THE MONTANA CONSERVATIONIST

News from Montana's Conservation Districts

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In This Issue

Stewards Supreme: Garfield Conservation District on a Roll

Prairie Populist: After just a few minutes of conversation, it's obvious that Dusty Olson loves her work with the Garfield County Conservation District (CD). She gushes over her job and her coworkers. After landing the role, one of the board members welcomed her with open arms. "You are getting a family here," they said. And that is certainly true.

Conservation Districts comprise "units of local government designed to help citizens conserve their soil, water, and other renewable resources." Five elected local board members govern and fund each CD with mill levies and Montana DNRC grants. There are 58 Conservation Districts across Montana; most — but not all — follow county lines. The Conservation Districts educate, assist with grant-writing and lead projects in their districts — filling typical duties for administrators, technicians or Big Sky Watershed Corp members. However, each CD offers different services.

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SOIL & WATER CONSERVATION DISTRICTS of MONTANA

MONTANA ASSOCIATION of CONSERVATION DISTRICTS
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Compost is key to sequestering carbon in the soil

UC Davis study dug deep to uncover which agricultural systems store the most carbon; cover crops found to be neutral unless combined with compost.

By Kat Kerlin, UC Davis: By moving beyond the surface level and literally digging deep, scientists at the University of California, Davis, found that compost is a key to storing carbon in semi-arid cropland soils, a strategy for offsetting CO2 emissions.

For their 19-year study, published in the journal Global Change Biology, scientists dug roughly 6 feet down to compare soil carbon changes in conventional, cover-cropped and compost-added plots of corn-tomato and wheat-fallow cropping systems. They found that:

Conventional soils neither release nor store much carbon.

Cover cropping conventional soils, while increasing carbon in the surface 12 inches, can actually lose significant amounts of carbon below that depth.

When both compost and cover crops were added in the organic-certified system, soil carbon content increased 12.6 percent over the length of the study, or about 0.07 percent annually. That's more than the international "4 per 1000" initiative, which calls for an increase of 0.04 percent of soil carbon per year. It is also far more carbon stored than would be calculated if only the surface layer was measured.

"If we take the time and energy to look a little deeper, there's always more to the story," said co-first author Jessica Chiartas, a Ph.D. student with the UC Davis land, air and water resources department. "The soil represents a huge mass of natural resource under our feet. If we're only thinking about farming the surface of it, we're missing an opportunity. Carbon is like a second crop."

Cover crops, compost and the carbon market

Nationwide, many studies that investigated carbon change in the top foot of soil found that cover-cropped systems store carbon. The UC Davis study also found gains in the surface but, deeper down, enough carbon was released from cover-cropped systems that it resulted in an overall net loss.

"There are other benefits to cover crops that farmers may still enjoy, but in our systems, storing carbon is not necessarily one of them," said co-first author Nicole Tautges, a cropping systems scientist with the UC Davis Agricultural Sustainability Institute. "We'd make more progress by incentivizing compost."

The researchers did not compare composted systems without cover crops, but suspect the compost helped sequester carbon despite the cover crop, a notion they intend to investigate further.

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Garfield CD, continued

Dusty, the Garfield County Conservation District administrator, has been with the Garfield County CD for nearly three years. Based in Jordan, the district serves Garfield County, a population of about 1,200, and more, via partnerships and cross-county projects.

A native of Montana and the daughter of a ranch hand, Dusty grew up in Lewistown. She found herself in Garfield County because of her husband whose hometown is Jordan. She said she never expected to work for the Conservation District.

Most people who are CD administrators have a natural resource management background. Dusty, on the other hand, previously sold Aflac insurance. She heard of the job opening through word of mouth. She was willing to try, even though she knew she had a huge learning curve. Sometimes, she admits, it feels as if she still doesn't know everything the job entails.

Luckily, Dusty loves the work. She gets to alternate between the office and the field, and she works with a wide range of folks from diverse agencies, groups and walks of life. Better yet, she is very good at her job.

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Sage Grouse and Ranching in Carter County

This story comes to us via the Natural Resources Conservation Service (NRCS) and Montana Department of Natural Resources (DNRC) and features rancher Brett Lesh of Carter County. Lesh's was one of the first ranching operations to implement innovative conservation measures to protect Sage Grouse in Montana.

