

NREL NEWS NOTES

*NATURAL RESOURCE ECOLOGY LABORATORY
COLORADO STATE UNIVERSITY*

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- [Spotlight on Science](#)
- [Announcements](#)
- [Meetings](#)
- [NREL Seminars](#)
- [Visitors](#)
- [Graduate Student News](#)
- [Grants Funded](#)
- [Proposals Submitted](#)
- [Manuscripts Published](#)
- [Outreach](#)
- [Personals](#)
- [Open Positions](#)

Spotlight on Science

Featuring: Diana Freckman

Director, NREL

BIOTEX 1 (Biological Investigations of Terrestrial Antarctic Systems)

Diana Freckman participated in a major research expedition (BIOTEX 1) supported by NSF at the McMurdo Dry Valley LTER (77 S) and the XI Italian Antarctic Research Expedition at Terra Nova Bay in Victoria Land (74 S), Antarctica in December and January. This was the largest international team of terrestrial biologists to work in Antarctica and included 4 Italian, 5 British and 1 US scientists from Univ. Siena, Univ. Trieste, Univ. Roma, British Antarctic Survey (Cambridge, UK), Anglia Polytechnic Univ (Cambridge), Wye College, Univ. London, and Colorado State Univ. The study was supported by the Scientific Committee of Antarctic Research (SCAR), the international body of the Antarctic Treaty that advises and coordinates scientific research in Antarctica. The expedition brought together, for the first time, a team of specialist scientists to make an intensive and detailed multidisciplinary study of all terrestrial organisms and their living environment at one site. Diana Freckman joined the BIOTEX group and Dr. W. Vincent (Univ. Laval, Quebec, Canada; Chair, International Planning Group on Environmental Management of Dry Valleys) at the Lake Hoare LTER Site. Cloches (open and closed UV-opaque and UV-transparent chambers) were established on the soil, close to long-term open-top ITEX (International Tundra Experiment) chambers, for comparative studies on microalgal and nematode colonization. Both types of cloches were also placed at the Edmonson Point BIOTEX Site. Cloches are being used to investigate the effect of elevated temperature in relation to global warming, and UV-radiation on colonization by microorganisms and mosses, the biochemistry of cold-adapted bacterial populations, and the distribution and diversity of nematodes, springtails and mites. In mid December, the BIOTEX team moved to the main expedition camp set up for the researchers at Edmonson Point.

Announcements

Antarctic Expedition 1995-1996

The NREL Antarctic research team had a number of visitors at the LTER field site in the McMurdo Dry Valleys this season, and Diana Freckman was a guide for their field tour: Timothy Wirth, Undersecretary of State for Global Affairs; Dr. Thomas E. Lovejoy, Counselor for Biodiversity and Environmental Affairs, Smithsonian Institution and member of the NREL External Advisory Committee; Dr. Karl Erb, Assistant for Science Technology, NSF; Dr. Bernard Burke, National Science Board, NSF; Dr. Ernest J. Moniz, Assoc. Director for Science, OSTP, Washington; Dr. Dennis Peacock, NSF; and the BIOTEX team.

The NREL External Advisory Committee will meet at NREL, March 19-21. This Committee includes: Dr. Gene E. Likens, Director, Institute of Ecosystem Studies, Millbrook, N; Dr. Thomas Lovejoy, Counselor for Biodiversity and Environmental Affairs, Smithsonian Institution, Washington, DC; Dr. Pamela A. Matson, Professor, Ecosystem Sciences Division, University of California-Berkeley; and Dr. Paul Risser, President, Oregon State University, Corvallis, OR.

The NREL Annual Outstanding Achievement Awards and Christmas Party was held December 15 at the new Ft. Collins Senior Center. Awards were presented to: **Diana Freckman** (Most Travel); **Bill Barton** (Most Publications); **Tom Stohlgren** (Most Proposals); **Serita Freese** (Outreach). Outstanding Employee awards were presented to: **Maureen McElain** - Administrative Support Staff; **Serita Freese** - Lab/Field Scientific Support; **Tammie Earl** - Programming/Data Analysis Scientific Support; **Andreas Arsons** - Post doc; **Menelaos Atsedu** - Graduate Student; **Arrin Alstad** - Hourly.

