# FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

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

## I. APPLICANT INFORMATION

A. Applicant Name: Katelin Killoy

Mailing Address: 730 ½ N Montana St.

City: Dillon State: MT Zip: 59725

Telephone: 406-596-1999 E-mail: Katelin.killoy@gmail.com

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 Grazing Association

Mailing Address: PO Box 521

City: Twin Bridges State: MT Zip: 59754

Telephone: 406-596-0449 E-mail: lmaddox0622@gmail.com

## II. PROJECT INFORMATION

A. Project Name: Rock Creek Headgates

River, stream, or lake: Rock Creek tributary to the Big Hole River

Location: Township: 4 South Range: 16 West Section: 10

Latitude: 45.4964450 Longitude: -113.5716687 *Within project (decimal degrees)*

County: Beaverhead

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

Presently there are three diversions on Rock Creek, a tributary to the Big Hole River, that lack infrastructure for finetune adjustments for diverted irrigation water during low flow conditions. Additionally, with the current infrastructure, Big Hole Grazing Association has not been able to use their full water right. The goal of this project is to improve irrigation efficiency and provide measuring devices, while maintaining year-round fish passage.

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

The Rock Creek Headgates Project will address two of the primary threats faced by Arctic grayling through the removal of barriers to fish passage and instream flow. Three diversions will be constructed from new and old material to provide improved instream flow and fish passage on Rock Creek, a tributary of the Big Hole River. These PODs include Burges 1, Burges 2, and Jones Lynn on Rock Creek. Currently, the irrigation infrastructure at these PODs are non-functioning and pose an impediment to upstream Arctic grayling migration by physical barriers and flow barriers.

Managing flow in Rock Creek will have significant impacts on the Big Hole River as Rock Creek confluences with the mainstem Big Hole River directly upstream of the Wisdom Bridge, a critical real-time gauge site for monitoring river flow triggers. Maintaining sufficient flow through this section of the Big Hole River will ensure grayling access to spawning and rearing habitat within the mainstem of the Big Hole River as well as spawning and refugia tributaries.

Additionally, at all proposed PODs, Big Hole Grazing Association is not able to accurately measure and finely tune irrigation withdrawals during low summer flows nor are they able to completely shut off irrigation withdrawals at these diversions. Lack of functioning structures further reduces water availability to Arctic grayling and other native fishes during the critical summer period.

**Project Descriptions:**

Burges 1 & Burges 2
The current infrastructure on both the Burges 1 and Burges 2 diversions off Rock Creek is nonexistent or entirely nonfunctioning. Burges 1 has a flume which is no longer usable and an old wooden headgate that does not fully close or allow for any irrigation adjustments to be made. Burges 2 has no functioning infrastructure, and the landowner has no control over irrigation take. For both of these diversions, we propose installing new 36” screw gates with squash culvert and new 3’ flumes with wingwalls within the ditch to allow for fine tune water adjustments during the irrigation season. Within the stream, we propose installing a rock bed aggradation structure to maintain fish passage while diverting water to the irrigation ditch. Additionally, 100’ of ditch will be cleaned below structures on each ditch to ensure accurate flume measurements.

Jones Lynn
The Jones Lynn diversion on Rock Creek poses a physical barrier to fish passage with its current irrigation infrastructure. The old pin & plank structure within the creek has a concrete footer that makes fish passage impossible during the irrigation season and low flows. Additionally, the ditch has an old wooden slide gate that does not fully shut, and the existing flume is nonfunctioning. To open fish passage through this diversion and allow for proper water management, we will remove and replace the existing pin & plank with a rock bed aggradation structure, install a new 36” screw gate with squash culvert, install a new 3’ flume with wingwalls, and clean 100’ below ditch structures.

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

Currently old infrastructure has been washed out and damaged from previous spring runoff events, leading to scour at the headgate locations and downstream. Once the infrastructure has been replaced the banks will stay stable, allowing for willows and sedges to reestablish, and fish passage will be opened to Arctic grayling and other salmonids.

