

Stunt Ranch Santa Monica Mountains Reserve
University of California
Los Angeles

Annual Report

July 1, 2003 – June 30, 2004



ANTS

University of California Natural Reserve System

I have no special talent, I'm only passionately curious!

- Albert Einstein

Cover Illustration: by siblings Danielle and Andrea Sork

On Thanksgiving 2002, Danielle and Andrea (then 7 and 10 respectively) created this watercolor marker illustration to accompany an article that appeared on the Kids Reading Room Page of the Los Angeles Times, titled, "Scientists dig for answers about army ant habitats". The article featured the excitement of discovery in field science research, specifically that of Dr. Peter Nonacs and Dr. Smadar Gilboa-Nonacs who observed army ants at Stunt Ranch when they were inspecting honey-pot ants. The species of army ants they discovered was *Neivamyrmex leonardi*.

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UCLA Stunt Ranch Santa Monica Mountains Reserve

2003-2004 ANNUAL REPORT

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UCLA Stunt Ranch Santa Monica Mountains Reserve

NARRATIVE OVERVIEW 2003-2004

If there were a theme for the UCLA Stunt Ranch Reserve's prior year it would be the age old axiom, "the only constant is change." How and why? In most arenas, great and small.

One significant way was in the name change of the Department of Organismic Biology Ecology and Evolution (OBEE), in which the Reserve has a home, to the Department of Ecology and Evolutionary Biology (EEB). The Stunt Ranch Santa Monica Mountain Reserve shares the stated mission of EEB, "to provide new knowledge of the ecological and evolutionary processes that produce and sustain life on Earth."

Last year, a major focus of the Reserve was on biodiversity and conservation in the five Mediterranean-climate regions of the world and particularly in the Santa Monica Mountains. Dr. Phil Rundel, the Reserve's faculty director, has devoted much of his time in helping people to understand that while the Mediterranean-climate regions comprise only about 2% of the earth's land area they account for 16% of the world's plant species. Twenty five ecological hotspots, areas of irreplaceable biodiversity whose protection is of critical global importance, have been identified worldwide. These designations are based on a large and unique diversity of organisms occurring nowhere else and on the extreme threat to these regions from human activities. While most of these hotspots lie in tropical forest regions of the world, each of the five Mediterranean-climate regions is on this select list.

Dr. Rundel, the Reserve's faculty advisors, and the Reserve have initiated and continued to work with government agencies and international NGOs to promote a better public understanding of the global significance of mediterranean-climate ecosystems and their biodiversity. More than a thousand educational posters designed and published by Stunt Ranch on the mediterranean-climate regions have now been distributed broadly to educational groups and schools in Southern California, and all over the world to a variety of universities, government agencies, and NGO's (non-government organizations)

For a brief explanation of the Reserve's other interests and projects from the year gone by, please see the notations below.

RECONSTRUCTION OF EDUCATIONAL FACILITIES:

Because of challenging septic code issues, the Reserve made the decision this year to delete the residence from its reconstruction project. Plans are continuing for the reconstruction of a nature center/classroom and workroom/storage area. With a little bit of good luck and a lot of behind the scenes work, construction is expected to move forward this coming year.

EDUCATION AND NATURE CENTER PROTOTYPE DISPLAY: This past year's display, *Where the Wild Things Are: Plants and Animals in the Santa Monica Mountains*, served as a successful educational resource for students, faculty, staff, and visitors in the bustling Life Science Building lobby. Subjects have included photos of a velvet ant, stink beetle, kingsnake, coyote, deermouse, horned lizard, kestrel, California newt, California quail, bobcat, Humbolt lily, shooting star, and manzanita. A custom designed map of the vegetation zones of the Santa Monica Mountains was produced. Taxidermied specimens of a badger, sharp-skinned hawk, and great horned owl are on loan from the National Park Service.

Plans are underway for the next few prototype displays. The first will feature, *Drawing from Nature*, the science and art lessons for kids published regularly in the Los Angeles times Kids Reading Room Page (see below). The next will focus on the *Chumash Native American's interaction with their environment*

CENTER FOR EMBEDDED NETWORKED SENSING (CENS) AT UCLA AND NATIONAL ECOLOGICAL OBSERVATORY NETWORK (NEON):

Phil Rundel is a senior faculty researcher with the UCLA Center for Embedded Networked Sensing (CENS), an NSF sponsored Science and Technology Center working to develop cutting edge technologies in environmental sensor arrays. These technologies offer tremendous possibilities in allowing collaborations between the fields of engineering and information technology with ecology. CENS is working closely with NSF in developing plans for the proposed National Ecological Observatory Network (NEON). This ambitious program is designed to address significant environmental challenges that are regional, continental, or global in their extent:

