NRCS Soil Health Update

June, 2016

Sharing soil health marketing communications information and resources from USDA's Natural Resources Conservation Service, other partners and the media.

***The New York Times* — A boon for soil, and for the environment**

When Gabe Brown and his wife bought their farm near Bismarck, North Dakota, from her parents in 1991, testing found the soil badly depleted, its carbon down to just a quarter of levels once considered natural in the area. Today the Brown farm and ranch is home to a diverse and thriving mix of plants and animals. And carbon, the building block of the rich humus that gives soil its density and nutrients, has more than tripled. That is a boon not just for the farm's productivity and its bottom line, but also for the global climate. Read more.

Related: Watch Gabe Brown's new TedTalk presentation on regenerative agriculture.

***NRCS* – 'The Hope in Healthy' Soil video series**

Chapter 4: Farmers going under cover

Video chapter four briefly explains what cover crops are and how they differ from other crops. The video also touches on cover crops' role in feeding the soil's microbes, which provide nutrients and other benefits to the crops that feed us.

DVDs of the series may be ordered free-of-charge through NRCS' National Distribution Center by e-mailing nrcsdistributioncenter@ia.usda.gov (specify "looped" or "chapter" versions). Watch Chapter 4 (2:24).

***Scientific American* (blog) – How soil microbes fight climate change**

Esther Ngumbi writes: Around the globe, 2016 has been a dusty year. Just this month, massive dust storms enveloped Guazhou County in China, engulfing five-story buildings. Dust storms in Kuwait suspended oil exports, while another storm engulfed the Texas Panhandle. In January, red clouds of dust swept across Free State, South Africa, while scientists warned that the erosion of nutrient-rich topsoil threatened food security. But the loss of soil also presents a less obvious challenge: it robs us of a key ally in fighting climate change. That ally is soil microbes. Read more.

***Union of Concerned Scientists* – Soils to reverse climate change: "Carbon farming" and the untapped potential in ecological approaches**

Andrea Basche writes: Are there agricultural practices that might offer more potential than the ones commonly discussed in the "carbon farming" conversation? In a companion post, I wrote about what the science tells us about cover cropping and reduced tillage, two practices getting a lot of attention in what I've called the "carbon farming" rage. Here I want to address some more agroecological practices, those that incorporate ecological principles, and what is known from field research about their ability to add carbon to the soil. Read more.

USDA – Agriculture Secretary Tom Vilsack and Senior White House Advisor Brian Deese announce partnerships with farmers and ranchers to address climate change

Secretary of Agriculture Tom Vilsack released a roadmap for the U.S. Department of Agriculture's (USDA) Building Blocks for Climate Smart Agriculture and Forestry – the Department's framework for helping farmers, ranchers, and forestland owners respond to climate change including improving soil health. The roadmap outlines progress, implementation plans, and case studies for each 10 building blocks. Read more.

***AgWeek* – Introducing livestock into arable cropping systems can improve soil health, profit**

In the Northern Great Plains, converting grasslands to croplands can potentially reduce soil health. South Dakota State University Extension advanced production specialist, Tong Wang, said that introducing livestock into arable cropping systems can reverse the negative impacts by improving soil health as well as adding profit per acre. "In the integrated crop livestock systems, cover crops and crop residue provide feed to livestock, while plants capture nutrients from the

livestock waste," Wang said. Read more.

***Land Stewardship Project* – A hub of soil health activity**
It's an overcast August morning in northeastern Indiana, and in a massive machine shed well stocked with the tools of a modern row crop operation, some 60 farmers are being reminded that growing corn and soybeans is about more than iron, oil and chemistry. The reminder comes in the form of a question from Dan DeSutter, who raises corn and soybeans in the west-central part of the state. "How many of you raise crops with no livestock?" The majority of hands in the room shoot up. "So you say," responds DeSutter. "We're all livestock farmers when it comes to soil biology." Read more.

