



FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

All sections must be addressed, or the application will be considered invalid



I. APPLICANT INFORMATION

A. Applicant Name: Madison River Foundation (Mia Cignoni, Conservation Programs Manager)

Mailing Address: PO Box 1527

City: Ennis State: MT Zip: 59729

Telephone: (413) 320-8004 E-mail: Mia@madisonriverfoundation.org

B. Contact Person (if different than applicant): _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ E-mail: _____

C. Landowner and/or Lessee Name (if different than applicant): Montana Fish, Wildlife, & Parks (Keith Wellstone)

Mailing Address: 1400 S 19th Ave

City: Bozeman State: MT Zip: 59718

Telephone: (406) 581-5568 E-mail: Keith.Wellstone@mt.gov

II. PROJECT INFORMATION

A. Project Name: Madison River Side Channel Restoration - Hyde Creek

River, stream, or lake: Madison River

Location: Township: 9 S Range: 1 W Section: 25

Latitude: 45.02649 Longitude: -111.66963 *Within project (decimal degrees)*

County: Madison

B. Purpose of Project: *(high level, focus on why the project is important)*

This project aims to restore and enhance the Hyde Creek side channel (~5,300 ft) on the upper Madison River to improve aquatic habitat complexity and support wild trout populations. By reconnecting and enhancing this channel, the project will increase spawning, rearing, and refuge habitat for native fish. This effort was initiated in coordination with Montana Fish, Wildlife & Parks as part of a comprehensive plan to enhance mainstem spawning and rearing habitat throughout the upper Madison River, contributing to long-term population resilience and sustainable wild trout fisheries.

- C. Brief Project Description (attach additional information to end of application). Please include the anticipated construction schedule:

Hyde Creek is a historical side channel of the Madison River that once supported cool-water habitat, riparian wetlands, and diverse aquatic life. Over time, channel abandonment and hydrologic isolation have left the channel largely dry, with limited ecological function and connectivity to the mainstem. The Hyde Creek restoration project represents a high-priority opportunity to re-establish floodplain connection and recover lost side-channel habitat on the upper Madison River. This effort was initiated in coordination with Montana Fish, Wildlife & Parks as part of a comprehensive plan to enhance mainstem spawning and rearing habitat. The Madison River Foundation (MRF), in partnership with NorthWestern Energy (NWE), Montana Fish, Wildlife & Parks (FWP), and Geum Environmental Consulting (Geum), will restore flow to approximately 5,300 feet of historical side channel and enhance aquatic and riparian conditions through natural channel design and revegetation. Geum was contracted to perform surveys, develop designs, prepare construction cost estimates, and guide permitting for USACE, MT DEQ, and the Madison Conservation District. Preliminary design drawings were completed in October 2025 and reviewed and approved by MRF. Wetland delineation and mapping will document net habitat lift and guide project implementation.

Construction is planned for Fall 2026 and will involve excavating multiple 6–10-foot wide side channels spanning approximately 5,300 feet along the existing floodplain swale. Native gravels (10–35 mm) and scattered boulders will be placed to create riffle-pool sequences with flow velocities of 1–2 ft/s, maintaining a gradient $\leq 0.3\%$ to promote spawning and rearing habitat while keeping gravels clean and discouraging aquatic vegetation encroachment. Brush bank matrix structures using willow cuttings will stabilize portions of both banks, and rock rib structures incorporating existing boulders will reinforce channel features. Upstream and downstream connections to the Madison River will re-establish surface flow during baseflow and seasonal high flows. Excavated material will be placed in a nearby upland repository, with access routes coordinated with FWP to limit weed spread. Livestock fencing will be coordinated with FWP where the area is currently grazed, and all equipment will be washed pre-construction to prevent introduction of invasive species.

This project will achieve several ecological objectives, including:

- Creating high-quality spawning and rearing habitat connected to the Madison River.
- Increasing aquatic habitat complexity and providing cool-water refugia for trout.
- Expanding riparian corridor width and woody vegetation cover.
- Restoring floodplain and wetland hydrology to improve groundwater exchange, nutrient cycling, and late-season flow stability.
- Enhancing riparian and wetland vegetation to support fish, amphibians, birds, and pollinators.
- Promoting primary production, food-web support, and long-term ecosystem resilience.

