN provides hands-on activities that support "learning by doing" and encourages youngsters to use their logic and reasoning as part of restoring the ecosystem. The program runs from September through May, during which children are bused to the UCSB campus where they learn through a classroom setting, laboratory participation, and computer simulations, as well as the Sedgwick Reserve for hikes, restoring the area along the creek, planting, exploring, and learning about plants and animals.

Field trips to the U.C.S.B. Center for Biodiversity and Ecological Restoration and the Sedgwick Reserve in the Santa Ynez Valley are among the most anticipated events for students. "The children are always very excited to go on the trips and learn about nature," says Julia Razo, mother of Jose Razo, who has been a chaperone during many of the events. "My son is always very enthusiastic when he participates in the activities. He's learned a lot about nature and even recognizes certain trees when he returns home. Even I enjoy, learn, and relax during these outings in nature. I only wish more parents could participate as chaperones so they could see the smile on their children's faces when they're involved in the activities the docents have them do," she adds.

**KIN provides hands-on activities that support "learning by doing" and encourages youngsters to use their logic and reasoning as part of restoring the ecosystem.**



# Education

## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

**KIN provides an opportunity for the children to step outside the typical educational realm. It expands the children's view of their world.**

## Kids in Nature - continued

When asked what they have learned through KIN, students are quick to recall many facts. "We have learned how long it takes for an oak tree to grow and how erosion starts. We also learned about different kinds of birds, like the American Kestrel," says fifth grader Brianna Gomez, from Ontiveros Elementary. Her classmate, Armando Medina, exclaims he applies his knowledge from KIN by planting flowers at his house with his mother. "I can tell what kind of flowers and rocks they are!" he says. "I learned lots of cool things. I like it when we go on hikes and learn new stuff!" he adds.

Parents and teachers appreciate KIN as an opportunity for the children to step outside the typical educational realm. "I think this is a fantastic program that should be a part of every elementary grade because it expands the children's view of their world. It gives them a common experience they can draw from to use in the classroom," says Mrs. Hernandez, a fourth grade teacher at Arellanes Elementary.

The hard work and dedication of directors, volunteers, docents, and teachers pays off when children walk away with new knowledge and the inspiration to continue with environmental studies. Eleven year old Concepcion Keyes, a fifth grader at Arellanes Elementary who aspires to attend college so she can teach kids about the environment says, "I like EVERYTHING about KIN!" When asked what she would say to children who are not in the program, she quickly responds, "Go to the Sedgwick Reserve!"

As a non-profit organization, Kids in Nature highly depends on monetary contributions for its continuation. Parents and teachers agree that maintaining the program for the participation of future generations is of great importance. Mrs. Razo hopes that her younger son, Rafael, will also get to participate in KIN. "It's unfortunate that my older son wasn't able to have this wonderful opportunity. However, we are thankful that Jose has, and hope that Rafael will also gain this learning experience like his older brother."







## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

The collection is scientifically valuable for its extensive coverage of this biogeographically complex and important region.

## Herpetological Research Collection

Sam Sweet

The Herpetological Research Collection contains about 11,500 specimens, mostly from the southwestern region of California (San Luis Obispo, Kern, Santa Barbara, Ventura and Los Angeles counties). The collection is scientifically valuable for its extensive coverage of this biogeographically complex and important region. Collection building began in the late 1970s with activities focusing on securing series of specimens from remote areas and across ecotonal boundaries, recovering records from lowland areas facing conversion to agriculture or housing, and documenting isolated relictual populations and distributional boundaries. The majority of specimens are fluid-preserved and are accompanied by field notes. Although there are no tissue collections, there are significant holdings of amphibian eggs and larvae, skeletal preparations, prepared materials, and a synoptic collection covering family-level diversity worldwide.

