NRCS Technology News

March 2003

"NRCS *Technology News*" is an electronic information piece provided by Science and Technology 10 times a year. It is designed to deliver 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.

"NRCS *Technology News*" is in a format that is available to all NRCS field staff. Back issues of "**NRCS *Technology News"*** are available at the Science and Technology Consortium Web page at http://www.nrcs.usda.gov/technical/SandT/index.html – select NRCS Technology News from the menu at the top of the page.

Features in this issue include:

• MESSAGE FROM THE DEPUTY CHIEFS

Lawrence E. Clark and Maurice J. Mausbach

Who are our customers? What are their needs? Who are the customers of our customers, and what are their needs? These are key questions that the Natural Resources Conservation Service (NRCS) needs to be able to answer because of changes in both the volume and complexity of work. We operate in a dynamic world and must continually anticipate structural change in the agricultural economy and be prepared to deal with the changes. If we fail to be vigilant, we will risk losing our relevancy. Answering these questions accurately and then providing the appropriate technologies to our customers in a rapidly changing agricultural environment are critical to the Agency's success.

As we ponder these questions, our thinking is involuntarily tempered by the Farm Security and Rural Investment Act of 2002 ("2002 farm bill") that elevated conservation to a higher level of prominence than ever before. The recently enacted 2002 farm bill increases conservation program funding by 80 percent and the FY 2003 Omnibus Appropriations Bill increased Conservation Operations by more than $46.5 million. Hence, our workload will increase and require more trained staff to get the work done.

Before the 2002 farm bill, NRCS was in the business of developing and delivering technical assistance through a cadre of well-trained professionals from among the conservation partnership. The bedrock of both aspects was our advances in technology. Using a business metaphor, we developed technology (Centers, Institutes, and State Offices), wholesaled it (State Offices), retailed it (District Offices), and provided technical packages to our sale service representatives (District Offices). We often provided help in financing the sale through our cost-share programs. Our customers were not only the farmer and rancher, but also city planners, public officials, environmental groups, foresters, small businesses, developers, wildlife advocates, and others in the public sector. We barely had adequate capacity to meet the demands of pre-2002 farm bill funding.

The 2002 farm bill's Technical Service Provider (TSP) provisions present a fundamental change that can provide a basis for implementing the expanded conservation programs. TSP's are a new customer and partner who will help carry out part of the retailing function of getting conservation on the land. In addition, they are most likely to benefit by and participate in technology development. We have already taken a number of steps,

including developing the electronic Field Office Technical Guide and TechReg, to assist this group. However, we still face many challenges in providing easily accessible technical information for TSP's. Our entire technology investment enterprise will become more transparent because internal and external users will depend on newly developed technological procedures, methods, and packages. We can expect that TSP's will offer many innovations for meeting additional technical needs and for improving the developmental process. We must to be ready to consider major changes in the way we develop, transfer, and maintain technology, while still providing quality service to our customers.

We probably have given more, but not nearly enough, thought to the changing nature of our traditional customers – medium and large farms and ranches. However, small farms control the bulk of the land in the country and play a major role in natural resource protection. The majority of small farmers are retired or part-timers. They rely on off-farm income to support their families and their love for farming. Many of the small producers consider farming "a way of life" rather than "a business," although economics is still very important. About 40 percent of farmland is rented, raising issues about long-term environmental goals. Our success in resource conservation requires that we develop technology through multi-media that can help and is acceptable for use by farmers that span a wide distribution of different size farms and ranches.

In the final analysis, we need to maintain awareness of what is being asked of our farmer and rancher customers. Increasingly, farmers are being asked to produce environmental goods and services, to date with little or no compensation. The Conservation Security Program will provide a new mechanism, and pollution trading offers another promising approach. The public demand for a safe food supply has recently legitimized a small, but growing, organic food market. Some buyers will not purchase commodities produced with biotechnology inputs and demand that non-biotech and biotech products be separated in marketing channels. A growing number of landowners are diversifying to alternative enterprises, such as hunting, bird watching, and bed and breakfast operations. We need to make sure that our technology development and transfer activities help these individuals develop and maintain sustainable operations.

