

Bureau of Reclamation
WaterSMART Cooperative Watershed Management Program Phase 1
Fiscal Years 2023-2024
Notice of Funding Opportunity No. R23AS00362



*Co-Developing a Prioritized Restoration Action Plan for the Bitterroot Subbasin
to Increase Socio-Ecological Resilience*

Applicant and Grant Administrator:

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Executive Summary

Date: November 30, 2023

Applicant: Bitterroot Water Partnership

City/County/State: City of Hamilton, Ravalli County, Montana

The Bitterroot Subbasin, spanning approximately 3,000 square miles in western Montana, is the focus area of the proposed project. Despite clear issues of concern from a changing climate to rampant growth and increasing water demands, substantial available data, and a strong desire to act, the community lacks a tangible action plan. Building on three decades of collaboration with local stakeholders to implement learning and conservation initiatives, the Bitterroot Water Partnership (formerly Bitter Root Water Forum) aims to refine project planning and prioritization efforts to complete a comprehensive “Prioritized Restoration Action Plan” emphasizing four distinct geographies within the subbasin. By working with private landowners, the Forest Service, water resource managers, water quality specialists, and Trout Unlimited, the BWP will: 1) deepen our understanding of subbasin needs through data collection, 2) develop practical solutions to address critical watershed needs in coordination with local partners, and 3) finalize actionable strategies for future restoration efforts, prioritizing areas of stakeholder interest. This proposal will benefit future landscape-level conservation by increasing community capacity to address concerns related to water quality, quantity, and changing demand—both during the three-year effort and after completion in November 2027. Planning efforts will align with Bitterroot National Forest planning on federal lands, but no implementation will be initiated under this proposal.

Project Location

The Bitterroot Subbasin (Hydrologic Unit Code 17010205) (USGS, 2023), located in Southwestern Montana, drains approximately 3,000 square miles and is a sub-watershed of the Pend Oreille Watershed within the greater Columbia Basin (Figure 1). The Bitterroot Subbasin flows north and drains at its lowest elevation point near the City of Missoula, at approximately 3,330 feet. The highest elevations are located in the Bitterroot Mountains situated on the western side of the Bitterroot Valley which form the Idaho-Montana Stateline. These peaks have elevations ranging from 8,000 to 10,000 feet. The eastern side of the Bitterroot Valley is bordered by the Sapphire Mountains which reach elevations between 6,000 and 8,000 feet. The Bitterroot Valley is arid, open, and dominated by shrubs and mixed grasslands.

The higher elevations around the Bitterroot Subbasin, specifically the Bitterroot Mountains on the western side, hold snow from October to July, with some snowfields persisting year-round. This high elevation snow catchment makes the Bitterroot Subbasin's hydrologic system typical for western U.S. snowmelt-driven systems. Characterized by higher alpine elevations and forested slopes, the headwaters receive 40-60 inches of precipitation, predominately as snowfall, while the valley floor receives approximately 12-13 inches of precipitation annually. This makes the Bitterroot Subbasin extremely vulnerable to climate change, as its residents, agricultural producers, tourists, recreationists, and natural ecosystems depend largely upon the snowmelt run-off for irrigation, aquifer recharge, streamflow, and all ecological services.

The Bitterroot Water Partnership (BWP) is the only local watershed group that works exclusively in Bitterroot Subbasin, serving its communities and working to protect and restore its vital water resources. The BWP is based in Hamilton, Montana, the heart of the Bitterroot Valley and the Ravalli County seat located at 46.24716, -114.15445.

The proposed project area is in the southern $\frac{3}{4}$ of the Bitterroot Subbasin (Figure 2), consisting of 24 HUC-12 sub-watersheds (USGS, 2023) which the BWP has grouped into four unique geographic areas under this proposal (Figure 2) The four geographic areas are: 1) the East Fork

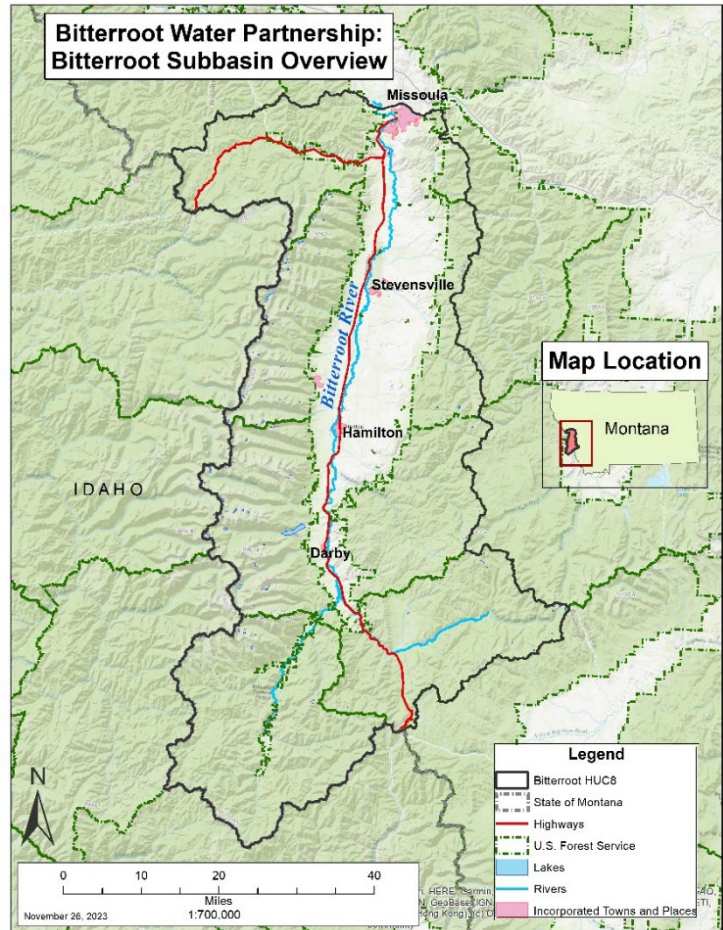


Figure 1. Bitterroot Subbasin Project Area, UC-8.

of Bitterroot River; 2) the West Fork of Bitterroot River; 3) the Eastside of Bitterroot Valley, and; 4) the Westside of Bitterroot Valley.

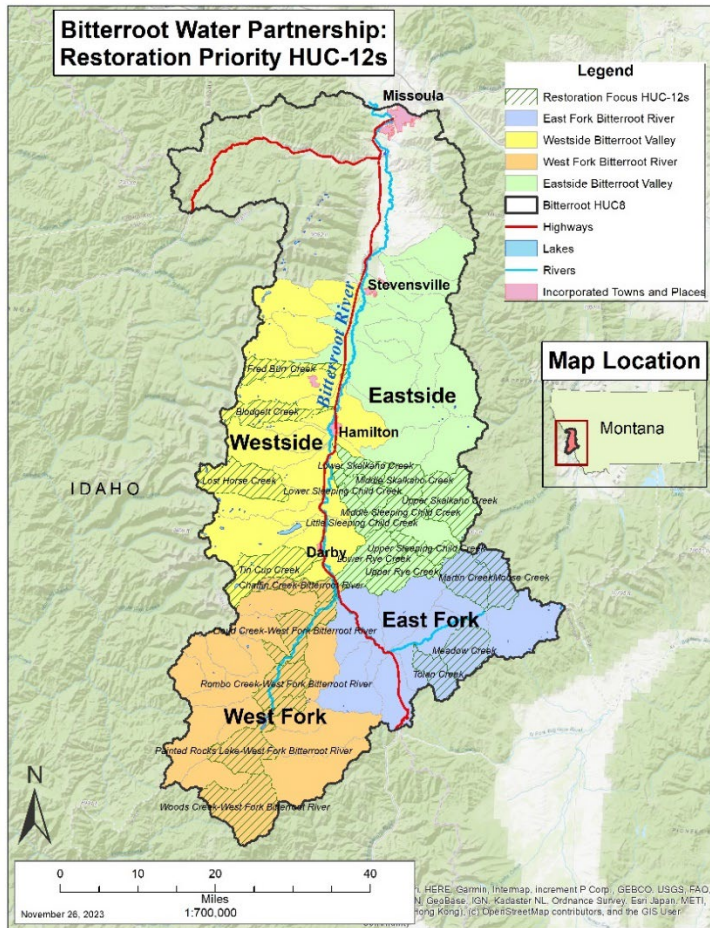


Figure 2. Bitterroot Watershed Project Focus Areas.

Applicant Category

The BWP seeks funding as an Existing Watershed Group and has been initiating and supporting conservation in the Bitterroot Valley for over 30 years. The BWP’s mission is to lead reliable and intentional conservation initiatives that promote and provide clean, ample water for people and healthy habitats by working with key partners and our communities.

Formerly known as the Bitter Root Water Forum, the BWP was established in 1993, received approval of tax-exempt status as a 501 (c) (3) organization in 2004, and began doing business as the Bitterroot Water Partnership in June 2023. The BWP has previously initiated projects through the WaterSMART Cooperative Watershed Management Phase 1 Grant Program (2019).

Previous watershed planning activities conducted by BWP and partner organizations include the development of the Bitterroot Subbasin Plan for Fish and Wildlife Conservation in 2010 and the development and subsequent approval of the Bitterroot Watershed Restoration Plan (WRP) by the Montana Department of Environmental Quality (MTDEQ) in 2014, updated in 2020. These regionally recognized publications currently serve as BWP’s primary resources for strategic project planning in the Bitterroot Watershed. More broadly, they have proven to be critical resources for regional Partners to initiate collaborative conservation work, seek funding opportunities, and implement meaningful, multi-beneficial projects in the Bitterroot Subbasin.

Following the approval of the Bitterroot WRP, BWP was awarded funding for the Bitterroot Watershed as the Montana Department of Environmental Quality (MTDEQ) Focus Watershed through the 319 Project Program. BWP utilized support from the program to connect and engage with streamside landowners on six priority tributaries, develop and implement projects that address stream impairments, identify and initiate projects with a variety of partner organizations, secure additional funding to address aquatic and riparian habitat improvements, and establish a role a leading conservation organization in the Bitterroot Subbasin.

