THE MONTANA CONSERVATIONIST

News from Montana's Conservation Districts

April 4, 2019

Volume 13 Issue 7

In This Issue

Local Working Groups Convening this Spring

Conservation districts are at the heart of locally-led conservation and Local Working Group engagement. Districts and NRCS field offices across Montana have been or will be holding Local Working Group meetings this spring as part of NRCS's Montana Focused Conservation.

Local Working Group meetings are a valuable part of the NRCS planning process. They provide an opportunity for conservation districts, agricultural producers, partner conservation organizations, and local land managers to be part of a collaborative effort to improve natural resources within their local county. Local priorities will impact NRCS technical and financial assistance.

Upcoming Local Working Group Meetings - click on each location for more information.

April 2 Custer County
April 3 Gallatin County
April 3 Liberty County
April 3 Dawson County
April 3 Hill County
April 8 Pondera County
April 8 Valley County
April 9 Broadwater County
April 9 Park County
April 10 Wheatland County
May 2 Lewis and Clark County, Lincoln
May 9 Lewis and Clark County, Augusta
May 14 Phillips County, Malta
May 16 Lewis and Clark County, East Helena
May 23 Lewis and Clark County, Wolf Creek

A main goal of Local Working Groups and Montana Focused Conservation is identifying collaborations and leveraging resources and funds to accomplish conservation goals at the local level. Check out www.mtconservationmenu.org for a menu of over 100 conservation programs offered in Montana.

SOIL & WATER CONSERVATION DISTRICTS of MONTANA

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

1101 11th Ave • Helena, MT 59601
(406) 443-5711 • www.swcdm.org

This newsletter is made possible by a grant from DNRC.

Benefits of restoration go beyond landscapes

Prairie Populist: Our grandparents may not have known about the unintended consequences of channelizing streams, but we certainly do. Today, Montanans from Eureka to the Ruby are taking in information and finding ways to help rivers and streams regain their curves. These reclamation efforts improve trout habitat, mitigate floods, and curb erosion.

But the benefits don't stop with conservation improvements. These restoration projects also give a boost to the local economy.

The Lincoln Conservation District, serving our most northwestern county, currently has two restoration projects in the works, the Tobacco River and Mud Creek.

We went up to Eureka last month to check out these reclamation sites during the 2018 Watershed Symposium. Both were at different points of completion and something caught our attention: excavators.

BECAUSE WHERE THERE ARE EXCAVATORS, THERE ARE JOBS.

Bob Cuffe, the owner of Glacier Excavating, met us at the Tobacco River restoration site. The project, which started construction in July of 2018, was nearing completion.

The view was breathtaking.

It is heartwarming to think of community volunteers correcting a stream with buckets and shovels — until they have to remove an entire car from a river bank. The reality is, these projects require specialists.

Luckily, Cuffe's company specializes in stream restoration.

This may seem like a limited scope for a company. But, it is keeping Cuffe and his employees busy working across western Montana and Idaho on restoration projects big and small.

READ MORE

Pollinator Conservation takes off in Montana

NACD: As a boy growing up on the family ranch in Ekalaka, Mont., Doug Bonsell was an avid reader of The Conservationist. He learned about the newest grazing practices, the importance of healthy soils, and many other topics of interest to an aspiring rancher. One month, the magazine had a story on habitat – what it was, why it was important, and how a landowner might restore or create habitat where none had been before. By the time he reached high school, Doug was making plans for developing habitat on the ranch. His first interest was birds, upland species such as sharp-tailed grouse and Hungarian partridge. Years later, when Doug and his wife, Ronda, purchased the family ranch, his visions of bird habitat became reality. Over many years the couple would plant more than 17,000 trees and shrubs. They planted buffaloberry, chokecherry, cotoneaster, juneberry, sumac, Russian almond, silverberry, currant, honeysuckle and apricot. They left standing grain and planted cover crops. In number and diversity, the birds flourished.

