

THE MONTANA CONSERVATIONIST

News from Montana's Conservation Districts

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Inspectors find more boats transporting invasive species into Montana

Montana watercraft inspection stations have intercepted 13 boats carrying invasive mollusks into the state this year. As of May 30, inspectors have caught 12 boats with invasive zebra or quagga mussels and one boat with red rim melania snails attached to watercraft.

The mussel-fouled boats typically come from mid-west states or Arizona after having spent several weeks or months in mussel-infested waters. All boat owners must have their watercraft inspected when entering Montana.



Last week, a pontoon boat that was purchased in Minnesota came through the Flowing Wells watercraft inspection station located east of Jordan. The new owner planned to launch from Rock Creek in Fort Peck Reservoir and knew that the boat needed to be inspected before launch. Flowing Wells inspectors removed invasive mussels on weeds that were wrapped around the fuel line going to the engines of the boat. No other mussels were found on the boat.

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MSU research team receives grant to further study cheatgrass

The Prairie Star: Looking out across a picturesque span of Montana rangeland this time of year, the depth of green is almost breath taking. To the untrained eye, the expanding grasslands may appear to be heaven for grazing animals, but upon close inspection, mixed in with the lush grass is all too often the invasive and largely unpalatable cheatgrass.

Cheatgrass is an annual grass-like weed that initially appeared on U.S. soil in 1861, debuting in Pennsylvania. Like most non-native species, cheatgrass began trudging across the whole country. It was first discovered in Montana in 1889 in Missoula County, and by 1980, cheatgrass had been found in every single Montana county. Currently, cheatgrass is categorized as a Priority 3 Regulated Plant because of the negative implications it can have on range and croplands in the state.

“Cheatgrass has been around for a long time, but people have started to get more concerned about it in the last 10-15 years,” said Dr. Lisa Rew, professor of Invasive Plant Ecology and Management in the Department of Land Resources and Environmental Sciences at Montana State University.

Concern over cheatgrass has largely risen due to the fact that managing its spread is difficult. Cheatgrass germinates in the fall, generally coming up after the first fall rains. The grass remains dormant over the winter, but once temperatures start warming to about 45 degrees in the spring, it begins growing again. The

invasive grass is only palatable to grazing animals before it goes to head, so this means it can only be of any use as forage in the fall, immediately after it rains or in the early spring. Usually by late May or early June, cheatgrass has gone to head and is well on its way to drying out.

Cheatgrass really likes disturbed areas, Rew explained, with overgrazed lands being one of its favorite areas to inhabit. However, cheatgrass is also often found in winter wheat crops, as well. Recent research has also found that cheatgrass enjoys warmth, so it thrives on south-facing slopes.

Herbicide usage is the most common approach to control the invasive grass, but it doesn't always have the greatest long-term effects and chemical control is expensive. Some producers have found success intensively grazing cheatgrass when it is palatable, but even that is not a cure all.

[READ MORE](#)



Senate passes Great American Outdoors Act

The Hill: The Senate passed a major public lands bill on Wednesday, voting to set aside hundreds of millions of dollars each year for conservation efforts.

The Great American Outdoors Act, which passed in a 73-25 vote, would permanently provide \$900 million in oil and gas revenues for the Land and Water Conservation Fund (LWCF), which helps secure land for trails and parks.

The legislation will also put \$6.5 billion toward addressing a maintenance backlog at national parks.

“Permanent LWCF funding will help improve access to public lands, including providing important access for hunting and fishing opportunities, and will ensure the program remains an important contributor to a strong and growing outdoor recreation economy that will benefit state and local economies throughout our nation,” Sen. Joe Manchin (D-W.Va.), who was part of a bipartisan group that introduced the bill, said in a floor speech.

The bill, which has broad bipartisan support, now heads to the House.

The lower chamber is expected to take up the bill by July 4, according to a senior Democratic aide.

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\$8 million dollar project underway to repair St. Mary canal collapse

MT Free Press: HAVRE — If ever there was a summer when hundreds of Montana's Hi-Line farmers could use rain, it's this one.

