

UCLA La Kretz Center for California Conservation Science 2014 Annual Report



UCLA College
Life Sciences



 **UCLA**
Institute of the Environment and Sustainability



"We help preserve California's biodiversity and ecosystems through research, education and public programs. We supply the scientific research needed to inform management actions to protect and restore California's fragile biodiversity resources."

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Welcome

We at the UCLA La Kretz Center for California Conservation Science are pleased to present our 2014 Annual Report, showcasing highlights of our achievements for the year and some of our planned activities for 2015.

2014 was a great year at the La Kretz Center. We launched a postdoctoral research program for California conservation scholars, supported UCLA graduate student conservation research through our Small Grant awards program, and conducted conservation workshops, seminars and lectures. At our Field Station in the Santa Monica Mountains, we provided conference facilities and overnight lodging to scientists, students, and resource managers from around Los Angeles and the world. Our collaborative research with local land management agencies was expanded to new partners, and we are excited to be working with them to fulfill our shared mission of conservation science. Finally, we launched the La Kretz League to engage with members of the general public who share our goal: to protect, conserve, and preserve the amazing biological resources that exist in California.

We are privileged to do this work enabled by the vision and generous founding gift of Morton La Kretz, and we continue to seek new sources of funding to expand our programs. Last year we raised substantial new support and partnership opportunities, including a \$500,000 grant from Zev Yaroslavsky and the LA County Board of Supervisors for a new research lab at our Field Station. We received \$100,000 in matching funds support for our postdocs, and several grants from resource management agencies for our ongoing research projects on threatened and endangered species in southern California.

As we look forward to 2015, we see an expanding set of research and conservation opportunities, and we hope to capitalize on them ever more effectively to realize our mission. With the help of our partners and supporters, including current and new members of the La Kretz League, we will continue to bring the intellectual and research capital of UCLA to bear on pressing conservation concerns across California.

Please share this report with your colleagues and friends. We are always looking for input on new projects, new partners, and new initiatives. If you have any questions about the La Kretz Center, you should always feel free to contact me or our staff.

Sincerely,

A handwritten signature in black ink that reads "Brad Shaffer". The signature is written in a cursive, flowing style.

Brad Shaffer
La Kretz Center Director & Distinguished Professor
UCLA



Education and Training

As a research center housed in a world-renowned university, the La Kretz Center directly supports conservation-oriented science and education with its partner agencies.

Postdoctoral Fellowships

The La Kretz Center is currently funding three postdoctoral scholars. We are proud to partner with the National Park Service and the Natural History Museum of Los Angeles County to co-fund two of our postdoctoral fellows.



John Benson: John is a mathematical modeler and a field biologist who studies large mammalian carnivores. In collaboration with our partners at the National Park Service, John is studying the small, isolated population

of mountain lions in the Santa Monica Mountains. His research uses demographic, behavioral and genetic data to guarantee the long-term persistence of our unique Los Angeles lions.

Elizabeth Long: Elizabeth’s research focuses on the ecology, evolution, and genetics of butterflies. In collaboration with the Natural History Museum, Elizabeth uses intensive field surveys and the latest genomic tools to determine the abundance, distribution, and reasons for declines of butterfly species in Southern California, with special emphasis on the Santa Monica Mountains and urban Los Angeles.



Eric Abelson: Eric's research focuses on the conservation biology of mammals, and how to use the study of animal behavior to enable conservation actions. His project examines road

mortality of mammalian wildlife, and how we can use behavioral tools to reduce this often ignored source of human-wildlife conflict.

Graduate Student Small Grant Awards

The La Kretz Center funded eight UCLA Graduate Students for a total of \$10,000. Congratulations to:

- Kelcie Chiquillo-** marine conservation of skates
- Rachel Chock-** endangered pocket mouse recovery
- Robert Cooper-** human-lizard interactions
- Sarah Helman-** marine mammal disease ecology
- Kevin Neal-** amphibian conservation genomics
- Yareli Sanchez-** salt marsh plant conservation
- Shaelynn Sleater-Squires-** bobcat conservation
- Brenton Spies-** coastal lagoon conservation

Conservation Genomics Workshop

The La Kretz Center hosted its second annual Conservation Genomics Workshop at our Santa Monica Mountains Field Station and our Stunt Ranch facility.

