THE MONTANA CONSERVATIONIST

News from Montana's Conservation Districts

February 20, 2020

Volume 14 Issue 2

In This Issue

Lake CD to put on Pollinator Initiative Workshops

Lake County Conservation District has been recognized around the state for their innovative and successful Pollinator Initiative program. Now, Lake County CD Resource Conservationist Heidi Fleury will be travelling around Montana, demonstrating how to replicate the program in your area.

The workshops will discuss the Lake County initiative, and how to start your own, including what it takes to make it happen/work and sharing of resources including posters, handouts, activities, and seed mix ideas.

Conservation District administrators and supervisors, county weed coordinators, MSU extension staff, City/county board members, commissioners, and anyone else looking to put together a similar program are invited to attend. The workshops are being funded through a grant from DNRC.

Workshop Dates: February 25: Glasgow | February 26: Miles City | February 27: Great Falls | March 19: Billings

SOIL & WATER CONSERVATION DISTRICTS of MONTANA

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

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This newsletter is made possible by a grant from DNRC.

Havre's wastewater woes solved by beer

Yellowstone Public Radio: Several years ago, Havre, Montana had a problem. Its treated wastewater had too many nutrients. Fixing it was expected to cost millions of dollars. But, wastewater workers discovered a cheap, upcycled solution through the magic of chemistry and beer.

Drue Newfield, the superintendent at Havre's Wastewater Treatment Facility, looks out across a series of large outdoor tanks full of something that looks like frothy chocolate milk. Every day, this place turns 1.5 million gallons of waste from sinks, showers and toilets into clean water to be released into the Milk River just beyond the line of trees.

Until recently, the facility had issues with phosphorus and nitrogen. The nutrients can cause algae blooms in rivers, which suck up all the oxygen and kill aquatic life.

Newfield says Havre spent over $10 million on upgrades in 2015 in an effort to meet the Environmental Protection Agency's newer, tougher standards.

"Which wasn't enough. That upgraded a lot of the old plant as well that just needed to be fixed," Newfield says.

He says they were going to have to spend tens-of-thousands of dollars each year on a chemical additive and potentially a million dollars on another upgrade.

"That's where the barley came in and was able to do what we didn't get," Newfield says.

Across town at Triple Dog Brewing, owner Michael Garrity walks past his large, shiny fermenters in the back and opens the garage door.

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Revitalizing soil with paper

On Pasture: The Agricultural Research Service (ARS) is helping to arm the U.S. military with a solution to two major environmental problems: the disposal of paper waste and revegetating damaged training grounds.

Under federal regulations, U.S. Army classified papers must be pulverized to a fine consistency, which leaves the material unsuitable for recycling. Continued disposal of this waste in landfills presents environmental concerns and is expensive. Secondly, army training areas become barren of vegetation from constant use by heavy equipment and foot soldiers. Soil erosion can occur, making it difficult to reestablish native grasses.

ARS teamed up with the U.S. Army Corps of Engineers to help address these issues. Their research focused on evaluating the use of pulverized or finely ground paper as a soil amendment to improve soil health and the ability to establish desirable native grasses on degraded Army training lands.

Pulverized paper, which is like a very fine confetti, is a cheap, high-quality organic material that is useful as a soil amendment, said Henry "Allen" Torbert, research leader at the ARS National Soils Dynamics Laboratory in Auburn, Alabama. ARS worked with the Army to determine the right rates of application and to make sure there were no environmental concerns from the application of paper.

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Boat launch restrictions lifted at Canyon Ferry Reservoir

From MT FWP: Restrictions on Canyon Ferry reservoir boat launches have been removed allowing all boaters to access all boat ramps this year. Montana Fish, Wildlife & Parks sought to remove the launch restrictions after three years of testing resulted in no detections of invasive quagga or zebra mussels.

The discovery of invasive mussel larvae in Tiber reservoir and a suspect detection of Canyon Ferry reservoir prompted restrictions on boating access in 2017. Boaters were required to launch at designated boat ramps and go through a decontamination station when exiting the water.

Regional guidelines allow for the delisting of a suspect waterbody and the removal of the mandatory exit inspections if three years of monitoring show no detections of invasive mussels.

Restrictions on Tiber Reservoir will remain in place for at least two more years.

