National Cooperative Soil Survey Newsletter

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Editor's Note

Issues of this newsletter are available on the World Wide Web (http://soils.usda.gov/). Under Quick Access, click on NCSS, then on Newsletters, and then on the issue number.

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Northeast Regional Cooperative Soil Survey Conference

Pennsylvania hosted the 2010 Northeast Regional Cooperative Soil Survey Conference at Elizabethtown College, in Lancaster County, Pennsylvania, June 6-10. State Soil Scientist Ed White opened the Conference describing the new Era in Soil Survey: A new structure, new tools, advanced technology, new opportunities, and an exponentially increasing need to help society make informed decisions.

Monday morning sessions included reports from the Soil Survey Division, National Soil Survey Center, Technical Soil Services, and National Park Service; reports on activities of the National Society of Consulting Soil Scientists; and breakout sessions for committee meetings. During a Monday evening dinner with a "Pennsylvania Dutch" menu, Dr. Donald Kraybill, Senior Fellow of the Young Center for Anabaptist and Pietist Studies, spoke on Amish and Mennonite agriculture and culture throughout the Northeast.

Denise Coleman, State Conservationist in Pennsylvania, opened Tuesday's session with a welcome and discussion of the value of the Soil Survey Program to the USDA, NRCS, state agencies, and the public.The technical sessions included a wide variety of timely topics in soil survey: Storm water issues, Mill Dams and Legacy Sediments, ARS Nutrient and Hydrologic studies, LiDAR data applications, detailed climate analysis for Pennsylvania, ecosystem services and the National Atlas, the National Carbon Accounting Strategy, and the status of the Multistate Hydropedology NE-1038 project from each participating university. Concurrent sessions included Ecological Site Descriptions, the North American Soil Geochemical Landscapes Project,

Soil Interpretations—Productivity and Risk, PaOneStop-Online Conservation Planning tool, Solifluction in the Ridge and Valley, and Soil Based Drought Vulnerability assessment. A well attended poster session followed the presentations.

Wednesday's Technical Tour brought all of the presentations into sharp focus. A morning drizzle, turning into a cold wet rain, did not hamper the enthusiasm or technical discussions of the tour participants. At the first stop the Mid Atlantic Hydric Soil Committee led discussion of the TF-2 Red Parent Material Hydric Soil Indicator. Mill Dams, Legacy Sediments and the sedimentary soils, and a restored Mill Dam flood-plain site (figs. 1 and 2) were observed at the second stop, with Dorothy Merritts and Bob Walters leading the discussions. At the third stop, Patrick Drohan led the group through multiple terrace profiles on the Susquehanna River. After lunch, the group visited Warwick Township to learn about innovative approaches to storm water management, farmland preservation, nutrient management, and wetland restoration and the positive effects these have had throughout the township and to Lititz Creek. Storm water BMPs from porous pavement, bioswales, and basins were observed in action during a period of heavy rainfall. A Hagerstown soil profile highlighted the stop.

Figure 1.—Restored Legacy Sediment Site.

Figure 2.—Frank Stoltzfus discusses the Masonic Village Farm operation as soil scientists observe a Legacy Sediment soil profile.

The final technical tour stop was at the Waltz Vineyard, which highlighted the complexity of viticulture and terrior (soil, climate, and landscape) in the Northeast. Viniculture and viticulture were discussed by owners Jan and Kim Waltz, Farm Manager Jeff Zick, Vineyard Soil Specialist James Fisher, and Cooperative Extension Viticulture Specialist Mark Chien, and field soil profiles were studied in heavy rain. After a long, wet day in the field, Waltz Vineyard hosted a wine tasting and dinner. They were presented with two soil monoliths of their "terrior" (fig. 3).

On Thursday, the six conference committees presented their final reports and the Regional Soil Survey Offices (MO 12, 13, and 14) presented their reports. A need for a Soil Interpretations subcommittee was discussed.

Tony Jenkins, State Soil Scientist in Maine, volunteered to host the 2012 Northeast Regional Conference, likely to be in Orono, Maine, in July.