Through these actions, Hyde Creek will regain its ecological function as a side channel, providing refuge for juvenile trout, increased spawning habitat, thermal cover, and connectivity to the Madison River, supporting long-term resilience of wild trout populations and associated riverine ecosystems.

- D. What was the cause of habitat degradation and how will the project correct the cause?

The Hyde Creek side channel has become disconnected from the Madison River due to altered flow regimes from Hebgen Dam operations and sediment accumulation in the channel swale. Without consistent surface flows, this channel has lost its hydrologic connectivity and associated habitat value. Restoration will regrade the channel to reconnect flow, excavate accumulated sediment, and incorporate large woody debris and brush structures to enhance habitat complexity. Riparian plantings will further support ecological function and long-term stability, restoring the channel's ability to provide spawning and rearing habitat for wild trout.

E. Length of stream or size of lake that will be treated (project extent): 5,300 ft
 Length/size of impact, if larger than project extent (e.g., stream miles opened): _____

F. Project Budget Summary:

Grant Request (Dollars): \$ 100,000.00

Matching Dollars: \$ 204,144.08

Matching In-Kind Services:* \$ 0

**salaries of government employees are not considered matching contributions*

Other Contributions (not used as match) \$ _____

Total Project Cost: \$ 304,144.08

G. Attach itemized (line item) budget – see *budget template*

H. Attach project location map(s) that include:

Extent of the project, including context (relation to major landmark or town)

Indication of public and private property

Riparian buffer locations and widths (if applicable) and grazing locations

I. Attach project plans:

Detailed sketches or plan views with the location and proposed restoration

Pre-project photographs (GPS location strongly recommended)

If water leasing or water salvage is involved, attach a supplemental questionnaire (<https://myfwp.mt.gov/getRepositoryFile?objectID=36110>)

J. Attach letters or statements of support (e.g., landowner consent, community or public support). For FWP statement, attach provided template. List any other project partners:

Montana Fish, Wildlife & Parks, NorthWestern Energy, Geum Environmental Consulting, Bureau of Land Management (BLM).

III. MAINTENANCE AND MONITORING (attach additional information to end of application):

A. A 20-year maintenance commitment is required*. Please confirm that you will ensure this protection and describe your approach. Attach any relevant maintenance plans. Yes No

**If it is a water leasing project, describe the length of the agreement.*

The MRF commits to a 20-year maintenance period in coordination with FWP, which manages the project area, including BLM parcels within the WMA. Wildlife-friendly electric fencing will be installed as needed to protect restored habitat during grazing. MRF and partners will monitor fencing, vegetation, and channel stability to ensure long-term success.

B. Will grazing be part of or adjacent to the project? If so, describe or attach land management plans, including short term and long term grazing regimes. If the landowner is not the applicant, please describe their involvement in the project. *If you want assistance with grazing plan development, note your need.*

Grazing occurs within and adjacent to the Hyde Creek project area, which is owned and managed by FWP as part of the Wall Creek WMA. The Middle Game Range follows a three-year rotation: early-growth grazing (May), post-seed grazing (late September), and a rest year. To protect new vegetation and channel features, MRF will work with FWP wildlife biologist Dean Waltee, the primary contact for the WMA and grazing system, to implement a five-year grazing exclusion, likely using wildlife-friendly temporary electric fencing as needed, while ensuring cattle continue to have access to the Madison River water source.

- C. Will the project be monitored to determine if goals were met? If so, what are the short-term and long-term plans to assess benefits and lessons learned? Were pre-project data collected? Will monitoring information be shared with FWP?

Yes, the Hyde Creek project will be monitored to evaluate whether restoration goals are met. Pre-project data include wetland delineations, a natural heritage review, and establishment of a new monitoring section in the Madison River to provide baseline trout abundance. While the side channel is currently dry, this baseline will allow comparison post-construction.