Story by John Grassy.

In the spring of 2012, Bret Lesh was trying to figure out water on the new 9,000-acre unit of his Cross W Ranch. Along with every other rancher in Carter County, Montana, his business was subject to the yearly calculus of snow, rain, temperature, wind. In a good year, his native rangeland in spring released its bounty of western wheatgrass, blue grama, thickspike wheatgrass, forbs and buffalograss, a carpet of bright green amidst the blue-gray sagebrush. Snowmelt and rain filled the small reservoirs and excavated pits that served as water sources for his cows. Sage-grouse assembled on their ancestral breeding grounds, the males to strut and joust for the attentions of nonchalant females. But that was a good year, that was maybe three years out of five. Bret Lesh needed to figure out water on his new property because a successful rancher in southern Carter County never loses sight of what can happen to his land and livelihood during the other two years.

When he stopped into the USDA Natural Resource Conservation Service (NRCS) office in Ekalaka that spring, Bret Lesh had no doubt heard the talk around Carter County about the greater sage-grouse. The big prairie birds that held dramatic courtship rites and flushed in coveys – the mottled grayish-brown-and-white birds everyone in Carter County saw most any normal day and scarcely considered, except when they fed along the roads and posed a threat to collide with passing vehicles – were declining across much of their historic range. Wildlife biologists were in southern Carter County studying the birds. State and federal agencies were huddling to discuss conservation strategies. It was entirely possible in 2012 that the Greater Sage-Grouse could be listed as a federally threatened or endangered species. The sage-grouse scientists had given southern Carter County a new name: Core Area 13. "Core" referred to the relative quality and importance of the habitat for Sage-Grouse in Montana; it meant the healthiest, most intact habitat, with a stable population of birds.

Rebecca Knapp, the NRCS district conservationist in Ekalaka, welcomed Bret Lesh into her office for their meeting. In response to the growing concern over sage grouse, her agency a year earlier had launched the National Sage Grouse Initiative, a cost-share program for private landowners who committed to making improvements on their land or changes in their management regimes to benefit sage grouse, an umbrella species for 350 other sagebrush-dependent birds, mammals and other wildlife.
In Carter County, Knapp says, agency staff and local leaders had decided on a low-key approach to the initiative. Sage-grouse were plentiful, which meant they were successfully coexisting with local ranching practices. The talk of a federal listing for the bird already had some landowners worried. "We decided to proceed slowly and limit local publicity," Knapp says. "We wanted to see how it went in some other areas first."

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What role do native grasslands play in reducing runoff?

Resilient Ag Landscapes: Study examines the effects of converting grassland to cropland.

Nebraska Farmer: Most of the time, when nutrient runoff is discussed in agriculture, the focus is on best management practices on the crop production side.

However, as Martha Kauffman, managing director of the northern Great Plains region for the World Wildlife Fund, pointed out during the 2019 Daugherty Water for Food Conference, grasslands — specifically on the Great Plains — have a big role to play in reducing nutrient loads in the Missouri and Mississippi river basins.

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However, as Martha Kauffman, managing director of the northern Great Plains region for the World Wildlife Fund, pointed out during the 2019 Daugherty Water for Food Conference, grasslands — specifically on the Great Plains — have a big role to play in reducing nutrient loads in the Missouri and Mississippi river basins.

It can be a contentious topic in the wake of flood events and with ongoing concerns of Missouri River infrastructure being managed more for wildlife habitat rather than for flood control.

So, with that in mind, it's important to point out that much of the northern Missouri River basin (which includes the northern Great Plains) still is in native prairie and doesn't contribute much to nitrogen runoff. And as Kauffman and others pointed out at the Water for Food Conference, it highlights the important role beef production and grazing play in the overall health of the ecosystem.

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Farm families weighed down by increased stress

Northern Ag: Farm families are under increased stress this season, challenged by weather, trade issues, the farm economy and many other factors that are out of their control. Stress impacts our bodies in many ways and can result in symptoms such as increased aches and pains, changes in appetite, lack of sleep, anxious or racing thoughts, moodiness and social isolation. Increased stress is becoming chronic and has taken a toll on farmers, resulting in mental health concerns. This increase in depression among farmers and ranchers is troubling.

