Monitoring Montana Waters

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MONITORING MONTANA WATERS

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Contents

January Blog

Data Analysis, Interpretation & Upload

Published 01/27/2025

After a busy summer field season, our volunteer water quality monitoring groups are working through the process of data management, analysis and upload. Monitoring Montana Waters offers laboratory analyses funding which supports the cost of analyzing water quality samples at Flathead Lake Biological Station's **Freshwater Research Laboratory**. Once MMW funded groups have received all their data, the process of interpreting the results and submitting ambient water quality data to Montana Department of Environmental Quality (MT DEQ) begins.

Montana uses a system called the Montana EquIS Water Quality Exchange (MT-eWQX) to store water quality monitoring data, including physical, chemical, biological and habitat data, from locations across the state. Once verified, these data are submitted to EPA's Water Quality Portal, where they are publicly available. Data from the previous year must be uploaded to the MT-eWQX database by **Friday, February 28th**.

For instructions and additional information on data upload, MT DEQ has provided step by step guidance on their **website**. If you need assistance during the EDD (EDD = Electronic Data Deliverable) submittal process, you can contact Deanna Tarum at **dtarum@mt.gov.** Montana State University Extension Water Quality also has a series of **tutorial videos** to provide additional context to the detailed written guidance provided by MT DEQ. For creating graphs to visualize water quality data, MSU Extension has a series of **tutorial videos**. Monitoring Montana Waters personnel are here to assist with data interpretation and upload. If you have any questions or wish to set up a meeting to discuss data analysis and/or data upload, please contact us at **mmw@flbs.umt.edu**.

February Blog

Connecting Communities & Protecting our Waters

Published 02/26/2025

Monitoring Montana Waters (MMW) aims to support water quality monitoring efforts in Montana and enable community stewardship of our waters. MMW empowers Montanans to act as community scientists, committing their time and energy to monitoring important and understudied freshwater systems. We cannot protect our invaluable freshwater resources alone. The community is our greatest asset. Two of our groups, **Central Montana Resource Council** (CMRC) in Lewistown, and **Carbon County Resource Council** (CCRC) in Red Lodge are working closely with their communities to amplify statewide collaborative water monitoring efforts.

On Saturday, February 1st, CMRC held an event titled Hot Chili, Sweet Rolls & Ross Fork Creek at Hobson Town Hall. Community members were invited via postcards and Facebook to learn about the 2024 Ross Fork Water Quality Monitoring Project, designed to set a baseline of Ross Fork Creek conditions. Volunteers from CMRC collected samples from four sites in July, August, and September. Community members were encouraged to bring their neighbors and stop by to chat about water quality while enjoying chili, sweet rolls, fruit, and coffee. CMRC briefly presented the 2024 findings and the plan for monitoring in 2025, and the program was followed by Q&A discussions. The group had 27 people in attendance and were able to recruit new volunteers for their second year of sampling!

On Wednesday, February 19th, CCRC invited the public to learn about the health and future of Rock Creek and its tributaries. The event titled Beer, Pizza, and Our Rivers & Streams featured speakers from Trout Unlimited; Fish, Wildlife, and Parks; and Monitoring Montana Waters. Dr. Rachel Malison, program leader for Monitoring Montana Waters gave everyone more information about how our program supports volunteer water quality monitoring across the state and protects our waters. She highlighted the importance of collecting scientifically credible data over long-term monitoring to inform management decisions. Ben Bailey, Fisheries Technician with Montana Fish, Wildlife and Parks assisted in getting CCRC's water monitoring program started and his management area encompasses the mainstem Yellowstone River and tributary streams. Ben spoke about dewatering, channel spanning diversion dams, bank stabilization, and habitat loss. He highlighted the importance of keeping our rivers wild, not just for aquatic life. Katie Young, the Beartooth Project Manager for Montana Trout Unlimited discussed river restoration projects related to flood resilience and ecosystem function in the waterways of the