Faculty, staff, and students associated with the Herpetological Collection have undertaken cooperative research agreements with state and federal wildlife agencies, and land management units such as the US Forest Service, Bureau of Land Management, Vandenberg AFB, and Carrizo Plain National Monument. The resulting projects provide comprehensive inventory work and detailed ecological studies of endangered or unique species such as California Tiger Salamanders, Arroyo Toads, California Red-legged Frogs, Western Pond Turtles, and California Legless Lizards. Other related research such as evaluation of clinal variation and incipient speciation in gopher snakes and rattlesnakes has led to assemblies of well-documented specimens. Most of these investigations include preservation of samples; over time unique documentation of the biology of many species that have not been studied before are created. These samples and records are maintained for future investigative uses, some of which no one can presently foresee.



The pattern of juvenile Arroyo toads closely matches mineral encrusted gravel deposits on the streamside bars where they live for 4-6 weeks following metamorphosis.



An adult male Arroyo toad from Sespe Creek, Ventura County



## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

The resulting projects provide comprehensive inventory work and detailed ecological studies of endangered or unique species.

Even one large exotic bullfrog in a pool can eat all of the male Arroyo Toads in a few nights.

## Herpetological Research Collection - continued

CCBER Curator of Herpetology Professor Sam Sweet has conducted ecological studies of the southern California endemic Arroyo Toad (*Bufo californicus*) since 1988, with a focus on reproductive biology and habitat use by juvenile and adult toads. This work established the localized nature of surviving populations and identified a suite of anthropogenic effects contributing to this species' rapid decline. Based on this information, Arroyo Toads were placed on the federal endangered species list in late 1994. The US Forest Service was able to promptly address a number of land-management problems identified by Sweet's research, and toad populations have since stabilized or increased.

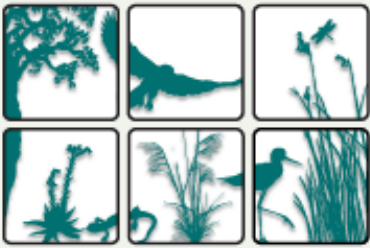
The most critical factors were breeding failures and losses of adult male toads to exotic bullfrogs. Arroyo toad eggs are laid in strings in shallow flowing water on the sandy edges of pools, and are quite vulnerable to being stranded or washed downstream by water level changes. The tadpoles are durable once they hatch and disperse, but newly-metamorphosed toads are very sensitive, since they occupy lightly-vegetated sand and gravel bars bordering the larval pools for several weeks in early summer.

Intensive recreational use (including OHV travel) in breeding pools and abrupt water level changes resulting from upstream dam operations, were preventing recruitment of young toads. Male Arroyo Toads call each night for several weeks from habitual sites on pool margins during the breeding season. Even one large exotic bullfrog in a pool can eat all of the male Arroyo Toads in a few nights. Since bullfrogs do not move among pools until after Arroyo Toads have finished breeding, targeted removal of single bullfrogs is an effective short-term solution.

Increased protection of the riparian zone through relocation of OHV trails and streamside campgrounds, rescheduling of water releases to less sensitive times of the year, and bullfrog removal programs have dramatically improved survival and recruitment of Arroyo Toads. The long-term solution (for nearly all exotic riparian plants and animals) is the restoration of natural flow regimes, including scouring floods in winter and allowing streams to go dry in late summer and fall. Endangered listing for Arroyo Toads drives this restoration process on public lands, to the benefit of all other native riparian species.



Arroyo toads breed in exposed sites in very shallow water, such as along the near edge of this pool on Piru Creek in Ventura County.



## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

It's an important discovery for Vandenberg Air Force Base, Santa Barbara County, and our region.

## Slender Salamander Discovery on Mainland

Mark Holmgren

On 8 May, 2006, on Vandenberg Air Force Base (VAFB), biologist Wes Fritz turned over several plywood boards near an abandoned house at Pt. Arguello. Beneath one he found two nine-inch long salamanders, larger than those with which he was familiar in California. On inspection, CCBER employee Morgan Ball saw that they were not Black-bellied Slender Salamander, *Batrachoseps nigriventris*, the slender salamander expected in this part of the mainland coast. Rather, they appeared to be the Channel Island Slender Salamander, *Batrachoseps pacificus*, known only from the four northern Channel Islands. One salamander was taken to UCSB for expert identification.

