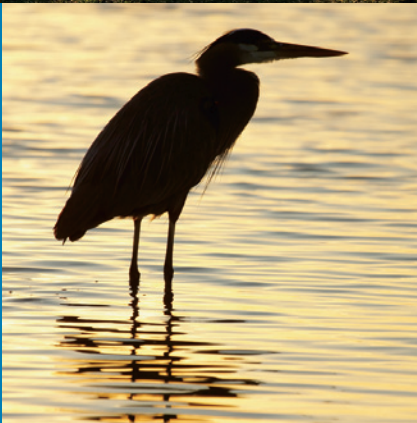




UCLA Institute of the Environment
and Sustainability



2011 Annual Report



UCLA La Kretz
Center for California
Conservation Science



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WELCOME

The UCLA La Kretz Center for California Conservation Science is pleased to issue its inaugural Annual Report, presenting highlights of our achievements in 2011 and some of our planned activities for 2012.

Over this past year, the La Kretz Center has demonstrated its capabilities in bringing together scientists and resource managers on a regional as well as an international scale, and has built a solid foundation of collaborative engagement with local land management agencies. We are privileged to do this work through the vision and generous gift of Morton La Kretz. The ambitious program we undertook this past year reflects our commitment to the Center's mission, as well as the strong positive response and support we have received from our partner agencies and the broader conservation community.

We look forward to this new year, as we are joined by our Faculty Director, Prof. Brad Shaffer, and as we move ahead to open our new field station in the Santa Monica Mountains, advance our research program, and continue to strengthen and expand both local and international partnerships.

ABOUT THE LA KRETZ CENTER

The La Kretz Center was created through a generous gift from UCLA alumnus and philanthropist **Morton La Kretz**. Housed within the Institute of the Environment and Sustainability (IoES), the La Kretz Center was established as a partnership between UCLA and the National Park Service, California State Parks, the Mountains Recreation and Conservation Authority, and the UCLA Stunt Ranch Santa Monica Mountains Reserve.

Our mission is to preserve California's biodiversity and ecosystems through research, education and public programs. We accomplish this by promoting scientific research and educational activities that inform and support environmental management and public education, and by providing a model of university and inter-agency cooperation for meeting the conservation and management challenges of the world's growing urban-wildland interface. A major emphasis is on conservation science issues in the Santa Monica Mountains and adjacent regions across southern California. The Center will also address pressing issues of relevance across California, as well as advance understanding nationally and internationally on conservation topics such as management at the wildland-urban interface and mediterranean-climate ecosystems.

The La Kretz Center is built on a model of collaboration and stakeholder engagement between University scientists, agency and management partners, and public participation. Our goal is to apply the cutting edge research needed to inform management actions, and to apply those research results to best protect and restore California's fragile biodiversity resources. We hope to work with our partners to bridge the gap between environmental science and policy, and to help move forward conservation science in California and the rest of the world.



Morton La Kretz



DIRECTORS AND STAFF



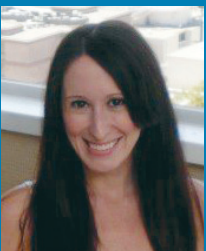
Brad Shaffer is the newly appointed Faculty Director for the UCLA La Kretz Center for California Conservation Science; he also holds the title of Distinguished Professor in the Department of Ecology and Evolutionary Biology at UCLA. Brad received his Ph.D. from the University of Chicago in Evolutionary Biology. For over 24 years he was Professor of Evolution and Ecology at the University of California Davis before moving to UCLA. His research focuses on the evolution, ecology and conservation biology of amphibians and reptiles. Recent research projects in his lab include comparative phylogeography of amphibians and reptiles in California, molecular phylogenetics and conservation of the world's turtles and tortoises, and conservation and landscape genetics of endangered California amphibians and reptiles. For over two decades, his lab has focused a great deal on ecological and genetical work on the California tiger salamander, an endangered species native to central and southern California vernal pool habitat.



Felicia Federico is the Executive Director of the La Kretz Center. She holds a Doctorate in Environmental Science and Engineering and an M.A. in Geography from UCLA, and a B.S. in Engineering from Rensselaer Polytechnic Institute, NY. Her research focus is on managing impacts of urban hydrology on stream channel form and stability (known as hydromodification), as a physical basis for conservation and management of Southern California's sensitive and ecologically important streams. Dr. Federico is particularly interested in understanding and facilitating the process by which research findings are incorporated into policy and management actions. She has contributed to education and outreach across a wide range of stakeholders to support this information transfer, including presentations at workshops and conferences sponsored by the CA State Water Resources Control Board, the LA County Department of Public Works, and the California Stormwater Quality Association.



Carol Felixson is Administrative and Outreach Officer for the La Kretz Center. She also serves as Director of Education and Outreach for the UCLA Stunt Ranch Reserve, is the Docent Coordinator for the Mildred E. Mathias Botanical Garden at UCLA and is a founding member of the Santa Monica Mountains Education Consortium. She helps to organize, publicize and coordinate La Kretz Center events, and works with faculty, students and external organizations to promote and facilitate research and instruction in the Santa Monica Mountains. Carol earned a Bachelor's degree in Social Welfare from the University of Wisconsin, Madison and a Professional Certification in Public Relations from UCLA Extension. She served on the board of the Resource Conservation District of the Santa Monica Mountains from 2007 to 2010. From 2001 to 2007, Ms. Felixson wrote *Drawing from Nature: science/art lessons for kids*, for the L.A. Times Kids' Reading Room Page, and from 1997 to 2009 wrote a column for the Botanical Garden's newsletter.



Karen Lefkowitz is Communications Officer with the Institute of the Environment and Sustainability, and supports the La Kretz Center in a similar capacity by writing articles, maintaining the website and participating in event planning. Karen has a Bachelor's degree in Radio-TV-Film from California State University, Northridge and a Master's degree in Communication Management from USC. Karen has been freelance writing for many years, contributing copy to print and online publications. An affection for the college atmosphere led to a career in higher education. For five years she served as Operations Officer for UCLA's School of Theater, Film and Television before transitioning to the Institute of the Environment and Sustainability.