	Watershed	HUC 12	Area (acres)	Watershed	HUC 12	Area (acres)
East Fork	Laird Creek-East Fork Bitterroot River	170102050506	34,195	Birch Creek-Bitterroot River	170102051105	39,445
	Martin Creek	170102050402	20,386	Gird Creek	170102051004	20,733
	Clifford Creek-East Fork Bitterroot River	170102050403	37,118	Willow Creek	170102051006	27,120
	Meadow Creek	170102050404	20,600	Divide Creek	170102050701	11,413
	Bertie Lord Creek-East Fork Bitterroot River	170102050405	10,985	Middle Sleeping Child Creek	170102050703	14,371
	Moose Creek	170102050401	15,936	Little Sleeping Child Creek	170102050704	9,938
	Cameron Creek	170102050504	31,429	Upper Rye Creek	170102050801	18,257
	Warm Springs Creek	170102050505	28,765	Lower Rye Creek	170102050802	22,074
	Tolan Creek	170102050501	12,914	Upper Sleeping Child Creek	170102050702	9,891
	Camp Creek	170102050502	22,755	Lower Sleeping Child Creek	170102050705	13,176
	Jennings Camp Creek-East Fork Bitterroot River	170102050503	25,418	Upper Skalkaho Creek	170102050902	29,003
	West Fork	Woods Creek-West Fork Bitterroot River	170102050102	36,338	Middle Skalkaho Creek	170102050903
Chaffin Creek-Bitterroot River		170102050803	12,937	Lower Skalkaho Creek	170102050904	10,470
Boulder Creek		170102050302	13,560	Daly Creek	170102050901	23,948
Trapper Creek		170102050304	18,182	Willoughby Creek	170102051202	13,281
Nez Pierce Fork		170102050204	23,927	Spooner Creek-Bitterroot River	170102051203	25,038
Piquette Creek		170102050303	20,572	Ambrose Creek	170102051502	13,266
Slate Creek		170102050107	11,576	Threemile Creek	170102051503	33,234
Watchtower Creek		170102050202	10,838	Lower Burnt Fork Bitterroot River	170102051304	21,159
Lloyd Creek-West Fork Bitterroot River		170102050305	22,026	Town of Stevensville-Burnt Fork Bitterroot River	170102051305	21,141
Painted Rocks Lake-West Fork Bitterroot River		170102050108	29,468	Upper Burnt Fork Bitterroot River	170102051303	25,649
Sheephead Creek		170102050201	12,390	Fred Burr Creek	170102051102	15,380
Little West Fork		170102050203	15,569	Bear Creek	170102051103	17,884
Lower Blue Joint Creek	170102050106	12,043	Sweatouse Creek	170102051104	18,271	
Hughes Creek	170102050103	38,509	Blodgett Creek	170102051005	18,165	
Deer Creek	170102050101	14,528	Bitterroot River-Woodside	170102051007	33,019	
Overwhich Creek	170102050104	32,159	Mill Creek	170102051101	25,615	
Upper Blue Joint Creek	170102050105	27,940	Canyon Creek-Bitterroot River	170102051003	9,969	
Rombo Creek-West Fork Bitterroot River	170102050301	18,339	Rock Creek	170102050805	36,700	
East Side				Tin Cup Creek	170102050804	27,053
				Town of Darby-Bitterroot River	170102050806	30,934
				South Lost Horse Creek	170102050602	19,968
				Lost Horse Creek	170102050601	27,808
				Roaring Lion Creek	170102051001	16,109
				Sawtooth Creek	170102051002	19,463
				Lick Creek-Bitterroot River	170102050807	34,041
				Big Creek	170102051201	22,494
				McCalla Creek	170102051301	10,956

Table 1. Bitterroot Watershed Project Area, with all HUC-12 sub-watersheds listed and twenty-four (24) restoration focused HUC-12 sub-watersheds highlighted in yellow.

Eligibility of Applicant

The Bitterroot Water Partnership, a “watershed group,” as defined in Section 6001(6) of the Cooperative Watershed Management Act, meets the eligibility requirements as a Category B applicant.

Project Description

The BWP in coordination with USFS, Montana Fish Wildlife and Parks (MFWP), Montana Department of Environmental Quality (MTDEQ), Trout Unlimited (TU) and other stakeholders' have identified the broad needs and issues impacting the four geographic areas that will be the focus of this project proposal (Figure 3).

Native fisheries restoration and conservation are primary focuses of the BWP work proposed under this grant opportunity. Two species in particular, Bull Trout, listed as threatened by USFWS under the Endangered Species Act (ESA) and Westslope Cutthroat Trout (state species of concern) are under enormous pressure from loss of available habitat, climate change, chronic dewatering due to irrigation

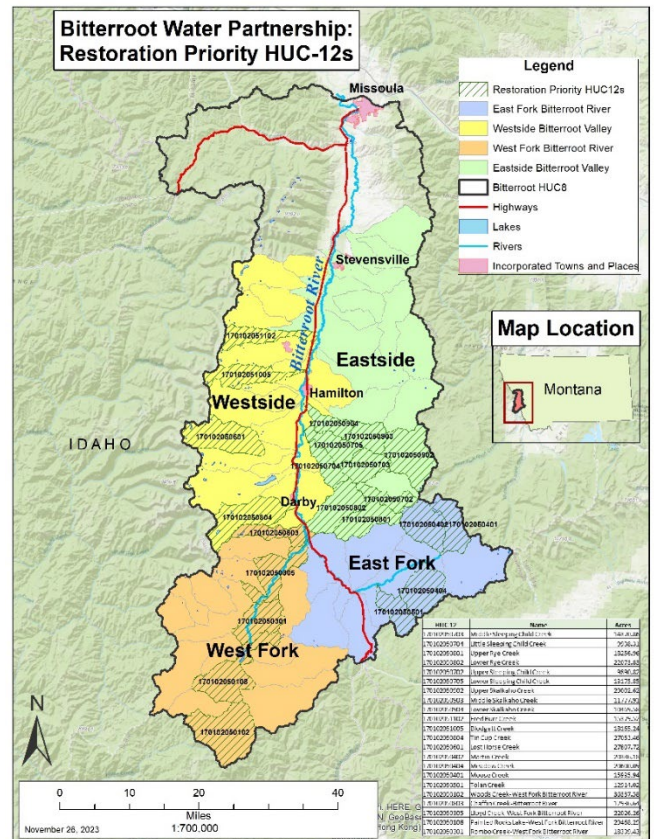


Figure 3. The BWP targeted HUC-12s for restoration focus and project implementation.

withdrawals, sedimentation (wildfire, extensive USFS logging road networks), non-native species, and increasing water temperatures (dewatering, vegetation alteration, and wildfire). Their current range distributions highlight where existing cold-water refugia and habitat is still available or found in abundance. Bull Trout are known as a “sensitive” species, and the first to be lost due to poor water quality and habitat conditions. As a result, Bull Trout Critical Habitat as identified by USFWS (Figure 4), provides a reliable indication of which mountain stream habitats are still semi-functioning, while the mainstem of the Bitterroot, East and West Forks function primarily as migratory and overwintering locations.

The Westslope Cutthroat Trout populations (Figure 5), while more prevalent throughout the Bitterroot Subbasin, also face similar pressures as listed above. The most intact, connected, and functioning HUC-12s in the basin for this species are also generally located in the East and West Forks of Bitterroot River. Additionally, the NorWest Summer Stream Temperature Modeling effort conducted by USFS researchers (Isaak et al., 2017) have identified these geographic areas of the Bitterroot Subbasin as the best to invest in cold-water refugia and native fisheries resiliency (Figure 6). Therefore, to address the chronic water quality and quantity issues facing the Bitterroot Subbasin, the BWP has identified a unique local approach for each of these four distinct geographies based on the most pressing factors impacting each area:

1. East Fork Bitterroot River (EFBR): The EFBR is the Bitterroot Subbasin’s cold-water fishery stronghold (Isaak et al., 2017) and currently has the most functioning and productive Bull Trout and Westslope Cutthroat Trout streams in the subbasin (MFWP). Despite this, many systems in this geographic area have sediment and water temperature impairments. The BWP has existing plans to work with USFS on these issues on forest lands, through road decommissioning, culvert replacement, and revegetation to address these issues. The BWP will also work with water resource consultants to implement a stream temperature model on the mainstem of the East Fork of Bitterroot River. Developed by Watercourse Engineering in 2013, in

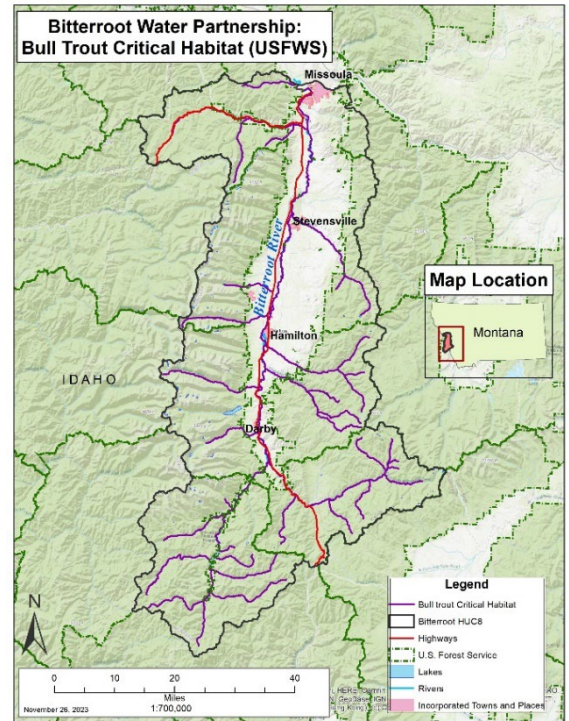


Figure 4. Bitterroot Subbasin, Bull Trout Critical Habitat as identified by USFWS.

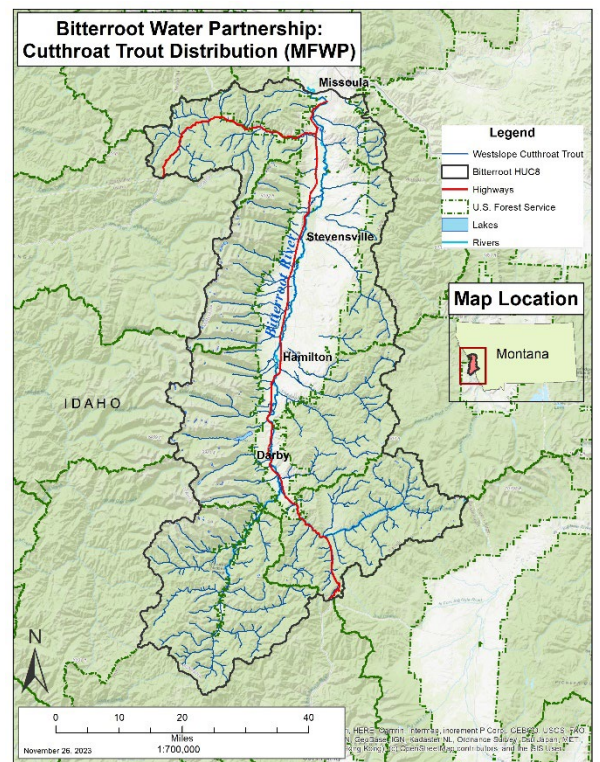


Figure 5. Bitterroot Subbasin, Westslope Cutthroat Trout distribution (MFWP).

partnership with the National Fish Wildlife Foundation (www.nfwf.org) and the Natural Resource Conservation Service (NRCS), the Water Temperature Transactions Tool (W3T) is a reach scale stream temperature model. Since 2013, the W3T Model has been effectively applied to dozens of streams around the Western U.S. and implemented by the Bonneville Power Administration’s (BPA) Columbia Basin Water Transactions Program (CBWTP). The W3T Model is a calibrated model, which will assist the BWP in prioritizing tributaries to the upper East Fork of Bitterroot River where restoration will provide the most measurable impacts.

