NREL NEWS NOTES

NATURAL RESOURCE ECOLOGY LABORATORY
COLORADO STATE UNIVERSITY

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Spotlight on Science

Featuring: Elisabeth Holland - NCAR/ACD & NREL

Beth Holland is a member of the Global Modeling Group of the Atmospheric Chemistry Division of the National Center for Atmospheric Research (NCAR) and a research scientist affiliated with NREL. Beth is currently working on bio-atmospheric nitrogen deposition on terrestrial carbon uptake and the importance of NO emitted from soils to atmospheric chemistry. Some of her papers are listed in the NREL News Notes Publications Section. Beth was recently awarded the Directorship of a NATO Advanced Study Institute on "Soils and Global Change: Trace Gases, the Carbon Cycle and Hydrology" to be held at the Chateau de Bonas, France, June 16-17, 1997. As she puts it, "the NATO ASI and my affiliations with NREL, CSU and CU give me all sorts of opportunities to interact with students which I love."

Beth is a true NREL product. She started working at NREL with Dave Coleman and Bill Parton in 1980 as an undergraduate research assistant on a belowground project. Her first research project was on "Dew formation influences on soil respiration." Since 1982 when Beth received her B.S. in Zoology at CSU, she has gone on to lead a varied and successful research career. She did research on interactions between litter placement, bacterial vs. fungal decomposition and soil organic matter stabilization for her MS in Agronomy with Dave Coleman, Ken Doxtader and Bill Parton (1985). In 1988, Beth received her Ph.D. in Rangeland Ecosystem Science, working on how herbivory influences on plant carbon allocation affected nitrogen cycling as part of the Wind Cave Project with Jim Detling. She still credits Vern Cole and his argumentative style for providing the training and practice needed for persistence in science.

In September 1988, Beth left NREL for a Stanford post-doctoral fellowship with Hal Mooney and Peter Vitousek. Stanford was an amazing contrast with NREL. Stanford discussions were intense and required an instant in depth analyses of the issues while scientific discussions at NREL could go on for weeks. At Stanford, Beth worked on nitrogen cycling in a serpentine grassland and began her involvement with the NSF-funded Jasper Ridge CO2 project with Chris Field, Terry Chapin and Hal Mooney. In late 1989, Beth returned to Colorado to work at NCAR.

Two aspects of the NREL experience have served Beth particularly well: (1) the emphasis on modeling and truly quantitative analysis and (2) the willingness to tackle interdisciplinary problems with the critical thought and in- depth analysis that they deserve.

We are pleased to highlight another of our outstanding scientists.

Announceents

Dave Swift was presented an award for "Outstanding Professor 1995-1996" by the Rangeland Ecosystem Science Department. Congratulations, David, Nice Job□□

Diana Freckman has been awarded a University of California - Davis, Bodega Marine Laboratory Distinguished Research Fellowship for summer 1988. Recipients of this fellowship are scientists of outstanding accomplishment and reputation.

Jim Detling returned from a sabbatical at CSIRO□s National Rangeland Program in Canberra, Australia on April 27. Welcome home, Jim□

David Valentine has accepted a tenure track position in Forest Soils in the School of Agriculture and Land Resources Management at the University of Alaska, Fairbanks. This will enable him to stay in the same town as his daughter, Kirsten, who will be moving to Fairbanks this fall. The University of Oklahoma understood the situation and has graciously released Dave from his commitment there this fall. Dave and By will be leaving for Alaska around August 1 and his job begins September 1, 1996. His time will be split, 60□ research, □0□ teaching, and 10□ service. He will be teaching 2 courses per year, one in undergraduate forest soils (junior level) and the other a graduate course of his choice. Dave and By will indeed be missed at NREL and we all wish you a great deal of success in your new job□

Geneva Chong recently returned from Honduras where she worked with the Partnership for Biodiversity in the Mosquitia (or Mosquito Coast). She evaluated a butterfly farm in the Rio Platano Biosphere Reserve that was started by the Peace Corps, San Diego Zoological Society and MOPAWI (a Honduran non-governmental organization). She had a fantastic time, and hopes her recommendations will help the farm meet its goals of ecological and economic sustainability.