ADVISORY BOARD

Victoria Sork is Dean of the Division of Life Sciences, and Professor in the Department of Ecology and Evolutionary Biology, and in the Institute of the Environment and Sustainability at UCLA. She holds a Ph.D. in biological sciences from the University of Michigan, Ann Arbor. Dr. Sork, whose research lies at the interface of evolutionary biology and ecology, is considered a pioneer in the recently emerged field of landscape genetics. Her research examines evolutionary and ecological processes that affect the genetic composition of natural populations of trees and how that existing genetic variation influences the ability of populations to respond to environmental change. Dr. Sork's current focus employs genomic tools to understand geographical patterns of adaptive genetic variation in California oak populations. This work has direct application for concerns about the ability of tree populations to respond to climate change.



Glen MacDonald is UC Presidential Chair and Director of the Institute of the Environment and Sustainability. He is also Professor in the Department of Geography and in the Department of Ecology and Evolutionary Biology at UCLA. He holds a Ph.D. in Botany from the University of Toronto and a M.Sc. in Geography from the University of Calgary. Dr. MacDonald studies climate change and its impacts on ecosystems and societies, with a focus on drought and water resources. His lab reconstructs past climate change and impacts through the use of fossil pollen, fossil stomates, plant macrofossils, insect remains, tree-rings, geochemistry and historical records. He also works on issues of current and future environmental change, with a focus on water scarcity. Areas of active field research include California, the northern Great Plains and adjacent Rocky Mountains, the North American subarctic, Russia and Siberia.



Madelyn Glickfeld is Assistant Director for Outreach and Strategic Initiatives for the Institute of the Environment and Sustainability at UCLA. She holds a M.Sc. in Planning from the former UCLA School of Architecture and Planning. Ms. Glickfeld organizes conferences and public lectures to bring critical environmental problems and solutions to public and private decision makers and the public as a whole. She collaborates with faculty to increase interdisciplinary environmental research and education in areas such as land conservation, climate change, water and watersheds, and public health and urban environments. Ms. Glickfeld served as Assistant Secretary of the California Resources Agency from 2001–2003. She is currently a member of the Los Angeles Regional Water Quality Control Board, a member of the California Advisory Board for the Trust for Public Land, and is on the Board of Directors of the Green Info Network.



Daniel Blumstein serves as Chair and is a Professor in the Department of Ecology and Evolutionary Biology at UCLA. Dan holds both a Ph.D. and M.Sc. in Animal Behavior from the University of California, Davis. He is interested in the evolution of social and antipredator behavior and the ramifications mechanisms of behavior have for higher level ecological processes and for wildlife conservation. He has spent over a decade studying the evolution of complex communication and sociality and used the 14 species of marmots as a model system. A main theme in his research is integrating knowledge of animal behavior into conservation biology. In addition to his more theoretical work, he has been actively engaged in using ecotourism as a form of community development and as a way to conserve natural resources.



ADVISORY BOARD CONTINUED



Christy Brigham is the Chief of Planning, Science and Resource Management for the National Park Service, Santa Monica Mountains National Recreation Area. She received her Ph.D. in ecology from the University of California, Davis. Dr. Brigham's work in the Park focuses on restoring damaged lands, removing non-native invasive species, and protecting resources through prevention of future invasions. Her research interests include: understanding the relative impacts of invasive species on native biodiversity, identifying effective ecological restoration techniques, evaluating ecotypic differentiation in native species and the impact of this differentiation on restoration design, evaluating techniques to disrupt the cycle of weed recolonization in degraded lands, understanding impacts of fragmentation on native plants, and identifying effective tools for management and conservation of rare plants. Dr. Brigham also serves on the La Kretz Center's Science Advisory Committee.



J.R. DeShazo is the Director of the Luskin Center for Innovation at the University of California at Los Angeles. He also is an Associate Professor and Vice Chair of the Department of Public Policy in the Luskin School of Public Affairs at UCLA, where he is an expert in economics, public finance, and organizational governance. He holds a Ph.D. in Urban Planning from Harvard University and a M.Sc. in Economics from Oxford University, where he was a Rhodes Scholar. Dr. DeShazo's recent research has focused on local public finance, regulatory reform, climate change policy, and solar energy policy. He advises the Los Angeles City Council, the Los Angeles Department of Water and Power, the Metropolitan Water District, and the Los Angeles Planning Department, among key agencies.



Paul Edelman is the Chief of Natural Resources and Planning for the Mountains Recreation and Conservation Authority (MRCA), and Deputy Director of the Santa Monica Mountains Conservancy (SMMC). He works on land acquisition, shaping development entitlement, and passive recreation development over a 2,500 square mile area of Southern California. A primary emphasis of his work is on habitat linkages of all scales. Paul also developed and has since overseen a riparian habitat restoration program funded by in-lieu mitigation fees. Paul earned his B.A. in Environmental Studies at the University of California Santa Cruz and M.S. in Biology at California State University Los Angeles. Paul also serves on the La Kretz Center's Science Advisory Committee.



Suzanne Goode is the Natural Resource Program Manager for the California Department of Parks and Recreation—Angeles District. She has held this position for 22 years. She oversees the natural resources for 40,000 acres in the Santa Monica Mountains, Simi Hills, the San Fernando Valley, the Verdugo Mountains and downtown Los Angeles. She is currently undertaking several large habitat restoration projects in the Santa Monica Mountains, including Malibu Lagoon, Malibu Canyon, Topanga Canyon, Arroyo Sequit and La Jolla Valley. Suzanne is particularly focused on the restoration of native grasslands. She also has responsibility for internal and external environmental review and real property management. Suzanne earned a B.A. and M.S. in Biology in addition to a B.A. in English from California State University, Los Angeles. Suzanne also serves on the La Kretz Center's Science Advisory Committee.