Private lands in the EFBR geography are generally found along the river bottoms and valley floors, and the BWP has a demonstrated record of working with private ranches and landowners in this location, implementing numerous stream restoration projects over the past decade. Building on these solid relationships and existing partnerships, the BWP plans to ramp up outreach and public meetings regarding this work, implement the W3T Model in coordination with locals, and begin a more targeted campaign of identifying where to maximize our investments in enhancing the ecological resilience of this system.

- EFBR limiting factors: Sedimentation, Warm Stream Temperatures, Dewatering, Connectivity, and aquatic passage issues.
- EFBR needed restoration actions: Public outreach and listening, road decommissioning, beaver dam analogues (BDAs), water transactions, on-farm water conservation, wetland restoration, streambank stabilization, culvert replacement, riparian revegetation and stream monitoring.

2. West Fork Bitterroot River: This area of the Bitterroot Subbasin is predominately owned by the USFS (>95%), except for small private landowners generally located along the mainstem of the West Fork Bitterroot River. It is also the location of the largest on-stream reservoir in the Bitterroot, Painted Rocks Reservoir. This stored water project owned by the State of Montana and managed by the Montana Department of Natural Resources and Conservation (DNRC) for private irrigator contracting is vitally important for agricultural producers throughout the Bitterroot Valley. Additionally, much like the EFBR, the sub-watersheds in the WFBR are also “headwater” streams and provide some of the best cold-water habitat for the subbasin’s threatened Bull Trout and native Westslope Cutthroat Trout populations. Due to more limited abilities to work with private landowners in this system, the BWP’s approach here is focused on stream monitoring along the vital West Fork Bitterroot River, which

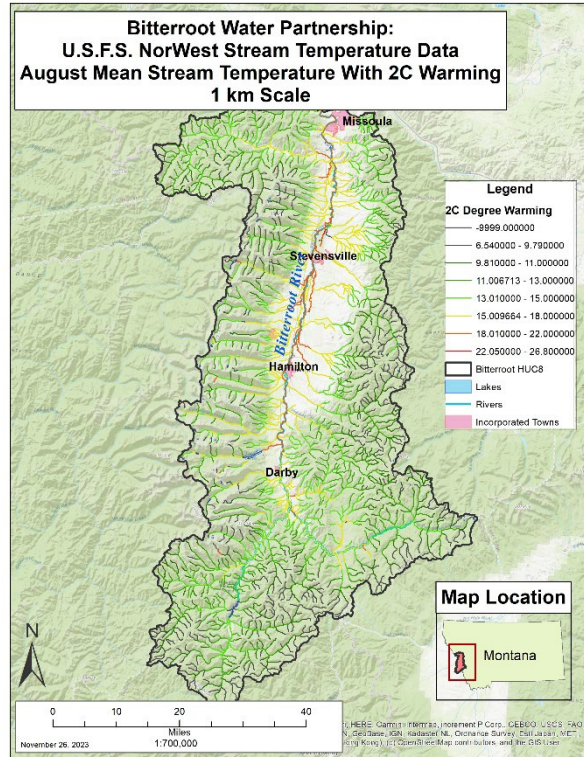


Figure 6. Bitterroot Subbasin, NorWest Stream Temperature Data.

provides good habitat and a migratory corridor for Bull Trout and other native fish. However, like most restoration work, this all begins with public outreach and networking. The BWP intends to continue the forward momentum by working with local landowners, DNRC, and USFS to best serve this geography.

The West Fork Bitterroot River reach is listed as Bull Trout Critical Habitat and is largely influenced by Painted Rocks Reservoir. This storage water project is aging, in need of many updates, and has no fish passage options currently. BWP hopes to work with the state and private water users to assist with future planning and operations of Painted Rocks Reservoir, which could enhance the fishery when possible.

The BWP's continued partnership and collaboration with the USFS on existing NEPA approved projects focused on sediment sources, road decommissioning, riparian revegetation, and/or culvert replacements to address tributary connectivity will continue. Work to identify suitable wetland and BDA opportunities is also desired here, while the outreach, coordination, and ongoing study of reservoir releases related to fish passage and warming stream temperatures will remain in focus.

- WFBR limiting factors: Sedimentation, Warm Stream Temperatures, Altered hydrology, connectivity, and aquatic passage issues.
- WFBR needed restoration actions: Public outreach and coordination, road decommissioning, beaver dam analogues (BDAs), wetland restoration, streambank stabilization, culvert replacement, riparian revegetation and stream monitoring.

3. Eastside of Bitterroot Valley (ESBV): The Eastside of Bitterroot Valley is predominately open agricultural land in the valley which is primarily reliant upon surface water irrigation with some exceptions of small dryland farming occurring. The ESBV uplands, like elsewhere in the subbasin are USFS forest lands, where the BWP continues to work as a partner to USFS to implement further road decommissioning, culvert replacement, riparian restoration, and other activities. Historic logging and logging road densities have created numerous water quality impairments in many of these sub-watershed streams (e.g., sedimentation, aquatic passage, and warming stream temperatures).

Large private land ranches and agricultural production are prevalent in this area of the Bitterroot Valley. Again, the BWP has extensive history of working collaboratively with many to implement best management practices (BMPs), and stream restoration projects and the BWP seeks to continue to expand this work. This begins with public outreach and listening to issues facing local producers and tailoring local crafted and system specific solutions to address these needs. BWP will continue seeking partnerships with the many private irrigation districts in this area to address specific water quantity and quality concerns. Working through outreach, stream monitoring, increasing partner networks, the BWP sees much potential in this geography.

- ESBV limiting factors: Dewatering, sedimentation, warm stream temperatures, connectivity, and aquatic passage issues.
- ESBV needed restoration actions: Public outreach and listening, road decommissioning, beaver dam analogues (BDAs), water transactions, on-farm water conservation, wetland restoration, streambank stabilization, culvert replacement, riparian revegetation and stream monitoring.

4. Westside of Bitterroot Valley (WSBV): The WSBV has numerous private water storage projects and one State of Montana storage water project located on the USFS lands in this area. The Bitterroot Mountains, which make up the high elevations of the WSBV, store the largest snowpack in the Subbasin. Tributaries flow generally east through the USFS lands down to private lands where water is distributed to smaller farms and ranches in traditional open-ditch irrigation systems. Many of these streams are over-appropriated with water rights, however, opportunities do exist to enhance flows through partnership, leasing of water, or cooperative instream water agreements. Traditional riparian habitat restoration opportunities exist but the greater stream enhancement need is enhancing water quantity where possible. The BWP plans to initiate more outreach and cooperative planning with water users with a focus on water quantity.

The BWP's approach here is to continue to conduct outreach, engage with partners, conduct select stream monitoring, and collaboratively seek restoration actions to enhance streamflow, while being poised for other opportunities where needed.

- WSBV limiting factors: Dewatering, warm stream temperatures, connectivity, and aquatic passage issues.
- WSBV needed restoration actions: Public outreach and listening, water transactions, streambank stabilization, riparian revegetation, and stream monitoring.

Our goal to increase ecological resilience by enhancing community capacity to address concerns related to water quality, quantity, and changing demand through the development of a "Prioritized Restoration Action Plan" land this proposal squarely under Task B: Watershed Planning. Associated task areas and proposed activities are listed below.

Task B: Watershed Restoration Planning

B1. Deepen our understanding of subbasin needs to guide and inform prioritization, project design, implementation, and post-treatment outcomes.

- Obtain project management services to assist with activities necessary to develop action strategies, including monitoring and modeling.
- Conduct water quality and quantity stream monitoring to develop and supplement existing baseline information.
- Conduct modeling and other technical analyses to assist in developing project goals and benchmarks for program success.
- Data collection and observation to inform strategic awareness campaign and streamside landowner campaign to enhance stakeholder engagement in restoration action.

B2. Engage targeted stakeholders, including private landowners, state and federal agencies, and local governments, to distill a list of prioritized projects that can address areas of concern and co-create legitimate strategies for completing projects.

- Coordination and collaborative planning with the Bitterroot National Forest
- Identify landowner and other key stakeholders' resource needs to pursue conservation action such as resources, knowledge, capacity support, skills, etc.
- Collect input and direction regarding potential ecosystem treatments.
- Engage stakeholders in conversations around monitoring insights and updated priorities.
- Offer opportunities to meet previously identified stakeholder resource needs such as

workshops, community forums, training, communication campaigns, etc.

B3. Engaging the larger communities in understanding critical watershed needs and potential solutions through an awareness and engagement campaign(s).

- Development of a data-driven Community Awareness and Engagement Campaign (CAEC)
- Delivering CAEC - mass marketing, media, design, video,
- Development of a Targeted Streamside Landowner Campaign (TSLC)
- Delivering a TSLC - design, printing, and direct mailing
- Identify and present planning goals and results at established, well attended local or regional events.

B4. Outline, prioritize, and finalize watershed management projects and strategic approaches into “Prioritized Restoration Action Plan”.

- Data Review
- Initial draft plan with actionable items, strategies, timelines, financial considerations, and process for evaluation and adaptive management.
- Present draft plan to key stakeholders for review and input.
- Present the final plan to key stakeholders for approval.

A prior CWMP Grant, "Building Trust, Reducing Conflict, and Developing Projects to Address Water Scarcity, Water Quality, and Fish Passage in the Bitterroot Watershed, Montana," was an important building block for the valuable and timely initiative proposed here. “Building Trust...” helped us move towards more sustainable water resource management by improving key relationships and our understanding of needs within the subbasin. Thanks to expanded staff capacity since our last grant, which includes the addition of more professionals working in-house and an ongoing contract with an experienced water resources consultant, we are now better positioned to pursue even more ambitious goals. This enhanced capacity will allow us to use our improved relationships to guide tangible action planning, fostering the most tangible and collaborative approaches to local resource conservation to date.

Evaluation Criteria

Evaluation Criterion A—Watershed Group Diversity and Geographic Scope (30 points)

Sub-criterion No. A1. Watershed Group Diversity

Like other communities in the West, the Bitterroot Valley is experiencing above-average growth and associated change in our social, economic, and ecological landscapes. From 1990-99, the county’s population increased by 43%; since 2010 the population has increased 15%, a rate double that of population growth in the United States during that time (US Census Data, 2022). Most of this increase results from migration. These drastic changes underly both the need and our approaches for intentional engagement of increasingly diverse interests in our efforts to co-develop sustainable and sensible water management initiatives. There is no reason to doubt that without proactive efforts to engage these diverse interests in water quality and quantity

treatments, our Valley will face similar challenges to communities across the West who are further along this trajectory of change, with water concerns chief among them.