Dr. Sam Sweet examined the salamander and concurred that the specimen, collected 25 miles from the nearest channel island, fit the description of *Batrachoseps pacificus*. Like the Channel Island Slender Salamander, the salamanders from Pt. Arguello were large, especially in the legs and feet, and had tail striations. There are no other mainland records of this species.

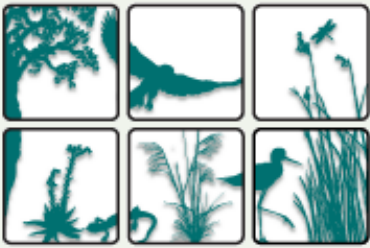
How did this animal get to Pt. Arguello? We can only wonder. The prevailing ocean currents would probably not have allowed unassisted dispersal from one of the islands to this point on the mainland. It is possible these animals were transported to the mainland by the Chumash, or perhaps more likely, by the livestock industry that transported sheep and cattle between the islands and the mainland in the last two centuries. Alternatively, these salamanders may be a relict of a lineage closely related to the large-bodied island species.

In recent years, UC Berkeley scientists have revised our understanding of the relationships among *Batrachoseps* salamanders using genetic techniques. We are hopeful that the authors of those studies may assist in explaining the origin of the salamanders from VAFB and their relationship to other members of the genus. It's an important discovery of a new animal for Vandenberg Air Force Base, Santa Barbara County, and our region.



Channel Island Slender Salamander, Pt. Arguello, VAFB  
Photo by Morgan Ball





## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

Students can gain valuable experiential education through internships, tours and field research opportunities

## Linking students, science and restoration targets

**Lisa Stratton**

An important part of CCBER's mission is to provide opportunities for learning about our regional ecology. The Center's collections provide valuable records and insight into historical biogeography of the area. Students can gain valuable experiential education through internships, tours and field research opportunities provided by the Center and our Campus Natural Areas. UCSB student research projects arise from individual student initiative, class projects and assignments and through awards and grants. The Center is currently providing mentorship and materials for over fifteen restoration-related research projects. These include three independent projects (with grants or awards), three collaborations, one class project, seven quarter-long class projects through the Bren School and one high-school class project.

### Tales of particle size and water tables

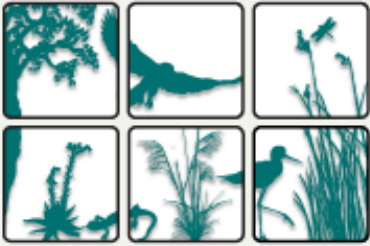
The UCSB Office of Undergraduate Research and Creative Activities (URCA) supports the work of Katie Lindeburg, a graduating senior in Environmental Studies, in her project assessing the suitability of Lagoon Island soils for vernal pool restoration. Under the supervision of Oliver Chadwick's soils lab and Lisa Stratton at CCBER, Katie has sampled soil cores down to 2.5 meters below the surface. Her findings indicate that Lagoon Island soils are high in sand content (~75%) and low in clay content (<20%) while vernal pools soils are much higher in clay content (~35-45%). These high sand contents indicate that Lagoon Island soils may be too well-drained to support vernal pools, but may be perfectly suited to support unique coastal bluff plant communities.

The Center is currently providing mentorship and materials for over fifteen restoration related research projects



Katie Lindeburg, a senior in Environmental Studies, analyzes soil texture at vernal pool sites and potential restoration sites.





## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

## Linking students - continued

These findings are valuable for helping us determine restoration targets for our \$100,000 Coastal Conservancy funded "Campus Lagoon Planning Grant". Casey Peters, an undergraduate in Environmental Studies and current CCBER intern and part-time employee, has just been awarded the prestigious CH Muller award to help us define our restoration goals for 'San Nicholas Wetland' a wetland area on the lagoon shore. He will compare water table levels, soil types, water quality and plant diversity in functioning wetlands with the San Nicholas site as the water table dries. His work will help prescribe an appropriate community target and grading plan for the site as part of the larger Coastal Conservancy Grant.

