

Providing  
Assistance with  
Water Quality  
Monitoring



# Monitoring

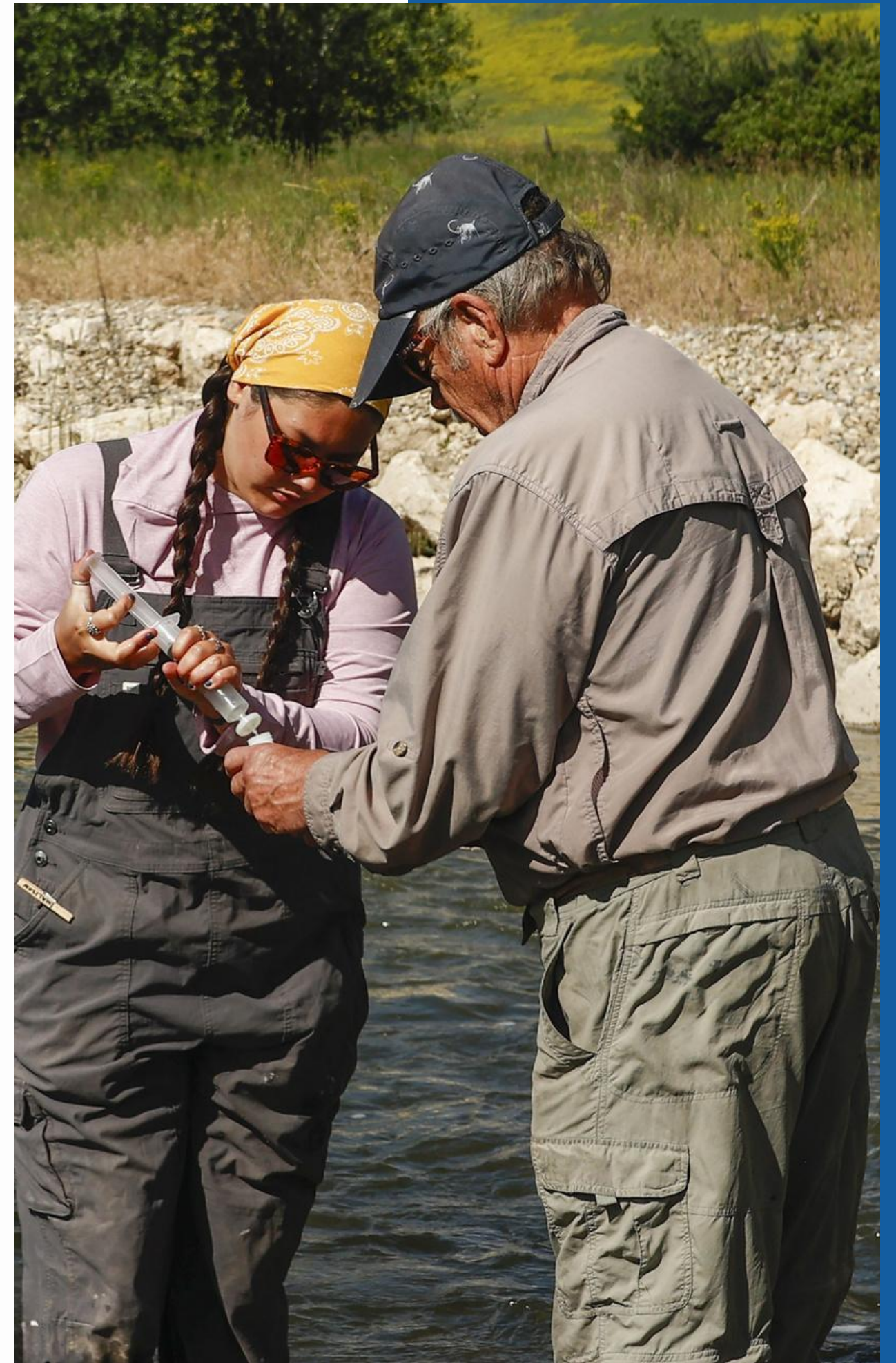
# Montana

Dr. Rachel Malison, Program Leader  
with the Flathead Co. SWC Member

# Waters

# Overview

- ❖ Flathead Lake Biological Station
- ❖ Big Sky Watershed Corps
- ❖ About MMW
- ❖ Our Mission
- ❖ Funding
- ❖ Training
- ❖ Building Capacity



# FLBS Background

- University of Montana's Flathead Lake Biological Station: Established 1899, by Dr. Morton J Elrod
- Celebrating the 125th anniversary of FLBS
- Moved to Yellow Bay in 1908

Hub for freshwater research:

- Long-term lake monitoring
- Aquatic invasive species
- Published research in ecology, microbiology, limnology.

