



# South Dakota Chapter

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## National Ag Day – Washington Pavilion

March 24, 2012 Chuck Lebeda, Heidi Rients, and Tamara and Erin Sommers helped students make Earth bracelets at the National Ag Day held at the Washington Pavilion, Sioux Falls, South Dakota.



National Ag Day celebration focuses on educating the consumer about the agricultural industry and how food, fiber, and

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### Special Interest Articles:

- Summer Activity
- Directors

## President's Corner



Steve Auch, president

There is a tremendous diversity of plant and animal life as well as an incredible amount of life in the soil.

I've attended a good number of farmer meetings this winter, which focused on bigger yields and more profit. There was little to no emphasis to the health of soil biological issues such as organic matter. This may be understandable as the area where I farm is in southeast South Dakota where there is very little no-till and is almost all corn and soybeans.

As I watched my neighbor chisel his field last fall I thought about better ways that are available to manage the soil. It really struck me how much damage he was doing to the soil microbiology when I found out he was chiseling 18-20 inches deep!

Can we make biological systems that do a better job than iron and fossil fuels?

We have a lot of work to do in soil and water management!

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Ag Day (continued from page 1)

renewable resources play an essential role in their lives. The South Dakota Soil and



Water Conservation Society members have a booth presenting the Earth's cycles using beads to represent the different aspects of the Earth's cycle.



Erin Sommers, Tamara Sommers, and Heidi Rients



NORTHERN PLAINS REGIONAL MEETING



Ron Shierer, area agronomist, Greeley, Colorado welcomed everyone to the 2012 Northern Plains Regional Meeting held in Sterling, Colorado March 8-10, 2012.



Paul Weber

Paul Weber, area resource conservationist for the Natural Resources Conservation Service out of Greeley, Colorado, introduced the group to the fundamentals of using the Trimble GeoXt module, which replaced the Garmin GPS due to its better accuracy, and being small and light. It has built-in antennae, but you can block the signal with your body. Better accuracy is obtained, if attaching external antennae in rough terrain. The 1 GB of internal memory can store a lot of data. An 8-hour battery gives longer use in the field, when using a low-lighted screen. The 5-mega pixel camera can be used to document high quality photos to a gps point in the field. It

can collect data simultaneously; points, lines or polygons.

The windows operating system76 gives the capabilities to write notes away from the office then download them to your computer later. It is easier to set up the shapefiles with a laptop then download them to the unit. You can type in notes using the onboard keyboard and stylus. The directory will also complete words. Colorado uses Arc Pad version 8 with their Trimbles.

It can be used for accurate practice certification. Map76 software is used with it.

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## MEET THE NEW DIRECTORS



### Southeast Director

Jeff Stewart of rural Wagner, South Dakota, was appointed by the South Dakota Soil and Water Conservation Society board of directors to serve as the southeast chapter director for 2012-2014.

Jeff has been a member of the Soil and Water Conservation Society for over 20 years. He first joined the society while working in Texas and served as the Northern SWCS director when he worked in Idaho. He assisted on the committee who put on the International SWCS meeting at Spokane in 2000.

He worked for the Minnesota Department of Natural Resources, U.S. Forest Service in Montana, and the South Dakota Department of Fish and Parks division of Forestry as a district forester in Pierre, South Dakota, prior to working for the Soil Conservation Service.

Jeff began his career for the Soil Conservation Service in Palestine, East Texas, and then moved to Lufkin, Texas, where he worked four years as a forester. He became the district conservationist in Murdo, South Dakota, in the mid 1980's where he served for two years before transferring to Carlton, Minnesota, as the district conservationist. He worked in Carlton for ten years then transferred to Sandpoint, Idaho, as a DC for eight years before transferring to Wagner, South Dakota, as a Resources Conservation and Development (RC&D) Coordinator for five plus years. Jeff retired in September 2011 with 30 plus years of federal service. He is still active with the Randall RC&D and is on many agriculture related committees.

He lives near Wagner, South Dakota, operates a 12-acre berry farm of Aronia and Black currant, and his hobbies include; hunting, fishing, reading, and horse training.

### West Director

Sandy Huber became a member of the Soil and Water Conservation Society after attending the Northern Plains Regional Soil and Water Conservation Technical Conference held in Rapid City, South Dakota, in 2009. She was appointed as the Western Division director for the South Dakota Chapter in 2010 and was co-chair of the 2011 South Dakota Chapters of Soil and Water Conservation Society and Society for Range Management meeting held in Wall, South Dakota. Sandy wanted to be actively involved in the South Dakota chapter and was appointed to serve as West Director for 2012-2014.