- biodiversity, species composition, and ecosystem functioning
- ecological aspects of biogeochemical cycles
- ecological implications of climate change
- ecology and evolution of infectious disease
- invasive species
- land use and habitat alteration

NEON will involve geographically distributed infrastructure connected via cyberinfrastructure into national observatory network. It will apply emerging technologies (sensor, analytical, communication, and information) to investigate the structure, dynamics, and evolution of ecosystems in the United States and forecast biological change. Moreover, it will provide for new collaborative environments (simulation, computation, visualization, and knowledge systems) are needed to facilitate the integration of research, education, and dialog across a wide range of biological, geophysical, and social sciences. The UC Natural Reserve System, including Stunt Ranch, will provide an important resource for the NEON program as it develops.

LOS ANGELES TIMES - DRAWING FROM NATURE SERIES:

The Reserve continues to contribute to the *Los Angeles Times* Reading by Nine literacy program. The Reserve's Director of Education and Community Outreach, Carol Felixson, established and has had the privilege of writing and photographing the feature, "Drawing

from Nature,” published monthly in the *Times Kids’* Reading Room page. She writes about the plants and animals found at Stunt Ranch and the UCLA Botanical Garden. Anne Burke wrote in *UCLA Magazine’s Summer 2004 issue*, that she “teaches children how to make fun pictures with easy-to-follow instructions and low-cost materials. She has a kid-friendly writing style that makes the lessons easy to digest.” Illustrations by children between the ages of 5-12 are unique to the articles. Plans are underway in 2005-2006 to expand the series to in-class activities and displays in other kid science/art venues.

The past year’s topics included:

- Acorn woodpecker and fingerpainting
- California alligator lizard and yarn art
- California tree frog and scratch drawing
- Coyotes and masks
- Desert cottontail and cookie art
- *Ginkgo biloba* and impasto painting
- Poison oak and coloring with pastels
- Popcorn flower and tissue paper collage
- Stink beetles and acrylics
- Woodrats and clay

To read the articles, see the art and photos of the kids please visit the Reserve’s News for Kids website at <http://nrs.ucop.edu/reserves/stunt/newsforkids.html>

OTHER:

The Reserve believes in the importance of the community and the University interacting and collaborating with each other for a shared greater good. And as part of its mission to contribute to the understanding and wise management of the earth and its natural systems, the Reserve regularly reaches out to university, local community, and broader groups.

Toward that end, over the past year, Reserve staff and advisors have attended and/or had involvement with

The following committees and organizations:

- California State Parks
- Coalition on the Environment and Jewish Life – Southern California
- Cold Creek Community Council
- Cold Creek Docents
- Heal the Bay
- International Union for the Conservation of Nature (IUCN)
- Las Virgines Municipal Water District
- Malibu Creek Watershed Educational Sub-committee

- Mountains Interpretive Council
- Mountains Recreation and Conservation Authority (MRCA)
- Mountains Restoration Trust
- Organization of Biological Field Stations (OBFS)
- Resource Conservation District of the Santa Monica Mountains
- Santa Monica Mountains Conservancy
- Santa Monica Mountains National Recreation Area
- Skirball Cultural Center
- Tree People
- Topanga Watershed Council
- UC Natural Reserve System
- UCLA Institute of the Environment
- UCLA Environmental Law Center
- UCLA Alumni Association

And the following projects and activities:

- Department of Ecology and Evolutionary Biology Research Symposium
- Fifth Annual Environmentalist of the Year Awards Reception: presented by the Coalition on the Environment and Jewish Life – Southern California
- In the Mist of the Rainbow: a celebration of the UCLA Stunt Ranch Past, Present and its Future
- Los Angeles Times/UCLA Festival of Books
- Opening reception - UCLA Plant Growth Center
- The ART in nATuRe: Santa Monica Mountains National Recreation Area (SMMNRA) children's art fair in celebration of the 25th anniversary of the (SMMNRA)
- UCLA Alumni Association: Dinner for 12 Strangers
- UCLA Institute of the Environment: Campaigning for the Environment: Influencing Environmental Policy through Opinion Research and Issue Based Marketing
- UCLA Institute of the Environment: The People Speak: A Discussion of America's Role in the World
- UCLA in LA: Rosenfield Distinguished Community Partnership Prize Reception

RESERVE INSTRUCTION:

See *User's affiliation and Instruction*.

RESERVE RESEARCH PROJECTS:

The following research projects took place on, or in the surrounding vicinity, of the Stunt Ranch Reserve during 2003-2004.