The PROGRAM and ABSTRACTS for the 1996 combined Ecological Society of America, Society of Conservation Biology, Association for Tropical Biology, American Association of Naturalists, and International Society of Ecological Modeling Annual Meeting were sent to Allen Press for printing and publication. A million thanks go out to the NREL Production staff: Becky Techau, Melissa Baker, Amy Whitehead, Shauna Bowler, Michelle Nelson, Suzy Lutz and Brian Newkirk. At □650 pages, this was a herculean effort□□This year□s meeting at Providence, Rhode Island on August 11-1□, 1996, has 2050 presentations in 15□separate sessions.

Meetings

Colorado

Dennis Ojima attended the NIGEC Scientific Advisory Committee for the NIGEC Great Plains Center on Jan. 19-20 in Boulder, CO. He attended the Cooperative Atmospheric Surface Exchange Study (CASES) meeting in Boulder on Feb. 22-2□and is co-chairman for Ecological Research.

Bill Parton presented a talk for the Chemical Engineering Seminar Series on Feb. 16 at CSU. His talk was titled "Development of Ecological Models and Use for Environmental Assessment." On March 19, Bill Parton presented a "fireside" talk to the Society of American Foresters Student Society at CSU

titled "Simulated Impact of Environmental Change on Forest Systems: Fact or Fiction."

Mohammed Kalkhan and Tom Stohlgren presented a talk titled "Assessing the Accuracy of Landscape-Scale Vegetation Diversity Using Double Sampling" at the Sixth Biennial Conf. on Remote Sensing Application in the U.S. Forest Service held Apr. 29-May in Denver, CO.

John Gross and Cynthia Melcher attended a meeting on "Ranking Conservation Priorities of Fish in Colorado" in Montrose, Colorado on April 0. They presented a demonstration of COVERS, the Colorado Division of Wildlife sponsored system for evaluating conservation needs of vertebrates, to Division of Wildlife biologists and gathered information on the ranking system and ecology of western slope fish species.

Jim Detling and Dan Milchunas met with Mark Ritchie (Utah State University) on May 6-7 to discuss plans for this field season for the Cross-site project on the effects of different sized herbivores on grasslands, and to plan for resubmitting an NSF-Ecosystem proposal on this topic.

Jill Baron presented a summary of how long-term ecosystem research can be applied to resource management of Department of Interior lands at a U.S. Geological Survey Policy Council meeting in Denver, CO, May 16. The Policy Council is an executive committee made up of the Director, Associate Directors and Division Chiefs of the USGS.

Richard Flagler, Linda Boren-Burrous, Gary Lear and Molly Welker attended the NADP Executive Committee meeting in Estes Park, CO, May 1 16.

Indy Burke, Bill Lauenroth and Jim Detling met on Monday, May 20, with two scientists from the Philadelphia Academy of Science and two visiting scientists from the Mongolian Academy of Science to discuss the shortgrass steppe LTER and the potential for setting up an international LTER program in Mongolia.

Mohammed Kalkhan helped organize the "Spatial Accuracy Assessment in Natural Resources and Environmental Sciences: Second International Symposium" held at CSU, May 21-2 The symposium dealt with spatial statistics, remote sensing, GIS, landscape analysis-patterns, point data analysis, accuracy assessment, and sampling methods in remote sensing. The meeting was attended by more than 00 people from all over the world.

Bill Davis and Bob Gilpin are hosted the Colorado Ingres Users Association meeting on June , 1996, at the CSU Lory Student Center, Room 22 226, from 8 am to 5 pm. The topics presented were: An Introduction to JAVA, Perl Programming, WWW Access to Ingres Databases, and a demonstration of the latest version of CA-OpenRoad.