Post-construction, FWP will conduct annual monitoring of the side channel, including spring and fall redd counts and backpack electrofishing mark-recapture surveys to estimate juvenile trout abundance. PIT tagging of young-of-year and juvenile fish will track contributions to mainstem recruitment. Habitat monitoring will include pebble counts in riffles to evaluate spawning habitat suitability for three years post-construction (see attached monitoring plan from FWP). BLM staff will assist with habitat monitoring. Short-term monitoring will track vegetation establishment, channel stability, and initial fish use, while long-term monitoring will assess habitat function, trout recruitment, and ecosystem benefits. All monitoring data will be shared with FWP to guide adaptive management and inform lessons learned for future restoration projects.

IV. PROJECT BENEFITS (attach additional information to end of application):

- A. What species of fish will benefit from this project?

The project will benefit wild trout species, including rainbow trout and brown trout. Additional native species utilizing side channel habitat, such as sculpin and mountain whitefish, may also benefit.

- B. How will the project protect or enhance wild fish habitat?

Restoring Hyde Creek will significantly enhance wild trout habitat by reestablishing surface flow and connectivity to the Madison River. Excavation of sedimented channel segments and placement of large woody debris, brush banks, and rock rib structures will create a variety of microhabitats, including riffles, pools, and low-velocity refugia that support spawning, juvenile rearing, and adult cover. Native riparian plantings will provide shading, improve water quality, and supply food and cover for fish, while restored floodplain and wetland hydrology will promote groundwater exchange, stabilize late-season flows, and maintain suitable temperatures for trout throughout the summer. These improvements will increase the availability of clean gravel for spawning, enhance survival of eggs and fry, and provide refugia during high-flow events, helping to maintain healthy, resilient populations of rainbow and brown trout. Additionally, the restored channel will support increased invertebrate production, woody debris complexity, and riparian habitat, fostering biodiversity and long-term ecological resilience within the side channel and mainstem river system.

- C. What is the expected improvement to fish populations, both short term and long term? How might the project translate to angler success?

Restoring Hyde Creek will provide both immediate and long-term benefits for wild trout populations. In the short term, the reconnected channel will serve as refuge during high flows and low-water periods, improving survival for juvenile fish. Over the long term, enhanced spawning and rearing habitat will support higher recruitment, larger fish, and more resilient populations of rainbow and brown trout. Improved habitat complexity, cover, and forage availability are expected to translate into increased catch rates and overall angler success on the Madison River. Healthier side-channel populations will also contribute to downstream fisheries, enhancing public fishing opportunities and experiences.

- D. Will the project increase public fishing opportunity for wild fish and, if so, how? Is public fishing allowed onsite? Is it allowed by permission? If not, describe how the public would benefit.

Hyde Creek is located on public lands managed by FWP and BLM, and is accessible to anglers from the Madison River or by walk-wading along the channel. Restoring this side channel will improve wild trout abundance and size, directly enhancing fishing opportunities for the public. Even for anglers who do not fish the channel itself, downstream fisheries will benefit from increased recruitment and productivity, providing broader recreational benefits.

- E. Aside from angling, what local or large-scale public benefits will be realized from this project?

Restoring Hyde Creek will provide multiple ecological, recreational, and economic benefits. Enhanced side-channel connectivity and complexity will support diverse aquatic and riparian wildlife, including fish, birds, and amphibians. Improved wild trout populations and angler success will attract recreational fishing to the Madison River, generating economic benefits for the local community of Ennis through increased spending on lodging, guide services, and related businesses. Additionally, this project demonstrates effective, science-based river restoration practices that can serve as a model for future conservation efforts in the Madison River watershed and across Montana.

- F. Will the project interfere with water or property rights of adjacent landowners? (explain):

The project will not interfere with water or property rights. Construction and flow reconnection occur entirely within public lands and established river channels.

- G. Will the project result in the development of commercial recreational use on the site (including paid access)? Explain:

No

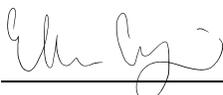
- H. Is this project associated with the reclamation of past mining activity?

No

Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.

V. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature:  Date: 11/12/25

Submittal: Applications must be signed and received on or before November 15 and May 15 to be considered for the subsequent funding period. Late or incomplete applications will be rejected.

Mail to: FWP Future Fisheries Fish Habitat Bureau PO Box 200701 Helena, MT 59620-0701	Email: Future Fisheries Coordinator FWPFFIP@mt.gov (electronic submissions must be signed) For files over 10MB, use https://transfer.mt.gov and send to mmcgree@mt.gov
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Both tables MUST be completed appropriately or the application will be invalid. Please see the example budget sheet for clarification.