We face major challenges. Our future and the future of voluntary natural resource conservation depend on NRCS rising to overcome these challenges. The Agency's strategic plan is being updated and will go a long way toward outlining a process to overcome these challenges. However, each one of us needs to personally challenge ourselves to continuously consider the needs of our old and new customers. The quality of our food, the health of our land, and the sustainability of our farmers and ranchers depend on our response.

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• CONSERVATIONIST'S CORNER

Diane E. Gelburd, Director
Ecological Sciences Division – Washington D.C.

Our Agency strength depends on keeping conservation technology up-to-date and readily available for field use. When complete, the electronic Field Office Technical Guide (eFOTG) will help maintain NRCS as the lead Agency in natural resource conservation.

Technology cycles that once occurred every 20 years are happening more often and eFOTG will help keep NRCS using current conservation technology. The eFOTG makes updating technical materials easier and eliminates the need for printing reams of revisions–saving time and money. Linking the eFOTG to the vast array of technical material sources available on the Internet can be helpful, as long as material added to the FOTG by hyperlinking is carefully monitored.

EFOTG will increase our ability to provide technically sound conservation planning assistance to a much larger customer base. The eFOTG information is readily available for Technical Service Providers (TSP), partners, and customers. This will improve NRCS's ability to implement National-level programs with fewer personnel, and monitor the quality of technical assistance provided by TSP's, partners, and the public.

The FOTG has always been dynamic, and an individual's understanding of how to apply the information must evolve. NRCS employees– especially recent hires, TSP's, our customers, and others will need training and hands-on experience to learn how to use the eFOTG. Just like any new tool, the eFOTG must be used wisely and can be made better as we work with it.

Many enhancements are under development for the eFOTG. For example, new software will streamline conservation planning by developing GIS and other interactive components that link the eFOTG and conservation planning software. This will help assure conservation plans are technically sound, professional in appearance, and produced efficiently by Agency personnel and outside vendors. Another enhancement, the SmarTech Thunderbook, will enable users to download electronic material to a notebook or tablet PC. The information used day-to-day will then be available for efficient use in the field, when and where it is needed. State content managers and state technical guide committees are making all State and local information available.

The eFOTG is available from the Quick Access menu at the NRCS Web site http://www.nrcs.usda.gov.

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• NEW PRODUCTS AND SERVICES

#1 Anthropogenic Soils Data Available on CD

The International Committee on Anthropogenic Soils (ICOMANTH) was established in 1995 and charged with defining appropriate classes in Soil Taxonomy for soils that have their major properties derived from human activities. The committee established a list of human activities that result in such significant alteration of soil properties and diagnostic horizons that previous classification and interpretations are no longer applicable. The committee is using circular letters to gather information for establishment of criteria to identify soils that form in anthropogenic materials or that are significantly altered by human activities. Efforts in this regard will help us recognize human activities in our soil survey work.

One of the new objectives for the ICOMANTH Committee is to "Develop a collection of soil descriptions representing an array of anthropogenic soil morphologies. These soil profiles can be used to propose new horizon nomenclature, terms for describing anthropogenic soil properties, and to document and describe human-influenced features for these soils." The National Soil Survey Center (NSSC) worked with John Galbraith at Virginia Tech to produce a CD to fulfill the objective mentioned above and to provide a vehicle for lively debate and discussion. More information on the CD is at the official Web site for ICOMANTH at http://clic.cses.vt.edu/icomanth/.

The Soil Survey Division and the NSSC have actively pursued the collection of data for anthropogenic soils since the early 1970s, when Horace Smith published the soil survey for Washington, D.C. The Soil Survey of LaTourette Park on Staten Island, New York, followed 20 years later. Both of these surveys and other detailed profile descriptions, characterization analyses, and urban inventory data for anthropogenic soils are examples of information contained in the CD.

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#2 Brochures for Michigan Windbreak Releases Updated

Information about plant species suitable for windbreaks is critical in current NRCS efforts to improve air quality. Detailed brochures for two windbreak species released by the Plant Materials Center at Rose Lake, Michigan, have recently been updated and reprinted for field office use. Both releases are adapted for use in the Great Lakes region.

