



Volume 1, Issue 1

March 2003

The Seed

Bi-annual newsletter of the
Center for Tropical Research



CTR research sites around the world

Inaugural Edition

In this Issue:

- ◆ Mission and Objectives.....2
- ◆ Current Research.....2
- ◆ Latest Grants Received.....2
- ◆ Field Notes.....3
- ◆ CTR People.....4



Dr. Santiago Gangotena, President of the Universidad de San Francisco de Quito, signing an academic agreement between UCLA and USFQ. - See page 3.

LETTER FROM THE DIRECTOR

Dear Readers,

Welcome to the inaugural issue of the newsletter for the Center for Tropical Research! We have developed this newsletter to help keep our many colleagues and collaborators around the world informed about our current research projects, past and upcoming events, and other newsworthy items.

Just over a year ago, CTR moved from San Francisco State University to the University of California Los Angeles campus. In this short time span, the Center has grown rapidly: there are now eight postdoctoral fellows, 17 graduate students, and 34 UCLA faculty that are affiliated with CTR. We are also pleased to have international research associates and senior research fellows that span the globe from West Africa to South America. In working to bridge the gap between research and conservation in practice, we have forged new partnerships with a number of indigenous and international environmental organizations, academic institutions, and government organizations. We hope you will enjoy reading more about these endeavors in the current and future issues of *The Seed*, and we welcome your comments, feedback, and contributions.

Happy reading,

Thomas B. Smith, Ph.D.

<http://www.ioe.ucla.edu/ctr>



MISSION AND OBJECTIVES



Volcano in Ecuador surrounded by tropical rainforest

The unifying goal of the senior scientists, graduate students, and staff of the Center for Tropical Research, is to understand the biotic processes that underlie and maintain the diversity of life worldwide, especially of the tropics, and to use this knowledge to address global environmental challenges. In collaboration with a network of prominent scientists from a diversity of disciplines and backgrounds, we are conducting research in many critical areas including: the processes important in generating diversity in rainforests; the relationship between ecology and disease; migratory connectivity and conservation of migratory birds; and rainforest

restoration in human-dominated landscapes. Employing novel applications of the latest technologies ranging from satellite imagery to molecular genetics, CTR projects provide important training opportunities for young scientists and decision-makers from the many countries where our research is conducted. This includes tropical developing countries in Central America, South America, Austral-Asia, and West Africa.

Objectives

- ♦ To conduct basic and applied biological research incorporating the latest technologies in order to document biodiversity and to understand essential biotic processes that produce and maintain tropical biodiversity worldwide.
- ♦ To help bridge the gap between the academic and government and non-government organizations and increase the quality of science for conservation decision-making by disseminating research results, interpretations and potential conservation applications in user-friendly form as widely as possible.
- ♦ To maximize the effectiveness of conservation programs by integrating research results with sustainable development/conservation policy and programs appropriate to tropical economies.

- ♦ To offer an international education curriculum, premised upon significant field research experience and the latest technologies targeting undergraduate and graduate-level students.

Our research programs employ innovative approaches to conservation problem solving such as:

- ♦ Applying advanced molecular genetic approaches to conserve rainforests on three continents, identify critical habitats for migratory birds, reintroduce endangered species, and study wildlife disease.
- ♦ Employing the latest in satellite imagery technology to estimate the loss of rainforest and identify critical areas to protect.
- ♦ Developing non-invasive methods of sampling, to genetically identify individuals and populations as well as developing state-of-the-art facilities to store samples in genetic libraries and databases.
- ♦ Testing alternative approaches to restoring rainforest by integrating data collected from movement patterns of seed dispersers and long-term studies of forest dynamics.

The Seed Editorial Board

Dorothy Fletcher - Design Editor. 310-794-4908
Marty Fujita - Managing Editor. 310-267-5132

CURRENT RESEARCH

CTR is committed to building collaborative projects with internationally based research organizations and NGOs. To this end, we have begun to open CTR research nodes in tropical countries with high conservation importance.

- ♦ Rainforest Diversity - Africa (Cameroon, Equatorial Guinea, Ivory Coast), Australia, South America (Ecuador)
This research seeks to include transition areas important for the maintenance and generation of biodiversity for conservation management plans and efforts.
- ♦ Rainforest Restoration and Seed Dispersal - South America (Ecuador), Africa (Cameroon)
These long-term studies examine the role of birds and primates as seed dispersers in the maintenance of tree diversity in West African and neotropical rainforests.
- ♦ Evolution of Polymorphisms - Africa (Cameroon)
Research on the black-bellied seedcracker (*Pyrenestes ostrinus*) focuses on understanding the ecological and evolutionary mechanisms maintaining trophic polymorphisms in birds.
- ♦ Conservation of Neotropical Migratory Birds - North America (U.S. and Canada), Central America (Mexico, El Salvador, Honduras, Belize, Costa Rica), South America (Ecuador)
This area of research seeks to determine the factors responsible for population declines of neotropical songbirds that migrate between Central America, Mexico, the U.S., and Canada.
- ♦ Behavioral Ecology & Evolution - Bahamas, Baja California, Ecuador
Research on sexual selection and behavior of various reptile and bird species is being conducted and applied to conservation efforts.
- ♦ Avian Pathogens - Africa
These studies investigate the link between biodiversity, disease and habitat disturbance.
- ♦ International Research Nodes - Ecuador
In Ecuador, CTR is currently engaged in several high-profile projects with conservation applications, including reforestation methodologies.

