



NRCS **Technology News**



May 2004

“NRCS *Technology News*,” provided by Science and Technology, delivers pertinent information to our customers about new technology, products, and services available from the Soil Survey and Resource Assessment and the Science and Technology deputy areas.

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MESSAGE FROM THE DEPUTY CHIEFS

NRCS Web Soil Survey Will Soon Be a Reality

Lawrence E. Clark and Maurice J. Mausbach



Lawrence Clark Maurice Mausbach

From the beginning of the National Cooperative Soil Survey Program in 1899, soil survey information has been disseminated through hard copy publications. The hard copy will soon become an artifact of the past. It will be replaced by a Web-based soil survey publication that can be tailored to the user's needs. The soil surveys will still be available in print, but only for those customers who prefer hard copy reports. A team of soil scientists and editors have come together to develop the soil business requirements for

“publishing” soil surveys on the Web. The goal is to transition to Web soil survey publications by January 2005.

During the summer of 2003, the Soil Survey Division developed a plan of action to streamline the publication process for the National Cooperative Soil Survey. After the options were considered, it was determined that the plan should expedite the transition to delivery of soil information (for the public as well as internal customers) on electronic media. As part of the plan, the Soil Survey Division formed a Quality Improvement Rapid Response Team (QIT) to explore the issues more fully and address an implementation strategy for the Agency. The QIT consisted of experts in soils, cartography, and information technology.

During this time, the West Texas Telecommunications Project was created to enhance the accessibility of NRCS data for all types of conservation planning. Out of this project, systems were being developed to enable users to customize soil surveys based on their unique needs. These developments, along with the QIT report, prompted the formation of the Web Soil Survey Team.

Use of the Web, geospatial data warehouses, and other electronic media forms such as CD-ROM and DVD are the motivation for making soil surveys available electronically, in a customized form, and for a wider client base.

The current vision for electronic delivery of soil surveys is to make use of seamless nationwide coverage of soils information such as the tabular data in NASIS (National Soils Information System) and the spatial data in SSURGO (Soil Survey Geographic Database). Customers will access the information in the Soils Data Warehouse through the Web. Information will be presented in a format that customers can use online or download for future use.

The Web Soil Survey publication will provide the capability to publish refreshed information on non-traditional geographic basis, such as watershed boundaries, Major Land Resource Areas (MLRAs), or smaller subsets, instead of the traditional county subsets. This new delivery system will allow NRCS to provide more in-depth technical information and new data that has not been provided previously in a soil survey. The new information includes geospatial data in the form of interpretive maps, diagrams, images, and reports. It will provide state soil scientists and MLRA office leaders greater flexibility in tailoring the content of each soil survey to address local needs. Previously, customers waited a long time after the soil mapping activities had been completed to get the information they needed. With the Web soil survey system, the information will be available as soon as it meets the quality assurance checks.

During the transition to the electronic soil survey, we will continue to print paper copy maps. Many of the products being delivered from commercial duplication vendors do not meet the accuracy requirements or quality of the soil survey maps that can be printed through Government Printing Office contractors. Until a viable Web solution can be developed for printing soil survey maps, the NRCS plans to make a limited number of hard copy sets of maps for newly Web-published soil surveys.

After we have fully transitioned to the Web soil survey, anyone will be able to access soil survey information through the Web. In addition, our vision is that the user will not need expensive GIS software to access the information. Through a few simple queries, the user will be able to focus on the area of interest and request the kinds of information desired presented in the format they prefer.

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CONSERVATIONIST'S CORNER

David G. Sawyer, State Conservationist, Kentucky



In order for NRCS Kentucky employees to be well prepared, we rely on up-to-date information and technical support from our National Divisions, Centers, and Institutes.

The Soil Quality Institute and members of the National Soil Quality Training Cadre presented a 3-day training session for NRCS Kentucky employees and partners. The training highlighted the benefits of improving soil quality and the importance of maintaining soil health. During the session, the participants received hands-on training in the field that involved the use of the Gempler Soil Quality Test Kit and other conservation planning support tools. Kentucky has a total of eight kits in the field that are scheduled to be used at sites throughout the State.

The Grazing Land Technology Institute provided technical assistance and training to State specialists in Kentucky. With this assistance, staff improved their skills to better serve clients through enhanced technical delivery methods to address a wide range of complex grazing land resource concerns. For example, 10 grazing land demonstration sites have been established on farms across Kentucky. These demonstrations showcase the practical application of prescribed grazing, livestock watering systems, fencing, and other practices suitable for livestock operations in specific regions of the State.



A typical diversified Kentucky farming operation.