- Assessing daily and seasonal fluctuations in nutrients and implications for eutrophication in southern California streams
- Bush poppy demography and productivity
- Comparative studies of mediterranean-climate ecosystems
- Evaluation and prediction of environmental changes along the southern California Coast
- Impact of chaparral fires on riparian ecosystems in the Santa Monica Mountains
- Native grassland restoration in the Malibu Creek watershed
- Photographic survey of the Santa Monica Mountains
- Physiological ecology of evergreen sclerophyll shrubs in chaparral: long term monitoring of gas exchange and water relations of a chaparral plant community
- Post-fire successional dynamics
- Urban runoff and invasive species establishment in the Santa Monica Mountains

See *User's affiliation and research and project updates*.

K-12 ACTIVITIES:

The reserve is honored to be one of several environmental programs highlighted in the *UCLA in LA: Partnerships for a Greater Los Angeles 2005 Directory*. One of the Reserve's successful partnerships is with the Cold Creek Docents, a division of the Mountains Restoration Trust, who coordinate the K-12 program at the Stunt Ranch Reserve. The Reserve and the Cold Creek Docents together are dedicated to making contributions to the education and training of the next generation of scientists and informed citizens who realize the importance of informed management of biological systems in sustaining human culture. This awareness is best created at an early age and continued over a lifetime.

Nancy Helsley, President of the Cold Creek Docents, says, “it is a beneficial purpose that both the University and the Docents serve, not only in education, but as stewards of the land and watershed.” The Reserve and the Cold Creek Docents work together for a wide variety of educational uses related to the natural history of chaparral and oak woodland ecosystems and the history of the Chumash people in the Santa Monica Mountains.

See *User’s affiliation and listing of K-12 school visits*

RESERVE RESEARCH FEATURED IN THE FOLLOWING PUBLICATIONS:

- An Introduction to the Plant Life of Southern California: Coast to Foothills – University of California Press
- Bulletin of the Southern California Academy of Sciences
- Ecology, Conservation and Management of Mediterranean Climate Ecosystems, Balknep Publishers
- Ecology, Evolution, and Systematics
- Insectes Sociaux
- Third International Wildland Fire Conference

See *Publications*

ON-SITE RESERVE USE:

The Stunt Ranch Reserve determines use on the basis of visitor days. During 2003-2004, the reserve had 3602 users and 5071 user days. These user numbers are broken down by university-level use from UCLA, other UC campuses, the California State University system, and others within/outside California. In addition to university use, the Reserve hosted environmental education programs for K-12 coordinated by the Cold Creek Docents, and varied public outreach programs.

See *User’s affiliations*.

For more information on the UCLA Stunt Ranch Santa Monica Mountains Reserve, visit <http://nrs.ucop.edu/reserves/stunt.html>, email cfelixso@ucla.edu, or call 310 206-3887.

UCLA Stunt Ranch Santa Monica Mountains Reserve

2003-2004 USE BY INSTRUCTIONAL GROUPS

Course Title	Institution	Instructor's Name
Astronomy 3 Astronomical Observation	UCLA	Art Huffman
EEB 154 California Ecosystems	UCLA	Philip W. Rundel
EEB 122 Ecology	UCLA	Richard Vance
GE Cluster M1A Global Environment	UCLA	Keith D. Stolzenbach
Geography 100 Principles of Geomorphology	UCLA	Antony R. Orme
Geography 100A Principles of Geomorphology Field and Laboratory	UCLA	Antony R. Orme
Geography 101 Coastal Geomorphology	UCLA	Antony R. Orme
Geography 101A Coastal Geomorphology Field and Laboratory	UCLA	Antony R. Orme
History Environmental Studies Graduate Seminar	UCLA	Peter S. Alagona
Biology 513 Entomology	CSUN	David Gray