PROJECT COSTS					GRANT REQUEST AND FUNDING			
Work Items (Itemize by Category)	Number of Units	Unit Description*	Cost/Unit	Total Cost	FUTURE FISHERIES REQUEST	Matching Contributions (Cash or In-Kind)***	Other Contributions (Funds not used as match)	Total Funding
<i>*Units = feet, hours, cubic yards, etc. Do not use lump sum unless necessary.</i>								
Personnel								
Survey	46.28	Hours	\$110.00	\$ 5,090.80		5,090.80		\$ 5,090.80
Design	119.04	Hours	\$110.00	\$ 13,094.40		13,094.40		\$ 13,094.40
Engineering	10	Hours	\$115.00	\$ 1,150.00		1,150.00		\$ 1,150.00
Permitting	44	Hours	\$113.86	\$ 5,009.97		5,009.97		\$ 5,009.97
Oversight	26	Hours	\$111.54	\$ 2,900.04		2,900.04		\$ 2,900.04
Maintenance**	14	Hours	\$110.00	\$ 1,540.00		1,540.00		\$ 1,540.00
Contingency (25%)	1	Ea.	\$7,619.82	\$ 7,619.82		7,619.82		\$ 7,619.82
			Sub-Total	\$ 36,405.03	\$ -	\$ 36,405.03	\$ -	\$ 36,405.03
Travel								
Mileage	1445	Miles	\$0.70	\$ 1,011.50		1,011.50		\$ 1,011.50
Per diem	5.5	Days	\$44.10	\$ 242.55		242.55		\$ 242.55
Lodging	4	Nights	\$110.00	\$ 440.00		440.00		\$ 440.00
			Sub-Total	\$ 1,694.05	\$ -	\$ 1,694.05	\$ -	\$ 1,694.05
Construction Materials								
Willow Cuttings	6,000	Each	\$1.20	\$ 7,200.00		7,200.00		\$ 7,200.00
Brush & Small Wood	4,000	Each	\$2.00	\$ 8,000.00		8,000.00		\$ 8,000.00
Rock Rib Structure	25	Each	\$200.00	\$ 5,000.00		5,000.00		\$ 5,000.00
Fence	3,640	Linear Feet	\$1.50	\$ 5,460.00		5,460.00		\$ 5,460.00
Native Seed	3	Acres	\$350.00	\$ 1,050.00		1,050.00		\$ 1,050.00
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ 26,710.00	\$ -	\$ 26,710.00	\$ -	\$ 26,710.00
Equipment, Labor and Mobilization								
Construct Brush Banks	2,000	Linear Feet	\$23.00	\$ 46,000.00	46,000.00			\$ 46,000.00
Construct Channel Bed	5,265	Linear Feet	\$15.00	\$ 78,975.00	1,040.00	77,935.00		\$ 78,975.00
Haul and Place Material in Repository	6,620	Cubic Yards	\$8.00	\$ 52,960.00	52,960.00			\$ 52,960.00
Mobilization (5% of estimated construction cost) and Demobilization (5% of estimated construction cost)	1	Ea.	\$20,400.00	\$ 20,400.00		20,400.00		\$ 20,400.00
Contingency (20% of estimated construction cost)	1	Ea.	\$41,000.00	\$ 41,000.00		41,000.00		\$ 41,000.00
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ 239,335.00	\$ 100,000.00	\$ 139,335.00	\$ -	\$ 239,335.00
			OVERALL TOTALS	\$ 304,144.08	\$ 100,000.00	\$ 204,144.08	\$ -	\$ 304,144.08

OTHER REQUIREMENTS:

**For projects that include a maintenance request, it cannot exceed 10% of the total project cost.

***Match can include in-kind materials or labor. Justification for in-kind labor (e.g. hourly rates used) can be noted below. Do not use government salaries as match.