The Wildlife Habitat Management Institute (WHMI) has developed multiple products and tools that benefit Kentucky at both the field and State office levels. The partnerships, created through WHMI, consist of numerous research institutes which ensure the latest technology is incorporated into conservation planning and applications that meet habitat needs. These tools provide the State with

technical research-based information to assist in the development of NRCS practice standards, specifications, job sheets, and State program policy.

Training tools developed by the WHMI are useful for educating field office personnel and landowners about fish and wildlife habitat concepts.

These tools include:

- Wildlife Habitat Management Leaflets that address 14 wildlife species in Kentucky, including the Bobwhite Quail, Eastern Bluebird, and Eastern Cottontail Rabbit;
- the “Conservation Corridor Planning at the Landscape Level” manual and corresponding training materials and presentations;
- the publication “A Comprehensive Review of Farm Bill Contributions to Wildlife Conservation;” and
- numerous videos about managing shallow water and woodland for wetland wildlife.



Kentucky PL-566 project.

The WHMI continues to develop research-based products focusing on habitat conservation needs. The products are developed so that WHMI technology can be incorporated into State standards and training and into conservation planning in the field.

Staff members in Kentucky appreciate the quality assistance provided by the Centers and Institutes. The reliance upon the expertise and research helps NRCS Kentucky employees achieve the Agency’s mission and bring our customers the best technical information to benefit our natural resources.

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NEW PRODUCTS AND SERVICES

#1 NRCS Soil Geochemistry Program Developed

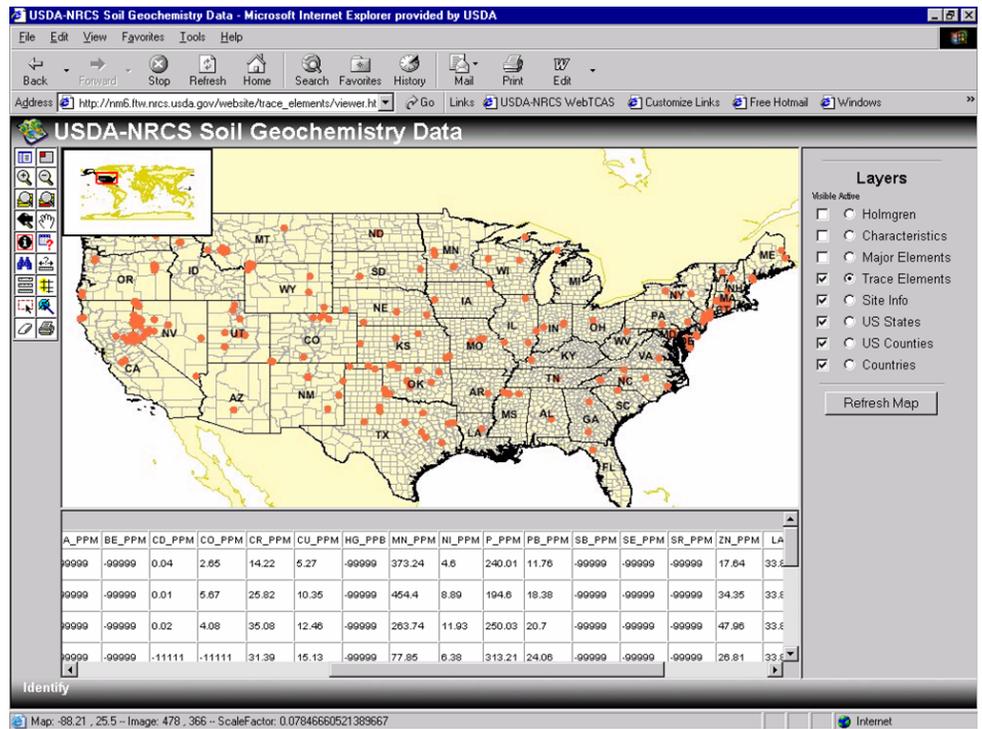
A soil geochemistry program has been developed by the National Soil Survey Center (NSSC) in Lincoln, Nebraska. The major objectives of the program are to

- evaluate, institute, and monitor quality of laboratory geochemical methods and data,
- investigate concentrations and distribution of native (background) concentrations of trace metals in U.S. soils, and
- provide leadership in the application and use of geochemical data for NRCS and the Soil Survey.

A usable soil geochemistry database has been compiled. This database includes major and trace elements with associated characterization data. These data are available at the USDA Soil Web site (<http://soils.usda.gov/survey/geochemistry/index.html>), featuring a geospatial display of data. This Web site has four layers: site characteristics, major elements, trace elements, and associated characterization data. A fifth layer of trace element data from Journal of Environmental Quality (Holmgren et al., 1993) is also included. These efforts on the Web site represent a unique and original effort in our Agency.