### Can seed predators take the heat?

Restoration projects can be impacted by seed-eating rodents and birds. NCEAS post-doc, John Orrock, has been working with CCBER to test the possible benefits of Capsaicin (cayenne liquid and powder) on restoration projects involving seeds. In three trials we are looking at using capsaicin on seeded plots, acorns and mature poppy plants. Rodents learn to avoid seeds once they associate the hot pepper with them. The effects of these treatments on the seeds, plants and rodent behavior are being monitored this spring in conjunction with a Bren student follow-up experiment on poppy seed predation by squirrels.



California poppies, a favorite food of California ground squirrels, are the subject of several experimental studies using hot pepper spray to reduce predation.

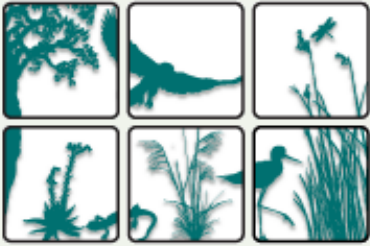
### Bren students take Campus Lagoon restoration projects to task

Students from Hunter Lenihan's Bren graduate Restoration Ecology class (217) have taken on seven small group projects. Several groups are focusing on comparing bird use of restored and un-restored habitat pairs through field observations and analysis of CCBER's six years of monthly bird survey data. Others are looking at restoration strategies by 1) comparing native seedling growth under a variety of restoration scenarios, 2) evaluating the impact of algal build up in the lagoon on invertebrate populations, 3) evaluating the costs and benefits of capsaicin on poppy growth and seed production, and 4) analyzing potential lagoon water quality control strategies through modeling.

### There is a project for you out there!

There are many research opportunities with the Center, from water quality studies, bird and benthic invertebrate studies to restoration strategies and surveys which explore the human component and appreciation of natural landscapes. We look forward to involving students, faculty and staff in projects on and off campus.

Rodents learn to avoid seeds once they associate the hot pepper with them.



# News & Events

## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

## Special Thanks

We would like to thank Barbara De Wolfe for her continued support of CCBER's Vertebrate Collections.

Her generosity and friendship has contributed to the development of the Center.

For CCBER merchandise, please [click here](#).

## Awards and Grants

**Goleta Valley Beautiful Award:** The UCSB Manzanita Village & Restoration Project has won the 2006 Goleta Valley Beautiful award in the public and institutional division. Project Manager Melanie Powers and her Manzanita Team including staff and undergraduate student interns began the project in August 2002. The Manzanita Village Restoration Project is 6-acres of Coastal Grassland, Vernal Pool, Vernal Marsh and Coastal Sage Scrub restoration and 1300 linear feet of bioswale creation. To date more than 80,000 native plants, organically grown at the CCBER greenhouse, have been installed by CCBER staff with the assistance of more than 100 UCSB student interns and volunteers. Ongoing monitoring and maintenance will continue in perpetuity. The project manager, Melanie Powers, and the Manzanita Village Restoration Team were honored at the 32nd Annual Awards Banquet on May 20th.

## Kids in Nature

**Hutton Grant for Kids in Nature program:** Kids in Nature was awarded a \$9000.00 grant to provide a year-long on program on environmental science, botany, ecology and habitat restoration for Joel Mason's 5th grade class at Olga Reed School in Los Olivos. Midstate Bank and Trust recently awarded \$2500.00 for supplies and materials for the KIN program.

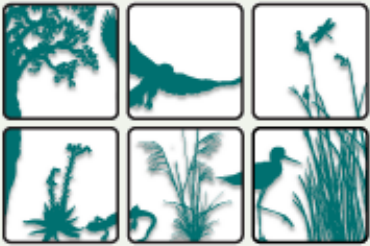
**SPF Grants:** Shoreline Preservation Fund has awarded the Center two grants (~ \$500 apiece) to support the purchase of materials for the acorn planting project and educational materials for student interns working with the Center. Shoreline Preservation Fund Coastal Restoration Fund has also supported five Saturday volunteer work groups over the past year. Those student groups, ROTC, Sigma Chi Omega, Chinese American Association and Hurricane Katrina Relief Group have cleared planting areas and planted seedlings.