An \$8 million infrastructure failure on the St. Mary Canal last month will restrict approximately 800 irrigators who work about 150,000 acres from Havre to Glasgow to about half the water they normally use during a season.

The St. Mary Canal was built approximately 100 years ago to feed water from lakes Sherburne and St. Mary into the Milk River and make it possible for ag producers in arid central and eastern Montana to pull water and make a living. The Milk River Project is among the oldest of the Bureau of Reclamation's infrastructures.

No failure of this magnitude has occurred in the history of the elaborate ditch system.

"There has not been an interruption to this extent," said Steve Davies, area manager for the Bureau of Reclamation in Billings, in an email. "Historically there have been occasional shutdowns required for emergency repairs to a siphon or canal embankment, but those were typically 1-2 weeks at most."

Irrigators have enough water in Nelson and Fresno reservoirs, which are now full, to pull until mid-July. So this year weather will have an exceptionally major say in how the 2020 season pans out for the farmers and ranchers who depend on the water system.

"There are some big worries with the loss of this water," said Jennifer Patrick, manager of the Milk River Joint Board of Control, which represents irrigators. Patrick, of Havre, added that farmers have their fingers crossed for a "timely precipitation event." [READ MORE](#)

Graying Pains:

Farm to Future

Montana's family farms and ranches face succession uncertainties as producers age toward retirement

MT Free Press: The 68-year-old old poultry farmer pointed out the hen houses he built decades ago, providing details of each wooden tenement's residents.

Hugh Spencer built the hen houses and accompanying grain bins, which look like high-density housing for chickens, shortly after he and his wife, Viki, purchased the land in 1981.

Spencer's 48-week-old hens are kept in the northernmost house. The pullets (or young hens) are kept in the center house. The veteran, 90-week-old hens huddle together in the southernmost house.

Spencer makes the walk from his and his wife's stately home only a few miles north of Plains, collecting the fruit of his and his hens' mutual labor, three times daily. The eggs are sold under the Spencer's Valley View Farm label.

For health reasons, Spencer changes his boots before entering each hen house. While he may have given little thought to this precaution 20 years ago, he is quick to point out its importance now.

He mentioned "bio security" frequently. His main concern is not for his bottom line, but for the birds themselves.

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Uncovering clues in the capillary fringe

Farm Progress: Ever heard of a capillary fringe? It might just be the most important — and mysterious — thing you've never heard of.

Stand outside and look down. There is the soil. On a dry day, all the spaces in the soil are filled with air. And some distance further down, those spaces are entirely water. So, what's in between?

That's the capillary fringe.

Like a paper towel wicking up water from a surface, water rises above its natural level in soils through capillary action. A lot of chemical and microbial activity in the soil varies based on how much water or air is around. So, the capillary fringe controls many important functions in the soil.

"Important processes like contaminant breakdown and carbon storage depend on the amount of water and oxygen available," says Jaclyn Fiola, now a graduate student at Virginia Tech. "Understanding the conditions in the capillary fringe will help us predict where certain soil processes will occur."

Fiola and her team set out to better understand this strange region. But that's no easy feat. With the entire fringe underground, it's invisible. And even scientists have a hard time agreeing on where the fringe begins and ends. That's where lab experiments come in handy.

The team gathered two kinds of soil, one sandy and one loamy. The scientists packed this soil into five-gallon buckets with holes near the bottom to allow water to enter.

To track the key events in the capillary fringe, Fiola turned to cleverly simple systems. To study how much oxygen was in the soil, the researchers painted PVC pipes with rust-embedded paint. They inserted these pipes into the soil.

Wherever there wasn't enough oxygen, microbes would "breathe" rust instead. That would turn the rust into a different form of iron, which washes away. By measuring how much rust was left, the team could get a glimpse beneath the soil.

The researchers were surprised to find that the water rose the entire

height of the buckets in both types of soils. That means the capillary fringe extended at least 9 inches, more than they were expecting.