The analytical focus of the program has been the examination of soil geochemistry of major horizons within pedons, including both anthropogenic and non-anthropogenically contaminated soils. This approach allows a greater utility for these data compared to geochemical surveys that analyze only trace elements of surface horizons. It functions for evaluation of background levels for site remediation and pedogenic interpretations with depth. A statistical evaluation was conducted to assess general trends in the dataset and published in the Journal of Environmental Quality (Burt et al., 2003).

Major soil series in the United States, their geographic distribution, and background (native) elemental content are being evaluated. This has resulted in a study to systematically evaluate all benchmark soils and other geographically extensive soils in the United States. The effort has initiated a new evaluation of the long-term goals for sampling pedons in the United States for both characterization and geochemical evaluation.



The soil geochemistry program is developing cooperative research for soil survey application. This work is designed to incorporate soil geochemistry into the mainstream products of soil survey. It will better position the NRCS Soil Survey to address needs of current and future customers. Data have applicability in pedology, geomorphic landform definition, and environmental assessment. This assessment of land use impact by urban and industrial users is a new direction for the NRCS Soil Survey and will improve the applicability of soil surveys and widen the user base in an increasingly urban society. These data have a direct application to the research mission of the Agency, link to the Agency's mission to support the Clean Water Act, and add value to the soil survey program for a wide array of applications.

For more information contact:

Rebecca Burt
 National Soil Survey Center
 402-437-5133
rebecca.burt@nssc.nrcs.usda.gov

or

Mike Wilson
 National Soil Survey Center
 402-437-4134
mike.wilson@nssc.nrcs.usda.gov

#2 “How to Develop a Marketing Plan” Released

“How to Develop a Marketing Plan,” a new fact sheet in the Social Sciences Institute’s “People, Partnerships, and Communities” series, is available in draft format. Marketing can promote a product, service or idea; build awareness about an issue or program; or create or repair an organization’s image. It is customer driven, outward focused, and changes as customers and their needs change. Understanding marketing is one of the best ways to achieve objectives, priorities, and conservation goals.

This new publication presents useful information on how to develop and implement a marketing plan. It offers guidance on assembling a marketing team and explains the steps to developing a successful marketing plan. Tips are included for e-mail and Internet marketing, analyzing the marketing environment, and building or improving brand identity. To request a copy of “How to Develop a Marketing Plan,” call 1-888-526-3227, ext. 2, or visit <http://www.ssi.nrcs.usda.gov>.

For more information, contact:
Barbara Wallace
Social Sciences Institute
616-942-1503
barbara.wallace@usda.gov

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#3 Social Sciences Institute Releases “Strengthening Public Involvement”

A draft of “Strengthening Public Involvement” is now available in the Social Sciences Institute’s “People, Partnerships, and Communities” fact sheet series. It is critical for the NRCS and The Conservation Partnership to insure that affected parties are represented prior to developing and implementing natural resource plans and policies. This fact sheet explains the different types of public involvement, why it is important, and who should be included in a public involvement process. The publication also offers keys to successful collaboration and explains how public involvement can address conservation issues. To learn more about enhancing participation in your watershed or district, visit <http://www.ssi.nrcs.usda.gov>.

For more information, contact:
Barbara Wallace
Social Sciences Institute
616-942-1503
barbara.wallace@usda.gov

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TECHNOLOGY TRANSFER

#4 PLANTS Mentioned in National Geographic Magazine Online

National Geographic Magazine Online recently included the NRCS PLANTS Database in the related links section of its April 2004 article on the Badlands, “American Landscapes Badlands: Reefs in a Prairie Sea.” To access the article, go to <http://magma.nationalgeographic.com/ngm/0404/feature4/index.html>. To visit the NRCS PLANTS Database, go to <http://plants.usda.gov>.

For more information, contact:
Scott Peterson
National Plant Data Center
225-775-6280, ext. 11
speterson@po.nrcs.usda.gov



*Badlands National Park in South Dakota.
Photo by Tim McCabe.*

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#5 Western Water Supply Forecasts Announced



Molas Divide in San Juan County, Colorado. Photo by Gene Alexander.