## Education

Summer courses for students

- K-12 education and outreach programs





# Big Sky Watershed Corps

Under Montana Conservation Corps

- Placed with a host site
- Undergraduate degree required
- Matched based on your interests
- Increase capacity

10 ½ month service term

- Hands on experience and training

# MMW Team

**Program launched through Flathead Lake Biological Station in  
2021**

**Philanthropically funded**



**Rachel Malison**

Program Leader



**Brianna Elizondo**

BSWC Member



**Tom Bansak**

Oversight Committee



**Erin Sexton**

Oversight Committee

# Goal of MMW

## Increase the capacity of water quality monitoring in Montana

### Protect the waters of Montana



### Guidance

Monitoring Montana Waters is a program at FLBS that provides scientific expertise and guidance to citizen-led watershed monitoring groups.



### Funding

MMW offers two different types of financial support to watershed groups. These funds are available to provide support for sample analyses costs, as well as the purchase of sampling gear.



### Training

MMW offers on-the-ground training for funded groups and will travel to different watersheds to meet with our funded groups.

# Partners



**MONTANA CONSERVATION CORPS**

*Tools for Living. Experience for Life.*



# MMW Guidance

MMW provides assistance with:

- All aspects of volunteer monitoring
- Writing Sampling and Analysis Plans
- Writing Standard Operating Procedures
- Selecting analytes for analysis
- Handling and chain of custody
- Instrument calibration
- On the ground training
- Data Management
  - Data analysis
    - Upload to MT EQuIS Database (requirement for program)

# Guidance

MMW offers assistance and consultation in designing monitoring plans, selecting analytes for analysis, analyzing and interpreting data, and providing on the ground training in methodologies.

## Sampling and Analysis Plan

- Project area description
  - Goals and objectives
- Monitoring locations and schedule
  - Field procedures
- Quality assurance/control
  - Data management/analysis
  - Project budget

## Standard Operating Procedures

- Detailed steps for collecting water samples
- Must follow approved DEQ methods
- Ensures data can be used for management

## Data Management

- Must agree to share data with FLBS
- Must upload all of their data to the MT DEQ EQulS Water Quality Exchange (MT-eWQX) database.



# Funding

MMW offers two different types of financial support to watershed groups.

**\$7,000**

Lab Analyses  
Funding

**50%**  
Cost Match in  
volunteer time,  
mileage, money  
spent

**\$1,500**

Gear Funding –  
every 3 years

**100%**  
Cost match in  
dollars



## Freshwater Research Lab – Sample Analyses Available

Alkalinity

Ammonia

Ash-Free Dry Mass

Calcium

Carbon (Total/Dissolved Organic, Dissolved Inorganic, Particulate)

Chloride

Chlorophyll/Phaeophytin

E. Coli and Total Coliforms

Greenhouse Gases

Magnesium

Nitrate

Nitrate/Nitrite

Nitrogen (Particulate, Total)

pH

Phosphate

Phosphorus (Total)

Potassium

Radiochemical Analysis

Silica

Sodium

Specific Conductivity

Sulfate

Total Suspended Solids

Turbidity

Other analyses available upon request

# MMW Groups Funded 2021-24



# 2024 Funded Groups

**Fourth year of operation: Funding 15 groups for lab and gear support**

Big Hole River Foundation: *Divide, Montana*

Bitterroot River Protection Association: *Stevensville, Montana*

Central Montana Resource Council: *Lewistown, Montana* (New for 2024)

Clarks Fork Yellowstone Partnership: *Roberts, Montana* (New for 2024)

