

NREL NEWS NOTES

NATURAL RESOURCE ECOLOGY LABORATORY
Colorado State University

No. 12 April & May 1995

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Announcements

The NREL Brochure was completed the end of April and is being distributed locally, nationally and internationally. We are extremely proud of our brochure, it is both attractive and infomative. A mailing list is being compiled and will be maintained for all future updates. If you have not received a copy of the brochure, please contact Arlene (Phone: 491-1982 or email: arlene@nrel.colostate.edu) or Kay

(Phone: 491-1991 or email: kay@nrel.colostate.edu).

NOTICE:

Diana has requested that the Scientific Staff register ALL VISITORS to NREL (in advance of the visit) and also provide information on any WORKSHOPS being organized by our Scientific Staff. *For Visitors*, we need the name, dates, purpose for the visit and who is sponsoring this visitor. *For the Workshops* we need names of people attending, dates, location of the event, scope of the event, and who is organizing the workshop.

A calendar of these events will be posted on the bulletin board located in the hallway next to the elevator. FORMS labeled Visitors Information, Meeting/Conference Information and Information for NREL News Notes are available in a stacked file hanging on the end of the large automated file in Kay's office for your convenience. PLEASE FILL OUT THESE FORMS (or if it is more convenient, email your information to kay) AND RETURN THEM TO KAY (place them in the top slot of the hanging stack file).

Buck Sanford received a Fulbright Fellowship for Zimbabwe. He will be working with the TSBF Program and will basically be doing research with some teaching at the University of Zimbabwe for one year beginning January 1996. Buck's family will accompany him to Zimbabwe.

The Great Outdoors Colorado Board of Trust and the Colorado Wildlife Commission visited NREL on April 12 to learn more about habitat and species protection efforts, specifically three projects --the Colorado Heritage Program Biological Conservation Database, the System for Conservation Planning (ScoP) project, and aquatic species protection research and management. All are funded by GoCo.

Dave Schimel has been appointed to the Committee on Global Change for the National Academy of Sciences and will be doing a review of the EOS program.

Ted Elliott has been appointed as Director of the CSU Office of Ecosystem Research and Management (OERM). The office is the result of the Colorado Agricultural Res. Station-Plant Sci. Strategic Planning review and external evaluation, for which Ted was chair. OERM was established to investigate the development of a University-wide Program of ecosystem research and management. It is being supported for an initial two years by the Colorado Agricultural Experiment Station, the Office of the Vice- President for Research, the College of Natural Resources and the College of Agriculture. The Office is working towards identifying the Programs organizational structure, defining expectations and clarifying its relation to departments, colleges and organized research laboratories, centers and institutes. Potential clientele are being identified within Colorado, the region and the nation. Initially, the Office is extending the reach of ecosystem efforts both within and beyond campus to assist driving research agenda-setting processes. In this regard, OERM has coordinated the submission of a proposal to establish the National Center for Environmental Decision-Making Research (NCEDMR) at CSU, to be funded by the National Science Foundation. An embellished version of the NCEDMR proposal is contained within the OERM homepage (see NREL homepage under Teds name for directions).

At the National ASTM Committee meeting held in Denver in April, Dave Bigelow received an Award of Appreciation for leadership as Chairman of Subcommittee D22.06 on Atmospheric Deposition from 1990- 1994 and active roles in Subcommittee D22.01 on Quality Control and D22.09, the International Standards Organization Technical Advisory Group. Dave also served as a member of a Poudre R-1 Task Group on Media and Technology. This task group has reviewed and suggested goals and implementation strategies for teaching technology in Poudre R-1.

Geneva Chong, Mohammed Kalkhan, Lisa Schell and Tom Stohlgren produced a beautiful color brochure on the "Landscape-Scale Gap Analysis Research Program".

Tom Stohlgren, Lisa Schell and Geneva Chong trained the field crew of the Central Plains Ecological Research (LTER) site in the use of the Modified- Whittaker vegetation sampling design. They are helping with the assessment of the long-term effects of grazing in prairie vegetation. The group is also helping Larimer County and the City of Fort Collins to inventory the Cathy Fromme Prairie (Open space): a joint project with the U.S. Forest Service "ecosystem management" research team. Tom and Lisa are assisting two graduate students, one from Vermont and the other from Germany in botanical research in Rocky Mountain National Park.

The NBS-willow project involving Frank Singer, Mike Coughenour, Dave Valentine, Ted Elliott and Jeff Welker have hired Mr. Steve Williams as a Research Associate on the project.

