FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

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

I. APPLICANT INFORMATION

A. Applicant Name: Montana Trout Unlimited

Mailing Address: PO Box 7186

City: Missoula State: MT Zip: 59807-186

Telephone: (406) 451-3035 E-mail: chris@montanatu.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): Big Hole River Preserve, LLC.

Mailing Address: 117 W. Patrick St. Suite 200

City: Frederick State: MD Zip: 21701

Telephone: (301) 676-8444 E-mail: cre@atlasrealestateco.com

II. PROJECT INFORMATION

A. Project Name: Big Hole Tributary Reconnection, Phase 1 - Johnson Creek

River, stream, or lake: Johnson Creek

Location: Township: T01 Range: R11 W Section: S19

Latitude: 45.82747 Longitude: -113.02013 *Within project (decimal degrees)*

County:

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

Across the Upper Missouri River Basin, low stream flows and elevated water temperatures, have led to declining native and wild salmonid populations. The Upper Big Hole River, home to the last aboriginal population of fluvial Arctic grayling, is one of the most chronically dewatered rivers in Montana. Furthermore, the Big Hole has experienced one of the most well-documented and publicized declines in wild trout populations in the West. The latter has resulted in a significant economic decline in the region's recreation economy. Montana Trout Unlimited (MTU) has prioritized the Big Hole for investment in critical drought adaptation strategies.

MTU is working with the Big Hole River Preserve, Montana Fish, Wildlife & Parks (FWP) and the Department of Natural Resources and Conservation (DNRC) to reconnect two coldwater tributaries, Johnson and Alder Creeks, in the middle reache of the Big Hole, 2.5 miles downstream of Dickie Bridge - the current downstream boundary of the Arctic Grayling Candidate Conservation Agreement with Assurances (CCAA) recovery program. Due to the tremendous effort of the CCAA, more grayling are inhabiting the Big Hole downstream of the recovery zone.

Johnson Creek flows south from Fleecer Mountain. It has a 12 mi^2 drainage area with an average peak flow of 25 cfs in June and a base flow of 2 cfs in August. Currently, Johnson Creek is entirely captured seasonally by an active irrigation ditch just 35 feet upstream from the Big Hole River. Two ditches distribute water to a 246.5-acre to a productive flood-irrigated hay meadow. Reconnecting this coldwater tributary will benefit all salmonid species by adding cold water to the Big Hole River, provide thermal refugia in the stream, reduce entrainment (fish loss to irrigation ditches), and provide spawning and rearing habitat.

MTU is coordinating with the DNRC and the irrigator to determine the most appropriate time to minimize irrigation. This could be a specific date (i.e., July 15) or a flow trigger on the Big Hole River at Dickie Bridge stream gage. A water rights change to use Big Hole water as a substitute for Johnson Creek water to meet the irrigation needs to maximize the potential from Johnson Creek are being managed by FWP to keep more coldwater instream during critical low-flow periods.

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

A flume will be constructed to carry Big Hole-sourced irrigation water over Johnson Creek. A trash rack, sluice gate, and overflow structure will accompany the flume. To reconnect Johnson Creek, a series of 3 step pools with appropriate salmonid jump height will be constructed between the restored Johnson Creek confluence and upstream of the flume. A hardened ford will be constructed upstream of the step pools to maintain ranch access. A second headgate and two-step pools will replace the existing POD on Johnson Creek. Willow transplants and staking will occur. Kaitlin Killoy, FWP-CCAA riparian ecologist, will provide specs for a riparian and upland seed mix.

Engineer's plans are provided as an attachment.

Project Schedule:
July - September 2024, Temperature Monitoring
August 2024, FWP procured WET for design and engineering
September 2024, MTU assumed project management
October 2024, 30% design completed
January 2025, 75% design completed
April 2025, 99% design completed
May 2025 - December 2025, permitting
September 2025, Advertise RFP
October 2025, Bid tour and contractor selection,
December 2025, permits secured
October 2026, construction 3 weeks to construct
December 2026, submit final grant reports

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

The Big Hole River ditch point of diversion is about a mile upstream of the Johnson Creek confluence. The ditch runs parallel to the Big Hole and fully captures Johnson Creek during the irrigation season. The project will reconnect Johnson Creek with a series of step pools while allowing the Big Hole River ditch to deliver water with an elevated flume.

E. Length of stream or size of lake that will be treated (project extent): 250'

Length/size of impact, if larger than project extent (e.g., stream miles opened): Approx. 10 miles

F. Project Budget Summary:

Grant Request (Dollars):	**$**	**110,640**
Matching Dollars:	**$**	**199,800**
Matching In-Kind Services:*	**$**	

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

Other Contributions (not used as match)	**$**	**47,400**
Total Project Cost:	**$**	**357,840**

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

CCAA team (FWP & DNRC), Montana Trout Foundation

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: X No: ☐

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

Maintenance plans will be developed in 2025 in conjunction with the CCAA team and the landowner.

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 will continue adjacent to the project site. An existing fence will be moved to allow for additional upland grazing, and will exclude the riparian area. The riparian management plan was developed by Kaitlin Killoy, FWP-CCAA riparian ecologist. See attachment.

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 CCAA team will be leading the flow monitoring with support from MTU. The CCAA team will also conduct follow-up riparian assessments. Pre-project data has been collected and a summary has been provided in the supplemental information. All of the data and monitoring information will be recorded by FWP.

Short-term success will be measured by cold water from Johnson Creek connecting to the river where it currently doesn't exist.

Long-term success will be measured by the landowner's use of and compliance in the water and grazing management agreements being developed by the project team. An increase in wild trout recruitment in adjacent monitoring sections may also be a measure of success.

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

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

Arctic grayling, westslope cutthroat trout, mountain whitefish, brown trout, rainbow trout, brook trout, and sculpin species.

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

"Water availability is the primary limiting factor for the fishery and its tributaries. Irrigation withdrawals and municipal use within the drainage can cause periods of low flow and high water temperatures," "Tributary connectivity will be a priority for Big Hole River restoration over the next four years" (FWP, Statewide Fisheries Management Plan, section 2.14 pgs. 6, 13).

The goal of this project is to: reconnect Johnson Creek to add critical coldwater to the Big Hole where it currently doesn't exist; maintain flood irrigation water delivery; and restore fish passage for spawning and thermal refugia to more than 10 miles of tributary habitat. Hourly stream temperature data were taken from mid-July through September 2024. When compared to the Big Hole at Dickie Bridge, the daily average temperature was up to 7 degrees (F) colder, and peak temperatures were up to 11 degrees colder in Johnson. The Big Hole needs more cold water, Johnson Creek can provide that.

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

This project could benefit both native Arctic grayling and rainbow and brown trout. Not only will this project help to cool the Big Hole River and make conditions more suitable for cold water fish species, Arctic grayling are known to use nearby tributary streams as thermal refuge in times of thermal stress. That is currently not possible in Johnson Creek because fish passage is completely blocked by the irrigation ditch and diversion. The project could improve the fishery in the river through increased potential spawning by both spring and fall spawning species. Johnson Creek is a moderate gradient stream and does not contain abundant spawning habitat, however, trout and grayling from the Big Hole River use similar streams in the area with similar habitats for spawning and rearing (i.e., Fishtrap and Lamarche Creek). Increased spawning potential in tributary stream could lead to increase recruitment of fish to the Big Hole River. Juvenile fish production is one of the main limiting factors for fish in the Big Hole River. Tributaries may serve as an important source of recruitment particularly during dry times.