National

Richard Flagler, Gary Lear, Bob Gilpin, and Molly Welker attended the NADP Technical Committee meeting in New Orleans, LA, April 1-

Tom Kirchner was invited to advise the National Research Council s Board on Radiation Effects Research on the topic "Pathway Model Evaluation." The meeting was held on April 2.

Mike Coughenour was an invited speaker in the Dyksterhuis Distinguished Lecture Series, Department of Rangeland Ecology and Management, Texas A M University, April 9. His presentation was titled "Spatial-Dynamic Analyses of Plant-Herbivore Interactions in Pastures, Landscapes, and Regional Ecosystems." He was the first speaker in this new lecture series established and endowed by the friends, family and colleagues of the late Dr. E. J. Dyksterhuis, who is best known for his development of a widely used system for evaluating range condition and trends.

Diana Freckman was an invited participant at an NSF-sponsored workshop to form a U.S. Organization for Biodiversity at the University of California - San Diego Super Computer Center on April 11-1, in San Diego, CA.

Richard Flagler organized and chaired a one-day workshop on "Air Pollution Injury to Vegetation" on April 15 in Raleigh, NC. He also attended the Air Pollution Workshop which was held April 16-18 in Raleigh and met as a member of the steering committee for this organization.

Diana Freckman presented a seminar for the Biological Sciences Department, Stanford University, Stanford, CA on April 15 titled "Low Biodiversity Soil Ecosystems: The Antarctic Dry Valleys."

Jill Baron attended the National Biological Science Annual Watershed Studies meeting, April 16-20, in Big Bend, T. She presented an overview of progress on the Loch Vale research site.

David Theobald gave a presentation on "Conserving Wildlife Habitat at the Urban/Rural Interface" as part of the National Resources Week Symposium at Utah State University, Logan, UT, April 17-19.

Richard Flagler presented an overview on the NADP to the Southern Assoc. of Agric. Exp. Station Directors at their spring meeting in Las Cruces, NM, on April 22.

Diana Freckman was selected as the Clare Boothe Luce speaker at Creighton University, Omaha, NE. She presented a seminar, on April 22-2, to the Clare Boothe Luce Women in Science Program, "Women as Scientific Leaders" and was the banquet speaker for the annual Environmental Science Program on the subject "Soil Biodiversity - Importance to Ecosystem Processes."

Diana Freckman attended a reception at the home of Maggie Bryant and Family at Locust Hill Farm in Middleburg, VA, for a fund-raising event on May 5. She presented a talk titled "Is Two-Thirds of the World's Biodiversity Beneath our Feet?"

On May 6-7, Richard Flagler visited the Illinois State Water Survey to meet with contractors for NADP analytical chemistry services. He presented a seminar to the Atmospheric Sciences group entitled "Acid Rain and Ozone Effects on Southern Pines: A Summary of NAPAP Results."

David Theobald presented a paper titled "Forecasting the Effects of Land Use Change on Wildlife Habitat in Summit County, Colorado" at The Sixth International Symposium on Society and Resource Management in State College, PA, on May 21.

Diana Freckman attended the Smithsonian Institution/MAB Biodiversity Program (SI/MAB) 1996 International Biodiversity Measuring and Monitoring Course Conservation and Research Center (CRC) meeting on May 0 at Front Royal, VA, and presented a talk titled "Soil Biodiversity Importance to Global Processes."