Clearwater Resource Council: *Seeley Lake, Montana*

Flathead River Alliance: *Columbia Falls, Montana*

Flathead Lakers, Swim guide: *Polson, Montana*

Kootenai Watershed Allies: *Troy, Montana*

Mission Bay Preserve HOA: *Polson, Montana*

Missoula Valley Watershed Group: *Missoula, Montana*

Rock Creek Watershed Group and Carbon County Resource Council: *Red Lodge, Montana*

Stillwater Valley Watershed Council: *Absarokee, Montana*

Thompson Chain of Lakes Stewardship Coalition: *Libby, Montana* (New for 2024)

Whitefish River Group: *Kalispell, Montana* (New for 2024)

Yaak Valley Forest Council: *Troy, Montana*

# Newly Funded Groups



Central Montana Resource  
Council



Whitefish River Water Quality  
Team



Thompson Chain of Lakes  
Stewardship Coalition

# Central Montana Resource Council



## Project Overview

- Monitoring 4 sites along Ross Fork Creek
- Total nitrogen, total phosphorus, nitrate-nitrite, soluble reactive phosphorus

## Project Area Overview

- Land uses: ranching and farming, CAFOs, recreation, fish and wildlife habitat

# Central Montana Resource Council



## Concerns & Goals

- Category 5 impaired: alterations in streamside vegetative covers, excessive nitrate-nitrite concentrations, physical substrate habitat alterations, and sedimentation
- Assess overall condition of Ross Fork Creek

# Whitefish River Water Quality Team

## Project Area Overview

- Monitoring 28 miles of the Whitefish River at three locations
- Land uses: agriculture, a golf course, a lumber mill, homes with acreage and high-density housing.



# Whitefish River Water Quality Team

## Concerns & Goals

- Temperature-impaired
- Evaluate current nutrient conditions
- Establish baseline for future comparisons



# Thompson Chain of Lakes Stewardship Coalition

## Project Overview & Goals

- Collected data on Crystal Lake, Lavon Lake, and Horseshoe Lake
- Total nitrogen, total phosphorus, nitrate-nitrite, soluble reactive phosphorus
- Protecting and preserving these vulnerable lakes



# Thompson Chain of Lakes Stewardship Coalition

## Concerns

- Surface and groundwater quality degradation from stormwater runoff, septic system effluent, and pesticide and fertilizer application
- Thompson Chain of Lakes Management Plan & Environmental Analysis



# Training

MMW offers on-the-ground training for funded groups

- Follow Standard Operating Procedures together





# **Volunteer Water Monitoring Training**

Hosted by MMW, MT DEQ, MSU Extension  
**Event**



**2-day workshop, 6 stations**

**Water Chemistry, macroinvertebrates, riparian vegetation, discharge, sediments, water meter calibration**



# VOLUNTEER WATER MONITORING TRAINING

May 14-16, 2025

Hosted at Flathead Lake Biological Station

Training will focus on field monitoring methods and peer learning to implement effective volunteer water monitoring programs. The training is intended for watershed coordinators, conservation districts, and others who develop, implement, and manage water monitoring programs throughout Montana. More information and registration coming soon!

## CONTACT

**Registration & Lodging**  
[rachel.malison@flbs.umt.edu](mailto:rachel.malison@flbs.umt.edu)

**Program Content**  
[abbie.ebert@mt.gov](mailto:abbie.ebert@mt.gov)



# Website



## Monitoring Montana Waters

Providing Assistance with Water Monitoring Efforts

July 29, 2024



MONITORING

[flbs.umt.edu](https://flbs.umt.edu)



- Getting Started with MMW
- Starting a Volunteer Monitoring Program
- How Are Water Resources Protected in Montana
- Funded Groups StoryMaps
- Links to MT DEQ and MSU Extension Water Quality Programs

## MMW Website Content

Here you will find pdfs of website content, as well as links for applications and forms.

Website Content:

Volunteer Monitoring

[Getting Started with MMW](#)

[Starting a Volunteer Monitoring Program](#)

[How Are Water Resources Protected in Montana](#)

[Standard Operating Procedures \(SOP\)](#)

[Field Gear Guide](#)

[2024 SAP Template](#)

Funding

[2024 Laboratory Analyses and Gear Funding Application](#)

## Helpful Links

Montana Department of Environmental Quality (MT DEQ) [Volunteer Monitoring Support Program](#) supports volunteer monitoring in several ways:

- Financial support, such as our Volunteer Monitoring Lab Analysis Program;
- Technical support, such as trainings and guidance documents;
- Administering volunteer monitoring opportunities; and
- Forming partnerships with other entities in the state that also support volunteer monitoring

The MT DEQ's [Water Resources Seminar](#) is another great resource to utilize. There are several videos on the website on a variety of subjects related to water quality.