The 2010 Northeast Region Silver Spade Award was presented to Jim Turenne, NRCS Research Soil Scientist, Rhode Island, by past recipient John Galbraith (fig. 4). Jim was recognized for the innovative work he has done.

Figure. 3.—Left to right, John Chibirka, James Fisher, and Patrick Drohan present soil monoliths to Jan Waltz and Jeff Zick.

Figure. 4.—John Galbraith (left) presenting Silver Spade Award to Jim Turenne.

More than 85 soil scientists (including University of Maryland students for the field tour) attended all or part of the conference. All the presentations, committee and MO reports, and additional photos from the 2010 Northeast Regional Soil Survey Conference are available on the Cooperative Soil Survey Web site (http://soils.usda.gov/partnerships/ncss/conferences/2010/northeast/index.html). ■

Southern Regional Cooperative Soil Survey Conference

The 2010 Southern Regional Cooperative Soil Survey Conference was held from July 12-15 (Monday through Thursday) at College Station, Texas. The following committees presented conference participants with reports and recommendations:

Soil Taxonomy and Standards
Research Priorities
New Technologies
Soil Interpretations
Subaqueous Soil

By voice vote, the conference participants accepted the reports and recommendations, which will be forwarded to the National Cooperative Soil Survey Conference for consideration. Detailed information about the reports and recommendations can be viewed at:

http://soils.usda.gov/partnerships/ncss/conferences/2010/south/agenda.html

A field trip on Wednesday demonstrated state-of-the-art soil mapping tools at the Walnut Creek Lignite Mine in Calvert, Texas. Two sites were mapped, one that has been reclaimed for 12 years (fig. 1) and one native soil site. Directed soil sampling was demonstrated using a map created by a landscape survey sensor that measures bulk soil electrical conductivity. Soil properties and horizon features of collected soil cores were quantified using nondestructive proximal sensing (visible near-infrared diffuse reflectance spectroscopy) of the intact soil core (figs. 2 and 3). Additionally, a site-specific soil nutrient map and associated interpretations were shown.

After the mine tour and demonstration, participants visited a central Texas Vertisol (fig. 4). They were encouraged to collect and take home their own Texas-sized slickenside.

Figure 1.—A reclaimed soil examined during the field trip.

Figure 2.—New technology demonstrated during the field trip.

