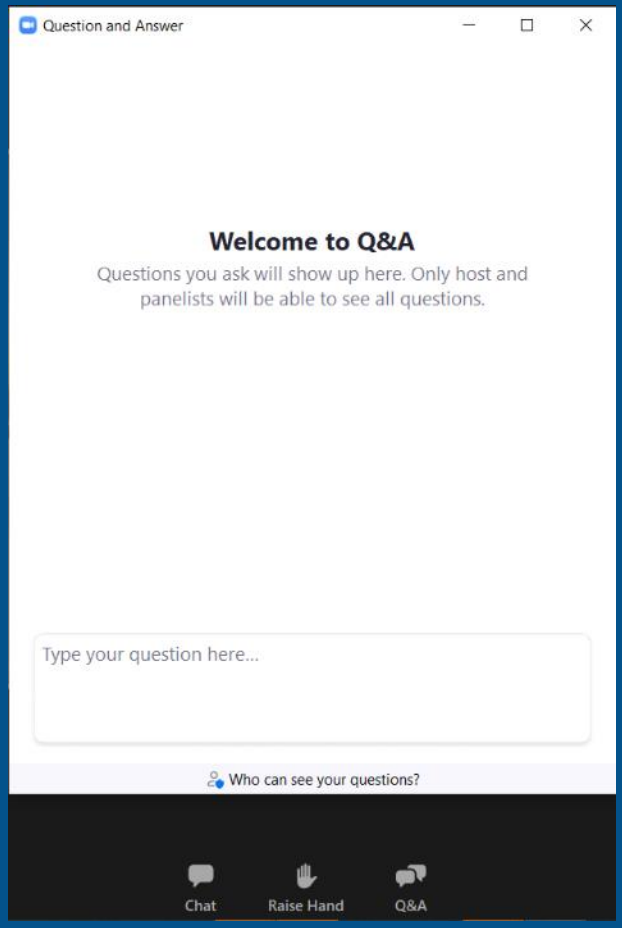
Nutrient Work Group

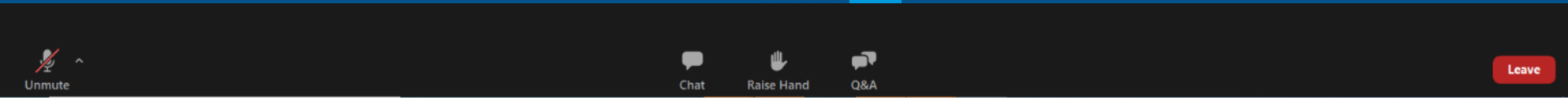
August 16, 2023

DEQ MONTANA

Welcome!

- This meeting is a webinar
- NWG members will be panelists
- Members of the public can raise their hand or use the Q&A feature to ask questions during the public comment portion of the meeting
- *9 raises your hand if you're on the phone
- State your name and affiliation before providing your comment





DEQ MONTANA

Agenda

Meeting Goal: Discuss program eligibility, the adaptive management plan template, and annual reporting requirements. EPA will be discussing the technical support document approach.