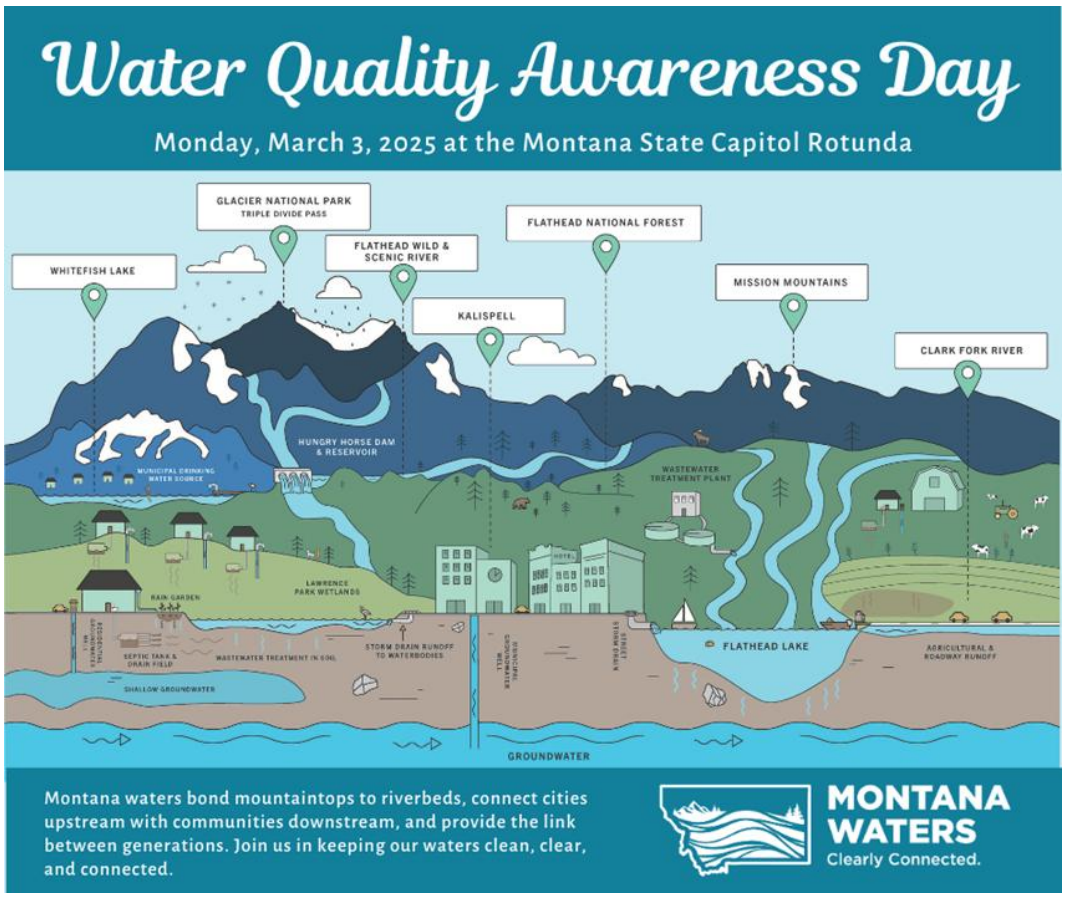
Beartooth Mountains. Following these presentations, community members were able to ask questions and voice their concerns about the watershed. CCRC was joined by around 80 community members eager to learn more about Rock Creek conditions and enjoy some free pizza and beer.

MMW personnel are happy to help our funded groups in any way possible when it comes to organizing community events and educating the public. Please don't hesitate to reach out or look to each other as examples!

March Blog

Water Quality Awareness Day Rotunda Event

Published 03/05/2025



At the start of March, Monitoring Montana Waters and the Montana Pesticide Stewardship Partnership Program participated in Water Quality Awareness Day at the Montana State Capitol Rotunda. The event was sponsored by Western Montana Conservation Commission and partners attending included Montana Department of Environmental Quality, US Geological Survey Wyoming-Montana Water Science Center, Montana Department of Natural Resources & Conservation: CARDD & Water Resources, City of Missoula Stormwater, Clark Fork Coalition, Montana Bureau of Mines & Geology, Prickly Pear Land Trust, and Montana Department of Commerce. Legislators received a postcard invitation to the event in their legislative mailboxes and an email a few days prior notifying them of the event.

