DEQ MONTANA 2021 Nonpoint Source Program Annual Report

2021 Nonpoint Source Program Annual Report

Montana Department of Environmental Quality

(Photo of Simms Meander Restoration Project on the Vermillion River)

What is "Nonpoint Source"?

Nonpoint source pollution comes from rainfall or snowmelt moving over and through the ground. This runoff picks up natural and human-caused pollutants and deposits them in lakes, rivers, and wetlands. It is often a result of the cumulative effect of small, widely-dispersed amounts of contaminants gathered from a large area.

Examples of nonpoint source pollution include things like fertilizers from residential and agricultural lands, chemicals from urban areas, sediment from eroding land and streambanks, and bacteria and nutrients from animal and human waste. Everything humans do has the potential to release pollution into the environment, but using best management practices reduce that impact.

Infographic about one type of nonpoint source pollution, nutrients and bacteria from septic systems, created by the Montana Association of Conservation Districts & the Flathead Basin Commission.

2021 At A Glance

Each year, the Montana Department of Environmental Quality (DEQ) receives a federal Clean Water Act Section 319 grant to improve water quality by addressing nonpoint source pollution. DEQ uses this award to fund locally-sponsored restoration, education, and planning projects through a competitive process.

A total of 32 **restoration**, **education**, and **planning** projects were active in 2021 (click each point to learn more). Of those, 8 were newly initiated and 9 were completed. Completed projects reduced pollution by 2,491 tons/year sediment, 322 pounds/year nitrogen, and 341 pounds/year phosphorus. Learn more about applying to our grant program **H**ERE.

Click **HERE** to review progress towards the measurable milestones established in the Montana Nonpoint Source Management Plan (2017).

Projects Awarded 2021 Funding

The Big Blackfoot Chapter of Trout Unlimited received $179,000 to reduce habitat loss and sediment erosion along 9,500 feet of Poorman Creek.

Restoration in action on Poorman Creek (photo by BBCTU)

Projects Awarded 2021 Funding

The Big Hole Watershed Committee received $89,000 to reduce erosion from hillslopes devoid of vegetation as a result of historic smelter operations. By installing gully check dam structures and revegetating bare upland areas, Oregon Creek will receive less sediment pollution.

Examples of gully check dam structures that capture sediment pollution (photo by BHWC).

Projects Awarded 2021 Funding

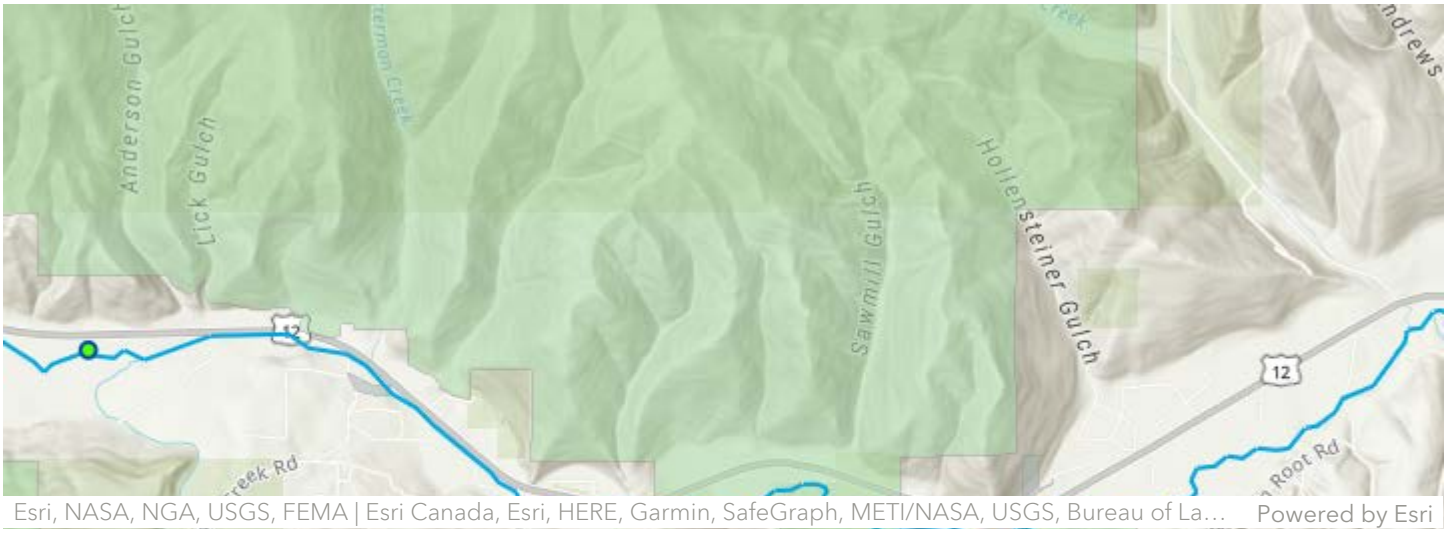
The Bitter Root Water Forum (BRWF) received $40,460 for two projects. For the 1st project, fencing to protect streamside vegetation from livestock grazing along at 2,200 feet of Threemile Creek will reduce sediment and nutrient pollution. The 2nd project will result in design plans that improve the water quality and land management of a ranch property spanning tributaries to Threemile Creek: Wheelbarrow, Grayhorse, and Ambrose Creeks.

Pre-project conditions for the fencing project on Threemile Creek. Although there is streamside vegetation, there are very few young trees. Installing fencing will be the first of perhaps many phases of this project (photo by BRWF).

Projects Awarded 2021 Funding

The Clark Fork Coalition received $287,300 to decommission 4.4 miles of unused forest roads, upgrade at least 19 culverts, and install large woody debris jams along 19.1 miles of streams in the Upper Lolo watershed. This phase of work builds on similar projects implemented in the Upper Lolo beginning in 2006.

This photo shows how a recently decommissioned road acted as a fire break when a wildfire moved through the project area in 2021.



Projects Awarded 2021 Funding

The Lolo Watershed Group (LWG) received $156,090 to reduce sediment, restore natural stream processes, and improve habitat along 3,000 feet of Lolo Creek.