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.

The public would primarily see increased fishing opportunities through consistent recruitment of juvenile fish to the Big Hole River and improved thermal conditions in the river. Hoot owl (temperature related) and full river closer (flow related) are common in this reach of the Big Hole River during dry years. While it is not likely that the project on Johnson Creek alone will stay off future hoot-owl closures, it is a step in the right direction.

Johnson Creek flows through private property for roughly 2 miles before reaching the National Forest. There is no public access to the creek but access can be gained by seeking permission from the private landowners.

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

This project will leave cleaner, coldwater instream, benefiting aquatic, riparian, and wildlife species. Leaving cleaner water instream will also benefit Butte-Silver Bow's water supply from the Big Hole River.

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

No, this project is relatively small in scale and takes place entirely on the landowner's property. Tributary water used for irrigation will be reduced, and well within the landowner's water rights. The next downstream water right is held by this landowner.

If anything, restoring fish passage will improve fish numbers on upstream land owned by private and federal land owners.

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

No commercial recreational access is planned for this project.

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: May 15, 2025

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

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

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**
**Units = feet, hours, cubic yards, etc. Do not use lump sum unless necessary.*								
Personnel								
Survey	1	ea	$5,000.00	$ 5,000.00			5,000.00	$ 5,000.00
Engineering Design	1	ea	$24,850.00	$ 24,850.00			24,850.00	$ 24,850.00
Permitting	1	ea	$13,750.00	$ 13,750.00			13,750.00	$ 13,750.00
Bid Documents	1	ea	$3,800.00	$ 3,800.00			3,800.00	$ 3,800.00
Oversight	1	Lump Sum	$24,000.00	$ 24,000.00	5,200.00	18,800.00		$ 24,000.00
MTU Project Management	100	hours	$42.00	$ 4,200.00		4,200.00		$ 4,200.00
Monitoring	40	hours	$25.00	$ 1,000.00		1,000.00		$ 1,000.00
			Sub-Total	$ 76,600.00	$ 5,200.00	$ 24,000.00	$ 47,400.00	$ 76,600.00
Travel								
Mileage	2500	miles	$0.70	$ 1,750.00		1,750.00		$ 1,750.00
Per diem				$ -				$ -
			Sub-Total	$ 1,750.00		$ 1,750.00	$ -	$ 1,750.00
Construction Materials								
Riprap, Class 1	10	Cubic Yard	$60.00	$ 600.00		600.00		$ 600.00
Riprap, Class 2	40	Cubic Yard	$75.00	$ 3,000.00		3,000.00		$ 3,000.00
Step Pool Boulder	340	ea	$165.00	$ 56,100.00	56,100.00			$ 56,100.00
Geotextile Fabric	110	Square Yard	$10.00	$ 1,100.00		1,100.00		$ 1,100.00
30" Steel Pipe (Flume)	30	Linear Feet	$500.00	$ 15,000.00	15,000.00			$ 15,000.00
CIP Concrete Headwall - Inlet	21	Cubic Yard	$2,200.00	$ 46,200.00		46,200.00		$ 46,200.00
CIP Concrete Headwall - Outlet	17	Cubic Yard	$2,200.00	$ 37,400.00		37,400.00		$ 37,400.00
Trash Rack	1	ea	$7,500.00	$ 7,500.00		7,500.00		$ 7,500.00
Sluice Gate-30" Pipe	1	ea	$6,000.00	$ 6,000.00	6,000.00			$ 6,000.00

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Sluice Gate-24" Overflow Pipe	1	ea	$6,000.00	$ 6,000.00		6,000.00		$ 6,000.00
Upper Headgate Diversion	1	ea	$15,000.00	$ 15,000.00		15,000.00		$ 15,000.00
Upland Soil Seeding/Planting	0.25	acre	$5,000.00	$ 1,250.00	1,250.00			$ 1,250.00
Riparian Soil Seeding/Planting	0.25	acre	$5,000.00	$ 1,250.00	1,250.00			$ 1,250.00
Granular Fill Material	50	Cubic Yard	$30.00	$ 1,500.00		1,500.00		$ 1,500.00
Erosion Control Blanket	105	Square Yard	$8.00	$ 840.00	840.00			$ 840.00
Willow Stakes	1600	ea	$5.00	$ 8,000.00		8,000.00		$ 8,000.00
			Sub-Total	$ 206,740.00	$ 80,440.00	$ 126,300.00	$ -	$ 206,740.00
Equipment, Labor, and Mobilization								
Mobilization	1	Lump Sum	$25,000.00	$ 25,000.00	25,000.00			$ 25,000.00
Taxes, Bonds, & Insurance	1	Lump Sum	$10,000.00	$ 10,000.00		10,000.00		$ 10,000.00
Erosion Control	1	Lump Sum	$11,000.00	$ 11,000.00		11,000.00		$ 11,000.00
Clearing & Grubbing	1	Lump Sum	$5,000.00	$ 5,000.00		5,000.00		$ 5,000.00
Dewatering	1	Lump Sum	$10,000.00	$ 10,000.00		10,000.00		$ 10,000.00
Topsoil Salvage & Place	50	Cubic Yard	$15.00	$ 750.00		750.00		$ 750.00
Excavation & Grading	200	Cubic Yard	$25.00	$ 5,000.00		5,000.00		$ 5,000.00
Fill & Grading	200	Cubic Yard	$30.00	$ 6,000.00		6,000.00		$ 6,000.00
				$ -				$ -
			Sub-Total	$ 72,750.00	$ 25,000.00	$ 47,750.00	$ -	$ 72,750.00
			OVERALL TOTALS	$ 357,840.00	$ 110,640.00	$ 199,800.00	$ 47,400.00	$ 357,840.00

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:

APPLICATION MATCHING CONTRIBUTIONS

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

CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
Landowner	$ -	$ 20,000.00	$ 20,000.00	Yes
George Grant Chapter of Trout Unlimited	$ -	$ 25,000.00	$ 25,000.00	Yes
Chuck Robbins Chapter of Trout Unlimited & MTU Mini-Grant	$ -	$ 10,000.00	$ 10,000.00	Yes
Landowner	$ -	$ 20,000.00	$ 20,000.00	Yes
Montana Trout Foundation	$ -	$ 5,000.00	$ 5,000.00	Yes
Sam B's Family Foundation	$ -	$ 7,500.00	$ 7,500.00	Yes
BLM-Trout Unlimited Keystone Agreement	$ -	$ 102,300.00	$ 102,300.00	Tentative
Trout and Salmon Foundation	$ -	$ 10,000.00	$ 10,000.00	Apply in August
TOTALS	$ -	$ 199,800.00	$ 199,800.00	

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)
FWP - State Wildlife Grant	$ -	$ 47,400.00	$ 47,400.00	Yes
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
TOTALS	$ -	$ 47,400.00	$ 47,400.00	