The main goal of this event was to demonstrate the great work organizations are doing across the state to protect and improve water quality and articulate why this work is needed and important. MMW and PSPP personnel had the opportunity to showcase Flathead Lake Biological Station's work, different projects, outreach efforts, and capacity. Legislators learned about what water quality issues our organization focuses on, why these issues are important and why they need to continue to be worked on. It was a great opportunity for us to highlight how our projects are funded and what kind of support is required to continue the work.

This event provides an opportunity for legislators to meet the people and organizations who work on the topics and issues they must discuss, make policies around, and dedicate funding toward during bill hearings and interim sessions. Water quality is and will continue to be an important topic and requires additional work and funding to protect Montana's water resources.

April Blog

Nutrient Pollution on Big Hole River

Published 04/18/2025

Monitoring Montana Waters (MMW) provides scientific, technical, and financial support to citizen-led watershed monitoring groups. MMW has provided assistance with water monitoring efforts on the Big Hole River since 2020. The Big Hole River valley encompasses 2,800-square miles of free-flowing, blue-ribbon trout streams, several mountain ranges, and many plant and animal species-of-concern, including the last remaining population of stream-dwelling Arctic grayling found in the Lower 48 United States. The Big Hole is a tributary of the Jefferson River, and it is affected by nutrient pollution, warming temperatures, development, noxious weeds, wildfires, and socioeconomic change.

The **Big Hole River Foundation** (BHRF) is a science-based organization that works to protect the Big Hole River watershed through water quality monitoring, education, outreach, and advocacy on behalf of its unique culture, fisheries, and wildlife. The primary focus of the BHRF is conducting a long-term water quality monitoring program on the Big Hole River. The BHRF collects data from April to October at 7 mainstem sites and 3 primary tributaries over 150-miles, from Twin Bridges up to the headwaters. The BHRF is the only MMW funded group that has also built an aquatic insect monitoring program to complement their work on water quality. Their effort has resulted in the collection of the most comprehensive aquatic macroinvertebrate dataset on the river to date. Samples are collected at 6 sites, with 4 replicates each, in late September each year. Over five years of water quality data collection, the Big Hole River Foundation has found consistently high levels of nitrogen and phosphorus at multiple sites on the Big Hole.

Trained volunteers serve a crucial role by monitoring water quality in Montana, helping to protect the water quality of our rivers, streams, lakes, and wetlands. Volunteer monitoring efforts help develop comprehensive data sets from which longer-term water quality trends can be discerned. If sampling reveals a significant water quality problem, then baseline data can be used to justify the implementation of more intensive watershed studies, and it can set the stage for formal water quality assessments to take place. In February 2025, **Upper Missouri Waterkeeper** and the Big Hole River Foundation filed a **32-page petition** urging the Montana Department of Environmental Quality to designate the Big Hole River as impaired for nutrient pollution. Excess nutrients in a river system can lead to algae blooms which can **lower dissolved oxygen levels** and harm fish

along with some of the macroinvertebrates that they eat. The petitioners would like DEQ to acknowledge that portions of the Big Hole are exceeding established water quality thresholds and designate the waterway as impaired for nutrient pollution. To read more about the Big Hole River petition to DEQ, check out the articles linked below.

River watchdogs decry nutrients pollution in Big Hole River | State | msuexponent.com

Big Hole River algae blooms lead to DEQ petition by enviros | News | bozemandailychronicle.com

Conservation Groups Petition to Address Big Hole River Nutrient Pollution

DEQ rejects petition targeting nutrients in Big Hole River

Enviro groups petition DEQ to limit nutrient pollution on Big Hole River | AP News

Frequently Asked Questions: Big Hole River Impairment Petition - Upper Missouri Waterkeeper®

Groups Petition the State of Montana to Protect Big Hole River from Nutrient Pollution - Upper Missouri Waterkeeper®

DEQ rejects request to list parts of Big Hole River as impaired

Montana DEQ seeks additional info for Big Hole River impairment decision

May Blog

Volunteer Water Quality Monitoring Training

Published 05/22/2025

The 2025 water quality monitoring season has begun! At the start of each season Monitoring Montana Waters (MMW) provides in person training for volunteer water quality monitoring groups to ensure each group feels confident in their abilities to collect scientifically credible water quality samples. To kick off the sampling season, MMW traveled to Lewistown to host a training event for **Central Montana Resource Council** (CMRC). Members of CMRC had the opportunity to practice sampling for unfiltered and filtered samples, as well as discuss the importance and procedures for field blanks, duplicates, and the COC form. MMW also met with citizen scientists from **Flathead Rivers Alliance** to prepare them to monitor water quality on the Three Forks of the Flathead Wild and Scenic River.