The LWG leads a school field trip on the banks of Lolo Creek. This photo is not from the project area, but it is typical of conditions along Lolo Creek: straightened and lacking streamside vegetation (photo by LWG).

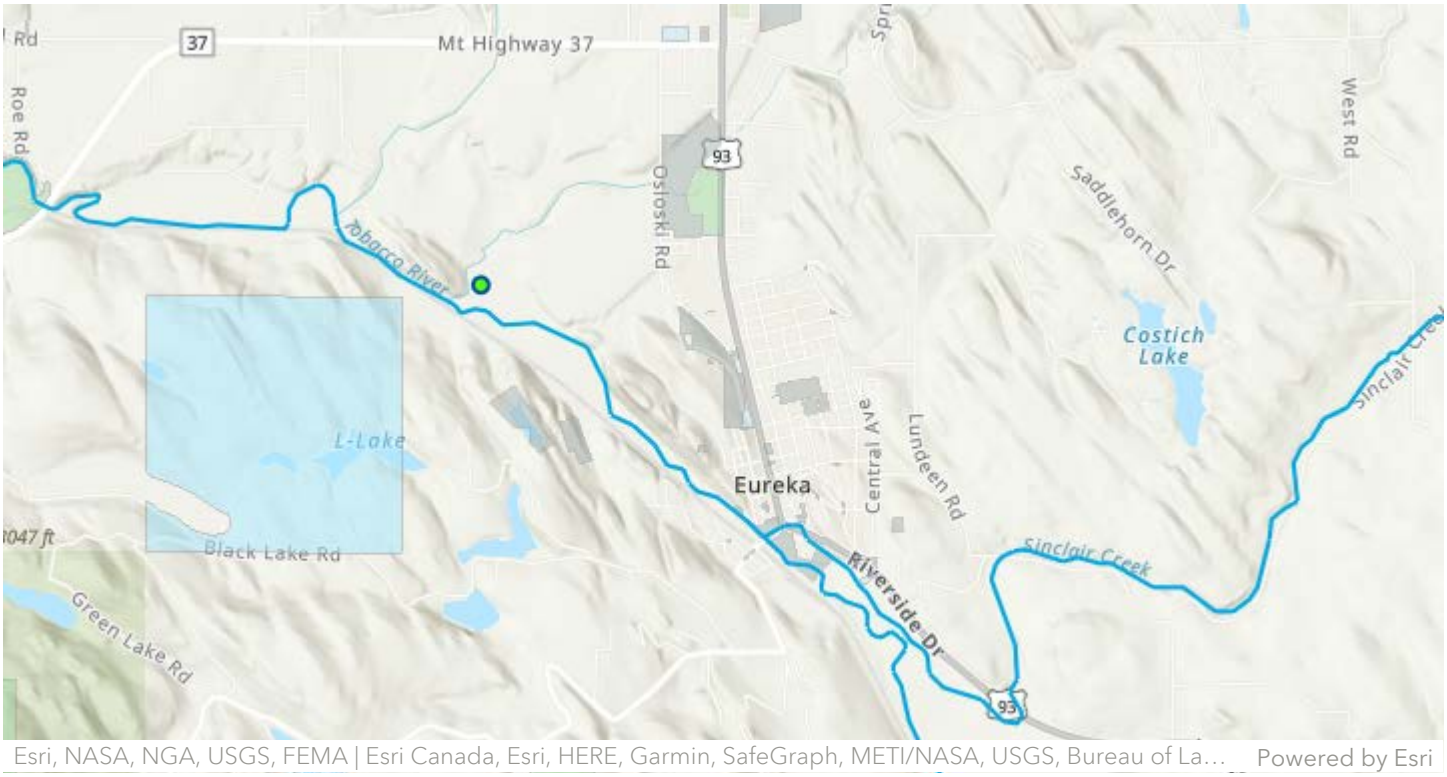
Projects Awarded 2021 Funding

Trout Unlimited received $200,000 to continue remedying placer mining impacted reaches of Ninemile Creek. This phase will accomplish removal of 245,000 cubic yards of placer processed material and reestablishment of 6,500 feet of naturally functioning stream channel and 45 acres of floodplain and wetlands.

Rewinding a River

This video highlights the Ninemile Creek restoration project.

https://player.vimeo.com/video/277482384?h=bdd0375ec7



Grants Completed in 2021

The Lincoln Conservation District received $404,996 and restored 4,200 feet of the Tobacco River and prevented 207 tons/year of sediment pollution. Past gravel mining operations, removal of vegetation, and overgrazing had caused channelization and severe streambank erosion. The project re-established riffle-pool stream habitat features, wetlands and riparian areas, stable streambanks and a reconnected floodplain.

This post-project photo shows bank stabilization using woody debris and willows (photo by Lincoln CD).