Karrin Alstad will be an MS student in RES working with Jeff Welker on water and carbon relations of willow as part of the NBS willow project.

Krista Alper and April Owen completed an automated bibliographic database for Rocky Mountain National Park, and the team is preparing to do Yellowstone and Grand Teton National Park in June.

Indy Burke was awarded the Colorado State University Honors Professor Award for 1995-1996. This award comes with a nice plaque and 1000. This is the only CSU Faculty Award which is awarded by the students. Indy will present a special honors lecture next fall.

Ted Elliott, Dave Schimel and Jill Baron will be serving on the NSF/DOE/NASA/USDA panel for a Joint Program on Terrestrial Ecology and Global Change June 8-9. Nearly 150 proposals were submitted.

LTER projects have been cut by 40K for next year, for all sites except the arctic and antarctic sites. This represents a significant change for the CPER-LTER program.

The National Atmospheric Deposition Program's Coordination Office was audited by representatives of the Network's sponsoring agencies May 22-25, 1995. Audit team members included: Mary Ann Allen, Electric Power Research Institute Paul Kapinos, U.S. Geological Survey Dr. Warren Knapp, Cornell University Dr. Jim Lynch, Pennsylvania State University Mark Peden, Illinois State Water Survey and Col. John Robertson, U.S. Military Academy. Biennial reviews are a part of the NADP/NTN's quality assurance program. They provide a means for determining how well the coordination, documentation, data management and quality assurance goals of the program are being met and provide an independent venue for identifying and resolving real or emerging problems in implementing the desires of the cooperating agencies who compose the NADP/NTN monitoring program.

Andy Parsons is doing field work in Toolik Field Station, Alaska (his annual spell in solitary confinement). He will return to NREL in September but hopes to keep everyone informed of his progress with an occasional e-mail letter. All mail, electronic or written, and care parcels will be gratefully received by Andy at: Toolik Field Station, Institute of Arctic Biology, UAF PO Box 5000, Fairbanks, AK 99707-0000, email address: andy@nrel.colostate.edu.

On April 24, Jill Baron gave a guest lecture to Will Clement's Ecotoxicology class.

Don Cline, a Ph.D. student working on the NBS-funded Colorado Rockies Global Change Project, successfully defended his Ph.D. dissertation on April 25. Cline, who is at the University of Colorado, studied snow accumulation and melt processes by using remote sensing, intensive ground measurements, and simulations.

Mike Coughenour will be going to Canberra, Australia on June 1 for two months. He will be on a working leave at CSIRO with Ken Hodgkinson, John Ludwig, et al. They are interested in spatial modeling and scaling up their studies to paddocks, landscapes and regions. Mike's family will join him for a vacation while he is there and they plan to include a visit to the Great Barrier Reef.

Meetings

Ted Elliott attended a Canadian workshop on "Atmospheric change in Canada: Assessing the whole as well as the parts" organized by Ted Munn, Director of the Institute for Environmental Studies, University of Toronto. It was held at the Ontario Institute for Studies in Education. Ted gave an invited presentation on "Integrated Assessment for the Ecosystem" and joined discussion on how to develop an integrated scientific methodology and policy framework.

Geneva Chong presented a paper titled "Landscape-scale Gap Analysis: A Complementary Geographic Approach for Land Managers" at the 10th Annual U.S. Landscape Ecology Symposium on April 22-26 at the University of Minnesota, Minneapolis. The paper was authored by Tom Stohlgren, Mike Coughenour, Geneva Chong, Dan Binkley, Mohammed Kalkhan, Lisa Schell, David Buckley, and Joseph Berry.

Tim Kittel presented a paper titled "Spatial and temporal GIS capabilities for global and regional modeling of terrestrial ecosystems" at the National Center for Geographic Information and Analysis (NCGIA) Specialist Meeting on Multiple Roles for GIS in U.S. Global Change Research (Initiative-15) in Santa Barbara, CA, March 8-11. He attended a seminar titled "Ecosystem Sensitivity to Climate

and CO2 Change: The VEMAP Model Intercomparison at the Department of Botany, University of Wyoming, Laramie on March 1.