***Sierra Voices* – What's a carbon farmer? How California ranchers use dirt to tackle climate change**
For many climate change activists, the latest rallying cry has been, "Keep it in the ground," a call to slow and stop drilling for fossil fuels. But for a new generation of land stewards, the cry is becoming, "Put it back in the ground!" As an avid gardener and former organic farmer, I know the promise that soil holds: Every ounce supports a plethora of life. Now, evidence suggests that soil may also be a key to slowing and reversing climate change. "I think the future is really bright," said Loren Poncia, an energetic Northern Californian cattle rancher. Poncia's optimism stems from the hope he sees in carbon farming, which he has implemented on his ranch. Read more.

NRCS' 'The Science of Soil Health' video series
***Bringing the science of soil health home*: Chapter 4 – The great cover up: How nature protects and enriches the soil**
In the fourth chapter of his five-part mini-series, "Bringing the Science of Soil Health Home," Buz Kloot, Ph.D. exposes nature's proclivity for keeping soil covered, and explains the benefits of discovering the cover for farmers and gardeners alike. Dr. Kloot explains how plant canopies or residues from cover crops and previously harvested cash crops provide a layer of "biomass," which helps reduce weed pressure while lowering soil temperatures and providing the soil with a coat of "armor" to protect it from water and wind erosion. Watch chapter four (4:40).

***Farm Progress* – Big belief in conservation led to huge commitment to soil health**
Some key leaders who pushed to form the Conservation Cropping Systems Initiative farm lots of acres. They include Kenny Cain, Crawfordsville, and Ray McCormick, Vincennes... Who you may never have heard of is Les Zimmerman, Clinton. His tenant raises corn and

soybeans on his farm, but crop farming is not what Zimmerman is all about. He operated a tree nursery for roughly 30 years, selling trees for landscaping within a 150-mile radius... So how did a nurseryman become a key component in the effort that launched Conservation Cropping Systems Initiative (CCSI), a thriving soil health program that put Indiana on the national map? Read more.

NRCS –Soil Health Webinar Series

June 14, 2 p.m. EASTERN Time – Managing soil health in forests

Maintaining forest soil health is essential to sustainable forest uses, but forest soils, like other soils, can be degraded through improper management. This webinar, slated for 2 p.m. on June 14th, will provide an overview of forest soil management issues and an introduction to practices that limit or mitigate impacts. Click here to learn more about the webinar and to sign in.

Note: No advance registration is required and space is not limited, but participants should sign in 15 minutes early. This webinar offers CEUs and will be recorded for future viewing. It is presented by the USDA NRCS Soil Health Division. Contact Holli Kuykendall, Ph.D., National Technology Specialist, for more information.

***Coastal Leader* (Kingston, Australia) Cover crop trial aims to unlock better soil**

United States-based cover crop pioneer Steve Groff had a simple message for South East growers recently – treat cover crops like cash crops. On a tour through southern Australia last month with AGF Seeds, Mr. Groff said similar management was needed to grow radish, millet and other cover crops as cereals and pulses, including fertilizer and insect control. “It (cover crops) can make a good farmer better, but a bad farmer worse,” he said. Read more.

***NRCS webinar replay* (in case you missed it) – Integrating warm season annuals into cool season perennial grazing systems**

This webinar focuses on the use of warm season annuals (cover crops), their management and tips for revitalizing old monoculture cool season pasture to improve soil health. The **Science & Technology Training Library** offers more than 300 on-demand webinars, and it has new and improved Search functionality. There are more than 40 **on-demand soil health webinars**. The “On-Demand Webinars by Category” topics listed on the Home page, including Soil Health, allows library users to search and view a list of webinars specific to their interests. Users have been asking to search by CEU type, and now they can.

***Iowa Public Radio* – Coastal foodies and Montana farmers meet over lentils… and have lessons for the future of food**

As a country music singer, Liz Carlisle, who grew up in Montana, says she was interested in the poetry and philosophy of farming and rural life. "I hadn't been involved in sustainable agriculture at all," she says, "I was a country singer. I think I shared a lot of values, but I didn't really know the language of sustainable agriculture and I wasn't, quite frankly, paying enough attention to economics or to science." Then Jon Tester, a Montana organic farmer, was elected to the U.S. Senate as a Democrat in 2006 and Carlisle went to work for him. She started learning about a network of organic and conventional farmers using fewer industrial practices and other more sustainable strategies to keep their farms ecologically healthy and also profitable. Read more.