K-12 AT STUNT RANCH RESERVE

2003-2004

Coordinated/led by the Cold Creek Docents of the Mountains Restoration Trust

Alexandria Elementary School, Los Angeles
Alta Loma Elementary, Los Angeles
Bay Laurel Elementary, Calabasas
Castle Heights Elementary, Los Angeles
Chamilian Armenian School, Glendale
Chase St. Elementary, Panorama City
Coldwater Canyon Elementary, North Hollywood
Community Harvest Charter, Los Angeles
Corinne Seeds University Elementary, UCLA
Curtis School, Los Angeles
Eastman Ave. Elementary, Los Angeles
Euclid Ave Elementary, Los Angeles
Fairbun Elementary, Los Angeles
Gardner St. Elementary, Los Angeles
Hale Middle School, Woodland Hills
Highland Hall School, Northridge
Hudson Elementary, Long Beach
Kennedy Elementary, Los Angeles
Liggett Elementary, Panorama City
Limerick Ave. Elementary, Canoga Park
Loyola Village Elementary, Los Angeles
Lycee Francais De Los Angeles, Los Angeles
Main Street Elementary, Los Angeles
Marvin Ave. Elementary, Los Angeles
Mirman School, Los Angeles
Monlux Math/Sci Elementary, North Hollywood
Mount Washington Elementary, Los Angeles
Nimitz Middle School, Huntington Park
Normont Elementary, Los Angeles
Open Charter School, Los Angeles
Our Lady of the Valley, Canoga Park
Palisades High School, Pacific Palisades
Park Century School, Los Angeles
Round Meadow Elementary, Los Virgenes
Russell Ave Elementary, Los Angeles
Sepulveda Middle School, Sepulveda
Stoner Ave. Elementary, Culver City
Sutter Middle School, Canoga Park
The Oaks School, Hollywood
Toluca Lake Elementary, Los Angeles
Turningpoint School, Culver City
Vintage Magnet, North Hills
Warner Ave. Elementary, Los Angeles
Windsor Hills Elementary, Los Angeles

UCLA Stunt Ranch Santa Monica Mountains Reserve

RESEARCH PROJECTS With 2003-2004 Updates

#1

Research User(s): Philip W. Rundel
User Affiliation: UCLA
Project Title: Comparative studies of Mediterranean-climate ecosystems
Project Duration: 1993 – on-going

Continuation of a long-term comparative study of Mediterranean-climate ecosystems using Stunt Ranch as a basis for studies.

#2

Research User(s): Philip W. Rundel and Rasoul Sharifi
User Affiliation: UCLA
Project Title: Bush poppy demography and productivity
Project Duration: 1993 – on-going

This is the tenth year of a study investigating post-fire patterns of demography and productivity in *Dendromecon rigida*, the bush poppy, which became established in dense stands on north-facing slopes of the Santa Monica Mountains following wildfires in 1993.

#3

Research User (s): Philip W. Rundel, Qinfeng Guo, and Jon Keeley
User Affiliation(s): UCLA, USGS
Project Title: Post-fire successional dynamics
Project Duration: 1993 – on-going
Funding Source: National Science Foundation

A long-term monitoring project of permanent plots established at Stunt Ranch and in the Santa Monica Mountains after the 1993 wildfire is continuing.

#4

Research User (s): Lee Katz
User Affiliation: Pepperdine University
Project Title: Salamander response to chaparral fire
Project Duration: 1993-1997

#5

Research User(s): Karen Esler
User Affiliation: University of Stellenbosch, South Africa
Project Title: Chaparral soil seed pools
Project Duration: 1994

#6 A

Research User(s): Philip W. Rundel
 User Affiliation: UCLA
 Project Title: Impact of chaparral fires on riparian ecosystems in the Santa Monica Mountains
 Project Duration: 1995- on-going

A long-term monitoring project of permanent plots established at Stunt Ranch and in the Santa Monica Mountains after the 1993 wildfire is continuing.

#6 B

Research User(s): Steve Davis
 User Affiliation: Pepperdine University
 Project Title: Physiological ecology of evergreen sclerophyll shrubs in chaparral.
 Project Duration: 1995-on-going

Studies of physiological ecology of evergreen sclerophyll shrubs in chaparral. And hydraulic architecture in relation to frosts and drought.

#7

Research User(s): Peter Nonacs
 User Affiliation: UCLA
 Project Title: Ant colony and productivity
 Project Duration: 1996 – 1998

#8

Research User(s): John Gamon
 User Affiliation: California State University Los Angeles
 Project Title: Multi-spectral remote sensing of plant productivity
 Project Duration: 1996 - 2001

#9

Research User (s): Richard F. Ambrose, Antony R. Orme, and others *
 User Affiliation: UCLA
 Project Title: Lower Malibu Creek and Malibu Lagoon resource enhancement and management project
 Project Duration: 1997 – 2000
 Funding Source: California State Coastal Conservancy

Other Investigators:

Johannes Feddema, Geography
 Charles Gerba (University of Arizona)
 Philip Rundel, EEB
 Mel Suffet, Environmental Science & Engineering Program
 M.I. Venkatesan, IGPP

#10

Research User(s): Robert Wayne and Michael Kohn
User Affiliation: UCLA
Project Title: Calibration of molecular techniques for the genetic analysis of coyote faeces in the Santa Monica Mountains
Project Duration: 1997 – 1998

#11

Research User(s): Brian Zutta and John Gamon
User Affiliation: California State University, Los Angeles
Project Title: Monitoring changing ecosystem productivity and functional diversity in evergreen-dominated ecosystems using multi-scale remote sensing.
Project Duration: 1998 – 2002
Funding Source: NSF-CREST

#12

Research User(s): Rasoul Sharifi and Philip W. Rundel
User Affiliation: UCLA
Project Title: Long term monitoring of gas exchange and water relations of a chaparral plant community
Project Duration: 1998-on-going

This study is investigating the comparative ecophysiology of evergreen chaparral shrubs and drought deciduous shrubs of the coastal sage which occur together at Stunt Ranch. Along with seasonal measurements of photosynthetic capacity and water use efficiency, the study is looking at the influence of low humidities associated with Santa Ana winds on gas exchange characteristics.