Jim Zack attended the 1996 ESRI User Conference in Palm Springs, CA, May 20-2. Topics of the conference included: ARC/INFO for Windows NT SurfaceScene for creating interactive fly-bys and VTML images MapObjects as data for Visual Basic, Visual C, Delphi, PowerBuilder applications GIS and the Internet (MapObjects as data for Java applets) GRID and Network extensions for ArcView 0 and Improved Spatial Database Engine (SDE) support.

nternational

Dennis Ojima traveled to Mongolia and China to meet with collaborators working on a three year project on land use/cover change in Asia. In Mongolia, he met Chuluun Togtohyn (NREL Visiting Scientist), who continued the trip with Dennis to China to meet researchers at the Ministry of Nature and Environment in Mongolia and discuss plans for land use/cover change research. They also met

with Dr. Bardach Mendbayarun (Coordinator of International Projects, Ministry for Nature and Environment of Mongolia), Dr. Tserendulamyn Shiirevimba (Vice-Minister, Ministry for Nature and the Environment of Mongolia), and Dr. Dagvadorj (Deptuy Director of Meteorology Office, Ministry for Nature and Environment of Mongolia) regarding global change research and sustainable development in Mongolia. Then at the Mongolian Academy of Sciences, they met Drs. Erdenjav, Jargalsaikan, Sureseren, Bajudosch and Bataar and worked out logistics for the field work in Mongolia this summer.

In Beijing, China, Dennis Ojima and Chuluun Togtohyn attended two meetings. First, the International Symposium on Transect Studies on Global Change and Biodiversity Studies May 6-8. At the transect symposium, Dennis presented a paper entitled "Environmental Gradients Controlling Ecosystem Dynamics in Temperate Ecosystems of Asia and North America," and Chuluun presented a paper entitled "Comparative Survey of Grassland Ecosystems in Northern China and Mongolia." During the meeting, a proposal was accepted to extend the Northeast China Transect into Mongolia to include the rich steppe region of eastern Mongolia and the drier regions of the eastern Gobi Desert. Later, Dennis chaired the Temperate East Asia Committee (EACOM) working group meeting for Land Use/Cover Change studies (LUCC). The objective of the meeting was to clarify the scope of research activities and organizational structure of the TEACO LUCC project. (Drafts are available on request).

Tim Kittel attended an International Workshop on Globally Gridded Transient Climate Data Sets for Biospheric Models at Potsdam Institute for Climate Impact Research, Potsdam, Germany on May 22-2□

isitors

Mark Stafford Smith from CSIRO in Alice Springs, Australia, visited NREL in April and presented a special seminar on April 2 titled "Trying to Link Modeling of Risky Environments with Policy Concerns in the Australian Rangelands."

NREL welcomes Lianne Schroder and Luc Hoogenstein, Masters of Science in Biology students in the last year of their study at the Wageningen Agricultural University, The Netherlands. They are working on the elk ecology research being conducted in Rocky Mountain National Park by Mike Coughenour and Frank Singer. They arrived in early May and will be located at the RMNP.

Dr. □iqi Luo from the Biological Sciences Center, Desert Research Institute in Reno, NV, visited NREL on May 1□ During his visit, he met with Ted Elliott, Bill Hunt, Jack Morgan, Dennis Ojima, Bill Parton, and Keith Paustian. Dr. Luo□s interests are in global change, linking of plant and soil models, modeling photosynthesis pathways and the development of possible research linkages between the Desert Research Institute and NREL.

Dr. Roel Merckx, Professor at the Katholieke University of Leuven, Belgium, arrived on May 25. Dr. Merckx will be working with Ted Elliott and Keith Paustian on their USDA soil organic matter project (KTSOM) with fractionations and the mass spectrometer. He will be visiting NREL until Nov. 2□

Diana Freckman sponsored a visit to NREL by Dr. Valerie Behan-Pelletier (Agriculture Canada, Ottawa, Ontario, Canada)□Dr. John Blair (Konza Prairie LTER, Kansas State U.)□Dr. Leonard Krishtalka, Director, Natural History Museum, U. Kansas)□Dr. Julian Humphries (Ecology □ Systematics, Cornell U.)□and Dr. Tim Seastedt (Niwot LTER, U. Colorado, Boulder) in May to work on a collaborative proposal being submitted in June.