Grants Completed in 2021

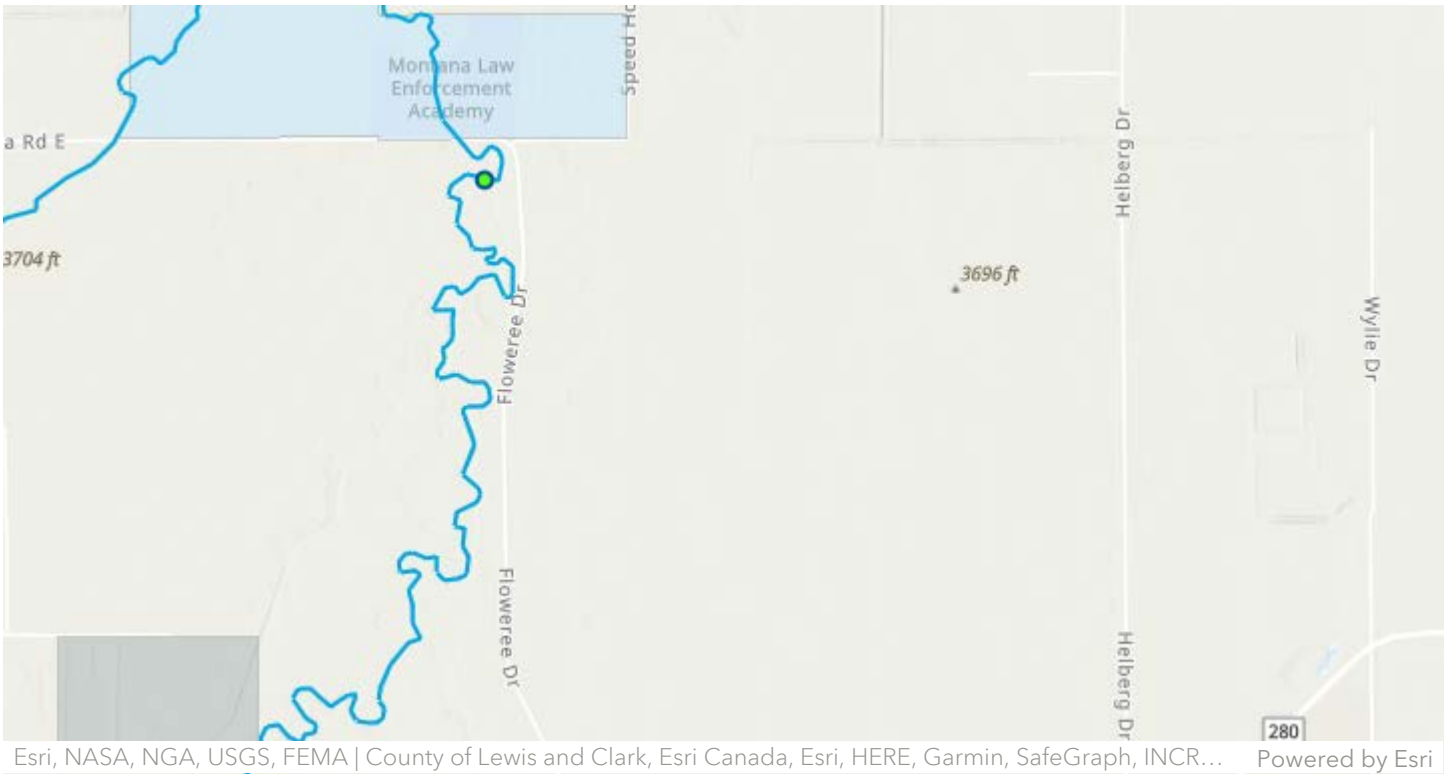
Abandoned placer mines throughout the Ninemile Creek drainage have caused channel confinement and substrate alterations that result in dewatering, fish passing barriers, and sediment pollution. Trout Unlimited received $400,000 and restored 5,700 feet of Ninemile Creek, created 26 acres of floodplain and riparian habitat, and prevented 1,387 tons/year of sediment pollution.

Post-project photo by Trout Unlimited.

Grants Completed in 2021

Ranching for Rivers is a cost-share program that funds ranchers operating on DEQ-identified impaired waterbodies and tributaries. Montana Association of Conservation Districts received $90,245 to administer the program and worked with landowners to install 44,571 feet of fencing installed along 6 miles of impaired stream, providing four grazing management plans, and preventing 45 tons/year sediment, 284 pounds/year nitrogen, and 332 pounds/year phosphorus pollution.

Pre- (above) and post-project (background) conditions on Nevada Creek. Notice the improvements: bank stabilization and willows establishing (photo by Big Blackfoot Chapter of Trout Unlimited).

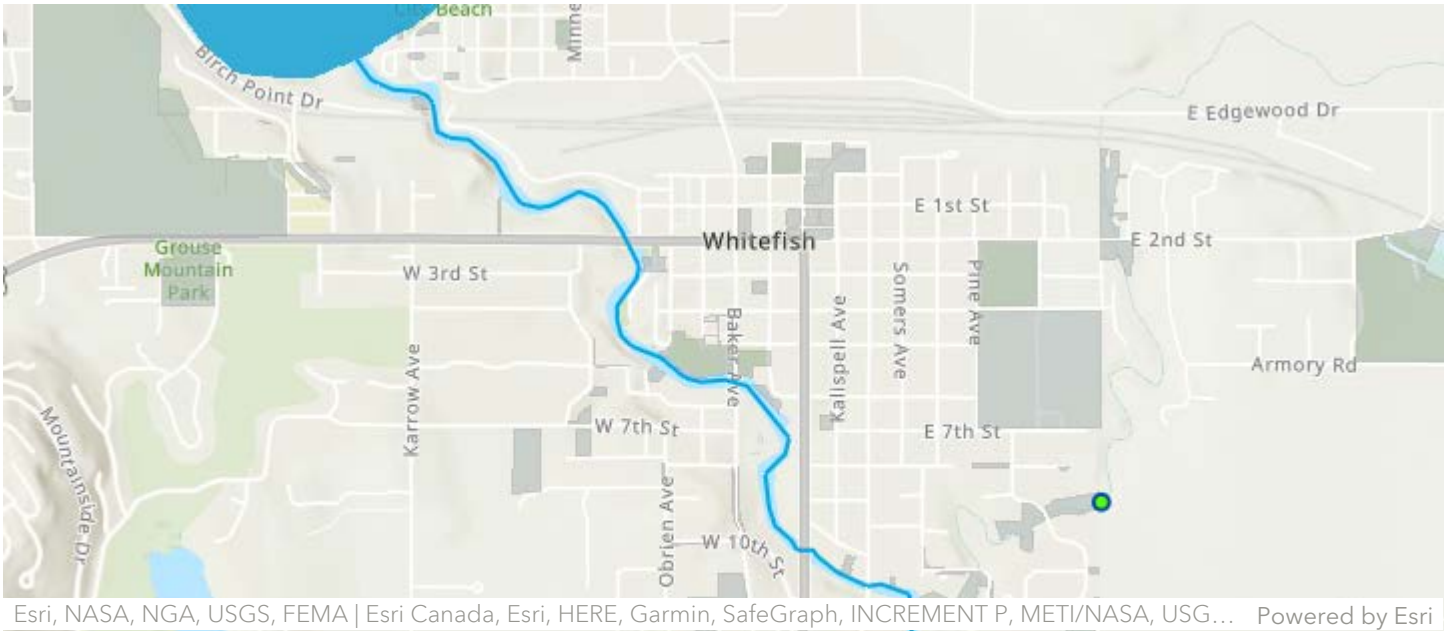


Grants Completed in 2021

Lewis & Clark Water Quality Protection District received $198,046 and completed bank stabilization and revegetation along 2,100 feet of Prickly Pear Creek, reducing sediment pollution by 286 tons/year.