Last year, decontamination stations operated at four boat ramps on Canyon Ferry and conducted 7,920 inspections.

Watercraft inspections will be significantly reduced on Canyon Ferry, but FWP will maintain an inspection station at the Silos boat ramp and a roving crew that will operate at high-use boat ramps in the Missouri river system.

"With the recent discovery of adult mussels in a North and South Dakota, our mission to keep Montana's waters free of mussels is more important than ever," said FWP's AIS Bureau Chief Thomas Woolf. "Boat owners and anglers need to do their part to protect our waters from invasive species and make sure their watercraft and gear are clean, drained and dry."

Coming weeks will make the difference for Montana water supply

KPAX: With a return to some heavier mountain snow storms in recent weeks, Western Montana's water supply has rebounded from a dry start this winter.

However, forecasters say the next few weeks will determine whether we finish the "water year" at above, or below, normal for the water outlook for summer and fall.

The most recent report from the Natural Resources Conservation Service had some encouraging news for ranchers, foresters and all the communities that depend on the mountain snowpack to get through the rest of the year.

Although snow events had started early last fall, November and December had been particularly dry, creating what NRCS calls "well below normal" snow pack to start 2020.

However, since then, snow has been piling up steadily. Some of the SNOTEL sites west of the Divide recorded as much as 100 to 150 inches of total snow fall in January, which works out to 18-inches of "snow water equivalent", the measure that is used to predict runoff.

While the Upper and Lower Clark Fork Basins, and the Bitterroot are at, or slightly below normal, there's still more snow than last year by the end of January. READ MORE

Occasional tillage may have place in long-term no-till

Successful Farming: Long-term no-till farmers know the feeling well: the fear that a tillage pass to control weeds or smooth out ditches will destroy soil structure and other benefits that no-till brought to the farm.

Recent research published by the University of Nebraska refutes that notion. In fact, studies by Charles Wortmann, soil and nutrient management specialist and Humberto Blanco, professor of soil science at UNL, shows occasional tillage (OT) – also called one-time or strategic tillage – may even be desired once every five or 10 years.

That's good news for farmers who feel they need to use a tillage pass for a number of reasons, including the following:

- help control weeds
- fracture a compaction layer
- incorporate soil amendments such as lime or manure
- reduce vertical stratification of nutrient availability
- increase soil organic matter to greater depth
- reduce crop residue accumulation

The researchers stress that this isn't recreational tillage. The type of tillage for OT "…should be specific to the objective of the OT," Wortmann and Blanco agree.

The researchers looked at OT in two Nebraska locations: a five-year study at the High Plains Agricultural Laboratory (HPAL) near Sydney in western Nebraska, using moldboard plow tillage; plus three five-year trials in eastern Nebraska in which five OT practices were compared. However, there has been much additional study elsewhere during the past decade. Dozens of other multiyear trials have been conducted including trials in Australia, Brazil, Canada, Spain, and Turkey, as well as in Indiana, Kansas, Kentucky, Oregon, Texas, and Wyoming.

READ MORE

Bee-friendly forage tested at Virginia Tech

Roanoke Star: The "fescue belt" stretches 1,000 miles across the southeastern United States, from Virginia and the Carolinas in the east to Kansas and Oklahoma in the west. It's named for its predominant grass, tall fescue, which feeds millions of beef cattle over of thousands of farms and ranches.

Tall fescue was planted widely in the southeast in the mid-20th century because it's a hardy grass, resistant to drought and cold, which makes it perfect to feed cattle during the winter and spring. But it harbors a fungus that can cause health problems in cattle, especially during the hot summer. And it's an invasive species, native to Europe, that can crowd out wildflowers and other native plants, which could be contributing to the decline in the population of bees and other pollinating insects.

A new study led by Megan O'Rourke, an associate professor in the School of Plant and Environmental Sciences in the College of Agriculture and Life Sciences at Virginia Tech, will address both of these problems. The research team will plant native prairie grasses and wildflowers in pastures at research stations in Virginia and Tennessee, and on six on-farm sites in Northern Virginia, including on Thomas Jefferson Foundation farmland.

