THE MONTANA CONSERVATIONIST

News from Montana's Conservation Districts

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In This Issue

MACD Seeks Executive Director

The Montana Association of Conservation Districts is currently seeking an Executive Director candidate to represent the non-profit and the state's 58 conservation districts. 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.

Visit www.macdnet.org/careers for a complete description of position responsibilities, qualifications, and how to apply. This full-time, salaried position is located in Helena, Montana. Complete applications must be submitted by May 1 at 5 p.m. for initial consideration.

SOIL & WATER CONSERVATION DISTRICTS of MONTANA

MONTANA ASSOCIATION of CONSERVATION DISTRICTS
We're growing Montana's future.

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BEEF Magazine:

What's the big deal about soil? Everything.

Your soil is home to most of the biodiversity in the world. Keeping it healthy will keep you and your cows healthy, too. By Robert Fears

Soil health has become a frequent topic of conversation and for good reason—it's the basic element of the cattle industry. Healthy soil grows abundant forage which keeps cattle producing in good body condition. Unhealthy soils can cause ranchers to file for bankruptcy.

"Soil health is the capacity of a soil to function as a vital, living ecosystem that sustains plants, animals and humans," says Steven Shafer, chief scientific officer with the Soil Health Institute. "Key words in this definition are vital and living. Soil health is vital to our livelihood and soil is alive with physical, chemical and biological components."

Physical component

"Soil has structure, which is the arrangement of primary particles into secondary units called aggregates. Soil aggregates are clumps of soil particles held together by moist clay, organic matter, polysaccharide gums produced by bacteria and fungi and fungal hyphae (strands)," says Dennis Chessman, Southeastern regional soil health team leader, NRCS Soil Health Division.

"Pores between aggregates contain water and air and allow roots to grow. Structure affects water infiltration, water holding capacity, water and air movement, nutrient availability and root growth," he explains.

An example of poor soil structure is plating, which is horizontal layers of soil particles created by compaction or lack of root growth. Plating prevents downward movement of water, nutrients and roots and reduces soil productivity.

"Soil texture is the percent of sand, silt and clay particles and determines water holding capacity," Shafer says. "Water is lost to deep percolation below root zones in sandy soils, whereas clay soils hold water too tightly for it to be available to plants. Available water capacity occurs in medium textured soils between levels of field capacity and wilting point."

Chemical component

Organic matter is an important part of soil chemistry and is derived from the remains of organisms such as plants, animals and their waste products. Benefits of soil organic matter include its major role in aggregate forming and its improvement of water infiltration, water holding capacity and available water at field capacity.

Organic matter mineralizes nitrogen, making it available to plants and accounts for 30% to 90% of the cation exchange capacity (CEC) of soil. CEC is a measure of soil fertility and nutrient retention capacity. In addition, soil organic matter is a major source of plant-available phosphorus and sulfur.

"Metals such as iron, manganese, zinc and copper are chelated by organic matter, keeping them available to plants. Organic matter improves plant root environment and contributes to favorable habitat for soil biology," Chessman says.

Biological component

Creatures living in the soil are critical to soil health and include bacteria, fungi, protozoa, nematodes, arthropods and earthworms. They affect soil structure, soil erosion and water availability. Soil biology is important for decomposition, nutrient cycling and plant growth. Soil is home to most of the biodiversity in the world. READ MORE

Hay and straw needed for livestock operations

Typically in the first quarter of the year, Montana Hay Company President Toby Edwards has about 7,000 to 8,000 tons of inventory; currently, "I don't think we have 200 tons for sale, period."

"Nobody has it," Edwards said. "If someone were to ask for 1,000 tons of hay and want to give me $300 a ton for that, I couldn't find it."

Hay is short in Montana and across parts of the Northern Plains. Last summer's drought – some are calling it the worst in 30 years – meant producers across the region put up fewer bales than normal. Then, an early, cold and long-lasting winter – also one for the record books, with one of the coldest, wettest and snowiest Februarys on record for most locations – upped cattle nutritional requirements, while simultaneously burying their winter grazing ground in deep snow.

Now: calving – when producers running low on hay and straw need it most.

"Our folks are caught between a bunch of negative factors," said Jim Killen, Nutra-Lix livestock nutritionist and director of the Montana Feed Association. "This isn't going to last forever, but it's an inconvenient time. All that extra moisture and muddy footing makes it harder to keep (cow/calf pair) core temperatures up, so producers are looking at bringing in bedding, bringing in hay."