**Coastal Conservancy Grant:** A Coastal Conservancy Grant was recently approved to develop a detailed plan for the restoration of Campus Lagoon. This plan will include design and grading specifications for wetlands, trails, stairs and upland vegetation with appropriate CEQA background work. This will greatly facilitate fundraising and implementation of larger scale projects.

**Vandenberg Grant:** The Vertebrate Collections received their 11th year of funding from VAFB. Work this year will be conducted on the endangered Southwestern Willow Flycatcher on the base.

**Student Resource Building Native American Heritage Garden:** CCBER has received funding from the Division of Student Affairs to install a native plant garden near the entrance to the new Student Resource Building. The planting palette will include locally occurring species with significant ethnobotanical value. [Wayne Chapman](#) will serve as the project manager.

**Muller Award:** Casey Peters, an undergraduate student in Environmental Studies, was chosen to receive The CH Muller award for 2006. The award supports excellence in undergraduate research in the plant sciences. Casey will be working with Dr. Lisa Stratton, Ecosystem Manager at CCBER, on a project to characterize the relationship between wetland plants and ground water levels in current and future wetland sites around the lagoon. Index wells will be installed and monitored weekly in conjunction with surveys of wetland vegetation in nearby natural areas. Casey has been a curious and dependable intern all year and now works part-time with the Center.



# News & Events

## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

## Awards and Grants - continued

**Cheadle Award:** Brent Miller was selected to receive the Vernon I. Cheadle award for 2006. Brent is a graduate student of Dr. Susan Mazer in the Department of Ecology, Evolution and Marine Biology. The award is given to an outstanding undergraduate or graduate student who exemplifies Dr. Cheadle's enthusiasm for scholarship, research, teaching and botany. Brent recently volunteered to assist CCBER in analyzing software programs for databasing many of the Center's significant collections.

## Upcoming Projects on Campus

**Library Cataloging Project:** We have begun to electronically catalog CCBER's extensive collection of books, government publications, archives and maps. The general collection focuses primarily on the plant sciences, covering topics such as taxonomy, systematics, physiology, and regional floras. The general collection also contains a small but significant collection of ornithological literature.

**San Clemente Project:** CCBER will be implementing the San Clemente Habitat Restoration and Enhancement Plan. The 6-acre project will include creation of 3 large biofiltration basins to treat runoff from the dorms and parking lots, enhancement of existing wetlands, restoration of native grassland and native shrub border. The project will hopefully get started in the next few months.

**Campus Flora Project:** CCBER recently received a \$23,000.00 grant from the Elvinia Slosson Foundation at UC Davis for the UCSB Campus Flora project. In partnership with Physical Facilities we will develop a UCSB Campus Flora database, plant signage and brochure featuring a walking tour through our botanically diverse campus. [Bree Belyea](#) will serve as the project manager.

### CCBER Merchandise:

**T-shirts for sale** - CCBER has long and short-sleeved T-shirts made from organic cotton for sale. Long-sleeved shirts \$15.00. Short-sleeved shirts \$12.00

**New plant book** - CCBER has updated their popular Native Plants and Habitats of UCSB plant identification field guide. The guide features habitat and native plant descriptions and color photos taken by CCBER staff. It will help botanists of all levels identify common native plants found around the UCSB campus. Books are \$15 and can be purchased at the Center. For more information, contact [Melanie Powers](#).

**Nature cards for sale** - CCBER has developed a beautiful line of photo greeting cards, featuring photos taken by Center staff and community members. They are available from the UCSB Bookstore and from the Center for \$3.00 each. All proceeds benefit the Center's Restoration Ecology program.

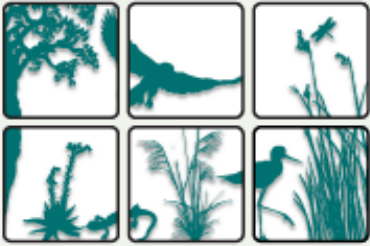
[Information on CCBER purchasing.](#)



The Campus Flora Project will incorporate botanical illustrations created by UCSB students in the CCS Flowers Course



The latest edition of the CCBER's plant book will be available and can be purchased at the Center.