"We're trying to transform the landscape to support both cattle and pollinators by planting more native wildflowers on farmland," said O'Rourke. READ MORE

BSWC member leads studies at Bridger Plant Materials Center

The Bridger Plant Materials Center, co-owner by Soil and Water Conservation Districts of Montana and Wyoming Conservation Districts, recently released their 2019 annual report. Of particular note was work done by another SWCDM partner program, the Big Sky Watershed Corps (BSWC).

Zachary Lenning, BSWC member, led two studies. The first was a greenhouse study titled Effects of Seeding Depth and Propagation Media on Seedling Emergence of Three Conservation Species. This study investigated the total number of seedlings emerging and the time required for emergence of three species (lacy phacelia, Sandberg bluegrass, and western yarrow) when seeded at four depths (surface, 0.25-, 0.5-, 1-inch deep) in sand and a clay-loam soil. Results varied significantly by species.

For lacy phacelia, there were significant differences in total seedlings emerged and average days to emergence. Surface planting seeds resulted in significantly fewer total seedlings, although days to emergence was faster than at most other seeding depths. Additionally, total seedlings emerged was greater in sand than clay loam soil whereas days to emergence was less with sand.

There were also significant differences in seedlings emerged and days to emergence for Sandberg bluegrass. Significantly less seedlings emerged requiring greater days to emergence when Sandberg was seeded at 1 inch. Propagation media did not affect either evaluation parameter for Sandberg bluegrass.

For western yarrow there were significant differences in seedlings emerged and time to emergence with seeding depth, as well as differences in emergence with propagation media.

In the second study titled Effect of Seeding Depth and Mix Compatibility on the Establishment and Production of Lacy Phacelia, lacy phacelia and Austrian winter pea were planted in the field at 0.5- and 1.0-inch deep, in single species stands and mixed together. The purpose of this study was to determine if planting depth and seeding lacy phacelia with Austrian winter pea effects biomass production and stand count, and if so, to what degree. There were no significant differences in biomass production or stand count for either species with planting depth. There were differences in biomass production of both species when planted alone versus in a mix. Stand count was not impacted by seeding as a single species versus in a mix for either species.

BPMC tests field plantings

Field plantings are a collaboration of PM staff with NRCS Field Offices to evaluate new plant species or planting technologies under a variety of soil, climatic, and land uses to assess their conservation potential under actual use conditions. In 2019, we evaluated 11 field plantings in Montana and Wyoming including two newly seeded plantings.

This spring, the Teller Wildlife Refuge, Pheasants Forever, NRCS Hamilton Field Office, MSU Ag Experimental Station, and NRCS Plant Materials worked together to seed a milkweed and pollinator field planting near Hamilton, MT. This field planting tests planting milkweed seed alone, milkweed rhizomes alone, and a milkweed-pollinator seed mix (penstemon, hairy goldenaster, blanketflower, blue flax, milkweed, green needlegrass, and bluebunch and western wheatgrasses) to see how well the species establish. The milkweed rhizome planting builds off research at the Idaho Plant Materials Center. In addition, the Teller Wildlife Refuge is working with the Hamilton FO to install larger scale pollinator and monarch plantings through the NRCS Honey Bee Pollinator Special Initiative.

Another new field planting tested improving a smooth-brome dominated pasture by adding legumes and other palatable forb species. Cicer milkvetch, sainfoin, and small burnet provide high quality forage for livestock and wildlife.

Grants

223, Education, and District Development Grants

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

DNRC Watershed Management Grants

The Watershed Management Grant (WMG) Program goals are to provide financial support for the development and implementation of locally led watershed related planning and capacity building activities that conserve, develop, improve or preserve state natural resources. Deadline: **February 26**. More Info

MARS In-Lieu Fee Stream and Wetland Mitigation

Montana Aquatic Resources Services (MARS) runs a state-wide In-Lieu Fee Stream and Wetland Mitigation Program. We have funding for several wetland restoration projects in our **Marias, Milk and Lower Missouri** service areas (see Service Area map). Our funding covers site selection, design, construction, monitoring, landowner payments, and long-term stewardship; and can be used for stand-alone projects, or possibly in combination with another rangeland conservation project or program. To learn more about the ILF program, visit http://montanaaquaticresources.org/

