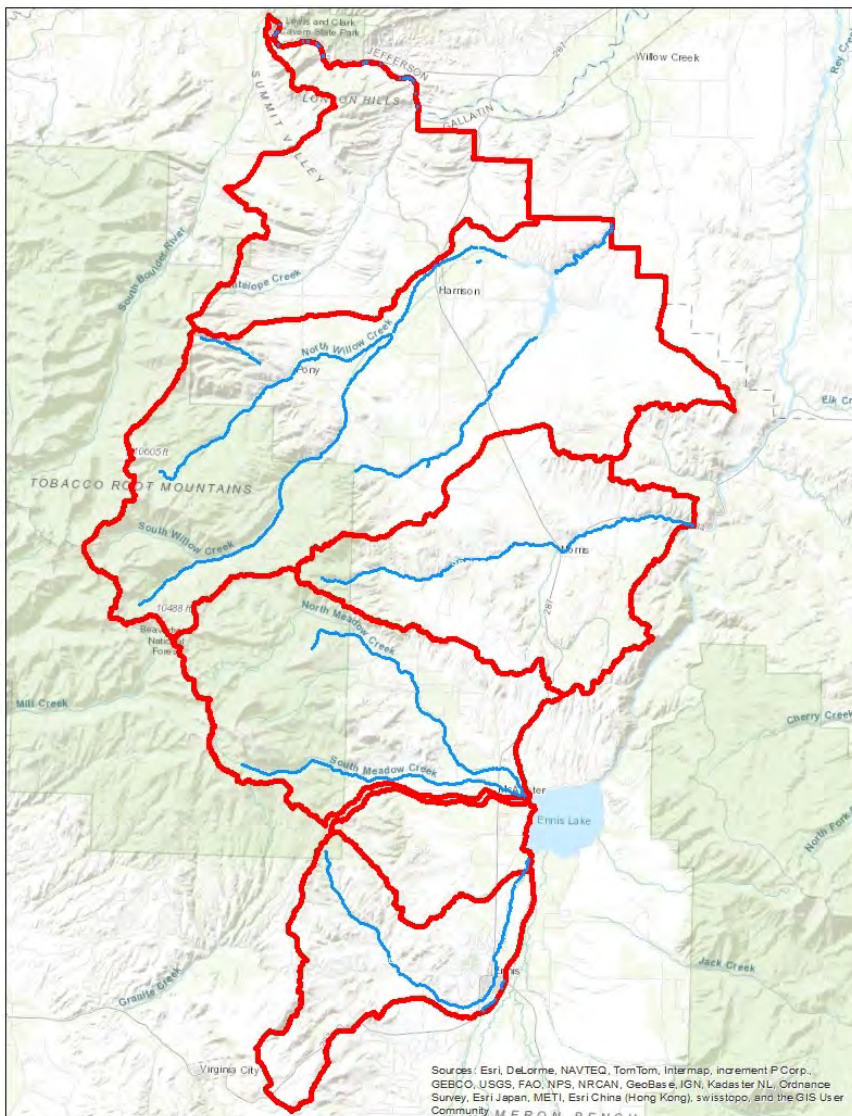


# EAST TOBACCO ROOTS RIPARIAN HEALTH TARGETED IMPLEMENTATION PLAN



East Tobacco Roots Planning area for multi-phase approach TIP's

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## ABSTRACT

This “Targeted Implementation Plan” will outline the strategy of the NRCS Sheridan field office, partners, and landowners to address riparian vegetation health and functions on tributaries outlined in the Madison River TMDL.

Montana Focused Conservation:  
Targeted Implementation Plan Fiscal  
Year 2022-2024

## **Background statement**

Madison County's local working group consists of engaged and committed landowners, agency and non-profit professionals, and other stakeholders. This group has identified stream health and riparian function as one of the top three priorities to be targeted by Environmental Quality Incentives Program (EQIP) funding and is also recognized in Madison County's Long-Range Plan (LRP) on page 17. The LRP was drafted in 2019, and partners discussed the concept of creating riparian pastures to allow for greater control of grazing within a riparian area. By doing so, landowners will now have the tools to greatly reduce the duration of disturbance to streambanks and riparian vegetation. The primary resource concern category, which this Targeted Implementation Plan (TIP) will address through practice implementation is: 1) **degraded plant condition**. The secondary resource concern categories addressed through practice implementation is: 2) **a decrease of sediment transported to surface water**. The third resource concern addressed will be: 3) **nutrients transported to surface water**.