Leelanau Germplasm is a selection of the native shrub, highbush cranberry. It was selected for use in windbreaks on organic or wet soils and can be used as an alternative to introduced shrubs for landscaping, aesthetics, and wildlife plantings. 'Affinity' northern white cedar is a native tree selection intended for use in field and farmstead windbreaks and in screen or border plantings in recreational and urban settings. It is also an important source of winter browse for wildlife.

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#3 Leadership Skills Self-Assessment Tool Available Online

The Social Sciences Institute (SSI) has developed "The Leadership Assessment Instrument" for individuals in The Conservation Partnership to self-evaluate his or her leadership skills. The instrument focuses on five personal characteristics, or competencies, essential to effective leadership – focused drive, emotional intelligence, building trusts-enabling others, conceptual thinking, and systems thinking. Each of these leadership dimensions has a definition and an associated set of behaviors that exemplifies that competency or skill. The more thoughtful and candid a person is in answering the 45 self-assessment questions, the more accurate will be the resulting personal leadership profile, complete with identification of areas of strength and areas for future development. When all responses are recorded, The Leadership Competency Profile Sheet provides a charted guide to individual leadership development planning.

Along with many other products designed to assist The Conservation Partnership with the "people aspects" of conservation work, "The Leadership Assessment Instrument" is available as both a technical note and an interactive tool at the SSI Web site www.ssi.nrcs.usda.gov.

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#4 New eNewsletter to Feature Plants' Role in Conservation

It is a fact that plants help make conservation happen. A new full-color electronic newsletter, *Plant Solutions,* will soon appear in e-mails nationwide sharing feature stories and expert advice on plants' role in conservation.

The new NRCS Plant Materials Program newsletter is targeted toward conservation leaders, but will be available to anyone with "vegetative" leanings by using a list-serve subscription. To help avoid information overload, *Plant Solutions* is a fun, brief read—only two pages with color photos and interactive links to additional information. Each issue will focus on a particular conservation challenge and will include a main feature story along with the sections "Ask the Expert" and "Did You Know…"

The first issue of *Plant Solutions* will be e-mailed this winter and features conservation plants' role in the 2002 Farm Bill. Subsequent issues will cover Louisiana coastal restoration efforts, plants battling invasive species, landscaping with native plants, reclaiming of Superfund sites, new accomplishments in carbon sequestration, and a look at culturally significant and medicinal plants. The newsletter is scheduled for distribution every other month.

For additional information or to subscribe to *Plant Solutions* today, visit the eNews Service link on the NRCS Plant Materials Web site at http://Plant-Materials.nrcs.usda.gov.

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• TECHNOLOGY TRANSFER

#5 Format Variety Contributes to Transfer of Plant Science Information

Plant science information from the National Plant Data Center (NPDC) continues to be transferred to staff, customers, and general public in a variety of formats that permit broader overviews of material than might otherwise be available through NPDC. Recent publications include: (1) Volume 26 of the "Flora of North America," which is now available electronically at http://flora.huh.harvard.edu:8080/flora/volum_page.jsp?volume_id=1026. Mark Skinner, NRCS plant systematist and a world authority on lilies, is the author of the genus *Lilium* in this volume. (2) The Crop Sciences Encyclopedia will include a research paper by M. Kat Anderson, NRCS ethnoecologist, about pre-agricultural wild plant gathering and management and how it contributed to the continuum of agricultural development. (3) "Forgotten Fires: Native Americans and the Transient Wilderness" was recently co-authored by Anderson and H.T. Lewis and describes indigenous knowledge, environmental history, landscape ecology, and ecosystem restoration. (4) "The Ethnobiology of California's Oak Woodlands," was published recently in the "Oaks n' Folks" newsletter at http://danr.ucop.edu/ihrmp/oakfolk.html. Dr. Anderson explores the usefulness and applications of the knowledge of the ecological diversity inherent in California's oak woodlands that is "embodied in anthropological collections," memories and traditional practices of Native Americans of California, and California's historical literature. The research was cooperatively funded by the University of California Integrated Hardwood Range Management Program, NRCS California, and the National Plant Data Center.