With 30 years of experience, BWP is well-respected by fellow leaders and local people as a group that effectively balances resource management with the needs of our communities. The approach outlined in this proposal relies on our ability to navigate through, interpret, and make connections among diverse groups' interests around water resources to coalesce them into robust and intentional action steps that can meet distinct needs while minimizing negative effects. The area's most common stakeholder groups support our leadership from various angles, but there are areas in which we seek to further develop relationships, trust, and mutual understanding. Tasks B2– B3 of this proposal are specifically designed to nourish budding relationships with entities who hold a stake in water and resource conservation but may not yet be actively empowered to take strategic action. Primary “affected stakeholders” in our watershed include:

- **Agricultural Producers:** Agriculture (primarily cattle grazing and alfalfa, apple orchards, barley, and other irrigated hay) has a deep history in the Bitterroot Valley. However, increased demand for housing, increased land prices and challenging agricultural economics have all led to substantial losses in agricultural land. In the 1980's agricultural lands comprised 73% of private land in the valley. By the 2000's, which had dropped to 63%, a loss of over 40,000 acres (Swanson, 2006).
- **Irrigation Districts and Private Irrigators:** The Bitterroot has some of the oldest and most complex water rights and water delivery systems in the state. With several major canal systems, thousands of individual diversions and 26 back-country reservoirs, irrigators have the strongest human influence on water resources in the valley. They also have a long history of compromise and ingenuity to maintain the health of the river and fishery. BWP coordinates most frequently with the Bitterroot Irrigation District and Daly Ditches, two of the largest districts, serving over 31,000 acres and 3,600 users.
 - Bitterroot Valley irrigation infrastructure delivers water to around 240,000 farmland acres, with ~71,000 acres irrigated (USDA, 2017) but this acreage is increasingly divided among smaller parcels, resulting in increased conflict and difficulties in managing flows. Seepage from irrigation canals and irrigated agricultural fields, especially flood irrigation, contributes significantly to aquifer recharge (Whitlock et al. 2017). Flood irrigation also benefits river ecology by replenishing river and creek levels through groundwater infiltration and backflows, creating a unique interdependency between residents, anglers, and agriculturists.
- **Public Land & Resource Managers:** Communities in the Bitterroot Valley exist largely within a “peninsula” of private lands on valley floor lower mountainsides and are surrounded by a “sea” of miles of US forest Service land (Figure 1). The Bitterroot National Forest manages 86% of the land in the Bitterroot watershed including crucial strongholds for threatened species. The National Forest, along with Montana Fish Wildlife & Parks and the US Fish and Wildlife Service, are active partners with BWP and

guide our conservation priorities. BWP also partners with Montana Department of Environmental Quality, Montana DNRC, and the USDA NRCS.

- **Conservation Groups:** BWP works closely with Trout Unlimited, Montana Watershed Coordination Council, Bitterroot Audubon, Bitter Root Land Trust, Intermountain West Joint Venture, Ravalli County Fish and Wildlife, the Teller Wildlife Refuge, and the Fly Fishers of the Bitterroot.
- **Local Government:** BWP has and will continue to partner with the Bitterroot Conservation District; Ravalli County (Roads, GIS, and Health Departments); City of Hamilton; and Irrigation Districts.
- **Recreation & Tourism:** The Bitterroot's iconic river, mountains and history draw visitors from across the globe and Tourism contributes an estimated \$36 million to the valley each year (Grau, 2019). The angling economy drives the tourism economy, but access to hiking, camping, and other public land use also draws tourists. Roughly 40% percent of visitors make an outdoor recreation trip in Ravalli County (Zartico via Glacier Country Montana, 2023). A key factor in the Bitterroot Tourism economy is the county's proximity to the City of Missoula, a mid-sized city. A leading 17% of the county's tourists come from Missoula (Zartico via Glacier Country Montana, 2023).
- **Fishing and Fishing Industry:** The Bitterroot River is one of the most heavily fished rivers in Montana (MFWP, 2018), and is a primary draw for residents and visitors. Fishing also supports the livelihoods of various recreation industries including fishing guides and fly-fishing shops. The angling economy is estimated to be a \$28 million per year industry in the Bitterroot (Backus via Swanson, 2017) and is cornerstone of local culture. Resident anglers are hugely supportive of BWP's initiatives to maintain clean waters and support BWP as board members, volunteers, partners, donors, and community advocates/representatives.
- **Other Bitterroot Residents:** The BWP is a community-responsive organization with a goal of genuinely engaging residents through public meetings, conservation and learning opportunities. Annually we host an average of 3-6 learning events, which may cover topics such as water rights, water-wise (drought tolerant) landscaping, or bird ecology. We give 1-2 formal presentations, host 3-6 restoration volunteer opportunities, one River Clean Up, and 4-12 community events or gatherings (volunteer gatherings, Pint Nights, open house nights, block parties, etc.). These opportunities encourage organic learning and community feedback which directs our initiatives. We also regularly attend other groups' meetings to maintain relationships with diverse community members.
- **Other Businesses, Non-Profits, and Interest Groups:** Including but not limited to the Hamilton Downtown Association, Bitter Root Brewing, Chapter One Book Store, Hamilton High School, and more. We frequently partner with groups like these in events, programs, and messaging to achieve mutually beneficial objectives that promote a sense of community and natural resource stewardship.

- **Bitterroot Water Partnership Staff:** BWP is composed of five staff members who live, work, and play in the Bitterroot. Each is exceptionally understanding of local circumstances and works tirelessly to ensure our initiatives are led to the highest standard possible so we can succeed in our careers and our personal commitments to lead local stewardship.

Note that BWP does not maintain group “memberships” and instead we interact with “engaged stakeholders.” Currently, BWP frequently partners with all the above-mentioned stakeholder groups in distinct ways. Many of our conservation priorities are primarily guided by regular formal and informal conversations with natural resource managers, local conservation organizations, and local government. From there, we gauge which potential initiatives based on resource concerns (dewatered streams, Bull Trout streams, 303(d)-listed streams) and decisions made in continued in/formal conversations and partnerships with private landowners and other Bitterroot residents.

Such initiatives generally take the form of (1) community engagement or learning programs and (2) technical restoration treatments. Note that most of our restoration treatments occur on private agricultural lands or public Forest Service land. Of the 14 projects completed within the past 10 years, 50% were completed on private land, 29% on public State land, 14% on public Federal land, and 7% on public city land. For any one of these initiatives BWP tends to coordinate with a minimum of two of the above stakeholder groups and an average maximum of five. In other words, BWP maintains a role as a liaison and bridge in interests and capacity around water conservation.

While the stakeholders with which we engage now currently represent a broad array of affected interests, the effort proposed herein is specifically designed to further target affected stakeholders within the four geographic areas where BWP intends to work. BWP will carry out general outreach, targeted outreach, and chain referral methods which are outlined in Sub-Criterion A.2. A General Community Awareness and Engagement Campaign (B3.1) will increase the number of people meaningfully aware of local conservation priorities and the BWP and enhance our ability to bolster community participation strategic action.

BWP is composed of five staff members who carry out all day-to-day activities and lead strategic approaches; the team is governed by a 9-12 person Board that act as key informants to guide and approve major decisions. Our Board of Directors reflects these interests and represents perspectives of fishing guides/outfitters, ranchers, irrigators, educators, and hydrologists. Our insight into agricultural perspectives is amplified by our connection to two Agricultural Advisors. Our general community of ‘supporters’ (i.e., volunteers, donors, etc.) is made up in large part of anglers and nature enthusiasts and also includes an array of the stakeholder groups described above.

Through structured and unstructured conversations with these community members, BWP is constantly fine-tuning our understanding of community concerns and pinpointing avenues of community engagement to guide strategic watershed management and enhancement efforts. BWP Board and Staff members seek and invite new Board Members to join, ensuring that the makeup of the Board continues to reflect the diverse interests and capacities of affected

stakeholders.

Sub-criterion No. A2. Geographic Scope

In the Bitterroot Subbasin, the largest landowner is the United States Forest Service (USFS), which owns approximately 1.255 million acres¹ in Ravalli County, making them a primary partner for the BWP. The headwater streams (East Fork, West Fork) that eventually flow into the Bitterroot River begin on Forest Service land, and support cold, clean, connected stream habitat required for our native aquatic species, including ESA-listed Bull Trout. Water resource concerns on Forest Service land are related to water quality, (sediment inputs from roads and timber harvest) and aquatic organism passage (undersized culverts). We actively work with Forest hydrologists, fish biologists, and rangers to implement priority water resource projects on their land, and on private land adjacent to the Forest.

Private lands in the Bitterroot Subbasin are primarily located in the valley floors or lower elevations, and managers and producers utilize surface water as it flows through the watershed. Private landowners and land managers are where BWP can be most effective with restoration actions and work to address migratory native fishes and aquatic species habitat and connectivity



Figure 7. Bitterroot Subbasin Project Area, HUC-8, showing distribution of public Federal land compared to private land in the Bitterroot Subbasin.

issues through water leasing and streamflow restoration utilizing private water rights. In addition to the private landowners, other resource managers within the project area include the U.S. Fish and Wildlife Service, Montana Department of Fish, Wildlife, and Parks (MFWP), and numerous private irrigation districts.

The BWP has a long history of partnering with private landowners to improve aquatic habitat and water resources. These 3-year proposed strategies will allow us to engage with existing partners, increase participation through targeted outreach, and develop a stakeholder-driven Prioritized Restoration Action Plan that address water quality and quantity concerns on private land and USFS land (Task B4).

One purpose of this proposal is to amplify collaboration with partners to identify, prioritize, and begin to strategize toward practical watershed-scale collections of restoration or ecosystem enhancement projects. To achieve this purpose, the BWP will intentionally engage with local landowners (or other entities as appropriate) in priority regions to understand their needs and interests and co-develop projects that can achieve

¹ Bitterroot Subbasin Plan, 2009.

those alongside watershed priorities. However, successful implementation will also require coordination and feedback from other affected stakeholders such as anglers/fishing industry, conservation organizations, resource managers, local government, irrigation districts, and other Bitterroot community members.

A first step in efforts to coordinate with affected stakeholders will be to carry out ‘general outreach’ to diverse groups introducing BWP – our team, our objectives and capacity, and suggestions regarding the potential benefits of our initiatives. This ‘general outreach’ will be reciprocal, giving BWP the opportunity to connect with more stakeholders and understand their interests, concerns, and capacity. Our strategy is to ‘meet people where they are’, attending pre-existing gatherings rather than adding burden by inviting people to *our* gatherings. In each of the four target regions, we expect to meet 1-2 times with a minimum of 6 distinct groups (i.e., irrigation district or Water Association meetings, community potlucks, agency meetings, special interest presentations, etc.) and up to 12 individuals, totaling 24-36 group meetings and 24-36 individual meetings during the general outreach phase. If the opportunity is clear, the BWP will host 1-6 of its own forums or presentations.