The Montana Department of Environmental Quality (DEQ) considers South Meadow Creek, North Meadow Creek, Moore Creek, and Hot Springs Creek as significant tributaries within this TIP's boundary that are impaired due to nutrients, E. Coli, or heavy metals. The Madison Conservation District (MCD) has observed increases in 310 permit applications for projects intended to mitigate stream health issues.

The riparian areas of the three watersheds included in this TIP are under a mix of management and ownership including: MT-DNRC, BLM, USFS, and private ownership. The TIP practices and conservation efforts will be focused on the non-federal land within each watershed and are to be focused within ½ mile of the mainstem of each tributary.



Figure 1. Location map for TIP tributaries of focus in Madison County

Several factors, including poor riparian grazing management, proximity to unpaved road, and urbanization attribute to sedimentation and nutrient transport are listed in the TIP and TMDL. Data provided by MT-DEQ suggests improvements to riparian grazing management could be a tool to improving vegetation. Ultimately, leading to an increased buffer to collect fine sediment, increasing shade to surface water, and improving wildlife habitat.

The benchmark management in riparian areas often result in large concentrations of livestock numbers in pastures adjacent to streams to provide a watering source through the winter months. Typically, livestock are fed hay adjacent to the streams and livestock will congregate along the stream banks, trampling and grazing existing vegetation, as well as, compacting the soil. Manure and pollutants are in higher concentrations for a longer time-periods when compared to summer pasture/rangeland settings. The historical grazing techniques ultimately lead to a riparian condition with minimal herbaceous litter and woody vegetation, and exposed trampled banks due to poor plant condition. (MT- DEQ Watershed Stream Summaries 2020)

NRCS will be implementing conservation plans to drive an outcome on tributary streams that are the lifeblood of a river that originates in Yellowstone National Park and receives over 200,000 angler days per year (MT-FWP). Healthy streams and surrounding habitat are important for the long-term sustainability of natural resources, local economy, and agriculture (Madison County LRP, page 13).



**An eroding streambank and unhealthy streamside vegetation resulting from livestock grazing on South Meadow Creek (site SMDW 18-01)**



**Hummocking, loss of streamside vegetation, and streambank erosion resulting from livestock access to Hot Springs Creek**

Figure 3: Benchmark conditions along two tributaries within TIP (MT-DEQ)



