NREL NEWS NOTES

NATURAL RESOURCE ECOLOGY LABORATORY
Colorado State University

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Announcements

Diana Wall was elected President-Elect of the Ecological Society of America. She will take office in August at the ESA meeting.

Tom Stohlgren completed a special assignment on the "Tiger Team" to design a long-term monitoring initiative for the San Francisco Bay. This was a joint effort with the State of California and the Federal government (primarily the USGS/DOI) to improve ecosystem monitoring of the Bay. The seven-member team prepared a conceptual plan for the Secretary of the Interior. Tom won a USGS "Special Services Award" for his efforts.

Tom Hobbs, Dave Theobald and Tammy Bearly gave a demonstration of the Natural Diversity Information Source to Colorado Legislators at the Governor's Mansion on Feb. 14.

A new book has just been published by CRC Press titled "Soil Organic Matter in Temperate Agroecosystems: Long-Term Experiments in North America," edited by Eldor A. Paul, Keith Paustian, Ted Elliott and Vern Cole.

Meetings

COLORADO

Diana Wall and Andy Parsons attended the McMurdo LTER PI meeting in Boulder on Feb. 28 and Mar. 1. Discussions ranged from reports of the previous season's science, budgets for the forthcoming year, and the acquisition of video cameras for use by the PI's which would allow them to produce video conferences over the internet.

Jill Baron attended the National Park Service Air uality Division and Rocky Mountain National Park meeting to identify what is and is not known about transport and effects of N deposition to ecological resources of the Rocky Mountains, Feb. 5 in Denver. Jill and her team of colleagues were featured in the Fort Collins Coloradoan on Feb. 1. Their research on nitrogen deposition in the Rocky Mountains is becoming famous for its quality.

Two talks were presented by Tom Stohlgren at the Mid-Continent Ecological Science Center (MESC) All-Center Meeting in Fort Collins, Feb. 24-2. The talks were titled "Weed Invasions in the Central Grasslands and Colorado Rockies" and "Global Change Impacts to the Rocky Mountains."

NATONAL

Tom Stohlgren and Jill Baron attended the USGS/Biological Resources Division Global Change Program Review on Feb. 10 in Phoenix, A. The review included a summary of Colorado Rockies global change research, and focused on future research direction. Tom presented the "Capstone Presentation" for the 28 terrestrial projects in the USGS Global Change Research Program.

Jill Baron and Tom Stohlgren participated in the Scoping Workshop on the Effects of Climate Change to the Rocky Mountains and Great Basin, sponsored by the US Global Change Research Program, co-organied by Jill Baron and Fred Wagner (USU) in Salt Lake City, UT, Feb. 1 -18.

Tom Stohlgren attended a meeting of the Public Affairs Committee of the Ecological Society of America on Feb. 2 -28 in Washington, DC.

Mike Coughenour attended a workshop at the National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, on Feb. 18-22 titled "Development of a Consistent Worldwide Net Primary Production Database."

Tom Hobbs attended the Ecological Society of America Working Group on Land Use Change at Oak Ridge National Laboratory, Oak Ridge, TN, on Jan. 25-2.

Jill Baron participated in a planning meeting to develop a long-term ecological research program for ellowstone National Park, Boeman, MT, Jan. 1 -Feb. 4. This initial effort included USGS administrator Mark Shaeffer (Acting Director of USGS) and LTER administrator Bob Waide (LTER Coordination Office), and is the beginning of an effort to develop long-term research.

NTERNATONAL

Mike Coughenour and Kathy Galvin participated in a workshop hosted by USAID and the International Livestock Research Institute titled "Modeling Land-Use in East Africa." The workshop was held in Nanyuki, Kenya, Dec. 9-12.

Kathy Galvin was an invited speaker at "Forum '9: New Linkages in Conservation and Development" in Istanbul, Turkey, Nov. 1 -21.

Diana Wall was the keynote speaker at a workshop promoting research on soil biodiversity and its significance for sustainable agriculture in Australia. The workshop, "Managing Soil Biodiversity for Agricultural Sustainability," on RD directions, was held at CSIRO Entomology Division, Canberra, Australia, Feb. 1, and was attended by representatives from science, agriculture and the government. While in Australia, Diana also presented a seminar on soil biodiversity at the CSIRO Land and Water Division in Adelaide, Feb. 19.

isitors

Dr. Philip Thornton, an economist from the International Livestock Research Institute, Nairobi, Kenya, will visit NREL March 1 -20. He is a team member of the USAID funded Global Livestock-CRSP project and will be working with Kathy Galvin on developing a socioeconomic submodel for

SAVANNA. Dr. Thornton will present a seminar at NREL on March 18 titled "A Conceptual Approach to Land Use Modeling for Impact Assessment Applications."