***NRCS-WA* – Soil health evangelist practices what he preaches**

He's an evangelist who saved his own soil. Now he wants to help others save theirs. When Douglas Poole speaks, you hear the passion in his voice for how healthy soil has helped his farm. But Poole wasn't always a soil health proponent; in fact he used to be an accountant. He's been a farmer before, and when he came back to the farm this time, leaving behind his job with the school system, he decided to make it forever… "I can't even imagine being a conventional farmer and looking to the future. I feel like those of us that have made the conversion have a future," he says. Read more in this story by NRCS' Jenn Cole.

***No-Till Farmer* – Embracing diversity brings on no-till profitability**

It's no accident that Levi Neuharth is keeping diversity in his cropping strategy, microbial activity in his soil biology and more money in his pocket. This second-generation South Dakota farmer has identified markets for the small grains that provide crop diversity, while integrating continuous cropping with cover crops into the no-till system his father, David, began establishing some 20 years ago.Read more.

Related from *No-Till Farmer*: 100% cover cropping brings new benefits to no-till farm. Watch the video interview (3:25).

WRVO-FM (Public Media) – Farmers try to find ways to deal with more severe weather

Planting season is getting underway in central New York. And for farmers it means another year when the changing climate can make or break a growing season. But farmers aren't sitting still when it comes to dealing with the more severe weather that comes along with a warming climate. Water is the lifeblood of a farm. Not enough and crops wither and die. Too much, and they are swept away in a soggy torrent of twisted roots and topsoil. "It's just devastating to watch your

crop wash after you've just planted it and it's coming out of the ground," said Dan Annable, who operates a 500-acre farm in Marietta. His farm is a rolling stretch of green hills and rocky gullies in southern Onondaga County. Read more.

NC State University – Building healthy soil in vegetable gardens: Cover crops have got it covered

Megan M. Gregory, Ph.D. writes: There is a large body of research supporting the use of cover crops on organic and sustainable farms. However, vegetable gardeners can successfully plant and manage cover crops with hand tools, and reap the benefits of this practice for their soil and crops. Download the free, 19-page document for gardeners.

***Iowa Farmer Today* – Soil health benefits from sustainable crop production**

ISU agronomy professor Mahdi Al-Kaisi writes: The benefits of healthy soil in sustaining crop production are most evident when growing conditions are less than ideal. Healthy soils increase the capacity of crops to withstand weather variability, including short-term extreme precipitation events and intra-seasonal drought. Increasingly highly variable weather conditions present increased risks to crops and require more careful attention to conservation planning to mitigate impacts on soil health and crop productivity. Read more.

***Regeneration International* – '100 Projects for the Climate' seeks applications for funding**

Continuing the momentum of COP 21, "100 Projects for the Climate" aims to speed up the emergence of citizen-led initiatives to help protect the planet and feed the world. This new effort will enable the 100 most innovative solutions from around the world to become a reality. Individuals or groups who have what they believe are "effective and replicable solutions for combating climate change," including soil health projects, are invited to submit their applications for possible funding by June 6th. Citizens will then vote to select 100 projects worldwide for funding.

***The Daily Star* – Cover crops have enriched local soil**

Soil at many area farms should be better prepared for the upcoming spring planting season thanks to the success of cover crops, says Dale Dewing of Cornell Cooperative Extension. As farmers learn the benefits, fields that once were barren in the off season will show a

green cover, he said. According to the NRCS, cover crops have the potential to provide multiple benefits in a cropping system.Read more.

***Michigan State University* – Organic matter: The living, the dead, and the very dead**
Soil health, specifically soil organic matter (SOM) has been on the minds of farmers in the past few years. Farmers are testing their soil and comparing its soil health on the grounds of increase of soil organic matter. Most tests that farmers use measure total SOM. SOM, however, is broken up into three different categories: living, dead, and the very dead. The ratio of these three is also a good measure of the health of your soil. Read more.

***Farm Credit Canada* – Cover crops gain popularity**
Ontario cash cropper Blake Vince can remember the moment cover crops really piqued his interest. Vince was in the U.S. for a farm meeting a few years back and started comparing notes with Ohio farmer David Brandt. Brandt was trying to persuade Vince there was a better way to farm, one that reduced tillage and depended more on cover crops. As a member of a family of farmers noted in their area for being no-till pioneers, Vince was interested, noting that the initial theoretical foundation of no-till always intended to incorporate the cover crop practice. But it was the bottom line numbers for similar yields that really got his attention. Read more.