They were also surprised that the PVC pipes had lost their rust well above the water table. "This means the soil in the capillary fringe at least 2 inches above the water table is behaving like soil in the water table even though it's not fully saturated," says Fiola.

"Based on the findings, the soil directly above the water table behaves a lot like the saturated soil within the water table," says Fiola.

Wetlands are defined by the government as soils that are saturated near the surface. But if soils act like they're saturated even above the water table, that means more areas might act like wetlands and deserve protection.

Scientists also wanted to better understand how water and air in the capillary fringe can affect other soil processes. To track decomposition, they inserted wooden sticks into the soil. Researchers found that microbes eating the wooden sticks were finicky.

"Our results suggest that the microbes that carry out decomposition require ideal conditions – not too wet and not too dry," says Fiola. The wood was most eaten away in the middle of the buckets where it was moist.

[READ MORE](#)

Agroforestry is "win-win" for bees and crops, study shows

Phys.org: Planting woody plant species alongside crops could double the number of insect pollinators helping farmers produce food, new research has demonstrated for the first time.

The study, led by the University of Reading and published in the journal *Agriculture, Ecosystems and Environment*, provides the first observed evidence that agroforestry increases wild insect pollinator numbers and increases pollination.

The team found agroforestry sites had double the number of solitary bees and hoverflies, and in arable agroforestry sites there were 2.4 times more bumblebees

than in those with just one kind of crop. Solitary bee species richness also increased tenfold at some sites. These increases in wild insect pollinators resulted in more pollination, as potted flowers left out in the study fields had up to 4.5 times more seeds.

The findings support mooted plans to implement agroforestry in Europe in the near future, showing that agroforestry could help stop the global decline of pollinators, partly resulting from intensive farming methods.

[READ MORE](#)

Field Bindweed - A nutritious, overlooked forage

On Pasture: Back in 2009, I spent part of the summer as the "Jane Goodall of cows," following a herd of 69 cows and their calves to see what they ate, and how they learned. Half were trained to eat diffuse knapweed and yellow toadflax and I wanted to see how quickly the untrained cows and calves learned from them.

Not only did trainees teach herd mates to eat weeds in less than a day, they also showed me that grass may not always be a cow's first or best choice!

Day after day, I followed the herd as they grazed a 500-acre pasture, near Boulder, Colorado. That June and July were two of the wettest

months in history and the pasture's grasses rebounded and forbs went wild. The pasture included a large prairie dog ghost-town that covered about 200 acres of the pasture, vacant because plague had killed them all. That area was almost grassless, and was covered in an assortment of weeds. It looked so bad from our accepted pasture paradigm that I nicknamed it the "garbage area."

But it didn't look bad to my herd. They avoided the grassy areas and spent their time in the "garbage area" snipping off sunflower blossoms, yucca fruits, and musk thistle flowers and eating prickly lettuce and bindweed.

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No-till increases crop yields, environmental gains over long haul

No-Till Farmer: Despite the environmental benefits of no-till agriculture, farmers often hesitate to change to this management approach due to uncertain economic returns.

Sarah Cusser, postdoctoral research associate at the Kellogg Biological Station (KBS), and MSU terrestrial ecologist Nick Haddad, director of the Long-term Ecological Research (LTER) program at the Kellogg Biological Station (KBS) and professor in the Department of Integrative Biology, however, have just published a study in *Global Change Biology* that clearly demonstrates significant benefit to both the environment and to crop yield for farmers practicing no-till versus tilled agriculture consistently over many years.

Additionally, Haddad's and Cusser's work demonstrates the importance of long-term research for obtaining meaningful results, especially on the outcomes of management changes that can be slow to develop and to detect, such as the attributes of cropping systems on soil structure and organic matter. Unquestionably, studies of shorter duration than theirs would have produced misleading results.