The grant also continued a re-watering agreement to keep late summer flow in Prickly Pear Creek.

Before (above) and after (below) project implementation. Notice the stabilized bank and the livestock water gap and fencing (photo by L&CWQPD).



Grants Completed in 2021

As the name implies, Cow Creek has a long history of use by livestock. Much of the stream is overwide, entrenched from its floodplain, and lined by unstable streambanks and disturbed soil. The Flathead Conservation District received $67,619 and worked with two different landowners to revegetate and install livestock fencing and two water gaps, restoring a total of 5.7 acres of riparian area at the two properties. The project reduced 38 pounds/year nitrogen and 9 pounds/year phosphorus pollution.

Post-project restored riparian area protected with fencing (photo by Flathead CD).

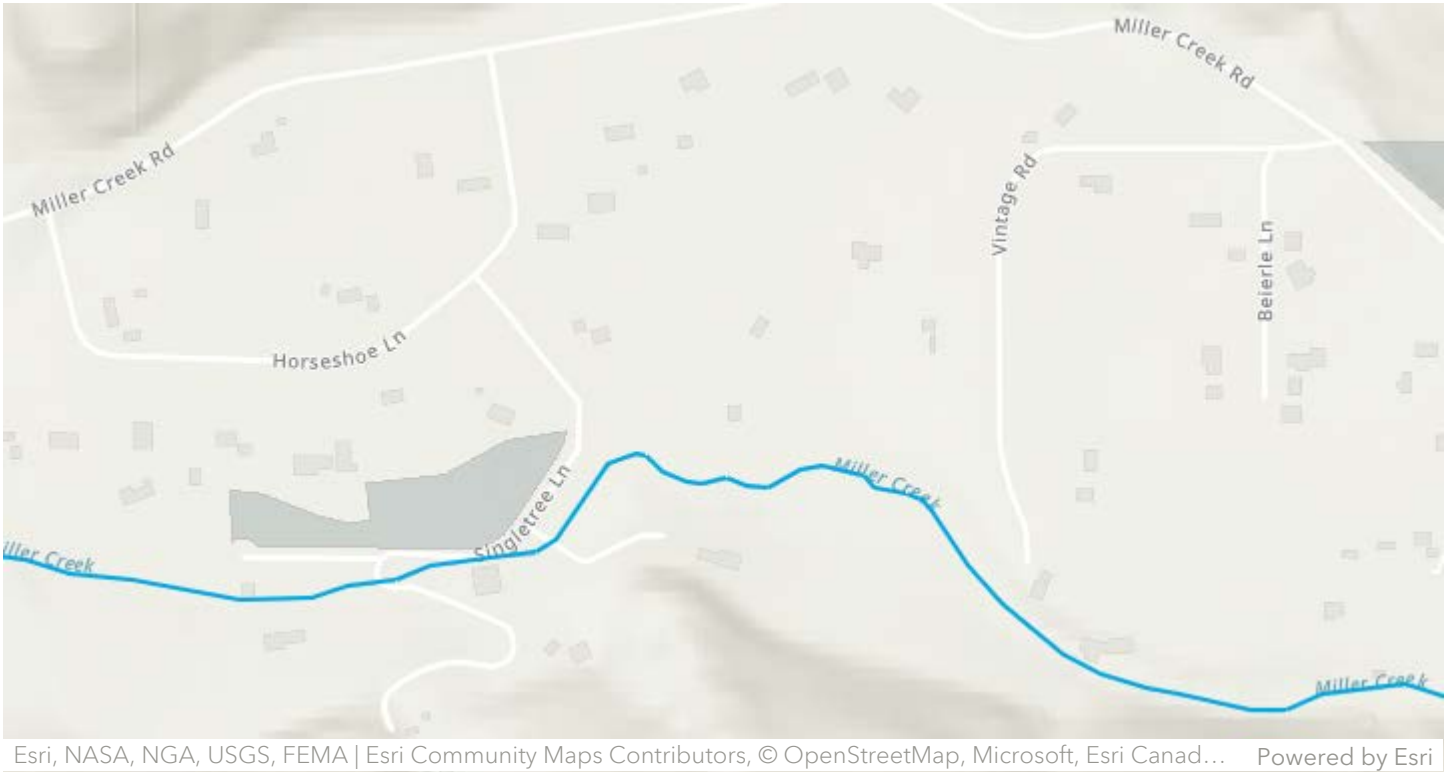
Grants Completed in 2021

Montana Watershed Coordination Council received $74,650 to administer the Big Sky Watershed Corp program. Under this contract, the seven local watershed organizations received funding to host AmeriCorp members who reduced nonpoint source pollution by conducting education and outreach and organizing volunteer events to restore native streamside vegetation and pollinator habitat, organize stream clean ups, and improve stormwater management. In total, the program reduced 52 tons/year sediment pollution under this contract. *Background photo (by Gallatin Watershed Council) is of volunteers planting willows on the East Gallatin.*

Grants Completed in 2021

Clark Fork Coalition received $98,400 and prevented 346 tons/year of sediment pollution along 1 mile of Miller Creek. They created 753 feet of new and side channel habitat and improved 0.06 acres of wetland by lowering the floodplain, stabilizing streambanks with woody debris matrixes, and revegetating.

Much more erosive banks before (above) project implementation than after (below; photos by Clark Fork Coalition).