The Deputy Assistant Secretary of the Water and Science, Department of the Interior, Mark Schaefer visited Diana Freckman, Alan Covich and others in the College of Natural Sciences and NREL on

May 2

an Fen Wang, Chinese Academy of Science, Institute of Botany, Beijing, Peoples Republic of China, hosted by Dennis Ojima, Bill Parton, and Arvin Mosier is visiting NREL from May 10 until July 2. She is training in trace gas chamber techniques.

At the 1996 Spring meeting for GDPE, Dan Binkley, Director of GDPE and NREL Associate Director, thanked those who were members of GDPE committees including NREL scientists Dennis Ojima, Kathy Galvin, Bill Lauenroth, and Tom Stohlgren and graduate student Rich Alward. He also noted the teaching contributions of: John Gross, Dave Schimel, Alan Covich, Indy Burke, Bill Lauenroth, Tom Stohlgren, Bill Parton, Jill Baron, Deb Coffin, Jeff Welker, and Ted Elliott. Elections were held for faculty and 2 student representatives for the GDPE Executive Committee: Boris Kondratieff was elected to represent Agricultural Sciences, Alan Covich to represent Natural Resources, and Jim Detling was elected as an at-large representative. Student representatives are Carol Miller and John (Jeb) Barrett.

Robin Martin (NREL graduate student in Rangeland Ecosystem Science Department) presented a seminar titled "Controls on Annual NO Emissions from Soils of the Colorado Shortgrass Steppe" on April 2 at the Lory Student Center.

Richard Alward received an LTER Research Fellowship which will assist him in conducting a research project at the CPER titled "How will Asymmetric Temperature Increases Influence Shortgrass Steppe Plant Communities and Plant-Herbivore Interactions"

Geneva Chong received a Colorado Fellowship from the Graduate School for Fall 1996.

Andres Cibils successfully defended his M.S. thesis on April 22. Members of his committee were: David Swift, Bill Lauenroth and Dave Steingraeber. Congratulations, Andres and Good Luck in Graduate School

Diana Freckman and Bob Niles received word that their proposal titled "Nematode Biodiversity in Ecosystems Stressed by Extremes of Temperature" was funded by NSF/DEB for 100,000. This is an 18 month project which is to conduct an extensive survey of soil nematodes inhabiting ecosystems in the western United States stressed areas. Nematodes will be surveyed from the Chihuahuan Desert Jornada Long Term Ecological Research (LTER) site and the transition zone of the Chihuahuan Desert, Great Basin, and shortgrass steppe (Sevilleta LTER). Nematodes, their descriptions, and site data will be organized in a relational database that will be accessible on the Internet and WWW.

Deb Coffin (NREL and Rangeland Ecosystem Sciences) and George Beck (Plant Pathology and Weed Science) were recently funded by the USDA/ National Research Initiative Competitive Grants Program for the project titled "Invasion of Rangeland by Aggressive Perennial Weeds: Ecology and Management." The goal of the project is to predict the environmental conditions under which the aggressive, perennial weed, Russian knapweed, maintains its dominance through time and the

conditions where native vegetation returns to dominance as a result of succession. The project will use experimental studies and simulation modeling to evaluate the short- and long-term effects of soil texture and precipitation on invasion dynamics of Russian knapweed in rangelands of Colorado. The three-year project will start July 1, 1996 and was funded at □□87,500.

Diana Freckman was funded by USDA/Research, Education and Economics, for "Evaluation Study Proposal." The 1-year grant will consist of 2 meetings: 1 at NREL and 1 at the Smithsonian Institute and will bring administrators of USDA, scientists and economists in a think-tank for The Bioregional Research Meeting.