Around 2012, Doug's interest in habitat found a new focus. He was seeing articles about pollinators, the term applied to a wide range of insects and other animals that carry out one of the world's most important natural functions. As they visit flowering plants in search of nectar or pollen for food, these insects transfer grains of pollen from the anther to the stigma of a flower, fertilizing it, and enabling the plant to produce seeds. READ MORE

Scientists study how the soil microbiome affects prairie health

From USAgNet: The influence of the gut microbiome on human health? That's become mainstream news. But zoom out on this idea now and consider the land we live on. Scientists believe there's a strong parallel with the community of soil microorganisms -- known as the soil microbiome -- and its influence on the health and resilience of grasslands.

Now, University of Kansas researchers at the Kansas Biological Survey, working in partnership with The Nature Conservancy, have an unusual opportunity to study the microbiome of a native prairie. At the Anderson County Prairie Preserve, south of Garnett, several experiments rely on previously undisturbed -- but doomed -- prairie soils.

These experiments are helping scientists learn about the soil microbiome's role in the prairie ecosystem. Specifically, they're exploring the prairie's potential for rebuilding itself post-disturbance.

The 1,450-acre Anderson County Preserve, near Welda, is an hour's drive south of Lawrence. It's owned by The Nature Conservancy and managed by the Kansas Biological Survey as part of the KU Field Station. For more than 15 years, the two organizations have worked in partnership to develop research at the Anderson County site.

But in 2013, the Kansas Department of Transportation announced that U.S. 169 would be widened from Welda north to Garnett. The road project eventually will take out 60 to 90 feet of land on each side of the highway for about a mile through the Preserve. Survey and Nature Conservancy managers, realizing that a significant strip of native prairie would be lost, saw an opportunity.

READ MORE

Nutrient input adjustments for a wet, cold spring

From MSU Extension: Spring soil water content and temperatures need to be considered when calculating spring fertilizer rates. Many Montana regions east of the Continental Divide received several more inches of precipitation than average over the last 6 months with a very cold February and early March, making fields cold and wet, with delayed planting.

Cool temperatures slow decomposition of plant residue and conversion of urea or ammonium fertilizer to plant available nitrogen for early spring growth. Higher than normal precipitation can also lead to nitrogen, sulfur and chloride leaching. Water-logged soils also increase nitrogen loss as gas and the occurrence of disease, and decrease plant nutrient uptake due to poor root growth.

Delayed seeding and cold soil may lower yield potentials, thus total nutrients needed, yet wetter than normal soils could increase yield potentials. Either way, providing small amounts of nitrogen, sulfur and chloride at seeding can give the plants a boost. Since these nutrients move easily with soil water, they can be either broadcast or applied with the seed. Broadcast application speeds up seeding and reduces the risk of seedling damage from high rates of seed-placed fertilizer. Side banding or double shooting is also an option to provide early fertilizer with low risk to germination.

Continued on Page 4

Spring nutrient considerations, continued

Salt or ammonia injury to seedlings increases with warmer, drier, and coarser soils. Use the South Dakota State University/International Plant Institute Seed Damage Calculator for guidelines based on crop and seed bed conditions. For example, 7 pounds nitrogen per acre (units of nitrogen) as urea when seed-placed with canola in a fine textured moist soil with a 2-inch opener and 12-inch row spacing could cause 10% stand loss. With the same opening and row spacing, but in moist coarse soil, only 3 unit of nitrogen would cause same stand loss. Cereals are more tolerant.

To determine if nitrogen has been lost from a field, spring soil test for available nitrate in the top 6-inches and in the 6-inch to 2 foot depth (3 foot, if possible). If nitrogen leaches only a few inches, then young roots will soon reach the nitrogen if they are healthy. Nitrogen leached lower in the root zone is not necessarily a total loss. If the roots reach deep nitrogen sources near the time of flowering, the nitrogen boost can increase grain protein. However, in coarse or shallow soils, leached nitrogen may be beyond the depth of even mature roots.