#13

Research User(s): Charles A. Knight (Advisor – David Ackerly)
User Affiliation: Stanford University
Project Title: Comparative ecophysiology of heat shock protein expression in plants
Project Duration: 1998- 2000
Funding: Stanford University

#14

Research User(s): Jeff Thomas (Advisor – Peter Nonacs)
User Affiliation: UCLA
Project Title: Signal variation and categorization by wrentits (*Chamaea fasciata*)
Project Duration: 1998 –2000
Funding Source: UCLA Department of Ecology and Evolutionary Biology Research Grant

#15

Research User(s): Aviva Liebert (Advisor – Peter Nonacs)
User Affiliation: UCLA
Project Title: Division of labor and reproductive skew among paper wasp foundresses
Project Duration: 1998 – 2002
Funding Source: Mildred E. Mathias Graduate Student Grant, UCLA Department of Ecology and Evolutionary Biology Research Grant

#16

Research User(s): Maria Diuk (Advisor – Peter Nonacs)
User Affiliation: UCLA
Project Title: Social behavior and learning in the California scrub jay
Project Duration: 1998

#17

Research User(s): Craig M. Fiehler (Advisor – Peter Nonacs)
User Affiliation: UCLA
Project Title: The effects of resource density on territorial behavior in wintering wrentits (*Chamaea fasciata*)
Project Duration: 1998 - 1999

#18

Research User(s): Stewart B. Peck
User Affiliation: Carleton University, Ottawa, Ontario, Canada
Project Title: Diversity of winter-active leiodid beetles in southern California
Project Duration: 1999

#19

Research User(s): Fritz Hertel
User Affiliation: UCLA
Project Title: Small mammal and bird survey at Stunt Ranch
Project Duration: 1999 - 2000

#20

Research User(s): Antony R. Orme
User Affiliation: UCLA
Project Title: Erosion and sediment transfers in the Topanga Creek watershed
Project Duration: 2000-2001
Funding Source: Santa Monica Bay Restoration Project (ultimately from the EPA) via the Resource Conservation District of the Santa Monica Mountains

#21

Research User(s): Philip W. Rundel and Judith King
User Affiliation: UCLA

Project Title: Ecosystem processes and dynamics in the urban/wildland interface of Southern California

Project Duration: 2000 – 2001

#22

Research User(s): Michael LaPlante (Advisor – Martin Cody)

User Affiliation: UCLA

Project Title: Changes in insect faunal populations in conjunction with a change in season at the California chaparral

Project Duration: 2000

#23

Research User(s): D. Riaño, E. Chuvieco, S. Ustin, R. Zomer, P. Dennison, and D. Roberts

User Affiliation: UC Davis, UC Santa Barbara, Univ. of Alcalá, Madrid, Spain

Project Title: Modeling and prediction of wildfire hazard in Southern California, integration of models with imaging spectrometry

Project Duration: 2000

#24

Research User(s): Don Miller

User Affiliation: Trinity University

Project Title: A preliminary phylogeny of galling aphids and their congeneric parasites on *Arctostaphylos* shrubs

Project Duration: 2001

#25

Research User(s): Nicholas Manoukis

User Affiliation: UCLA

Project Title: Effects of quaternary climate change on the genetic structure of *Hyla cadaverina*, the California tree frog

Project Duration: 2001

#26

Research User(s): Daniel T. Blumstein and Rina Fernandez

User Affiliation: UCLA

Project Title: The evolutionary-ecology of fear: comparative studies of disturbance in birds. Do birds habituate to human disturbance?

Project Duration: 2001

#27

Research User (s): Richard F. Ambrose

User Affiliation: UCLA

Project Title: Environmental monitoring and bioassessment of Ventura and Los Angeles County watersheds

Project Duration: 2001 –2003
Funding Source: Los Angeles Regional Water Quality Control Board

#28

Research User(s): Philip W. Rundel
User Affiliation(s): UCLA
Project Title: Ecophysiology of ferns in chaparral and oak woodland habitats of the Santa Monica Mountains
Project Duration: 2001 – on-going

Photosynthetic gas exchange studies with four species of native ferns is continuing.