MSU Extension Water Quality Program (MSUEWQ) offers the Data Hub. It provides storage and visualization of surface water data and photos collected by citizen scientists and groups across Montana. Contact Adam Sigler, the Extension Associate Specialist with questions or email [ExtensionWater@montana.edu](mailto:ExtensionWater@montana.edu)

[MSUEWQ Data Hub](#)



# Outreach Materials



**MONITORING MONTANA WATERS**

**ABOUT US**

**OUR GOAL**  
TO SUPPORT WATER QUALITY MONITORING BY COMMUNITY GROUPS AND PROTECT OUR WATERS.

**BEYOND OUR WATERS**  
WHEN WE PROTECT OUR WATERS, WE PROTECT AQUATIC INSECTS, FISH, BIRDS, AND ENTIRE ECOSYSTEMS THEY SUPPORT.

**GET INVOLVED**  
WE NEED YOUR SUPPORT TO PROTECT OUR WATERS FOR FUTURE GENERATIONS. WE RELY ON PHILANTHROPIC CONTRIBUTIONS TO FUND OUR PROGRAM. PLEASE CONSIDER DONATING TO MMW.

**WEBSITE** **DONATE**

**CONTACT**

406-872-4518  
mmw@flbs.umt.edu  
bit.ly/flbsmmw  
32125 Bio Station Ln, Polson, MT

**Some Watershed Groups**

Clearwater Resource Council  
Missoula Valley Water Quality District

**“ RANCHERS NEED CLEAN WATER FOR THEIR STOCK. FARMERS NEED IT FOR THEIR CROPS. EVERY EMPLOYER NEEDS IT TO STAY IN BUSINESS, AND EVERY LIVING THING NEEDS IT FOR LIFE... -Mark Udall ”**



**Monitoring Montana Waters**

**Citizen Science Monitoring is Essential in Montana**  
MMW empowers Montanans to act as community scientists, committing their time and energy to help understand and protect important and understudied freshwater systems. The community is our greatest asset.

**Water Quality Monitoring**  
Monitoring Montana Waters (MMW) dedicates time, personnel, and funding to assist citizen-led water quality monitoring in Montana. MMW provides technical and scientific assistance in addition to training for laboratory analyses and field gear.

**Help Support our Monitoring Efforts**  
We cannot protect our invaluable freshwater resources alone. We need your help to ensure our water is safeguarded for future generations. Please consider making a donation today.

**Providing Assistance with Water Monitoring Efforts in Montana**

bit.ly/flbsmmw 406-872-4518

**MONITORING MONTANA WATERS**



**MONITORING MONTANA WATERS**

**MMW**

Providing assistance to community groups with water quality monitoring in Montana. Our goal is to support water quality monitoring and protect our waters.

**FLATHEAD LAKE BIO STATION**



**Citizen Science is Essential**  
MMW empowers Montanans to act as community scientists, committing their time and energy to the understanding of important and understudied freshwaters that they care about.

**Beyond our Waters**  
MMW dedicates time, personnel, and funding to assist citizen-led water quality monitoring in Montana. When we protect our waters, we protect aquatic insects, fish, birds, and entire ecosystems they support.

**Help Support our Efforts**  
Help us protect Montana's cherished waters. We rely on philanthropic contributions to fund our program. We need your help to ensure our water is safeguarded for future generations. Please consider making a donation today.

**Contact** (406) 872-4518  
mmw@flbs.umt.edu  
bit.ly/flbsmmw



# MMW Goals



MONITORING  
MONTANA WATERS

01

MMW will continue to support water quality monitoring efforts throughout Montana

02

Continue to expand the program and develop new resources to support our groups

03

We want our data to be used for management decisions and research purposes

04

Develop new programs to protect our waters

# THANK YOU!



**Brianna Elizondo**

2024 BSWC Member

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