Mohammed Kalkhan attended the Annual Convention and Exposition of the American Congress on Surveying and Mapping (ACSM) and American Society for Photogrammetry and Remote Sensing (ASPRS) on Feb. 2 -March in Charlotte, N.C. Mohammed was moderator for the session titled "Remote Sensing Environment" and presented 2 papers, "Statistical Properties of Five Indices in Assessing the Accuracy of Remotely Sensed Data Using Simple Random Sampling", and "Evaluation of the Statistical Properties of the Inverse Estimators for Remotely Sensed Areal Estimates Using Simple Random Sampling". His coauthors were Robin Reich (Dept. Forest Sciences, CSU) and Raymond Czaplewski (USDA Forest Service, RMF and RES).

Keith Paustian traveled to Columbus, Ohio, to meet with Rob Parmelee, Clive Edwards, Peter Groffman and other investigators involved in an NSF-sponsored project to study earthworm ecology in arable land. The project is based at Ohio State U. and Keith is a consultant on modeling in the project.

Bill Parton attended the GCTE-LUCC-GAIM-DIS Workshop "Incorporating Land-Use Change Projections in Dynamic Global Vegetation Models" held May 1 - in Manchester, UK.

Dennis Oima attended a VEMAP collaborators meeting in Washington, DC, May 8 -11 and then traveled to Athens, GA to attend a BOREAS PI meeting on May 15-1.

Bill Pulliam attended an EPA Workshop "A Workshop on Regional Assessment of Climate Change Impacts in the Southeast: Vulnerable Resources and Predictive Capabilities" held in Charleston, SC, April 1 -19.

On May 15, Keith Paustian presented results from an ongoing analysis of C sequestration on Conservation Reserve Program (CRP) lands to the NRCS (Natural Resources Conservation Service) in Washington, D.C. The project findings are being used by NRCS in preparing recommendations in the 1995 Farm Bill legislation.

Larry Band and Richard Lammers (University of Toronto) spend May 21-2 at NREL installing a new version of RHESys, and making a series of model runs for Loch Vale Watershed and the Big Thompson River as part of the NBS-funded Colorado Rockies Global Change Project. Lammers will be presenting some of these results at the American Geophysical Union spring meeting in Baltimore, MD, May 0 -June .

The 4th Periodic LVWS/WEBB Meeting was held March 9, 1995 in the NREL Conference Room. Those attending and contributing were: Jill Baron, Don Cline, Melannie Hartman, Dave Clow, Julie Sueker, Paul Brooks, Don Campbell, Dan Binkley, Diane McKnight, Peter Kiffney, Mark Williams and Tom Chase.

A paper authored by Mohammed Kalkhan, Tom Stohlgren and Mike Coughenour and titled "An investigation of biodiversity and landscape-scale gap patterns using double sampling: A GIS approach" was presented by Mohammed at the 9th International Symposium on GIS for Environmental, Natural Resource and Land Information Management in Vancouver, Canada on March 2 -April . While in Canada, he also visited Forestry Canada, Center of Remote Sensing and GIS.

Mike Coughenour presented a paper titled "Stress Effects on Future Terrestrial Carbon Fluxes" on May 1 at the IGBP -GCTE Workshop at Lake Tahoe. He will be presenting a paper in Pietermaritzburg, South Africa in July at the World Resource Modeling Conference. After the conference Mike will participate in a workshop on "Sustainability of Herbivore-Vegetation

Interactions in Semi-arid Environments" at Ilala Game Reserve near Durbin, South Africa. Jim Ellis will also be attending the conference and workshop.

Melannie Hartmann presented "Simulations of Snow Distribution and Hydrology in a Mountain Basin" at the GPAC Workshop on Computer Applications in Water Management in Fort Collins on May 24.

Jeff Welker attended the 1995 Science Workshop for the NSF Arctic System Science, Land-Atmosphere-Ice Interactions research program at Orcus Island, Washington. An overview of his studies on tundra ecosystem responses to changes in winter and summer climates was presented including plans for CO₂ flux work in 1995 and isotopic measures of water sources in tundra plants.

Rob Kremer presented a talk titled "Spatial Data Resolution Compatibility for Regional to Global Modeling Input" on May 0 in Boulder at the Intl Workshop on Global Databases Global Land 1 - km Base (GLOBE) Project Coordinated Meetings.

Jeff Welker attended an NSF-Office of Polar Programs sponsored workshop at the Bodega Marine Laboratory, CA in March 1995 to discuss future logistic and scientific research activities at the Toolik Lake Field Station in Alaska. Based on the workshop the US arctic research community has produced a document recommending expanded NSF investment in the field stations infrastructure and continued support of interdisciplinary studies.

