

UCLA La Kretz Center for California Conservation Science

Director's Message

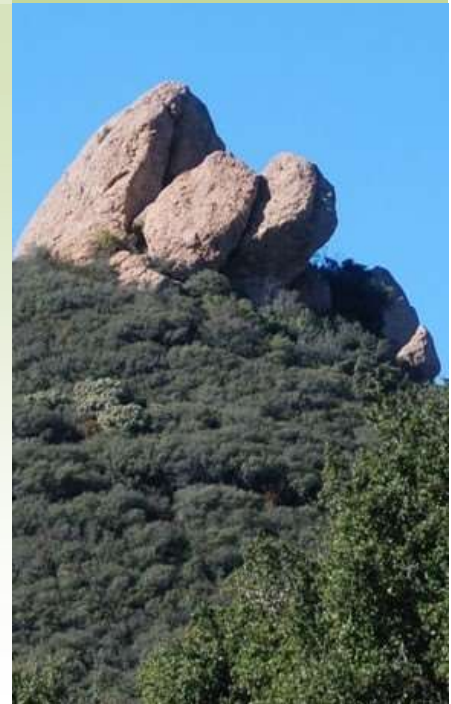
At the La Kretz Center, members of the UCLA academic community work in collaboration with off-campus partners to produce cutting edge research that facilitates important policy outcomes. This year, our La Kretz Postdoctoral program fledged its first two scholars, and we look forward to additional partnerships that will allow us to continue to support these superb young scientists. We are also working to increase the visibility and impact of conservation science through lectures and citizen science. We now host two large annual public events, the La Kretz Annual Lecture and our new Public Discussion series with the Natural History Museum. These events tackle important, sometimes contentious issues that are critical parts of the conservation discussion, and both have been attended by hundreds of Angelenos from all walks of life.

Looking ahead to 2016, I am particularly excited about two new projects: expanding our La Kretz Field Station into a multi-site research and teaching environment for regional conservation science, and launching the California Conservation Genomics Initiative to provide comprehensive genomics data on 100 endangered or exploited species across the state. Both constitute important pieces of the conservation agenda that will make a difference to California.

In the following Annual Report, we highlight some of our accomplishments for 2015. Enjoy!

Brad Shaffer, Director

*The La Kretz Center is made possible by a generous endowment from UCLA alumnus and philanthropist **Morton La Kretz**.*



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Our Mission

To conserve California's biodiversity and ecosystems through research, education and public programs. We fund scientific research and educational activities that inform and enable environmental management through university-agency cooperation to meet the conservation challenges facing 21st century California.

In the Field



Stunt Ranch Reserve joins La Kretz Center

In 2015, the La Kretz Center assumed responsibility for the administration of the Stunt Ranch Santa Monica Mountains Reserve, a UC Natural Reserve System site. Just 15 miles from the La Kretz Field Station, Stunt Ranch Reserve is located in the Cold Creek watershed, in the heart of the Santa Monica Mountains. Stunt is adjacent to extensive natural areas, including state and federal parklands and areas managed explicitly for conservation purposes. An important Chumash

archeological site, Stunt lends itself to programs that focus on natural ecosystems, human history, and resource management at the urban/wildland interface. Stunt offers UC and other affiliated researchers full access to 310 acres of pristine chaparral, live oak woodland, and annual grasslands habitats that are home to more than 300 vascular plant species and a stunning array of birds, reptiles, and amphibians. Come join us!

As we incorporate Stunt Ranch into the La Kretz Center mission, we will create a multi-site research and teaching environment for conservation science in the Santa Monica Mountains.



Gary Bucciarelli

Gary is a man with many hats. He serves as our founding Director of Research at Stunt Ranch and as a jointly funded La Kretz postdoctoral researcher with the NPS and UCLA. Gary views his position as an opportunity to enable new conservation research at UCLA, including his own landscape genomics work on stream-breeding amphibians. Gary is also well known to the many environmental groups operating in the Santa Monicas, and is excited to grow and nurture the well-established educational and outreach work that has characterized the Stunt Ranch community.