"The findings drive home the importance of long-term studies because they reveal unexpected results," Haddad said. [READ MORE](#)

Grants

COVID-19 Rapid Response Infrastructure RFP

Mosaic is launching an open RFP in May 2020 to make \$1 million of rapid response grants to individual nonprofit grassroots organizations, and networks of them, focused primarily on environmental protection and/or environmental justice to fund tools & technology, training, and related resources needed as a result of the COVID-19 pandemic. [More Info](#)

MT Grazing Lands Mini-Grants

The Montana Grazing Lands Conservation Initiative (GLCI) is accepting applications for mini-grants and demonstration projects. The purpose of the mini-grant is 1) to provide funding for educational workshops or event that may come about throughout the year and 2) to support partners and organizations with an interest in the conservation, education and awareness of grazing lands and natural resources in Montana. Requests for funding are limited to a minimum of \$50 and a maximum of \$1,000. There is no application deadline. Submissions will be considered year-round by the Montana GLCI steering committee. [More Info](#)

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](#)

Montana Grazing Lands Education Mini-Grants

The Montana Grazing Lands Conservation Initiative (GLCI) is accepting applications for mini-grants and demonstration projects. The mini-grants will provide funding for educational events throughout the year and support partners and organizations with an interest in the conservation, education, and awareness of grazing lands and natural resources in Montana. Mini-grant funding requests are limited to a minimum of \$50 and a maximum of \$1,000. There is no application deadline. [More Info](#)

USDA Cooperative Agreements for Community Compost and Food Waste Reduction

On May 11, the USDA announced the availability of \$900,000 for local governments to host a Community Compost and Food Waste Reduction (CCFWR) pilot project for fiscal year (FY) 2020. The cooperative agreements will support projects that develop and test strategies for planning and implementing municipal compost plans and food waste reduction plans. Due **June 26**. [More Info](#)

Conservation Innovation Grants

Conservation Innovation Grants (CIG) are competitive grants that drive public and private sector innovation in resource conservation. CIG projects inspire creative problem solving that boosts production on farms, ranches, and private forests -

ultimately, they improve water quality, soil health, and wildlife habitat. Deadline: **June 29**. [More Info](#)

Wetland Mitigation Banking Program Funds

USDA has \$5 million available to help states, local governments and other qualified partners develop wetland mitigation banks to restore, create or enhance wetland ecosystems. Due **July 6**. [More Info](#)

2021 BSWC Host Site Cost Share Support

Need help paying for a BSWC member in 2021? Will your member be working to reduce nonpoint source pollution? The MWCC Watershed Fund has funding to help MWCC Partners implement DEQ-approved Watershed Restoration Plans (WRPs) by hosting a Big Sky Watershed Corps (BSWC) member in 2021. A total of \$35,000 is available, and up to \$6,000 may be awarded to each qualifying organization. Due **July 31**. [More Info](#)

Missoula RAC Accepting Project Proposals

The Missoula Resource Advisory Committee (RAC) is now accepting new project proposals. The application deadline is **Aug. 1**, and the committee has approximately \$151,500 in project funding to award. At least 50% of all funds must be used for projects primarily dedicated to restoring streams and watersheds, or road maintenance, decommissioning or removal. [More Info](#)

CD Water Projects Grant

Funds

The Sweet Grass Conservation District is offering up to \$20,000 for conservation district sponsored irrigation related projects, stream restoration, and other activities that result in improvements to water quality and quantity and to aquatic habitat. Projects require a 50/50 match. Due **August 5**. Contact Guelda Halverson, Guelda.Halverson@mt.nacdnet.net for more info.

Events, etc

Montana Youth Range Camp

The annual Montana Youth Range Camp, hosted by the Lewis & Clark Conservation District, will be held August 3-6, 2020, at the C Bar N Ranch near Augusta, Montana. Visit <https://lccd.mt.nacdnet.org/> for more info.