Don Peden, Canadian International Development Research Council (IDRC), visited the NREL on Feb. 2. Don did his Ph.D. with George Van Dyne in the early 190's, on trophic ecology of bison. He is in charge of agroecosystem initiatives for a new IDRC program called "Ecosystem Approaches to Human Health." The basic assumption is that humans are part of the ecosystems that support them and that better ecosystem management is a cost-effective alternative to improving human health.

Carlos Cerri, Director of Centro de Energia Nuclear na Agricultura in Piracicaba, Brail, visited the NREL, Feb. 5-. Dr. Cerri is internationally known for his use of stable isotopes in studies of organic matter and nutrient dynamics in forests and agricultural systems in Brail. Dr. Cerri presented a seminar on Feb. at NREL titled "Stocks and Dynamics of Soil Carbon Following Deforestation of Pasture in Amaonia."

Miguel Acevedo from the University of Northern Texas and a group of visitors from Veneuela Electrification del Caroni (EDELCA) visited Mike Coughenour, Dave Swift, Jim Ellis and Kathy Galvin, to discuss possible research in the State of Suayana, Caroni and Guri River Basins.

Reserc Actiities

wiin Tree Study

Dan Binkley took a crew of ecology graduate students (Sigrid Resh, Jason Kaye, Margot Kaye, and Rod Chimner) to Hawaii to do a final study on the effects of N-fixing and non-N-fixing trees on ecosystem productivity, biomass, and soils. The 1 -year-old plantation has outlived its planned lifespan by 10 years, and Dan and colleagues have submitted a proposal to NSF to harvest this first generation of trees and examine their legacy on site fertility into the second generation.

Ecudorin Amon roect

Buck Sanford was in the Ecuadorian Amaon, Jan. -2, with Sally Horn (University of Tennessee) working on soil charcoal amounts and distribution in lowland tropical soils. They also found and sampled several sites with "buried" forest that have been exposed by river cut-banks.

Antrctic ied Seson

Diana Wall and Andy Parsons, along with Ross Virginia and Melody Burkins from Dartmouth College, traveled to McMurdo Station in Antarctica at the end of December. They joined Amy Treonis and Dan Bumbarger who had been 'on the ice' since early November 199 with Ed Kuhn. Ed had returned to Fort Collins shortly before Christmas.

Despite poor weather on the continent this austral summer (which caused many delays in transport to and from Antarctica), the field team was extremely lucky and managed to get out to the field and take samples on schedule. This season, work associated with the McMurdo Dry Valley LTER was continued, and Amy was in the second field season of experiments for her Ph.D.

While in the Dry Valleys, Cory Dean, Science Editor for the New ork Times visited with the LTER group, and wrote an excellent article entitled "In an Antarctic Desert, Signs of Life." The work on soils and soil organisms was featured prominently (Feb. , 1998 issue), and there was even space for a wistful Dan Bumbarger quote about listening to glaciers creak in the sun.

An article featuring Amy Treonis appeared in Soils News, a publication produced by Decagon, the manufacturers of 'Tru Psi,' a thermocouple psychrometer that measures soil water potential. Amy has had considerable experience using the Tru Psi in Antarctica, and this aspect of her work was

highlighted in the article.

rdute Student News

Lisa Schell successfully presented her second semester graduate presentation titled "Assessing the Environmental Health of a Community: A Case Study in Leadville, CO," at the Prescott College Colloquia in Prescott, A, on Feb. .

Lisa Schell is a veteran Science-By-Mail volunteer scientist. This year she is mentoring 5 groups of school-aged children (4th-9th grades) through scientific challenge packets. They have completed the first challenge, Scientific Imaging, and are currently working on the second packet titled ACommunications.

The NREL graduate students gratefully thank Dave Bigelow of the UVB Program for donating two Sun workstations for their use

Shauna BurnSilver, Ph.D. student in GDPE, joined the NREL in Jan. She is working with Kathy Galvin in Africa. Welcome Shauna

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Ntion Science oundtion

Mike Coughenour and Jim Ellis were funded 450,000 for a three -year project titled "Integrated Assessment of African Savannas with Spatial-Dynamic Vegetation and Land-Use Modeling." This project will study development of an integrated assessment system built on landscape level simulation modeling that will be capable of being implemented at regional and continental scales. The vegetation model will consider vegetation dynamic responses to herbivory, wood utiliation, fire, and fine-scaled landscape structure. This project will improve our capability to evaluate the impacts of climate change on savannas and other ecosystems where livestock and wildlife graing, fire, and direct human vegetation utiliation are integral components of the ecosystem.