## Targeted Implementation Boundary Map

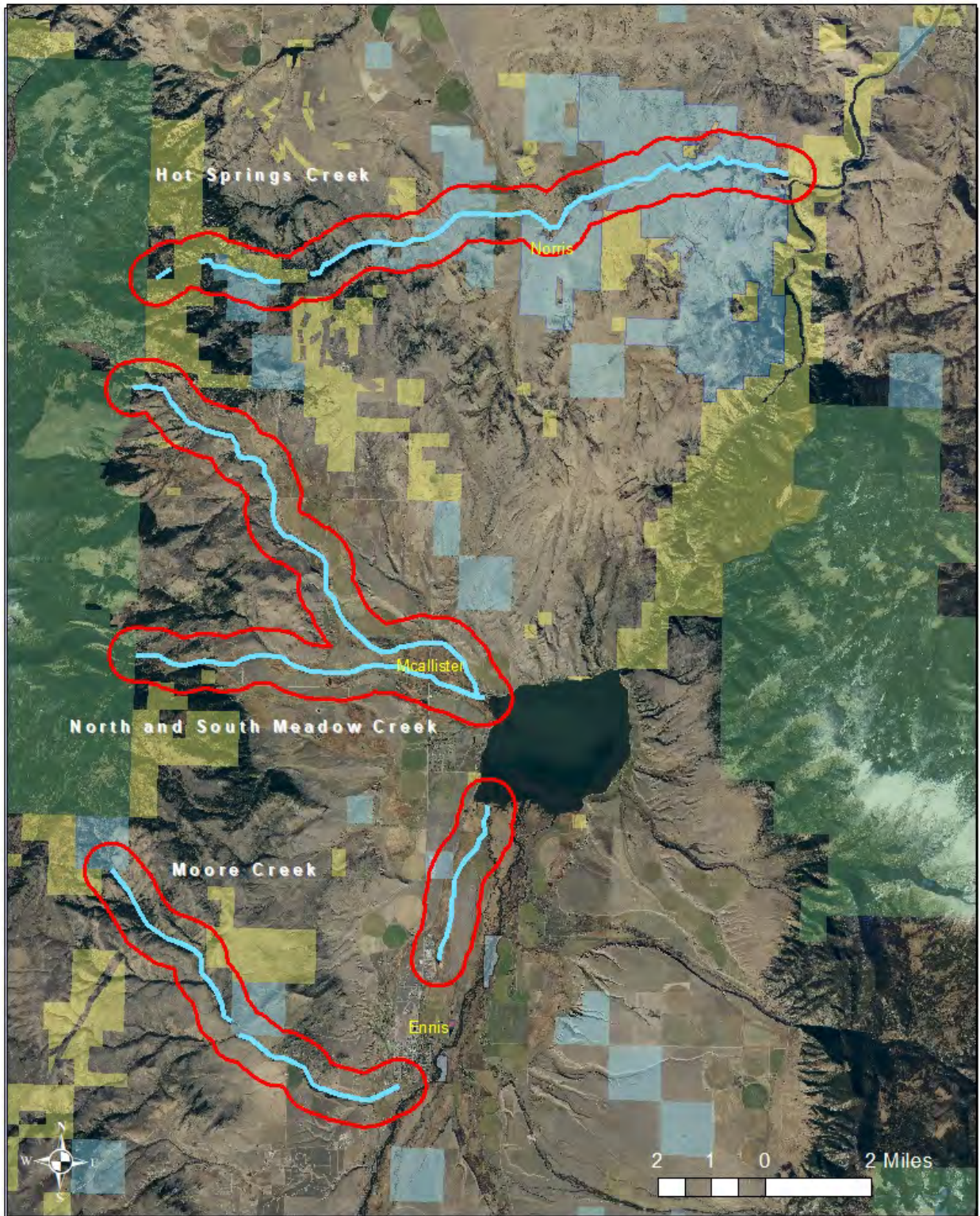


Figure 2. Moore, Meadow, and Hot Springs Creeks will be the focus of the 2022-2024 TIP

## **Goals and Conservation Practices**

This TIP's goals are to work with landowners within the watershed to use the conservation practices as tools to implement a system of "riparian pastures" along 20% of the TIP tributaries on non-federal lands. Ideally, fencing will be installed 100'+ from the streams on both sides. The intention will be to leave enough space within the riparian area to create small, but viable pastures for dormant season/short duration grazing. Ultimately, these pastures will decrease the amount of time livestock are present within the riparian area, therefore limiting the opportunity for nutrients, manure, and other pollutants to directly enter streams. As a result of decreased grazing pressure, the structure and diverse composition of riparian vegetation will increase. A healthy riparian buffer can filter and mitigate sediment and other pollutants to the adjacent surface water sources.

Tree and shrub planting (612) will be used to promote biodiversity to improve aquatic and terrestrial habitat. The species used will vary depending on site condition but will favor typical riparian species, and may include willow, Woods' rose, Redosier dogwood, golden currant, etc. While some mortality is expected to tree planting attempts by wildlife browsing, at a minimum bare root stock will be planted with protection tubes. Exclusion fencing or cages may also be used by the landowner depending on the applicability for the site and scale of the implementation.

Forage and biomass planting (512) may be used when plant composition and structure in upland pastures, adjacent to waterbodies is limited. These practices will lend to increases of root systems and general plant biomass that will help to limit pollutant transport, sediment, and leaching.

Livestock access to surface water will decrease because of the generation of a "riparian pasture". Because of this, many of the supporting practices provide "off-stream" water outside of the riparian area and utilizing these off-stream watering sources will be critical for livestock managers.

A prescribed grazing plan (528) for the newly created riparian pastures will be developed and contracted for one year after infrastructure implementation. Management practices need to be utilized far beyond the length of a typical NRCS contract to display true results. NRCS will work alongside landowners to educate and promote the adoption of voluntary conservation practices that will lead to a higher level of grazing management in the long term.

By using the NRCS prescribed grazing plan, managers will be better equipped for drastically reducing impacts to streamside conditions while still utilizing the riparian forage at a timing and duration that will reverse the consequences of the historical management techniques which have been described in the background statement. Monitoring completed by landowners through the prescribed grazing plan will display quantifiable results from a before/ after comparison.