Philip Rundel holds the title of Distinguished Professor of Biology in the Department of Ecology and Evolutionary Biology at UCLA. He is also a member of the Institute of the Environment and Sustainability, the Faculty Director of the Stunt Ranch Reserve and is a Senior Investigator in the Center for Embedded Networked Sensing (CENS). Dr. Rundel holds a Ph.D. from Duke University. His research has centered on the ecology and eco-physiological adaptations of plants and plant communities to environmental stress, particularly in the winter rainfall areas of California, Chile and South Africa. This focus has led to an increasing involvement in collaborative work with government agencies and non-government organizations (NGOs) to promote public awareness of the global significance and challenges for the conservation of biodiversity in the five mediterranean-climate regions of the world.



Yongwei Sheng is Associate Professor in the Department of Geography at UCLA. He specializes in the field of Geospatial Information Systems and Technologies (GIST) with research interests in remote sensing, photogrammetry, geographic information systems (GIS), and their applications in large-area environmental monitoring and assessment. Dr. Sheng earned his Ph.D. in Environmental Science, Policy and Management from the University of California, Berkeley, and his M.E. in Earth Sciences from Zhejiang University, China. His research interests include geographic information acquisition, uncertainty in geographic information, and 3-D information technologies for GIScience. His current research includes understanding global lake dynamics in the context of global change, especially in the Tibetan Plateau and the pan-Arctic, through several ongoing National Science Foundation and NASA funded projects.



Larry Wan is an entrepreneur and founder of a number of high tech companies, as well as a naturalist and long time conservationist. He holds a Ph.D. from Yale in engineering and applied sciences. Dr. Wan was recruited in 1962 by the UC Board of Regents, along with two of his Yale professors, to found and establish the engineering school at UC Santa Barbara. He also founded a conservancy, the Western Alliance for Nature, to protect and rescue vanishing critical habitats for wildlife. Activities in Southern California include support to protecting Least Terns and Western Snowy Plovers at Ormond Beach, and to protecting the Bolsa Chica wetland in Orange County. Dr. Wan serves on the boards of a number of environmental organizations, including the MRCA, and has also served as the mayor of Malibu.



EVENTS AND WORKSHOPS

As part of our mission of outreach and capacity building, the La Kretz Center is proud to have organized several key meetings to enhance communication and information exchange among our partner organizations.

UCLA/NPS Climate Change Workshop

The La Kretz Center organized a two-day workshop on Climate Change, held in April, 2011 on the UCLA campus, in collaboration with the **Mediterranean Coast Network of the National Park Service Inventory & Monitoring Program (MEDN)**, and with support from the **UCLA Center for Climate Change Solutions (CCCS)**.

THE WORKSHOP OBJECTIVES WERE TO:

- ◆ Update National Park staff and others regarding climate change and the observed and predicted ecological responses.
- ◆ Provide background on park management constraints and research interests for academic scientists interested in partnering with agency scientists.
- ◆ Identify priority research needs related to climate change for SoCA coastal national parks, and help form collaborative research relationships to pursue these needs.
- ◆ Identify top priority monitoring needs to enable detection and documentation of ecological responses to climate change in the SoCA coastal national parks.



Over 80 scientists and staff attended the workshop



Alex Hall discusses projected climate change in SoCA

PRESENTERS AND PANELISTS:

- ◆ Dr. Stacey Ostermann-Kelm, NPS
- ◆ Dr. Felicia Federico, UCLA
- ◆ Dr. Paul Bunje, UCLA
- ◆ Prof. Glen MacDonald, UCLA
- ◆ Dr. Dan Cayan, USGS/Scripps
- ◆ Prof. Alex Hall, UCLA
- ◆ Prof. Curtis Deutsch, UCLA
- ◆ Dr. Wolfgang Buermann, UCLA
- ◆ Prof. Victoria Sork, UCLA
- ◆ Prof. Terri Hogue, UCLA
- ◆ Prof. Steve Beissinger, UC Berkeley
- ◆ Prof. Richard Ambrose, UCLA
- ◆ Dr. Christy Brigham, NPS
- ◆ Dr. Angela Evenden, NPS
- ◆ Dr. Eric Graham, UCLA
- ◆ Susan Teel, NPS
- ◆ Dr. David Busch, USGS
- ◆ Dr. Jake Weltzin, National Phenology Network
- ◆ Dr. Kelly Redmond, Desert Research Inst./Western Regional Climate Center

Approximately 80 individuals attended the workshop across both days. In addition to UCLA graduate students and post-docs, participants included representatives from:

- ◆ National Park Service
- ◆ California State Parks
- ◆ US Geological Survey
- ◆ Santa Monica Mountains Resource Conservation District
- ◆ Natural History Museum of Los Angeles
- ◆ National Phenology Network

The first day of the workshop consisted of presentations by faculty/scientist experts on climate change science, progressing from global mechanisms of change to climate modeling and predictions for Southern California.

The second day of the workshop began with a focus on informing academics about park activities and concerns, followed by breakout group discussions that generated priority recommendations for research and monitoring on five topic areas: Climate Data, Marine Organisms, Terrestrial Vegetation, Terrestrial Wildlife, and Watershed Processes (Fire and Hydrology). The workshop concluded with a panel discussion by four representatives from NPS, UCLA, and USGS, to assist with synthesis, context and initial ideas for next steps.