Additional budget detail: This is a budget estimate provided by Geum Environmental Consulting. The reason for 20% contingency for construction is that we don't have past cost information for excavating side channels in this way, so Geum based estimates on other similar work where they do have costs, but leaving room for contractors potentially bidding high to account for uncertainty because they have never done this type of project before. As a contractor has not been secured (bid tour will take place in January/February 2026), actual costs are not yet known. Geum listed fencing at \$1.50/foot as we are continuing to have conversations with agencies about the best option for livestock/browse management. We will likely move forward with single strand electric fencing, but do not have a good cost estimate on that at the time of submitting this application, so \$1.50/foot is being used as a placeholder until we know exact costs. A 25% contingency was included in the contract for Geum for design, permitting, and travel to cover unforeseen tasks, deliverables, and delays. The Madison River Foundation has covered design, permitting, travel and contingency costs for Geum, will cover any additional costs, and will cover any costs should matching contributions not be secured.

APPLICATION MATCHING CONTRIBUTIONS

Total should equal match listed above; do not include requested funds

CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
Madison River Foundation	\$ -	\$ 59,144.08	\$ 59,144.08	Y
NorthWestern Energy MadTAC Funds	\$ -	\$ 75,000.00	\$ 75,000.00	N - Decision in December '26
America's Foundation Inc.	\$ -	\$ 50,000.00	\$ 50,000.00	N - Contract Pending
Montana Trout Foundation	\$ -	\$ 15,000.00	\$ 15,000.00	N - Decision in February '26
Lawrence Foundation	\$ -	\$ 5,000.00	\$ 5,000.00	N - Decision in December '26
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
TOTALS	\$ -	\$ 204,144.08	\$ 204,144.08	

OTHER CONTRIBUTIONS

Total should equal other contributions listed above; these are funds not specically matched to the Future Fisheries application

CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
TOTALS	\$ -	\$ -	\$ -	

MONTANA FISH, WILDLIFE & PARKS

Future Fisheries Improvement Program

Appendix: FWP Statement

Project Title: Madison River Side Channel Restoration Project

Please describe the potential impact of the project, including the priorities of the Fisheries Division and the importance to Montana's anglers.

The Madison River currently supports the highest angler use of all drainages in Montana (338,164 angler days in 2023; League and Caball 2025) and is an important resource for local economies and recreationists (Michael et al. 2025). However, two dams – Hebgen Dam established in 1917, and the Madison Dam established in 1906 – have altered the natural sediment transport regimes that are integral for replenishing spawning gravels for salmonids. A recent sediment transport study determined that gravel recruitment is declining as habitats that facilitate gravel retention, such as islands and side channels, continue to contract, and existing gravel is lost to Ennis Lake (Pioneer Technical 2022).

Habitat features such as islands and side channels not only serve as reservoirs of gravel for the creation and replenishment of spawning habitat, but the passive edges of islands and side channels also provide habitats where fish can find refuge from high velocities, predators, and extreme temperatures. An examination of mainstem Madison River habitat features (boulders, islands, and side channels) on trout abundance, conducted by Montana Fish, Wildlife, & Parks (FWP) in 2021, showed a suggestive positive relationship between island and side channel density and the abundance of trout >16" (Lohrenz et al. 2021). Relative abundances of juvenile trout are frequently linked to complex habitats such as islands and side channels because they are commonly used for rearing and overwintering (Swales et al. 1986).

Trout density and size structure management objectives (Table 1), established by FWP, provide a foundation for the implementation and evaluation of projects to increase fish production and recruitment to the mainstem fishery. Since 2016, density benchmarks for combined trout ≥ 10 " have only been met twice in FWP long term monitoring sections above Madison Dam, while densities in the monitoring section below Madison Dam are at historical lows (Figure 1).

Montana Fish, Wildlife, & Parks is actively pursuing projects such as island enhancement and side channel reconnection to increase fish production and recruitment in the mainstem fishery. This project strongly aligns with our FWP goals, because it aims to mitigate the loss of spawning habitat and improve habitat conditions for juvenile trout in the Madison River.

References

League, C. and B. Caball. 2025. Montana Statewide Pressure Report. Montana Fish, Wildlife & Parks. Helena, Montana.

Lohrenz, T. et al. 2021. Madison River 2188 project monitoring report. Montana Fish Wildlife & Parks. Ennis, Montana. Prepared for Northwestern Energy Environmental Division. Butte, Montana.