Ranching for Rivers

The Ranching for Rivers program is accepting applicants on a rolling basis for 2020. Conservation Districts and watershed groups with identified projects, or individual landowners working with a local CD or watershed group may apply. The program offers 50% cost-share for project implementation and/or the development of a Grazing Management Plan. More Info

RDG Project & Planning Grants

The DNRC Reclamation and Development Grants Program (RDGP) is now accepting grant applications for both: RDG Planning Grants - up to $50,000; and RDG Project Grants - up to $500,000. Grants are available to any city, county, Tribe, conservation district, or other local government subdivision in Montana. Proposed grants must provide natural resource benefits in one of two categories: 1) Reclamation projects; 2) Crucial state need: must prevent or eliminate damage to natural resources or capture extraordinary public benefit that would otherwise be lost. Planning Grants due **March 19**; Project Grants due **May 15**. More Info

Water Quality Education and Outreach Mini-Grants

SWCDM is pleased to offer mini-grants up to $3,000 to help fund local education and outreach efforts that address nonpoint source water quality issues. Funded projects need to occur within a year of being awarded. Closes **March 27**. More Info

Events, etc

Pollinator program trainings

Learn how to start your own pollinator initiative in your area, including what you'll need to get started and resources like posters, stickers, and seed mix ideas. **Workshop Dates: February 25: Glasgow | February 26: Miles City | February 27: Great Falls | March 19: Billings**

Regenerating soil with patterns of diversity

You are invited to a discussion on the various organic ways of regenerating soil for new and well-established farmers and gardeners. Event Presented by Yourganic Farm, Leon Stangl. **February 29**, Hamilton. More info.

Montana Water Summit

Join diverse Montanans and invited speakers from a variety of backgrounds to explore hot spots – and solutions – at the land and water nexus. **March 3-4, 2020** in Helena. Registration closes February 25. Visit www.mtwatersummit.com.

Soil Health Innovations Conference

The Soil Health Innovations Conference will bring together producers, industry professionals, educators, and students who are at the cutting edge of soil health: On-farm practices, soil biology, carbon markets, and public policy. Join us for a far-reaching exploration of agriculture's sustainable future. **March 30-31**, Bozeman. More Info

Coming Up

February

24 MACD Executive Committee Conference Call

25 Pollinator program training, Glasgow

26 Pollinator program training, Miles City

27 Pollinator program training, Great Falls

29 Regenerating soil workshop, Hamilton

March

3-4 Montana Water Summit

9 MACD Board Conference Call

15 National Ag Day

Leopold Conservation Award Nomination Deadline

23 MACD Executive Committee Conference Call

30-31 Soil Health Innovations Conference

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

2020 USDA Tribal Outreach Forum

USDA is hosting this two-day forum to bring people together and highlight key resources available to tribal communities. Panel discussions will be held on the implementation of the renewed USDA and Bureau of Indian Affairs Memorandum of Understanding, hemp production on tribal lands and agricultural lending opportunities. **April 14-15**, Billings. More Info

Jobs

Ranchers Stewardship Alliance Project Administrator

This is a new position assigned to further the growth, goals and objectives of the Ranchers Stewardship Alliance (RSA). We focus on the importance of ranch families and their contributions to their communities, to the ecosystems they manage, and to feeding the world. We are looking for a motivated individual who understands private landowners and landowner stewardship issues, as well as the complex relationship they have with public lands and our conservation partners. Application review begins **March 2**. Email ranchstewards@gmail.com for more info.

MISC

Leopold Conservation Award

If you, or someone you know, is a Montana landowner who is committed to land management practices that increase conservation, we invite your application for the Leopold Conservation Award. Application deadline: **March 15, 2020**. Contact Stacy Barta (sbarta@mt.gov) with questions. More Info

MACD Scholarships Now Open

Each year, MACD awards two $500 scholarships to Montana students. High school seniors or students who are attending an accredited post secondary institution in Montana may apply.

Eligibility requirements include:

- US citizenship,
- Montana residency,
- minimum grade point average of 3.0, and
- enrollment or plans to enroll in a course of study that allows students to explore natural resource issues. Appropriate courses of study include agriculture, agribusiness, animal science, range science, forestry, environmental science, land resource science, plant science, etc.

Students may receive a scholarship both as a high school senior and once during post secondary career.

The deadline for 2020 scholarships is **February 21, 2020**. More Info