# FUTURE FISHERIES IMPROVEMENT PROGRAM

## FUNDING RECOMMENDATIONS
## SUMMER 2022

1) **Miller Creek restoration MPG (019-2022).** Miller Creek (Missoula County) is a tributary to the Bitterroot River near Lolo that supports populations of westslope cutthroat trout and brook trout. It is on the 2016 Clean Water Act 303(d) list for temperature and sediment impairments and also has high conservation value for native cutthroat trout. Historically, Miller Creek was moved and straightened, causing bank incision and erosion, reduced riparian vegetation, and reduced habitat quality. The project applicant and landowner intend to improve stream function, floodplain connectivity, riparian vegetation, and instream habitat by installing large instream wood structures, beaver mimicry structures, and woody debris matrix streambank treatments, by lowering the streambanks, planting vegetation, and activating or adjusting the current or old channels. The goals are to improve fish and riparian habitat while also improving temperature and sediment impairments. FFIP supported a 2019 project on the Anderson property ($28,400) a 2021 project on the Wustner Ranch ($15,000), and a 2021 project on Little Park Creek (a tributary; $20,000).

<table>
<tr><td>REQUEST</td><td>$20,700</td><td rowspan="5">ITEMS REQUESTED BY APPLICANT</td><td rowspan="5">Containerized plants and trees, habitat structures</td></tr>
<tr><td>MATCH</td><td>$98,146</td></tr>
<tr><td>OTHER CONTRIBUTIONS</td><td>$0</td></tr>
<tr><td>% REQUESTED</td><td>17%</td></tr>
<tr><td>TOTAL COST</td><td>$118,846</td></tr>
<tr><td colspan="4">FWP STAFF RECOMMENDATION: Fully Fund ($20,700).</td></tr>
<tr><td colspan="4">REVIEW PANEL RECOMMENDATION: Fully Fund ($20,700).</td></tr>
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*Link to application:* https://myfwp.mt.gov/getRepositoryFile?objectID=106402

2) **Bighorn River side channel reactivation (014-2022).** The Bighorn River (Bighorn County) is one of Montana's premier trout fisheries. The river supports populations of warmwater species (longnose and white suckers, longnose dace, channel catfish) but trout are the focus of this project (brown trout, rainbow trout). The Bighorn was dammed in 1966 (Yellowtail Dam built at Fort Smith), which affected sediment transport and reduced side channel habitat due to sediment deposition at channel

heads and vegetative encroachment. This project would build on a pilot side channel reconnection project by completing 12 side channel reconnections with the intention of achieving stream function at the lower flows produced by the dam. Habitat complexity would also be improved in areas with oversimplified bedform features. The goals are to improve stream and ecological function, enhance habitat, and increase angling opportunities by improving trout populations.

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| REQUEST | $60,000 | ITEMS REQUESTED BY APPLICANT | Construction oversight, excavator/operator |
| MATCH | $110,663 | | |
| OTHER CONTRIBUTIONS | $0 | | |
| % REQUESTED | 35% | | |
| TOTAL COST | $170,663 | | |
| FWP STAFF RECOMMENDATION: Fully fund (**$60,000**) but request that livestock use be added to monitoring activities to track possible future fencing needs. | | | |
| REVIEW PANEL RECOMMENDATION: Fully fund (**$60,000**). | | | |

*Link to application:* https://myfwp.mt.gov/getRepositoryFile?objectID=106395
https://myfwp.mt.gov/getRepositoryFile?objectID=106396

3) **Bryant Creek fish barrier (014-2022).** Bryant Creek (Beaverhead County) is a tributary to the Big Hole River, 9 miles northwest of Wise River. In its uppermost 1 mile of stream, 100% pure westslope cutthroat trout are separated from downstream brook trout by a natural cascade fish barrier. This project would install a treated wood fish barrier approximately 1.5 miles above the confluence with the Big Hole River. Following this project, the brook trout would be removed with rotenone and the stream would be restocked with westslope cutthroat trout, increasing available habitat from 1 mile to 11 miles. The goal is to conserve westslope cutthroat trout both in Bryant Creek and east of the Continental Divide in the Upper Missouri drainage. The fish removal portion of the project was approved by the Fish & Wildlife Commission in December 2021.

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| REQUEST | $15,000 | ITEMS REQUESTED BY APPLICANT | Lumber, site preparation, barrier installation |
| MATCH | $21,000 | | |
| OTHER CONTRIBUTIONS | $0 | | |
| % REQUESTED | 43% | | |

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| TOTAL COST | $35,000 | | |
| FWP STAFF RECOMMENDATION: Fully fund (**$15,000**). | | | |
| REVIEW PANEL RECOMMENDATION: Fully fund (**$15,000**). | | | |

*Link to application:* https://myfwp.mt.gov/getRepositoryFile?objectID=106397

4) **Buer Pond fencing (016-2022).** Buer Pond (Daniels County) is a 1 acre waterbody located 7 miles east of Scobey. It contains self-sustaining populations of largemouth bass and yellow perch, and serves as a donation source to populate other waterbodies. It is on private land but is managed as a public fishery. Cattle have been able to access the pond, leading to reduced and trampled vegetation. This project would fence the pond area, excluding it from cattle grazing. The goal is to improve riparian and near-shore emergent vegetation, which is expected to enhance critical spawning and rearing habitat for fish.