Sandy was born and raised on a ranch near Martin, South Dakota. Growing up she was very active in 4-H and FFA. These programs led to her future education and career choices.

She graduated from South Dakota State University with a Bachelor of Science degree in Agriculture Education. Teaching jobs in the vocational education field were being reduced and eliminated in many areas when she graduated, so she took the position of 4-H/Agriculture Agent with the South Dakota State University Cooperative Extension Service in Selby, South Dakota. Huber worked in this capacity for almost ten years.

In 1996 Sandy married Scott Huber and when the extension agriculture position opened in Martin, South Dakota, she accepted and they moved back to her hometown, so they could help her mother out on the ranch.

With changes in the Extension Service, Sandy became an Area Agronomist working for the Cooperative Extension Service, serving seven counties in the Southwestern Field Education Unit. She enjoyed working with producers and youth, but the long hours and travel distances were tough on her young family. In 2008, she was offered the position of District Conservationist with the Natural Resources Conservation Service in Martin, where she continues to work with producers to improve their land.

Sandy's husband Scott works as a program technician for Farm Service Agency. They have two boys, Frank who is 10 and Wyatt who is 5. Together they continue to operate the family's ranch along with her mother.



**PRESIDENT ELECT** (continued from page 3)



Kirt Peterson stops to inspect some garrison creeping foxtail.

Kirt Peterson is a native South Dakota and grew up around Aberdeen, South Dakota.

Kirt accepted the appointment to be the 2012-2013 President-Elect for the South Dakota Chapter of the Soil and Water Conservation Society at their last board meeting.

He attended college focusing on biology and chemistry then transferred to South Dakota State University (SDSU) where he obtained his degree in

ecological sciences.

At Brookings, he volunteered 30 hours a week for a year with the Natural Resources Conservation Service before accepting a full-time position as a Soil Conservationist in Plankinton, South Dakota.

On July 4, 2012, he will have worked two years as a full-time NRCS employee and his third year with the agency.

Kirt feels extremely fortunate to have a career in such a fascinating, challenging, and important field and feels honored to be selected as President-Elect for the South Dakota Chapter of Soil and Water Conservation Society. He looks forward to meeting new people and becoming more involved with the SWCS chapter.

Kirt joined the SWCS in 2009 as a student in Brookings. He remembers both Doug Malo and Thomas Schumacher (SDSU professors in soils) recommending the organization to those of us who were interested. He is an avid reader of the conservation journals.

**NP Meeting** (continued from page 2)



Richard Webb

Richard Webb, agronomist with the Natural Resources Conservation Service in Bismarck, North Dakota, gave step-by-step instructions on how to use the Trimble GeoXT in the field. He began by showing us how to navigate the Arc toolbox, then to select the project.shp file and transfer it to the GeoXT unit.



Tim Stephens

Tim Stephens, range management specialist with the Natural Resources Conservation Service in southeastern Colorado, tossed out B.S. flags to everyone. We were to toss the B.S. ribbons at him, if we disagreed with anything he said.

Tim began with, "People are amazing, one person can convert hundreds of acres of soil and kill what naturally

grows there just to create a seed bed, then to plant something that would not naturally grow or thrive there."

He quoted Dan Campbell in saying, "If you want to make a small change, change how you do things. If you want to change big things, change how you see things."

He told the story of Esther Island in the southwest Pacific Ocean. Most islands in the Pacific Esther Island are composed of volcanic rock.

The Rapaniu people living on the island believed that the living had a symbiotic relationship with the dead where the dead provided everything that the living needed (health, fertility of land

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## Soil Health (continued from page 4)

and animals, and fortune.) and the living through offerings provided the dead with a better place in the spirit world. With a little work they could make a paradise. They made huge monumental statues out of volcanic rock, cut down the trees and planted crops. Before the 1700's the Rapanui experienced a tremendous upheaval in their social system because of the change they had made in their island's ecology.

Most of the trees and all species of land birds became extinct through some combination of over-harvesting, over-hunting, and climate change. The island was deforested and did not have any trees over 10 feet tall. The deforestation meant that the people were no longer able to build seaworthy vessels. As the population increased, food became scarcer, and they resorted to cannibalism.