#29

Research User(s): Gretchen C. Coffman, Philip W. Rundel, and Richard F. Ambrose
User Affiliation(s): UCLA
Project Title: Influence of nutrient loading on the invasion of an alien plant species, giant cane (*Arundo donax*) in Southern California riparian communities.
Project Duration: 2002 – 2003
Funding Source: California Water Resources Center

#30

Research User (s): Ammon Corl
User Affiliation: University of California, Santa Cruz
Project Title: The stability of frequency dependent dynamics in the side-blotched lizard.
Project Duration: 2002
Funding Source: Mildred E. Mathias Graduate Student Grant

#31

Research User(s): Paul Wilson and Elizabeth Jordon
User Affiliation: California State University, Northridge
Project Title: Pollinator preference among two species of *Penstemon* flowers and their hybrids
Project Duration: 2002 – on-going

#32

Research User (s): Jonathan Levine and Heather Coleman
User Affiliation: UCLA
Project Title: The impacts of exotic grass invaders on the growth, species composition and richness of sparse native forbs in Southern California
Project Duration: 2002 - 2003
Funding Source: UCLA

#33

Research User(s): David Gray
User Affiliation: California State University, Northridge
Project Title: Acoustic communication and phonotactic predation in crickets.
Project Duration: 2002 – 2003

#34

Research User(s): Daphne Christopher and Hannah Stevens
User Affiliation: The New York Botanical Garden Institute of Economic Botany
Project Title: Floristics and Phytochemical Survey Project
Project Duration: 2002

#35

Research User(s): Arthur C. Gibson and Barry Prigge
User Affiliation: UCLA
Project Title: Flora of the Santa Monica Mountains, California
Project Duration: 2003 – on-going

#36

Research User(s): Gary Griggs (UCSC) and Antony R. Orme (UCLA), Principal Investigators
User Affiliations: UCSC and UCLA
Project Title: Coastal Environmental Quality Initiative, State of California: Evaluation and prediction of coastal changes along the southern California coast
Project Duration: 2004-2006

This project involves 2 principal investigators and 4 Ph.D. students over a 2-year period. It will focus on beach changes and coastal erosion along the south face of the Santa Monica Mountains.

#37

Research User(s): Richard F. Ambrose
User Affiliation: UCLA
Project Title: Assessing daily and seasonal fluctuations in nutrients and implications for eutrophication in southern California streams
Project Duration: 7/1/04-6/30/05.
Funding Source: National Science Foundation.

Robert Gilbert (M.S. student in Environmental Health Sciences) is working on a study of nutrient and algal dynamics in Malibu Creek Watershed streams. This is a collaboration with faculty from the Engineering School (Bill Kaiser is PI) on an NSF-funding project entitled "Networked Info-Mechanical Systems (NIMS)" that is developing innovative ways of sensing environmental parameters. We have been conducting preliminary studies examining short-term (daily) temporal variation in nutrients, as well as assessing spatial variation in water quality parameters and macroalgae and diatoms in Malibu

Creek and its tributaries, all related to different land uses in the watershed. For the future, we will be doing monthly sampling at 5 sites, including Cold Creek (right at the preserve).

#38

Research User(s): Judi Tamasi (Advisor Philip W. Rundel, UCLA)
User Affiliation: Mountains Recreation and Conservation Authority (MRCA)
Project Title: Native grassland restoration project
Project Duration: 2003 – on-going

This is a major field study to explore approaches to the restoration of native bunch grasses in the former Ahmanson Ranch area of the Simi Hills. Judi is an employee of the Mountains Recreation and Conservation Authority.

#39

Research User(s): James Tomcavage
User Affiliation: UCLA
Project Title: Photographic survey of the Santa Monica Mountains
Project Duration: 2003

This project involved photographing varied sites in the Santa Monica Mountains including Topanga Canyon, Temescal Canyon, the Cold Creek watershed and Stunt Ranch.

#40

Research User(s): Renate Gebauer, John Tiszler, and Philip W. Rundel
User Affiliation: Kenne State College, National Park Service (SMMNRA), UCLA
Project Title: Urban runoff and invasive species establishment in the Santa Monica Mountains.
Project Duration: 2004-on-going
Funding Source: Santa Monica Mountains National Recreation Area

This project is investigating the possibility that urban runoff from home irrigation or other sources is providing sufficient summer moisture in local streams to facilitate the establishment of alien invasive plant species. Urban runoff will be identified using deuterium isotope measurements of stream water, while an ecophysiological approach is being used to understand the effect of water stress on alien invasive species in riparian habitats.