E. Length of stream or size of lake that will be treated (project extent): 1 mile of Rock Creek

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

F. Project Budget Summary:

| | | |
|---|---|---|
| **Grant Request (Dollars):** | **$** | **48,000** |
| Matching Dollars: | **$** | **48,000** |
| Matching In-Kind Services:* | **$** | |

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

| | | |
|---|---|---|
| Other Contributions (not used as match) | **$** | |
| **Total Project Cost:** | **$** | **96,000** |

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:

**Biologist statement from Ryan Kreiner**

## 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.*

This project is part of Big Hole Grazing Association's Site-Specific Conservation Plan (SSP) through the Big Hole Arctic Grayling CCAA. The SSPs address threats to Arctic Grayling on the landowner's property including fish passage and instream flow. The SSP is a 10-year agreement that has been signed in 2025 by Big Hole Grazing Association. The landowner has implemented numerous conservation projects for Arctic grayling in good faith and successfully improved habitat, stream flows and connectivity that have benefited Arctic grayling and other native and sportfish. The landowner has signed both MFWP and USFWS landowner agreements (20 and 10-year agreements, respectively).

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.*

In cooperation with the CCAA program, the landowner has continually worked with FWP on grazing schedules in compliance with their SSP. The current grazing plan calls for a high intensity short duration grazing with riparian pastures to be deferred to the late fall, winter.

Due to the historical importance and potential for Rock Creek to be a grayling spawning tributary of the Big Hole River, site-specific plans include separate flow agreements. The flow agreements include limiting withdrawals of water when flows at the Wisdom Bridge Gaging Station drop below 160 cfs between April 25th and June 30th and below 60 cfs between July 1st and October 9th. At minimum, management of diversions that 25% of the available flow be left instream. The mouth of Rock Creek at the confluence of the Big Hole River needs to maintain a minimum of 2 cfs.

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?

The project will be monitored twice a year as a part of the CCAA program during the beginning and end of the water right's period of use. On a downstream landowner's property also enrolled in the CCAA program there is a Tru Track to monitor water temperature and stream stage. Additionally, FWP annually monitors grayling abundance and genetic diversity downstream of the project area in the Big Hole River. Ongoing large-scale restoration efforts in the Big Hole River have positively influenced the overall grayling population and provides resilience to drought and other threats identified in the State of Montana's Upper Missouri River Arctic Grayling Conservation Strategy (2022).

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

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

Arctic grayling (*Thymallus arcticus*), a designated Species of Concern by the State of Montana.

Rock Creek was a historically occupied Arctic grayling spawning stream. With declines in the Big Hole Arctic grayling population during the late 20th Century, grayling stopped using Rock Creek as a spawning channel. Previous reintroductions throughout 2010-2013 were unsuccessful to establish a spawning population in Rock Creek. However, in 2025 a private landowner observed adult Arctic grayling below the Burges 2 diversion on Rock Creek. Whether Arctic grayling have naturally reestablished in this stream or are using it as thermal refugia, it is imperative to keep this stream section open to upstream passage for their potential occupancy. Increasing instream flows during the irrigation season will also have significant benefits to Arctic grayling migration by maintaining enough flow in the channel for access to thermal refugia sites. The CCAA program works with four (4) participating landowners on Rock Creek. Roughly 80% (8.1 miles of 10.2 miles) of Rock Creek falls within enrolled acres within the CCAA program below the National Forest Boundary to the confluence of the Big Hole River. Enrolled landowners follow site-specific plans which have specific conservation efforts outlined and are pertinent to their specific property and operation.

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

Restoring fish passage will provide connectivity to Arctic grayling and other native fish in the system to access spawning areas and thermal refugia. Additionally, improved instream flows will increase water over riffles for fish passage and sustain cool water temperatures. Rock Creek struggles to maintain flows to the Big Hole River late in the year and any increase in instream flows will improve downstream habitat.