Recent Grants Received

The CTR gratefully acknowledges the following donors and research sponsors:

NSE: A cross-disciplinary study of the evolutionary processes that sustain rainforest biodiversity.

EPA: Migratory birds as indicators of ecosystem health; a molecular genetic approach to linking population units and geography.

CALFED: Genetic identification of management units for watershed dependent species of special concern.

Turner Foundation: Using genetic markers to identify reasons for the decline of neotropical migratory birds.

UCLA Conservation Genetics: Neotropical migrant bird feather collection and database.

UCLA Latin America Center: Biodiversity and conservation of Baja Mexico lizards.

UCLA Academic Senate: Developing molecular methods to detect diseases of threatened bird populations

The E.P. and Betty Franklin Endowed Fund in Tropical Conservation: Life estate gift annuity.

FIELD NOTES: Recent news and events from CTR

West African Colleagues Visit CTR Lab

The CTR conservation genetics laboratory hosted a visit from two colleagues from West Africa during October and November, 2002. Dr. Blaise Kadjo and Mr. Bertin Akpatou, researchers at the Centre



Dr. Blaise Kadjo and Mr. Bertin Akpatou

Suisse de Recherches Scientifiques in Abidjan, Cote d'Ivoire, came to the lab to learn various techniques for understanding the molecular genetics of mammal and bird populations in their native country. They have been

involved in field studies for a CTR research project focusing on the importance of evolutionary processes in ecological gradients that exist in riverine, montane, savannah and rainforest ecosystems in West Africa. During their stay in California, they also participated in the CTR workshop on Rainforest Diversification and Conservation.

CTR facilitates Memorandum of Agreement Between UCLA and Ecuadorian University

On August 26, 2002 University of California, Los Angeles (UCLA) and Universidad de San Francisco de Quito (USFQ) formalized a cooperative academic agreement between the two institutions.

This effort was spearheaded by Dr. Thomas B. Smith (Professor of Biology at UCLA and Director of Center for Tropical Research) and Dr. Santiago Gangotena (President of USFQ), both of whom are shown in the adjacent photo.

The agreement paves the way for increased collaboration and cooperation between the two prestigious institutions, including exchange of students, professors, and researchers as well as jointly developed academic symposia and



Dr. Thomas Smith and Dr. Santiago Gangotena immediately after signing the agreement.

curricula. The agreement particularly strengthens ties between the Center for Tropical Research, which is housed in UCLA's Institute of the Environment, and USFQ's Tiputini Biological Station, which is located in the Amazon Basin, and the newly opened GAIA institute, on the Galapagos Islands. This will increase the quantity and quality of scientific research projects being conducted at these unique localities, benefiting both institutions and the scientific community in general.

CTR Endowment Receives First Major Gift

On December 20, 2002, a generous gift was made to the Institute of the Environment for the Center for Tropical Research. The gift eventually will create the E.P. and Betty Franklin Endowed Fund in Tropical Conservation. UCLA planned giving staff worked closely with donor Betty Franklin, to establish a Life Estate Gift Annuity. This gift arrangement enables Betty to give a gift of her home of 56 years to The UCLA Foundation while



Betty Franklin

continuing to live in and enjoy it. Betty will receive lifetime annuity payments, and after her lifetime, her gift will benefit the Center for Tropical Research.

CTR Workshop on Rainforest Diversification and Conservation

On November 8th and 9th, CTR convened a gathering at UCLA to discuss the implications of the research findings for conservation of tropical ecosystems. Over forty people attended, including collaborating scientists from Boston University, UC Berkeley, University of Queensland, University of Cocody (Cote d'Ivoire), and JPL/NASA. Scientists gave short presentations on their findings, covering a broad spectrum of taxa (from frogs and lizards



From left to right: Sasan Saatchi, Robert Wayne, Chris Schneider and Tom Smith

to birds and bats). Evidence of microevolutionary change was found in each of these taxa in a variety of morphological and behavioral traits, as well as in molecular genetic structure. Parallel work in Australia, West Africa, and Ecuador showed concordant patterns, indicating that many of the evolutionary processes responsible for generating tropical diversity are similar across continents.

Representatives from nongovernmental environmental organizations and the donor community attended and provided valuable insight and an on-the-ground, practitioner's perspective for how the research can be applied to conservation efforts.