MONTANA FISH, WILDLIFE & PARKS

Future Fisheries Improvement Program

Appendix: FWP Statement

Project Title: Big Hole Tributary Reconnection: Johnson Creek

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

Johnson Creek is a tributary to the Big Hole River upstream of Wise River. This section of the Big Hole suffers from chronic dewatering and high temperatures. The Wise River, roughly 3 miles downstream provides some buffering against warm water temperatures, but the reach in which Johnson Creek enters the river chronically exceeds 70F. The addition of cooler water in this reach of river could be highly beneficial for the aquatic life in the river including trout and Arctic grayling. Arctic grayling routinely use cold tributaries upstream of Johnson Creek as thermal refuge during warm summer months. Currently, although there is cold water present in Johnson Creek, grayling use of Johnson Creek is not possible because fish passage is completely blocked during the irrigation season. The proposed project would permanently remove this blockage and provide unrestricted, year-round fish passage into Johnson Creek. Warm water from the Big Hole River would be used to satisfy irrigation needs and the cold water in the creek would be allowed to flow directly to the Big Hole. FWP's water rights team is assisting in converting a portion of the water rights from Johnson Creek to the Big Hole River to make this possible. Johnson Creek is one of several tributary reconnection projects in this area including Alder Creek and the Wise River which cumulatively could have a substantial positive impact on the fishery of the Big Hole River.

In addition to providing cold water to the Big Hole, the creation of year-round connectivity between Johnson Creek and the Big Hole River could also have positive impacts on the fishery. Johnson Creek is moderate gradient and does not have abundant spawning potential, but there is adequate habitat to support a self-sustaining fishery. The fishery of Johnson Creek consists of primarily brook trout; however, recent surveys found both juvenile rainbow and brown trout in low abundance in the downstream reaches of the creek. It is possible that with improved passage the number of rainbow and brown trout that use Johnson Creek for spawning and rearing could increase. Typically, there is no connectivity between Johnson Creek and the Big Hole River in the spring for spawning rainbow trout and limited connectivity for brown trout in the fall. Both species could significantly benefit from improved fish passage and use Johnson Creek more for spawning and rearing.

Tributary reconnection was set out as one of the primary management goals for the Big Hole River in the State-Wide Fisheries Management Plan. Tributaries in and round the Wise River were particularly called out as a management priority due to the cold water they could potentially provide to the Big Hole River during critical time periods. Johnson Creek would represent the first project to accomplish this goal.

Name of FWP Biologist Jim Olsen Date:/ 5/15/25

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

Big Hole Tributary Reconnection, Phase 1 - Johnson Creek

Project area:
Johnson Creek flows south out of Fleecer Mountain. It has a 12 mi^2 drainage area with an average peak flow of 25 cfs in June and a base flow of 2 cfs in August. Currently, Johnson Creek is entirely captured seasonally by an active irrigation ditch just 35 feet upstream from the Big Hole River. Two ditches distribute water to a flood-irrigated hay meadow (**Figure 1**).

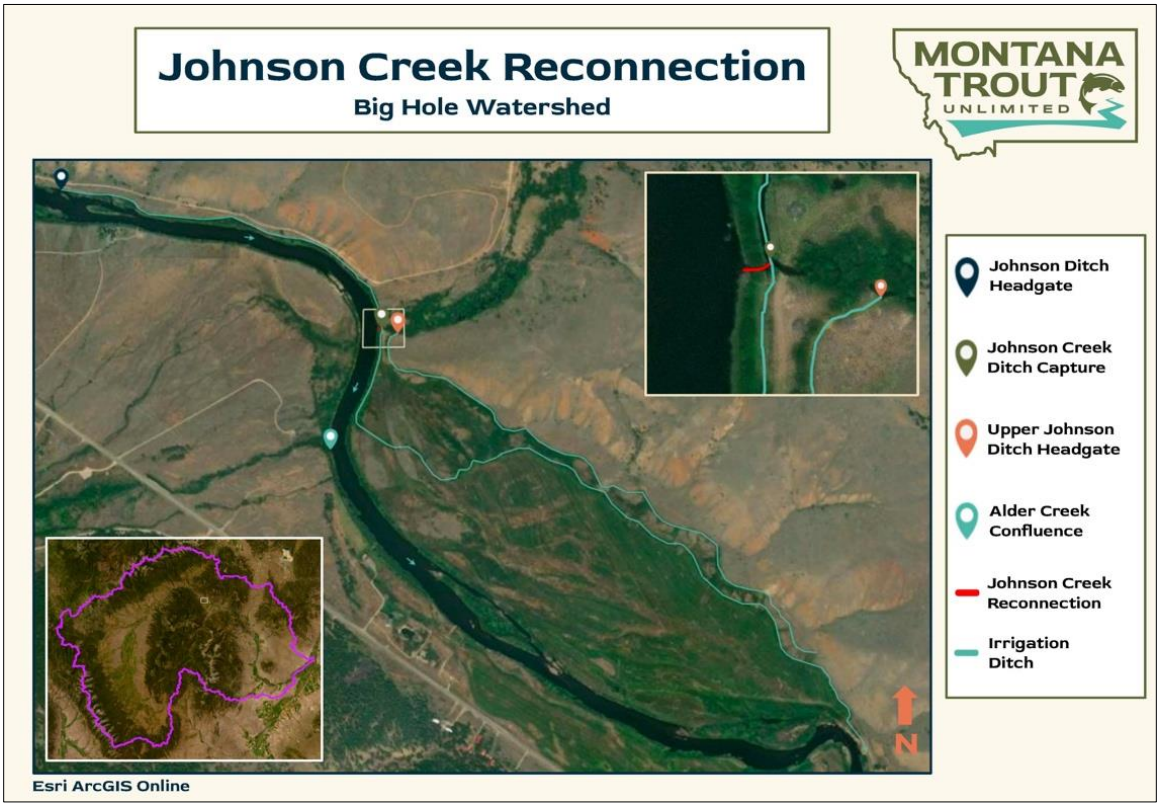

Figure 1. Location of the Johnson Creek reconnection and irrigation infrastructure project.

Irrigation:
MTU is coordinating with the DNRC, FWP, and the Big Hole River Preserve (BHRP) to determine the most appropriate time to minimize irrigation. This could be a specific date (i.e., July 15) or a flow trigger on the Big Hole River at Dickie Bridge stream gage. A water rights change to maximize the potential of Johnson Creek is being managed by FWP to keep more coldwater instream during critical low-flow periods.

BHRP irrigates with water rights from the Big Hole River, Johnson, and Alder Creeks. The Big Hole River Ditch and Point of Diversion (POD), **41D_93271**, and Johnson Creek ditches and PODs, **41D_93270**, and associated Place of Use. While Alder Creek PODs and ditches are not part of this funding request, MTU is working with the BHRP on a similar tributary reconnection there in phase 2 and is a component of the overall restoration strategy for BHRP. (**Figure 2**).