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

Improved riparian health of the Big Hole River will benefit Arctic grayling by maintaining cold water and fish passage in important conservation reaches. This provides the public an opportunity to appreciate and catch a unique Montana species.

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.

This project will increase public opportunity of a quality fishing experience by improving conditions for Arctic grayling persistence in the Big Hole River.

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

This project is part of an ongoing, large-scale habitat improvement program in the Big Hole River which has positively influenced grayling population levels since its inception. Improved riparian health of Rock Creek equates to improved spawning and adult habitat conditions for grayling that migrate large distances within the Big Hole River, and more opportunity for the public to appreciate and catch a unique Montana species. Additionally, a stable and healthy grayling population eliminates the need to protect Arctic grayling under the ESA, which would place restrictions on land-use and angling.

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

No. Project will not interfere with any water rights or property rights.

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

No. The project is located on a working ranch. There will be no development of commercial recreational use.

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: Katelin Killoy Date: 5/15/2026

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<br>Fish Habitat Bureau<br>PO Box 200701<br>Helena, MT 59620-0701 | Email: | Future Fisheries Coordinator<br>FWPFFIP@mt.gov<br>(electronic submissions must be signed)<br>For files over 10MB, use https://transfer.mt.gov and send to bailey.duxbury@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 | | | | $ - | | | | $ - |
| Design | | | | $ - | | | | $ - |
| Engineering | | | | $ - | | | | $ - |
| Permitting | | | | $ - | | | | $ - |
| Oversight | | | | $ - | | | | $ - |
| Maintenance** | | | | $ - | | | | $ - |
| | | | Sub-Total | $ - | $ - | $ - | $ - | $ - |
| **Travel** | | | | | | | | |
| Mileage | | | | $ - | | | | $ - |
| Per diem | | | | $ - | | | | $ - |
| | | | Sub-Total | $ - | | $ - | $ - | $ - |
| **Construction Materials** | | | | | | | | |
| 36" screw gate with squash culvert | 3 | | $9,500.00 | $ 28,500.00 | 14,250.00 | 14,250.00 | | $ 28,500.00 |
| 3' flume with wingwalss | 3 | | $4,900.00 | $ 14,700.00 | 7,350.00 | 7,350.00 | | $ 14,700.00 |
| rip rap | 3 | | $2,600.00 | $ 7,800.00 | 3,900.00 | 3,900.00 | | $ 7,800.00 |
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | Sub-Total | $ 51,000.00 | $ 25,500.00 | $ 25,500.00 | $ - | $ 51,000.00 |
| **Equipment, Labor, and Mobilization** | | | | | | | | |
| mobilization and demobilization | 3 | | $4,000.00 | $ 12,000.00 | 6,000.00 | 6,000.00 | | $ 12,000.00 |
| transport and installation of flumes | 3 | | $2,700.00 | $ 8,100.00 | 4,050.00 | 4,050.00 | | $ 8,100.00 |
| transport and installation of screwgates | 3 | | $3,700.00 | $ 11,100.00 | 5,550.00 | 5,550.00 | | $ 11,100.00 |
| haul and place rip rap | 3 | | $1,600.00 | $ 4,800.00 | 2,400.00 | 2,400.00 | | $ 4,800.00 |
| clean ditch approximately 100' each | 3 | | $3,000.00 | $ 9,000.00 | 4,500.00 | 4,500.00 | | $ 9,000.00 |



(Revised 5/18/2026)

## BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | Sub-Total | $ 45,000.00 | $ 22,500.00 | $ 22,500.00 | $ - | $ 45,000.00 |
| | | | **OVERALL TOTALS** | $ 96,000.00 | $ 48,000.00 | $ 48,000.00 | $ - | $ 96,000.00 |