Lizard Wizard

A study by CTR postdoctoral researcher, Dr. Ryan Calsbeek, created quite a stir in the popular media upon publication in the Proceedings of the National Academy of Science on November 5th, 2002. In Ryan's words:

"My work on side-blotched lizards shows that female mate choice is about both the male's territory and his genes. Usually, large males and the best territory go hand in hand because larger males outcompete the smaller ones for the best bachelor pads. However, by experimentally manipulating territory quality, I was

able to differentiate between female preferences for males and their resources. My colleague Barry Sinervo and I rearranged the territories of a population of side-blotched lizards, *Uta stansburiana*. We took rocks good for sheltering and sunning from the territories controlled by larger males and placed them in the territories of smaller males. We then recorded where the females chose to settle and with whom they mated. The females preferred to set up nests in the better territories, even if a smaller male controlled the area. The females, however, also mated with larger males outside of their chosen territory.

We used the progeny's DNA to determine

paternity, and we found that most male offspring were larger, sired by the larger lizard. Female offspring tended to be smaller and sired by the smaller territory owner. We show that this selective sperm utilization gives the female ultimate control over her mating choice and outcome, that shapes species over time."



Side-blotched lizard

CTR PEOPLE

Director Tom Smith

Associate Director Marty Fujita

Affiliated UCLA Faculty

Organismic Biology Ecology and Evolution (OBEE)

Dan Blumstein
Martin Cody
Nicholas Collias
Arthur Gibson
Malcolm Gordon
Greg Grether
Bill Hamner
Henry Hespentheide
Glen McDonald (and geography)
Ken Nagy
Peter Narins
Peter Nonacs
Phil Rundel
Victoria Sork (Steering Committee member)
Charles Taylor
Blaire Van Valkenburgh
Robert Wayne (Steering Committee member)
Jonathan Levine

School of Public Policy

JR De Shazo
Suzanna Hecht

Geography

Judith Carney
Thomas Gillespie
Anthony Orme
Glen McDonald (and OBEE)
Marilyn Raphael
Hartmut Walter
Yongkang Xue

Mol, Cell and Dev. Bio

Ann Hirsch

JLNRC/Physiology

Alan Grinnell

World Arts and Cultures

Allen Roberts

Anthropology

Harold Barrett
Susan Perry

Physiology

Barney Schlinger

Post Doctoral UCLA Research Fellows

Carolyne Bardeleben
Ryan Calsbeek
Cyril Dutech
Delphine Grivet
Darren Irwin
Jordan Karubian
John Pollinger
Ravinder Sehgal

Graduate Students and Research Associates

Andy Aguilar
Allison Alvarado
Caroline Dingle
Maria Diuk-Wasser
Adam Freedman
Jessica Irwin
Klaus Koepfli
Ilonka von Lippke
Nick Manoukis
John McCormack
Borja Milá
Erin Marnocha
Deborah Pires
Ben Wang
Amy Rogers
Katy Semple

International Research Associates

Bertin Akpatou - Ivory Coast
Gabriela Castaneda - Ecuador
Jaime Chaves - Ecuador
Juan Freile - Ecuador
Tatiana Santander - Ecuador
Prince Tamon - Cameroon

Senior Research Fellows

Frank Bayliss - San Francisco State University

Carol Baird - UC Berkeley & Cal Alive!

Katrina Brandon - Conservation International
Tom Brooks - Conservation International
Sonya Clegg - Imperial College London
Ed Connor - San Francisco State University
Roger Fotso - Wildlife Conservation Society, Cameroon
Derek Girman - Sonoma State University
Alan Harper - Terra Penninsular and Audubon California
Sandy Harcourt - UC Davis
Karen Holder - Queens University, Canada
Hugh Jonez - University of Western Australia
Catherine Graham - University of California, Berkeley
Blaise Kadjo - C.S.R.S., Cote D'Ivoire
Irby Lovette - Cornell University
Gretchen Leubhn - San Francisco State University
Michael McColm - Jatun Sacha, Ecuador (CV)
Craig Moritz - University of California, Berkeley
Matt Orr - University of California, Berkeley
Tom Parker - San Francisco State University
Jim Patton - University of California, Berkeley
Mark Reynold - The Nature Conservancy
David Romo - Universidad San Francisco do Quito
Sassan Saatchi - Jet Propulsion Laboratory, NASA
Kelly Swing - Universidad San Francisco do Quito)
Chris Schneider - Boston University
Hans Slabbekoorn - Leiden University, Netherlands
Greg Spicer - San Francisco State University

Partner Organizations

Conservation International
Institute of the Environment (UCLA)
Institute for Bird Populations
Jatun Sacha
Organismic Biology, Ecology and Evolution (UCLA)
Point Reyes Bird Observatory
ReefCheck (UCLA)
The Nature Conservancy
Universidad San Francisco do Quito
Wildlife Conservation Society
World Resources Institute

For more information on our center, its research projects, outreach efforts, events, faculty and staff, visit us at <http://www.ioe.ucla.edu/ctr>



Center for Tropical Research
UCLA Institute of the Environment
1365 Mira Hershey Hall
610 Charles E. Young Drive East
Los Angeles, CA 90095-1496

NON-PROFIT
ORG.
U.S. POSTAGE
PAID
UCLA