



Technology News

November 2003

“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

Lawrence E. Clark and Maurice J. Mausbach

The Farm Security and Rural Investment Act of 2002 (the Farm Bill) provides the single most significant commitment of resources in the Nation's history to conservation efforts on private lands. Funding for the Environmental Quality Incentives Program (EQIP) and other conservation programs was increased by approximately 80 percent over the 1996 Farm Bill allocations. The National Resources Inventory Conservation Effects Assessment Project (NRI-CEAP), developed by NRCS and its USDA partners, measures the environmental benefits of conservation practices and programs, providing the farming community, other environmental policy issue stakeholders, and legislators a scientific account of environmental benefits achieved through conservation programs.

The NRI-CEAP is a cooperative USDA effort led by NRCS. Cooperating agencies and principal partners include the National Agricultural Statistics Service (NASS), Agricultural Research Service (ARS), Farm Service Agency (FSA), and the Cooperative State Research, Education, and Extension Service (CSREES). Other agencies and groups, such as the Soil and Water Conservation Society (SWCS) and the Environmental Protection Agency (EPA), will also contribute to NRI-CEAP.

The NRI-CEAP consists of two major categories of data collection and analysis. The *National Assessment* component examines a broad suite of environmental factors through an innovative blend of sampling, modeling, and the use of administrative records to give stakeholders a nationally consistent accounting of the benefits associated with conservation practices and programs. The *Watershed Assessment Studies* will assess benefits in selected watersheds, providing a means to examine uncertainties and sensitivities of national/regional modeling and to validate and enhance the modeling technology. In addition, watersheds offer a public scientific demonstration of conservation practices and programs.

The NRI serves as the sampling base and provides historical baseline data and a scientifically credible representation of the Nation's agricultural base including soils, topography, climate, use, and management. NASS is interviewing farm operators to obtain data needed on specific farming activities at NRI sample sites. NASS, FSA, and NRCS are gathering information on applications of conservation practices and program participation.

Annual reporting of the National Assessment results will begin in 2005. Reporting of results from the watershed assessment studies will begin in 2006. Initial analyses will focus on water quality (nutrients and sediment), soil quality, and water conservation on croplands. The benefits of wildlife habitat, air quality, grazing lands, and wetlands will be examined later in the project. An NRI-CEAP Web site is under development and other communication activities will include one or more forums each year to gain input and advice on the NRI-CEAP approach and the expected results.

Clean water and productive soils are foundational natural resources that are critical to the health of many diverse ecosystems, the overall health and productivity of the Nation's working lands, and the food security of the Nation. The NRI-CEAP will show that conservation practices and programs have a direct and quantifiable impact on improving water quality and enhancing soil quality and other associated natural resources. It will provide scientifically defensible data for use in developing credible conservation programs and policies to conserve, manage, and protect our vital natural resources.

CONSERVATIONIST'S CORNER

Roger A. Hansen

State Conservationist—Missouri

Missouri is known as the “Show Me” state. Natural Resources Conservation Service (NRCS) staff in Missouri do their best to show people the different ways to benefit from the latest science and technology developments in relation to a wide range of natural resources. NRCS gathers information about soil and makes it available to the public in the form of a soil survey publication.

The soil survey publication is in high demand by people from both urban and rural areas. Soil surveys provide natural resource information needed to plan and apply conservation practices. These surveys can also assist with urban development. Missouri soil scientists partnered with staff at the National Cartographic and Geospatial Center (NCGC) to develop soil surveys on compact discs (CDs) to reduce the time it takes to get the product to the user.

Soil surveys on CD are an exact copy of the hard copy publication. Missouri soil scientists provide the majority of the publication information, including soil series and map unit descriptions. Staff at the NCGC prepares the “camera ready” version that includes the general soil map, legend, and index to maps. This version is the final step in the soil survey publication process and is required for the General Printing Office to print the soil survey publication.

Staff at the National Water and Climate Center (WCC) also contributes to the development of the soil survey publication. The WCC serves as a warehouse or collection point for climate data throughout the Nation. They develop county specific climatic tables of temperature and precipitation.

The WCC also provides descriptive narratives suitable for use in the soil survey CD and hard copy publication in a short time period.