Soil testing is not reliable to determine sulfur availability. Visual symptoms (upper yellow leaves) along with soil type and location in the landscape can help determine plant sulfur deficiency. Loam or more coarse-textured soils, especially on eroded ridgetops, are more susceptible to sulfur deficiency. If a comparison of fall and spring soil nitrate test indicates that nitrogen leached, then it is highly likely sulfate and chloride also leached. Target 30 pounds available chloride (soil plus fertilizer) per acre in the top 2 feet on small grains.

Patience may be the best approach if nutrients did not leach out of reach, or if poor uptake is temporary because of water-saturated soils. Nutrient deficient areas may not be large enough to warrant special treatment. However, watch for wide scale early symptoms of nutrient deficiency. Yields could be lost by being too patient, and a rescue treatment could be worthwhile. Timely top-dress should help the crop green-up and encourage faster root growth to 'catch up' to nitrogen that has moved out of reach of shallow, young roots.

Nitrogen deficiency commonly shows as uniform yellow discoloration from the leaf tip backward, appearing in older leaves first. Even legumes may be nitrogen deficient if they are unable to fix their own nitrogen or take up sufficient nitrogen. Sulfur deficiency also causes uniform yellowing, but shows up on upper, younger leaves first. In contrast, yellowing due to disease or lack of other nutrients is usually non-uniform, striped or spotty. Chloride deficiency shows up as spots on certain varieties of wheat or when whole above ground plant chloride levels in wheat at the boot stage are less than 0.12 percent chloride.

A rescue treatment for nitrogen is 10 to 20 units of nitrogen applied as 28 or 32 percent urea ammonium nitrate solution (3 to 6 gallons per acre). Ammonium-based products contain nitrogen that is immediately available, unlike urea. Rescue treatment for sulfur is to apply 3 to 5 units of sulfur as granular ammonium sulfate (21-0-0-24) or as a liquid sulfur formulation. If it is hard to distinguish whether nitrogen or sulfur is lacking, ammonium sulfate application helps with both nutrients.

With all foliar applications be aware of potential leaf burn. Streamer bars minimize burn especially if more than 25 units of nitrogen are applied. The risk of burn increases when herbicides, fungicides, surfactants, or sulfur are included in a mix with nitrogen. In these cases, don't exceed 15 units of nitrogen if applied with a flat fan. Burn should not be an issue if nitrogen is put through a pivot, because the concentration of nitrogen in the irrigation water will be very low.

Broadcast applications are best followed by half-inch of irrigation or rainfall within a couple of days to minimize nitrogen loss as ammonia gas, and to force nitrogen into the root zone. This is also true for foliar applications because only a small portion is absorbed through the leaf. The rest needs to be washed off and into the soil to be taken up by roots.

More information on soil fertility is available at the Montana State University Soil Fertility Extension website. Nutrient deficiency symptoms are shown at http://landresources.montana.edu/soilfertility/nutrientdeficiencies.html. If you have questions, contact Clain Jones, MSU Extension Soil Fertility Specialist, clainj@montana.edu, or 406-994-6076.

Ranching for results, not regulations

Beef Magazine: Sometimes it's a challenge to look at what you do every day, and what the generations before you have done every day, from a different perspective.

But sometimes, oftentimes in fact, doing just that can lead to remarkable results. Just ask Agee Smith.

Smith is part of a group of Nevada ranchers who started thinking differently 23 years ago — well before recent federal land management agency mandates to improve the health of sagebrush country. This included using holistic resource management to balance livestock grazing with increasing native plants and wildlife habitat.

Now, Smith says his operation depends on it.

Smith is the fifth generation in his family's line to run the Cottonwood Guest Ranch, a cow-calf and guest ranch recreational operation located in Nevada's remote northeastern corner, in the shadow of the rugged Jarbidge Mountains.