**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) |
|---|---|---|---|---|
| **USFWS Fish Passage Funding** | $ - | $ 48,000.00 | $ 48,000.00 | Y |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| **TOTALS** | $ - | $ 48,000.00 | $ 48,000.00 | |

## 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) |
|---|---|---|---|---|
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |

## BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

| | | | | |
|---|---|---|---|---|
| | $ - | $ - | $ - | |
| **TOTALS** | $ - | $ - | $ - | |

# MONTANA FISH, WILDLIFE & PARKS

## Future Fisheries Improvement Program

### *Appendix: FWP Statement*

Project Title: Rock Creek Headgates

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

Rock Creek is a tributary to the Big Hole River near Wisdom, Montana. Rock Creek joins the Big Hole directly upstream of the USGS gaging site which has been critically low during the last few years of prolonged drought. Despite low flows, the area has still produced significant amounts of age 0 grayling. Grayling are more tolerant of low flows and warmer temperatures than other native salmonids in Montana, but have shown increased growth, abundance, and distribution when flows are increased. Additionally, during periods of extreme low summer baseflows, all contributions of flow are significant. This project will provide enrolled landowners the ability to precisely control irrigation withdrawals and to shut off water when flow triggers are met. Additionally, diversion structures may become migration barriers during low flows and fish passage will be incorporated into the design of these three structures.

The upper Big Hole River CCAA program has been highly successful at improving the grayling population by addressing four primary threats: 1) Reduced Streamflows, 2) Riparian Health, 3) Barriers to grayling movement, and 4) Entrainment in irrigation ditches. The program has been so successful that the US Fish and Wildlife Service specifically called out the program as a primary reason in their 2020 finding that Upper Missouri River Arctic grayling were not warranted for protections under the Endangered Species Act. Specifically, they state that *Conservation actions associated with the Big Hole CCAA and Strategic Habitat Conservation Plan have reduced water temperatures in tributaries, increased instream flows in tributaries and the mainstem Big Hole River, decreased the duration of stressful or lethal water temperatures for Arctic grayling, connected almost all core habitat so Arctic grayling can access thermal refugia if water temperatures become too warm in parts of the Big Hole River system, and improved riparian health.* Further, they conclude that *It is now apparent that these threats are being effectively mitigated on private land (Big Hole River) by conservation actions under the Big Hole CCAA and do not appear to be present or acting at a level to warrant concern on most of the other populations.* This project will specifically address two of these threats, fish passage and reduced streamflows.

