



NRCS **Technology News**



October 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.

Features in this issue include:

MESSAGE FROM THE DEPUTY CHIEFS

[“Smartech Ushers in a New Vision for Technology Delivery”](#)

[Lawrence E. Clark and Maurice J. Mausbach](#)

CONSERVATIONIST’S CORNER

[Shirley Gammon, State Conservationist, Alaska](#)

NEW PRODUCTS AND SERVICES

[#1 New Soil Quality Fact Sheets Focus on Pasturelands](#)

[#2 Bulk Copies of “Hydrophobicity” Available](#)

[#3 “Rebuilding Your Local Work Group” Fact Sheet Draft Available](#)

TECHNOLOGICAL ADVANCES

[#4 RUSLE2: A Flexible Planning Tool](#)

WEB-BASED TECHNOLOGY

[#5 Limited Resource and Beginning Farmer Data Set Released](#)

TRAINING

[#6 *The Leader In You* Seminar, “Give ‘Em the Pickle!” Approaching](#)

MESSAGE FROM THE DEPUTY CHIEFS

Lawrence E. Clark and Maurice J. Mausbach

The jobs for field conservationists, technical service providers, conservation partners, and conservation program customers were made easier when the Electronic Field Office Technical Guide (eFOTG) came online.

Smartech transforms how technology is accessed and used to make decisions for actions to conserve resources on the farm, ranch, subdivision, or other land needing treatment. It is a framework for organizing and delivering technology quickly to a large audience of interested users.

At the core of that framework is eFOTG. It posts updates immediately to a central database and makes the information available to field offices, partners, customers, and those interested in other counties and states. After it appeared online in August 2002, eFOTG became one of the most visited NRCS sites.

Conservationists with laptop computers can use the Thunderbook feature of eFOTG. This new feature is an electronic briefcase where users download technical information and quickly organize it on the laptop. This information can be referenced in the field, in discussion with customers, at meetings, or in other situations away from the office. Upon return to the office, the laptop is docked to the network, and the program checks and updates the technical information if it has changed in eFOTG.

Smartech is a featured page in the My NRCS portal for field conservationists and Agency employees. From this page, users access the eFOTG and technical handbooks and manuals, and create their Thunderbooks. They also can conveniently order and download data from the NRCS data center through the Resource Data Gateway, which has increased data delivery across the country by more than 8-fold. The Smartech page will soon be available to customers and technical service providers, allowing them to customize their pages to find the information they need quickly.

The next phase of Smartech will put conservation management guidance in a database, making the eFOTG interactive. Customers will be able to get online and initiate the development or revision of their conservation plans. Smartech's conservation guidance underpins this process, which helps streamline the process for participating in conservation programs. Customers can avoid "taking a number" for service by initiating planning online, consulting Smartech, and interacting with technical service providers, who will be able to participate online through customer-granted access.

The Smartech conservation management guides will also be tapped for performance reporting. The guides contain conservation practice effects and impacts data for the conservation systems commonly applied by customers in the county. As customers develop and apply their conservation plans, the data from the guides linked to the plans can be mined by the computer to provide a sense for how the plan is impacting resource conditions. For all plans, the conservationist can see how resource conditions are being impacted throughout the county.

Smartech will increasingly contain online resource tools to help the conservationist and technical service provider evaluate resource problems and possible solutions. Examples include tools that

generate soil interpretations, such as expected crop yields or suitability of a site for a septic tank. Smartech also contains a runoff calculator, condensing the usual 2- to 3-hour exercise to 30 minutes or less.

In the long term, Smartech will feature what is called an object modeling system (OMS) for the Agricultural Non-Point Source Model (AGNPS) and Nitrate Leaching and Economic Analysis Package (NLEAP) and other models used to validate field experience and develop information that goes into the eFOTG. The OMS framework breaks down models into their component parts and makes many of them reusable and interchangeable. Scientists commonly exchange pieces of models, and OMS provides a consistent and efficient way to do this. Models developed in OMS can easily be moved into Smartech for detailed resource analysis by field specialists. OMS has the potential to cut technology development and transfer time by half or more. Technology is delivered faster and is targeted to the identified problem. Object modeling systems work in collaboration with the Agricultural Research Service (ARS), NRCS, and U.S. Geological Survey.

Smartech is progressing through the hard work of our technical specialists and contributing field conservationists and partners. The vision for this effort germinated in the field offices of several states, with the technical committees organizing this interest until it became an Agency-wide project. The “smarts” in Smartech reflect the innovation and good judgment evident in our conservation community.