UCLA Stunt Ranch Santa Monica Mountains Reserve

PUBLICATIONS

1996 - 2005

Ambrose, R.F., S.F. Lee and S.P. Bergquist. 2003. Environmental monitoring and bioassessment of coastal watersheds in Ventura and Los Angeles Counties. *Report to the Los Angeles Regional Water Quality Control Board.*

Anzalone, C.B., L.B. Kats, and M. Gordon, 1998. Effects of solar uv-b on embryonic development in three species of lower latitude and lower elevation amphibians *Conservation Biology* 12, 646-653.

Baas, P., F.W. Ewers, S.D. Davis and E.A. Wheeler 2004 Evolution of xylem physiology. In: *Evolution of Plant Physiology*, I. Poole and A. R. Hemsley (eds.). Linnean Society Symposium Series number 21, Elsevier Ltd., Oxford, UK: pp. 273-295.

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Chari J, P. Wilson 2001. Factors limiting hybridization between *Penstemon spectabilis* and *Penstemon centranthifolius* (Scrophulariaceae). *Canadian Journal of Botany* 79: 1439-1448.

Cody, M.L. 2001. Bird diversity components in Australian Eucalyptus and north-temperate *Quercus* woodlands. *Auk* 118: 443-456.

Coffman, G.C., R.F. Ambrose and P.W. Rundel. 2004. Invasion of *Arundo donax* in river ecosystems of mediterranean climates: impacts and management strategies. In: Arianoutsou, M. and V.P. Papanistasis (eds.) *Ecology, Conservation and Management of Mediterranean Climate Ecosystems*. Millpress, Rotterdam.

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Davis, S.D., F.W. Ewers, J. Wood, J.J. Reeves. and K.J. Kolb. 1999. Differential susceptibility to xylem cavitation among three pairs of *Ceanothus* species in the Transverse Mountain Ranges of Southern California. *Ecoscience*. 6: 180-186.

Davis, S.D., F.W., Ewers, J.S. Sperry, K.A. Portwood, M.C. Crocker, and G.C. Adams 2002. Shoot dieback during prolonged drought in *Ceanothus* chaparral of California: a possible case of hydraulic failure. *American Journal of Botany* 89:820-828.

Davis, S.D., R. B. Pratt, F. W. Ewers, and T.J. Bowen. 2004. Interactions between water stress and freezing regulates chaparral distribution patterns in coastal California. In *Ecology, Conservation and Management of Mediterranean Climate Ecosystems*, M. Arianoutsou and V. P. Papanastasis (eds.). Millpress, Rotterdam.

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UCLA Stunt Ranch Santa Monica Mountains Reserve

PERSONNEL UPDATES

PHILIP W. RUNDEL

Reserve Faculty Director: Phil Rundel is continuing to work with government agencies and international NGOs to promote a better public understanding of the global significance of Mediterranean-climate ecosystems and their biodiversity. More than a thousand educational posters designed and published by Stunt Ranch have now been distributed all over the world, as well as broadly to educational groups and schools in Southern California. Rundel presented in an overview talk on Mediterranean-Climatic Ecosystems at a March workshop in Malibu sponsored by the International Union for the Conservation of Nature (IUCN). He also met in March in Santiago with the Director and Associate Director of CONAF, the Chilean government agency in charge of national parks and forest resources. At that time he presented seminars on Mediterranean ecology and biodiversity to CONAF and to the Universidad de las Americas.

In May, Rundel presented the keynote address, *Mediterranean-climate ecosystems: defining their extent and community dominance*, at the International Conference on Mediterranean Ecology in Rhodes, Greece. In November 2004 he was the co-organizer of a symposium, *Exploraciones de convergencia en bosques húmedos: los bosques australes y esos del noroeste de la costa pacífica de los Estados Unidos*, at an international conference in Mendoza, Argentina.

Phil Rundel and Robert Gustafson of the Los Angeles County Museum of Natural History have coauthored a new book, *Introduction to the Plant Life of Southern California*, which will be published in April 2005 by the University of California Press. This illustrated book, containing 330 color photographs, will provide an introduction for the general public to the ecology of plant communities in the coastal and foothill areas of Southern California.

CAROL FELIXSON

Reserve Director of Education and Community Outreach: In addition to her work for the Stunt Ranch Reserve, Carol Felixson serves as the docent and communications coordinator for the Mildred E. Mathias Botanical Garden (MEMBG) at UCLA. She was appointed as one of two manager's representatives to the UC Natural Reserve System University-wide Advisory Committee which meets twice a year. In her column for the Los Angeles Times Kids Page, *Drawing from Nature*, Felixson introduces children to a subject from nature and an art technique. The children then apply what they have learned in an illustration. She is also a contributing author to the MEMBG quarterly newsletter. Additionally, Felixson is on the board of advisors of the Coalition on the Environment and Jewish Life - Southern California. A graduate in Social Welfare from the University of Wisconsin, Madison, she completed a Professional Designation in Public Relations from UCLA Extension. She is currently enrolled in UCLA Extension's Creative Writing

Certificate Program and is a member of the Society for Children's Book Writers and Illustrators.