Jeff Welker has accepted a position as Associate Professor in the Range Ecology and Watershed Management Department at the University of Wyoming, Laramie. Jeff will continue to maintain his affiliations with NREL and CSU while expanding his ITEX tundra research to include studies in the Medicine Bow Mountains.

Tom Stohlgren will present a few lectures on species-area curves and ecological diversity in John Wiens E-501 "Community and Ecosystem Ecology" course. Tom also has accepted an offer to help teach the Smithsonian Institutions course on "Measuring and Monitoring Biodiversity" in Virginia in May.

The Mercury Deposition Network (MDN) became an official part of the NADP on January 1, 1996, after final approval by the NADP Technical Committee at its meeting last fall. Richard Flagler is the PI for the new project and Molly Welker will serve as the coordinator. The MDN is a weekly monitoring program to look at the spatial and temporal trends in total Hg deposition. The anticipated goal for 1996 is a 20-0 site network.

Research Associates Krista Alper and April Owen have organized over 12,000 citations (in Pro-Cite) from National Parks in the Rocky Mountain Region. April and Greg Newman (Environmental Science student) are now organizing the research literature on research in North Dakota. This work is part of scientist Tom Stohlgrens grant.

NREL and Department of Anthropology scientist, Kathy Galvin has a Visiting Research Fellowship at the University of the Witwatersrand, Johannesburg, South Africa for six months. She and an Anthropology graduate student will be investigating issues of conservation and human development in the lowveld region of South Africa starting in early March.

Beth Holland, NREL and NCAR in Boulder, received funding from the NATO International Scientific Exchange Programme to direct an Advanced Study Institute (Soils and Global Change: Carbon Cycle, Trace Gas Exchange and Hydrology). The Institute will be held at the Chateau Bonas, near Toulouse France in June 16-27, 1997. It will include 60-0 students from around the world and 15 lecturers. Endorsements have been received from IGAC and are currently being solicited from GCTE and BACHE. If you are interested in further information, please e-mail your inquiries to: eholland@acd.ucar.edu.

Jill Baron is representing NREL in the University-wide Agric. Exp. Station and Cooperative State Research Education and Extension Service review of CSU Water Resources programs. The review is being conducted as a strategic planning effort that will provide a comprehensive plan for CSU Water Resources programs. The first meeting was held Dec. 11-12 and the planning process will continue over the next year.

Keith Paustian and Ted Elliott are participating in a work group involving USDA/ARS, NRCS and University researchers, charged by Karl Stuaber, Undersecretary of Agriculture, with defining preliminary agroecological zones for the U.S. The classification of agrozones will be used initially to assess the coverage and representativeness of field research conducted by USDA and State Experiment Station locations.

NREL postdoc Rob Kremers generosity to science has provided him with a lot of publicity. Rob was one of the Ph.D. scientists selected to be in the "Studmuffins of Science" calendar as Dr. March. Proceeds of the calendar, which sells for 15.00, will go to the American Association for the Advancement of Science (AAAS).

The Graduate Degree Program in Ecology (GDPE), which sponsors the Distinguished Ecologist Lecture Series on campus, has reserved time on Wednesday, March 6 27 and April 10 24 from 9-10 a.m. for the NREL Scientific Staff to meet with each visiting ecologist in Room B215 at the Natural and Environmental Sciences Building.

The NADP homepage on the WWW is now fully functional. You can get an overview of the program, view site maps and individual site photos, get quality assurance information, view current concentration and deposition maps, download data, and much more. Please surf by for a visit at: <http://nadp.nrel.colostate.edu/NADP>.