Recent research studies have shown that the prevalence of depressive symptoms in farmers and ranchers ranges from 6% to 35%. Additionally, suicide among farmers and ranchers is a national concern. With the increased chronic stress that agricultural producers are experiencing, the suicide rate among farmers and ranchers is higher than the general population.

Whether you are a member of a farm family or not, these statistics should concern all of us.

Agriculture is the bedrock of our economy, and we depend on farmers for our daily needs such as food, clothing and fuel. Currently, many farmers are in jeopardy of losing their family farms, some of which have been passed down from one generation to the next.

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Testing begins on Berkeley Pit water treatment facility

MTPR: 37 years ago, Atlantic Richfield abandoned an open pit copper mine in Butte and allowed it to flood with toxic mine water. Now, the company estimates they're one month away from proving they're in control of the Berkeley Pit. MTPR's Nora Saks got a sneak peek of their new water treatment facility and has more.

I'm inside a huge tan shed located right next to the Berkeley Pit in Butte, resisting the urge to reach out and touch the maze of tanks, spigots, gauges and pipes going every which way.

"We are treating water right now, so it's very important that we don't - everyone wants to turn a valve or push a button, but let's try not to do that today."

That's Atlantic Richfield's operations manager Ron Halsey. He's in charge of this new polishing plant, which has an unassuming appearance, but is almost ready to serve a critical function.

It's the final component of a pilot project to start pumping and treating the highly acidic and metal-laden groundwater flooding the Berkeley Pit, well before it reaches the point when it will contaminate Butte's aquifer and creeks. Unmanaged, that's projected to happen in 2023.

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New ARS study shows US Beef not a significant contributor to global warming

On Pasture: An Agricultural Research Service (ARS)-led team has completed a comprehensive life-cycle analysis quantifying the resource use and various environmental emissions of beef cattle production in the United States. Their results so far indicate that U.S. beef's contribution to climate change is small percentage of the country's Greenhouse Gas emissions, and were not a significant contributor to long-term global warming.

"The environmental footprint of producing beef has long been debated," said Marlen Eve, ARS deputy administrator for natural resources and sustainable agricultural systems. "One challenge is that the impacts extend beyond just those associated with growing the animals and include the impact of producing feed and other inputs. This is further complicated by the diversity of ways that beef cattle are managed and fed. It is important to have an accurate quantification of these impacts to provide a baseline against which production system sustainability can be assessed and improved."

The aim of the study is to establish baseline measures that the U.S. beef industry can use to explore ways of reducing its environmental footprint and improve sustainability.

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Submarines probe depths of Flathead Lake

MTPR (Aug 6): Boaters on Flathead Lake might see a strange sight this month: small submarines surfacing at various locations. The subs are diving in an effort to help researchers at the Flathead Biological Station reach unexplored depths.

"Want me to go down? Ok, we're going to dive."

Hank Pronk is the pilot of the Nekton Gamma, a small two-man submarine that will be one of two subs aiding in Flathead Lake Bio Station's research efforts this week.

On Monday, Pronk gave several people a quick ride in Yellow Bay.

"So we're 14 feet from the bottom right now."

As we go down, the water becomes murky and after a few minutes, we're 40 feet below the surface. Visibility improves and you can see along the muddy bottom for about 15 feet.

Back on the dock, Bio Station researcher Jim Craft explains that this opportunity was made available at no cost to the station through a group of private sub owners called Innerspace Science, which connects people like Pronk with research organizations like the Bio Station.

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Grants

223, Education, and District Development Grants

The deadlines for this year's 223, Education, and District Development grants from DNRC are as follows: **October 23; January 15, 2020, and April 22, 2020**.

Reclamation & Development Planning Grants

The DNRC Reclamation and Development Grants Program (RDGP) is now accepting grant applications to fund planning and assessment for natural resource projects. Up to $50,000 is available per planning project to any city, county, Tribe, conservation district, or other local government subdivision in Montana. Initial review begins **September 5;** applications will continue to be accepted until **October 10.** More Info

Montana Farm Bureau Foundation Grants

In celebration of their 100th birthday, the Montana Farm Bureau is offering grants to support rural Montana. The Centennial Community Initiative is established to help expand economic opportunities, create jobs, support infrastructure improvements, increase support in community service, and provide a long lasting impact in Montana rural areas. A total of $100,000 is available. Deadline: **December 31, 2019.** More Info

Events, etc

Beaver Restoration Meeting

Montana Fish, Wildlife & Parks is hosting a meeting on Tuesday, Aug. 27, on the roles of beaver and humans in habitat restoration and water conservation. The meeting's objective is to increase common awareness of potential opportunities, constraints, mechanisms, authorities, roles, and expectations for beavers and other tools to conserve and enhance riparian and aquatic habitats. **August 27**, Helena. For more info: Quentin Kujala at qkujala@mt.gov.