A proposal titled "Epizootiology of Brucellosis in the Greater □ellowstone Area: A Comprehensive Stochastic Model" was funded by the NBS-State Partnership Program for 18 months at □20,800. PI□s are T. Kreeger (Wyoming Fish and Game), M. Miller (Colorado Division of Wildlife), J. Gross (NREL), and S. Anderson (University of Wyoming). This project will use an individual-based model to simulate the dynamics of brucellosis in elk, bison, and cattle. Simulations will be used to evaluate the potential consequences of management actions including vaccination and removals, and to identify aspects of the disease that are inadequately understood.

Deb Coffin and Bill Parton submitted a proposal titled "Vulnerability of Chihuahuan Desert Grasslands and Dominant Plant Species to Global Change" to NSF.

A proposal titled "Developing a Multi-agency, Multi-scale Vegetation Sampling Program for the Central Grasslands" was submitted to USDI/National Biological Service Inventory and Monitoring by Tom Stohlgren and Mike Coughenour.

Frank Singer and Mike Coughenour submitted a continuation proposal titled "Population Estimation, Plant Interactions, Forage Biomass and Offtake, and Carrying Capacity Estimation of Elk in the Estes Valley" to USDI-NPS.

A proposal titled "Assessment of C □ N Dynamics in Changing Landscapes with Linked Succession Biogeochemistry Models" was submitted to NSF/TECO/Texas A□M by Dennis Ojima and Dave Schimel.

Tom Stohlgren, Frank Singer and Mike Coughenour submitted a proposal titled "Declining Native Plant Diversity Caused by Invasive Weeds and Interactions with Grazing: A Multi-State and Multi-Agency" to NBS/NPS (Denver).

Tom Stohlgren and Mike Coughenour submitted a proposal to NBS/NPS (Denver) titled "Developing an Inventory and Monitoring Plan for Rocky Mountain National Park."

Mike Coughenour submitted a proposal titled "Evaluation of Livestock Distribution: Potential of Improving Riparian Conditions and Water □uality" to NSF/Montana State University.

Dan Milchunas submitted a proposal titled "Assessment of Biodiversity on U.S. Rangelands" to the U.S. Forest Service.

A proposal titled "U.S. Agroecozones using GIS in Colorado" was submitted by Ted Elliott to USDA/ARS.

Tom Hobbs and John Gross submitted a proposal titled "SCOP: A System for Conservation" to

Colorado DOW.

Deb Coffin, J. Gosz (Univ. New Mexico), M. Cain (New Mexico State U.), B. Milligan (New Mexico State U.), T. Mulhern (Univ. New Mexico), Bill Parton, and J. Vande Castle (U. Washington) submitted a proposal titled "Vulnerability of Chihuahuan Desert Grasslands and Dominant Plant Species to Global Change" to NSF/DOE/NASA/USDA Joint Program on Terrestrial Ecology and Global Change.

Chase, T.N., R.A. Pielke, T.G.F. Kittel, R. Nemani, and S.W. Running. 1996. Sensitivity of a general circulation model to global changes in area index. J. Geophys. Res. 101:7□9□-7□08.

Chen, D.□., M.B. Coughenour, J.S. Thullen and D. Eberts. 1995. Assessment of responses of Hydrilla verticillata to atmospheric change with modeling predictions for four western United States reservoirs. In: Global Climate Change Response Program. USDI, Bureau of Reclamation, Denver, CO.

Coffin, D.P. and W.K. Lauenroth. 1996. Recovery of vegetation in a semiarid grassland 5□years after disturbance. Ecological Applications 6:5□8-555.

Cole, C.V. 1996. Summary for Policymakers. In: R.T. Watson, M.C. Zinyowera, R.H. Moss, and D.J. Dokken (eds.) Climate Change 1995. Impacts, Adaptations and Mitigation of Climate Change. Contribution of Working Group II to the Second Assessment Report of the IPCC. Cambridge University Press, New □ork. 879 pp.

Copeland, J.H., R.A. Pielke, and T.G.F. Kittel. 1996. Potential climatic impacts of vegetation change: A regional modeling study. J. Geophys. Res. 101:7□09-7□18.