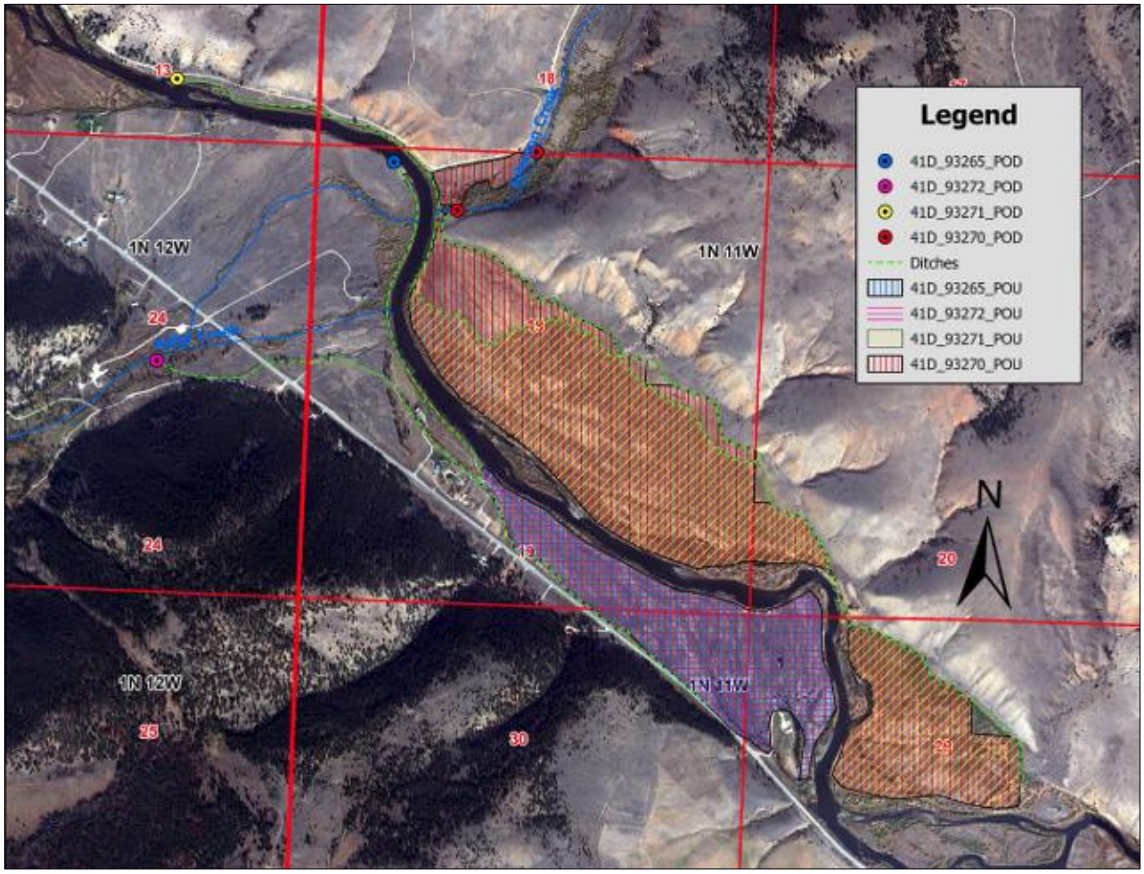

Figure 2. Big Hole River Ditch and Point of Diversion (POD), 41D_93271, and Johnson Creek ditches and PODs, 41D_93270, and associated Place of Use in red and yellow.

From mid-July through September 2024, hourly stream temperature data were taken for Johnson Creek. When compared to the Big Hole at Dickie Bridge, the daily average temperature was up to 7°F colder (**Figure 3**). Peak temperatures were up to 11°F colder in Johnson Creek (not shown). The Big Hole needs more cold water, Johnson Creek can provide that.

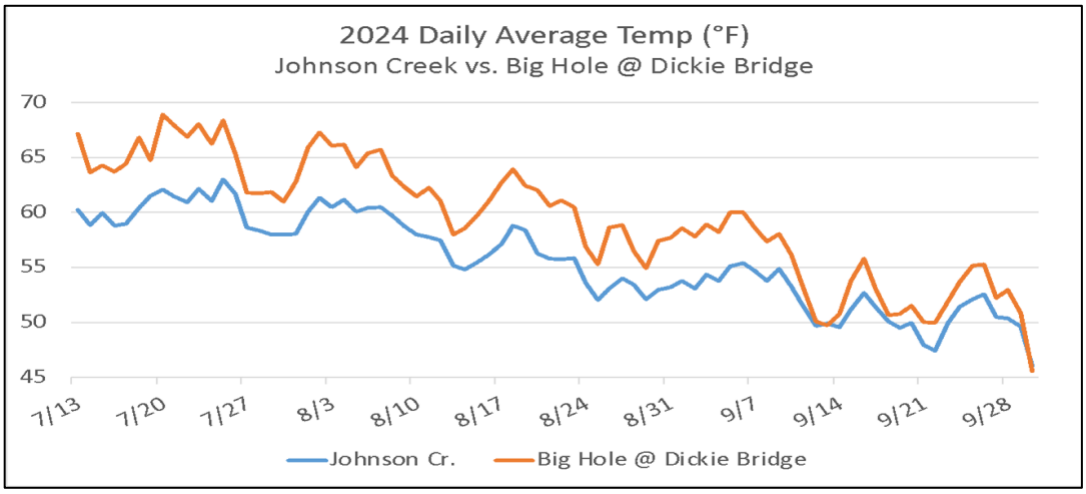

Figure 3. Johnson Creek and Big Hole daily average temperatures, 2024.

Excerpt from FWP's 2023 – 2026 Statewide Fisheries Management Plan, Section 2.14

> **Pg 6.** *Prolonged drought, exacerbated by irrigation demand, has caused a well-documented decline of salmonids in the Big Hole watershed. "Water availability is the primary limiting factor for the fishery and its tributaries. Irrigation withdrawals and municipal use within the drainage can cause periods of low flow and high water temperatures.*
>
> **Pg 13.** *Tributary connectivity will be a priority for Big Hole River restoration over the next four years."*

The goals of this project are to:
reconnect Johnson Creek to the Big Hole where it currently doesn't exist; maintain flood irrigation water delivery; and restore fish passage for spawning and thermal refugia to more than 10 miles of tributary habitat.

The objectives are to:
design the irrigation infrastructure to allow fish passage; construct a flume for the Big Hole River ditch over the Johnson Creek channel where a series of step-pools will enable fish passage; install a new headgate on the upper ditch to allow for the ditch to be shut off during low flow periods to increase critical coldwater to the Big Hole River (**Figure 4**).