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In Idaho, a Model for Long-Term Groundwater Recharge Tastes Success

From Water Deeply: LAST WINTER, THE state of Idaho succeeded in recharging 317,000 acre-feet of water into an important aquifer, enough to serve 700,000 homes for a year. It was an important milestone in an ambitious program to restore a groundwater source that had been overtapped for decades.

The water source is the Eastern Snake Plain Aquifer, a massive and complex groundwater source, which is also linked to springs that contribute to flows in the Snake River. A legal settlement among various water rights holders in 2015 compelled the state to begin replenishing the aquifer, which serves a variety of important constituents, including farms, cities and fish hatcheries.

With a large network of recharge facilities constructed already and more in the works, Idaho could be a model for other states struggling with groundwater depletion.

To learn more, Water Deeply talked to Brian Patton, executive officer of the Idaho Water Resource Board.

Water Deeply: Tell me about the Eastern Snake Plain Aquifer.

Brian Patton: It is a very large, very productive aquifer that underlies most of southern and eastern Idaho. It's about 10,000 square miles in extent. It directly supplies water to about 1 million acres of irrigated land in addition to various cities, towns, businesses and industry in the region.

And it is hydrologically connected to the Snake River at various locations, so that springs flowing from the aquifer back to the river help augment river flows and thereby partially supply water for another 600,000 acres of irrigated agriculture.

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High water benefits some prairie river species

Billings Gazette: This year when winter ends, and yes someday it will, talk will turn from snowfall and ice depth to snowmelt, runoff and flooding.

Old timers will recall the great flood years from the 1960s and 1970s. More recently came high water in 1993 and 2011. Those were tough years for many.

We may not like floods, but they serve a purpose in nature. Whether birds, amphibians or fish, many prairie wildlife species profit from excess water.

Which brings us to the basic question: Can you ever have too much water? If you build in a low-lying, flood-prone area, the answer is likely in the affirmative. For critters inhabiting a prairie-river ecosystem, the answer is there's no such thing.

Take fish. No water is no good, of course, and too little water can deprive some fish, like trout, of oxygen and cover. But what does too much water do?

When flooding pushes a stream or river out of its banks, it creates additional pools, channels and backwaters. Those areas quickly become habitat for insects (can you say, mosquito?) frogs, birds and fish. READ MORE

Statewide inventory tallies value, benefits of urban forests

Which tree pest threatens nearly one-third of Montana's urban trees? How many trees does the city of Helena manage? How much would it cost to replace all of Kalispell's urban trees? What's the monetary value of the benefits provided by trees in Butte, Cascade, Glasgow, or Miles City?

Thanks to the recently-completed State of Community Trees in Montana, residents and community leaders across Montana can find answers to these and other questions.

"Public trees are a vital component of the infrastructure and character of our communities," said Jamie Kirby, manager of the Montana Department of Natural Resources and Conservation's (DNRC) Urban and Community Forestry Program. "The statewide assessment provides a set of benchmarks to help cities and towns make management decisions and create long-term strategies for their urban forests."

The report analyzes data on tree species, size, age, location, condition and other factors in 61 communities, Kirby said. It calculates the benefits provided by trees in each community, including energy savings from electricity and natural gas usage, atmospheric carbon reduction, property value, storm water runoff reduction, and contributions to human and economic health.

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NRCS accepting applications for Upper Clark Fork Drought Resiliency Project

Agricultural producers in Montana's Upper Clark Fork River Watershed area have until May 18, 2018, to apply for financial assistance for conservation practices funded through the USDA Natural Resources Conservation Service's Regional Conservation Partnership Program.

In February 2016, a proposal submitted by the Watershed Restoration Coalition was accepted by NRCS to be funded through the Regional Conservation Partnership Program. The program will provide funding for partnership projects between public (Federal and State) and private entities and nongovernmental organizations.

The Upper Clark Fork project makes available a special five-year funding pool that NRCS will use to fund projects in the Upper Clark Fork watershed area. This is the second year funding is being made available and NRCS anticipates funding projects each year for the duration of the project agreement.

The RCPP project sign-up period will focus on projects that will address water conservation, irrigation water management, fish passage and fisheries habitat resource issues.