As of April 1, 2004, the National Water and Climate Center (NWCC) predicts that a majority of basins in the West will receive reduced streamflows. Most basins in the Pacific Northwest, northern Rockies of Montana and Idaho, northern Nevada, portions of Utah, and central California are forecast to receive spring and summer streamflows ranging from 70 to 90 percent of average. The Intermountain West basins in Nevada, Utah, southern Idaho, and western Colorado are forecast to receive spring and summer streamflows ranging from 50 to 70 percent of average. Many basins in Arizona, western New Mexico, the South and North Platte River of Colorado, and the Bear River of southeastern Idaho are forecast to receive well below average spring streamflows, less than 50 percent of average. Western Alaska streamflows are forecast to be slightly below average and near average in central Alaska.

Reservoir storage for all Western States except California is running below historic April 1st averages, with Nevada, New Mexico, Utah and Wyoming reporting the largest percent of average storage deficits. Low storage values reflect carryover dryness of the continuing drought in the Intermountain West, Southwest, the southern Rockies, and last water year's below-average seasonal runoff.

The NWCC homepage provides the latest available snowpack and water supply information. Visit <http://www.wcc.nrcs.usda.gov> for an up-to-date forecast.

For more information, contact:
Phil Pasteris
National Water and Climate Center
503-414-3058
ppasteris@wcc.nrcs.usda.gov

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WEB-BASED TECHNOLOGY

#6 Organic Agriculture and Resource Conservation Web Site Available

A new NRCS Web page helps answer frequently asked questions about resource conservation on certified organic farms and ranches. The site provides field staff with an introduction to the requirements for organic certification, issues related to writing conservation plans for organic producers, and common resource concerns on organic operations. A list of Internet resources for further information is included. The URL is: http://soils.usda.gov/sqi/soil_quality/land_management/organic.html.

For more information, contact:
Ann Lewandowski
Soil Quality Institute
612-624-6765
alewand@umn.edu

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#7 PLANTS Database Logs New Record

In March 2004, the NRCS PLANTS Database received over 12.4 million hits, with users visiting PLANTS an average of 15,000 times each day. These numbers set new overall usage records. Additionally, the record doubles March 2003's usage (6.2 million hits). The National Plant Data Center expects numbers to continue to increase in the next few months, with May traditionally being the month with the highest usage.

To visit PLANTS, go to <http://plants.usda.gov>.

For more information contact:
Scott Peterson
National Plant Data Center
225-775-6280, ext. 11
speterson@po.nrcs.usda.gov



Tulip prickly pear. Courtesy of PLANTS Database.

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TRAINING

#8 Discover Your Strengths with *The Leader in You* on May 19



Marcus Buckingham

Reminder! “Now, Discover Your Strengths,” the last satellite seminar in *The Leader in You* spring 2004 series, will broadcast Wednesday, May 19, 2004, from 11:00 a.m. to 12:30 p.m., e.t. (*Note the date change: the seminar was originally scheduled for Tuesday, May 18.*) Co-author of “First, Break All the Rules: What the World’s Greatest Managers Do Differently,” Marcus Buckingham will discuss techniques for better on-the-job performance through discovering specific individual strengths.

Satellite coordinates and handout information for this seminar will be available for NRCS employees on the my.NRCS Intranet site (<https://my.nrcs.usda.gov>) 2 to 3 weeks prior to the seminar. Click on the my.NRCS tab and look under General Announcements for the posting. The information will also be e-mailed to partner contacts at that time. Tapes of this and 40 previous seminars are available through the Social

Sciences Institute’s lending library. To request a tape or assistance, contact Becky Noricks at the Social Sciences Institute at 616-942-1503 or ssinter2@po.nrcs.usda.gov.

The Leader in You training program, sponsored by the Social Sciences Institute and the National Employee Development Center, is designed to support the locally led conservation aspects of the Farm Bill and the President’s Management Agenda. The National Association of Conservation Districts, the National Association of State Conservation Agencies, National Conservation District Employees Association, and the Targeted Learning Corporation are cooperating sponsors of this program.

For more information contact:
Barbara Wallace/Rebecca Noricks
Social Sciences Institute
616-942-1503
ssinter2@po.nrcs.usda.gov

and

Sue Brooks
National Employee Development Center
817-509-3245
sbrooks@ftw.nrcs.usda.gov

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NRCS TECHNOLOGY NEWS

Bruce Knight, Chief, Natural Resources Conservation Service
Lawrence E. Clark, Deputy Chief for Science and Technology
Maurice J. Mausbach, Deputy Chief for Soil Survey and Resource Assessment

NRCS Science and Technology Consortium staff should send information for *NRCS Technology News* to:

Barbara Wallace, Editor
Social Sciences Institute
(616) 942-1503
barbara.wallace@usda.gov

Katherine Sikma, Editorial Assistant
Social Sciences Institute
(616) 942-1503
ssintern@po.nrcs.usda.gov

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