Grants Completed in 2021

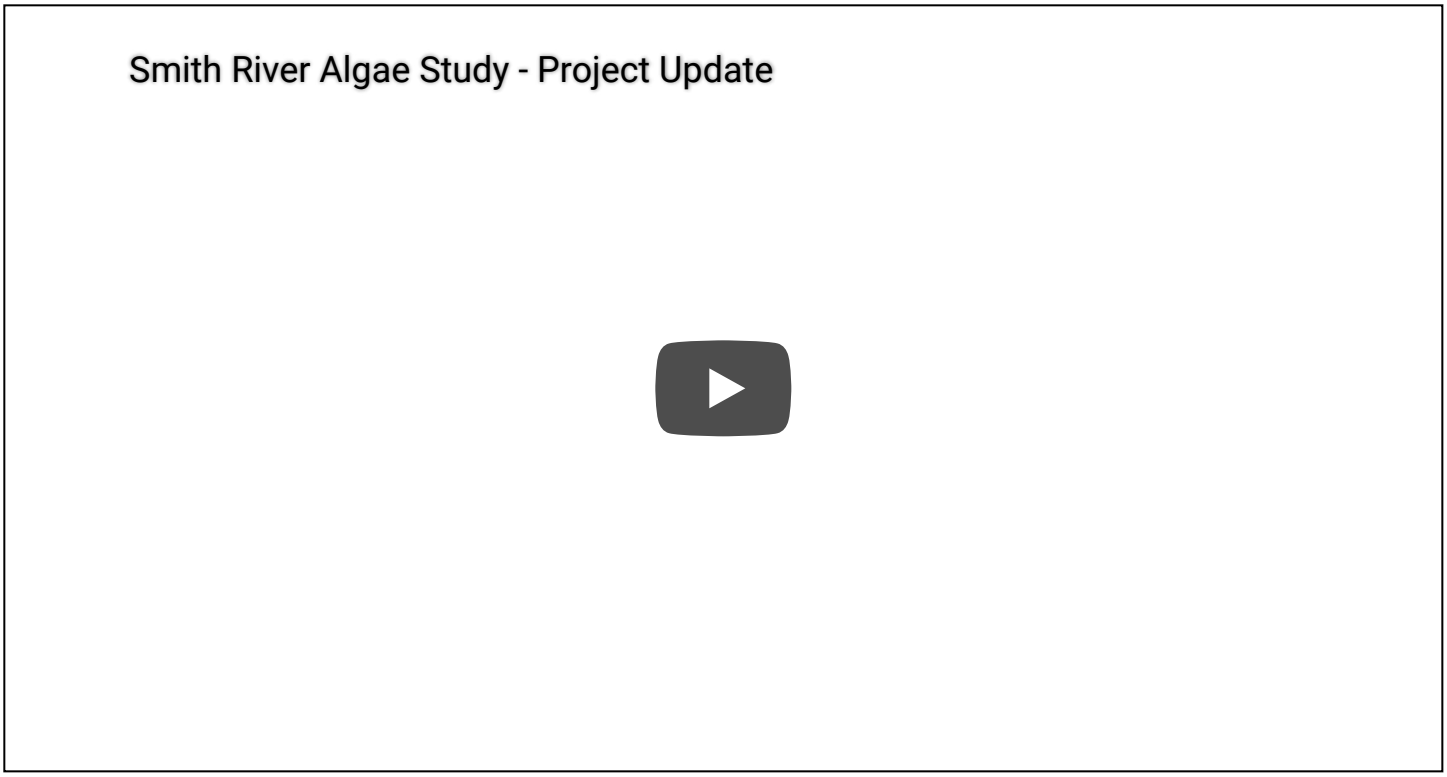
The Missoula Valley Water Quality District received $21,444 and designed restoration plans for restoring Miller Creek at Singletree

lane. If implemented, plans would replace undersized culverts with a bridge and restore 1,200 feet of stream.

Standards & Modeling Section

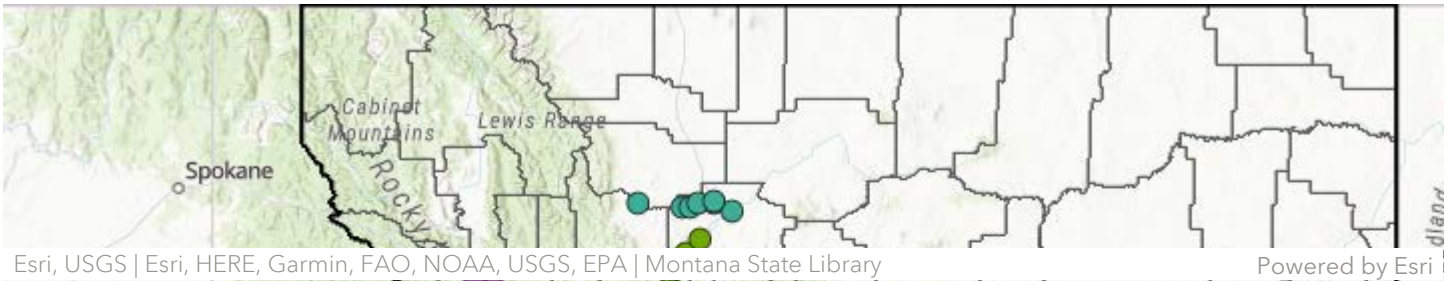
Standards continued developing an upper Yellowstone nutrient model, Canyon Ferry nutrient model, a Tongue River salinity model, and a Flathead Lake revised watershed model. Standards also worked closely with the Nutrient Work Group preparing to implement narrative nutrient criteria.

Photo of the Tongue River.