[TO TOP](#)

CONSERVATIONIST'S CORNER

Shirley Gammon

State Conservationist—Alaska

Alaska is a land of extremes, with elevations ranging from sea level to over 20,000 feet, annual precipitation ranging from 6 to more than 200 inches, as well as active tectonics, glaciers, and permafrost. These highly variable physical conditions create a host of technical challenges. NRCS Alaska has a skilled staff that is well versed in understanding northern technical issues. Due to the wide variety and complexity of the challenges found in the Great Land, NRCS Alaska often needs additional technical expertise. This valuable assistance is provided by members of the National Science and Technology Consortium.



Unalakleet, Alaska

The native village of Unalakleet was experiencing damage from flooding. They turned to NRCS Alaska for assistance in understanding flood elevations and providing possible solutions to moderate flooding impacts. NRCS Alaska staff, along with hydrology and modeling assistance from the National Water Management Center, completed a detailed flood plain study for the village. The study included the impacts from high seas that occur during fall storms. “This study

shows us the risks from flooding if we implement various flood control projects. The study allows us to complete our long-range plans,” said Art Ivanoff, village environmental coordinator.

Specialists in geology and soil mechanics from the National Design, Construction and Soil Mechanics Center recently conducted a detailed look at the Delta-Clearwater River project, along with water resources planning specialists from the National Water Management Center. The Delta-Clearwater project will provide flooding protection for agricultural land and minimize sediment input into the Delta-Clearwater River. The river is a spring-fed, nonglacial stream known for its coho salmon spawning and trophy grayling fishery. The technical specialists provided NRCS Alaska with excellent insight into the complexity of water and sediment movement in and over the glacial outwash fan where the project is located.

As a result of the technical team’s report, NRCS Alaska assembled a planning group to revisit the Delta-Clearwater treatment alternatives in light of the new technical analysis and information. The planning group included specialists in landscape architecture and forest ecology from the Watershed Sciences Institute assisting NRCS Alaska staff and the local project sponsors. The planning group reexamined the resource issues, alternative treatments, and the impact of proposed treatments. A report describing the alternatives, their costs, and environmental impacts will be made available to the sponsors in the next few months.

NRCS Alaska is proud of the broad and varied technical services we provide our customers. We know that in a state as complex as Alaska, there are always new technical challenges. By bringing in expertise from the National Science and Technology Consortium as it is needed, NRCS Alaska extends its capabilities and assures delivery of the highest technical quality products to clients.

[TO TOP](#)

NEW PRODUCTS AND SERVICES

#1 New Soil Quality Fact Sheets Focus on Pasturelands

The Soil Quality Information Sheet series now includes two fact sheets addressing pastures. The first publication is an introduction to pasture soil quality issues. The second describes methods for monitoring and assessing soil quality on pastures.

The information is intended primarily for use in the planning process, but can also be used as an educational resource for teaching about soil quality. Comments and suggestions regarding these publications may be sent to the soil quality Webmaster at sqi.webmaster@ftw.nrcs.usda.gov.

Copies may be downloaded from the Soil Quality Web site at: <http://soils.usda.gov/sqi>. Bulk supplies can be requested from the Landcare office by phone (toll-free) at 1-888-LANDCARE or by e-mail at landcare@swcs.org.

For more information, contact:

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612-624-6765
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[TO TOP](#)

#2 Bulk Copies of “Hydrophobicity” Available

The Soil Quality Information Sheet, “Hydrophobicity,” previously available in electronic format only, can now be ordered in hard copy from the NRCS Landcare Office.

Hydrophobic soils are a common problem following severe wildfire. Gases produced by intense fires form a layer of water-repellant soil, causing a reduction in infiltration. Consequently, erosion increases due to greater amounts of runoff, spreading sediment and decreasing water quality in low-lying areas. This fact sheet describes this concern and offers treatment suggestions.



Workers Till Hydrophobic Soils

Supplies can be ordered from the Landcare Office by phone (toll-free) at 1-888-LANDCARE or by e-mail at landcare@swcs.org. Copies also can be downloaded from <http://soils.usda.gov/sqi/>. Contact the soil quality Webmaster with questions at sqi.webmaster@ftw.nrcs.usda.gov.

For more information, contact:

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[TO TOP](#)

#3 “Rebuilding Your Local Work Group” Fact Sheet Draft Available

The Social Sciences Institute recently released a draft of “Rebuilding Your Local Work Group,” an addition to its *People, Partnerships, and Communities* fact sheet series. Work groups have proven to be effective in increasing local participation in the management and protection of natural resources. This fact sheet can help work group participants identify local issues, set schedules for addressing the issues, and find resources to implement the changes.