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| REQUEST | $6,650 | ITEMS REQUESTED BY APPLICANT | Construction materials, labor |
| MATCH | $2,850 | | |
| OTHER CONTRIBUTIONS | $0 | | |
| % REQUESTED | 70% | | |
| TOTAL COST | $9,500 | | |
| FWP STAFF RECOMMENDATION: Fully fund (**$6,650**) but ask for wildlife friendly fence. | | | |
| REVIEW PANEL RECOMMENDATION: Fully fund (**$6,650**). | | | |

*Link to application:* https://myfwp.mt.gov/getRepositoryFile?objectID=106398

5) **Middle Fork Judith road decommission and rehab (017-2022).** The Middle Fork Judith River (Judith Basin County) is a tributary to the Judith River southwest of Hobson that contains populations of westslope cutthroat trout / rainbow trout hybrids, brook trout, rocky mountain whitefish, sculpin, and other cool and warmwater species. In the project location (phase 5), extensive and increasing use of a forest road led to river fords in 17 locations with 49 discrete entrances impacting the river. The road network affects the river by causing erosion and sediment deposition, which reduces water quality and available fish habitat. This project would decommission 2.5 miles of riparian road and rehabilitate damaged streambanks with locally available materials. The goal is to return the stream to a naturally-functional state, which will promote

healthy sediment transport and improve habitat for invertebrates and fish species. This phase is number 5, following 4 previous phases of work in this area.

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| REQUEST | $40,000 | ITEMS REQUESTED BY APPLICANT | Labor and equipment |
| MATCH | $67,482 | | |
| OTHER CONTRIBUTIONS | $6,350 | | |
| % REQUESTED | 35% | | |
| TOTAL COST | $113,832 | | |
| FWP STAFF RECOMMENDATION: Fully fund (**$40,000**) and ask for additional detail on contracting and post-project enforcement. | | | |
| REVIEW PANEL RECOMMENDATION: Fully fund (**$40,000**). | | | |

*Link to application:* https://myfwp.mt.gov/getRepositoryFile?objectID=106399
*Link to record of decision:* https://myfwp.mt.gov/getRepositoryFile?objectID=106400

6) **North Boulder fish passage (020-2022).** The North Boulder River (Jefferson County) is a tributary to the Boulder River, near Whitehall. It contains brown trout, rainbow trout, mountain whitefish, and other species including sculpin and crayfish. In the project area, three irrigation diversions entrain fish and one diversion restricts seasonal fish movement. This project would focus on the removal of the diversion restricting fish passage (Shaw Diversion) and the restoration of the project site. Other, related projects would address the remaining diversions and water rights. The goal is to attain unobstructed movement for aquatic organisms in the North Boulder River and to improve natural stream function. This is expected to translate to improved brown trout populations. A Future Fisheries project was funded at this location in 2001 ($8,000) to install a fish ladder, which has proven to be only partially effective.

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| REQUEST | $41,000 | ITEMS REQUESTED BY APPLICANT | Willow and woody debris matrix, irrigation plugs, labor/equipment, stockwater |
| MATCH | $183,200 | | |
| OTHER CONTRIBUTIONS | $0 | | |
| % REQUESTED | 18% | | |
| TOTAL COST | $224,200 | | |
| FWP STAFF RECOMMENDATION: Fully fund (**$41,000**). | | | |
| REVIEW PANEL RECOMMENDATION: Fully fund (**$41,000**). | | | |

*Link to application:* https://myfwp.mt.gov/getRepositoryFile?objectID=106403

7) **Mill Creek fish barrier supplement (018-2022).** Mill Creek (Park County) is a tributary to the Yellowstone River in Paradise Valley. It contains conservation populations of native Yellowstone cutthroat trout (YCT) and is one of the few remaining areas where gene flow potentially occurs between distinct populations of YCT inhabiting most streams throughout the watershed (i.e., a metapopulation). In 1995, a boulder fish barrier was built at the forest boundary to preclude upstream invasion by nonnative species, but rainbow trout were found upstream of the barrier. In 1999, genetic testing confirmed hybridization of rainbow trout and YCT, and in 2019 testing indicated that hybridization was spreading up the drainage. Brook trout are also a threat to YCT persistence. This application requests supplemental funding for a project that would construct a fish barrier to secure YCT conservation populations in upper Mill Creek. The barrier would be constructed using cast-in-place concrete with a double drop design and will be designed to accommodate a 100-year flood (750 cfs). Installing a barrier before nonnative invasion expands would prevent the need for future nonnative fish removal in Mill Creek. The goals of this project are to maintain the current level of YCT genetic purity and preserve the genetic legacy of this native YCT population. This project was funded by FFIP in Summer 2021 for $50,000 (original request $100,000).