Preliminaries
- Agenda
- Nutrient Work Group Roll Call

DEQ Updates
- Staff Updates

Technical Support Document Approach

Adaptive Management Program Eligibility

Adaptive Management Plan Template

Annual Reporting

How to Choose an Appropriate Nonpoint Source BMP

Public Comment & Close of Meeting
- Public Comment

DEQ MONTANA

Roll Call

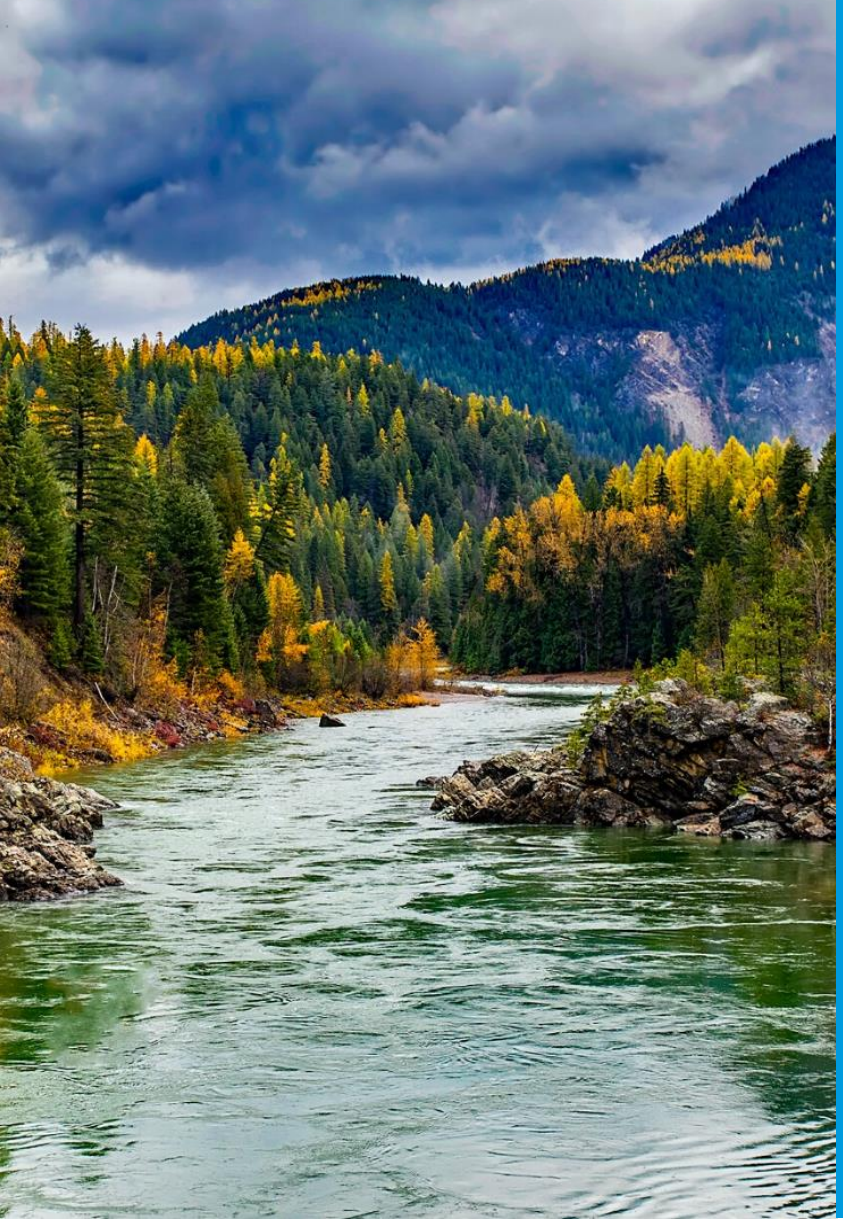
Nutrient Work Group Members

Interest Group	Representative	Substitute
Point Source Discharger: Large Municipal Systems (>1 MGD)	Louis Engels	
Point Source Discharger: Middle-Sized Mechanical Systems (<1 MGD)	Shannon Holmes	
Point Source Discharger: Small Municipal Systems with Lagoons	Rika Lashley	
Point Source Discharger: Non-POTW	Alan Olson	
Municipalities	Kelly Lynch	
Mining	Matt Vincent	
Farming-Oriented Agriculture	Karli Johnson	
Livestock-Oriented Agriculture	Raylee Honeycutt	
Conservation Organization - Local	Kristin Gardner	
Conservation Organization – Regional	Sarah Zuzulock	
Conservation Organization – Statewide	David Brooks	
Environmental Advocacy Organization	Guy Alsentzer	
Water or Fishing-Based Recreation	Pete Cardinal	
Federal Land Management Agencies	Andy Efta	
Federal Regulatory Agencies	Tina Laidlaw	
State Land Management Agencies	Jeff Schmalenberg	
Water Quality Districts / County Planning Departments	Nick Banish	
Soil & Water Conservation Districts – West of the Continental Divide	Samantha Tappenbeck	
Soil & Water Conservation Districts – East of the Continental Divide	Dan Rostad	
Wastewater Engineering Firms	Scott Buecker	
Timber Industry	Julia Altemus	