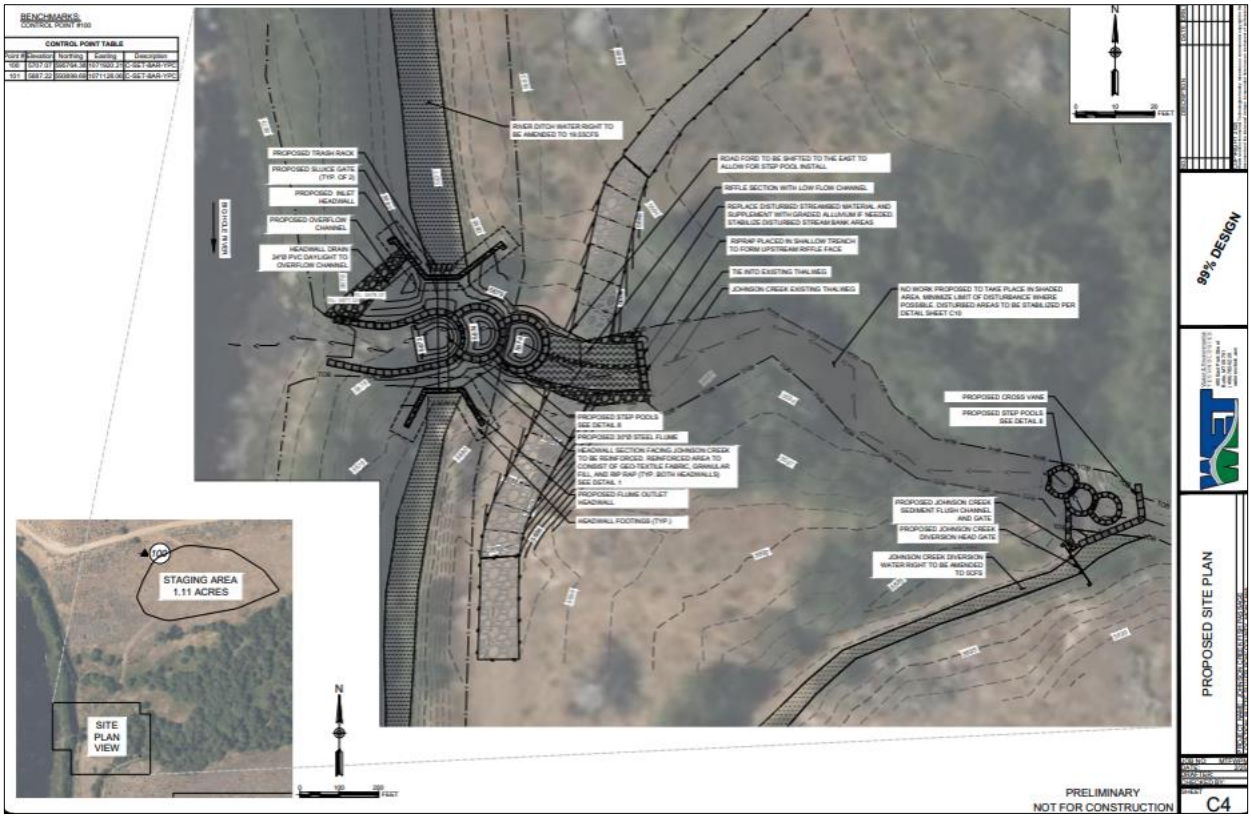

Figure 4. Plan view of the Johnson Creek reconnection project.

The two-phase project to reconnect Johnson and Alder Creeks (**Figure 5**) with the Big Hole River will increase coldwater in the river, restore fish passage to the two tributaries, and maintain access to irrigation water. A true win-win project MTU strives to develop.

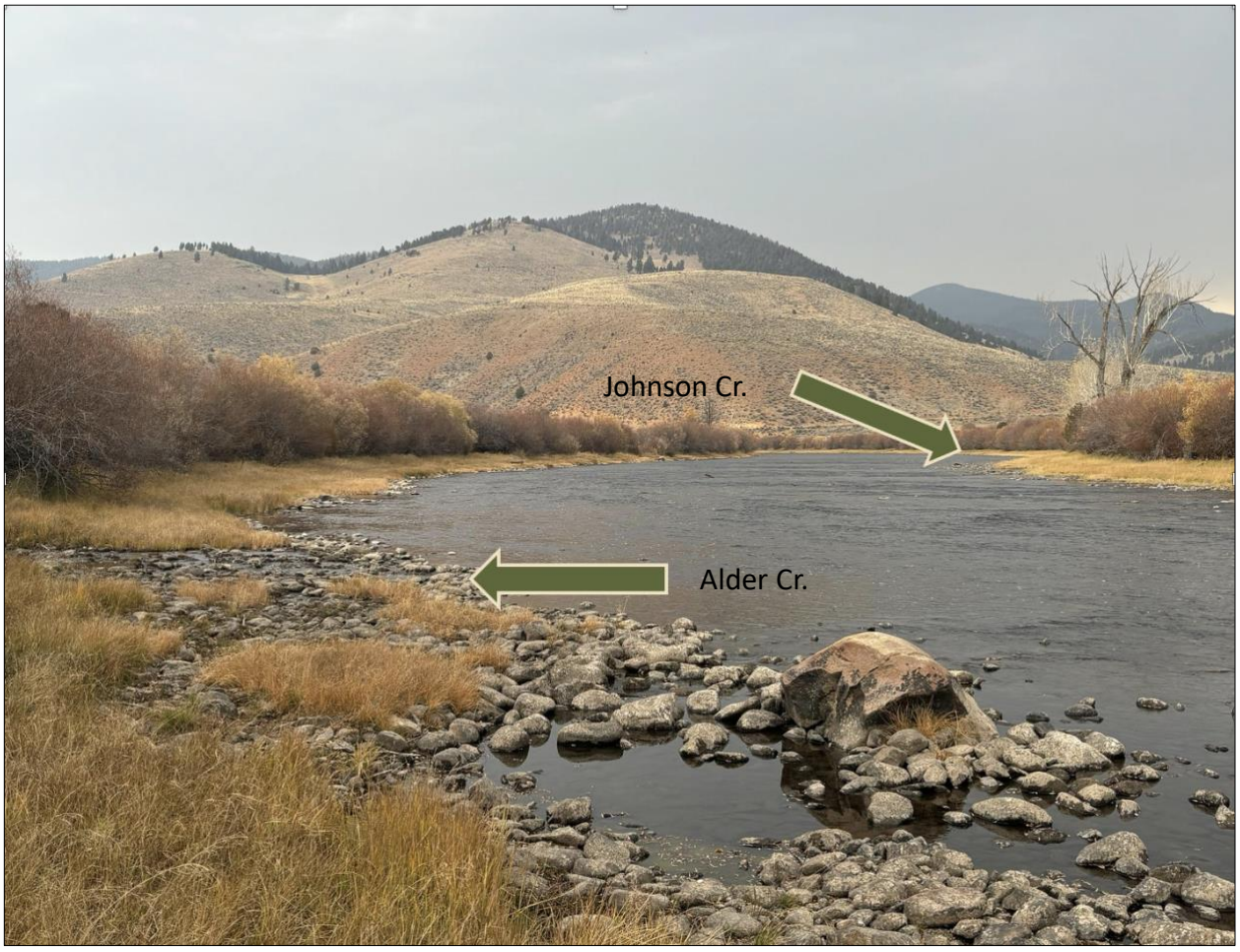

Figure 5. The confluences of Johnson and Alder Creeks will reconnect to the Big Hole River just 400 yards apart once the two-phase project on the Big Hole River Preserve is completed.

Big Hole River Preserve, LLC.

Johnson Creek - Riparian Management Plan

On June 22nd, 2023, riparian assessments were completed along Johnson Creek and the Big Hole River on Big Hole River Preserve LLC property. The purpose was to assess the riparian health on Johnson Creek, a potential spawning stream for Arctic Grayling (*Thymallus arcticus*) and the Big Hole River, and primary adult habitat in the Big Hole Watershed. Riparian zones are critical for the ecological function of most aquatic systems (Gregory et al. 1991). Riparian habitats dissipate stream-energy during floods, filter sediments and pollutants, facilitate ground-water recharge, cool streams by shading, stabilize streambanks, maintain channel characteristics, promote floodplain development, and provide woody debris, organic material, and terrestrial insects (e.g., Murphy and Meehan 1991; Prichard et al. 1998). Healthy riparian corridors are vital for maintaining instream habitat for Arctic grayling in the upper Missouri River basin. Riparian assessments can be used to assess grazing impacts on Johnson Creek and the Big Hole River.