Tim ended with "conservation farming puts first things first by attending to the health of the soil, by seeing to it that the starting off place, the base, is put into sound health and kept that way." Aldo Leopold stated it best with "Health is the capacity of the land for self renewal. Land then is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants, and animals." --- Aldo Leopold, A Sand County Almanac, 1949.

Our foremost objective should be first Soil Health followed by Ecological Processes; then begin to change our thought process. The sustained capability of soil to function at a high level is a vital living ecosystem.

What are the ramifications for management of water for cropland or rangeland? Fifty percent of the fertilizer applied today makes up the nutrients lost by soil degradation. "We should mimic the natural communities of the area you live in. Come up with a different way of how you look at it," says Tim.

Cory Cole, Soil Scientist with Natural Resources Conservation Service, introduced the afternoon speakers.



Ed Kilpatrick demonstrated the Slake Test, which is a clear example of what is going on in the soil. Which soil has the ability to remain intact as moisture is added?

Ed dropped two clods of dry soil into wire screens attached to water-filled glass containers to illustrate the test.



The soil aggregate on the left is from a conventional tilled crop field and the one on the right was from an undisturbed CRP

field. (To do this test you need to have soil that is air-dried) A mesh of ¼" grid is formed to dip about 2 ½" in the water-filled jar and approximately a 2 ½" diameter soil clod is placed in the water. The soil on the left began to immediately fall apart and particles dispersed in the water. The soil on the right held together longer as it had micro aggregates holding it together.

Tillage aerates the soil and stimulates the soil bacteria to consume organic matter and soil glues; this reduces aggregation, porosity and infiltration said Ed. When the soil pores are condensed, infiltration is decreased and runoff is increased. Aggregation is important in decreasing erosion, increasing water and air movement, and preserving organic matter in the soil. More pore spaces in the soil system equals better infiltration.



Jon Stika, area resource soil scientist with the Natural Resource Conservation in Dickinson, North Dakota, says there is a problem separating

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## Soil Health (continued from page 5)

the *Good* from the *Symptoms* of a problem and in using the tools to fix the problem when dealing with soil.

Consider the following when problem solving:

- The Goal is the desired result.
- The tool is the device used to achieve the task.
- The problem is an obstacle or implement where the resolution is recognized as a solution toward a known purpose or goal.
- The symptom is a departure from the normal function indicating the presence of an abnormality. In other words, something is wrong.

“Never make implementing a tool a goal. If the goal is improving soil health, then select the tool that will effectively ensure the goal,” said Jon.

Tools do not build houses; skilled workers build houses! You must become a skilled worker with a clear goal in mind, only then do the tools become a lasting value.

A foremost goal is to restore the health of our soil as the vast majority of the soils in the United States are non-functional.

The *problem* is a lack of understanding on how soils function.

The *symptoms* are the departure from the normal, soil erosion, compaction, crusting and water runoff.

We work to deal with symptoms not the problem.

To get the problem straight we need to learn how soil functions and apply it to the nine steps of conservation planning.

Ways to create quality microbial habitat is to disturb the soil less, which increases the diversity of the plants grown in the soil. The diversity of plants correlates to diversity of microbial, living roots in the soil, and keeping the soil covered as much as possible.

These are the keys to improving soil health and sustainable agriculture because they focus on soil biology and soil ecology.



Michael “Storm” Casper is a soil conservation technician with the Natural Resources Conservation Service in Springfield, Colorado. He became interested in Soil Health after hearing speakers

on the subject. He says a simple definition of soil health is the capacity of the soil to function. The key to building soil health is to understand that soil is a biological function. Crops planted need to maintain good root depth, be nitrogen fixers, and produce biomass. Also, to be considered are the rate of decomposition and crops beneficial for species habitat

Several basic principles must be followed to improve soil health:

- 1.) Maintain a suitable habitat for a variety of animals that live within the soil food web.
- 2.) Disturb the soil less by not tilling.
- 3.) Grow living roots throughout the year with growing crops and cover crops keep the soil covered.
- 4.) Have a diversity of vegetation by using good crop rotations.

“The whole is greater than the sum of the parts,” said Storm. Try to “Mimic Range. It’s what Mother Nature wants to grow, and it needs a lot of diversity.” The natural succession of plants and soils with high disturbance = annual plants; low disturbance = a lot of woody plants and high diversity. The natural flow of energy is the way nature wants to go. This means there are a lot of different plants, cool, warm season, woody plants, and perennial plants.