DEQ Updates

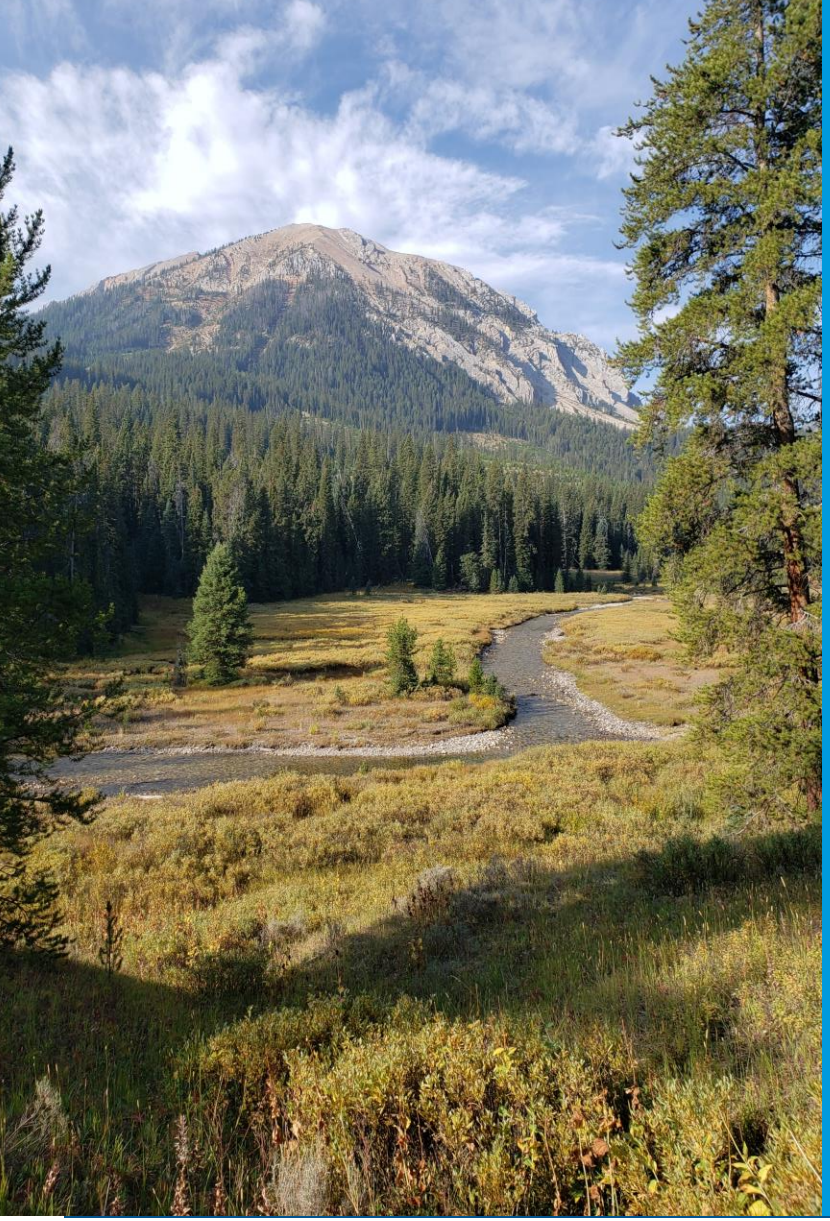
DEQ Updates

- Staff updates



TSD Approach

DEQ MONTANA



Eligibility Requirements to Enter Adaptive Management Program

DEQ MONTANA

Eligibility Requirements to Enter Adaptive Management Program

- Entry eligibility
  - Different than continued eligibility
  - Reasonable potential – nitrogen and/or phosphorus
  - Submit Adaptive Management Plan (AMP)
- Key Considerations
  - Resources
  - Measurable impacts
  - Exiting Adaptive Management Program

DEQ MONTANA

Adaptive Management Plan Template

DEQ MONTANA

Adaptive Management Plan (AMP) Template

- Merged monitoring and implementation plan
- Problem definition and background
  - Adaptive Management Program phase
  - Monitoring goals
- Watershed description
  - Location and boundaries
  - Hydrology
  - Climate
  - Land cover and land uses

AMP Template - Standards, Objectives, & Sampling Design

- Nutrient Water quality Standards
  - Stream classifications and beneficial uses
- Objectives and sampling design
  - Monitoring objectives
  - Sampling design
  - Monitoring locations
  - Monitoring timeframe and schedule
  - Parameters

DEQ MONTANA

AMP Template - Monitoring Team and Field Procedures

- Project team roles and responsibilities
- Order of operations
- Field forms and sample labels
- Data collection procedures
- Changes to the field sampling plan
- Field health and safety procedures

AMP Template - Sample Handling and Lab Analysis

- Sample handling and delivery
- Lab chain of custody
- Laboratory analytical requirements
- Quality assurance and quality control
  - Describe the training and qualifications
  - Instrument calibration and maintenance
  - Data quality indicators

AMP Template - Data

- Data review and validation
- Data management
- Data analysis and reporting
  - Data analysis
  - Reporting – Submit EDDs through MT-eWQX

AMP Template - Implementation

- Facility-scale
  - Optimization
  - Facility improvements
- Watershed-scale
  - Source assessment
  - Partners assisting with implementing nutrient reductions
  - Action items for the reduction of nutrients in the watershed
  - Ability to fund and implement the plan