Keith Paustian attended a NATO Advanced Research Workshop on "Evaluation of Soil Organic Matter Models Using Existing, Long-term Datasets", at Rothamsted Experiment Station, UK.

Keith presented a paper on "The North American long-term site network". Keith and Ted Elliott were on the organizing committee for the workshop.

Jeff Welker and Andy Parsons helped organize and attended the 6th International Tundra Experiment (ITE) workshop in April, 1995 in Ottawa, Canada. Jeff presented a paper titled "Comparative responses of *Dryas* to ITE environmental manipulations: A synthesis with circumpolar comparisons." Andy and Jeff presented a poster titled "Comparative growth responses of *Vaccinium* species to ITE environmental manipulations in Sweden and Alaska" and they presented a paper titled "Experimental snowdepth manipulations: Effects on plant nutrients and implications for caribou". All three papers are to be published in a special issue of Arctic and Alpine Research (AAR) based on the ITE meeting.

Chuulun presented a paper for Dennis at the Workshop on Land-Use and Land-Cover Changes in Europe and Northern Asia in Laxenburg, Austria April -5. Due to an over zealous customs agent in Frankfurt he was sent back to Austria for a couple more days while his visa problems were straightened out Glad you made it back Chuulun

NREL Seminars

March 10. Dave Schimel - "Modeling and Remote Sensing of spatial Variability in Ecosystem Processes: Intercomparison, Evaluation and the Role of Disturbance."

March 17. Dr. Lucas Bouwman, DLO Research Inst. for Agrobiol. and Soil Fertil., Haren, The Netherlands - "Effects of Bacterivorous Nematodes on C- and N-Mineralization as Measured in Microcosms with Arable Soil Under Absence and Presence of Competition for Food by Protozoa and Preation by Nematophagous Fungi."

March 24. Dave Valentine - "Methane Uptake and Nitrous Oxide Emissions at the CPER: A Four Year Data Series and One Year Modeling Effort."

RESEARCH ASSOCIATE
(Laboratory Manager)

POSITION:

Research Associate, Natural Resource Ecology Laboratory and Department of Rangeland Ecosystem Science, Colorado State University, Fort Collins, CO. Research projects are focussed on elucidating the function of nematode biodiversity in managed and unmanaged ecosystems (for example, Antarctic Dry Valleys, Central Plains Experimental Range (CPER)-Long Term Ecological Research (LTER) site, and Michigan State University-Kellogg Biological Station LTER).

QUALIFICATIONS:

M.S. preferred in ecology, microbial ecology, biogeochemistry, plant pathology, or a related field. Background in soil ecology or nematology desired, but not required.

JOB DESCRIPTION:

Supervision, coordination, and maintenance of soil ecology laboratory.

Responsibilities include the establishment and maintenance of field, laboratory, and greenhouse experiments, in addition to:

- Supervision of research associates and student workers
- Collecting and processing soil samples to determine biotic, chemical and physical properties
- Identify and enumerate free-living and plant parasitic nematodes
- Maintain laboratory equipment
- Coordinate data entry, assist with data analysis
- Participation in preparing research proposals and papers

The successful applicant must have supervisory experience and strong organizational skills. Further, it is essential that the candidate possess interpersonal and communication skills for working with other members of the laboratory in a team effort. Additional preferred skills include experience in one or all of the following:

- Nematode and/or soil microbial extraction methods.
- Statistical analysis.
- Isolation, purification, and maintenance of laboratory microbial cultures.
- Utilization of computer software for spreadsheet analysis, word processing, routine statistical analysis, graphics, and communications.
- Biogeochemical soil analysis.
- Molecular applications in soil ecology

BEGINNING DATE: Fall, 2000

SALARY RANGE: 200,000 - 250,000

APPLICATIONS:

Applications must be postmarked by August 15, 2000. Forward complete curriculum vitae, including academic transcripts, description of research interests and goals, and the names, addresses, and phone numbers of three references to:

*Dr. Diana Freckman / Dr. Robert Niles
Natural Resource Ecology Laboratory
Colorado State University
Fort Collins, CO 80523-1499
(970) 491-1965 FAX*

Additional information may be obtained by contacting Dr. Freckman at (970) 491-1965 or Dr. Robert Niles at (970) 491-1965.

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Colorado State University

Fort Collins, CO 80523

[webmaster@nr.cstate.edu](#)