Donors to NREL

Donations in support of research and education projects were from the following individuals:

Thomas B. Kirchner, NREL; Christie W. Barton, Rockville, CT; John E. Larson, Richardson, TX; and Carroll J. Schell, Sevierville, TN

Meetings

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On November 2, Jill Baron spoke with a group of 10 Indonesian University Rectors. She and Ralph Smith, Associate Vice-President for Research, discussed University/Public Agency collaboration.

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Jill Baron was in Chicago, Oct. 24-26 as part of a committee to re-invent the Research Grade Evaluation Process for the National Biological Service. The RGE process is a means of evaluating the quality and productivity of federal research scientists.

Tim Kittel, NREL NCAR, presented a paper titled "Intercomparison of the Water Budget Responses to Climate Change Model, a Biogeographic Model, and Three Biogeochemical Models". Research Report, Climate and Global Dynamics Division, at NCAR on Oct. 0.

Visiting Scientist Chuluun Togtohyun was invited to attend the Science Planning NSF-funded Workshop for Research Opportunities in Northern Mongolia at Seabrook Island, SC, Oct. 25-2. He

presented papers titled "Critical Issues of Collaborative Research in Mongolia" and "Research on Global Changes, Biodiversity and Ecology in Mongolia."

Ted Elliott, Keith Paustian, and Vern Cole attended the ASA/CSA/SSSA meeting in St. Louis, MO, Oct. 0 -Nov. . Keith presented two invited papers: "Assessment of the contributions of CRP lands to C sequestration" and "Long-term site information synthesis: Impact of management on soil organic matter." Ted presented two invited papers titled "Site networks for assessing soils as sinks for carbon dioxide" and "Principles of ecosystem science and their application to sustainable agriculture." At this meeting, a full day symposium was organized by Ted, Keith, Vern and Eldor Paul (Michigan State U., East Lansing) titled "Estimating Management and Climate Change Effects on Net Carbon Dioxide Fluxed from Agricultural Soils: Use of long-term experimental data." A poster session was also organized as part of the symposium. Plans are being made to publish the proceedings as an ASA/SSSAJ Special Publication.

In early November, Tom Hobbs gave a presentation on Data Management, Collection, and Inventory at the U.S. Forest Service Ecological Stewardship Workshop in Tucson, A.

Beth Holland presented a talk in November at NCAR titled "Examination of Spatial Variation in Nitrogen Deposition and Its Impact on the Global Carbon Cycle."

Kathy Galvin was an invited speaker in the session on Health and Reproduction among Nomadic Pastoralists of Turkana, Northwest Kenya: A Biocultural Perspective at the African Studies Assoc. meetings, Orlando, FL, Nov. -6.

Kathy Galvin participated in a NOAA sponsored International Forum on forecasting El Nino: Launching an International Research Institute, in Washington, DC, Nov. 6-.

Tom Kirchner presented lectures on uncertainty analysis at the workshop "Pathway Analysis and Risk Assessment for Environmental Compliance and Dose Reconstruction", Nov. 6-10 at Kiawah Island, SC.

Diana Freckman traveled to Washington, DC, Nov. -10, to attend the Association of Ecosystem Research Centers (AERC) Annual meeting and Board of Directors meeting.

Chuluun Togtohyn and Dennis Ojima were moderators for the panel on "The Mongolian Steppes and the American Prairies: Ecological and Cultural Comparisons" at the American West Symposium on Mongolia, Nov. 9 in Denver.

Jill Baron traveled to Washington, DC and Providence, RI, Nov. 7-12, to plan the Ecological Society of America annual meetings. Jill is Program Chairperson for the 1996 Annual ESA Meetings. While in Washington, Nov. 9-10, she spent a day reviewing and revising draft documents for the National Biological Service Strategic Science Planning Workshop, held in December.

The Annual PIs meeting of the USFS Southern Global Change Program (SGCP) was held Nov. 2 - 0 in Raleigh, NC. Richard Flagler made a presentation on research results from the past four years of the SGCP.