Adaptive Management Plan Template

- Future data collection
- Timeframes for implementing the AMP and annual reporting
- Outreach strategy and communication plan

Annual Reporting

DEQ MONTANA

Monitoring Summary

- Near field
  - Up/down stream summary of nutrient stats
  - Up/down stream summary of response variable stats
    - Summarize dissolved oxygen Δ data
    - Summarize macroinvertebrate data
- Watershed – For modeling or nonpoint source implementation trading
- If response variables are not met, develop a plan of action
- In the first annual report, results from nutrient diffusing substrates
- Deviations from adaptive management sampling plan
  - Annual % completeness by measurement
  - Description of problems encountered (lab/field issues)
  - Flagged data summary
  - Corrective measures for next year
  - A plan to overcome lacking/lagging data to meet program timelines

DEQ MONTANA

Monitoring Summary (Cont'd))

- Reductions
  - Maintained
  - What was done
  - Areas for improvement
- Upgrades
- Monitoring data
- Deviations from AMP
- Plan for meeting interim and final limits
- Plans for NPS work if in watershed-scale phase

Implementation Summary

- Optimization efforts
  - Plan
  - Do
  - Study
  - Act
- Annual optimization reductions comparison
- Maintain reductions expressed as:
  - Rolling annual average
  - Concentration and mass reduction
- Technical assistance received from DEQ
  - Recommendations

DEQ MONTANA

Implementation Summary

- What is being monitored to achieve reductions
- What has been done to achieve reductions
- Efforts to maintain reductions
- Areas for improvement
- Nonpoint source agreements (if in watershed-scale implementation)
  - Progress on NPS work or potential NPS projects
  - Expected timeline for completion
  - Expected and realized reductions
- Upgrades (if performed)
  - Planned completion date or if already completed, when?
  - What upgrades were done
  - Expected and realized reductions

DEQ MONTANA

Choosing Appropriate NPS BMPs

DEQ MONTANA

Implementing NPS Projects

- Practices designed to protect or improve the physical, chemical, or biological characteristics of water resources (DEQ 2017)
- “Reasonable land, soil, and water conservation practices" - *methods, measures, or practices that protect present and reasonably anticipated beneficial uses. These practices include, but are not limited to, structural and nonstructural controls and operation and maintenance procedures. Appropriate practices may be applied before, during, or after pollution-producing activities.* (ARM 17.30.602(23))
- Most NPS implementation of BMPs is voluntary
- Through AMP, NPS project implementation would be assured through contracts and measured as part of an ongoing monitoring program

DEQ MONTANA

AMP Nonpoint Source Implementation

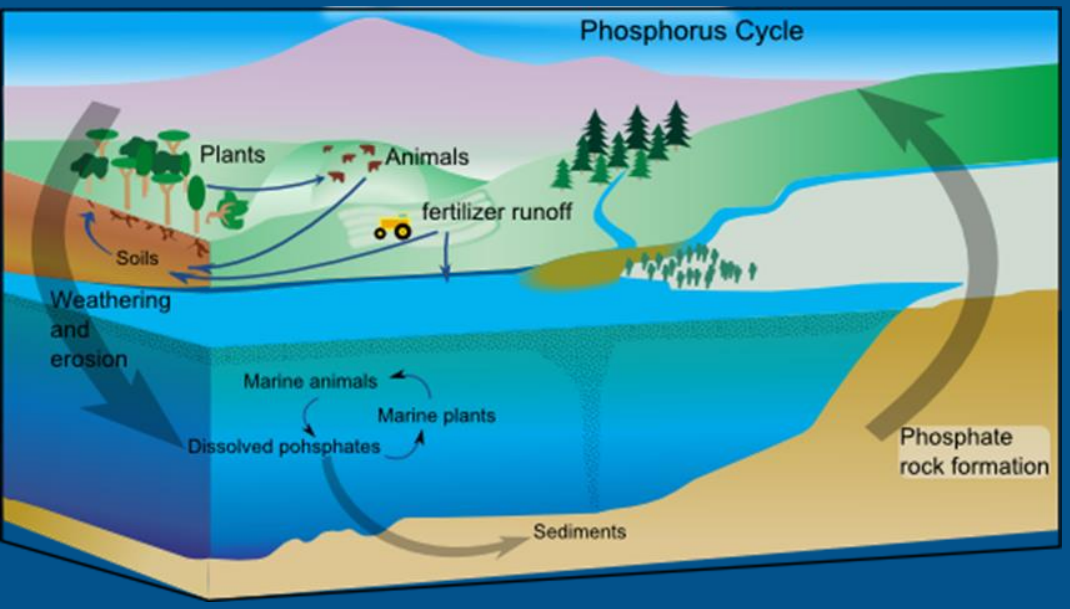
- Considerations:
  - Are NPS projects warranted?
  - Is P-prioritization appropriate?
  - Was optimization sufficient?
  - Where are you at in the AMP process?
  - Surface and groundwater pathways