Following general outreach to affected stakeholders, the BWP will maintain targeted outreach to resource managers, landowners, private irrigation districts, conservation organizations, local government, and fishing industry representatives to collect input and direction regarding potential ecosystem treatments. During this phase, BWP will uncover insights to partner capacity, existing data, critical reports, and connection to landowners already identified as interested and integral in watershed management initiatives. Additionally, BWP will engage stakeholders in conversations around monitoring insights and updated priorities for the four geographic areas identified within the Bitterroot subbasin. Existing relationships with many of these stakeholders will bolster outreach efforts and an understanding of current guiding documents (i.e., Bitterroot Watershed Restoration Plan, Bull Trout Recovery Plan, Bitterroot Valley Long Range Plan, etc.). A sub-component of targeted outreach will focus on collaboration with the Bitterroot National Forest.

Because in-person outreach has high costs and is difficult to scale, the targeted outreach will also incorporate custom design, printing, and direct mailing of materials to streamside landowners in Priority Regions. Engaging US farmers is a difficult task given that they are especially overwhelmed by marketing mail, wary of outsiders, and reluctant to share information, (Weigel, Cruse, and Reddy, 2022). Targeted messages that use local environmental data and come from a known messenger can increase landowner engagement by roughly 20% (Weigel, Cruse, and Reddy, 2022). Insights collected during General and in-person Targeted Outreach will inform how messages are strategically targeted in mailings. If possible, results from relevant County polls, led by a hired consultant (Task B3.1), will inform unique messaging.

We expect that between targeted outreach to relevant parties and general outreach to affected stakeholders, we will be able to launch an effective ‘chain referral’ method that continues to connect us with relevant parties (i.e., private landowners and potential partners). We estimate our final landowner partnerships in the East Fork and East side to total 8-10 and 3-7 on the West Fork and West Side of the Valley. These estimates correlate with density of landownership in each of these regions.

Through these communications we also intend to uncover what types of conservation-oriented learning, resource, or training opportunities landowners or other stakeholders are interested in. BWP staff will seek to integrate these needs for stakeholders where appropriate in the Prioritized Restoration Action Plan. Importantly, BWP will incorporate a list of committed actors into the strategy, providing a road map of which projects will happen, on which land, and when. This coalescing of stakeholder-supported projects is the missing link between our existing data and conservation priorities and the capacity to carry out impactful, watershed-scale, and necessary treatments on the ground.

Understanding that the success of the BWP's must be upheld by a community-wide sense of legitimacy, we propose to use and supplement the deep insight uncovered during this 3-year process to develop and implement a Community Awareness and Engagement Campaign (CAEC) that can help create energy and momentum to fuel ongoing efforts. By amplifying public understanding of conservation priorities and the BWP, the CAEC will expand opportunities for public participation and support or, in other words, ensuring that stakeholder support is maximized and representative of the area in which we work. Results from County polling that seek to understand values, attitudes, concerns, etc. of target audiences will underpin the strategy of the CAEC.

The proposed project area is located in the southern ¾ of the Bitterroot Subbasin. The four unique geographic areas will be the focus of the proposed project as they represent the headwaters of the Bitterroot River and their health and resiliency provide significant ecological benefits that uplift the entire Bitterroot River System. The northern ¼ of the Bitterroot Subbasin is closer in proximity to the City of Missoula where BWP partners (Lolo Watershed Group, Clark Fork Coalition, and Trout Unlimited) focus restoration efforts.

Evaluation Criterion B - Developing Strategies to Address Critical Watershed Needs (35 points)

Sub-criterion No. B1. Critical Watershed Needs or Issues

Addressing Challenges and Opportunities Resulting from Existing & Changing Agricultural Landscapes

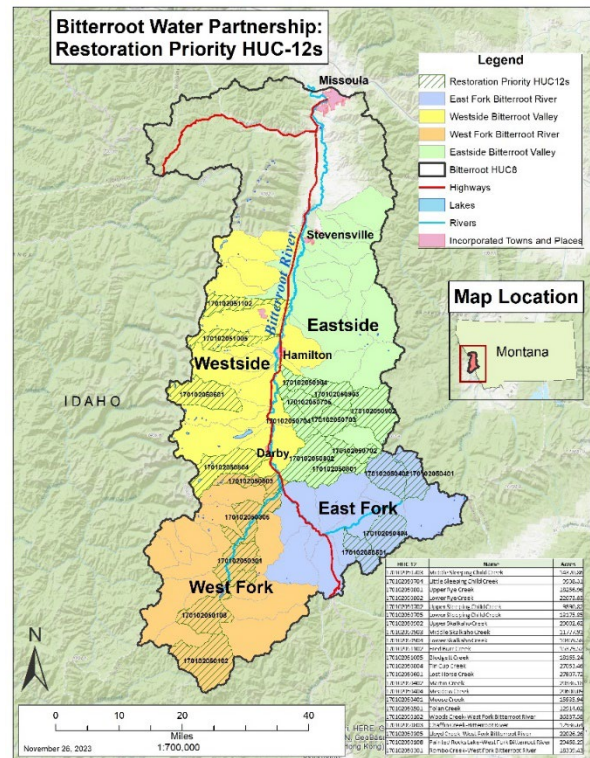


Figure 8, The BWP targeted HUC-12s for restoration focus and project implementation.

Sub-issues: aquifer recharge, water supply shortages, drought impacts, conflict over water supply

The drastic changes in population and ecological landscapes (i.e., transition from farm or ranch land to residential, increase in precipitation, etc.) will affect the use of, quantity, and quality of groundwater and surface water. In 2017 there were ~241,000 acres of farmland in Ravalli County, with 29% of land (~71,000) acres irrigated (USDA, 2017). Nearly $\frac{3}{4}$ of farms in 2017 were smaller than 49 acres and trends suggest that while the total acreage of farmland is decreasing, the number of farms increase.

In 2019 50% of Montana agricultural lands were irrigated by sprinklers, up from 30% in the mid-1900s (Lonsdale et al, 2020). Figure 9 shows a similar conversion rate in Hamilton, Montana. As more properties cease flood irrigation practices to transition to sprinklers, the sub-basin is liable to experience increased riparian dryness. This phenomenon was documented in Montana's Missouri Headwaters, where increased riparian dryness was correlated with greater land area converted from flood to center-pivot irrigation (Vanderhoof, Christensen, and Alexander, 2019).

In other words, for the foreseeable future farming will be a leading economic sector in the Bitterroot but the socio-ecological face of the system will differ from its historic roots, requiring different management approaches and interventions to ensure adequate water quality and quantity for producers and other residents. There is an urgent need to (1) understand projected trends and areas of concentrated impact to (2) co-create strategies that mitigate inevitable negative effects to water quality and quantity. Restoration and eco-engineering projects to address these impacts will help secure water reliability and water storage for farms; sustain aquifer recharge in lieu of flood irrigation; equip small farms with sustainable practices for water quality and quantity; and more.

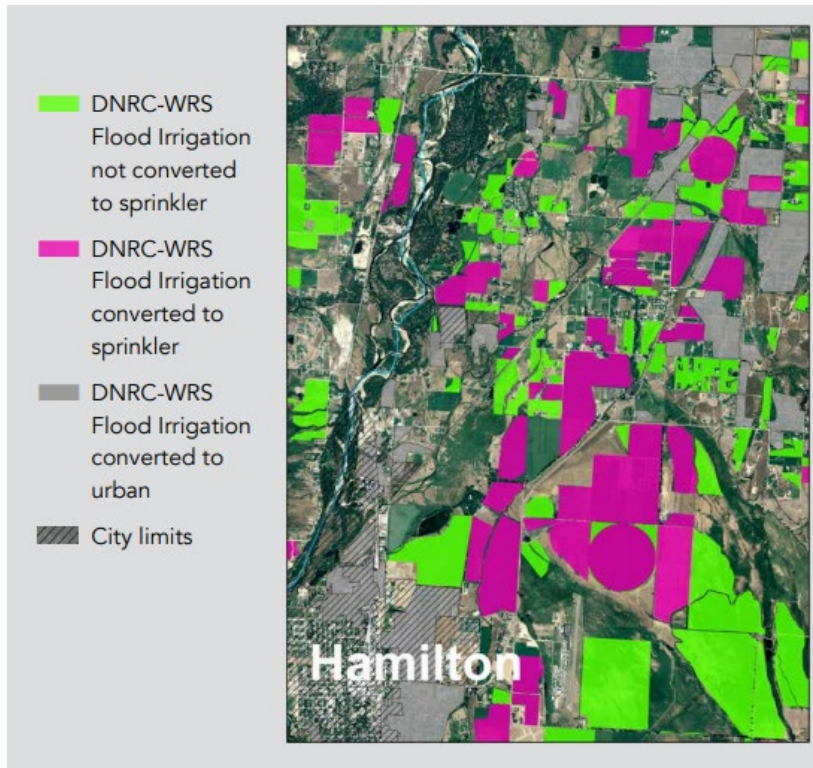


Figure 9. A 2019 snapshot of farmland in Hamilton, Montana that remains flood irrigated versus land that has been converted to sprinkler irrigation, and flood-irrigated land that has been converted to urban development. Based on comparison of Montana Department of Natural Resources and Conservation Water Resources Surveys (1946-1971) and Montana Department of Revenue Final Land Unit Classification 2019. Sourced from *Evaluating Irrigation Efficiency: Toward a sustainable water future for Montana* (Lonsdale, 2020).

Promoting Healthy Fish & Wildlife Populations and Sustainable Recreation

Sub-issues: water quality impairments, water supply shortages, endangered species concerns, aquatic and riparian ecosystem degradation, habitat fragmentation and degradation, post-fire concerns

The Bitterroot River is an iconic fishing destination, commonly one of the top ten most-fished rivers in the state (MFWP, 2023), hosting populations of rainbow trout, Westslope Cutthroat Trout, brown trout, mountain whitefish, and more. As more people move to and visit our Valley, angling pressure is increasing precipitously. From 1989 to 2020 estimated annual angler days (one angler day is one person fishing for any time of one day) on the Bitterroot River and the West Fork increased by 248%. These reaches are listed as Critical Habitat for Bull Trout, a Threatened species under the ESA, by the U.S. Fish and Wildlife Service (USFWS 2010). According to recent data, increased catch-and-release may be causing an increase in mortality for Westslope Cutthroat Trout, a Montana State Species of Concern (Lindstrom, 2022). Community concern regarding the health of our fisheries amid increasing stream degradation and angling pressure continues to grow.