Save the Date: Montana Range Tour

The 2019 Montana Range Tour, will be held **September 4th & 5th** in Harlowton, MT.

Treasure County Soil Health Tour

This tour will cover companion cropping, minimum till beets, grazing on irrigated cropland, a rainfall simulator, and an equipment demonstration. **September 18**, Hysham. Contact Angela Stahl (406.342.5510 x102) for more info.

9th Annual Roundtable on the Crown of the Continent

This year's conference will focus on strengthening the land-culture connection. Together over the next three days we'll look at how a handful of currently pressing topics are playing out in the landscape, and then provide the space to have conversations that work through the tensions — and explore the opportunities — that each of our diverse collaborators represent. Polson, **September 24-26.** Agenda | Registration

Public Lands Council Annual Meeting

The Public Land Council has their national annual meeting in Great Falls on September 25-28th. Some topics may interest districts, such as: BLM and communication, forest service and wildlife, multiple use, and public land ranching. More Info

Women stepping forward for agriculture

Make plans now to attend the annual Women Stepping Forward for Agriculture Conference at the Gallatin County Fairgrounds in Bozeman, Mont., **Oct. 1-3, 2019**. This year's conference theme is Salute to Agriculture and is packed with speakers that will deliver information on today's most relevant agricultural topics: Ag lending, markets and trade, hemp production, ag research, and beef cattle production. More Info

Save the Date: MACD Annual Convention

MACD's annual convention will be held November 18-21 in Kalispell at the Red Lion Hotel & Convention Center. We are working to get information on hotel reservations a a draft agenda up. Please visit our website, convention.macdnet.org for the latest information.

Coming Up

August

26 MACD Executive Committee Conference Call

27 Beaver Restoration Meeting, Helena

September

4-5 Montana Range Tour, Harlowton

16 Area 4 Annual Meeting, Hardin

17 Area 2 Annual Meeting, Glendive

18 Area 1 Annual Meeting, Glasgow

Treasure County Soil Health Tour

19 Area 3 Annual Meeting, between Lewistown & Hobson

24 Area 6 Annual Meeting, Alder

24-26 Crown of the Continent Roundtable

26 Area 5 Annual Meeting, Hamilton

Have a story, funding opportunity, or event to share? Please email tmc@macdnet.org with details.

Jobs

DNRC CARRD Program Specialist

This position manages the Watershed Management Grant Program and oversees Renewable Resource Grants. It is an amazing opportunity to be a part of projects across Montana that conserve, manage, develop and preserve Montana's renewable resources. Closes **August 28**. More Info

MACD Executive Director

The Montana Association of Conservation Districts (MACD) is currently seeking to hire an Executive Director. The Executive Director is responsible for providing leadership and overall management of the organization. This includes communication with conservation districts and partners, legislative duties, representing conservation districts at a variety of events, and the administration and management of daily operations. **Position to remain open until filled.** More Info

MISC

Nominate Your Conservation Leaders Today

Do you have an outstanding conservation leader in your community? Take this opportunity to show your appreciation for their work and dedication by sending in a nomination for one of NACD's national conservation awards.

CD Supervisor & Employee of the Year Nominations

The time has come to nominate outstanding conservation district employees and supervisors for the MACDEO's annual Employee and Supervisor of the Year Awards. Nominations are due by September 1, and awards will be presented at the annual MACD convention in November. More Info

National Conservation Foundation Next Generation Leadership Initiative

The goal of the NGLI is to equip conservation district leaders with the tools to become national leaders through personal, civic and organizational leadership development. The NGLI will consist of comprehensive in-person training sessions to help participants rise to meet the future needs of natural resources management, increasing their capacity to navigate and manage complex conservation challenges – both current and future – at the national level. Application Deadline: **September 20**. More Info