This year marks the 23nd anniversary that he and a few of his closest ranching neighbors – known as the Shoesole Group – have used this innovative style of land management to guide natural resource conservation on three ranches encompassing more than 200,000 acres. READ MORE

Climate change is hurting regrowth in forests, researchers say

MTPR: Scientists at the University of Montana have found that climate change is already reducing the ability of some forests in the western U.S. to bounce back after wildfire. Their findings are confirming a long-suspected change.

For the past three years, UM post-doc Kimberly Davis has looked at how ponderosa pine and Douglas fir forests regenerate after fire, and she's made an eye-opening discovery.

Some forests just won't be coming back.

Davis says she found that once conditions get hot and dry enough, there's a dramatic reduction in those trees ability to regenerate.

"So we call these thresholds, where all of a sudden, you cross a certain temperature, and then you see this big decline," says Davis.

Climate change in the West is crossing a perilous threshold, Davis says, and some of Montana's iconic pine and fir forests might not be able to regenerate if they get hit by wildfire.

In her lab in Missoula, Davis shows me some of the work researchers do that's led to their conclusions.

"So if you look in there you'll be able to see all the cells, so all those little circles," Davis says as she squints through a microscope at a tiny tree trunk the size of a fingernail. READ MORE

Microplastics found in food system

FoodTank.com: Daily worldwide production of plastic tops over a thousand metric tons and it's ubiquitous in our lives from water bottles to grocery bags. But many scientists, including the World Health Organization, are questioning its impact on humans, as they find oceans, farmers' fields, and food products drowning in tiny plastic particles called microplastics.

Despite plastic's omnipresence, governing bodies mismanage its disposal, as Esther Garrido-Gamarro of the U.N. Food and Agriculture Organization (FAO) explains to Food Tank. "Between 1950 and 2015 only 9 percent of plastics were recycled, 12 percent incinerated, and the remaining 79 percent stored in landfills or released directly into the environment."

Instead of biodegrading, plastic persists for hundreds, even thousands of years, breaking down into particles as tiny as the flu virus. And it isn't just the physical fragments that can cause harm; toxins added during manufacturing and organic pollutants gathered during air and water travel also accumulate in ecosystems.

Microplastics also infiltrate the soil, in part from sewage-based fertilizers and plastic field coverings. Chelsea Rochman, Assistant Professor at the University of Toronto, writes in the journal Science that "the current evidence suggests that microplastic contamination is as ubiquitous on land and in freshwater as in the marine environment." READ MORE

Grants

223, Mini Education, and District Development Grants

The Fiscal Year 2019 deadlines for the 223, Mini-Education, and District Development grants are: **April 25, 2019** Grant Application

Network for Landscape Conservation Catalyst Fund

This fund specifically seeks to build critical capacity and forward momentum in landscape conservation partnerships by supporting the key building block activities and collaborative processes that move partnerships forward. Pre-proposals due **April 26**. More Info

Water Project Grant Opportunity

Sweet Grass Conservation is now accepting applications for a new round of water project funding. Conservation districts may apply for funds to be used for irrigation related projects, stream restoration, and other activities that result in improvements to water quality and quantity and to aquatic habitat. **Applications due May 1**. Projects must be completed by November 30, 2019. Contact Guelda Halverson, Guelda.halverson@mt.nacdnet.net, for more info.

Future Fisheries Improvement Program

For almost two decades, FWP's Future Fisheries Improvement Program has worked to restore rivers, streams, and lakes to improve and restore Montana's wild fish habitats. Between $350,000 and $650,000 are available each year for projects that revitalize wild fish populations. Any entity proposing a project that would benefit wild fish will be considered for funding. Due **May 31**. More Info

Events, etc

Webinar: Aligning Soil & Human Health

Participants will join the Aligning Soil and Human Health webinar to learn how the four "C"s that connect soil and human health--Climate, Critters, Cuisine and Community--and identify farm-level practices that promote health for humans and the environment. **April 9.** More Info

Tree & Gardening Workshop

Rosebud & Treasure County Conservation Districts are hosting a workshop on improving soil fertility in home gardens, with a tour of the Montana Heritage Orchard. **April 12**, Forsyth. Email Bobbi.vannattan@mt.usda.gov for more info.