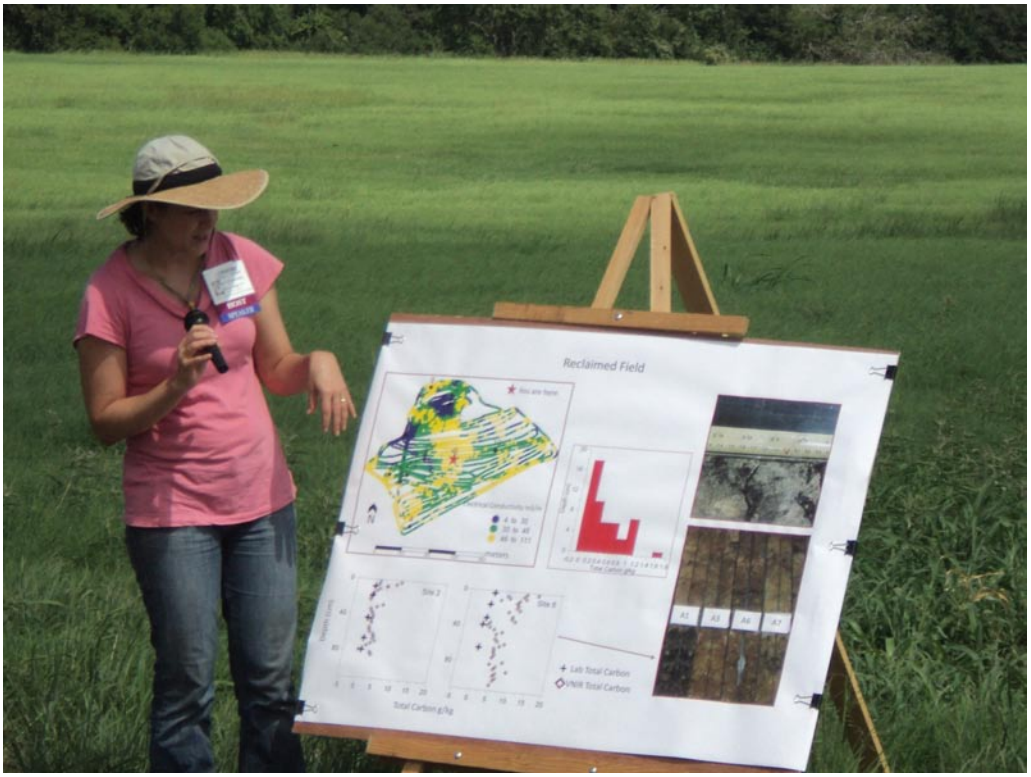

Figure 3.—Demonstration of the results of application of the new technology.

Figure 4.—A central Texas Vertisol.

The 2012 Southern Regional Cooperative Soil Survey Conference will be held in Kentucky. On behalf of Kentucky, Steve Blanford accepted responsibility for hosting the 2012 conference. The chair of the conference will be from the Kentucky Agricultural Experiment Station, and the Kentucky State Soil Scientist will be co-chair. ■

Western Regional Cooperative Soil Survey Conference

The Western Regional Cooperative Soil Survey Conference was held in conjunction with conferences of the Western Society of Soil Science and the Western Society of Crop Science on June 21-24, 2010, at the Embassy Suites in Las Vegas, Nevada.

This joint conference was a great success with the help of Bob Boyd, BLM; Doug Merkler, NRCS; and Dr. Brenda Buck, UNLV. There were 92 participants who attended the conference, including 35 Natural Resources Conservation Service employees, 30 university cooperators, 18 corporate partners, and 9 graduate and undergraduate students. This year's meeting incorporated the Western Society of Crop Science and the Western Society of Soil Science into the mix for a productive agenda and symposium.

An all-day field trip on Wednesday (June 23) highlighted the collaboration between the National Cooperative Soil Survey Program and research on arid soils in southern Nevada by the University of Nevada at Las Vegas. The tour was well organized and was conducted by Dr. Brenda Buck and Doug Merkler. Stops on the tour demonstrated research on dust emissions, petrocalcic genesis, petrogypsic soils, and biological soil crusts. See figures 1, 2, and 3 for photos from the tour.

Figure 1.—Profile of the Drygyp soil series in the Lake Mead National Recreation Area, a stop on the tour included in the Western Regional Conference. Drygyp soils are fine-gypseous, hypergypsic, hyperthermic, shallow Typic Petrogypsids.

Figure 2.—Joe Chiaretti, soil scientist, National Soil Survey Center, explains changes in description and classification standards that affect the Drygyp series.

Figure 3.—Mormon Mesa, one of the stops on the tour included in the Western Regional Conference. The geomorphic surface is millions of years old.

The figures, the PowerPoint presentations from throughout the week, and reports from the Standards, Applied Technology, and Research Needs Committees are posted on the Web (http://soils.usda.gov/partnerships/ncss/conferences/2010/west/agenda.html). ■

North Central Regional Cooperative Soil Survey Conference

The North Central Regional Cooperative Soil Survey Conference was held at The Ohio State University in Columbus, Ohio, on June 14-17, 2010. It included more than 70 participants. It was a successful conference. The input from the participants was excellent.

The conference presentations covered various issues, including ecological site inventory, new soil survey products available to the GIS modeling community, rapid carbon assessment, carbon sequestration in urban soils, urban contaminants (lead and arsenic), and spatial modeling of soil properties. The presenters were from NRCS, The Ohio State University, the Ohio Department of Natural Resources, Purdue University, Cleveland State University, and the Ohio Historical Society.

The last day (June 17) included reports by MO Leaders from Salina, Kansas; Bismarck, North Dakota; and Indianapolis, Indiana (MOs 5, 7, and 11). It also included reports from the following committees: New Technology, Research Needs, Standards and Taxonomy, and Soil Interpretations

On June 16, there was an all-day field trip that included stops at the USDA-ARS North Appalachian Experimental Watershed (fig. 1), a reclaimed strip mine (fig. 2), Dawes Arboretum (fig. 3), and the Newark Earthworks (fig. 4). The trip also

demonstrated the soil and landscape diversity of central and eastern Ohio on a variety of glacial- and bedrock-influenced landscapes.