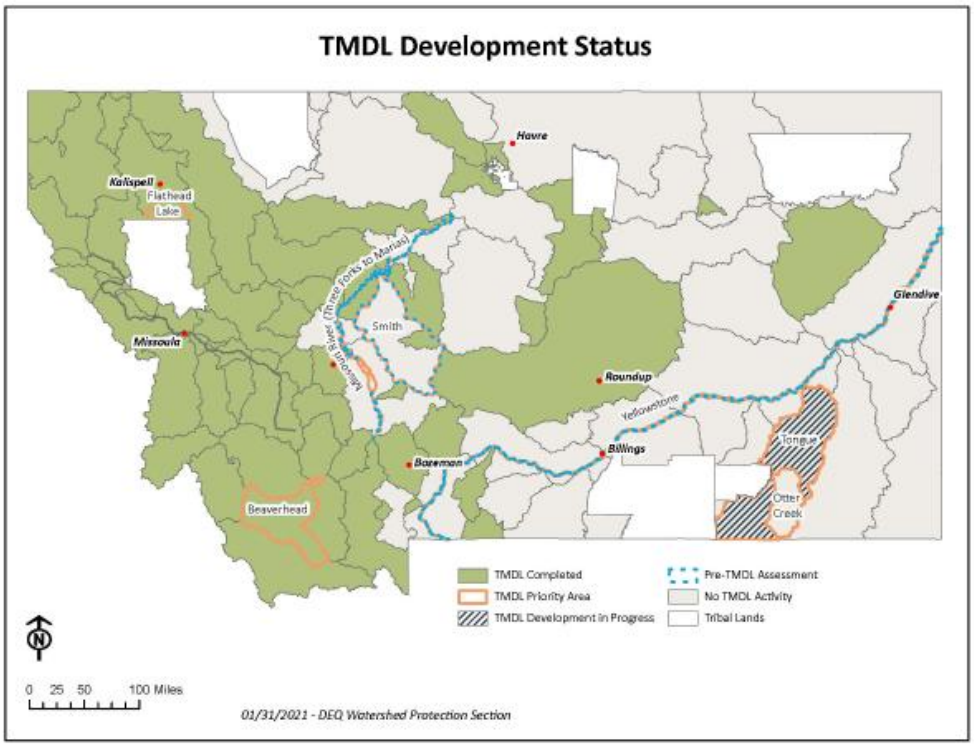
Monitoring Section

During 2021, Monitoring and Assessment (MAS) staff focused their efforts on the Yellowstone, Upper Missouri, and Smith Rivers *(see video in background)*. Through partnerships with local organizations, monitoring also continued on the Upper/West Forks of the Gallatin, Clark Fork, and Bitterroot Rivers. With help from the Nonpoint Source Program and local organizations, MAS also completed monitoring for potential success stories on tributaries to the Big Hole River, and Cache Creek and Taylors Fork of the Gallatin.



Monitoring Section

DEQ continues to provide training and technical and financial resources for volunteer monitoring programs. These programs heighten awareness of water resource issues and solutions, and help increase the amount of credible data. In 2021, the DEQ Monitoring and Assessment Section awarded $33,928 to nine volunteer monitoring programs through the Lab Analysis Support Program. *Click the points on the map or check out this storymap to learn more!*



Water Quality Improvement Plans (TMDLs)

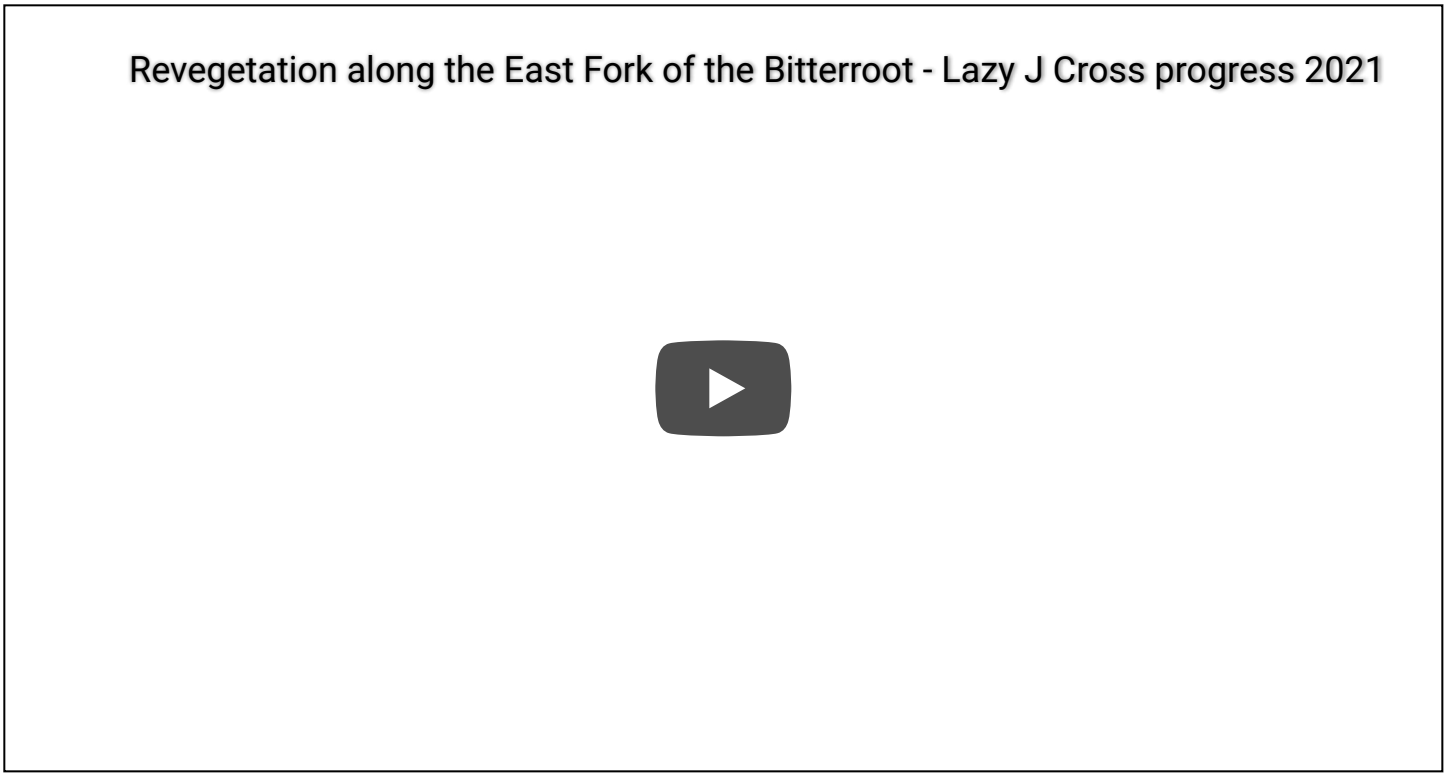
New Water Quality Improvement Plans, also known as Total Maximum Daily Loads, in 2021 include Musselshell *E. coli* and Red Rock metals, sediment, and *E. coli*.