EA

Tom Stohlgren received funding for a one-year project at 124,80 for the proposal titled "Summitville Mine Site Ecological Risk Assessment: Soil, Vegetation, and Livestock Exposure Investigation." Dr. Howard Ramsdell, Environmental Health Center for Environmental Toxicology and Technology, CSU, is the Co-PI. The research team will conduct the multi-scale sampling of vegetation and help select representative species for contaminants analysis.

SDA orest Serice

Tom Stohlgren was funded 50,000 for a one -year project titled "Developing a Multi-scale Sampling Design for Native and Exotic Plants on USDA Forest Health Monitoring Plots." This project is funded by the USDA Forest Service (Ken Stolte, FHM Program, Research Triangle Park, NC) and will be with Merrill Kauffman (Rocky Mountain Forest and Range Experiment Station) and Dan Binkley (CSU). Kelly Bull will train Forest Service personnel in four areas of the country. They will design the protocol that will be used by the FHM program throughout the country to assess understory plant diversity and invasive species.

SAD

Mike Coughenour, Kathy Galvin and Jim Ellis received funding of 25,000/y for years on a proposal titled "Integrated Modeling and Assessment System for Balancing Food Security, Conservation, and Ecosystem Integrity in East Africa." The project will develop an integrated modeling and assessment system (IMAS) to assess livestock-wildlife interactions in pastoral

ecosystems of East Africa. Other senior personnel are: Ann Magennis, James DeMartini, Larry Rittenhouse, Dennis Child, Joyce Acen, Freetham Banyikwa, Edmund Barrow, Robert Davis, James Else, Jan Grootenhuis, Rashidi Kidunda, Jenesio Kinyamario, Russell Kruska, Stephen Mbogoh, Terry McCabe, Patricia Moehlman, Arthur R. Mugisha, Angello Mwilawa, Robin Reid, Paul M. Rwambo, and Philip Thornton

LM

Tom Stohlgren received funding for a proposal titled "Assessing Patterns of Biodiversity in Grand Staircase-Escalante National Monument Using Multi-scale Techniques." The proposal was for 250,000/y for six years. The first year was funded at 150,000 and work will begin this spring. The Stohlgren team will work with Jayne Belnap (USGS/BRD) and Robin Reich (CSU) on the project. Cindy Villa will lead one of the field crews and Geneva Chong will assist in the administration of the project.

MESCRDSS

Tom Stohlgren was funded 50,000/y for a five -year project titled "Rapid Assessments of Exotic Plant Invasions in the Central Grasslands." This project was funded by the MESC/BRD/USGS AWeeds of the West" program. This study will systematically survey hot spots of plant diversity in up to five DOI units - developing a region-wide evaluation of the invasive species problem.

SSNtion r SericeS is nd Widie Serice

Francis Singer and Mike Coughenour received funding for a proposal titled "Ecological Studies of Elk and Bison in the Jackson Hole, Habitat Modeling, Forage Estimation, and Model-Based Analyses of Possible New Management Scenarios" from USGS, NPS and US Fish and Wildlife Service for the years 1998-2001 at 20,000.

Francis Singer, Ted Elliott, Mike Coughenour, and Jeff Welker received ,000 for a one -year extension of "Elk Herbivory, Plant Interactions, and Ecosystem Processes in Rocky Mountain National Park." They will be focusing on several key ecological questions to provide the data the park needs for management decisions on elk, sometime in 1999.

SDSSRD

Mike Coughenour is being funded 11,000 for a proposal titled "Spatial Modeling of ellowstone Bison and Their Environments." The proposed project will study the bison which occupy ellowstone National Park. A simulation model will be adapted to represent these herds, their ecological environments, and how the herds respond to each other and to their environment. This project will impact the public good and is of special interest because it will aid management of the ellowstone bison.

SS

Mike Coughenour received funding for a subcontract proposal titled "Ecological Studies of the Jackson Bison and Elk Herds" from USGS/NPS/BRD/Wyoming Game and Fish Dept. for 45,000. The project will study bison ecological carrying capacity. This impacts the public good and is of special interest because the bison problem is of enormous national priority. This study may enable managers to alter the numbers of bison and/or elk and/or reduce artificial feeding in order to reduce the Brucellosis threat to domestic cattle.

CANON nc

Francis Singer received 50,000 in funding from CANON Inc. for one year to complete restoration of bighorn sheep in Colorado National Monument, Capitol Reef, and Badlands National Parks.

Coordo itt rtnersi rogrm

Tom Hobbs, Mike Coughenour and Jim Ellis were awarded 55,959 for one year for their proposal titled "An Ecosystem Approach for Comparing Alternatives for Managing Elk Populations."