Figure 1.—One of the stops on the field trip of the North Central Regional Conference.

Figure 2.—A mine reclamation area used for wildlife habitat.

Figure 3.—Cypress swamp in Dawes Arboretum.

Figure 4.—The Newark Earthworks.

Committee reports, presentations from the first two days of the conference, and reports from the three MO leaders are available on the Web (http://soils.usda.gov/partnerships/ncss/conferences/2010/north_central/index.html). ■

New Soil Scientist Training Plan Development

From Soil Survey Division, "Weekly Update," July 28, 2010.

The National Soil Survey Center is this week hosting a group of nine soil scientists representing eight MLRA Regions and one university partner (Kansas State University) who are working to outline a training plan for new soil scientists with an emphasis on landscape modeling and soil map development. Because the National Cooperative Soil Survey has changed emphasis from initial mapping to updating our existing data, our new hires are not consistently getting the training and experience they need to understand the soil-landscape relationship. This plan will provide guidance to those soil scientists who will be training our new employees and will help to ensure that training will be consistent across the country. The plan will include completing NEDC and SSD training courses but will emphasize the on-the-job training that is delivered in the first 12-18 months of an employee's job experience as a soil scientist in the National Cooperative Soil Survey program. Our university partners may also reference this plan as they prepare courses involving soil-landscape relationships. ■

Recipients of 2010 National Cooperative Soil Survey Awards Announced

Adapted from Soil Survey Division, "Weekly Update," June 21, 2010.

During 1999, the Centennial Year of the National Cooperative Soil Survey (NCSS), the Soil Survey Division initiated two awards for scientists involved in the production phase of the soil survey program. These two awards are NCSS Soil Scientist of the Year and NCSS Soil Scientist Achievement. A third award, initiated in 2005, is given to the NCSS Cooperator of the Year.

The Soil Survey Division has announced the recipients of the National Cooperative Soil Survey Awards for 2010. Caryl A. Radatz, MLRA Region 10 Leader and State Soil Scientist, Minnesota, is the recipient of the 2010 NCSS Soil Scientist of the Year Award for work done in 2009 as National SSURGO Coordinator. Michael G. Ulmer, Senior Regional Soil Scientist, Natural Resources Conservation Service, Bismarck, North Dakota, is the recipient of the 2010 NCSS Soil Scientist Achievement Award. Dr. Curtis H. Monger, Professor of Pedology and Environmental Science, Department of Plant and Environmental Sciences, New Mexico State University, Las Cruces, New Mexico, is the recipient of the 2010 NCSS Cooperator of the Year Award. He will receive the award this fall at the ASA/CSSA/SSSA annual meetings in Long Beach, CA.

For the period 1999 to 2010, recipients of the first two awards are as follows:

Soil Scientist of the Year

1999 Samuel Indorante, IL
2000 Markus H. Clark, AK
2001 Eva M. Mueller, WA
2002 Dave Roberts, WI
2003 Tom D'Avello, IL
2004 Douglas Merkler, NV
2005 Anthony Khiel, KY
2006 Thomas McKay, NV
2007 John Doll, IL
2008 Kirby Griffith, TX
2009 Michael J. Mungoven, AK
2010 Caryl Radatz, MN (for work while in MO in 2009)

Soil Scientist Achievement

1999 Dr. Charles E. (Ed) Redmond, OH
2000 William Dollarhide, NV
2001 Tim Gerber, OH
2002 Allan Giencke, MN
2003 Kerry Arroues, CA
2004 Dennis Potter, MO
2005 William "Rob" Knight, PA
2006 James Doolittle, PA
2007 James Greenwade, TX
2008 James (JP) Pannell, CO
2009 Roger D. Windhorn, IL
2010 Michael G. Ulmer, ND

Maxine Levin, NHQ Soil Scientist, presents Mike Ulmer and Caryl Radatz the 2010 NCSS Soil Scientist Achievement Award and the Soil Scientist of the Year Award, respectively, at the North Central Regional Cooperative Soil Survey Conference in Columbus, OH.