LISA POMPELLI

Reserve Design Consultant: Lisa Pompelli is an illustrator and exhibit designer for the Stunt Ranch Reserve. She created, with Dr. Philip Rundel, an educational poster on the Mediterranean-Climate Regions of the World, which continues to be used worldwide. She currently teaches botanical illustration and botany at the Huntington Botanical Garden where she also continues to design posters for their science and botany programs. Pompelli attended Art Center College of Design and graduated with a degree in Geography at UCLA. In 2004, at the invitation of the Turkmenistan government, Lisa gave a presentation on her illustrious great grandfather, Raphael Pumpelly, on the centennial celebration of his archaeology excavation in Anau.

UCLA RESERVE FACULTY ADVISORY COMMITTEE:

Philip W. Rundel, Chair: Professor in the Department of Ecology and Evolutionary Biology at UCLA (see above)

Richard F. Ambrose: Professor in the UCLA School of Public Health's Department of Environmental Health Sciences and Director of the Environmental Science and Engineering Program. Dr. Ambrose continued his long-term research on wetland ecology and restoration at Mugu Lagoon, which included the completion of a 10 hectare restoration of salt marsh habitat. He also completed an assessment of the success of wetland mitigation projects throughout Los Angeles and Ventura Counties, and has initiated an expansion of this program to include wetland mitigation projects throughout California... Dr. Ambrose's research also includes long-term monitoring of rocky intertidal communities in southern California and aquatic ecosystem health of coastal watersheds.

Jeanne Arnold: Professor of Anthropology at UCLA. Dr. Arnold is an archaeologist with a research focus on the North American Pacific Coast. She co-directs an international (US-Canada) archaeological project in British Columbia and supervises an ethnoarchaeological project on modern Los Angeles household architecture and uses of space. She continues long-term research on the California Channel Islands, and her latest book is *Foundations of Chumash Complexity* (2004).

Martin Cody: Professor in the Department of Ecology and Evolutionary Biology at UCLA retired this year. He joined the UCLA faculty in 1966. He plans to concentrate on research now, and will remain affiliated with UCLA for research purposes, for the duration of a 5-yr NSF grant that will develop embedded networks of remote sensor systems, and test their efficacy on rainforest ant birds in Chiapas, Mexico. He also has long-term research projects on birds in Grand Teton National Park and on plants of British Columbia islands that he will maintain, as well as field work on Australian bird diversity and distributions. Meanwhile, he has to make sure his new house gets up and running.

Art Huffman: Senior Lecturer in Physics and Astronomy retired this past year. He was at UCLA for two years as a Post doc in the 70's, then from 1980 – 1996 he served as the Director of Lecture Demonstrations. Then for eight years he served as a Senior Lecturer. He still comes in to campus about two days a week, gives demo shows to groups and schools, and works on various physics problems with colleagues.

Peter Nonacs: Associate Professor in the Department of Ecology and Evolutionary Biology at UCLA. Dr. Nonacs served as the UCLA representative to the UC Natural Reserve System University-wide Advisory Committee. Nonacs research interests are behavioral ecology and social evolution, using both theoretical and experimental approaches.

Victoria Sork: Professor and Chair of the Department of Ecology and Evolutionary Biology at UCLA and professor in the Institute of the Environment. Dr. Sork was appointed to succeed Dr. Peter Nonacs as UCLA representative to the UC Natural Reserve System University-wide Advisory Committee. Her research interests include population biology, conservation genetics, and evolutionary dynamics of plant populations.

Thomas B. Smith: Professor in the Department of Ecology and Evolutionary Biology at UCLA, and Director of the Center for Tropical Research, Institute of the Environment at UCLA. Smith's appointment was renewed as UC representative at-large to the UC Natural Reserve System University-wide Advisory Committee.

Hartmut Walter: Professor of Geography. Dr. Walter has continued his studies of the endemic fauna and flora of the Channel Islands. He is particularly concerned with the still unprotected island subspecies of the Loggerhead Shrike that is confined to S. Catalina, Santa Cruz and Santa Rosa Islands. This population is extremely small (estimate: <50 individuals>). He is also working on the birds of Socorro Island (Mexico) and aspects of the culture and politics of extinction.