Kathy Galvin and Jim Ellis received funding of 58,914 for years on a proposal titled "Uses of Climate Forecast Information in the Livestock Sector of the Arid Regions of South Africa." The proposed project will study how commercial livestock users and small-scale livestock producers respond to climate information and how they might respond better with information that is more appropriate to their needs. This project impacts the public good or is of special interest because of the potential added value of useful climate information to ranchers in a region with high climate variability.

Tom Stohlgren and Dan Binkley submitted a proposal to USDA titled "FHM Vegetation Structure Pilot."
A proposal titled "uantifying Carbon Sequestration Potential Through Improved Pasture Management" was submitted to EPA by Keith Paustian and Ted Elliott.

John Gross, Dave Theobald and John Loomis submitted a proposal titled "Assessing Consequences of Land Conversion on the Value of Environmental Amenities" to EPA.

Diana Wall submitted a proposal titled "McMurdo Long Term Ecological Research" to NSF.
A proposal titled "Biogeochemical Controls on CO2 and N2O Exchange at Different Scales Under Elevated Atmospheric CO" was submitted by Bill Parton, Arvin Mosier and Jack Morgan to NSF.

Diana Wall and Andy Parsons submitted a subcontract proposal to Dartmouth College/NSF LExEn Program titled "Environmental Extremes and the Biodiversity of Antarctic Soil Communities."

A subcontract proposal titled "Ecosystems in Extraterrestrial Systems" was submitted to NASA Astrobiology/University of Colorado, Boulder by Diana Wall, Dennis Ojima, Bob Phillips, C. Waldren, E. Kelly, D. Klein, ANS Reddy, R. Pielke, A. Mosier, G. Coulter, B. McClain, K. Willmoth and W. Parton.

Dennis Ojima, Roger Pielke and Bill Parton submitted a proposal to NSF titled "Collaborative Land Atmosphere Transfer Experiment (C-LATTE)."
Mike Coughenour, James DeMartini and Kathy Galvin submitted a proposal titled "An Ecological and Veterinary Approach to Wildlife and Livestock in Uganda."

A Science and Technology Center (STC) proposal from CSU, titled "Integrated WATER and Watersheds Programs" was submitted to NSF by Neil Grigg, Jill Baron, Jorge Ramire, Roger Pielke, and Jack Stanford.

Mike Coughenour submitted a proposal to NASA/TECO/University of Ariona titled "Modeling Ariona Oak Savanna Responses to Climate, Graing, Fire and Exotic Grasses."

Jim Ellis, Kathy Galvin and Mike Coughenour submitted a proposal titled "Living with Uncertainty" to USDA.
A proposal titled "Applying Dynamic Modeling and Adaptive Management to Brucellosis" was submitted to USDA by John Gross (NREL) and Bruce Lubow (Coop Fish and Wildlife Research, CSU).

Keith Paustian submitted a proposal to USDA titled "Developing Soil C Sequestration as a Commodity, for CO2 Emission Mitigation in U.S. Agriculture."
Francis Singer submitted a 5 year proposal to USGS titled "Biological Effects of Different Ungulate

Population Management Scenarios and Ungulate Restoration."

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The NREL Foundation Committee consisting of Chairman Dave Swift, and members Dennis Ojima, Kathy Galvin, Bert Cushing and Vern Cole, will meet to determine procedures for distribution of donated funds.
New contributions to the NREL have been received from:

Dr. Pam Matson
Dr. Tom Lovejoy
Dr. David Schimel

Dr. Bert Cushing

Dr. C.E. (Bert) Cushing donated the series of books, "Ecosystems of the World." Bert is an ecosystem scientist who works on freshwater systems. He recently retired from the Environmental Sciences Department at Batelle-Pacific Northwest Laboratories in Richland, Washington, and relocated in Estes Park, Colorado. We are happy to have Bert so close and will benefit from his expertise as a scientist and as a former editor of the Ecological Bulletin of the Ecological Society of America.

Dr. Bennett Wall

Dr. Bennett H. Wall graciously donated 2 volumes of the Journal of Southern History and Louisiana History volumes to Morgan Library on behalf of the NREL. Dr. Wall is a retired history professor from the University of Georgia and Tulane University.

Bill Parton was also a donor to the NREL fund raising effort. Bill's name was inadvertently omitted from the list of donors reported in NREL News Notes issue 24. The generous contributions to NREL are greatly appreciated - and we apologie for this oversight

Carlo Popoliio has joined NREL as the crew leader and biologist on Francis Singer's study of bison and elk in Jackson Hole. Welcome to the NREL, Carlo

Jill Baron and Dennis Ojima were judges at the Rivendell Elementary School Science Fair on Feb. .

"An adventure is an inconvenience properly considered"

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