For the period 2005 to 2010, the recipients of the third award are as follows:

National NCSS Cooperator Achievement

2005 Neil Smeck, OSU, OH
2006 Pete Biggam, NPS, Denver, CO
2007 Martin Rabenhorst, UMD, MD
2008 Fredrick W. Madison, UWI, WI
2009 Michel D. Ransom, KSU, Manhattan, KS
2010 Curtis H. Monger, NMSU, Las Cruces, NM

Dr. Curtis H. Monger.

Soil Geomorphology Institute Finishes Up in Davis, CA

From Soil Survey Division, "Weekly Update," June 28, 2010.

This week wraps up the 3-week-long Soil Geomorphology Institute for 37 soil scientists representing 17 states. Three Forest Service employees and one employee from the Bureau of Land Management were part of the 37. The purpose of the Soil Geomorphology Institute is to expand the field skills and conceptual knowledge needed to generate and deliver scientifically accurate soil inventory products. Soil scientists learn to apply established and emerging technologies in soil geomorphology, stratigraphy, hydrology, and pedology and better understand the literature regarding soil geomorphic information. Dr. A. Toby O'Geen at the Davis campus of the University of California hosted this year's Institute. Philip Schoeneberger and Doug Wysocki, Research Soil Scientists at the NSSC in Lincoln, Nebraska, Dr. Jim Richardson, retired contractor, and Fred Young, GIS Specialist

in Columbia, Missouri, served as instructors. This was the sixth session of the Soil Geomorphology Institute conducted over the last 4 years. In the future, the Soil Geomorphology Institute will be offered in alternating years with the Soil Science Institute and will continue to rotate through host cooperating universities across the country. ■

Rapid Carbon Assessment Project—Data Entry Forms for Field Data Collection

From Soil Survey Division, "Weekly Update," July 1, 2010.

As part of the Rapid Carbon Assessment (RCA) project, a suite of MS Excel-based forms has been developed to aid in the field data collection, analysis, and subsequent importing into NASIS. Starting in early May of 2010, personnel from the National Soil Survey Center (NSSC) Soil Survey Lab (SSL), NSSC Soil Business Analysis (SBA), and NSSC Soil Interpretations (SI), working collaboratively, began the development of tools to be used in the RCA project. On June 30, 2010, the final version of the Rapid Carbon Assessment Project Excel Workbook was posted to the RCA SharePoint site. The SBA staff worked closely with the SSL staff to define the required data dictionary elements. Then, working closely with the SBA and SSL RCA staffs, the SI staff developed the data entry forms to be used by the NRCS field office staffs when collecting data for RCA. Bringing all concerned staff members together at the beginning of the project resulted in a successful effort to develop a tool for those involved in field data collection and those who will import the data into NASIS. ■

National Soil Survey Center Participates in Federal Interagency Conference

From Soil Survey Division, "Weekly Update," July 1, 2010.

Staff from the National Soil Survey Center, Lincoln, Nebraska, recently exhibited at the Federal Interagency Sedimentation and Hydrology Modeling Conference in Las Vegas, Nevada. This exhibit was part of the NSSC ongoing outreach effort to introduce NRCS and its Web-based soils applications to nontraditional customers and thus increase awareness of NRCS and promote the use of NRCS soils information databases.

NSSC staff members Tammy Cheever and Linda Greene along with retired soil scientist Karl Hipple spent 3 days promoting the agency and demonstrating various Web-based soils applications using mobile computer workstations enhanced with plasma screens for easy viewing and learning. These "hands-on" workstations allowed visitors to learn who we are, what we offer, and how to navigate the various online applications, such as the Web Soil Survey and Soil Data Mart.

The Federal interagency conference attracted approximately 500 participants, many from such agencies as the U.S. Army Corps of Engineers, EPA, and USGS. NSSC plans to broaden its outreach efforts by participating in conference settings hosted by professional organizations outside the Federal family. ■

NCSS Assists in Soil Investigations at Liberty State Park

From Soil Survey Division, "Weekly Update," July 7, 2010.

