

NREL NEWS NOTES

NATURAL RESOURCE ECOLOGY LABORATORY
Colorado State University

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- [Spotlight on Science](#)
 - [Announcements](#)
 - [Colorado](#)
 - [National](#)
 - [International](#)
 - [Calendar of Events](#)
 - [NREL Seminars](#)
 - [Graduate Student News](#)
 - [New Employees](#)
 - [Grants Funded](#)
 - [Proposals Submitted](#)
 - [Manuscripts Published](#)
 - [Outreach](#)
 - [Personals](#)
 - [Previous NREL News Notes](#)
-

Spotlight on Science

Featuring: Tom Hobbs Research Scientist - Natural Resource Ecology Laboratory

The work of scientists at NREL is widely admired by other ecologists, but it is unusual for one of us to be recognized by other disciplines. Tom Hobbs and his colleagues Chris Duerksen, Don Elliot (attorneys at Clarion Associates, Denver) and Jim Miller (Biology Dept., CSU) recently received an award from the Colorado Chapter of the American Planning Association for their book, *Managing Development for People and Wildlife: A Habitat Protection Handbook for Local Governments*. The purpose of the book is to assimilate knowledge of science and law and to make that knowledge accessible to people making decisions on land use that affect wildlife habitat. The book brings together ecological knowledge useful in setting priorities for protecting habitat, with legal, political and economic principles relevant to implementing habitat protection on the ground.

The book is one of the products of the System for Conservation Planning Project (SCoP, pronounced "scope"), which is led by Tom and funded by a grant from Great Outdoors Colorado. Project collaborators at CSU include Tammy Bearly, Dave Theobald, and Jim Zack. Bill Riebsame from the Geography Department at CU also works on the project. The goal of SCoP is to assemble state-of-the-art understanding of the ecological consequences of development for wildlife habitat and to provide tools to planners and decision makers allowing them to foresee those consequences. To that end, pilot efforts are underway in Larimer and Summit counties, where the SCoP team is building on-line information systems that display a wide range of data and analyses on wildlife habitat. At the core of the system is a land use change model built by Dave Theobald that uses historical data on settlement patterns to forecast the spatial distribution of the human population in the future. Users of

the system can manipulate the model to examine alternatives for managing distribution of people on the land. A closely related project funded by the Rocky Mountain Elk Foundation is being carried out by Tom, John Gross, and Dave Theobald. They are developing general procedures focusing widely available geographic data to support planning to protect elk habitat in the Rocky Mountain region. They will provide the interface and the analysis routines to allow other to build systems like SCoP in other areas of the West.

Tom also supervises a Ph.D. student (Jim Miller, Biology Department, CSU) in collaboration with John Wiens (Biology Department, CSU). Jim's work focuses on the influence of landscape context on the structure and function of bird communities in riparian zones along the Front Range. In particular, Jim is working on effects of changing density of the human population on the composition of bird communities along stream corridors. Fine scale features (vegetative structure and biomass) of Jim's study plots tends to be similar among all plots, but the coarse scale context in which they are embedded varies enormously. Some of his plots are bordered by an apartment complex, others are found in open space. Results of two years of study show marked shifts in community structure along this gradient of urbanization.

In the past, most of Tom's work involved native ungulates and their role in grasslands and shrub-steppe. He continues to be active in this area. He recently published an invited synthesis paper in the Journal of Wildlife Management reviewing the ways that ungulates modify ecosystems. He will be a plenary speaker at the International Ruminant Nutrition Conference in 1999. Jill Baron has invited him to give the keynote address at the Rocky Mountain National Park All Scientists Meeting next summer, and Tom will participate in a Wildlife Society Symposium on "Ecology and Management of Ungulates in National Parks of Western North America" organized by Mike Coughenour and Frank Singer.

Tom lives happily with his wife of 20 years, Debbie, and their two children, Sarah (age 1) and Nick (age 7). When he is not doing science, chances are he is coaching youth soccer. During 1996, he was chosen as the Fort Collins Soccer Club Coach of the year. His under-13 boys team is called the Sparcs the only team in Colorado named after --you guessed it.