Ranching Systems Fall Symposium

Hosted by MSU Department of Animal & Range Sciences, "Calving Season and Ranch Workforce - Managing Both Successfully" featuring Burke Teichert & Bob Milligan will be held **September 22 & 23** at the GranTree Inn in Bozeman. [More Info](#)

2020 Watershed Symposium Goes Virtual

The Montana Watershed Coordination Council and the Montana Forest Collaborative Network are co-hosting the 2020 Watershed Symposium titled "Summit to Stream: Connecting People, Water, and Forests." Due to health and safety concerns

from the COVID-19 outbreak, the Montana Watershed Coordination Council (MWCC) and the Montana Forest Collaboration Network (MFCN) have decided to restructure our combined conference scheduled for this coming fall, and we are no longer gathering in Butte, MT October 14th-16th. Instead, we will be working to develop new and innovative strategies to engage and serve our conservation partners across the state. [More Info](#)

Jobs

MCC Field Crew Members

MCC is seeking field crew members for the summer term. Crews will camp for most of their terms, oftentimes in remote locations in varied terrain and in all weather conditions. Work may include building or maintaining trails, treating or removing invasive species, building fences, operating chainsaws to reduce wildfire risks by thinning trees, among many other types of projects. [READ MORE](#)

Northern Rockies Program Manager

The Trust for Public Land is seeking a leader with demonstrated ability in project management and community engagement, and a background in open space acquisition and conservation and park/trail creation. This position reports to the Northern Rockies Area Director. Based in Bozeman. Posted May 19. [More Info](#)

Range Technician (2 positions)

SWCDM is seeking two (2) full-time,

term positions with benefits to serve in Roundup and Glasgow, Montana, respectively. These positions are part of a collaborative effort among SWCDM, USDA Natural Resources Conservation Service (NRCS), and local partners to further the delivery of rangeland conservation. Deadline: **June 30**. [More Info](#)

Director of Natural Resources - Montana Stockgrowers

Do you enjoy advocating for Montana's ranchers? Do you have a background in agriculture practices and livestock? If you answered yes, then this position could be for you! This full-time position is located in Helena, MT. and works with the Montana Stockgrowers Association (MSGA), Montana Association of State Grazing Districts (MASGD), and the Montana Public Lands Council (MPLC). The application deadline is **June 30**. [More Info](#)

Program Manager, Sustainable Ranching Initiative

World Wildlife Fund (WWF), one of the world's leading conservation organization, seeks a Program Manager for our Sustainable Ranching Initiative at our Northern Great Plains (NGP) Program office in Bozeman, MT office. The Program Manager will oversee the Sustainable Ranching Initiative in the NGP with the goal of avoiding the conversion of grasslands to croplands across the region by enhancing the environmental, economic, and social viability of grass-based enterprises. Due: **July 1**. [More Info](#)

Coming Up

June

22 MACD Executive Committee Conference

July

13 MACD Board Conference Call

24 MACD Education Committee Meeting

27 MACD Executive Committee Conference Call

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

Take the Streamgage User's Survey

Do you check stream gage data in Montana for flooding information, stream flow data, or water rights? Montana is home to 264 gages funded and maintained by state, federal and local governments; companies, and nonprofits. Each organization has its own goals and needs for the gage data. The data for most of the gages is publicly available through apps, and websites for people to use. We know that gage data sites are being visited much more over the last 5 years, but we don't know who is checking on the data and for what reasons. Public funding for the gage's maintenance has decreased or remained flat over the last decade.

The Stream Gage Data Users survey was created by representatives from local nonprofits, and state and federal agencies to help us understand how people and organization are using and accessing data. Whether you are a ranch, farmer, water commissioner, tribal representative, watershed group, an irrigator, or water rights holder, please complete the Montana Stream Gage Data Users Survey, it is a short survey that takes about 5 minutes to complete and can be found here: <https://www.surveymonkey.com/r/95JZPPC>.

Coronavirus Food Assistance Program

Are you a farmer or rancher whose operation has been directly impacted by the coronavirus pandemic? The Coronavirus Food Assistance Program provides direct relief to producers who faced price declines and additional marketing costs due to COVID-19. USDA is accepting applications now through August 28, 2020. Producers should apply through the FSA at their local USDA Service Center.