To apply for financial assistance, visit the NRCS field office located at 1002 Hollenback Road in Deer Lodge. For additional information, contact Glen Green, NRCS District Conservationist, at (406) 415-4040 or 415-4046. READ MORE

Grants

223, etc. Grant Deadlines

The next 223, mini-education, and district development grants from DNRC deadline for FY 2018 is: **April 25, 2018**. Grant Info

Ranching For Rivers Program Applications

SWCDM is seeking applications for Ranching for Rivers – a cost-share program to help rancher with riparian pasture fencing projects. In partnership with the Missouri River Conservation District Council, SWCDM will offer up to 50% cost-share to landowners throughout the state to voluntarily construct fences and/or other infrastructure (crossings, water gaps, offsite water, etc.) that enable them to better manage the riparian resources on their land. Applications accepted on rolling basis, closes **June 15.** More Info

Candidate Conservation Agreement with Assurances for grassland birds

The Nature Conservancy has partnered with the U.S. Fish and Wildlife Service on a voluntary program that contributes toward the conservation of greater sage-grouse and four declining grassland songbird species. The goal of the CCAA is to maintain and enhance habitats for these birds, while providing assurances to ranchers against potential future land use restrictions. More Info.

Events, etc

Montana Storm Water Conference

Join us, **May 1-3**, 2018, in Bozeman, MT, for the 2018 Montana Storm Water Conference. This is a time to gather, share, learn and collaborate on storm water and water quality issues with your local, regional and national colleagues More Info

Montana Range Forum

Please join us for the 2018 Range Forum. This event has a great line up of topics relevant to Montana rangelands. Topics include Elk and ranching in Montana, Fire and Drought, and information on new mediation program from Montana Department of Agriculture. **May 9 & 10.** More Info

Bumble Bee Ecology and Conservation Webinar

This webinar will cover the basics of bumble bee ecology and conservation. Participants will learn the status of North America's nearly 50 species of bumble bees, the threats they face, and the role that important habitat features and land management play in supporting robust bumble bee communities. **May 22** More Info

Judith Basin Range School

Judith Basin CD is hosting a range workshop featuring Dr. Fred Provenza, discussing Soil, Plants, Herbivores, Humans: How are we linked? **May 24**, Geyser Community Hall, Geyser. For info call 566-2311 ext 107.

Connecting Soil Health with Productivity

Dr. Christine Jones will cover the basics of soil function; including the links between soil elements, structure and water at this workshop hosted by Little Beaver CD. **June 15**, Baker. Email littlebeavercd@macdnet.org for more info.

Wetland Rendezvous

The purpose of this gathering is to spend some quality time in the field exploring springs and wetlands with other wetland scientists and learn about new and innovative ways to inventory, monitor, and assess these ecosystems. Hosted by Montana Wetland Council. Lincoln, MT, **June 26-28**. More Info

Montana Natural Resources Youth Camp

The 32nd annual Montana Natural Resources Youth Camp will be held July 15-20. Students aged 14-18 will spend a week in rustic cabins at Lubrecht Experimental Forest east of Missoula, learning about our natural resources & their management, and make lasting friendships. Camp cost is $300. Application & deposit of $150 due **June 15**. www.mnryc.com for more info.

2018 River Rendezvous

Please join us on **July 11th and 12th** for the 2018 River Rendezvous hosted by the Cascade Conservation District and the Missouri River Conservation Districts Council. Contact Rachel Frost 406-454-0056, or Tenlee Atchison 406.727.3603 x125 for more information.

Coming Up

April

21	Madison & Ruby Valley District Banquet
	Broadwater Small Acreage Management Institute
22	Bumblebee Ecology & Conservation Webinar
23-24	Envirothon
23	MACD Executive Committee Conference Call
28	Fly Fishing Film Tour, Thompson Falls

May

1-3	Montana Stormwater Conference, Bozeman
9-10	Montana Range Forum, Billings
14	MACD Board Conference Call
28	MACD Executive Committee Conference Call

Have an event to share?
Visit macdnet.org/calendar to add your event to our list!

Opportunities, continued...

Jobs

Montana DEQ Wetland Field Tech

If you have a passion for wetland ecology and working outdoors, a position as a Wetland Field Technician may be for you. This position is temporary and expected to work from mid-May through early fall. The Technician travel extensively (at least 15 days per month) beginning June through mid-September. More Info

Summer Internship Opportunity The Montana Rangeland Resource Program is excited to announce a unique opportunity for two students for the summer of 2018. The successful applicants will have the opportunity to spend two weeks at each of the six host/mentor's ranch operations. This internship is designed to offer beginning agriculturalists, natural resource and range specialists the real-world and hands-on experience implementing the educational tools already gained to a ranching operation. This paid internship will last for three months during the 2018 summer where interns will work and learn from mentoring ranchers from across the state of Montana. A stipend of $1,600 will be given at the end of each month with room and board supplied by the mentoring ranch. Contact Stacey Barta for more info: sbarta@mt.gov