Nonpoint Source Program

The Nonpoint Source Program continued their Focus Watershed approach in the Bitterroot. The Call for 319 Applications in 2021 marks the final Call where up to 50% of funds are earmarked for Bitterroot projects. Throughout the Bitterroot Focus Watershed effort, $1,513,300 has been distributed to local organizations to improve water quality.

Although the next Call for 319 Applications will prioritize the Lower Gallatin watershed, Bitterroot projects continue to be eligible for 319 funding, and staff time in the Bitterroot managing projects and coordinating effectiveness will continue to be a priority.

Photo of the Bitterroot River.



Nonpoint Source Program

In 2021, the Nonpoint Source Program published the Bitterroot Headwaters TMDL Implementation Evaluation.

They also visited three past projects to evaluate their success at meeting project goals in the long term. The Water Forum shot footage for the video in the background, about the successful revegetation project along the East Fork Bitterroot, during a long-term project effectiveness review with DEQ.

Nonpoint Source Program

DEQ continues to support outreach and monitoring for harmful algal blooms (HABs). 29 out of 47 citizen reports were confirmed to be HABs. Visit HAB.mt.gov for more information, to submit a suspected HAB report, and view a map of recent reports.

Photo of Holter Reservoir submitted to the HAB Program in summer of 2021.

Wetland Program

The Wetland Program continues to develop maps and disturbance indices that will identify areas where the greatest potential negative impact on wetland function could occur. Tools like this, along with incorporating wetland assessments into TMDL documents and quantifying load reductions from wetland restoration projects, should increase implementation of wetland restoration projects around the state.

In 2021, the Wetland Program partnered with the Montana Watershed Coordination Council to award the biennial Wetland Award to Loren Ruport.

Photo of Cache Creek during 2021 field work. Although conditions appear to be improving, removal of local beaver is likely responsible for the downcutting shown in this picture.

Our Partners

The Nonpoint Source Program works with local, state, and federal

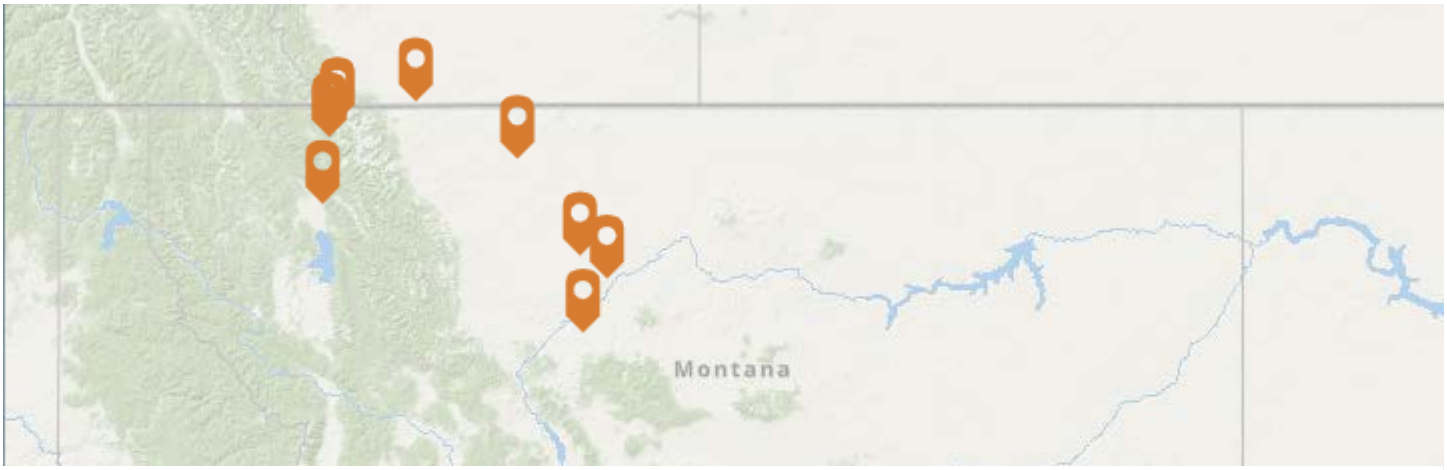
partners to provide necessary resources that address nonpoint source pollution. These last sections summarize only a few of our partnerships, which are too numerous to capture here.

Montana Association of Conservation Districts

Created in 1942, MACD is a nonprofit association that supports Montana's conservation districts as the lead voice for locally-led natural resource conservation.

In 2021, MACD's Ranching for Rivers program (video in background) worked with landowners to implement six grazing and riparian management projects under grants totaling $65,245. Projects include construction of fencing to protect over 12 miles of streambank from overgrazing and erosion, stock water tanks to facilitate off-site watering, and grazing management plans. Ranching for Rivers cost share will be made available in the summer/fall 2022.

A portion of one of three projects implemented under the Ranching for Rivers program in 2021, before (above) and after (below) a water gap was installed on Cottonwood Creek (photo by Blackfoot Challenge).



Montana Association of Conservation Districts

MACD coordinated the Education and Outreach Water Quality Mini-Grant Program with funding provided through Nonpoint Source Program 319 Grants. Since 2010, this program has successfully granted 128 E&O projects for 62 unique Montana organizations. Awarded projects range from youth educational field trips, workshops for landowners, community events, visual storytelling, and more!

In 2021, MACD awarded 10 new projects with mini-grants totaling $23,252. *Click on each point to learn more!* MACD E&O mini-grant applications are accepted every spring.