Announcement

The NREL recently established several categories of giving which include the NREL Graduate Student Fund, the NREL Scientific Equipment Fund, Financial Support for NREL Scientists and Visiting Scientists, the Dyne Distinguished Ecosystem Scientist Award, and the NREL General Fund. We would like to thank the following people for their generous gifts, which were received as of January 1, 1997:

Ms. Christie Barton

Ms. Karen Bradley

Dr. Ingrid Burke

Ms. Elizabeth W. Cline

Dr. Fern Cole

Dr. David Coleman

Dr. Diana W. Freckman

Dr. David Icklichter

Dr. Orie L. Loucks

Dr. Thomas Lovejoy

Dr. William H. Patrick, Jr.

The annual NREL Christmas Awards Party was hosted by NADP and held at their offices on Canyon. This years award recipients were: Linda Bandhauer, NREL Support Staff Award Mike Coughenour, Most Proposals Submitted Diana Freckman, Travel Award and Bill Parton, Most Publications.

The UB web site received an "Editors Choice" award from LookSmart, Inc., a Readers Digest affiliate.

athy Galvin gave a presentation titled "Wildlife Conservation Biology and People: Issues of Compatability in East Africa," on Dec. 6 at the Sigma i Fall Speaker Series held in the Lory Student Center.

Tom irchner, who was a member of NREL for 2 years, accepted a position as Manager of Data Base Systems at the Carlsbad Environmental Monitoring and Research Center, New Meico State University, Las Cruces, NM. Tom began his new job on December 1, 1996. The Center was set up to provide independent monitoring of DOEs Waste Isolation Pilot Plant (WIPP) site. The WIPP site will be receiving radioactive waste from DOEs facilities. The waste contains low to moderate levels of radioactivity, and will be primarily plutonium contaminated clothing, soil, etc. As part of the monitoring program, atmospheric water, soil and biotic environmental samples will be collected. One of Toms tasks is to put together a system for synthesizing the collected data and seeing that it is properly archived. He also is in charge of developing a system for tracking the inventory of hazardous materials to remain within EPA guidelines. Another part of the Centers mission is to implement a research program. We wish Tom much success in his new career.

Meetings

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Jill Baron and Tom Stohlgren participated in a meeting called by Rocky Mountain National Park managers and National Park Service Air uality managers to discuss the state of knowledge about air quality and air quality related threats. Both Baron and Stohlgren gave presentations on nitrogen deposition effects at the Nov. 1 meeting.

Bob Niles discussed his research on alfalfa stem nematodes at the Annual Meeting of the Arkansas alley Research Center Advisory Council, Rocky Ford, CO on Dec. 10.

Tim ittel participated in a workshop sponsored by EPRI on "Interfacing Mesoscale Climate Models with Impacts Assessment" in boulder, CO, on Dec. -6. The Workshop was organized by the International Institute of Theoretical and Applied Physics, Iowa State University, Ames, IA.

NTONL

Gary Lear, Molly Welker, Susan Smith, Bob Gilpin, and Linda Bandhauer attended the 1996 NADP

Technical Committee Meeting in Williamsburg, A, Oct. 21 -2. Molly presented a poster titled "NADP/MDN A/AC Protocols."

Tim ittel, Dennis Ojima, Bill Parton, and Dave Schimel participated in the EMAP Phase II Planning Workshp, Dec. 12-1 in Charlottesville, A.

Tim ittel attended the Fall 199 meeting of the American Geophysical Union, Dec. 1 -19 in San Francisco, CA. Tim and Roger Pielke co-authored a paper presented by Jeff Copeland titled "Climatic Impacts of Landscape Change in the Central United States."

Bill Parton attended an NCEAS-GCTE Workshop titled "Global Change and Terrestrial Ecosystems: A Synthesis," on Nov. 12-1 in Santa Barbara, CA.

Bill Parton traveled to Washington, DC, on Dec. 9-10 to attend the meeting of the Committee on Geophysical and Environmental Data, National Academy of Science.

Bill Parton chaired the IGBP-DIS GPPDI Workshop on Dec. 1 -1 in Cincinnati, OH.

Diana Freckman attended the ASA, CSSA, SSSA Annual Meeting in Indianapolis, IN, on Nov. -. She gave an invited symposium entitled "Invertebrate Diversity in Soils" on Nov. .

Diana Freckman attended the NRC Board on Environment, Studies, and Toicology (NRC BEST) meeting in Washington, DC, Nov. 6-7.

The Association of Ecosystem Research Centers (AERC) Symposium titled "Ecosystem Science for the 21st Century" was held Nov. -9 in Santa Barbara, CA, and was attended by Diana Freckman.