Monitoring Montana Waters, **Montana Department of Environmental Quality (DEQ)** and **MSU Extension Water Quality Program** (MSUEWQ) also hosted a water quality monitoring training event at the Flathead Lake Biological Station (FLBS) from May 14-16. Participants from water monitoring groups, conservation districts and volunteer groups throughout the state came to learn more about the importance of water monitoring and develop new skills to improve their current efforts. Participants had the option of choosing to attend focused workshops on developing and refining monitoring programs or get more experience with hands on data analysis on Wednesday. The following day was spent outside rotating between training stations that included topics on macroinvertebrates and algae, riparian health, basic lake monitoring, water chemistry, measuring discharge, as well as how to calibrate, use and care for different water quality probes like YSI meters and Hydrolabs. Experts from MT DEQ, FLBS, and MSU Extension led each station on Yellow Bay Creek. The last day of the training focused on interpreting water quality data and highlighted success stories of sharing results with the public.

MMW continued to provide training by visiting the **Yaak Valley Forest Council** in Troy and the **Bitterroot River Protection Association** in Victor to do group training events and go over grab and filtered sample collection methods. MMW travels to each watershed and provides in-person training for groups as needed. This is a great opportunity for us to connect and spend quality time in-person with our volunteers, who we primarily communicate with via email, phone or zoom. We are so

appreciative of our volunteers and want to do all we can to make them feel confident when collecting data.

June Blog

Flathead Lakers Swim Guide

Published 06/27/2025

The Flathead Swim Guide Project is a collaborative project between the Flathead Lakers, Monitoring Montana Waters, and the Confederated Salish and Kootenai Tribes. The Flathead Lake Swim Guide program monitors E. coli levels at sixteen public swimming areas throughout the summer swimming season from July through September.

The Flathead Lakers have been involved in the Swim Guide since its introduction to Flathead Lake in 2018, by open water swimmer and coach Mark Johnston of **FLOW Swimmers**. Johnston observed that while many U.S. recreational waters were routinely tested for safety, Flathead Lake lacked such a program. Concerned about potential health risks for local swimmers, he initiated water quality monitoring at popular swim areas around the lake. He partnered with Monitoring Montana Waters in 2021, and the

Flathead Lakers took on program management in 2022. Now in 2025, the program is entering into its eighth season of monitoring.

Consistent monitoring allows for early detection of issues and helps protect public health. You can find the locations and results for each beach at **The Swim Guide** , or download the app for iOS or Android. The Swim Guide is a global platform that provides water quality data for more than 8,000 beaches worldwide. The Flathead Lakers upload their results to The Swim Guide platform each week. Water quality samples are analyzed at the Flathead Lake Biological Station Freshwater Research Lab.

July Blog

Protecting the Jefferson Basin

Published 07/24/2025

Montana's Jefferson Basin includes the Big Hole, Ruby, Beaverhead, and Jefferson Rivers that have historically supported an abundance of wild trout. These cold-water fisheries are an integral part of Montana culture and have helped make the state a world-renowned outdoor destination. Today, the Jefferson Basin is experiencing variable snowpacks and dewatered rivers, increased development pressure and pollution, noxious algal blooms, warming temperatures, under-studied diseases and mortality, and increased recreational pressure. **Reports** from Montana Fish, Wildlife, and Parks confirm that wild trout populations have crashed to historic lows, and initial investigations have found little to no young-of-year recruitment.

Save Wild Trout (SWTC)is a coalition of anglers, river advocates, concerned citizens, businesses, guides, and outfitters whose mission is to protect wild trout for the benefit of all. Earlier this year, after more than three decades of work on the Big Hole River, the **Big Hole River Foundation** expanded its water quality monitoring model to all four rivers of the Jefferson Basin as part of Save Wild Trout. On Monday, July 14, Save Wild Trout and Upper Missouri Waterkeepers hosted an event to mark the release of a detailed report on the Jefferson River Basin. The public was invited to learn more about the Jefferson River Basin Abiotic Monitoring 2023-2024 and ongoing efforts to protect the health of Montana's iconic cold-water fisheries.