“Rebuilding Your Local Work Group” presents techniques to renew interest and sustain momentum in a work group’s tasks. The publication is available by calling 616-942-1503.

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[TO TOP](#)

TECHNOLOGICAL ADVANCES

#4 RUSLE2: A Flexible Planning Tool

The Revised Universal Soil Loss Equation (RUSLE2) is a Windows-based replacement for the USLE and the MS-DOS version of RUSLE. NRCS is implementing RUSLE2 across the country as the climate data, soils data, and management scenarios for crops, forages, and some grazing systems become available. The close working relationship between the RUSLE2 development team and NRCS users has resulted in a user interface that is well suited to NRCS conservation planning activities. The RUSLE2 interface allows quick and easy comparisons of alternative combinations of crops, tillage and planting systems, grazing systems, and supporting practices. Soil loss estimates can be displayed in a single profile view. Alternatives can be compared for the same profile in a worksheet view, and all alternatives for various fields on a farm can be displayed in the plan view.

The “Rotation Builder” module in RUSLE2 can assemble pre-built crop and tillage or forage and grazing scenarios together into “rotations.” This module also allows for easy changing of the rotation, substitution of a different crop or tillage system, and the addition of support practices, such as terraces, contouring, stripcropping, contour buffer strips, filter strips, or drainage.

NRCS agronomists compiled a large national database of single- and multi-year management scenarios. These management “templates” comprise the largest and most extensive database of its kind that NRCS has ever assembled. The database is coordinated nationally and is proving to be a valuable NRCS asset to other modeling efforts and developers of other evaluation tools. In addition, the RUSLE2 interface now includes a Phosphorus Index, the Soil Conditioning Index (SCI), and the

STIR (Soil Tillage Intensity Rating). The STIR rating is currently being considered as a criterion for revised national residue management practice standards. Users not only get the standard soil loss and sediment delivery outputs, they can also display other outputs. All are automatically recalculated when any of the inputs are changed. Users can save valuable time by displaying various outputs in the same user interface, eliminating the need to recreate the management scenario in various separate models.

For more information, contact:

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[TO TOP](#)

WEB-BASED TECHNOLOGY

#5 Limited Resource and Beginning Farmer Data Set Released

The Social Sciences Institute recently released “The Limited Resource Farmer and Beginning Farmer Data Set.” This database provides useful information for analyzing base populations of Limited Resource and Beginning Farmers at the state and county levels. The data are available on the SSI Web site at <http://www.ssi.nrcs.usda.gov/CustomData/index.html>.

For more information, contact:

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[TO TOP](#)

TRAINING

#6 *The Leader In You* Seminar, “Give ‘Em the Pickle!” Approaching

Don't miss the second satellite seminar in *The Leader in You* fall 2003 series, “Give ‘Em the Pickle!,” featuring customer service expert Bob Farrell. It will broadcast on Wednesday, October 15, 2003, from 1 to 3 p.m. e.t. This seminar discusses one of the secrets to success in business—customer service. It supports the NRCS 2004 priority of implementing the President's Management Agenda Initiative—Strategic Management of Human Capital.



Bob Farrell

Bob Farrell believes that business has managed to industrialize, modernize, globalize, reorganize, and computerize; yet it hasn't realized its potential to create and keep customers. It is critical that you “go the extra mile” to give your customers what they want. Bob Farrell says the best way to do that is to give them “pickles.” “Pickles” are the special things you do, like providing them with useful information they might not know about, or including a handwritten note with every order shipped. Join us for a fun, motivating look at the most important thing we can do in our work—take care of the customer.

As a successful entrepreneur in the restaurant business, Bob Farrell opened 157 restaurants with no failures. He combined his love for family, fun, and ice cream and co-founded one of the first national full-service chain restaurants, Farrell's Ice Cream Parlors. He went on to personally manage and open more than 130 Farrell's restaurants, eventually selling the company to Marriott. Called by many as the most impassioned customer service speaker in the business, Bob shares his unique insights with heartfelt conviction.

Also, mark your calendar and join us December 10 for consultant Joni Daniels' presentation entitled “Power Tools for Women!” More details coming soon about this seminar.

The Leader in You program, sponsored by the NRCS Social Sciences Institute and the NRCS 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, National Association of State Conservation Agencies, National Conservation District Employees Association, and the Federal Training Network are cooperating sponsors of the program.

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