Genomics helps field biologists identify populations, species and genes that are



critical to conservation, and our workshop trains PhD students in this important research area. Two dozen students from colleges and universities across the country and the world came together for five days in March for a hands-on workshop where we studied population genomics as an emerging tool in conservation science.

EEB seminar speakers (co-sponsored)

Partnering with the UCLA Ecology and Evolutionary Biology Department, the La Kretz Center co-sponsored seminar speakers whose work addresses a range of conservation concerns, promoting collaborations with our faculty and students.



Research

In addition to supporting research conducted by our postdocs and graduate students, the La Kretz Center conducts research on the conservation of threatened and endangered species across California.

Desert Tortoises in the Mojave Desert

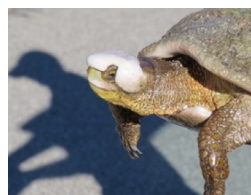


With funding from the state of California and the US Fish and Wildlife Service, the La Kretz Center is using cutting edge genomics to

determine how endangered desert tortoises use their habitat—where they go, how they traverse the complex soils, vegetation types and topography of the desert, and how tortoises (and their genes) flow across the Mojave. Using the newest technologies, we can study literally millions of genes to learn how tortoises move and what corridors they prefer in key areas of the desert. Our goal is to use these data to predict the impact of alternative placements of solar green energy installations on tortoise populations. Some placements may isolate and fragment the habitat much more than others, and our landscape genomic work is providing quantitative estimates of those effects, projected forward over the next 50 years. Before plans for solar developments in the Mojave are finalized, we and our collaborators are providing our agency partners with information that they can use for proactive conservation planning. By encouraging the placement of green energy sites where they will have minimal impacts on tortoise populations now and in the future, we anticipate a win-win for tortoises and green energy.

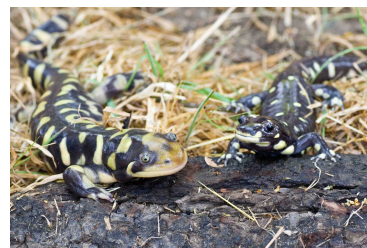
Lake Elizabeth pond turtle rescue effort

In partnership with the California Department of Fish & Wildlife and the Turtle Conservancy Center, the La Kretz Center rescued 27



threatened western pond turtles from Lake Elizabeth in eastern Los Angeles County. California is in the midst of a multi-year drought, and in late 2014 the water in Lake Elizabeth reached a life-threatening level of salinity for its native turtle population. In response, we established an emergency “turtle assurance colony” on the roof of the UCLA Botany building. This rescue is an effort to preserve the genetic diversity of the turtles of Lake Elizabeth, a key southern California population that once contained several hundred animals. Since their rescue in November, the turtles have increased in body mass, and are recovering beautifully. Plans are in place to return them to Lake Elizabeth when conditions have improved, hopefully in the Spring of 2015.

Hybridization of Endangered Tiger Salamanders



60 years ago, bait dealers in California’s Salinas Valley introduced non-native tiger salamanders from Texas; those invasive

salamanders have now hybridized with our endangered California tiger salamanders, threatening their genetic integrity. With funding from the National Science Foundation and several state and federal agencies, our work is providing the scientific evidence necessary to manage this challenging conservation problem. Our most recent work, based on a set of 7,000 genes and thousands of tissue samples amassed over the last 30 years, tracks the spread of non-native genes across the range of this endangered California amphibian. By partnering with state and federal agencies, we are providing the data necessary to manage this insidious genetic invasion.



Partnerships

UCLA established the La Kretz Center for California Conservation Science to foster greater interaction between the university and agencies responsible for conservation in California. In 2014 we strengthened our partnership with the National Park Service and the Natural History Museum, and developed collaborative projects with several other government agencies and non-profit organizations.