Breakout groups generated priority research and monitoring recommendations on five topic areas



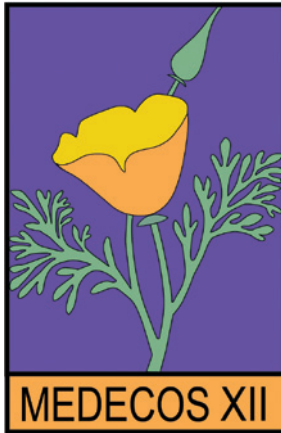
Panel discussion members, l to r: Glen MacDonald (UCLA), Dave Busch (USGS), Christy Brigham (NPS), Alex Hall (UCLA)

The following broad areas of research and monitoring are priorities for the southern California coastal national parks:

- ◆ Fog and Microclimate
- ◆ Ocean Acidification
- ◆ Phenology Monitoring
- ◆ Fire and Climate Change
- ◆ Expanded Species Inventories and Vulnerability Assessments

A report that includes summaries of the workshop presentations, as well as details of the breakout session recommendations and priorities, is expected to be released in spring 2012. It will be published as an NPS Natural Resource Report and posted on the following website, which also contains copies of the workshop presentations:

<http://science.nature.nps.gov/im/units/medn/climatechange/>



MEDECOS XII Conference

In partnership with the **Stunt Ranch Santa Monica Mountains Reserve**, the La Kretz Center organized and hosted the **12th Mediterranean Ecosystems International Conference (MEDECOS XII)**, held September 6–9, 2011, on the UCLA campus. The MEDECOS conferences bring together ecologists and resource managers from all five Mediterranean-climate regions of the world, each designated as a biodiversity hotspot. MEDECOS XII was the 40th anniversary of this long-standing event that rotates among participating countries. This year's conference theme, *Linking Science to Resource Management*, reflects one of the core missions of the La Kretz Center and is critical to achieving conservation and sustainability goals in all five regions. MEDECOS XII included:

- ◆ 300 participants
- ◆ 60 international representatives from 13 countries.
- ◆ 180 oral presentations and 40 posters



L to R: Conference co-chair Felicia Federico at the poster session with Chilean attendees: Juan Armesto, Marcela Bustamante, Aurora Gaxiola, Pablo Marquet

LOCAL ORGANIZING COMMITTEE:

- ◆ Prof. Phil Rundel, UCLA—Chair
- ◆ Dr. Felicia Federico, UCLA—Co-Chair
- ◆ Carol Felixson, UCLA—Logistics Coordinator
- ◆ Eileen Sir, Joan Koyama, and Shahara Vasquez, UCLA—Financial Managers
- ◆ Mina Trujillo, Chraft PR—Conference Planner

TECHNICAL PROGRAM COMMITTEE:

- ◆ Dr. Ray Sauvajot—National Park Service, Pacific West Region
- ◆ Dr. Michael O'Connell—Irvine Ranch Conservancy
- ◆ Dr. Jon Keeley—US Geological Survey
- ◆ Dr. Christy Brigham—National Park Service, Santa Monica Mountains
- ◆ Dr. Hugh Safford—US Forest Service, Pacific Southwest Region
- ◆ Deborah Glaser—Council for Watershed Health
- ◆ Dr. Sophie Parker—The Nature Conservancy

MEDECOS XII KEYNOTE SPEAKERS:

- ◆ **Prof. Harold Mooney**—Paul S. Achilles Professor of Environmental Biology and a Senior Fellow at the Freeman Spogli Institute for International Relations, Stanford University; member of the National Academy of Sciences.
- ◆ **Dr. Ray Sauvajot**—Natural Resource Program Chief for the Pacific West Region, National Park Service.
- ◆ **Prof. Richard Cowling**—Professor of Botany at Nelson Mandela Metropolitan University, South Africa, and an international member of the U.S. National Academy of Sciences.
- ◆ **Prof. Pablo Marquet**—Professor of Ecology and Center for Advanced Studies in Ecology and Biodiversity at the Pontificia Universidad Catolica de Chile.
- ◆ **Malcolm Margolin**—Founder and executive director of Heyday, an independent nonprofit publisher of books on California history, culture, and natural history since 1974.



Ray Sauvajot (NPS) gives a keynote talk.

TECHNICAL SESSIONS:

- ◆ Oaks in Mediterranean Systems
- ◆ Ecology of the City
- ◆ Fire as an Evolutionary Pressure Shaping Plant Traits
- ◆ Restoring and Managing Shrubland Communities
- ◆ Natural and Unnatural Forces Shaping Mediterranean Watersheds
- ◆ Citizen Science and Community Engagement
- ◆ Conserving Mediterranean Island Ecosystem
- ◆ Ecophysiology and Environmental Change
- ◆ Global Change and Fire
- ◆ Fire Management at the Wildland-Urban Interface
- ◆ Wildlife Management at the Wildland-Urban Interface
- ◆ Topics in Ecosystem Management in the Mexican Mediterranean Zone
- ◆ A Landscape-Scale Linkage of Critical Conservation Concern: Science and Strategy in the Tehachapi Region
- ◆ Restoration in Mediterranean-Climate Ecosystems: Linking Science and Management in an Era of Global Change
- ◆ Rivers and Streams in Med Climate Regions:
(A)Biotic Influences and Responses
- ◆ Conservation of Species and Genetic Diversity



L to R: California panel session chair Jay Chamberlin (CA State Parks), Sophie Parker (The Nature Conservancy), Joe Edmiston (Santa Monica Mountains Conservancy), Michael O'Connell (Irvine Ranch Conservancy), and Woody Smeck (Santa Monica Mountains NRA)

PANEL DISCUSSION TOPICS:

- ◆ Managing Invasive Species
- ◆ California: A Case Study for Conservation Management
- ◆ Conservation of Mediterranean-Type Ecosystems—
Opportunities for Global Lessons Learned



L to R: Jon Keeley (USGS), Jeff Pipes (Pipestone Vineyards), Phil Rundel (UCLA, conference chair), Victoria Sork (UCLA)



National Park Service Ranger Mike Malone gives participants a tour of the Western Town at Paramount Ranch

Poster presentations and a wine tasting were held during an evening reception, which included a short discussion of “green” vineyard and winery practices by Jeff Pipes, owner and winemaker of Pipestone Vineyards in Paso Robles, CA. The following evening, a field trip and banquet was held at Paramount Ranch, a renowned park site in the Santa Monica Mountains. Attendees were greeted by Woody Smeck, Superintendent of the Santa Monica Mountains National Recreation Area. Participants enjoyed a guided tour of the Western Town and music by Dustbowl Revival, a California-based band.