The NRCS' Riparian Assessment Method was used to determine the present condition of riparian habitats on the enrolled property (NRCS 2004). The NRCS' Riparian Assessment Method categorizes riparian zone condition as either: 1.) "Sustainable" (≥ 80%), 2.) "At Risk" (50 – 79%), or 3.) "Not Sustainable" (≤49%). These categories are based on a numerical score from 10 assessment questions (NRCS 2004). The 10 assessment categories include stream incision, lateral bank erosion, sediment balance, streambank vegetation, riparian vegetative cover, noxious weeds, undesirable plants in the riparian area, woody species establishment and regeneration, tree and shrub utilization, and floodplain characteristics. Riparian assessments are repeated every five years.

In 2023, Johnson Creek was rated "Sustainable" with a score of 88%, and the riparian condition was improving due to the removal of grazing for 1 year (Figure 1). At the time of the assessment, no active incision was observed, minimal human-induced lateral erosion, an appropriate width-to-depth ratio, and the hydrology was well connected. The riparian/wetland canopy cover comprised 75-85% deep-rooting species. On average, there are at least four plant species with deep, binding root masses throughout the riparian community. Species include *Salix geyeriana* (Geyer's willow), *Salix boothii* (Booth's willow), *Carex utriculata* (beaked sedge), *Carex aquatilis* (Water sedge), and *Carex vesicaria* (Inflated sedge). Canada thistle (*Cirsium arvense*) covered less than 1% of the riparian area. Over 15% of the riparian area is covered with undesirable plants. Species include *Poa pratensis* (Kentucky bluegrass), *Taraxacum officinale* (Dandelion), and *Alopecurus pratensis* (Meadow foxtail). There were all age classes for *Salix boothii* and *Salix geyeriana*. There was a lack of age classes for *Salix bebbiana*. Of the available second-year and older stems, 5-25% were browsed by wildlife. There were beaver dams throughout the reach with an excellent Geyer's Willow-Beaked Sedge community throughout to dissipate energy and capture sediment.

Proposed Action:

Currently the Johnson Creek riparian pasture is grazed twice throughout the summer. In 2024, utilization was high, due to unique circumstances, and led to poor willow recruitment and bank trampling. Long term use of this pasture like in 2024 will likely lead to this stream reach decreasing in score and may result in this reach rating below "Sustainable." A fence along the eastern side of Johnson Creek is proposed to create full exclusion of Johnson Creek (Figure 2). A portion of the existing fence will be removed so the upland pasture near Johnson Creek is larger, and cattle have access to water from a ditch running through the pasture (Figure 3). Big Hole River Preserve can choose to split up the pasture with the Johnson Creek Ditch into multiple to create a grazing rotation throughout it. With the new Johnson Creek riparian fencing and Johnson Creek irrigation improvements, Big Hole River Preserve will be able to better utilize upland pastures and manage grazing distribution.

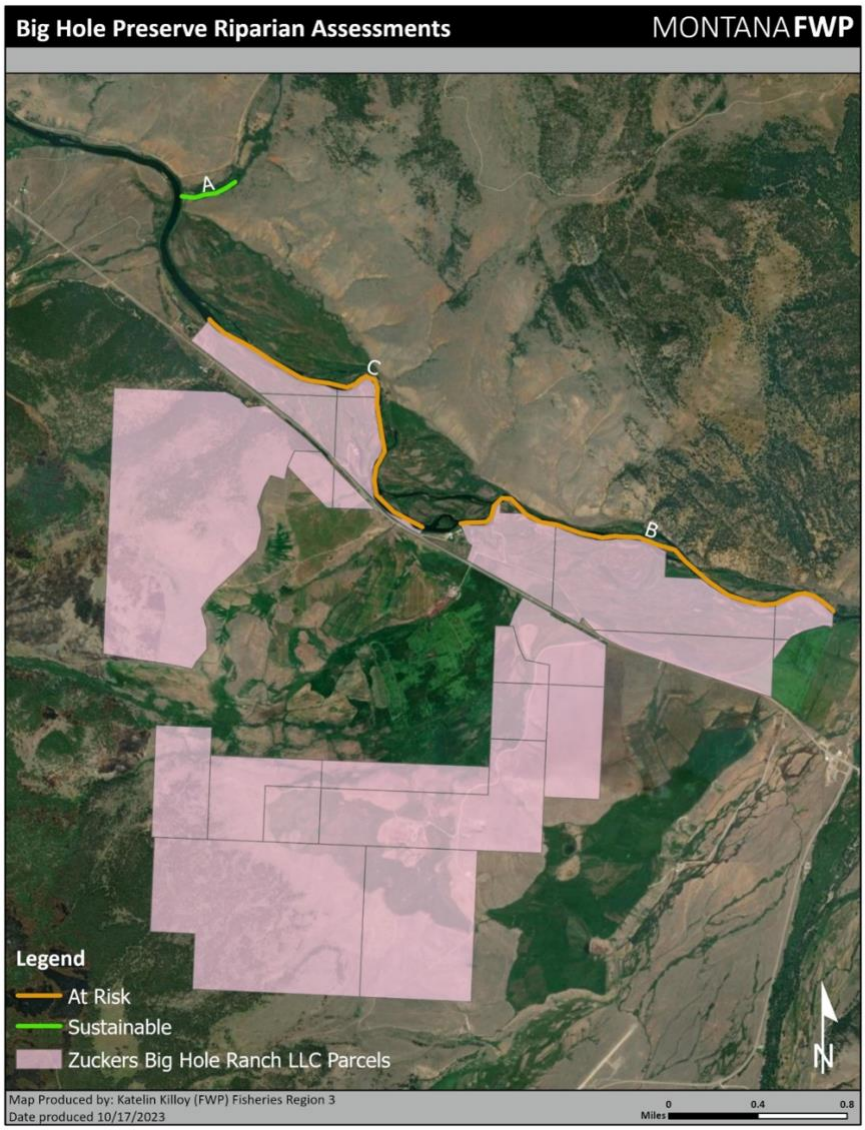

Figure 1. Riparian assessments on Big Hole Preserve property.