AMP Nonpoint Source Implementation

- Quantify and characterize all sources of nutrient contributions
- Identify partners
- Develop and document action items for the reduction of nutrients in the watershed
  - Facility Improvements, Optimization
  - Nutrient Trading
  - **Implementing NPS Projects**

DEQ MONTANA

Implementing NPS Projects:
Phosphorus Sources



- Among most limiting biogeochemicals/nutrients in aquatic ecosystems
- Primarily bound in rock and sediment
- Released by erosion, weathering, leaching, and mining
- Used/recycled by plants and animals

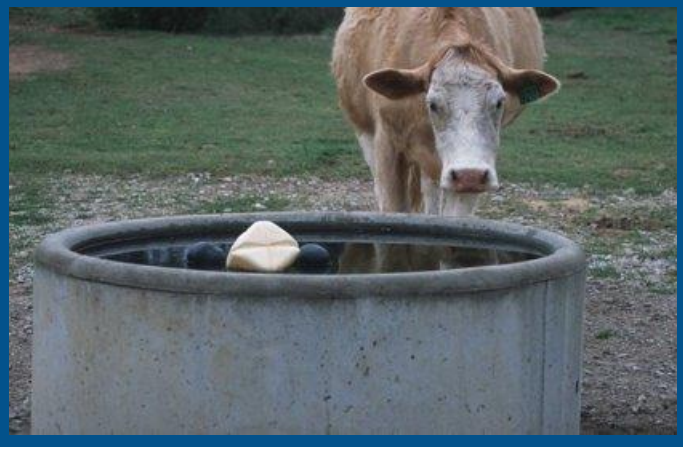
DEQ MONTANA

Implementing NPS Projects:
Phosphorus BMPs

- Channel restoration (connecting to floodplain, adding sinuosity, etc.)
- Riparian buffers, other row crop ag BMPs
- Off-channel livestock watering, hardened water crossing
- Road improvements, restoring unused roads
- Culvert replacement

DEQ MONTANA

Phosphorus BMPs



DEQ MONTANA

NPS P-reduction Projects

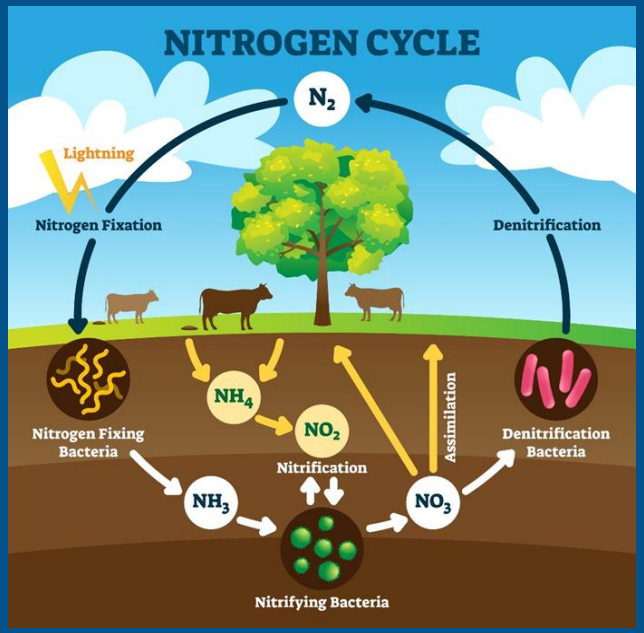
Dry Creek (lower Gallatin) - before (2018 and after (2019)