Missouri's partnership with the National Cartographic and Geospatial Center and the National Water and Climate Center has been strong and continues to grow. Innovative ideas and excellent communication are the keys to the successful partnership. Urban and rural users of soil survey information benefit from this partnership by being able to access the data in the electronic format before the release of the hard copy publication. To date, 92 of the 106 Missouri soil surveys are available in an electronic format, several of which are well in advance of the hard copy publication.

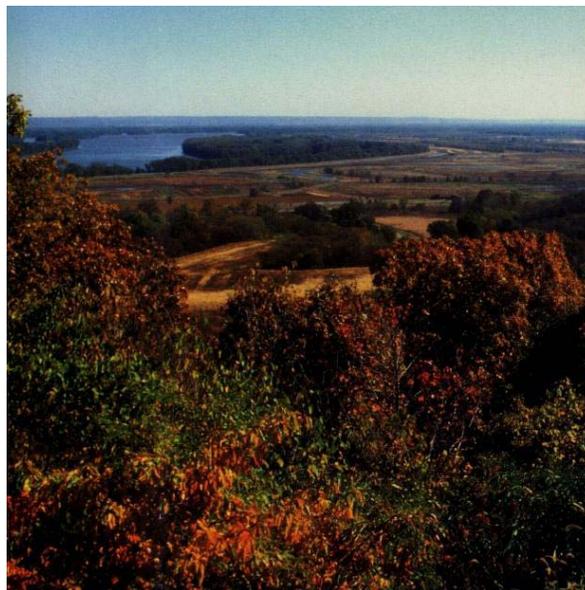


Photo from Soil Survey of Pike County, Missouri, 1997.

NEW PRODUCTS AND SERVICES

#1 “Adoption of Conservation Buffers: Barriers and Strategies” Released

The Social Sciences Institute recently released a technical report entitled “Adoption of Conservation Buffers: Barriers and Strategies.” This report examines the adoption and diffusion of conservation buffers by assessing attitudes and behaviors of four producer groups (all producers, livestock, low-income and minority, and American Indians). The report lists barriers to the adoption of buffers for each group and potential strategies for overcoming them.

The report offers recommendations for field staff and other conservation partners to consider when marketing conservation buffers. A technology transfer model illustrating producers’ needs and preferences for establishing and maintaining buffers describes a “working” example of buffer adoption.

“Adoption of Conservation Buffers: Barriers and Strategies” is available on the Institute’s Web site at www.ssi.nrcs.usda.gov. To request the report in hard copy, call Landcare at 1-888-526-3227, extension 2.

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#2 Wildflower Images Contributed to PLANTS



Eastern Greenviolet

A large addition of high quality images has been added to the PLANTS database by Thomas Barnes, associate extension professor and wildlife specialist in the University of Kentucky Department of Forestry. Dr. Barnes specializes in wildlife ecology and habitat management and recently produced a book entitled, *Gardening for the Birds*. A widely published author, images from his forthcoming book, *Wildflowers and Ferns of Kentucky*, are now in the Gallery on the PLANTS Web site at <http://plants.usda.gov>.

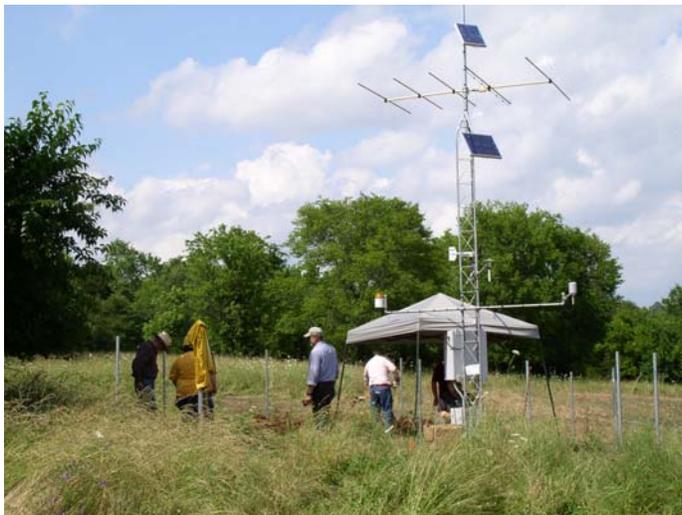
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#3 Soil Climate Network Grows and Assists the Field

The Soil Climate Analysis Network (SCAN) increased by 11 stations in Fiscal Year 2003 to 85 stations in 41 States and Puerto Rico. The new stations are in South Dakota, Oregon, Alabama, Tennessee, and Kentucky. In addition, two new research stations were constructed in Antarctica.