# Getting Involved



## In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

## There are many ways to become involved with CCBER

### Weekly Restoration Seminar

The Restoration Ecology Seminar, RE188, is a one-unit seminar open to the public. Speakers from on and off campus discuss restoration and conservation topics. In the past, the seminar has focused on specific restoration techniques for unique plant communities such as vernal pools, salt marsh and native grassland. Last fall the focus was Conservation Conflicts and Challenges. During the winter we focused on the restoration implications of the Endangered Species Act, and this Spring the focus was on Watershed Management in Santa Barbara County. Future topics will include Ecosystem Restoration: Beyond Plans (Fall), Grassland Restoration (Winter), Plant Identification (Spring). The seminars occur every Monday from September- May at 6 PM in CCBER's classroom. Contact [Lisa Stratton](#) for more information.

### CCBER Internship Program

The student internship program offers students valuable hands-on ecological restoration experience working with CCBER's environmental professionals while earning course credit. Students work under the guidance of CCBER staff to restore native wetlands, coastal sage scrub, grasslands and oak woodland habitats at various designated natural areas in and around the UCSB campus. Activities include plant propagation, seed collection, planting, weeding, and ecological monitoring.



To earn credit, students must attend one two-hour field session per unit per week and keep a weekly journal of their experiences. The internship opportunity is open to students with upper division standing in EEMB, Environmental Studies, Geograpy, and CCS departments For more information please contact [David Harris](#). See you in the bushes! Volunteer opportunities are also available for those who don't meet all the necessary requirements for the internship (see below).

### CCBER Volunteer Opportunities:

Become a volunteer at the Center. Please contact:

Herbarium, [Jennifer Thorsch](#)

Vertebrate Collections, [Mark Holmgren](#)

Invertebrate Collections, [Bree Belyea](#)

Nursery and Greenhouse, [Wayne Chapman](#)

Restoration Ecology Program, [Melanie Powers](#), [Lisa Stratton](#)

Make a tax-deductible gift:  
[Click here for donation form.](#)





# Faculty and Staff

## In this Issue

Director's Foreword	1
Ecological Restoration Education	3
Biodiversity Collections	6
Field Notes	8
Research	10
News and Events	11
Getting Involved	13
Faculty and Staff	15
Contact, Subscription	16
Newsletter PDF	17