<table>
<tr><td>REQUEST</td><td>$62,977</td><td rowspan="5">ITEMS REQUESTED BY APPLICANT</td><td rowspan="5">Construction materials, labor, and equipment</td></tr>
<tr><td>MATCH</td><td>$435,834.08*</td></tr>
<tr><td>OTHER CONTRIBUTIONS</td><td>$0</td></tr>
<tr><td>% REQUESTED</td><td>11%</td></tr>
<tr><td>TOTAL COST</td><td>$576,153.46</td></tr>
<tr><td colspan="4">FWP STAFF RECOMMENDATION: Partially fund ($50,000).</td></tr>
<tr><td colspan="4">REVIEW PANEL RECOMMENDATION: Partially fund ($50,000).</td></tr>
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*Link to application:* https://myfwp.mt.gov/getRepositoryFile?objectID=106401

8) **Rock Creek diversion improvements (021-2022).** Rock Creek (Carbon County) is a tributary to the Clarks Fork of the Yellowstone River. Rainbow trout, brown trout, Rocky Mountain whitefish, and sculpin are present at the project site, which is north of Roberts. At this location, there is a 100-ft wide, channel-spanning diversion (Johnson Ranch Diversion). This diversion was constructed between 1950 and 1970 and is in poor condition with significant deterioration and channel scour upstream and downstream of the structure. It also acts as a fish barrier, preventing trout and other

species from moving upstream. This project would replace the diversion and incorporate fish passage. Three alternatives were assessed, and the third option was chosen as the preferred choice: a channel spanning structure composed of sill rocks and footer rocks with a grouted rock step-pool fishway for fish passage. The goals are to replace a failing structure, maintain the ability to maintain water rights, and enhance fish passage in this section of Rock Creek. Allowing fish passage in this section of Rock Creek will connect downstream habitat to upstream areas that have cooler water, which is critical refuge in the summer when temperatures are warm and streamflow is low.

<table>
<tr><td>REQUEST</td><td>$100,000</td><td rowspan="5">ITEMS REQUESTED BY APPLICANT</td><td rowspan="5">Rock and grout</td></tr>
<tr><td>MATCH</td><td>$559,200</td></tr>
<tr><td>OTHER CONTRIBUTIONS</td><td>$0</td></tr>
<tr><td>% REQUESTED</td><td>15%</td></tr>
<tr><td>TOTAL COST</td><td>$659,200</td></tr>
<tr><td colspan="4">FWP STAFF RECOMMENDATION: Partially fund ($50,000), as grant funding is limited. We ask that FWP fisheries staff are heavily involved in the final design of the fishway.</td></tr>
<tr><td colspan="4">REVIEW PANEL RECOMMENDATION: Table ($0), and ask the applicant to resubmit with additional information on 1) the incorporation of a measuring device on the diversion, 2) the implications and plan for entrainment at the diversion, and 3) more information on the biological implications of opening 1.5 miles of habitat for fish and how that fits into a larger scale watershed plan for restoring connectivity in Rock Creek.</td></tr>
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*Link to application:* https://myfwp.mt.gov/getRepositoryFile?objectID=106404

9) **Wilson Creek stream and floodplain restoration (022-2022).** Wilson Creek (Gallatin County) is a tributary to the Gallatin River. It contains populations of rainbow trout, brown trout, and Rocky Mountain sculpin. At the project location, south of Gallatin Gateway, Wilson Creek was ditched for agriculture, creating a straightened, widened channel. It was also impacted by dewatering during peak irrigation season and a loss of vegetation. This created poor habitat for salmonid reproduction or rearing and reduced the overall health of the stream. The project would restore the incised stream channel and connect it to the floodplain, create in-stream habitat complexity, and partially relocate the stream channel. The goals are to enhance spawning and rearing habitat for resident and migratory salmonids and to recontour the stream channel to

increase floodplain connectivity and increase the potential for water storage that can contribute to late season flows in Wilson Creek and the Gallatin River.

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| REQUEST | $5,460 | ITEMS REQUESTED BY APPLICANT | Excavator/operator, mobilization |
| MATCH | $31,560 | | |
| OTHER CONTRIBUTIONS | $0 | | |
| % REQUESTED | 17% | | |
| TOTAL COST | $31,560 | | |
| FWP STAFF RECOMMENDATION: Fully fund (**$5,460**), but ask for additional detail on the construction plan and expectations for long term stream function and sinuosity. | | | |
| REVIEW PANEL RECOMMENDATION: Fully fund (**$5,460**). | | | |

*Link to application:* https://myfwp.mt.gov/getRepositoryFile?objectID=106405