Data from all stations except Antarctica are available in near-real time at <http://www.wcc.nrcs.usda.gov> and are used by a wide range of users including global climate modelers, soil scientists, ecologists, drought managers, and farmers. The National Water and Climate Center and the National Soil Survey Center jointly manage the SCAN.



Newly Installed Station at Allen Farm in Tennessee

Demand for new stations continues. Most requests come from NRCS offices to support various activities including soil surveys, water management, and crop production models. Station installations are currently planned for Arkansas (five stations), Virginia (two), Kansas (three), and Mississippi (one). If you are considering setting up a station to monitor soil temperature, soil water content, or other climatic variables, the USDA NRCS Soil Climate Team can provide valuable assistance that will save you time and money, while ensuring that the project is successful.

The Soil Climate Team can assist with equipment selection, aid in its installation, and provide technical assistance for its maintenance. The project can be simple, such as monitoring soil temperature at one or two depths. Complex projects might involve a complete soil climate station monitoring soil temperature and soil water content at several depths, soil redox potential, soil heat flux, soil water level, air temperature, relative humidity, solar radiation, wind, snowfall, precipitation, barometric pressure, and more.

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TECHNOLOGY TRANSFER

#4 Rehabilitating Burn Sites After Wildfires

The Plant Materials Program and the Emergency Watershed Protection (EWP) have partnered with local sponsor and community groups to provide successful rehabilitation programs on private lands. This past summer's Aspen Fire in Arizona and the previous Rodeo/Chediski Fire provided team members with new knowledge regarding revegetation of burned sites.

Advances occurred in the areas of aerial seed and mulch application techniques, developing effective seed mixes, utilizing native perennial grasses and forbs effectively, and assessing the need and location for practice treatments such as straw wattles, straw bale check dams, and straw bale diversions.

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WEB-BASED TECHNOLOGY

#5 NRCS Retiree: An Important Contributor to PLANTS

Gary Monroe, a retired NRCS soil scientist who worked in Idaho and retired from the Nevada State Office, knows that a picture is worth a thousand words. He ventures out into the wildlands with camera in hand and provides the Center with plant images from the islands of California to the deserts of Nevada. He has also worked with the Nevada Native Plant Society to provide some of the highlights of their slide collection. These images are also now available at PLANTS.



Clubhair Mariposa Lily

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TRAINING

#6 “Power Tools for Women!,” An Upcoming “The Leader in You” Seminar



Joni Daniels

Mark your calendars for the third satellite seminar in “The Leader in You” fall series, “Power Tools for Women!,” featuring Joni Daniels. It will broadcast on Wednesday, December 10, 2003, from 1-3 p.m. e.t. The NRCS Federal Women’s Program and Earth Care Connection, USA join the sponsors to bring you this program that will help you charge up your personal and professional image. The information in this program will be beneficial to all employees.

Do you feel like you are struggling to tap into your potential? Learn interpersonal skills to build a network, enhance your ability to influence, and find ways to mentor and support others. Find your strengths and learn how to use them.

Consultant Joni Daniels is the founder and principal of Daniels & Associates, a consulting group specializing in personal and professional development. She is the author of “Power Tools for Women!,” named one of the best new business books of March 2002 by The Business Reader Review. Her clients include Fannie Mae, Educational Testing Services, Marriott International, the Department of Defense, and AIG Life Companies.

This program supports the NRCS 2004 priority of implementing the President’s Management Agenda initiative—Strategic Management of Human Capital, as well as the locally led conservation aspects of the Farm Bill. “The Leader in You” program is sponsored by the NRCS Social Sciences Institute and the NRCS National Employee Development Center, in cooperation with the National Association of Conservation Districts, National Association of State Conservation Agencies, National Conservation District Employees Association, and the Federal Training Network.

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