Michael, J., D. Sheehan, and J. Baldrige. 2025. Economic contribution of cold-water and warm-water fishing in Montana. Bureau of Business and Economic Research, University of Montana, Missoula. Prepared for Montana Fish, Wildlife & Parks.

Pioneer Technical Services, Inc. 2002. Madison River Sediment Mobility Assessment. Bozeman, Montana.

Swales, S., R. B. Lauzier, and C. D. Levings. 1986. Winter habitat preferences of juvenile salmonids in two interior rivers in British Columbia. *Can. J. Zool.* 64:1506-1514.

Table 1. Montana Fish, Wildlife, and Parks management goals for trout abundances and size structures in three long-term monitoring sections of the Madison River.

Site	Management objectives	
	Abundance (trout \geq 10 inches / mile)	Size structure (percentage of fish \geq 10 inches that are also \geq 16 inches)
Pine Butte	2,300	25%
Varney	1,200	35%
Norris	2,500	15%

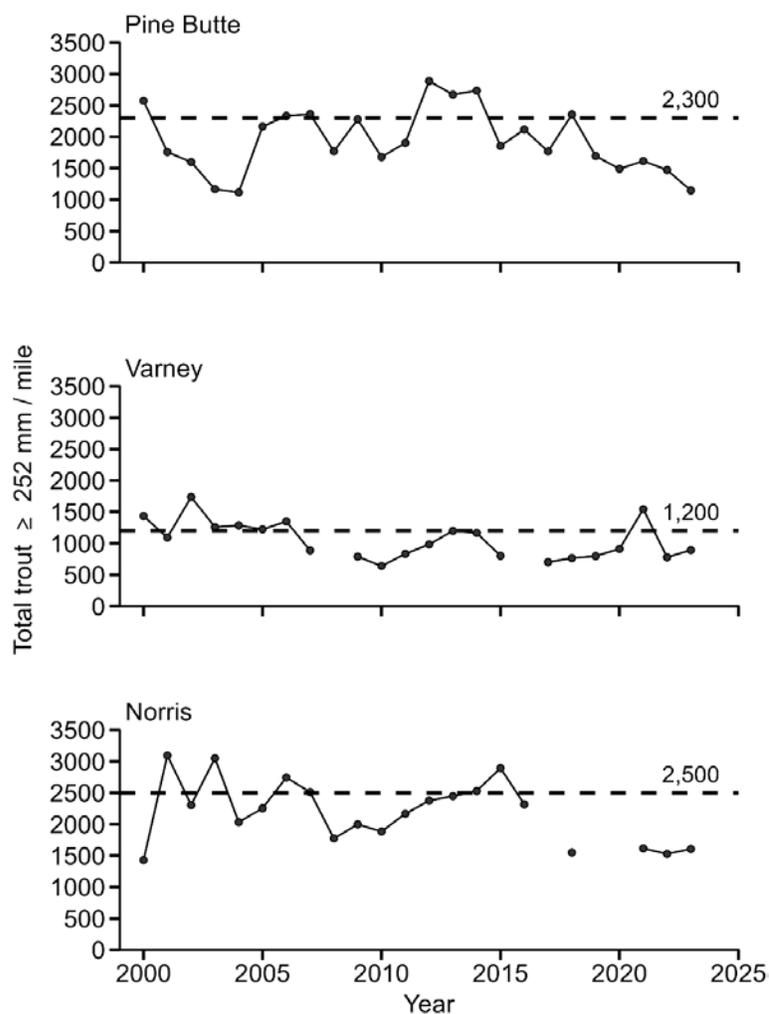


Figure 1. Estimated abundance of all trout \geq 252 mm (\sim 10") in three long-term monitoring sections of the Madison River. Black dashed lines represent the management goals for trout abundance in each section.

Name of FWP Biologist Keith Wellstone Date: 11/6/2025

Please attach to the FFIP application and materials and submit according to listed deadlines.



Montana Fish, Wildlife & Parks
Fisheries Division
1420 E. Sixth Ave.
P.O. Box 200701
Helena, MT 59620-0701

November 10, 2025

Dear Mr. Bailey Duxbury and Future Fisheries Citizens Review Panel,

On behalf of NorthWestern Energy, I am writing to express our strong support for the Madison River Side Channel Restoration – Hyde Creek Project.