During the week of June 28, soil scientists from the National Soil Survey Center and from Connecticut, New Jersey, and New York completed soil investigations at Liberty State Park in Jersey City, New Jersey. These activities support the initial soil survey of Hudson County. Within a 251-acre plot of abandoned rail yard, multiple soil pits were excavated, described, and sampled for characterization at the Soil Survey Laboratory in Lincoln, Nebraska. Electromagnetic induction and ground-penetrating radar were used to map open areas of the park. In the open park areas, an engineered cap of clean fill was installed to meet the high occupancy use standards by the New Jersey Department of Environmental Protection and the United States Environmental Protection Agency. These areas are considered sensitive and are protected by the National Park Service and the New Jersey Park Service. Soil excavations and soil probings are largely prohibited. The use of noninvasive geophysical tools offers a practical means to map and characterize these remediated areas. Photos from the investigation follow:

Connecticut, New Jersey, and New York soil scientists collaborate to describe anthropogenic soils in an area of uncapped soils at Liberty Park, New Jersey.

Debbie Surabian and Jim Doolittle conduct GPR surveys across a sensitive area of Liberty Park in which digging is largely prohibited.

GPR surveys were conducted across open areas of Liberty Park. In this picture, the Manhattan skyline is in the background.

Damage from tornado in Wadena, Minnesota, on June 18, 2010. Picture taken on July 17, 2010. The sign appears to have followed its own instruction.

Yield Sign in Wadena, Minnesota

By Stanley P. Anderson, editor, Natural Resources Conservation Service, National Soil Survey Center, Lincoln, Nebraska.

On the way up to northern Minnesota in July, I stayed at a motel in Wadena, Minnesota. My wife and I viewed the damage caused by the Wadena tornado on June 18, 2010. One of the points of interest was a severely bent Yield sign in an open area between the ice-skating rink and the municipal swimming pool, both of which were significantly damaged by the tornado.

My father taught agriculture at Wadena High School during the period 1958 to 1963, and I graduated from there in 1962. All five of the homes in which my family lived from 1958 to 1963 were spared. The first one was less than five blocks from the path of the tornado indicated by the bent sign. ■

National Soil Survey Center Employees Make a Difference on a National Stage

By Linda Greene, ACES enrollee, Natural Resources Conservation Service, National Soil Survey Center, Lincoln, Nebraska.

National Soil Survey Center employees Tammy Umholtz and Marc Crouch recently volunteered their time to help put on the 2010 Special Olympics USA National Games in Lincoln, Nebraska. Promoted as the biggest sporting event in the history of the State of Nebraska, the games hosted more than 3,600 athletes from 47 states, competing in 13 sports venues from July 18-23.

Umholtz, Visual Information Specialist, and Crouch, Soil Scientist-Training Coordinator, volunteered their time and energy for the basketball competition. Crouch has been involved with Special Olympics Nebraska for 3 years, officiating basketball on the local and state levels, and was honored when he was selected to officiate at the

national games alongside officials from the NCAA. “I had the privilege to officiate the gold medal game between Nebraska and Alabama in front of a large crowd that just rocked the gym,” said Crouch. “I never heard one negative comment about anything and that’s a ‘wow’ coming from an official,” he added.

Marc Crouch and Tammy Umholtz.

Umholtz, on the other hand, was new to the experience and explained that she saw a story in the Lincoln newspaper about the need for volunteers. “I thought it would be fun and a great experience,” Umholtz said. “My favorite part was meeting the athletes and coaches and seeing their dedication and enthusiasm for competition and the game of basketball,” she added.