MEDECOS XII Contributing Partners:



National Park Service:
Santa Monica Mountains National Recreation Area
Mediterranean Coast Network Inventory & Monitoring Program
Southern California Research Learning Center



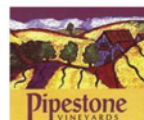
US Forest Service:
Pacific Southwest Region
International Programs Office



MEDECOS XII participants reaffirmed their commitment to work toward the conservation and informed management of the five mediterranean-climate regions of the world. We believe this conference greatly facilitated both technical exchanges and personal connections to strengthen these linkages. The full conference program and abstracts can be found at: <http://medecos2011.com/program.html>



MEDECOS XII Sponsors:



Annual Public Lecture

The second annual La Kretz Center Public Lecture was held on May 15, 2011 featuring **Dr. Paul Ehrlich**, president of Stanford University's Center for Conservation Biology. A pioneer in the field of coevolution and known for his long-term studies of the structure, dynamics, and genetics of natural butterfly populations, Ehrlich first sounded the alarm about the environmental impacts of overpopulation and resource exploitation in his 1968 book *The Population Bomb*. He is the recipient of numerous scientific awards, including the 2009 Ramon Margalef Award in Ecology and Environmental Sciences, which honors exceptional lifetime achievements. The lecture took place at the beautiful King Gillette Ranch in the Santa Monica Mountains and attracted over 230 attendees.



L to R: Victoria Sork (UCLA), guest speaker Paul Ehrlich (Stanford), Morton La Kretz.



Felicia Federico (UCLA) introduces Dr. Ehrlich

The title of Dr. Ehrlich's talk was *"California, Conservation, and the Globe: Why we need to close the culture gap and all become Mahbsters."* The Millennium Assessment of Human Behavior (MAHB) is his latest initiative to educate the public about the threats that uncontrolled human activities pose to the environment, including climate change, loss of biodiversity and ecosystem services, toxification of the planet, potential impacts of nuclear war, and social and economic inequities. The term "culture gap" in this context refers to the difference between what society knows and what each individual knows, and is of particular concern when elected officials and other leaders lack scientific knowledge. Started by a group of social and natural scientists and scholars in the humanities, MAHB aims to address the current global challenges and avoid a collapse of global civilization through changes in human behavior. Dr. Ehrlich believes that academic focus needs to shift dramatically to the social sciences and the humanities in order to understand how social norms are generated and how individual actions can be translated into group behavior.

Video highlights from the talk can be found at:

<http://www.environment.ucla.edu/lakretz/news/article.asp?parentid=11949>

More information about the Millennium Assessment of Human Behavior can be found at: <http://mahb.stanford.edu/>

The La Kretz Center advances scientific research relevant to its mission in several ways, including: direct participation of Center staff on grant-supported or self-funded projects; funding of associated faculty through the Center's operating budget; and facilitating UCLA faculty and student collaboration with our land management partners, through either agency or external funding sources. The following is a summary of some of our current projects.

La Kretz Center Cooperative Research Program

The Memoranda of Understanding between UCLA and its three partner agencies specify the establishment of a **Cooperative Research Program** that will guide research to increase understanding and management capability within the Santa Monica Mountains National Recreation Area. An initial draft was created in February, 2011, and reviewed by an Advisory Committee, consisting of representatives from each of the partner agencies; a revised version awaits integration of climate-change related research priorities identified through the Climate Change Workshop. **The Research Program identifies potential research needs in support of park agency management goals, and attempts to establish a clear link between specific research products and management actions within the Park agencies' authority.** The following management goals were selected as the starting point for identifying and prioritizing potential research projects:

- ◆ Determine Status and Trends of Park Health
- ◆ Maintain, Protect, and Restore Resources
- ◆ Balance Recreation with Resource Protection
- ◆ Conservation Planning / Land-Use Planning at the Wildland-Urban Interface
- ◆ Human Use and Engagement
- ◆ Management of Natural Processes
(Fire, Hydrology, Erosion/Sedimentation, Wind)
- ◆ Information Management and Sharing

We envision this document would be reviewed and updated annually to reflect an evolving set of accomplishments and emerging priorities. La Kretz Center staff have already begun to coordinate with faculty partners to identify funding sources and assist with proposal development in support of identified priorities. Three of the research areas identified as highest priority by the Advisory Committee were proposed and accepted as IoES Senior Practicum projects for the Academic Year 2011-12 and are currently in progress (see below).

A Collaborative Science Agenda on Climate Change for Southern California Coastal National Parks

Outcomes from the Climate Change Workshop are currently being prepared as an NPS Natural Resource Report and will form the basis for the La Kretz Center's climate change-related research priorities.

Hydromodification Assessment and Management in California

The La Kretz Center's executive director, **Dr. Felicia Federico**, is currently working under a grant from the **California State Water Resources Control Board (SWRCB)**, managed through the **Southern California Coastal Water Research Project (SCCWRP)** to develop a technical report on the management of hydromodification impacts (physical and biological changes in streams associated with the alterations in flow and sediment caused by land use modification).

Dr. Federico is a contributing author and editor of this report, and together with **SCCWRP Principal Scientist, Dr. Eric Stein**, manages the expert team of scientists and practitioners working on this effort. Hydromodification management has emerged as a prominent issue because degradation of the physical structure of a channel is often indicative of and associated with broader impacts to many beneficial uses, including water supply, water quality, habitat, and public safety. Conversely, reducing hydromodification impacts has the potential to protect and restore those same beneficial uses.

THE TECHNICAL REPORT HAS TWO GOALS:

Short-term: To provide technical assistance to implement existing hydromodification management regulations, consistent with current scientific understanding.

Long-term: To describe the elements of effective hydromodification assessment, management and monitoring. This includes incorporation of watershed-scale objectives, and will require fundamental changes in regulatory and management approaches, potentially requiring 10+ years to fully implement.

A final draft of this report is currently in review by the SWRCB. Highlights were presented at the California Stormwater Quality Association (CASQA) annual conference in September, 2011.



Excess erosion along a stream in Los Angeles County.