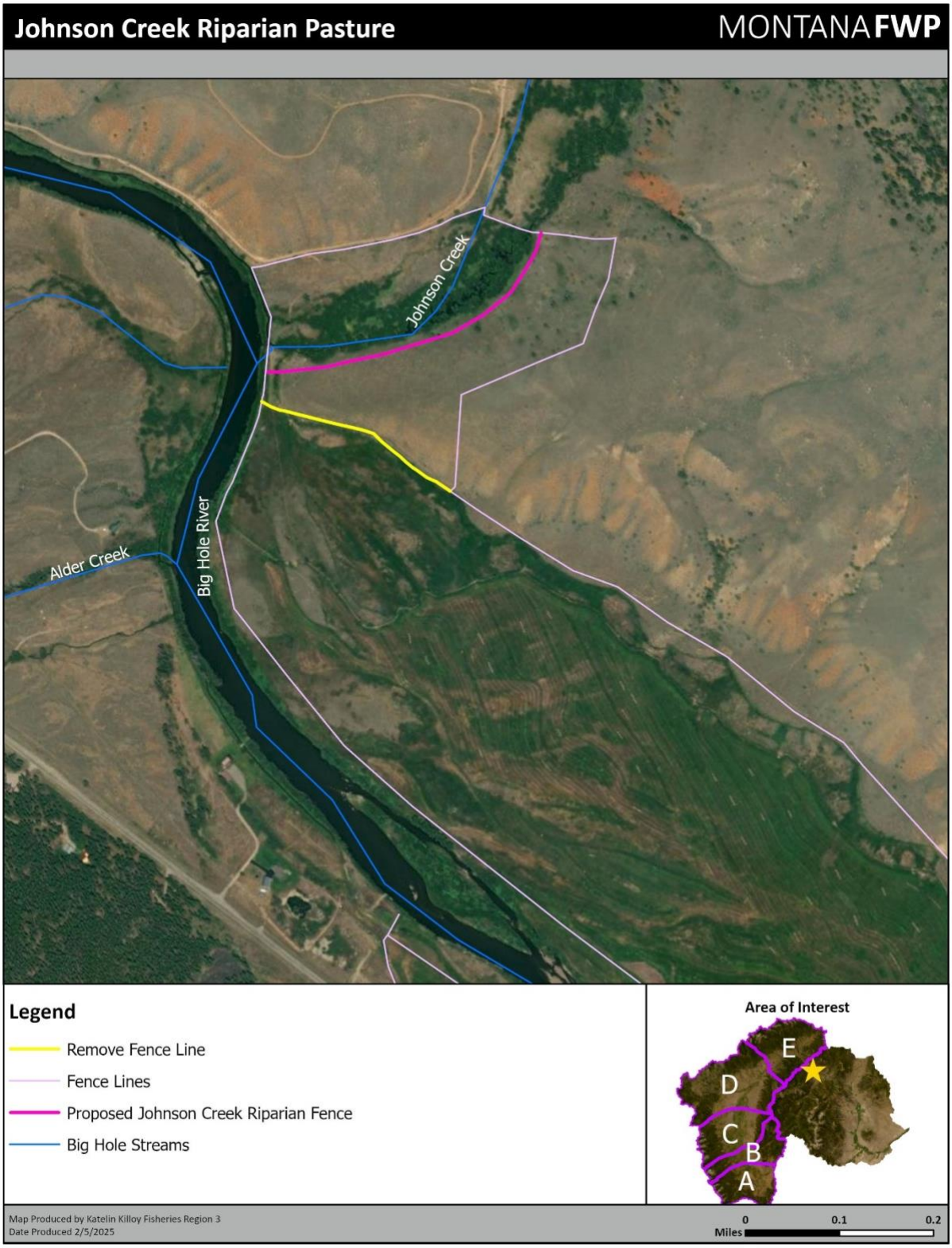

Figure 2. Proposed riparian fence along Johnson Creek on the Big Hole Preserve.

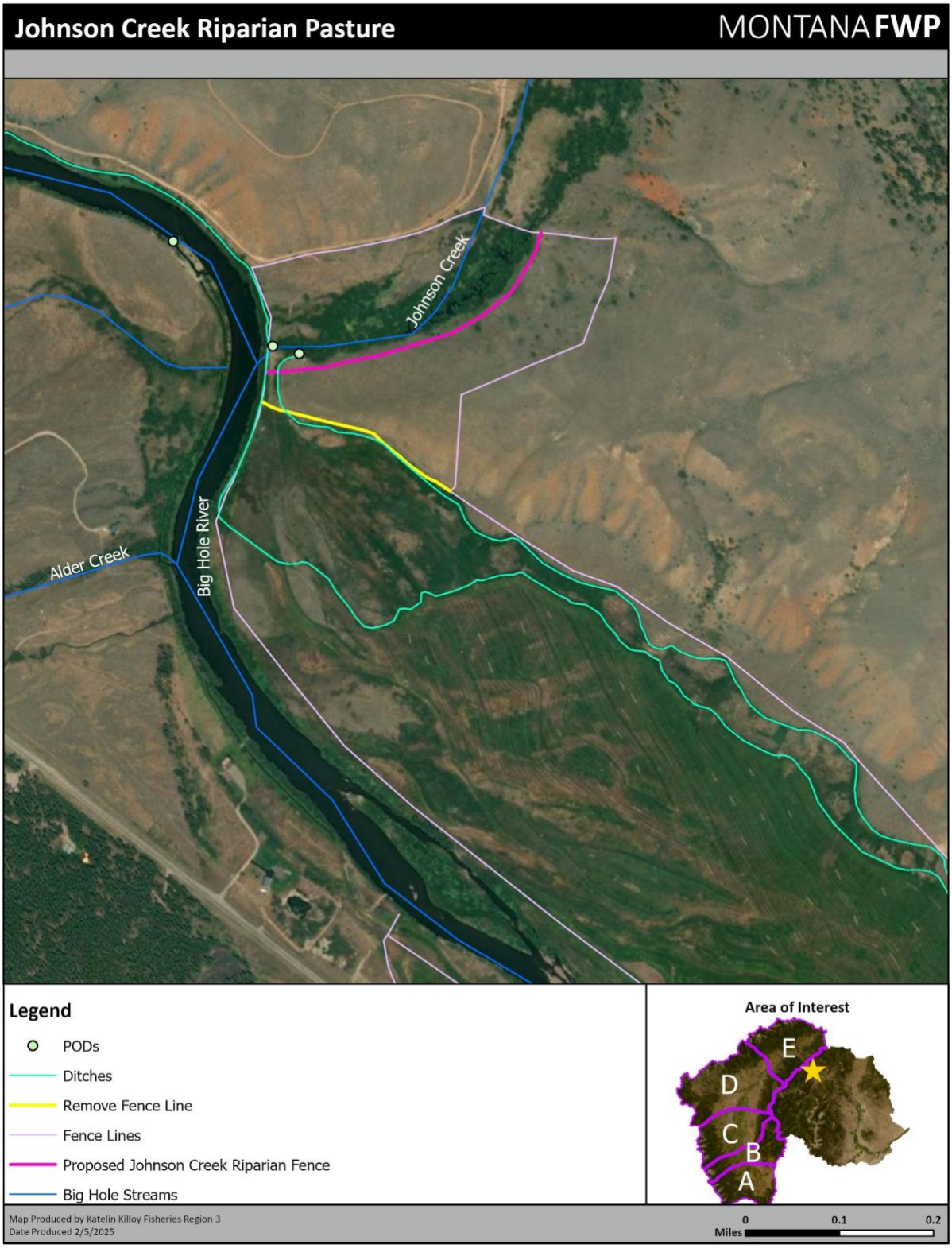

Figure 3. Ditches on the Big Hole Preserve property that will provide stock water to cattle.