Diana Freckman, Tom Stohlgren, Alan Covich, and Amy Treonis attended the National Center for Ecological Analysis and Synthesis (NCEAS) Invited Symposium, "Synthesis in Ecology: Applications, Opportunities, and Challenges," in Santa Barbara, CA, Nov. 17-20.

INTERNATIONAL

Ted Elliott attended a meeting of the Interamerican Institute for Global Change held in Recife, Brazil, on Nov. 11-16. Discussion at the meeting focused on future collaboration among the countries of Brazil, Bolivia, Canada, Meico, the United States, and enezuela. Issues of global change were discussed, including land-use and management changes and their interaction with changes in climate and atmospheric carbon dioide levels.

Dennis Ojima attended IGBP/BAHC-LUCC meetings, Nov. -10 in yoto, Japan. He spent Nov. 11 -1 in Seoul, orea, attending a meeting of the 6th START Regional Committee for Temperate East Asia (TEACOM).

Bill Parton traveled to Paris, France, Nov. -10, to participate in a SCOPE Tree-Grass Meeting.

ern Cole has completed work as a lead author on an IPCC publication after meetings in Washington, DC, and Geneva, Switzerland. The IPCC has published a Technical Paper in response to a request from the United Nations Framework Convention on Climate Change. The material presented has undergone eper and government review. Chapter 6 of the Technical Paper discusses the Agriculture Sector. Specific topics are Technologies for Reducing GHG Emissions in the Agriculture Sector, Mitigation of Carbon Dioide Emissions, Mitigation of Methane Emissions, Mitigation of Nitrous Oide Emissions and Measures for Reducing GHG Emissions in the Agriculture Sector.

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June 1997

Beth Holland and Dave Schimel are serving on the Organizing Committee of the NATO Advanced Study Institute. Beth is serving as the Director and Dave as a member of the committee. The NATO Advanced Study Institute "Soil and Global Change: Carbon Cycle, Trace Gas Exchange, and Hydrology" will be held June 16-27, 1997 at the Chateau de Bonas in Toulouse, France. Approximately 60 -0 students will be invited to participate.

isitors

Patrick Bohlen, Institute of Ecosystem Studies, Millbrook, N, visited at NREL and presented a seminar sponsored by NREL and GDPE as part of the New Ecologists Seminar Series on November 22. During his visit, he also taught a session of Diana Freckmans E92 class.

Dr. Ts. Adyasuren, Minister for Nature and Environment of Mongolia, visited NREL and worked with Dr. Chuluun Togtohyn, January -2.

Tom Meiner, University of Arizona, visited NREL Oct. 2 -0. Tom worked with Jill Baron and gathered information to simulate Loch ale hydrochemistry using the Alpine Hydrochemical Model (AHM). A portion of his visit was to learn how to use CENTUR so that he can incorporate Century C and N dynamics into AHM.

Carol endall, an isotope geochemist with the USGS in Menlo Park, visited NREL the first week in Nov. She and Jill Baron are planning the net phase of a dual isotope NO study for an NSF project addressing N flowpaths in alpine watershed.

J.T. Ritchie, U. Schultress, and B. Baer, Michigan State University, visited NREL Jan. 2 -1, and were sponsored by eith Paustian. They attended a User Advisory Committee (UAC) meeting to assist in the development of the SALUS model, designed for simulating production, soil dynamics and economic output for comple (i.e., multi -species rotations non -conventional tillage) cropping by stems.

NREL Se □ in □ r □

November 1: Sara Hotchkiss, Department of Ecology, Ecolution, and Behavior, University of Minnesota, St. Paul. "North Pacific Climate History from Hawaiian Pollen Records."

November : Frank Singer, NREL, "Elk egetation Interactions in ellowstone National Park -- Implications of Climate Change and Ecological Processes."

November 1: Dr. E. Raymond Hunt, Jr., Department of Botany, University of Wyoming, Laramie, W, "Comparison of the Airborne isible/Infrared Imaging Spectrometer (AIRIS) with Other Techniques for Rangeland Assessment by Remote Sensing."

November 22: Patrick Bohlen, Institute of Ecosystem Studies, Millbrook, N, "Eotic Earthworms Alter Fundamental Controls of Forest Floor Nutrient Cycling Processes in Forests of Northeastern U.S."

Page last modified: March 23, 2002

[Back to Newsnotes List](#)

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