Photo courtesy of Derek Booth

Artificial Night Lighting as Global Change

Dr. Travis Longcore, Associate Adjunct Professor in the IoES and co-editor of the book *Ecological Consequences of Artificial Night Lighting* (2006), is preparing an invited review for the journal *TREE* to trace the advances in research on light at night over the past five years. This work is being funded by the La Kretz Center. Dr. Longcore's review demonstrates that light pollution is sufficiently pervasive and ecologically significant to be recognized as a form of global change. While it is possible to mitigate light pollution, and various groups are currently working toward this end for purposes such as astronomical observation or energy conservation, it is critical that ecologists are engaged to ensure that solutions also address impacts to species, ecosystems and evolutionary processes.



Satellite image courtesy of NASA

NPS Inventory and Monitoring Protocol for Landscape Dynamics

IoES Director **Prof. Glen MacDonald** (Geography, and Ecology and Evolutionary Biology Departments) and **Prof. Tom Gillespie** (Geography Department) are jointly supervising UCLA Ph.D. student **Kate Willis** (Geography) under an agreement with the National Park Service developed in conjunction with the La Kretz Center. This project involves the development of a Landscape Dynamics Protocol for the **NPS Inventory and Monitoring Program**, through the application of remote sensing data and analysis techniques, to track status and trends in land use and land cover, vegetation communities, phenology, and light pollution. Ms. Willis will synthesize existing knowledge to balance data attributes such as cost, resolution, and frequency with regional ecological considerations and practical concerns related to ongoing data analysis. This effort is targeted for June 2012 completion.

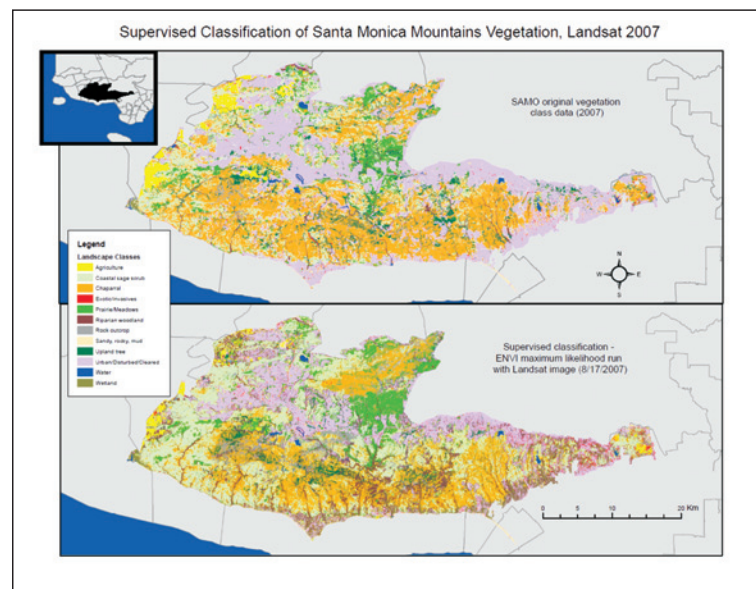


Image courtesy of Kate Willis, 2011

Environmental Sciences Senior Practicum Projects

Students pursuing a B.S. in Environmental Sciences, offered through the IoES, participate in a capstone project known as the Senior Practicum. This is a culminating research experience undertaken over three quarters by teams of 6–8 seniors under the supervision of an expert advisor. The goals of the Senior Practicum are to provide students with training and experience in multidisciplinary environmental problem solving; at the same time, these projects offer a tremendous resource to prospective “clients,” who submit project proposals for consideration each summer for the upcoming academic year.

Facilitated by La Kretz Center staff, three projects identified as priorities in the La Kretz Center’s Collaborative Research Program (see earlier discussion) were submitted as proposals for the Senior Practicum, and accepted for the 2011–2012 academic year. These research efforts are currently underway by student groups and will conclude with a final report and presentation in June of this year. La Kretz Center staff are assisting our partners in coordination with student groups as needed, and will participate in reviews of student findings and in evaluating potential for further work on these projects at the Master’s or Ph.D. level.

Current projects:

Study of Santa Monica Mountains Vineyards. In collaboration with **CA State Parks and the Resource Conservation District of Santa Monica Mountains**, students will apply GIS tools and regulatory reviews to analyze the implications of current zoning laws on the potential for growth of vineyards within the Santa Monica Mountains, as well as work to develop a set of best management practices specific to vineyards within this local region.

Climate Change Vulnerability Analyses. In collaboration with the **NPS Inventory & Monitoring Program for the Mediterranean Coast Network** (Santa Monica Mountains NRA, Channel Islands National Park and Cabrillo National Monument), students will utilize the NatureServe Vulnerability Index combined with literature reviews and expert interviews to assess the relative risk of key species to climate change impacts.

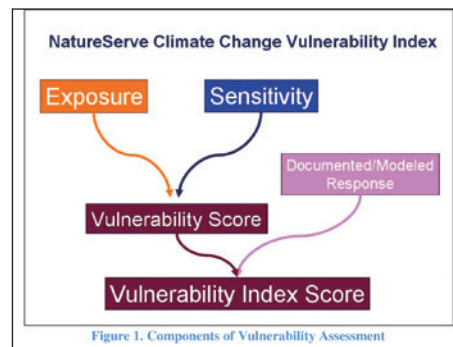


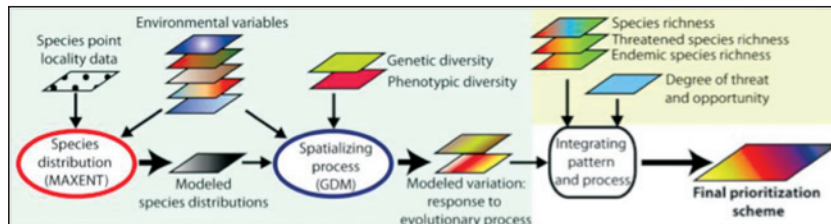
Image courtesy of NatureServe

Development of Detailed Wildlife Corridor Maps. In collaboration with the **Mountains Recreation and Conservation Authority**, students will use GIS tools, field assessments and literature reviews to create detailed wildlife corridor maps for the eastern Santa Monica Mountains. These maps will be valuable for evaluating potential impacts from new developments and for identifying priority areas for conserving open space.