Additionally, based on the Montana Department of Environmental Quality’s TMDL assessment, the Bitterroot faces several water quality concerns, all of which affect aquatic habitat and organisms. Increased sediment, temperature and alteration of streamside or littoral vegetative cover are the most common water quality impairments (MTDEQ, 2018). Agriculture, grazing, and roads are the primary sources of these impairments.

A monumental threat which will lead inevitably to the decline of cold-water species, ecosystems, and associated economies is our changing climate and warming waters. Therefore, there is a need to strategically identify, maintain, and enhance cold water refugia that will act as a “climate shield” for species like the Bull trout and Westslope Cutthroat Trout to increase the odds of preserving populations (Isaak et al 2017; USFWS 2015). If these cold-water habitats that can withstand climate change can be enhanced, they would serve an integral role in protecting key watersheds and preventing precipitous species decline or extinction (Isaak et al 2017).

The 3-year approach proposed herein will create a Prioritized Restoration Action Plan. that will identify committed collaborators who can help enhance cold-water refugia, improve streamside and aquatic habitat through reduction of sediment and temperature pollution, improve habitat connectivity, and establish long-term monitoring sites and protocols that can inform adaptive management and continued strategic conservation. Through the process of generating these strategies, social capital among the network of actors who will carry out the strategies will be enhanced, thereby benefitting future landscape-level conservation actions.

Managing Water Alongside Development

Sub-issues: declining ecological resiliency, water supply shortages, water quality impairments, drought impacts, conflicts over water supply, aquatic and riparian ecosystem degradation, habitat fragmentation and degradation

Water in the Bitterroot basin is highly overallocated, resulting in significant dewatering in streams. Bitterroot tributaries and the Bitterroot River are used to irrigate both sides of the valley through an extensive network of canal and ditch systems while additional development in the valley has increased demand for groundwater, which in turn, impacts surface water flow. Nearly 20 Bitterroot tributaries have sections that are chronically dewatered (MFWP, 2015) and are completely dry in their lower reaches during irrigation season most years. The Bitterroot River itself loses about 100 cfs, 20-25% of its total volume, over the 30 miles between Darby and Victor before groundwater and irrigation return flows begin to supplement flow.

Managing water alongside development is a century-long challenge for the West, but one that the Bitterroot Valley is just beginning to grapple with more seriously each passing year. Communities that have been successful in conserving water supply and associated ecological resilience in the face of changing water demands associated with development have taken a strategic approach in efforts to secure methods of enhanced aquifer recharge, help residents adapt to updated management strategies, create water sharing arrangements, limit avoidable habitat degradation and support private landowners in restoration efforts, and work with stakeholders to adopt drought response plans.

Recent community focus groups (Figure 10) revealed the desire to maximize water security in the Valley is a top priority. The Watershed Planning effort proposed here will serve as a catalyst, allowing communities to collaboratively identify projects to promote water security, and a strategy for implementation. Without an intense approach to developing a connected, clear strategy, the wide-spread and complex issue of water security across a 3,000 square mile sub-basin will remain unapproachable.



Figure 10. Community members in two 2023 focus groups identified threats to water in the Bitterroot, with water security and unsustainable development considered in the top three threats.

Sub-criterion No. B2. Project Benefits

Our role as a Watershed Group is to bridge science, best-practices, and outside resources with on-the-ground needs. The proposed Tasks directly address the concerns and opportunities listed above by coordinating with affected stakeholders and key partners to create a Prioritized Restoration Action Plan. Our proposed actions are important for addressing these issues because while concerns are clear, a reasonably large amount of data is available, and the desire to act is high, our communities lack a clear action strategy, which would include invested actors, to follow together.

Immediate benefits that we expect to produce from this three-year-long effort include:

- An understanding of the knowledge, skills, resources, etc. that private landowners seek in their efforts to engage in water conservation efforts.
- A well-connected social network bolstered by common awareness and concern, primed to enact strategies together (Davenport and Seekamp, 2013; Foster-Fishman et al, 2001)
 - Enhanced relationships with key private landowners who are most affected by and most able to advance water management in the subbasin.
 - A nuanced understanding of USFS priorities and a short-list of water quality or quantity enhancement projects that can be quickly implemented on Forest Service lands.
 - Well-spread community recognition of the Bitterroot Water Partnership and the conservation priorities we address, enhancing our approachability and, therefore, the long-term likelihood of diverse stakeholders' eagerness to coordinate with us in water management.
- A well-supported Prioritized Restoration Action Plan for focal watersheds that maintain network-wide momentum in forward-thinking water management (Meenar et al., 2013)

for the next 5-10 years.

- Development of a data-driven Community Awareness and Engagement Campaign *and* a Targeted Streamside Landowner mailing program

Long-term benefits we expect to achieve based on our products from this three-year-long effort include:

- Significant increase in community capacity to address concerns related to water quality, quantity, and changing demand. Our capacity will be enhanced in the following dimensions (Goodman et al., 1998; Brown et al., 2003): leadership, resources and skills, social and organizational networks, commitment, and citizen participation.
- Increase in the identification and enhancement of cold-water refugia for climate-vulnerable aquatic species on public lands (Isaak et al., 2017)
 - Enhanced ecological resilience in the face of a warming and drying regional climate.
- Identification of and partnership with landowners who are willing to enact streamside treatments like habitat restoration, fencing or grazing adjustments, low-tech process-based restoration, and other treatments that benefit water quality and quantity.
- Completion of sub-watershed scale(s) of collected treatments that produce measurable benefits for water quality, quantity or storage, and habitat in the face of changing social, ecological, and climate landscapes.
- Growing years’ worth of stream monitoring data will continue to inform adaptive management.

While we expect enhanced water storage (security), water quality, and aquatic habitat to benefit Bitterroot communities, there are certain stakeholder groups that will receive heightened or more direct benefits. Importantly, people who are culturally and/or financially reliant on the fishing industry will experience outsized benefits from strategies that improve the resiliency of this system. Private landowners whose streamside habitat falls within conservation priority areas will encounter more opportunities for partnership in the creation and implementation of Action Strategies. Relatedly, those landowners will have a greater opportunity to advocate for the skills, knowledge, and resources they seek to participate in water conservation.

Evaluation Criterion C—Readiness to Proceed (20 points)

Project Schedule

Task B1: Deepen our understanding of subbasin needs to guide and inform prioritization, project design, implementation, and post-treatment outcomes.		
Cost: \$136,000		
Milestones	Timeline	Task Lead
B1.1 Coordinate project management services to assist with activities necessary to develop action strategies, including monitoring and modeling.	Q1-Q4 2025 Q1-Q4 2026 Q1-Q3 2027	ED*
B1.2 Conduct water quality and quantity stream monitoring to develop and supplement existing baseline information.	Q2+Q3 2025 Q2+Q3 2026 Q2+Q3 2027	PM*

B1.3 Conduct Water Temperature Transaction Tool (W3T) Modeling Data Collection and other technical analyses.	Q2+Q3 2025 Q2+Q3 2026	Contractor*
B1.4 Data collection and observation to inform strategic awareness campaign and streamside landowner campaign to enhance stakeholder engagement in restoration action.	Q1-Q4 2025 Q1-Q4 2026	CEC*
Task B2: Engage targeted stakeholders, including private landowners, state and federal agencies, and local governments, to distill a list of prioritized projects that can address areas of concern and co-create legitimate strategies for completing projects.		
Cost: \$76,950		
Milestones	Timeline	Task Lead
B2.1 Coordination and Collaborative planning with the Bitterroot National Forest.	Q1-Q4 2025 Q1-Q4 2026 Q1-Q2 2027	PM
B2.2 Identify landowner and other key stakeholders' resource needs to pursue conservation action such as resources, knowledge, capacity support, skills, etc.	Q1-Q4 2025	CEC
B2.3 Collect input and direction regarding potential ecosystem treatments.	Q3-Q4 2025 Q1-Q3 2026	CEC
B2.4 Engage stakeholders in conversations around monitoring insights and updated priorities.	Q3-Q4 2026	PM
B2.5 Offer opportunities to meet previously identified stakeholder resource needs such as workshops, community forums, trainings, communication campaigns, etc.	Q1-Q4 2026 Q1-Q4 2027	CEC
B2.6 Development of a Targeted Streamside Landowner Campaign (TSLC).	Q1-Q4 2025	CEC
B2.7 Delivering a TSLC: design, printing, and direct mailing.	Q1-Q4 2026 Q1-Q4 2027	CEC
Task B3: Engaging the larger communities in understanding critical watershed needs and potential solutions through an awareness and engagement campaign(s)		
Cost: \$50,850		
Milestones	Timeline	Task Lead
B3.1 Development of a data-driven Community Awareness and Engagement Campaign (CAEC).	Q1-Q4 2025	CEC
B3.2 Delivering CAEC: marketing, media, design, video.	Q1-Q4 2026 Q1-Q4 2027	CEC
B3.3 Identify and present planning goals and results at established, well attended local or regional events.	Q3-Q4 2027	CEC
Task B4: Outline, prioritize, and finalize watershed management projects and strategic approaches into "Prioritized Restoration Action Plan"		
Cost: \$9,500		
Milestones	Timeline	Task Lead
B4.1 Data review and formatting for dissemination.	Q1-Q2 2027	PM
B4.2 Draft plan with actionable items, strategies, timelines, financial considerations, and process for evaluation and adaptive management.	Q2-Q3 2027	PM

B4.3 Present draft plan to key stakeholders for review and input.	Q3 2027	CEC
B4.4 Present the final plan to key stakeholders for approval.	Q4 2027	PM

*Full job titles: PM = Project Manager, ED = Executive Director, CEC = Community Engagement Coordinator

Evaluation Criterion D—Presidential and Department of the Interior Priorities (15 points)

Climate Change

Like the rest of Montana, the Bitterroot watershed will experience a generally warming climate, with temperatures projected to increase 4.5-6.0°F by mid-century (Whitlock et al. 2017). Given the unique features of the narrow, mountain-enveloped valley, this watershed faces the following unique predicted challenges and opportunities (Maxwell, 2023; Whitlock et al. 2017):

- From 2010 to 2038, an increase of 12.2 more days over 95°F
- Summer nighttime minimum temperatures rising, stressing livestock.
- Significant increases of both minimum and maximum daily temperatures in the four-month winter season, increasing rain precipitation and decreasing snow precipitation
 - Faster run-off in the spring, with larger initial pulses
 - Decrease in length of snow-melt season, causing lower river and stream flow and irrigation water flows in July and August
 - Warmer streams due to lack of snow melt from early season snow.
 - Shorter fishing season due to fishing restrictions
- The number and timing of annual hard frost dates is decreasing, altering the success of traditionally grown crops.
- Streamflow runoff changes combined with higher summer temperatures means moisture loss in plants and soils is significant, especially in July and August, meaning more water is required to maintain profitable growth.