A paper put out by the North Dakota Technical Development Team on Farming in the 21<sup>st</sup> Century on Soil Health states that biodiversity is the ultimate key to success of any agricultural system. The lack thereof limits the potential of any cropping system and allows disease and pests to increase. By increasing the diversity of a crop rotation and by using cover crops there is an increase in soil health and function, reducing input costs, and increasing productivity.



## Proposed Summer Activity

The South Dakota SWCS chapter is organizing a weekend for SWCS members to camp together and have a few structured activities to take in on July 27-29 (Friday-Sunday). A time to get together, relax and have a good time.

The planned event is at the American Creek Campground, Chamberlain, South Dakota. (There are 2 cabins available the 27-29 and 2 additional available for Saturday. There are several camp sites available, though.

Possible activities in the planning stages

are with the Lower Brule tribe and include a tour of their wildlife operation as well as their farm and popcorn facility. Other ideas included a tour of the big bend dam, local museums, South Dakota Hall of Fame in addition to all other fun camping activities.

The proposed tours would take place on Friday with Saturday pretty open for other activities. You are invited to attend one day or all 3 days.

Please contact Val Dupraz if you have questions or would like to participate in the event.

## Northern Plains Director Report

By Anita Nein

Greetings, My Friends in South Dakota SWCS!

Thank you for all the courtesies extended to me during the last two visits to your annual chapter meetings. I really enjoyed seeing some of you again and meeting more of you for the first time.

With your strong emphasis on reaching out with projects to children's groups and linking your annual meeting with the South Dakota Range Society and Soil Science of America Members, I can safely say that your chapter has traditionally been a very strong Northern Plains Chapter in terms of outreach over many years. I think you will appreciate the fact that the SWCS Board of Directors and Staff are doing a strategic plan aimed at outreach. The plan includes chapters identifying their own agencies and entities with which to work and will give SWCS products, recommendations, and services that the other entities want and need. We will be making contacts based on a need or resource concern.

You have the concept down well with your natural resource bracelets, soil painting kits, and emphasis on soil quality. Really, for the SWCS

Membership, Chapters, Student Chapters, Staff and Board of Directors, the conscious emphasis is preparing to market and actually sell our products, expertise, and services of great value to others. We are hoping to complete the plan in the next two months. Knowing there are open-minded members in a chapter like yours, we can make inroads in expanding our influence in the conservation arena. This is not a plan to force members into something, but to empower, support, and coordinate members into action.

There is something new at the International Conference this year. Due to requests by members to the BOD, the Regional Roundtable will not be in the setting of an expensive breakfast or luncheon this year. The Regional meetings will be held on Sunday. You should eat before you come. The session starts at noon July 22 with the State of Society address by Bill Boyer, the Annual Report from the Executive Director Jim Gulliford, The House of Delegates session, and then the Regional Meetings or Roundtables.

This Regional Roundtable will provide the site for conferees to meet and discuss

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**SD Chapter  
Soil and  
Water  
Conservation  
Society**

PO Box 481  
Murdo, SD 57559-0481  
Phone: (605) 669-2835

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We're on the Web!

See us at:

[www.sdswcs.org](http://www.sdswcs.org)

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Address:

**Soil and Water  
Conservation Society**  
945 SW Ankeny Road  
Ankeny, IA

**NP Report** (continued from page 7)

membership with their own region, have chapter reports, and bring relevant issues from their chapters.

Something at your disposal you may want to consider buying and reading is the "Soil Biology Primer." You may purchase the Soil Biology Primer by SWCS in cooperation with USDA/NRCS from the SWCS office in Ankeny. It is the size of a magazine, and a wonderful \$18 picture book for old and young alike.

I needed a program for my Rotary Club and I bought one just to see what it was like, then purchased three more. The members passed and shared it around. The primer has good

quality pictures of all the living organisms in the soil. I bought some gummy worms and other gummy products to represent the earthworms and nematodes. I found a few old Halloween spiders, bought some mushrooms, etc. just to help the participants relate to living things they have never seen before. Using those and the pictures in the book gave this group of adults a wonderful introduction to what is in the soil and a new soil awareness. The members really liked the program. After diving into it seriously yourself, you may want to keep it around the house for the children and grandchildren to see.

SD Chapter Soil and Water Conservation Society  
PO Box 481  
Murdo, SD 57559-0481