Riparian buffers have long been a focus of conservation efforts and recently have been discovered to sequester carbon and reduce climate change. Tree and shrub cover in riparian areas are effective for storing soil organic carbon (SOC) in the floodplain, upper-bank landforms, and the biomass of the of the trees themselves. (Matzek, 2020)

Within the TIP area, and using data available to the Sheridan FO, there is approximately 39 miles of TMDL streams on non-federal lands within the boundary. Based from field observations, DEQ reports, and conversations with conservation partners, many of these miles of stream are in poor condition. While there is very little data available to quantify the amount of stream miles in poor conditions, NRCS staff will evaluate each project area with the help of the NRCS Riparian Assessment protocol

The goal of this TIP will be to implement the appropriate practices to improve approximately 20% of the total stream miles within the TIP boundary by applying changes to riparian grazing management, infrastructure, and vegetation health and leading to sustainable and upward trending riparian conditions on a landscape level effect.

**EQIP Funds Request**

<b>Fiscal Year 2022</b>	<b>Fiscal Year 2023</b>	<b>Fiscal Year 2024</b>
2.6 Linear Stream Miles	2.6 Linear Stream Miles	2.6 Linear Stream Miles
65 acres- Riparian Pasture	65 acres- Riparian Pasture	65 acres- Riparian Pasture
Total: \$95,000	Total: \$95,000	Total: \$95,000

**See Appendix A** for practice breakdown



## **NRCS implementation**

Sheridan Field office staff began outreach in the TIP area in late 2020. COVID-19 has made outreach more difficult than usual, as landowner outreach meetings are not an option for the near future. In addition, Partners from MT-FWP and MCD have been meeting with landowners in the area. Several landowners have shown some level of interest in changing management and adopting conservation practices. Recruitment for EQIP applications will be conducted by NRCS and partners throughout FY 2021, in preparation for 2022 contract obligations.

Alternatives will be developed by the planner and may be any combination of the eligible practices. Fencing, prescribed grazing, and tree/shrub establishment are expected to be the most utilized practices. Others may be necessary depending on baseline resource concerns and landowner objectives.

It is expected that there will be two to four contracts obligated per year of the TIP depending on the scale at which the projects are implemented and the available funding.



Photo: MT-NRCS/ Endecott Ranch- South Meadow Creek

## **Conservation Partners**

### **- *Madison Conservation District***

The Madison Conservation District (MCD) employs a year-round Conservation Programs Manager to help facilitate projects in the area that benefit soil or water conservation. This TIP represents a great opportunity for NRCS to work alongside their MCD partners to provide a lasting, positive impact on the watershed, and they are excited to offer support from start to finish by accessing unique funding opportunities and providing in-kind support in the form of site monitoring and public relations.

For instance, the Ranching for Rivers Program promotes the generation of “riparian pastures” for the benefit of stream and riparian health. The program is managed by the Soil and Water Conservation Districts of Montana and conservation districts across the state are encouraged to apply.

In terms of monitoring, for over a decade the MCD has led a successful tributary monitoring program known as the Madison Stream Team. MCD and NRCS can utilize aspects of this program and help inform future stream and riparian health efforts. NRCS will be able to evaluate the mid-term and long-term outcomes of these TIP projects in a few ways:

- annual photo at an established location at each site (years 0, 1, and 2)
- annual drone flight along an established path (years 0, 1, and 2)
- pre and post turbidity analysis (spectrophotometer in the MCD lab)

### **- *Montana Fish Wildlife and Parks- Future Fisheries Program (FFIP)***

Montana Fish Wildlife and Parks Future Fisheries Improvement Program provides funding opportunities to landowners, anglers, civic groups, conservation districts, or other government agencies for projects that protect, enhance, and restore habitats for Montana’s wild fish populations for public benefit.

Future Fisheries funding may be used for the costs of project design/construction, and the maintenance of projects that restore, enhance, or protect habitat for wild fishes. Examples of projects include enhancement of stream flow, restoration or protection of stream channels or banks, restore, or protect riparian areas, and improve wild fish passage around or prevent wild fish loss through diversions.

FFIP will likely be used in addition to EQIP/ TIP funding for landowners/managers that do not participate with NRCS programs, or implementation of conservation measures not offered in the TIP conservation practices.



For more detailed information regarding Montana Fish Wildlife and Parks Future Fisheries Improvement Program visit Montana Fish Wildlife and Parks website at <https://fwp.mt.gov/aboutfwp/grant-programs/future-fisheries-improvement>

### **Progress evaluation and monitoring**

Landowners who enter a contractual agreement with NRCS will follow a prescribed grazing plan for the riparian pastures, which will be a contracted practice for one year. Monitoring will be conducted before and after infrastructure is installed by the Madison Conservation District. This can be used to track the vegetation response within the riparian areas of Planning Land Units. Riparian assessments will be conducted before and after the projects are completed with each landowner, as an additional resource for displaying results.