Field Station hosts over 300 users in 2015

The La Kretz Center Field Station is a fully operational facility complete with space for meetings, a full kitchen, and overnight accommodations for up to 18 individuals. Construction of a new building on the site that will add both research and longer-term, family-friendly housing capacity is scheduled for completion in 2016.

In 2015, the Field Station hosted over 300 users, and provided full-time housing for two La Kretz postdoctoral researchers.

The Field Station is a great home base for researchers, and our primary goal is to provide a pleasant, accessible, affordable site for researchers, workshops, and meetings. While adjacent open space at the Rocky Oaks Park is available, it is also open to the public, and controlled access field opportunities are limited to a few acres around the station. Given this, we are especially pleased to add the UC Stunt Ranch Reserve to our program. As we incorporate Stunt Ranch into the La Kretz mission, we are creating a multi-site research and teaching environment for conservation science in the Santa Monica Mountains.

2015 Field Station Highlights:

- 302 User Days; 103 Overnight Users; 284 Overnight Stays
- Two full-time resident researchers (15 months combined)
- California/Nevada Amphibian Populations Task Force meeting
- UC Berkeley – California vole (*Microtus californicus*) research
- UC Davis – California hedgenettle (*Stachys bullata*) sampling
- University of Madrid – Mediterranean climate fire scenario research
- UCLA La Kretz California Conservation Genomics Workshop



La Kretz postdocs collaborate with Park Service ecologists on mountain lion study

At the National Park Service, wildlife ecologists are engaged in a long-term scientific study of mountain lions in the Santa Monica Mountains. In collaboration with the Park Service, former La Kretz Postdoc Eric Abelson studied where and how often lions cross roads. His research sets the stage for environmental modifications that should reduce road mortality for lions and other large mammals in the mountains.

Current La Kretz postdoc John Benson is integrating demographic, behavioral and genetic data collected by the NPS and UCLA researchers to ecologically model population viability, determining how long we can expect our mountain lion population to persist given its isolation and small size. John's work suggests that a new immigrant lion every two to four years is necessary for our population to remain viable. Given how hard it is for lions to cross the 101 and 405 freeways, it may be time for human intervention.

Butterfly survey by La Kretz Center and Natural History Museum scientist

As a La Kretz/Natural History Museum postdoc, Elizabeth Long conducted a comprehensive resurvey of butterflies across the Santa Monica Mountains and Los Angeles, quantifying patterns of decline and increase for the first time in 40 years. After a year of intensive field surveys and study of the Museum's extensive collections, Elizabeth determined that several species (including Giant Swallowtail and Gulf Fritillary) have thrived in the face of human disturbance, while others (Gabb's Checkerspot, Callippe Fritillary) are in steep decline, even in our most pristine areas. We still have an amazing butterfly fauna, and Elizabeth's work is critical to its future viability. One key result from her work: our butterflies are doing much, much better west of the 405 compared to open space east of the freeway.

Research: Projects

Desert tortoise

La Kretz Center students and researchers partner with state and federal agencies, using genomics research to identify the best locations for solar energy installations that minimize impacts on endangered tortoises in the Mojave Desert.

Tiger Salamander

New La Kretz Center partnerships with the USFWS, BLM, and California Department of Fish and Wildlife are zeroing in on the management of invasive non-natives that hybridize with our endangered California tiger salamander, threatening the native species' genetic integrity.

Natural Communities Coalition

The La Kretz Center recently entered into a collaborative research partnership with these land stewards for 36,000 acres of Orange County protected lands, focusing on monitoring and enhancing wildlife habitat. Formerly known as the Nature Reserves of Orange County, our NCC partnership uses genomics, 20 years of historical data archives, and citizen science BioBlitzes to quantify wildlife health and how to improve it in Orange County.





From fire ecology to genomics: Meet our new postdocs

Alexandria (Alex) Pivovarov is a plant physiologist studying the effect of California's current drought on carbon and water cycling in the Santa Monica Mountains, and how it relates to fire risk for native species of plants. Alexandria earned her Ph.D. in Plant Biology from UC Riverside and joined us in August.