The event started with a hands-on demonstration of water quality sampling procedures and field equipment from Brian Wheeler, Director of Save Wild Trout, who also gave some updates on the status of the 2025 monitoring season. Dr. Kyle Flynn was the keynote speaker of the event unveiling the "**Jefferson River Basin Abiotic Monitoring 2023–2024**", a comprehensive scientific report on river health across the Jefferson Basin. The report integrates high-resolution thermal (FLIR) imagery, on-the-ground water quality monitoring, and field data collected over two field seasons by Save Wild Trout's research team. This science-driven effort provides an unprecedented baseline for understanding nutrient pollution, warming temperatures, and algal growth—critical threats to Montana's cold-water fisheries. MMW is glad to support the efforts of SWT to collect data to help protect our waters.

August Blog

Summer Outreach Events

Published 08/27/2025

Both **Monitoring Montana Waters** (MMW) and the **Montana Pesticide Stewardship Partnership Program** (PSPP) have been busy this summer connecting with community members and inviting the public to hear all about our efforts. Tabling events are a great way for us to get the word out about our programs and connect with those who are interested in learning more about protecting our waters.

This summer, **Janelle Groff**, research coordinator for the Montana Pesticide Stewardship Partnership Program joined Montana State University at their **Field Day** hosted at the **Northwestern Agricultural Research Center** in Creston, MT. This event allows researchers to meet with community members, producers, and partners. Attendees learned about ongoing research and toured the facility. The Bigfork Monday Market is another great opportunity for our team to chat with both locals and visitors. Each week, the Bigfork Monday Market offers up a booth to a local non-profit organization so that they may educate the community on their mission. In July, Janelle Groff and **Brianna Elizondo** attended the market as one of the local non-profit organizations representing the **Flathead Lake Biological Station** (FLBS) and our respective programs. We were able to talk to community members about monitoring, upcoming events, and the state of the lake while they enjoyed live music and local vendors.

One of the main events that our team participates in each summer is the FLBS Open House. Each summer, the public is invited to attend a free and family-friendly Open House celebration at the Bio Station. Visitors have the opportunity to explore the FLBS campus in Yellow Bay, meet the Bio Station's team of scientists and educators, and learn about Flathead Lake and its watershed, as well as the Bio Station's cutting-edge, world-renowned research and immersive education programs. MMW and PSPP both had exhibits at the event and offered a hands-on learning activity for kids. We are very fortunate to have opportunities like these to share our work with the community and spread the word about what we do. Always feel free to reach out to us if you have any events we would be able to participate in, or if you need any support in planning outreach events!

September Blog

2025 Watershed Symposium

Published 09/30/2025

Montana Watershed Coordination Council's biannual Watershed Symposium brings watershed partners from around the state together to connect, learn, and share information to advance collaborative conservation efforts. Attendees joined from watershed organizations, conservation districts, natural resource agencies, tribal nations, nonprofits, academic institutions, together with local representatives, and landowners. This year, the event was hosted in Billings/Winnett, Montana in partnership with Winnett ACES.

The theme for this year's Watershed Symposium was Beyond the Banks, the impacts of watershed conservation. This 3-day event started with a panel made up of individuals from the Big Hole Watershed Committee, Winnett ACES, Blackfoot Challenge, Northern Cheyenne Tribal Environmental Department, and the Petroleum County Conservation District. The panel shared conservation success stories and highlighted recipes for success. The event continued the following day with keynote speaker Dr. Rachel Frost from the Dan Scott Ranch Management Program at Montana State University discussing how conservation fits in the bigger picture of community, economics, opportunity, and resiliency. The inspiring presentation encouraged attendees to find leverage on the landscape. Participants spent the rest of the day attending various workshops with topics ranging from developing Watershed Restoration Plans, implementing current Watershed Restoration Plans, storytelling, developing social metrics for grassland conservation, sharing metrics, project expectation management, and DIY media production.