Copeland, J.H., T. Chase, J. Baron, T.G.F. Kittel, and R.A. Pielke. 1996. Impacts of vegetation change on regional climate and downscaling of GCM output to the regional scale. Pages 199-212 in S.J. Ghan, W.T. Pennell, K.L. Peterson, E. Rykiel, M.J. Scott, L.W. Vail (eds.) Reigonal Impacts of Global Climate Change: Assessing Change and Response at the Scales that Matter. Battelle Press, Richland, WA.

Coughenour, M.B. and F.J. Singer. 1996. Elk population processes in □ellowstone National Park under the policy of natural regulation. Ecological Applications 6:57□-59□

Elliott, E.T. and K. Paustian. 1996. Why Site Networks□In: D.S. Powlson, P. Smith and J.U. Smith (eds.) Evaluation of Soil Organic Matter Models. NATO ASI Series 1□8:27-□6. Springer-Verlag, Berlin.

Elliott, E.T., K. Paustian, and S.D. Frey. 1996. Modeling the Measurable or Measuring the Modelable: A Hierarchical Approach to Isolating Meaningful Soil Organic Matter Fractionations. In: D.S. Powlson, P. Smith and J.U. Smith (eds.) Evaluation of Soil Organic Matter Models. NATO ASI Series 1□8:161-179. Springer-Verlag, Berlin.

Frey, S.D. 1996. Workshop of Effects of Management on Forest Soil Carbon: A Report. USDA, Forest Service and EPA General Technical Report NE-217.

Hunt, H.W., E.T. Elliott, J.K. Detling, J.A. Morgan and D.□. Chen. 1996. Responses of a C□and a C□perennial grass to elevated CO2 and temperature under different water regimes. Global Change Biology 2:□5-□7.

Kittel, T.G.F., N.A. Rosenbloom, T.H. Painter, D.S. Schimel, and VEMAP Modeling Participants. 1995. The VEMAP integrated database for modeling United States ecosystem/vegetation sensitivity to climate change. J. Biogeography 22:857-862.

Kittel, T.G.F. Contributing author in Working Group I and II, IPCC 1995 Assessment Reports: Kattenberg, A., F. Giorgi, H. Grassl, G.A. Meehl, J.F.B. Mitchell, R. Stouffer, T. Tokioka, A. Weaver, and T.M.L. Wigley (Lead authors). 1996. Climate models - projection of future climate. Pages 285-□57 (Ch. 6) in J.T. Houghton, L.G. Meiro Filho, B.A. Callander, N. Harris, A. Kattenberg, and K. Maskell (eds.) Climate Change 1995. The Science of Climate Change. Contribution of Working Group I to the Second Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge Univ. Press, New □ork. Beniston, M., and D.G.

Fox (Coordinating Lead Authors). 1996. Impacts and adaptation options for mountain regions. Pages 191-21□(Ch. 5) in R.T. Watson, M.C. Zinyowera, and R.H. Moss (eds.) Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analyses. Contribution of Working Group II to the Second Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge Univ. Press, New □ork.

Lapitan, R.L. and W.J. Parton. 1996. Seasonal variabilities in the distribution of the microclimatic factors and evapotranspiration in a shortgrass steppe. Agricultural and Forest Meteorology 79:11□-1□0.

Parton, W.J. 1996. The CENTUR□ model. In: D.S. Powlson, P. Smith, and U.U. Smith (eds.) Evaluation of Soil Organic Matter Models. NATO ASI Series 1□8:28□-291. Springer-Verlag, Berlin.

Paustian, K., E.T. Elliott, H.P. Collins, C.V. Cole, and E.A. Paul. 1995. Use of a network of long-term experiments for analysis of soil carbon dynamics and global change: The North American model. Australian Journal of Experimental Agriculture □5:929-9□9.