Between the two of them, they gave several hours of time and energy officiating, score keeping, and helping with the award ceremonies. ■

Retirement of Dr. Hari Eswaran

After 30 years of service, Dr. Hari Eswaran retired on June 30, 2010. In 1980, Dr. Eswaran joined the U.S. Department of Agriculture, Soil Conservation Service (later the Natural Resources Conservation Service), as leader of the USAID-funded project Soil Management Support Services (SMSS). The overarching goal of SMSS was to help developing countries better understand their soil resources and to use the U.S. system of soil taxonomy through classification meetings, laboratory training meetings, development of a large set of soils data from around the world, and training in soil mapping. Dr. Eswaran also provided leadership with the Benchmark Soils Project and the World Soil Resources program.

Dr. Hari Eswaren

Dr. Eswaran’s greatest contribution has been the improvement, understanding, and use of soil taxonomy both nationally and globally. His leadership extended the work of Guy Smith to the next level. Dr. Eswaran led the creation of several international committees, open-ended groups that brought the world’s leading soil experts together to improve aspects of soil taxonomy. Under his leadership, these committees provided recommendations that led to a series of universally accepted updates of the U.S. system of soil taxonomy, including the establishment of two new orders—Andisols and Gelisols. Without his leadership, soil taxonomy would have remained a uniquely U.S. system, not a worldwide system.

Dr. Eswaran was a pioneer in the use of soil micromorphology in understanding pedogenesis of tropical soils. SMSS supported over 700 pedon soil sampling projects from more than 50 countries. Dr. Eswaran examined, described, and published thin section results for many of these projects.

SMSS held a series of 21 workshops to teach soil taxonomy and the laboratory methods related to soil taxonomy in many different parts of the developing world. These workshops reached young scientists in many countries, many of whom later became soil program leaders in their countries. Dr. Eswaran's influence through these people has improved the understanding and management of soils all over the world.

Throughout his career, Dr. Eswaran has traveled to more than 100 countries and worked with hundreds of soil scientists. With his patient guidance and his true love of soils and the soil science community, he has touched many people. He has left a lasting legacy that will be carried on by current and future generations. In retirement, Dr. Eswaran plans to return home to his native Malaysia. ■

David Hoover Joins National Soil Survey Center Staff

David Hoover joined the NSSC staff in Lincoln on August 16 as the new National Leader for Soil Business Systems. In that role, David will be supervising the Geospatial Research Unit in Morgantown, West Virginia, staff in Lincoln, and the Business Analyst for Soils in Fort Collins, Colorado. David will also be the Chair of the Soil Business Area Analysis Group (SBAAG) with an emphasis on continued support for existing technology as well as development of new tools and processes to assist soil investigations.

David Hoover

David is a graduate of the University of Minnesota and worked for 14 years in Nebraska as a field soil scientist and project leader for the University of Nebraska and the NRCS. Following that, he served as the Idaho State GIS Coordinator for 9 years, concentrating on completing the soil survey digitizing for the State and field office implementation of GIS software and processes. For the past 10 years, David served as the Idaho State Soil Scientist with an emphasis on completing the initial soil survey on private lands, implementation of the MLRA structural approach to soils operations, and cooperative work with the Forest Service on soil mapping in National Forests. David also served as the Idaho Snow Survey manager and handled Operations for the State.

David can be reached at 402-437-4013 or David.Hoover@lin.usda.gov. ■

Linda Scheffe Joins National Soil Survey Center Staff

Linda Oyer Scheffe has joined the NSSC Interpretations Staff as Conservation Agronomist. She is not a stranger to Lincoln, having worked at the Midwest National Technical Center from 1988 to 1992 as an agronomist in sustainable agriculture. She has extensive experience in international technical assistance,

Linda Scheffe demonstrating soil fertility sampling. According to Linda, "Agronomists are out-standing in their fields."

including work on projects and studies in Guatemala, Kenya, British Columbia, Canada, Argentina, Nicaragua, and Mexico. Her Ph.D. in Agronomy from Auburn University and her M.S. from New Mexico State University complement her B.A degree in Ecology from Friends World College. Most recently, she served as the State Water Quality Specialist in New Mexico and on numerous regional and national interagency teams, including integrated water management, air quality, energy, nutrient management, and pathogen management.

Linda is married to Ken Scheffe and has two children—Shawn and Xela. She enjoys gardening, camping, bicycling, developing user friendly materials for producers, and providing international technical assistance. ■