***AgriNews* – Governor sees farmers' water quality improvements**
Gov. Terry Branstad saw what farmers in the Middle Cedar Partnership Project are doing to protect water quality during a Soil and Water Conservation Week tour. John Weber took Branstad on a brief driving tour to see their rye cover crop and their saturated buffer. Three years into the nutrient reduction strategy, Branstad is encouraged by what he's seen. "I'm trying to learn as much as I can," Branstad said. "There's nothing like getting out and seeing firsthand how things work." Read more.

***Manitoba Co-operator* – Conservation districts aim to improve water infiltration**
Jennifer Paige writes: The best place to store water is where it falls. That's the conclusion of four Manitoba conservation districts that are banding together to launch a new project that will demonstrate how to build organic matter in soil and make it a sink for rainfall and meltwater. Read more.

***Mercola.com* – The soil solution**
Physician and surgeon Dr. Joseph Mercola wrties: It's easy to take soil for granted. That is, until you lose it. The dirt beneath your feet is arguably one of the most under-appreciated assets on the planet.

Without it, life would largely cease to exist while, when at its prime, this “black gold” gives life. In nature, plants thrive because of a symbiotic relationship with their surrounding environment, including mircroorganisms in the soil. Read more.

***Agri-View* – Farmer sees value in cover crops**

I call myself a biological farmer,” Steve Siverling said. “To me that means taking care of the soil and trying to improve it. I am not the best bookkeeper and sometimes I felt I might have been a little backward in some of my practices over the years. But that is the great thing about farming; you can do it your way, as long as you pay your bills and feed your family.” Read more.

***Huffpost Green* – Land health Is our health: Grass up!**

Julie Ann Fineman writes: Healthier soil feeds healthier plants, which feed healthier cows, which produce healthier milk, which makes healthier people. This week I was invited to learn about the agricultural work being done for our future at Grass Up!, one of many national think tank pop-ups lead by Organic Valley’s educational campaign to promote a more sustainable food future. Read more.

***Farm Progress* – Cover crop planted after wheat crop does good things for the soil**

You can create a buffet for the microorganisms in your fields if you grow wheat. It starts after the wheat comes off the field. Farmers south of Interstate 70 traditionally plant soybeans after wheat. And it is tough most years as you move farther north in Indiana, since you run out of growing season before double-crop soybeans mature. Shannon Zezula, resource conservationist with the NRCS, along with other NRCS staff members around the state and the Indiana Conservation Partnership, put together information to explain another alternative to planting soybeans after wheat, especially where that practice doesn’t fit as well. Read more.

***The Nebraska Radio Network* – USDA wants Nebraska to have healthier soil, more productive crops**

The idea being, the healthier the soil, the more efficient and productive corn, soybeans, and other crops can be. NRCS is looking for 12 farms across the state to be demonstration sites, according to Aaron Hird, state soil health specialist. “We can learn a lot on the ground and showcase cover crops and soil health management systems locally with field days and trainings,” Hird tells Nebraska Radio Network, “and gain a lot more ground with farmers than with our own staff and other partners by having local examples.” Read more.

***Soil Solutions* – An interview with "The Hidden Half of Nature's" David Montgomery**

David R. Montgomery, co-author of the Hidden Half of Nature, explains the symbiosis between plants and microbes in the soil—a partnership that goes way back to when plants first colonized the continents. Watch the short interview (2:56). Watch the NRCS soil health webinar featuring Dr. Montgomery (one hour).

Additional soil health marketing communications materials from the soil health communications team are in development, so stay tuned for further updates. As always, please feel free to contact me at any time if you need additional information or would like to offer contributions to the Update. If you'd like to subscribe or unsubscribe to NRCS' Soil Health Update, contact ron.nichols@wdc.usda.gov . Thanks for all you do on behalf of conservation and American agriculture.

**The views and opinions expressed in the aforementioned articles or videos are those of the individuals featured therein and do not necessarily represent the official policy or position of any agency of the U.S. Government.*

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