Name of FWP Biologist Ryan Kreiner Date: 5/11/2025

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

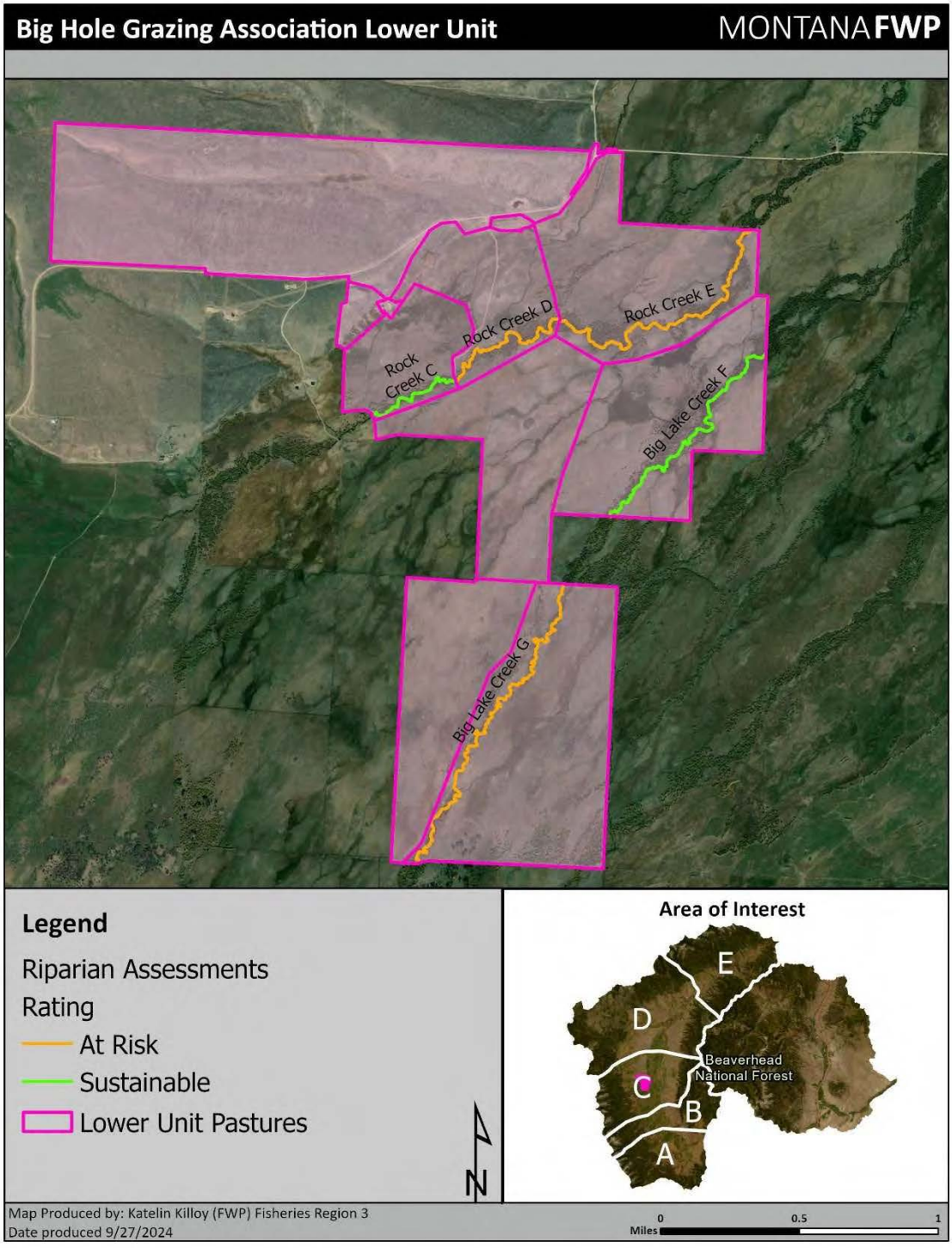



**Figure 7.** Riparian assessment status along the creeks in Participating Landowner's Lower Unit enrolled in the CCAA. Letters on the inset map depict CCAA Management Segments.

Reach C – This reach of Rock Creek rated "Sustainable" in the 2023 riparian assessments with a score of 82%. The Agencies recommend no more than a total of 84 AUMs for the #24 Wetlands Pasture in the Lower Unit during late fall or winter use (assumptions: AUM = 915lbs, 1500lb cow with fetus, and consumption of 2% of body weight per day).