In addition, NPDC continues to develop and enhance the PLANTS Web site for greater use and satisfaction from all visitors. Recently, "Fine Gardening" magazine included a map from the PLANTS Web site for an article on garlic mustard, crediting the USDA NRCS PLANTS database. An NRCS plant specialist customer was pleased with his success at the PLANTS Web site in obtaining information on invasive species. He wrote, "Just wanted to let you know that I usually end back at the PLANTS Web site to get the information I need. I had what I needed in less than a minute from your site after wasting close to an hour on the other site and never finding what I needed. Thanks for the Web site…. I can hardly do my job without it!"

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• WEB-BASED TECHNOLOGY

#6 HortNote Highlights Salty Soils

Before installing salt-tolerant plants or reclaiming a salt-affected site, landowners and managers need good analytical information to create a strong conservation plan. The latest HortNote issue, Number 5, from the Plant Materials Center at Bridger, Montana, examines causes of salt-affected soils, several tests used to measure saltiness, and various classifications of salt-affected soils. Soil salt levels can greatly influence plant survival and growth. The effect of high-salt soils in the Northern Plains and Rocky Mountains, for example, is dramatic. It is estimated that 300,000 acres in Montana alone have been removed from production because of increased salinity. Even soils classified as "slightly saline" are marginally acceptable for many crops. The next issue of HortNote will continue this theme, addressing plant tolerance to salt accumulation.

The HortNote electronic newsletter provides timely information on a variety of plant and conservation horticulture topics, such as windbreak design, installation, protection, and maintenance; species selection; greenhouse operations; plant propagation and production; and native, low maintenance, and xeriscape landscaping. Past issues are available on the Plant Materials Program Web site http://Plant-Materials.nrcs.usda.gov - select Publications, select Bridger, MT, select Newsletters.

Visit http://plant-materials.nrcs.usda.gov/pubs/mtpmcarhortnote5.pdf to access HortNote, Number 5, on salt-affected soils.

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#7 Updated Wetlands Climate Datasets Available

The National Water and Climate Center has updated its Wetlands Climate Datasets, and the information is available from the Center's Web site, http://www.wcc.nrcs.usda.gov/water/climate/. The datasets contain normal ranges for monthly precipitation and growing season dates for the period 1971-2000. As part of a

standard conservation plan, monthly precipitation and growing season dates are critical components for determining qualified wetland areas.

The climate files are organized by State and county. A compressed file containing the entire wetlands climate tables for a State is available at http://www.wcc.nrcs.usda.gov/water/wetstate.html. These files are either a zip format, primarily for PC use, or a UNIX format, tar.

Information on wetlands delineation and the use of the climate data in those delineations is at http://www.pwrc.usgs.gov/WLI/wetdel.htm.

For more information – on the Wetlands Climate tables and analysis or climate data averaged for the period 1961-1990 **– contact:**

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• TRAINING

#8 *The Leader in You* Program Announces Spring 2003 Seminars

Two new opportunities to gain information helpful to strengthening your locally led conservation team are coming this spring from *The Leader in You* program. "FISH! Sticks…Keeping the Vision Alive" will be broadcast on Thursday, May 15, from 1:00 to 3:00 p.m. e.t. This satellite seminar, led by best-selling author, Dr. Stephen Lundin, will explain the three commitments necessary to make worthwhile changes "stick" in an organization. "Leading Through Influence," will be broadcast on Tuesday, June 3, from 1:00 to 3:00 p.m. e.t. Led by Dr. Laree Kiely, President of L. Kiely Inc., an organizational effectiveness consulting group, viewers will learn how to change people's minds through *influence* rather than by rewards, threats, or punishments.

There are more than 30 titles available in the Social Sciences Institute's *The Leader in You* videotape lending library! Collaborations and Community Building, Leadership Development, and Managing Change are some of the topic categories in this self-paced leadership development series. Each videotape with handouts is available for loan to staff, directors, and Earth Team volunteers of the sponsors without charge for a 2-week viewing period. Take advantage of this free opportunity!

To request a tape or a brochure that contains summaries of all tapes available, contact Cameron Barron at ssinter2@po.nrcs.usda.gov or (616) 942-1503.
The spring series of The Leader in You program is sponsored by the NRCS National Employee Development Center and the Social Sciences Institute 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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