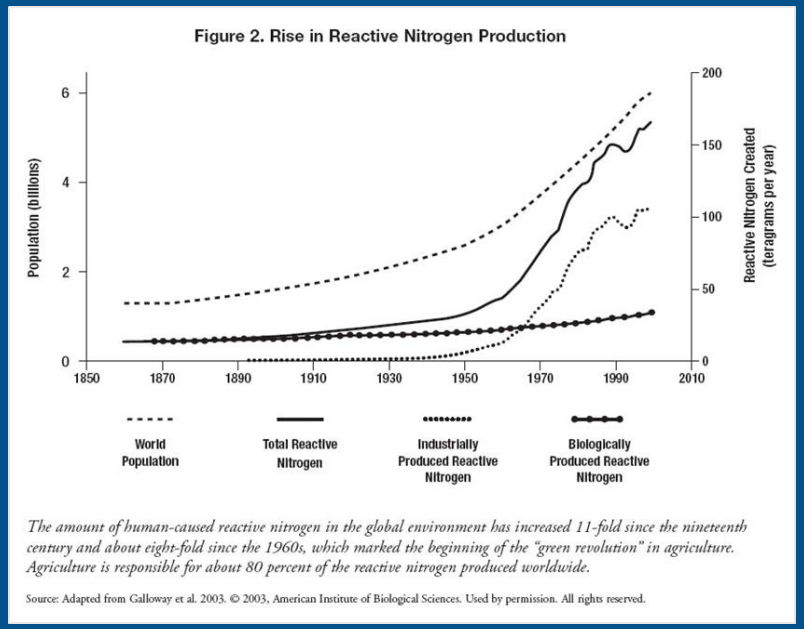
East Fork Bitterroot – before (2017) and after 2021

DEQ MONTANA

Implementing NPS Projects:
Nitrogen sources

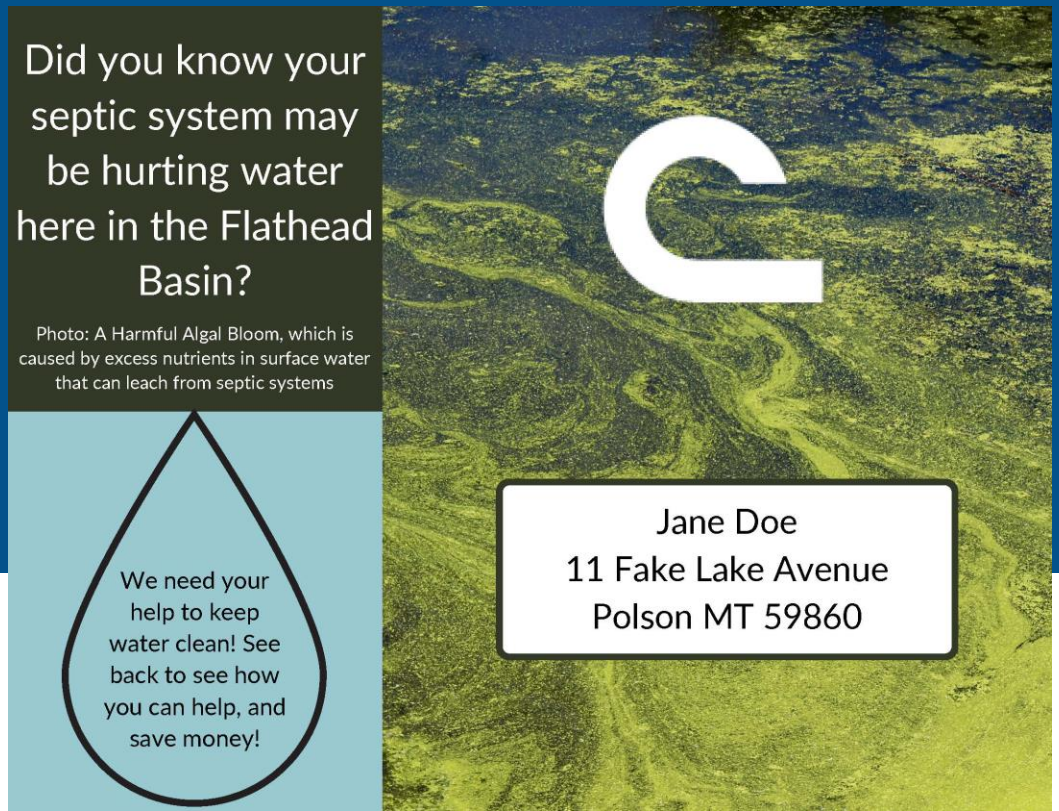
- Three primary sources: #1, #2, and the atmosphere





Nitrogen BMPs

- Connection of septic systems to centralized treatment systems
- Nutrient management plans, improvements at CAFOs
- Precision agriculture



NPS BMPs: Assurance is in the Stream

- Projects proposed for NPS implementation in an AMP must identify BMPs, project site factors, agreements, and estimated load reductions.
- Achieving nutrient reductions must be demonstrated through in-stream data collection efforts and reported via annual reporting.
- If milestones are not met/expected reductions are not achieved, AMP eligibility could be reconsidered.