A 2023 community forum hosted by the Bitterroot Climate Action Group revealed how local concerns regarding climate were chiefly local concerns about water quality and quantity. A slide from the Executive Summary of the forum highlights the prominent concerns around water (Figure 11).



Figure 11. A slide from the 2023 Bitterroot Resilience Forum Summary highlights key takeaways from group discussions about concerns related to climate change, with ‘water’ touted as a far-leading concern.

In other words, the time to make our watershed resilient to a quickly changing climate is now. Our efforts proposed herein can help address the impacts of climate change by:

- Collecting projects that, when combined, can have significant impact on stream temperatures, slowing or reversing warming, or establishing strategic cold water refugia for aquatic species.
- Equipping landowners and major water users with the understanding, resources, or capacity they need to be an active participant in water conservation while meeting their management goals.
- Laying the groundwork for future drought response plans or strategies
- Enhancing habitat of vulnerable species like Bull trout and Westslope Cutthroat Trout to increase their resiliency in a more fragile system.
- Co-creating prioritized projects that enhance water quality and quantity in the face of changing demand, strategies for advancing connected efforts, and community momentum fueled by stakeholder and partner buy-in
- Increasing community understanding of the challenges we face and opportunities and capacity for solutions in focal watersheds.

Our efforts can enhance resiliency amidst a changing climate by creating actionable plans to address our most pressing community concerns related to water. Planning efforts will develop collections of projects that can be combined to create measurable impacts for areas that, if left unaddressed, could end up on the other side of a climate-induced tipping point. For example, restoring streamside and aquatic habitat, identifying and enhancing cold water refugia, re-watering streams, will be treatments necessary to save species like Bull trout or Westslope Cutthroat Trout, and the communities that depend on them, from imperilment.

Benefits to Disadvantaged, Underserved, and Tribal Communities

Disadvantaged and Underserved Community Benefits

Ravalli County has a largely white population, with 95.7% of residents identifying as white. The second largest racial category in the county is Native American, accounting for 1.2% of residents (US Census, 2020 estimate). According to the Climate and Economic Justice Screening tool, five Ravalli County tracts that are identified as disadvantaged are located within the proposed project area. Each of the five meets or exceeds the threshold for Low-Income and Projected Wildfire Risk. The project is not expected to serve or benefit the disadvantaged communities identified by the Climate and Economic Justice Screening tool.

Tribal Benefits

The proposed project does not directly serve and/or benefit a Tribe.

The proposed project does not support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe.

Project Budget

Table 1. —Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1.	\$0
Non-Federal Subtotal	\$0
REQUESTED RECLAMATION FUNDING	\$298,300

Environmental and Cultural Resources Compliance

The proposed activities are planning in nature, and do not require compliance review. They will not involve earthwork or impacts on soil, air, water, or habitat. Projects that result from planning efforts may require environmental and resource review but will occur after this grant agreement has expired and will not be paid for through CWMP funds.

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

No, the proposed project will focus on project planning and prioritization. No impacts to the surrounding environment will occur.

Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

The proposed project area consists of ESA Threatened Bull Trout Critical Habitat and Montana Species of Concern, the native Westslope Cutthroat Trout. The proposed project will not affect the abovementioned species.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “Waters of the United States”? If so, describe and estimate any impacts the proposed project may have.

Yes, there are wetlands and surface waters inside the proposed project boundary. Because the proposed project focuses on project planning and prioritization, no wetlands or surface waters will be impacted.

Will the proposed project result in any modification of, or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

No, the project will not result in any modification of or effect to irrigation systems of any kind.

Are there any known archeological sites in the proposed project area?

Yes, but because the proposed project focuses on project planning and prioritization, no archeological sites will be impacted.

Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?

No, the proposed project will not have any impact on low income or minority populations.

Will the proposed project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on Tribal lands?

No, the proposed project will not have any impact on Indian sacred sites or Tribal lands.

Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

No, the proposed project will not contribute to the introduction, continued existence, or spread of noxious or non-native invasive species within the project area.

Required Permits or Approvals

No permits or approvals are required for the proposed activities.

Overlap or Duplication of Effort Statement

There is no overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel. The project proposal that is submitted here for the Cooperative Watershed Management Program will not be submitted for funding consideration to any other potential funding source, Federal or non-Federal.

Conflict of Interest Disclosure Statement

There are no actual or potential conflicts of interest at the time of the submission.

Letters of Support

Please see Letters of Support from both the Bitterroot National Forest and Montana Trout Unlimited in the Attachments section of the proposal.

Official Resolution

Please see the approved Official Resolution signed by the BWP Board of Directors President in the Attachments section of the proposal.

ATTACHMENTS

Project Budget Detail and Budget Narrative

Table 1. Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
Non-Federal Subtotal	\$ 0
REQUESTED RECLAMATION FUNDING	\$298,300

Table 2. Budget Proposal Table

Budget Item Description	Computation		Quantity Type	Total Cost
	\$/Unit	Quantity		
Salaries and Wages				
Meagen Larson, Project Manager/PM	\$26.83	2200	Hours	\$59,026
Executive Director/ED	\$41.67	500	Hours	\$20,835
Community Engagement Coordinator/CEC	\$27.34	1500	Hours	\$41,010
Fringe Benefits				
Meagen Larson, Project Manager	\$59,026	41%	% of salary	\$24,201
Executive Director	\$20,835	36%	% of salary	\$7,501
Community Engagement Coordinator	\$41,010	41%	% of salary	\$16,814
Travel				
Stakeholder Meetings	\$.68/mile	920	Miles	\$626
Priority Area Site Visits	\$.68/mile	5600	Miles	\$3,808
Equipment				
None	0	0	NA	\$0.00
Supplies and Materials				

Meeting Supplies	\$500	1	Lump Sum	\$500
Onset Hobo Data Logger	\$360	9	Per Unit	\$3,240
Field Equipment	\$790	1	Lump Sum	\$790
Printed Materials	\$450	1	Lump Sum	\$450
Contractual/Construction				
Water Quality Specialist	\$16,500	3	Annual Contract	\$49,500
W3T Temperature Modeling	\$20,500	1	Lump Sum	\$20,500
Consultant with TU	\$50/hr	175	Hours	\$8,750
Polling Consultant	\$125/hr	50	Hours	\$6,250
Graphic design contractor	\$95/hr	20	Hours	\$1,900
Other Direct Costs				
Campaign Marketing	\$4,000	1	Lump Sum	\$4,000
Mailers and Postage	\$1,800	2	Lump Sum	\$3,600
Total Direct Costs				\$273,300
Indirect Costs				
BWP	10%	\$250,000	% of Base not to exceed \$25K	\$25,000
Total Estimated Project Costs				\$298,300

a. Personnel

The hourly labor rates outlined in the budget proposal reflect the average hourly rates for the identified personnel/positions during the grant period and are consistently applied to Federal and non-Federal activities*. BWP Executive Director will manage the grant and has included coordination and oversight costs as well as 8 hours per quarter to maintain compliance with grant oversight, reporting and evaluation requirements.

**The hourly rates used in the budget reflect the average of the hourly rate projections for each position in FY2025, FY2026, and FY2027, assuming an organizational standard 3% annual salary.*

Meagen Larson, PM, hour approximation for budgeting includes: 1,250 hours Task B1, 800 hours Task B2, 50 hours Task B3, and 150 hours Task B4.

ED, hour approximation for budgeting includes: 150 hours Task B1, 200 hours Task B2, 150 hours Task B3, and 50 hours Task B4.

CEC, hour approximation for budgeting includes: 100 hours Task B1, 750 hours Task B2, 600 hours Task B3, and 50 hours Task B4.

b. Fringe Benefits

Fringe benefits include benefit amounts (retirement, health stipend) and required taxes paid for each position (FICA, State Unemployment, Workers Comp).

Position	Annual Salary	Retirement	FICA (SS and Med)	Health Stipend/ Year	State UI	Workers Comp. Premium Share	Total	Fringe %
Rates		3%	8%	\$3,600	1%	\$444		
PM	\$51,515	\$1,545	\$3,940	\$3,600	\$721	\$444	\$10,252	41
ED	\$80,000	\$2,400	\$6,120	\$3,600	\$1,120	\$444	\$13,684	36
CEC	\$52,500	\$1,575	\$4,016	\$3,600	\$735	\$444	\$10,370	41

c. Travel

The budget includes \$4,434 in estimated travel costs for the Project Manager to conduct 70 site visits and the Community Engagement Coordinator to travel to 20 meetings. The costs include federal mileage rates (\$.68/mile) and approximate round trip mileage for trips based on averages of actual mileage reimbursements provided in 2023 (40 miles for meetings, 80 miles for site visits).

d. Equipment

NA

e. Supplies

Materials and Supplies: \$4,980

- \$500: Meeting Supplies: All necessary items for multiple stakeholder meetings including but not limited to: notebooks, pens, folders, markers, printed maps, flash drives, etc.
- \$3240: Data loggers, to collect stage and water temps for modeling
- \$790: Field equipment (GPS and software)
- \$450: Printed materials including standalone maps and final action plans

f. Contractual

Consultants will be hired to assist with monitoring, modeling, baseline data collection, and project planning as needed. We have conducted a preliminary price analysis based on previous years' work and found average fees for a water quality specialist are \$150 per hour, and W3 Modeling to the scale that we are interested in will be \$20,500-\$23,500. Because annual needs for monitoring, modeling, and planning will change, we intend to develop separate annual contracts for the work, none to exceed \$25,000. We will use a Limited Solicitation procurement process for contractors.

We also intend to contract with a Project Manager from Trout Unlimited to build upon efforts from a previous CWMP partnership. Because of the TU PM's knowledge of subbasins within the Westside planning area, this will allow for more efficient planning and outreach among the stakeholders with whom she has an existing relationship. The billing rate for this type of contract with TU will be \$57.25/hour, and we anticipate less than 150 hours total, so we will not need to go through a formal bidding process.

Consultants will help develop and administer the strategic Campaigns (for Community Engagement and Streamside Landowners) including polling and designing campaign outreach materials (photography, infographics, etc.). Recent rate comps indicate a polling consultant to average \$125/hour and a designer to average \$95/hour. Neither contract will exceed \$10,000 so a Limited Solicitation procurement process will be used.

g. Construction

NA

h. Other Direct Costs

To implement the strategic Campaigns, we will need to invest in marketing - billboards, newspaper ads, videos, social media ads, etc. Another local organization recently lead a successful Valley-wide campaign using similar tactics; based on a more limited scope and scale, we anticipate spending approximately ¼ of their Campaign budget - \$4,000 total.

Printed media and postage cost for one year (~1,000 mailings) of a campaign—brochures, postcards, etc.—\$1,800

Though we anticipate there will be significant involvement from local stakeholders, agencies, and other partners, **no third-party in-kind contributions are included in this proposal.**

i. Indirect Costs

BWP has never received a Federal negotiated indirect cost rate, so the budget includes a 10% de minimis rate of modified total direct costs.