Gary Bucciarelli is using field ecology and genomics to determine how stream-breeding amphibians use the fragmented Santa Monica Mountains landscape, identifying populations of conservation concern. Gary earned his Ph.D. in Ecology & Evolutionary Biology at UCLA and joined us in September.

And say goodbye to outgoing postdocs

Eric Abelson, road ecologist and our first La Kretz postdoc, accepted a position as a research wildlife biologist for the Pacific Southwest Research Station—the research branch of the US Forest Service—in Davis, CA. In his new position Eric will be working to identify locations where wildlife cross roads, and how to mitigate for the danger of car strikes on wildlife. This work continues Eric's postdoctoral research on an age old question of why did the mountain lion cross the road (and how can we make that a safe decision).

Elizabeth Long has accepted a new position as Director of Conservation Science at the 8500 acre Mohonk Reserve in upper state New York. As Director, she oversees a research program that is diverse in taxonomic scope and boasts biological inventories and phenological records dating back to the 1920s. As a La Kretz /Natural History Museum postdoc, Elizabeth conducted intensive field surveys to determine butterfly species richness, abundance, and declines in Southern California, with special emphasis on the Santa Monica Mountains and urban Los Angeles.

Research: People

20 UCLA students receive La Kretz small grants to help support their conservation research

The La Kretz small grant program funds student research that addresses important issues in basic environmental sciences and simultaneously fulfills our mission of working to preserve California's biological and ecosystem diversity. Projects range widely, from the assessment of marine protected areas using environmental DNA to carbon sequestration in Yosemite National Park. By combining our efforts and funding with Stunt Ranch, we were able to support 20 projects in 2016 with \$40,000 in funds.

Congratulations to:

Tiffany Armenta
Autumn Chang
Rachel Chock
Wendy Clark
Zachary Gold
Katja Grossman
Richard Hedley
Sarah Helman
Scott Lyndon
Camila Medeiros
Tiara Moore
Kevin Neal
Ariel Pezner
Sarah Ratay
Emily Ryznar
Brenton Spies
The Bruin Naturalist Club
Erin Toffelmier
Yi-Ju Wang
Tiffany Armenta

Lectures & Workshops



Coyotes as top predators in the city

Ghost dogs. It is one of the most amazing wildlife stories in recent years. Despite constant persecution, coyotes have dramatically expanded their range and have now colonized virtually every metropolitan area across North America. Although their presence in urban areas is well documented, the pathways to this apparent success, and the implications for people and other wildlife species, remain poorly

understood.

In his presentation at our 6th Annual Public Lecture, Professor Stan Gehrt of Ohio State University discussed how coyotes live among millions of people, how they move across the landscape while remaining largely hidden from us, and how they function as predators in the urban ecosystem. Ghost dogs indeed!

The La Kretz Center brings to Los Angeles renowned thinkers, researchers and leaders to educate and inspire our audience, and ourselves, on conservation science.



The Value of Nature

Our 7th Annual Public Lecture will be presented by Dr. Heather Tallis, Acting Chief Scientist for The Nature Conservancy on: "Rethinking the value of nature from education to health", with a panel discussion following her presentation.

Dr. Tallis is a leading expert addressing the impact of natural landscapes on human well-being. Her research focuses on key connections between nature and people, ranging from the inclusion of watersheds in urban infrastructure to connections between education and human health and well-being. Take a walk outside, and you'll end up happier, healthier, and perhaps smarter.

Conservation genomics workshops: cutting edge research for conservation action

UCLA

The annual La Kretz Workshop in Conservation Genomics is held at the Field Station, with lectures at Stunt Ranch. For five days, a group of faculty, postdoc and graduate student instructors teach an international group of 20+ Ph.D. students how to analyze and utilize genomics data to enable conservation science. A highlight of the course is a half-day panel with state and federal agency biologists who discuss both career opportunities and research needs, opening the door for future collaborations and jobs with our student participants. 2016 will be the fourth offering of our workshop, scheduled for late March.