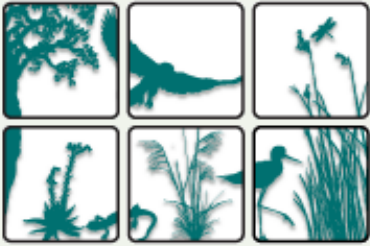
## Cheadle Center Faculty and Staff

Bree Belya	Restoration Assistant	<a href="mailto:belyea@lifesci.ucsb.edu">belyea@lifesci.ucsb.edu</a>	893-4211
Kelly Campbell	Interpretation Coordinator	<a href="mailto:kcampbell@lifesci.ucsb.edu">kcampbell@lifesci.ucsb.edu</a>	893-4211
Wayne Chapman	Greenhouse Manager	<a href="mailto:w_chapma@lifesci.ucsb.edu">w_chapma@lifesci.ucsb.edu</a>	893-4211
Carla D'Antonio	Faculty Director	<a href="mailto:dantonio@es.ucsb.edu">dantonio@es.ucsb.edu</a>	893-2796
Barbara Going	Restoration Assistant	<a href="mailto:going@lifesci.ucsb.edu">going@lifesci.ucsb.edu</a>	893-4211
Laurie Hannah	Librarian	<a href="mailto:hannah@lifesci.ucsb.edu">hannah@lifesci.ucsb.edu</a>	
Dave Harris	Restoration Assistant	<a href="mailto:dharris@lifesci.ucsb.edu">dharris@lifesci.ucsb.edu</a>	893-4211
Mark Holmgren	Associate Director & Vertebrate Collections Curator	<a href="mailto:holmgren@lifesci.ucsb.edu">holmgren@lifesci.ucsb.edu</a>	893-4098
Janet Myers	Restoration Assistant	<a href="mailto:myers@lifesci.ucsb.edu">myers@lifesci.ucsb.edu</a>	893-4211
Melanie Powers	Restoration Project Manager	<a href="mailto:powers@lifesci.ucsb.edu">powers@lifesci.ucsb.edu</a>	893-2506
Darwin Richardson	Natural Areas Steward	<a href="mailto:drichardson@lifesci.ucsb.edu">drichardson@lifesci.ucsb.edu</a>	893-4211
Luis Rodriguez	Herbarium Assistant	<a href="mailto:rodriguez@lifesci.ucsb.edu">rodriguez@lifesci.ucsb.edu</a>	
Lisa Stratton	Natural Areas Director	<a href="mailto:stratton@lifesci.ucsb.edu">stratton@lifesci.ucsb.edu</a>	893-4158
Jen Stroh	Vertebrate Collections Assistant	<a href="mailto:stroh@lifesci.ucsb.edu">stroh@lifesci.ucsb.edu</a>	
George Thomson	Restoration Coordinator	<a href="mailto:g_thomson@lifesci.ucsb.edu">g_thomson@lifesci.ucsb.edu</a>	893-4211
Jennifer Thorsch	Katherine Esau Director	<a href="mailto:thorsch@lifesci.ucsb.edu">thorsch@lifesci.ucsb.edu</a>	893-2401

## Cheadle Center Curators

David Chapman	Algae	<a href="mailto:chapman@lifesci.ucsb.edu">chapman@lifesci.ucsb.edu</a>	893-7545
Todd Oakley	Invertebrate Zoology	<a href="mailto:oakley@lifesci.ucsb.edu">oakley@lifesci.ucsb.edu</a>	893-4715
Susan Mazer	Botany	<a href="mailto:mazer@lifesci.ucsb.edu">mazer@lifesci.ucsb.edu</a>	893-8011
John Damuth	Mammology	<a href="mailto:damuth@lifesci.ucsb.edu">damuth@lifesci.ucsb.edu</a>	893-8066
Stephen Rothstein	Ornithology	<a href="mailto:rothstein@lifesci.ucsb.edu">rothstein@lifesci.ucsb.edu</a>	893-2834
Sam Sweet	Herpetology	<a href="mailto:sweet@lifesci.ucsb.edu">sweet@lifesci.ucsb.edu</a>	893-3730
Bruce Tiffney	Paleobotany	<a href="mailto:tiffney@ccs.ucsb.edu">tiffney@ccs.ucsb.edu</a>	893-3827
Shirley Tucker	Lichens	<a href="mailto:tucker@lifesci.ucsb.edu">tucker@lifesci.ucsb.edu</a>	898-0908
Robert Warner	Ichthyology	<a href="mailto:warner@lifesci.ucsb.edu">warner@lifesci.ucsb.edu</a>	893-2941





### In this Issue

Director's Foreword	1
Ecological Restoration	3
Education	6
Biodiversity	
Collections	8
Field Notes	10
Research	11
News and Events	13
Getting Involved	15
Faculty and Staff	16
Contact, Subscription	17
Newsletter PDF	

Cheadle Center for Biodiversity and Ecological Restoration  
 Dept. of Ecology, Evolution and Marine Biology  
 University of California  
 Santa Barbara, CA 93106-9615  
 Phone 805 . 893 . 2401  
 Fax 805 . 893 . 4222

**REASON FOR CONTACT :**

- Subscribe to e-newsletter
- Unsubscribe from e-newsletter
- Information on Donating
- Volunteer Program
- Intern Program
- Seminars and Workshops
- Purchasing CCBER Merchandise
- Other

**N A M E :**

**E - M A I L :**

**P H O N E :**

**C O M M E N T S :**



Killdeer fledgling hatched at Manzanita Village spring of 2003.