Letters of Support

File Code: 2600
Date: November 15, 2023

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Robin Graber
Mail Code: 86-6300
P.O. Box 25007
Denver, CO 80225

Re: Bitterroot Water Partnership's (BWP) Cooperative Watershed management Program (CWMP) Review Committee WaterSmart Phase 1 Grant Application

Dear CWMP Review Committee:

The Bitterroot National Forest (BRF) is writing in support of the Bitterroot Water Partnership's (BWP) request for funding through CWMP WaterSmart Phase 1.

The BRF's focus is restoring and making resilient landscapes and watersheds that function properly and support various terrestrial and aquatic species, that include Federally listed threatened bull trout and State species of concern westslope cutthroat trout. We continually seek opportunities to work with our partners to protect and restore critical habitats and watershed processes both on public land and adjacent lands. As such, we intend to work with BWP to identify overlapping areas of interest for whole watershed restoration. Through this grant, our abilities to partner will be enhanced, specifically in areas of:

- Actively supporting BWP in pursuing restoration work in areas where NEPA has been completed and align upcoming efforts.
- Researching and working in partnership with BWP to identify areas where BRAT models and/or beaver surveys have been completed, and actively prioritize areas where low-tech process-based restoration (LTPBR) would prove valuable for watershed restoration.
- Develop and implement Water Condition Framework/Watershed Restoration Action Plans (WRAPs) in areas prioritized by the Forest and BWP, where we can concurrently work on our common goals.
- Leveraging future Forest Service funding opportunities.
- Assistance with implementation on LTPBR projects, AOPs and other watershed restoration projects on the Forest.
- Collaborate on future projects that benefit watershed health and resiliency.



We value our partnership with the BWP as we continue our efforts to improve and protect the landscapes and watersheds in the Bitterroot Valley and I encourage the support of the CWMP review committee to these efforts. Thank you for your consideration.

Sincerely,

MATTHEW ANDERSON  Digitally signed by MATTHEW
ANDERSON
Date: 2023.11.15 18:01:36 -07'00'

MATTHEW D. ANDERSON
Forest Supervisor

cc: Brandy Langum – Aquatics Program Manager, Bitterroot National Forest, Heather Barber – Executive Director, Bitterroot Water Partnership, Meagen Larson – Project Manager, Bitterroot Water Partnership



Christine Brissette
312 N. Higgins Ave., Suite 200
Missoula, MT 59802
406-544-9649
e-mail: cbrissette@tu.org

December 4, 2023

To the CWMP Grant Review Committee:

I would like to express my full support for the Bitterroot Water Partnership's (BWP) proposal to the Bureau of Reclamation's Cooperative Watershed Management Grant Program. As a restoration practitioner in the Bitterroot Valley for seven years, and a close partner of BWP, I can attest that the organization is adept at not only implementing restoration projects, but also leading the community development and stakeholder involvement required.

TU works to improve fisheries and water quality throughout the Bitterroot valley through partnerships, project development and project implementation. Those interests will be well-served by the implementation of the goals and tasks outlined in their grant proposal. The Bitterroot Watershed supports a number of important native fish species including bull trout (ESA listed as Threatened) and westslope cutthroat trout (State species of concern), as well as recreationally significant species like rainbow and brown trout. Unfortunately, habitat degradation related to irrigation and land development has had substantial negative impacts on many of the Valley's fisheries. Addressing these problems is often challenging, but the Bitterroot has a long history of finding cooperative solutions among vested users.

The goals outlined in this proposal will help build on the success of a CWMP grant that TU completed in partnership with BWP (2020-2023) and will be a worthwhile investment in the continued protection and enhancement of waters in the Bitterroot subbasin. I will gladly look forward to continued opportunity to partner with BWP for the benefit of cold-water habitat.

If you have questions or comments related to this letter, please feel free to contact me directly.

Sincerely,

Christine Brissette
Project Manager
Trout Unlimited

Official Resolution



**BITTERROOT WATER
PARTNERSHIP**

WHEREAS, the Bitterroot Water Partnership is committing to the financial and legal obligations associated with the receipt of financial assistance award under the FOA for the WaterSMART Cooperative Watershed Management Program (CWMP), it is:

RESOLVED, that the Board of Directors has reviewed and supports the application submitted;

RESOLVED, that the Bitterroot Water Partnership will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement;

RESOLVED, that the Board of Directors is hereby authorized and approved to authorize and empower the following individuals to make, execute, endorse, and deliver in the name of and on behalf of the Bitterroot Water Partnership, for the obligations associated with the WaterSMART Cooperative Watershed Management Program;

Name: Heather Barber
Position/Title: Executive Director


Signature:

Name: Meagen Larson
Position/Title: Project Manager


Signature:

The undersigned certifies that they are the properly elected and qualified President of the Bitterroot Water Partnership, a corporation duly conformed pursuant to the laws of the state of Montana, and that said meeting was held in accordance with state law and with the Bylaws of the Bitterroot Water Partnership.

This resolution has been approved by the Board of Directors of the Bitterroot Water Partnership on November 13, 2023, and goes into effect immediately following signature.

I, Edward M. Snook, as authorized by the Bitterroot Water Partnership, hereby certify and attest that all the information above is true and correct.



Bitterroot Water Partnership BOD President signature

11/13/2023

Date

References

- Backus, P. via Swanson, L., (2017, April 30). Water plays an important role in Ravalli county's economic well-being. *The Ravalli Republic*.
- Brown, P., Chaskin, R. J., Hamilton, R., Richman, H., Patrizi, P., Sherwood, K., & Spector, A. (2003). Toward greater effectiveness in community change.
- Davenport, M. A., & Seekamp, E. (2013). A multilevel community capacity model for sustainable watershed management. *Society & Natural Resources*, 26(9), 1101-1111.
- Foster-Fishman, P., Berkowitz, S., Lounsbury, D., Jacobson, S., and Allen, N. (2001). Building collaborative capacity in community coalitions: A review and integrative framework. *Am. J. Commun. Psychol.* 29(2):241–261.
- Goodman, R. M., Speers, M. A., McLeroy, K., Fawcett, S., Kegler, M., Parker, E., ... & Wallerstein, N. (1998). Identifying and defining the dimensions of community capacity to provide a basis for measurement. *Health education & behavior*, 25(3), 258-278.
- Isaak, Daniel J.; Wenger, Seth J.; Peterson, Erin E.; Ver Hoef, Jay M.; Nagel, David E.; Luce, Charles H.; Hostetler, Steven W.; Dunham, Jason B.; Roper, Brett B.; Wollrab, Sherry P.; Chandler, Gwynne L.; Horan, Dona L.; Parkes-Payne, Sharon. (2017). The NorWeST summer stream temperature model and scenarios for the western U.S.: A crowd-sourced database and new geospatial tools foster a user community and predict broad climate warming of rivers and streams. *Water Resources Research*. 53: 9181-9205.
- United States Department of Agriculture (USDA) (2017). 2017 Census of Agriculture Report – Ravalli County Montana.
https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Montana/cp30081.pdf
- Lonsdale, W. R., Cross, W. F., Dalby, C. E., Meloy, S. E., & Schwend, A. C. (2020). *Evaluating irrigation efficiency: Toward a sustainable water future for Montana*. The Montana University System Water Center.
https://dnrc.mt.gov/docs/water/Planning_implementation_coor/Evaluating-Irrigation-Efficiency-MontanaWaterCenter.pdf
- Maxwell, B. (2023, October). *The Bitterroot Valley in a Changing Climate. Bitterroot Resilience Forum*.
- Meenar, M., Featherstone, J., Mandarano, L., & Olszak, B. (2013) Effective Community Engagement Tools in Watershed Plans. *Examples from the USA., 49th ISOCARP Congress*
- Montana Department of Environmental Quality (MDEQ) (2018). Final Water Quality Integrated Report.

https://deq.mt.gov/files/Water/WQPB/CWAIC/Reports/IRs/2020/MT_2020_IR_Final.pdf

Montana Fish, Wildlife, and Parks. (2015). Dewatered Streams – Montana. https://gis-mtftp.hub.arcgis.com/datasets/e0849312c41b415992a075f8696164c8_0/explore?location=46.332279%2C-113.933763%2C10.86

Montana Fish, Wildlife and Parks (MFWP) (2023). Montana Statewide Angling Pressure. <https://fwp.mt.gov/binaries/content/assets/fwp/fish/angling-pressure-surveys/2021/angler-pressure-survey-summary-2021.pdf>

Northwest Power and Conservation Council (NPCC). (2009). “Bitterroot River Subbasin Plan.” In Columbia River Basin Fish and Wildlife Program. Portland, Oregon, 2009.

Lindstrom, J. (2022). (rep.). *Analysis And Management Implications of Long-term Trout Population Monitoring on the Bitterroot River and Lower West Fork Bitterroot River, Western Montana*. Montana Fish, Wildlife, and Parks.

Swanson, L. D. (2001). *The Bitterroot Valley of western Montana: area economic profile*. O'Connor Center for the Rocky Mountain West, the University of Montana.

United States Census Bureau. (2020). Annual Estimates of the Resident Population, April 1, 2010 to July 1, 2019. <https://data.census.gov/cedsci/table?q=Ravalli%20County%20montana&tid=PEPPOP2019.PEPAN NRES&hidePreview=false>

United States Fish and Wildlife Service. (2010) Revised Designation of Critical Habitat for Bull Trout in the Coterminous United States; Final Rule. <https://www.federalregister.gov/documents/2010/10/18/2010-25028/endangered-and-threatened-wildlife-and-plants-revised-designation-of-critical-habitat-for-bull-trout>

U.S. Fish and Wildlife Service. (2015). Recovery plan for the coterminous United States population of Bull Trout (*Salvelinus confluentus*). Portland, Oregon. xii + 179 pages.

Vanderhoof, M. K., Christensen, J. R., & Alexander, L. C. (2019). Influence of multi-decadal land use, irrigation practices and climate on riparian corridors across the Upper Missouri River headwaters basin, Montana. *Hydrology and Earth System Sciences*, 23(10), 4269-4292. <https://doi.org/10.5194/hess-23-4269-2019>

Weigel, C., Cruse, R., & Reddy, S. (2022). Using targeted messages to improve farmer engagement in conservation programs. *Journal of Soil and Water Conservation*, 77(5), 546-551.

Whitlock, C., Cross, W., Maxwell, B., Silverman, N., & Wade, A. A. (2017). Montana climate assessment. *Bozeman and Missoula MT: Montana State University and University of Montana, Montana Institute on Ecosystems*, 318.

Zartico via Glacier Country Tourism (2023). Top Origin Markets and Change – Percentage of Total Devices by POI Category.