Cal Fish & Wildlife

In early 2016, in collaboration with the UCLA Grand Challenges initiative, the La Kretz Center hosted a two-day California Conservation Genomics Initiative workshop in Sacramento. A dozen UC scientists gave short presentations on their research, and state, federal, and non-governmental agency participants contributed to panel discussions on how genomics can help guide endangered species management. Our hope is to identify 100 species that would most benefit from this work, and start working on them in 2016. Perhaps this will be the year of the (conservation) genome!



Team Turtle beats the drought

In October 2014, the La Kretz Center established an emergency "turtle assurance colony" on the roof of the UCLA Botany building. In collaboration with the California Department of Fish and Wildlife and the Turtle Conservancy (Ojai, CA), we rescued 30 turtles from drought-ravaged Lake Elizabeth to preserve the genetic diversity of this key southern California population that once contained several hundred animals. After eight months at UCLA, 28 turtles were released back into the wild in May 2015, where they and their offspring will continue to be monitored by wildlife biologists.

This effort reflects the La Kretz Center's most fundamental mission — to protect and preserve California's biodiversity. According to Director Brad Shaffer, "it is clear that captive management, including captive breeding, will increasingly be a part of endangered species management in the future, especially for populations that are isolated and fragmented by human development. If such actions become necessary for survival, then we at UCLA are ready to work with agency partners to help out."

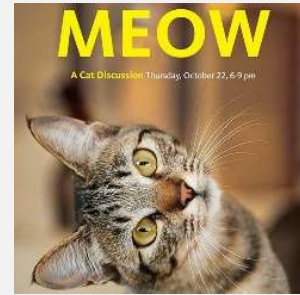
School children learn about the impact of invasive species on California's native fauna



At the 2015 UCLA Explore Your Universe Festival, endangered California tiger salamanders and invasive red-eared slider turtles were on display at the La Kretz Center booth. Parents and children learned about invasive non-natives that hybridize with our endangered California tiger salamander, and how red-eared sliders introduced from the pet and food trades threaten our only native freshwater turtle.

The La Kretz Center also participated in the Werner Elementary School Science Slam, and the LA Nature Urban Fest at the Natural History Museum.

Public Outreach



Butterfly specialist leads La Kretz League outing

This year's La Kretz League field event took place in the Santa Monica Mountains, where Postdoctoral Fellow Elizabeth Long and other local researchers led League members for a day of hiking and butterfly netting. We saw two dozen species of butterflies, and learned firsthand about species that are thriving and declining in the mountains.

Meow!

In partnership with the Los Angeles County Natural History Museum, we hosted a public Discussion on Cats, Biodiversity and Human Health. Moderated by UCLA's IoES Director Peter Kareiva and featuring three cat experts, our panel helped us understand feline ecology, the role of feral cats in human health and happiness, and ways to better management practices. Our goal was to help make our city a better place for cats, the people who own them, and our native wildlife.

Contact Us

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*The La Kretz Center, a research unit of
the UCLA Institute of Environment and
Sustainability, is jointly administered
by UCLA College, Division of Life
Sciences.*

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Geography

Victoria L. Sork

Life Sciences Division Dean and
Professor, Department of Ecology and
Evolutionary Biology

Larry Wan

Mountains Recreation and
Conservation Authority

Partners

The La Kretz Center gains its strength through partnerships on and off campus. We are a research unit of the UCLA Institute of the Environment and Sustainability, and we work closely with the U.S. National Park Service (NPS), the Los Angeles County Museum of Natural History, The Nature Conservancy, US Geological Service, US Fish and Wildlife Service, and the California Department of Fish and Wildlife. The La Kretz Field Station is located on National Park Service land, and the Natural History Museum and Pepperdine University collaborate with us on public outreach projects. Our postdoctoral scholar program has been generously co-funded by the NPS and the Museum. We look forward to continuing these and other partnership efforts in 2016.

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