Field office staff will compile a yearly report and complete the Missoula Area TIP tracking spreadsheet, for the Assistant State Conservationist-Field Operation review. Their input will be requested for further streamlining the planning process throughout the life span of the TIP.

A possible effect of this TIP is to be the first implementation of its kind in a phased approach to increase the pace and scale of potential similar conservation efforts on some, or all, of the Madison River watershed. Partners and landowners in the upper-Madison region have also expressed interest in similar conservation efforts. However, the District Conservationist and partners would like to start small-scale to adjust for any complications that come-to-bear over implementation in this East Tobacco Roots project area.



Photo: MT-NRCS/ Endecott Ranch- South Meadow Creek

## **RANKING AND PRIORITIZATION**

MT300-19-23, Attachment F Montana NRCS Targeted Implementation Plan (TIP) Application Prioritization Tool will be used as the prioritization ranking tool for eligible TIP applications.

Ranking Questions:

1. Is the participants planned practices on a mainstem tributary listed in the Madison Watershed Assessment TMDL or prioritized in TIP boundary? (Moore's, South Meadow, North Meadow, Hot Springs)
2. Are the participants planned practices adjacent to a braid/ side channel of the mainstem tributaries within the TIP boundary?
3. Are vegetative (612 or 512) planned in addition to infrastructure practices?
4. Is this project adjacent (above or below stream) to another project of similar nature. (Definition: Another NRCS application that has been preapproved, **or** obligated, **or** completed through TIP funding/ Ranching for Rivers funding. OR, adjacent to existing practices that meet NRCS planning criteria but were CTA.)
5. Livestock grazing is not year-long/ continual on the Planned Land Unit.

*In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.*

**Appendix A.**

**Fiscal Year 2022**

Practice Name	Practice Code	Est. Quantity	Unit	Cost	Total
Fence	382	13726	Ft	2.00	\$28,000
Tree/ Shrub Establishment	612	1000	Ea	1.48	\$1,480
Forage and Biomass Planting	512	200	Ac	79.42	\$15,884
Watering Facility	614	4- 1400 Gallon	Gal	1.37	\$7,672
Prescribed Grazing	528	65	Ac	4.98	\$325

Practice Name	Practice Code	Est. Quantity	Unit	Cost	Total
Water Well	642	3 x 200'	Ft	33.98	\$20,388
Spring Development	574	1	Ea	1706.47	\$1706.47
Livestock Pipeline	430	2000	Ft	1.33	\$2,660
Pumping Plant	533	36	Hr	149.80	\$5,392
Pumping Plant	533	3	Ea	2661.64	\$7,984
Mulching	484	30,000	SQ FT	0.11	\$3,300

**Total -95,000**

Table 1: Fiscal year 2022 funds request and expected practice quantity list

**Fiscal Year 2023**

Practice Name	Practice Code	Est. Quantity	Unit	Cost	Total
Fence	382	13726	Ft	2.00	\$28,000
Tree/ Shrub Establishment	612	1000	Ea	1.48	\$1,480
Forage and Biomass Planting	512	200	Ac	79.42	\$15,884
Watering Facility	614	4- 1400 Gallon	Gal	1.37	\$7,672
Prescribed Grazing	528	65	Ac	4.98	\$325

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Pumping Plant	533	3	Ea	2661.64	\$7,984
Mulching	484	30,000	SQ FT	0.11	\$3,300

**Total -95,000**

Table 2: Fiscal year 2023 funds request and expected practice quantity list



**Fiscal Year 2024**

<b>Practice Name</b>	<b>Practice Code</b>	<b>Est. Quantity</b>	<b>Unit</b>	<b>Cost</b>	<b>Total</b>
Fence	382	13726	Ft	2.00	\$28,000
Tree/ Shrub Establishment	612	1000	Ea	1.48	\$1,480
Forage and Biomass Planting	512	200	Ac	79.42	\$15,884
Watering Facility	614	4- 1400 Gallon	Gal	1.37	\$7,672
Prescribed Grazing	528	65	Ac	4.98	\$325

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Pumping Plant	533	3	Ea	2661.64	\$7,984
Mulching	484	30,000	SQ FT	0.11	\$3,300

<b>Total -95,000</b>
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Table 3: Fiscal year 2024 funds request and expected practice quantity list