Agency

National Park Service (NPS)
Natural History Museum of Los Angeles (NHMLA)
Sabin Family Foundation
The Nature Conservancy (TNC)
The Nature Reserve of Orange County
Turtle Conservancy/Behler Center
U.S. Fish and Wildlife/ CA Fish and Wildlife
U.S. Geological Survey (USGS)/UC Mexus

Collaborative Project

Postdoc co-sponsorship (John Benson)
Postdoc co-sponsorship (Elizabeth Long)
Tiger salamander conservation
Biodiversity database project
Biodiversity planning & implementation
Western pond turtle conservation
Desert tortoise conservation
Endangered Mexican frog genetics

First Annual Collaborative Projects Meeting

In September the La Kretz Center hosted our first annual Collaborative Projects Meeting at the La Kretz Center's Field Station. Representatives from UCLA, NPS, TNC, NHMLA, and other entities met to brainstorm about ideas and projects that would benefit from close partnership between multiple institutions and individuals. Three projects were identified as top priorities that address the concerns of multiple parties who agreed to work together over the next year to make these ideas a reality.

1. Graduate training program in applied conservation science
2. Assessing carbon sequestration in natural habitats (chaparral and oak woodland) and habitat restoration
3. Clearing house for species information and development of an online data base of landscape change in the southern California



Public Outreach

The La Kretz Center takes great pride in its public programs. Through a variety of approaches, we engage with the public in as many areas as possible, cultivating a culture of scientific discovery and exploration with interested members of the local Los Angeles community.

La Kretz Annual Lecture



Our 5th Annual Public Lecture showcased the conservation work of Professor Dan Simberloff (U. Tennessee) on the management of invasive species and their impacts on native plants and

animals. Following the talk, VIP members of the La Kretz League joined Professor Simberloff and La Kretz Center affiliates for dinner and drinks at the Field Station.

Science Fairs

At the 2014 UCLA Explore Your Universe Festival, California tiger salamanders and Western pond turtles were on display at the La Kretz Center booth. Parents and children learned why these native species are declining, and what the La Kretz Center is doing to preserve their populations in nature.

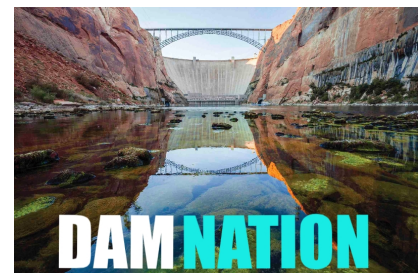


At the National Park Service Annual Science Festival, recipients of the La Kretz Graduate Small Grant Programs showcased their research to over 2,000 attendees.

La Kretz League

In 2014 we launched the La Kretz League, a new outreach program to members of the general public. The League provides members the unique opportunity to learn about the natural history of the Santa Monica Mountains and Southern California from biologists at UCLA, while their tax-deductible donations help fund graduate student and postdoctoral research sponsored by the La Kretz Center. Through a series of events, members gained firsthand insight and experience with the work of our scientists on the conservation of the natural ecosystems and biodiversity of California.

The La Kretz League kickoff event took place at Peter Strauss Ranch, where UCLA professors and researchers joined league members for a day of hiking, birding, and herping. In the summer, the League hosted a screening of Patagonia's award-winning documentary film DAMNATION downtown at the Natural History Museum. At our final event of the year, our postdocs presented their research to League members at a private, informal dinner party at the La Kretz Field Station.



For 2015 we are planning a series of new events for League members, including a butterfly hike led by postdoctoral researcher Elizabeth Long, a "Bioblitz" biodiversity survey at the Field Station, and additional film screenings. Please consider joining our League!



Field Station

The La Kretz Center Field Station is UCLA's physical presence in the Santa Monica Mountains, and operates in close association with the UCLA Stunt Ranch Reserve. Our Field Station is widely used by a variety of groups that find the facility and its surrounding area ideal for hosting meetings, conducting research, and planning environmental and conservation action plans.