DEQ MONTANA

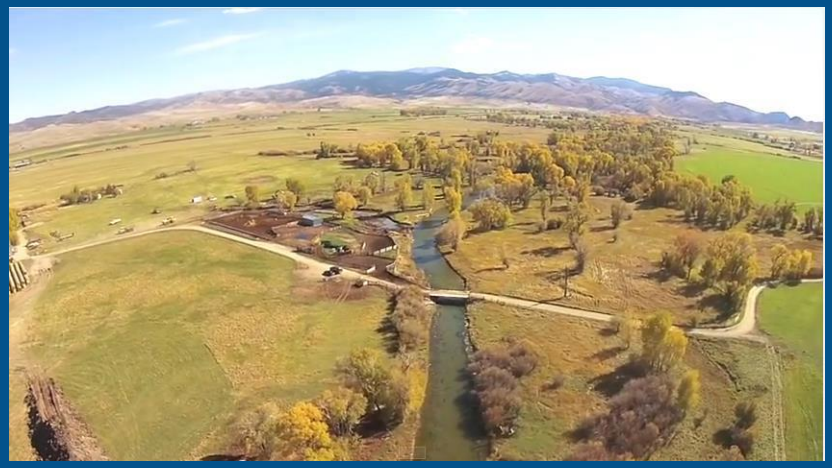
Implementing NPS Projects

Load reduction success depends on many factors including:

- Location (e.g., geology, existing vegetation)
- Scale
- Time
- Existing and historical and use
- Landowner support – long-term sustainability

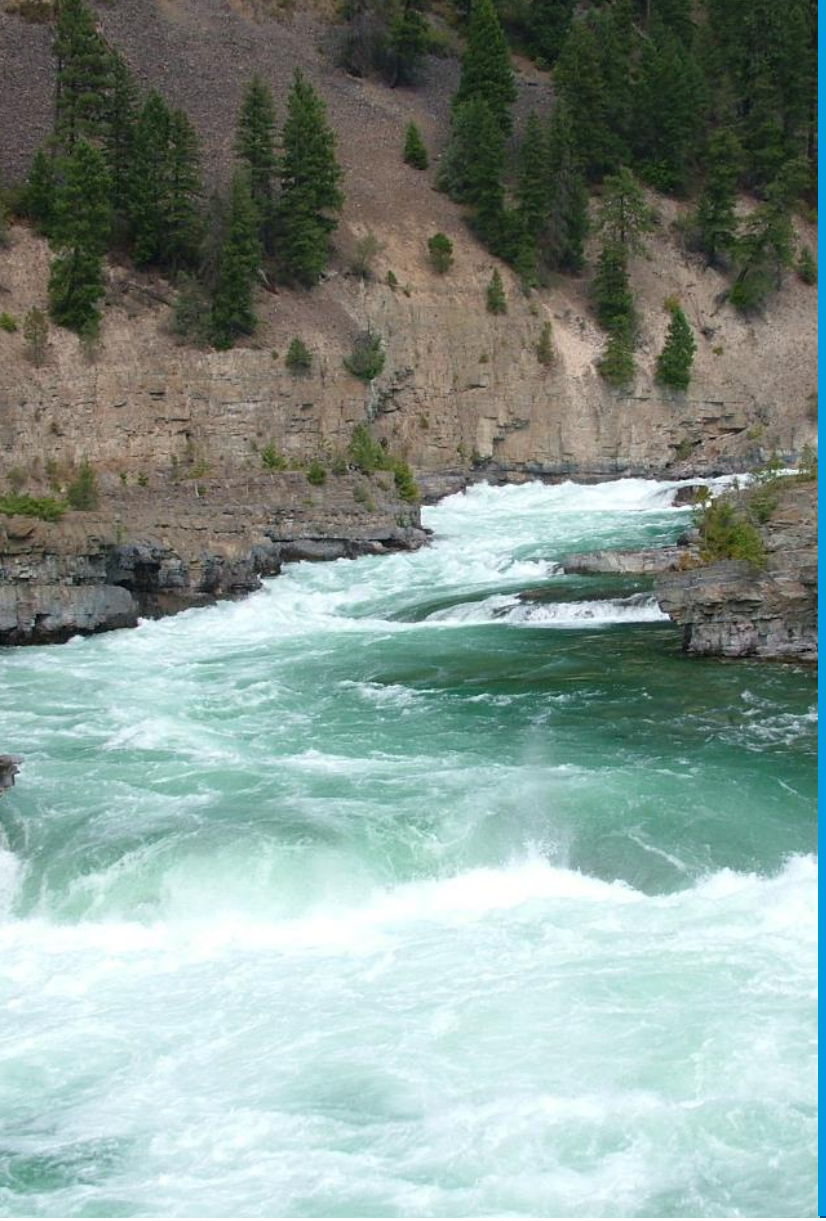
Implementing NPS Projects

Miller Ranch on the Ruby River before and one year after the relocation of a corral close to stream and restoration of stream sinuosity and wetland habitat