NorthWestern Energy is proud to partner with the Madison River Foundation, Montana Fish, Wildlife & Parks, and Geum Environmental Consulting to restore approximately 5,300 feet of historic side channel habitat at Hyde Creek on the upper Madison River. This important project will reconnect Madison River flows to a historic side channel, enhancing both aquatic and riparian habitats.

The restoration will improve floodplain and wetland hydrology, create vital spawning and rearing habitats to support wild trout recruitment, and build long-term ecological resilience. These outcomes will benefit not only the Madison River fishery but also the broader wildlife populations that depend on this ecosystem.

Over the past two decades, NorthWestern Energy has invested millions of dollars in dozens of fisheries and wildlife enhancement projects throughout the Madison River watershed. The Hyde Creek project represents a continued commitment to protecting and enhancing the natural resources that sustain both ecological integrity and public enjoyment. We believe this effort will significantly contribute to the long-term health of the Madison River ecosystem for current and future generations.

We appreciate your consideration to fully support this project's implementation.

Sincerely,

Andy Welch

Manager, Hydropower License Compliance

Andrew.Welch@NorthWestern.com

○ 406-444-8115

Madison River Side Channel Restoration - Hyde Creek Pre-Project Photos



Figure 1. Hyde Creek Side Channel - view from the river of downstream end of project, looking southwest.



Figure 2. Hyde Creek Side Channel - view of upstream end of project, looking south.



Figure 3. Hyde Creek Side Channel - view of middle of project, looking south.



Figure 4. Hyde Creek Side Channel - view from upper extent of project area, looking towards downstream end, looking north.



Figure 5. Hyde Creek Side Channel - view of entire project area, looking South. Project area outlined in red.

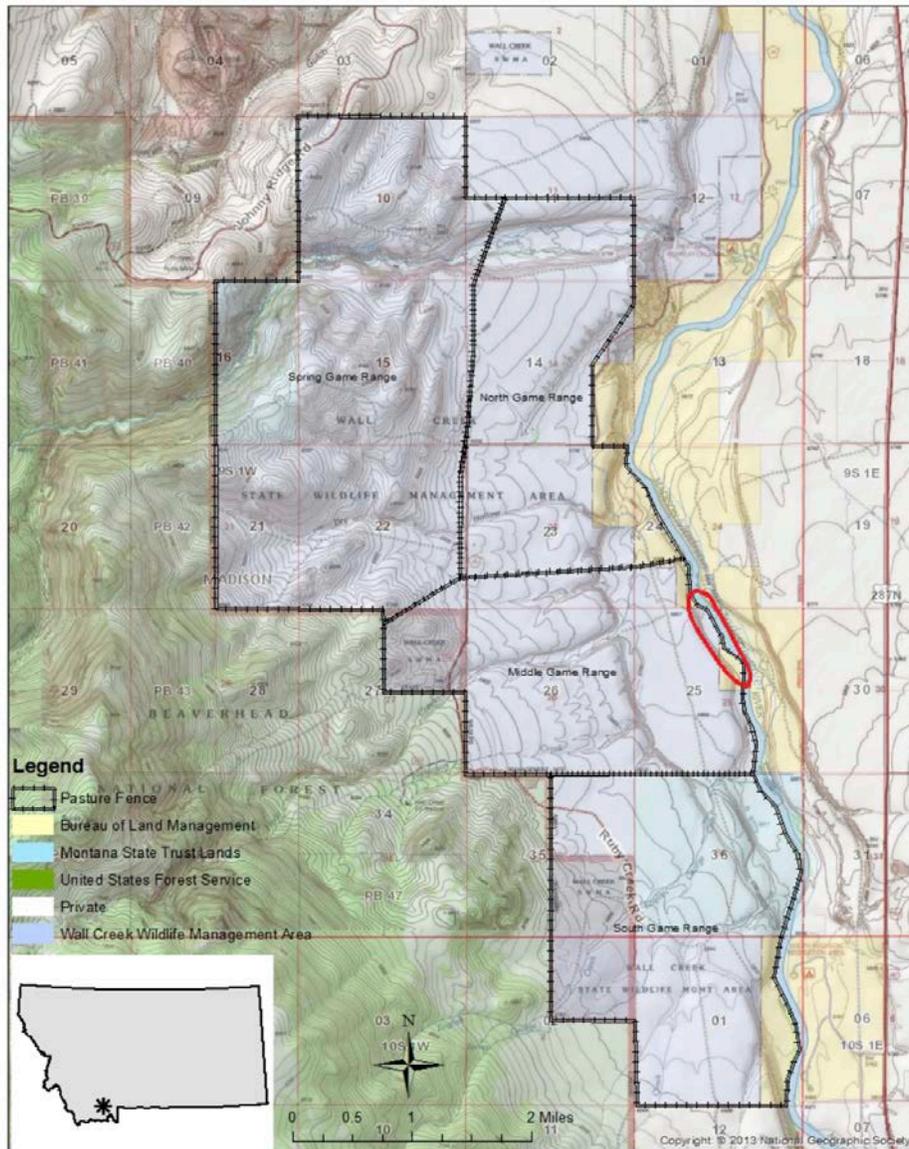
Madison River Side Channel Restoration - Hyde Creek Grazing Locations and Rotations