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George Grant TU
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Cold Clean Fishable Water

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

May 8, 2025

Dear Michelle McGree and the Future Fisheries Citizens Review Panel,

Please accept this letter from the George Grant Chapter of Trout Unlimited (GGTU) in support of Montana Trout Unlimited's (MTU) proposal to reconnect Johnson Creek, a tributary to the Big Hole River, a river we've invested deeply in for over 50 years. At our April 17th board meeting, GGTU committed up to $25,000 in chapter funds as a match for the Future Fisheries Improvement Program grants and other funding sources.

The Upper Big Hole River, home to the last aboriginal population of fluvial Arctic grayling, is one of the most chronically dewatered rivers in Montana. Furthermore, the Big Hole has experienced one of the most well-documented and publicized declines in wild trout populations in the West. The latter has resulted in a significant economic decline in the region's recreational economy. MTU and GGTU have prioritized the Big Hole for investment in critical drought adaptation strategies.

The goals of this project are to reconnect Johnson Creek to the Big Hole where it currently doesn't exist, maintain flood irrigation water delivery, and restore fish passage for spawning and thermal refugia to more than 10 miles of tributary habitat. A water rights change to maximize the potential from Johnson Creek is being managed by FWP to keep more coldwater in Johnson Creek and the Big Hole River during critical low-flow periods.

Projects like this align with our mission statement to: Conserve, Protect, and Restore cold water fisheries and their watersheds in southwest Montana. This is a rare project that has the potential to not only reconnect a key tributary but also provide instream flow for a critically dewatered portion of the Big Hole. GGTU is enthusiastic to offer our support.

Thank you for the opportunity to comment.

Alex Leone
Vice President, George Grant TU
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president@ggtu.org

BIG HOLE
WATERSHED COMMITTEE
Conservation Through Consensus.

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5/14/2025

RE: FFIP Application for the Big Hole Tributary Reconnection, Phase 1 - Johnson Creek

Dear Michelle McGree and the Future Fisheries Citizens Review Panel,

Please accept this letter from the Big Hole Watershed Committee (BHWC) in support of Montana Trout Unlimited's (MTU) proposal to reconnect Johnson Creek to the Big Hole River. Established in 1995, the BHWC is a watershed group and central hub of diverse viewpoints on resource and community concerns. We are a consensus-based 501(c)(3) nonprofit organization dedicated to the conservation of the Big Hole River and the surrounding watershed. Our work is comprehensive, spanning floodplains, communities, wildlife, water, and fisheries.

The Upper Big Hole River is home to the last aboriginal population of fluvial Arctic grayling and has experienced one of the most well-documented and publicized declines in wild trout populations in the West, which has impacted the region's recreation economy. BHWC is glad to support and work with MTU to prioritize the Big Hole watershed for investment in critical drought adaptation strategies. Much like the BHWC, MTU strives to complete voluntary, win-win conservation projects with landowners and land management agencies.

This project, at its simplest, seeks to fully reconnect Johnson Creek's cold water to the Big Hole, where it currently gets put into a ditch. The work will maintain flood irrigation water delivery and restore fish passage for spawning and thermal refugia to more than 10 miles of tributary habitat. We are working on a large riparian restoration project on the same property and want to deliver wins for this new, large conservation-minded landowner. Success with this effort will certainly increase goodwill and future projects for the fish. Thank you for the opportunity to comment in support of this project.

Pedro Marques
Executive Director
pmarques@bhwc.org
406-552-2369

TROUT UNLIMITED
CHUCK ROBBINS CHAPTER #656

May 14, 2025

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

RE: Big Hole Tributary Reconnection, Phase 1 – Johnson Creek

Dear Michelle McGree and the Future Fisheries Citizens Review Panel,

Please accept this letter from the Chuck Robbins Chapter of Trout Unlimited (CRTU) in support of Montana Trout Unlimited's (MTU) project to reconnect Johnson Creek, a tributary to the Big Hole River. CRTU has committed $5,000 in chapter funds as a match for the Future Fisheries Improvement Program grants and other funding sources.

The Upper Big Hole River, home to the last aboriginal population of fluvial Arctic grayling, is one of the most chronically dewatered rivers in Montana. Furthermore, the Big Hole has experienced one of the most well-documented and publicized declines in wild trout populations in the West. The latter has resulted in a significant economic decline in the region's recreational economy. MTU and CRTU have prioritized the Big Hole for investment in critical drought adaptation strategies. It is also a favorite place for our membership to fish, camp, and float.

The goals of this project are to reconnect Johnson Creek to the Big Hole where it currently doesn't exist, maintain flood irrigation water delivery, and restore fish passage for spawning and thermal refugia to more than 10 miles of tributary habitat.

Projects like this align with our Chapter's mission to: Conserve, Protect, and Restore cold water fisheries and their watersheds in southwest Montana. This is a rare project that has the potential to not only reconnect a key tributary but also provide instream flow for a critically dewatered portion of the Big Hole. CRTU is enthusiastic to offer our support.

Thank you for the opportunity to comment.

Mike Geary
President, Chuck Robbins Chapter of Trout Unlimited
~~270 Tuke Ln.~~ P.O. Box 581
Twin Bridges, MT 59754
406.459.2030

Big Hole River Preserve, LLC.
C/O The Allemall Foundation, INC.
117 W. Patrick St. Suite 200
Frederick, MD 21701

Future Fisheries Improvement Program
FWP Fisheries Division
P.O. Box 200701
Helena, MT 59620
Submitted Electronically

RE: FFIP Application for the Big Hole Tributary Reconnection, Phase 1 - Johnson Creek

Dear Michelle McGree and the Future Fisheries Citizens Review Panel,

I am writing you today to express our permission for Montana Trout Unlimited (MTU) to apply for project funding on our behalf. MTU's mission is to Conserve, Protect, and Restore Montana's coldwater fisheries and their watersheds. We share a common goal with MTU to improve the Big Hole fishery which is the main focus that led us to buy the Elkhorn Ranch, MT (Elkhorn) a couple of years ago.

On the western portion of Elkorn, known as the Big Hole River Preserve LLC (BHRP), we have two unique opportunities to reconnect two cold water tributaries, Alder and Johnson Creeks, to the Big Hole River (BHR) just downstream of Dickie Bridge. The application MTU is submitting is for funding for Phase 1 – Johnson Creek (JC). Currently, a sizeable amount of its water volume is diverted for flood irrigation while the remaining volume goes towards the BHR where, unfortunately, the existing irrigation ditch that runs parallel to BHR, captures the remaining waters of JC during irrigation season. The project aims to reconnect JC directly to BHR, bypassing the existing BHR irrigation ditch.

The water from JC in the summer months is about 12 degrees cooler than the BHR based on monitoring results last year by the State and is the opinion of BHRP together with the Montana Fish, Wildlife, and Parks (FWP), that spawning will increase dramatically in JC because the fish will be able to access it directly from the BHR instead of through the BHR irrigation ditch, which is currently its only access to JC. There was a census taken twice last year and identified four species of trout that are not as sensitive to warmer waters that exist in the BHR irrigation ditch, so the reconnection of JC directly to BHR is critical to the other species that will be stimulated to go up creek directly to BHR because of the colder temperatures.

The BHRP is working through a more holistic landowner agreement with MTU and FWP. In the meantime, please consider this letter our support of MTU's application to the Future Fisheries Improvement Program.

Thank you for the opportunity to help us help BHR.

Edward Scott
Managing Member