Resources

- Agricultural BMPs
  - DEQ NPS Management Plan
  - NRCS MT Field Office Technical Guide
  - Nutrient Management Plan – NRCS
  - Best Management Practices to Minimize Agricultural Phosphorous Impacts on Water Quality
- Montana Forestry BMPs (DNRC)
- Construction Stormwater BMPs (DEQ)
- CAFO Nutrient Management Plan - Nine Minimum Practices



Upcoming Meetings

DEQ MONTANA

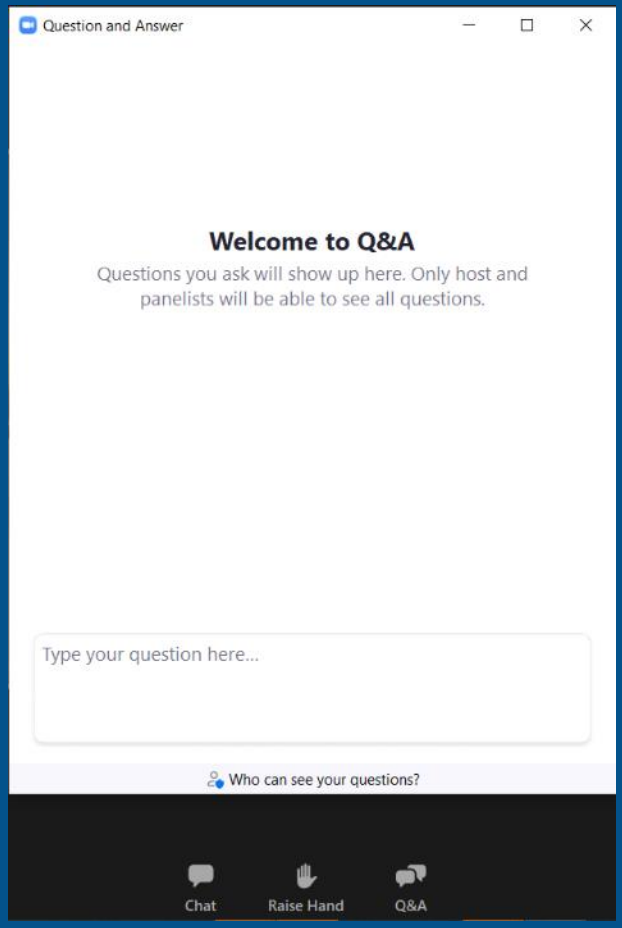
Upcoming Meeting Schedule

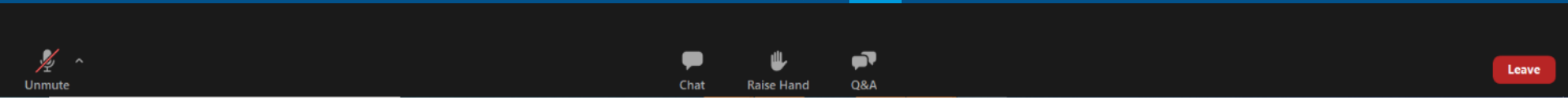
- September 14, 2023 9 – 11:00 a.m.
- October 16, 2023 9 – 11:00 a.m.
- November 14, 2023 9 – 11:00 a.m.

Public Comment

Questions/ Comments

- Raise hand (*9 if on the phone) or type questions into the Q&A
- DEQ will unmute you if you wish to provide your comment orally
- If calling by phone, press*6 to unmute
- State your name and affiliation before providing your comment





DEQ MONTANA

Meeting Summary

- Adaptive Management Program entry eligibility
  - Reasonable potential
  - Submit AMP
- There is now a singular AMP template
  - Phased effort
  - More detail built in over time
  - AMP Scientist will be available for consultation
- Annual reporting
  - List of requirements
  - Submitted through FACTS by January 31 of each year
- Choosing appropriate NPS BMPs
  - BMP implementation assured through contracts
  - Assurance is in the stream

DEQ MONTANA

Thanks for Joining Us

Contact:
Kyle Milke
kyle.milke@mt.gov

To submit comments or questions

Submit Comments or Questions

https://deq.mt.gov/water/Councils

DEQ MONTANA