Beekeeping & Pollinator workshop

Lake County Conservation District is offering a free half-day workshop on beekeeping and native and honey bee pollinator conservation. Local beekeeper Chuck Lewis, of Plan Bee, will be on hand to answer questions about starting your own hive. There be hive/bee sets available for purchase, and supplies to build Mason bee houses to attract local bees. **April 13**, at the Ronan Fairgrounds. More info: lakecd@macdnet.org

Integrated predator Damage Management Workshop

WLA is hosting a workshop to provide information on the science and the practical applications of various non-lethal methods integrated into predator damage management strategies to protect livestock. **April 24**, Helena. Email cole@westernlandowners.org for more info.

Judith Basin Range School

Johann Zietsman, world renowned speaker, will be presenting at a 2-day seminar on Livestock Management and Grazing. Zietsman will be sharing proven concepts for selecting the best adapted genetics with ultra-high-density grazing. **May 29 & 30**, Hobson, MT. For info call 566-2311 x107.

Montana Youth Range Camp

The Montana Youth Range Camp (MYRC) is a 4-day program for youth ages 11–17. This year's camp will be held June 25-28 at Hyalite Reservoir south of Bozeman. Registration deadline is **June 11**. More Info

Save the Date: Montana Range Tour

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

Jobs

Lower Musselshell CD Administrator

Lower Musselshell Conservation

Coming Up

April

8 **MACD Board Conference Call**

9 Aligning soil & human health webinar

12 Tree & Gardening Workshop, Forsyth

13 Beekeeping & Pollinator workshop, Ronan

18 Bridger Plant Materials Center Board of Managers meeting

22 **MACD Executive Commmittee Conference Call**

24 Integrated Predator Management Workshop, Helena

25 223, Mini Education, and District Development Grants Deadline

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

District in Roundup, MT is seeking applicants for the position of district administrator. Part time position, 24 hours/week, flexible schedule. Knowledge of multiple computer programs and accounting experience. Start at $12/hour. Email donna.pedrazzi@mt.nacdnet.net for more info.

DNRC Resource Development Bureau Chief

The Resource Development Bureau Chief is responsible for the development and administration of the RRGL and RDG grant programs under direction of the Deputy Administrator, Office of Resource Finance within CARDD. Duties include developing program goals and policies; outreach and advocacy; developing and improving partnerships; and managing the budget, six staff and operations of the bureau. **Closes April 5.** More Info

Coordinator, MRCDC

The Missouri River Conservation Districts Council is seeking a full-time professional Coordinator. Must have a bachelors degree or equivalent experience in a natural resource, public administration, or related field; and at least two years experience working with diverse clientele, building consensus, managing multiple project goals and resolving complex problems. In-state and out-of-state travel is necessary. **Closes April 15.** More Info

Coordinator, Winnett ACES

Winnett ACES is seeking a part-time coordinator. The ideal candidate will have an understanding of rural communities in the west and a basic knowledge of the agriculture industry. The coordinator will focus on new grasslands conservation projects, the land project, and agriculture outreach efforts. **Closes April 22**. More Info

Stream Permitting Coordinator, DNRC

The Conservation and Resource Development Division is seeking a full time Stream Permitting Coordinator. This position is responsible for coordinating the 310 law with conservation districts, and provides education and outreach to districts and the general public on stream coordinating. **Closes April 23**. More Info

Private Lands Wildlife Biologist

Bird Conservancy of the Rockies is seeking a private lands wildlife biologist based in Glendive. The position provides technical resources to landowners and other land managers to more fully incorporate wildlife conservation on their private lands. **Closes April 30.** More Info

Executive Director, Blackfoot Challenge

The Blackfoot Challenge seeks an experienced, collaborative, and personable Executive Director (ED) to lead the fund development and strategic visioning of the organization while providing financial and administrative oversight and exceptional staff supervision. Application review begins **May 1**. More Info