The following research by IoES faculty, while not funded or facilitated by the La Kretz Center, involves collaborations with land management agencies and is relevant to management of the Santa Monica Mountains and the wildland-urban interface. We are pleased to highlight this important conservation work as part of our report.

Maximizing Evolutionary Potential Under Climate Change

Under a recently awarded grant from the California Landscape Conservation Cooperative, the UCLA Center for Tropical Research (within the IoES), working with the **National Park Service, Santa Monica Mountains National Recreation Area (SMM NRA)**, and the **US Geological Survey**, have begun work on a project entitled, “Maximizing Evolutionary Potential for Climate Change Responses in California Protected Areas”. A collaboration of researchers (**Dr. Ryan Harrigan, Dr. Henri Thomassen, and Prof. Thomas Smith** from the CTR, and **Dr. Katy Semple Delaney and Dr. Seth Riley** from SMM NRA), are using a novel approach of identifying areas of biological diversity and potential across multiple species in the SMM NRA. Initially, these new methods are being applied to four species of vertebrates that differ in range size and habitat requirements to determine how well the method can prioritize conservation efforts. Species include: the side-blotched lizard (*Uta stansburiana*), the western fence lizard (*Sceloporus occidentalis*), the western skink (*Plestiodon skiltonianus*), and the wrentit (*Chamaea fasciata*). Initial results indicate that these methods can identify both natural and anthropogenic barriers to genetic flow, and can aid conservation decisions under future climate change.



Thomassen et al, 2010



Fire in Mediterranean Ecosystems: Ecology, Evolution and Management

UCLA Professor and La Kretz Center advisory board member **Philip W. Rundel** co-authored a book with this title, in conjunction with **Dr. Jon E. Keeley** (USGS), **Prof. William J. Bond** (University of Cape Town), **Prof. Ross A. Bradstock** (University of Wollongong, New South Wales) and **Prof. Juli G. Pausas** (Consejo Superior de Investigaciones Científicas, Madrid). Exploring the role of fire in each of the five Mediterranean-type climate ecosystems, this book offers a unique view of the evolution of fire-adapted traits and the role of fire in shaping Earth’s ecosystems. Analyzing these geographically separate but ecologically convergent ecosystems provides key tools for understanding fire regime diversity and its role in the assembly and evolutionary convergence of ecosystems. Topics covered include regional patterns, the ecological role of wildfires, the evolution of species within those systems, and the ways in which societies have adapted to living in fire-prone environments.

OTHER COLLABORATIVE ACTIVITIES

CA Landscape Conservation Cooperative— Southern CA Workshop

On January 26, 2011, the La Kretz Center hosted the California Landscape Conservation Cooperative (CA LCC) for one of two southern California workshops. These workshops marked the introduction of the LCC programs into southern California.

Part of a national network of LCCs established by the U.S. Department of the Interior in 2009, the CA LCC is a management-science partnership informing and promoting integrated science, natural resource management and conservation to address impacts of climate change and other stressors within and across ecosystems. The goals of the LCC are to foster collaboration and integration of science and management; support research, monitoring and the development of technical products to inform and enhance conservation decisions and actions; facilitate information acquisition, interpretation, translation, exchange and availability; promote adaptive management; and communicate information, findings, activities and opportunities within and outside the LCC community.

The CA LCC goals are closely aligned with those of the La Kretz Center, and **Prof. Brad Shaffer** (Director of the La Kretz Center) was recently appointed to the CA LCC Steering Committee. We were delighted to have this opportunity to host over 70 attendees, representing more than 25 natural resource management agencies and organizations throughout the Los Angeles area, as they came together to learn about and engage with the California LCC. The workshop keynote address was delivered by La Kretz Center Advisory Board member **Prof. Glen MacDonald** (Director of the Institute of the Environment and Sustainability). More information about the CA LCC can be found at: <http://californialcc.org/>



From l. to r.: Rick Kearney (Assistant Regional Director, USFWS) Debra Schlafmann (CA LCC Coordinator), Felicia Federico (Executive Director, La Kretz Center), Doug Austen (USFWS National LCC Coordinator), Glen MacDonald (Director, UCLA IoES), Robin O'Malley (Policy and Partnership Coordinator, National Climate Change and Wildlife Science Center, USGS), David Busch (Interim Director, Southwest Climate Science Center, USGS), Rebecca Fris (CA LCC Science Coordinator)

National Park Service Science Festival

The La Kretz Center scientists and staff manned a booth and provided sponsorship in support of the **National Park Service's** second annual **Santa Monica Mountains Science Festival**, held on April 15 and 16, 2011 at Paramount Ranch. The Festival included talks, demonstrations, nature walks, family activities, live animal displays and meet and greets with scientists. 2,900 people attended the Festival where they enjoyed presentations on the natural wildlife of the area, had fun in the kids' activity section, and participated in many hands-on demonstrations provided by a "who's who" of environmental agencies and organizations in the Santa Monica Mountains. Twenty buses brought over 1,160 school children from as far away as Ventura, Granada Hills, San Gabriel, Oxnard, Pacoima, Lawndale and South Gate.

At the La Kretz booth, visitors young and old learned about the water cycle, and tested their knowledge with a quiz related to precipitation, infiltration, evapotranspiration and runoff. Visitors to the booth received a ruler/magnifying glass to help with other Festival activities.

UCLA was also represented at the Science Fair by the **Stunt Ranch Santa Monica Mountains Reserve** and the **IoES Center for Tropical Research (CTR)**. At the Stunt Ranch booth, visitors learned about plants and animals in the area through a stamp/art project. At the CTR booth, visitors learned about migratory birds through a multi-media presentation.