On the last day of the Symposium, participants had the opportunity to tour various projects in Roundup and Winnett. In Roundup, the Lower Musselshell Conservation District shared flood resiliency projects that have been implemented as they continue to face frequent and severe flooding. From there, the group drove to Winnett to hear about Winnett ACES Soil Health Program. Winnett ACES welcomed us into their newly built community center as they shared about the land, people, and projects that make Central Montana rural communities so special. Winnett ACES offered various project tour options including wet meadow restoration, stream restoration and native reseeding, wildlife-friendly fencing, and native reseeding and water/grazing infrastructure. The night ended with exploring the town and meeting local landowners. This

Symposium draws together such a wide audience and allows participants to learn from one another's experiences. Monitoring Montana Waters is grateful for all the opportunities that MWCC provides to learn more about protecting Montana's waters.

October Blog

Water Quality Awareness Evening

Published 10/13/2025

Monitoring Montana Waters and the **Montana Pesticide Stewardship Partnership Program** recently hosted a Water Quality Awareness Evening event in partnership with the **Montana Audubon Center** in Billings, Montana. Montana Audubon Center focuses on environmental stewardship and community involvement. The Center is located only minutes from downtown Billings on 54 acres of restored gravel pit along the Yellowstone River. The former gravel mine left behind three ponds, now serving as wildlife habitat and a welcoming place for community recreation and educational programming.

The Montana Audubon Center was a beautiful location to host our educational programming event which featured two 30-minute presentations covering water quality basics, the importance of volunteer water quality monitoring, the difference between nonpoint and point source pollution, and ways community members can get involved in monitoring and reducing nonpoint source pollution. In between the two presentations, attendees had the opportunity to visit two of the ponds and participate in hands-on sampling. At the first station, participants sorted macroinvertebrates and learned how macroinvertebrates are used as bioindicators of water quality conditions. They were also able to use kick nets to learn about protocols and collect macroinvertebrates. At the second station, participants had a chance to collect unfiltered and filtered grab samples. They learned the Standard Operating Procedures associated with collecting chemical samples for laboratory analysis. This event was a great opportunity for us to raise awareness about sources of pollution, distribute education materials, and increase community engagement in volunteer water monitoring.

It's really important to remember that when we protect our waters, we protect aquatic insects, fish, birds, and entire ecosystems that they support. We're very grateful that we had the opportunity to host this event and expand our reach to a new community in eastern Montana. This event was made possible thanks to a mini grant which was awarded to the Flathead Lake Biological Station and Montana Audubon Center by the **Montana Association of Conservation Districts** (MACD). MACD offers mini grants up to $4,000 to help fund local education and outreach efforts that address nonpoint source water quality issues. Funding for these mini grants is made available through the **Montana Department of Environmental Quality**'s federally funded 319 program.

November Blog

Important Dates

Published 11/03/2025

As we wrap up the 2025 sampling season, I wanted to remind everyone of some important dates. Here are some dates to keep in mind as we approach 2026:

Feb 1st -We recommend sending in a draft of your Sampling & Analysis Plan. Time permitting, we will provide you with feedback prior to the March 1st application deadline. Groups must have an approved SAP on file by the funding application deadline.

Feb 28th- Data from the previous year must be uploaded to the MT-DEQ database by Saturday, February 28th. We are working with our lab to send out the remaining 2025 data! MSU Extension has step-by-step data upload **tutorial videos**. MT DEQ also has instructions for submitting data on their **website**. MMW is available if you are in need of assistance with the data entry and submission process. Please reach out to us to set up a meeting. A short final report must be submitted to MMW by February 28th as well. The 2025 Final Report can be found on the **MMW website** under the resources tab.

Mar 1st – Funding applications are due for the MMW Laboratory Analyses Funding and MMW Gear Funding. Priority will be given to groups that have a completed SAP on file at the time of submission. The 2026 SAP Template, 2026 Laboratory Analyses Funding & Gear Funding Application, and Budget Template can all be found on the **MMW website** under the resources tab.

Please do not hesitate to reach out to MMW if you have any questions about the deadlines and requirements. Final reports, Sampling & Analysis Plans, and Funding Applications can be submitted electronically via email to Monitoring Montana Water's Program Leader, Dr. Rachel Malison, at **mmw@flbs.umt.edu**. She can be reached by phone at 406-872-4518. If you have any gear that belongs to MMW, please reach out to us to set up a plan for return. We would like to inventory and clean all gear for the next season.