Tom Stohlgren was in Washington, DC, Dec. 4- with 0 NBS scientists and he was one of five work group leaders charged with drafting the National Biological Services Strategic Science Plan. Tom also was assigned the task of lead editor for the volume.

Jill Baron participated in a multi-agency Ecological Stewardship Workshop in Tucson, A, Dec. 4 -9. The workshop "Toward a Scientific and Social Framework for Ecologically Based Stewardship of Federal Lands and Waters," brought scientists and resource managers together to plan a reference

document that outlines options and alternatives for implementing an ecologically-based approach toward management, and documents the scientific foundation for these options and alternatives. Baron is part of the four person team writing the science document on Ecological Functions and Processes.

Ted Elliott conducted a workshop titled "Soil Organic Matter Concepts and Methods Workshop" on Dec. 1 -19 at NREL. Those attending were Denis Angers, Mike Beare, Cindy Cambardella, Vern Cole, Ted Elliott, Serita Frey, Georg Guggenberger, Julie Jastrow, Mike Miller, Keith Paustian and Johan Six. The workshop objectives were to define a conceptual framework of tasks, share recent soil organic matter research results, describe current and future (2- yr.) research plans, and to identify individual contributions to a scientific paper (2- pp.) describing contemporary concepts and methods.

Beth Holland presented a talk titled "Nitrogen and Carbon Cycling Coupling" at the joint GIM/GEIA meeting of IGAC in Fairfax, VA in December.

Richard Flagler was an invited participant in a workshop sponsored by the Southern Oxidant Study Program to determine the form and function of the Secondary Ambient Air Quality Standard for Ozone. The meeting was held January 12-1 in Raleigh, NC. This was a very selective meeting of the top national experts in the field of Ozone Effects on Vegetation. The results of this workshop will have direct impact on the revision of the Ozone Criteria Document now pending with the EPA.

On Dec. 20, Tom Hobbs, Tammy Bearly, Jim ack, Dave Theobald (NREL) and Bill Reibsame (U. of Colorado-Boulder) gave a demonstration of the System for Conservation Planning (SCoP) information system to Jim Lochhead, Director of the Colorado Department of Natural Resources in Denver.

NREL Colorado Division of Wildlife Scientist Tom Hobbs gave a presentation titled "New Initiatives in Land Use: A System for Conservation Planning" at the Annual Meeting of the Wildlife Society in Colorado Springs on Jan. 24. He also gave a presentation on Jan. 26 titled "Land Use Planning and Wildlife Habitat" to the Routt County Commissioners at Steamboat Springs.

Diana Freckman was an invited participant at the American Academy of Microbiology Colloquium, "Microbial Diversity: Foundation of the Biosphere" which was held in Palm Coast, FL, Jan 1 -21.

Rob Kremer presented a paper titled "Biophysical Data Integration for Terrestrial Ecosystem Simulation from Watershed to Basin Scales" at the National Center for Geographic Information and Analysis (NCGIA) Third International Conference/Workshop on Integrating GIS and Environmental Modeling in Santa Fe, NM, Jan. 21-25. Becky McKeown presented a paper at this meeting titled "Ecosystem Modeling and spatially Explicit Land Surface Changes for Climate and Global Change Analysis." Dennis Ojima and Tim Kittel also attended the conference.

The VEMAP Phase 2 Planning Workshop was held Jan. 15-17 in Boulder. A talk titled "The Development of N Deposition Fields for VEMAP" was presented by Beth Holland on Jan. 15. Participants from NREL were Bill Parton, Dennis Ojima, Dave Schimel, Tim Kittel, Becky McKeown, Melannie Hartman, Rob Kremer and Robin Kelly.

Visiting Scientist Chuluun Togtohn was an invited speaker at the Mongolia Teachers Workshop on Jan. 27 in Denver. The Workshop was co-sponsored by the Denver Art Museum and the World History Association. His presentation was on "The Mongolian Steppes: Nomadic People and Culture."

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Page last modified: March 22, 2002

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