Carol Felixson and Felicia Federico at the La Kretz Center booth



Carol Felixson with visitors at the Stunt Ranch Booth



John Pollinger with visitors at the CTR Booth

Santa Monica Mountains Education Consortium

The UCLA La Kretz Center for California Conservation Science joined the Santa Monica Mountains Education Consortium (SMMEC) in 2011. The Consortium is comprised of more than 15 park agencies and organizations that present educational programming in the Santa Monica Mountains National Recreation Area. SMMEC's purpose is to create a supportive environment for members to implement a comprehensive and collaborative education plan for the Santa Monica Mountains Recreation Area.

Carol Felixson, the La Kretz Center's Administrative and Outreach Officer, assisted with organizing the Santa Monica Mountains Education Consortium's **2011 Training for Naturalists**. The Training consisted of lecture, discussion, and role play on the themes of child development, creative control and multiple learning styles. It was a first-of-its-kind joint training held to benefit field interpreters and docents from numerous environmental agencies and organizations in the Santa Monica Mountains. The event was co-sponsored by the National Park Service, California State Parks, Mountains Recreation & Conservation Authority, Resource Conservation District of Santa Monica Mountains and the UCLA Stunt Ranch Reserve. Felixson, who helped to found the Consortium and who sits on its Steering Committee, said plans are underway for the 2012 Training, which will continue as an annual event.

For more information see: <http://samofund.org/SMMEC/SMMEC.htm>

Southern and Central CA Fire Science Consortium Regional Meeting

On May 11, 2011, the La Kretz Center hosted and helped facilitate the Central and Southern California regional team of the California Fire Science Consortium (CFSC). This meeting of land managers and other stakeholders in the fire community was convened by team leaders **Dr. Jon Keeley** (Research Ecologist, USGS Sequoia and Kings Canyon Field Station) and **Dr. Marti Witter** (Fire Ecologist, National Park Service, Santa Monica Mountains National Recreation Area), to discuss the process of communicating managers' science needs to scientists and the optimal ways of disseminating science to the management community. The meeting included representatives from NPS, US Forest Service, County Fire Departments, universities and NGOs.

DISCUSSION THEMES:

- ◆ Transfer of Managers' Needs to Scientists
- ◆ Transfer of Science to Managers
- ◆ Composition of a Centralized Website
- ◆ How to Ensure Sustainability of Transfer

Further details on the meeting and about the California Fire Science Consortium can be found at: <http://www.cafiresci.org/c-and-s-ca-updates/>

California Biodiversity Poster

The UCLA La Kretz Center co-produced, with the **UCLA Stunt Ranch Reserve**, a full color poster on California's Biodiversity, with text by **Dr. Philip Rundel** and art by **Lisa Pompelli**. Like each of the other four mediterranean-climate regions of the world, California has globally significant flora and fauna and has been declared one of the world's 25 biodiversity hotspots. The poster is intended as an educational tool for academics and professionals as well as students and interested lay people.



Artist Lisa Pompelli and author Phil Rundel (UCLA) unveil the California Biodiversity Poster at the MEDECOS XII Conference

VISITING SCHOLARS



The La Kretz Center welcomed **Dr. Kemal Tuluhan Yilmaz** as a visiting scholar during the summer of 2011. Dr. Yilmaz is professor in the Department of Landscape Architecture at Cukurova University in Adana, Turkey. During his stay in Los Angeles, he presented his work on wetland monitoring along Turkey's Mediterranean coast at the MEDECOS XII conference, as well as to the science staff of the Santa Monica Mountains NRA.



We are pleased to have **Dr. Sabrina Drill** as a visiting scholar through March 2012. Dr. Drill is the Natural Resources Advisor for Los Angeles and Ventura Counties with UC Cooperative Extension. She holds a Ph.D. in Geography from UCLA and a B.S. and M.S. in Biology. During her sabbatical, she is collaborating with faculty across several UCLA departments to examine the use of mobile computing applications in conservation and natural resource management, including to assess the dynamics of lagoon systems along the California coast.

WHAT'S IN STORE FOR 2012

2012 promises to be a critical year to launch several new La Kretz Center initiatives as well as build on previous successes. Here is a sample of what's in store.

The La Kretz Field Center

Negotiations are currently underway with our National Park Service partners to establish a **dedicated field center** for the La Kretz Center adjacent to the Rocky Oaks national park. This will be a major activity for 2012 and will greatly enhance our ability to attract and support researchers for work in the Santa Monica Mountains.

Our goal is to develop our field center into a facility that will support field research activities, provide accommodation for short and long-term visitors, provide space for meetings and small classes, as well as office space, access to the UCLA library resources, lab facilities and field gear storage. The field center will be a focal point for collaboration with our agency partners and an access point for student field activities. In addition to supporting our own research activities, the field center will help support researchers working at the UCLA Stunt Ranch Santa Monica Mountains Reserve.

La Kretz Center staff will also continue to be co-located with the science staff at the NPS headquarters in Thousand Oaks, as well as on the UCLA campus within the IoES and the Department of Ecology and Evolutionary Biology.

La Kretz Annual Lecture

We are delighted to announce that **Dr. Sylvia Earle**, internationally renowned oceanographer, explorer and author, will be the speaker for our third annual La Kretz Center Lecture.

This event will take place on Sunday, May 6 at the King Gillette Ranch in the heart of the Santa Monica Mountains.

Formerly Chief Scientist of NOAA, Dr. Earle is a National Geographic Explorer in Residence. She is founder of SEAlliance, Mission Blue, and Deep Ocean Exploration and Research, Inc. Dr. Earle chairs advisory councils for the Harte Research Institute for Gulf of Mexico Studies; the Ocean in Google Earth; the Marine Science and Technology Foundation and the Schmidt Research Vessel Institute. She has a B.S. degree from Florida State University, M.S. and PhD. from Duke University, 19 honorary degrees, has lectured in more than 80 countries, appeared in hundreds of radio and television productions and has authored more than 175 scientific, technical and popular publications.



UCLA Institute of the Environment
and Sustainability

UCLA La Kretz Center for California Conservation Science