Montana Watershed Coordination Council

MWCC's mission is to unite and support Montana's community-based conservation networks to promote healthy and productive watersheds.

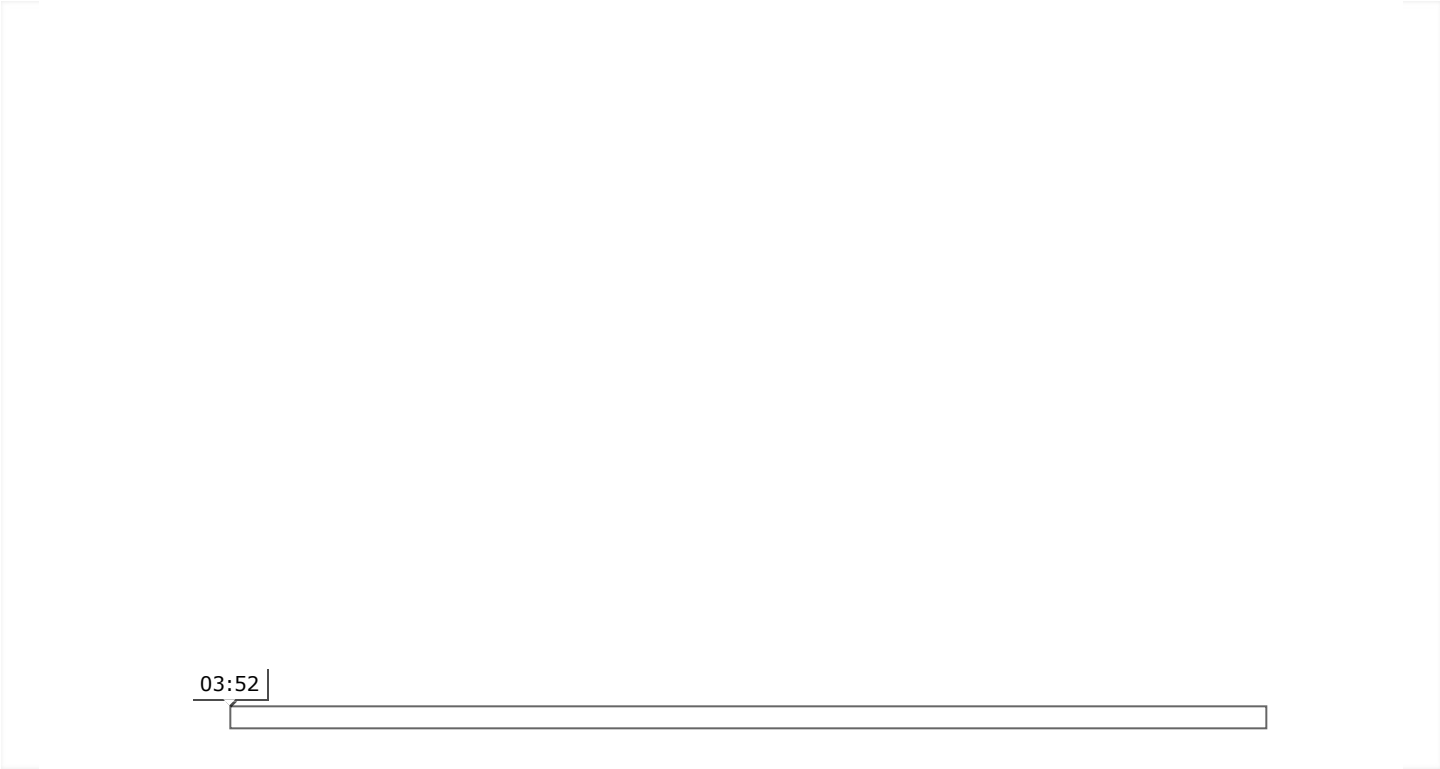
In 2021, the MWCC Watershed Fund distributed 37 grants and scholarships (more than $200,000) to local organizations to build capacity and implement projects. The Watershed Fund has distributed more than $850,000 since 2018, supporting local watershed conservation efforts that have implemented 183 separate conservation practices; improved 385 miles of river and lakeshore; engaged 6,042 local stakeholders; and made 10,293 acres more resilient to changing conditions.

Photo (by the Bitter Root Water Forum) of 8th graders planting seedlings at a revegetation project on the Bitterroot River.

Montana Watershed Coordination Council

2021 marked the 10th year of the Big Sky Watershed Corps Program (BSWC). This AmeriCorps program is a partnership between MWCC, Montana Association of Conservation Districts, and Montana Conservation Corps. 34 BSWC members served with organizations across Montana. The Watershed Fund provided cost-share funding for 6 local organizations to host BSWC members and funding for 6 members to complete on-the-ground projects. Projects included low-tech restoration using beaver mimicry and other sediment-trapping devices, riparian revegetation, and improved grazing management.

Photo by the Ruby Valley Conservation District, where a beaver mimicry structure was added to increase the groundwater table.



Montana Watershed Coordination Council

MWCC and the Montana Wetland Council awarded the biennial Wetland Stewardship Award to Loren Ruport and the biennial Watershed Stewardship Awards to the Blackfeet Nation's Ksik Stakii Project, Heather Mullee Barber, and Jeff Ryan. Congrats!

Check out the new short film, *Uniting Montana's Watersheds*, about the importance of MWCC's efforts.

Acknowledgements

This report was prepared by Hannah Riedl and reviewed by Meagan Gilmore, Water Quality Specialists with the Montana Department of Environmental

Quality.

Contributors include Deb Call, Steve Carpenedo, Abbie Ebert, Mark Ockey, (DEQ), Terri Nichols (MWCC), and Stephanie Clemens-Adams (MACD).

Photos are from DEQ unless otherwise noted.

Suggested citation: Department of Environmental Quality. 2022. Montana Nonpoint Source Program 2021 Annual Report. Helena, MT: Montana Department of Environmental Quality.

Montana Dept. of Environmental Quality

1520 E. Sixth Avenue, Helena, MT, 59601