Paustian, K., E.T. Elliott, E.A. Paul, H.P. Collins, C.V. Cole, and S.D. Frey. 1996. The North American Site Network. In: D.S. Powlson, P. Smith, and J.U. Smith (eds.) Evaluation of Soil Organic Matter Models. NATO ASI Series, 1□8:□7-5□ Springer-Verlag, Berlin.

Reid, R.S. and J.E. Ellis. 1995. Impacts of pastoralists on woodlands in South Turkana, Kenya: Livestock-mediated tree recruitment. Ecological Applications 5:978-992.

Cynthia Melcher participated in the annual Audubon Society Birdathon fund raising event on May 10-11. Her group was extremely successful and identified more than 125 species of birds over the 2□ hr. period.

Bill Parton taught the 7th grade science classes (all eight) at Bill Reed Middle School in Loveland on April 10. The topic of his talk was "Biosphere II and African Ecosystems."

Dave Bigelow presented a seminar on acid rain to the 8th grade students at Bill Reed Middle School in Loveland on April 22. He also conducted an Internet Workshop for students at Mary Blair Elementary School in Loveland on May 2.

The Loch Vale Watershed project participated in a national "Stream Interlink" Project organized by the Kentucky Water Watch, during the week of April 22. This is a training program for elementary and high school science teachers across the U.S., who searched for, retrieved, and evaluated stream water quality data from volunteer sites. The purpose was to have science teachers work with actual data, and also learn techniques for Internet data retrieval.

Therese Johnson, a former graduate student at NREL gave birth on April 25 to a 7 lb. 5 oz. baby boy. Congratulations to the new family!!

Krista Alper with her husband Joe, returned on April 21, from a trip to China to get their new baby daughter, Clare. The adoption proceedings took a great deal of time and Clare is now 1 -months old, very bright, and beautiful. She is adjusting quickly to life in the U.S. and her new parents. Congratulations to the very proud and happy new parents!

Vern and Jea Cole vacationed in Ireland and England the beginning of June with their friends, Dr. & Mrs. John Stewart (Dean of the College of Agriculture at the University of Saskatchewan). Dr. Stewart was a gracious tour guide of his native country, Ireland, and they all enjoyed a wonderful time.

There are no seminars scheduled for the summer.

(Field Technician - Ultraviolet Radiation Monitoring Network)

The USDA sponsored Ultraviolet Radiation Monitoring Network at Colorado State University is seeking an individual to install, troubleshoot and repair instrumentation, train operators, and assist in the coordination of the network's field activities. The selected candidate will be expected to become familiar with all aspects of the monitoring program including siting criteria, field procedures, equipment operation and maintenance, data management and general program objectives. Responsibilities will include the acquisition of data telemetered from the monitoring stations, report preparation, and preparation of special data summaries. The field technician will be required to make independent decisions on instrument siting and operation and make both written and verbal presentations to university and federal agency scientists. Considerable travel will be necessary to service sites across the United States.

The network began operation in 199 and presently measures ultraviolet irradiance in 16 states with both broadband and Multi-Filter Rotating Shadowband Radiometers (MFRSR). The position will support the network's planned expansion to 0 sites and its planned addition of instrumentation to existing sites.

The candidate must possess a B.S/B.A. degree in a physical science such as physics, astronomy, meteorology, geology, etc with appropriate experience. Demonstrated knowledge of electronic instrumentation and repair, positional astronomy and optical measurement principles, meteorological siting principles and previous experience as a field technician is highly desirable. Computer experience is essential. Programming experience, especially in a Unix environment is also desirable. Funding of the position is dependent upon continued federal support. Salary is negotiable in the range of 28,000-,000. Minimally qualified candidates will start at 28,000.

Please furnish a current resume and name, address, and phone number of three persons familiar with your professional experience. Send applications to Linda Bandhauer, UV Monitoring Program, Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, CO 8052, no later than . Availability for an interview in Fort Collins required.

NREL News Notes will be published every two months. Please submit your news items to Kay McElwain (Editor) by the last Monday of each month.

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