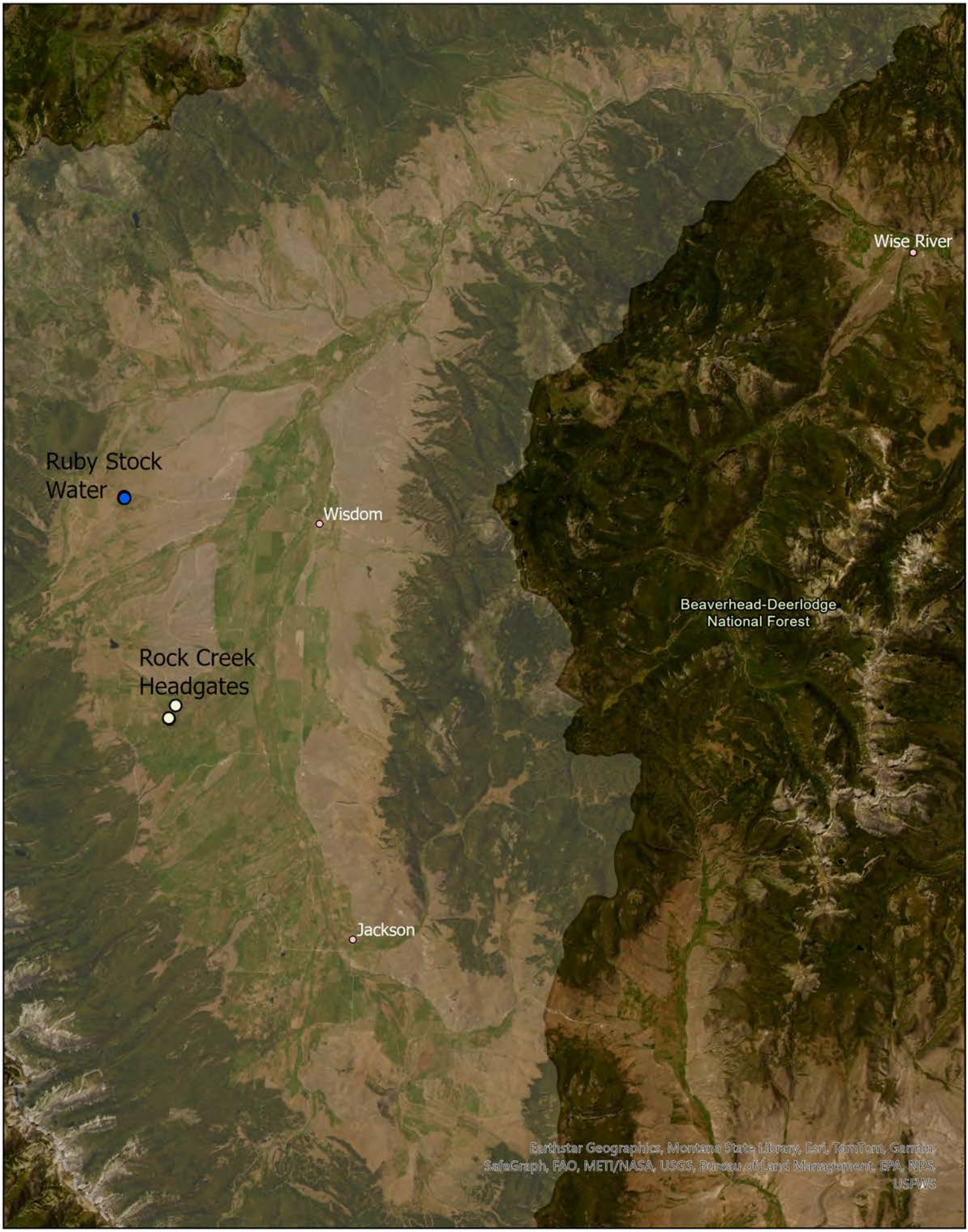
Reach D – This reach of Rock Creek rated "At Risk" in the 2023 riparian assessments with a score of 78%. This reach is static and just under the "Sustainable" rating. The "At Risk" score is attributed to lack of riparian/wetland vegetation cover and high colonization of introduced graminoids. The Agencies recommend no more than a total of 105 AUMs for the #18 South Corrals Pasture in the Lower Unit during late fall or winter use (assumptions: AUM = 915lbs, 1500lb cow with fetus, and consumption of 2% of body weight per day).

Reach E – This reach of Rock Creek rated "At Risk" in the 2023 riparian assessments with a score of 70%. The 2023 score is attributed to active lateral erosion on the outside banks, poor width to depth ratio resulting in imbalance of the sediment and water supplied by the watershed, and high colonization of introduced graminoids. Reach E has improved greatly from the "Non-Sustainable" rating in 2018 due to increased cover of *Carex* and *Salix* species with recruitment of seedlings and saplings. The Agencies recommend no more than a total of 185 AUMs for the #19 East Corral Pasture in the Lower Unit during late fall or winter use (assumptions: AUM = 915lbs, 1500lb cow with fetus, and consumption of 2% of body weight per day).