Statistics of short-term usage (2014)

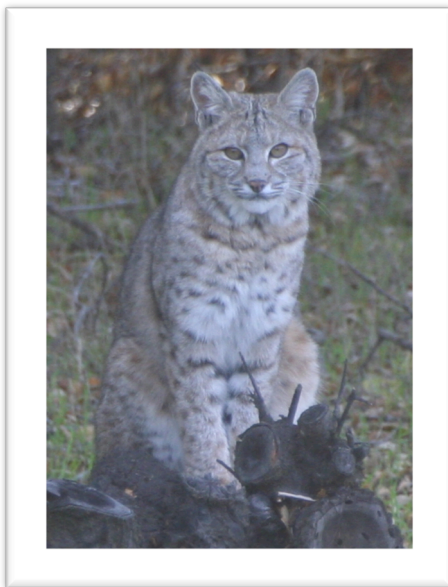
Total Overnight Users – 169
Total User Days – 438
Total Overnight Stays – 287

Statistics of long-term usage (2014)

Postdoc Elizabeth Long—5 months
Postdoc John Benson—5 months

Use of the field station include the following groups for research or meetings:

- Natural History Museum of Los Angeles County Lab Retreat
- UCLA Environmental Science Practicum Group - the Attraction of Insects to LED Lights
- La Kretz Center Genomics Workshop
- University of Mainz - Pollination ecology in Salvia
- La Kretz Center 5th Annual Lecture Dinner
- Westmont College - Reptile Research in the Santa Monica Mountains
- UCLA – Meteor Shower Photography
- AmeriCorps's with Mountains Restoration Trust
- UC Division of Agriculture and Natural Resources - California Naturalist Strategic Planning Retreat
- UCLA - NSF EaSM project planning meeting



La Kretz postdoc John Benson photographed this bobcat at the Field Station. Quite a beauty!

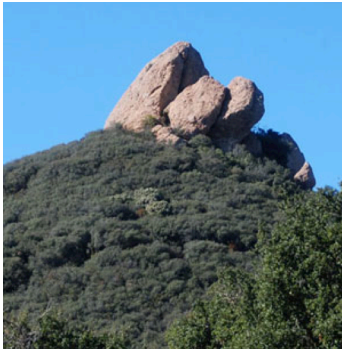




Upcoming in 2015

We have lots on the agenda for 2015. Here's a sample of what's in store.

Field Station Lab



With funding in place for our new field laboratory at the La Kretz Field Station, we are actively moving forward to add this major new element to our campus in the Santa Monica

Mountains. With generous support from the Los Angeles County Supervisors (and a special thanks to Zev Yaroslavsky), we will be adding a 700 square foot lab to our field station, complete with bench space for sorting and preserving biological samples, microscopes, plant presses, freezer space, dissection facilities and much more. We will also be adding an ADA compliant bathroom and shower, and upgrading the garage to provide 400 square feet of high-quality storage space that is fully integrated with the lab. The field laboratory will be open to all users at no cost, including researchers, school groups, classes, consulting scientists, and of course members of our partner agencies in the Santa Monicas and beyond. Our goal is to use the lab to foster new and continuing field research in the region, helping to build a strong scientific community that will inform and enable the best possible conservation actions.

Our expected completion date is summer/fall of 2015. Stay tuned for our opening celebration!

Annual Public Lecture

2015 will mark our sixth Annual Public Lecture. One of our goals with the lecture is to bring informative, entertaining conservation science to the public in all regions of LA. With that in mind, this year's lecture will be at Pepperdine University on Saturday, 18 April. In keeping with our tradition of presenting world-renowned speakers discussing issues of relevance

to our local and regional conservation needs, this year's speaker will be Stan Gerht. Hailing from Ohio State University, Stan is the leading researcher studying urban coyotes—

where they occur, how they make a living, and their impacts on their often-oblivious human neighbors. Over the last 12 years, he and his team have marked and radio-collared over 800 coyotes in Chicago, providing an in-depth look at how the expanding urban coyote population makes a living and has learned to co-exist with all of us.



Following the lecture, we will have a panel discussion/question & answer session with several leading biologists on urban carnivores, including coyotes, bobcats and of course mountain lions, across the greater LA landscape. Our lectures, as always are free to the general public. Come join us on April 18th—save the date!



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Contact Us

If you have any questions about the La Kretz Center, the La Kretz League, or conservation science in California, please contact us.

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