The Hyde Creek side channel (outlined in red) is located in the Middle Game Range within the Wall Creek Wildlife Management Area. This game range is on a 3-year grazing rotation. In 2026, it will not be grazed, in 2027 it will be grazed May 1-June 1, and in 2028 it will be grazed September 23-September 30. We are actively discussing grazing management with Dean Waltee of FWP who is the primary contact for this game range. He is amenable to temporary exclusion fencing around the project area during active grazing periods.

Table 1. Annual grazing rotation.

Year	Spring Game Range	North Game Range	Middle Game Range	South Game Range
2018	B	E	A	D
2019	C	A	D	E
2020	E	D	E	A
2021	C	E	A	D
2022	B	A	D	E
2023	E	D	E	A
2024	B	E	A	D
2025	C	A	D	E
2026	E	D	E	A

A = Graze May 1 - June 1
 B = Graze June 2 - July 14
 C = Graze September 15 - September 22
 D = Graze September 23 - September 30
 E = Rest



Hyde Creek and Morgan Gulch Side Channel Reactivation Monitoring

Objectives

1. Determine if salmonid spawning and juvenile trout abundance increases as a result of increased spawning habitat and habitat complexity created by channel reactivation.
2. Determine if side channel reactivation increases trout recruitment to the mainstem Madison River fishery.

Determine if salmonid spawning and juvenile trout abundance increase as a result of increased spawning habitat and habitat complexity created by channel reactivation.

Redd counts will be done in spring and fall after side channel reactivation to document both Rainbow and Brown Trout utilization of the area. Redd counts will be completed by walking upstream and identifying streambed disturbances consistent with redd morphology. A typical redd consists of a pit where gravel was excavated with a mound of gravel (tail spill) immediately downstream of the pit. The number and location of individual redds within the monitoring section will be recorded and the #redds/ (unit area) calculated.

Mark recapture surveys within the project area will be used to evaluate juvenile abundance. Backpack electrofishing gear will be utilized to survey reactivated side channels. Juvenile trout captured will be marked with a fin clip and PIT tagged. Fish will be returned to side channel and recaptured after 3 days of redistribution. Abundance estimates will be calculated using the Peterson method and estimated to fish/foot.

Pebble counts will be used to evaluate available spawning habitat in the project area. Suitable Brown Trout and Rainbow Trout spawning habitat particles typically range from 10-32mm in diameter (source). A 100 Wolman pebble count will be conducted in 5 riffles at each project site. Particle size distributions will be evaluated, and pebble counts will occur for 3 years post construction.

Determine if habitat improvements lead to increased recruitment to the mainstem fishery.

FWP will establish a new monitoring section in the Madison River, from Palisades to the Ruby Creek fishing access site, within the area of side channel reactivation. Abundance estimates of Brown Trout and Rainbow Trout made prior to side channel reactivation will be used to determine effects on recruitment to mainstem fishery. We will compare abundances through time in the established section. To determine if fish were produced within the reactivated side channel, PIT tags will be implanted in young-of-year and juvenile fish during abundance estimates conducted in the side channel project area, and during annual abundance estimates in the Palisades to Ruby reach trout will be scanned to determine if they originated from the project area.