Reach F – This reach of Big Lake Creek rated "Sustainable" in the 2024 riparian assessments with a score of 98%. The Agencies recommend no more than a total of 133 AUMs for the #20 Lake Creek Pasture in the Lower Unit during late fall or winter use (assumptions: AUM = 915lbs, 1500lb cow with fetus, and consumption of 2% of body weight per day).

Reach G – This reach of Big Lake Creek rated "At Risk" in the 2024 riparian assessments with a score of 55%. The 2024 score is attributed to lateral erosion on the outside and inside banks, poor width to depth ratio resulting in imbalance of the sediment and water supplied by the watershed, high colonization of introduced graminoids, and heavy browsing on available trees and shrubs. The Agencies recommend no more than a total of 203 AUMs for the #22 East Pons Pasture in the Lower Unit during late fall or winter use (assumptions: AUM = 915lbs, 1500lb cow with fetus, and consumption of 2% of body weight per day).

If Reach D, Reach E, or Reach G do not improve by the 2028 or 2033 riparian assessments, or Reach D or Reach G drops down to "At Risk", the Agencies will work Participating Landowner to identify changes in stocking rate, grazing timing, or grazing frequency to improve riparian health.


Wise River
Ruby Stock Water
Wisdom
Beaverhead-Deerlodge National Forest
Rock Creek Headgates
Jackson
Earthstar Geographics, Montana State Library, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USFWS

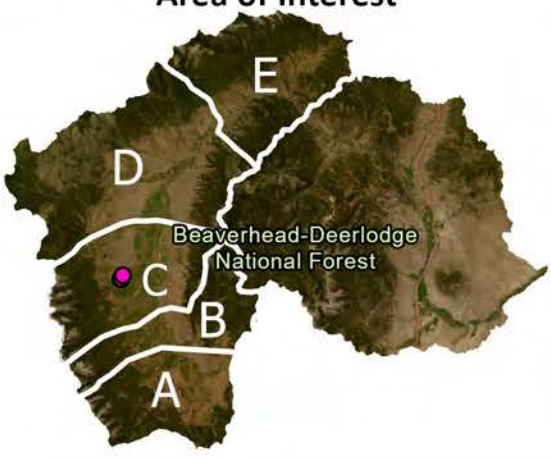
# Big Hole Grazing Association Headgates

MONTANA FWP


## Legend

- Big Hole Streams
- Montana_Off_System_Routes
- Big Hole Grazing Association

Area of Interest




N

Map Produced by: Katelin Killoy (FWP) Fisheries Region 3
Date produced 2/17/2026

0 0.4 0.8
Miles

**Jones Lynn Ditch:** 45.49648, -113.57262

- BHGA
- Current slide gate is heavy and doesn't fully shut
    - Needs new screwgate in the ditch
- Flume is not set
- Replace pin and plank with rock structure

Old slide gate that does not function.

Old pin and plank across Rock Creek blocking fish passage.

**Burges Ditch Headgate:** 45.49684, -113.57317

- BHGA
- Has flume- needs to be reset
- Needs new screwgate in the ditch
- Add rock structure in the stream

Old pin and plank on the ditch entrance.

Sedimented in flume (measuring device).

**Burges 2/Peterson Headgate**: 45.50455, -113.56738

- BHGA
- Has a pipe that does nothing
    - Needs a new screwgate in the ditch
- Remove old headgate (that is on the bank)
    - Add rock structure in the stream
- Reset flume

Old pipe for the ditch that is no longer aligned with the ditch.

Pin and plank that was once in Rock Creek to divert flows into the ditch, is now on the bank.