



TETON RIVER BASIN

BUILDING FORMAL COLLABORATIVES TO LEVERAGE FEDERAL FUNDING

Watershed Context

The Teton River watershed is located in eastern Idaho and western Wyoming, just west of the iconic Teton mountain range. The mainstem Teton River collects snowmelt runoff from tributary streams originating in the surrounding Teton, Big Hole and Snake River mountains and discharges into Henry's Fork of the Snake River. Land use development and changes have impacted the health and function of the watershed's aquatic systems, which historically supported a thriving population of Yellowstone Cutthroat Trout. Friends of the Teton River (FTR) is a nonprofit organization whose mission is to restore and conserve populations of native trout species, surface and groundwater quality and healthy, functioning natural hydrology. Through their principles of sound science, community education and effective collaboration, FTR has partnered with local landowners and agricultural producers, public agencies, The Nature Conservancy (TNC) and other NGOs to implement strategic and effective conservation projects in the Teton River watershed.

Characterization of the Watershed

The Teton River watershed drains 806 square miles of eastern Idaho and 327 square miles of western Wyoming. The Upper Teton River flows through the Teton Valley, a wide, flat portion of the upper watershed with lots of vegetation and wetlands and the cities of Driggs, Teton and Victor. The river flows northward and exits the valley by dropping into the Teton River Canyon. As a snowmelt-fed river, the Teton's peak flows occur in the early summer and its hydrograph decreases significantly throughout the summer and fall. Its important tributaries – Fox Creek, Teton Creek, Bitch Creek, Canyon Creek – are wild and remote and begin in the national forest (Amy Verbeten and Anna Lindstedt, personal communication).

The Teton Valley is surrounded by public land in its neighboring mountain ranges. About 25% of the watershed area is federally- or state-owned, with the majority of its land being managed by the USFS as part of Caribou-Targhee National Forest. The Teton Valley itself is primarily private land, with about 50% of it being used for agriculture and the other 50% developed or at least planned for development.

The Teton Valley's main agricultural products are malt barley, hay, ranching of beef cattle and some potatoes. In recent years, the valley has been undergoing a transition from an agriculture-dominated economy to one also based on recreational tourism due to its proximity to Grand Teton and Yellowstone national parks. The lack of available private land and cost inflation of Jackson Hole is causing residential growth to expand into the Teton Valley. As a result, the population of Teton County, Idaho grew by 39% between 2000 and 2007, making it the fourth fastest growing county in the United States during that time (Friends of the Teton River, n.d.). Water use in the basin has been and remains primarily for agricultural, but urban water demands have been increasing in recent years.

In 1975, Teton Dam was constructed at the lower end of Teton Canyon to create a reservoir for irrigation water. However, in 1976 the earthen dam catastrophically failed, releasing 250,000 acre-feet of water and 4 million cubic yards of embankment material downstream. The portion of the river downstream of the dam site was significantly altered and has since undergone mitigation and restoration work.

The focal species of conservation efforts in the Teton River is the Yellowstone cutthroat trout (YCT). The watershed historically supported productive trout populations but now only occupy 23% of their historic range (Friends of the Teton River 2021b). While not listed as endangered, YCT are considered to be an indicator of ecosystem health and are a species of conservation concern by multi-state and federal agencies.

Agencies / Entities Interviewed

Friends of the Teton River (FTR) is a non-profit organization based in Driggs, Idaho, in the center of the Teton Valley. Their mission is to “restore and conserve the Teton River Watershed, ensuring a lasting legacy of clean water, healthy streams and a vibrant wild fishery” (Friends of the Teton River n.d.). While one of their primary objectives is to restore and conserve YCT, FTR is not exclusively a fish-based organization. Their other objectives are to restore and conserve surface and groundwater quality, restore and conserve healthy, functioning stream channels, floodplains, riparian areas and natural wetlands, provide watershed education and promote a strong and sustainable organization. They are founded on the principles of sound science, community education and effective collaboration with a diverse group of local stakeholders, community members, regional representatives and state and federal agencies (Friends of the Teton River n.d.).

FTR has worked along the mainstem Teton River and its tributaries throughout the watershed. Most of these efforts have been focused on the upper Teton River and Teton Valley since the lower section of the river is very remote and difficult to access due to steep canyon walls. They initially prioritized projects in tributaries to the upper Teton River, like Trail Creek, Fox Creek, Darby Creek, Teton Creek, South Leigh Creek and Badger Creek. Projects in these tributaries were seen as “low-hanging fruit”, as in they were smaller, less costly and were supported by landowners and science. FTR has since expanded their efforts to other tributaries that feed into the lower Teton River, like Bitch Creek, Canyon Creek and Moody Creek.

Coalition of Partners

Local Agricultural Partners Collaboration is an important principle of the work that FTR does in the Teton watershed. They work with broad categories of partners – from private landowners in the Teton Valley to public agencies in the surrounding mountains. They acknowledge that their most critical partners are private landowners, primarily local farming and ranching communities. They have developed key agricultural partnerships not only with individual landowners, but with larger entities that represent landowners and agricultural partners. For example, they have partnered with the local (Teton County) chapters of the Farm Bureau and Soil Conservation District, as well as individual canal companies like Canyon Creek Canal Company, Trail Creek Sprinkler Irrigation Company and others.

FTR have worked to develop and maintain key partnerships with local landowners and agricultural entities through community engagement and education efforts. Starting in 2018, they began hosting the Annual Teton Farm & Agricultural Tour, where they lead community members on a 5-hour bus tour highlighting the work local farmers, ranchers and conservation groups are doing to benefit the health of the Teton Valley. The tour is sponsored by FTR, Teton County Farm Bureau, Teton County Soil Conservation District, Teton Regional Land Trust and local agricultural partners. The 2019 tour saw a turnout of about 100 community members (Sean Ellis 2019). FTR also hosts other types of education events for the agricultural community. In 2019, they partnered with Teton County Soil Conservation District to host a soil health workshop with a regenerative agriculture specialist for 30 producers and community members (Friends of the Teton River 2021a). Through its dedicated effort to engage with the

local agricultural community, FTR has been able to foster positive working relationships on the ground. These relationships have been critical in accomplishing FTR's conservation goals, as a majority of their work has been on private land in the Teton Valley.

Public Agency Partners FTR has also partnered with state and federal agencies that manage the public lands in the surrounding mountain ranges. Most of the headwaters to the Teton River's tributaries originate in the Caribou-Targhee National Forest, managed by the US Forest Service. As such, they have worked with the Forest Service on its projects located in those tributaries. To a lesser extent, FTR has partnered with the Bureau of Land Management which manages portions of the canyon section of the Teton River. They have also worked with state agencies in Idaho and Wyoming, including the Idaho Department of Lands, Idaho Department of Fish and Game and Wyoming Game and Fish Department. FTR has also collaborated with the Natural Resources Conservation Service and even shares an employee with them.

Discrete Collaborations on Specific Projects In addition to working broadly with private landowners and public agencies, FTR collaborates with other NGOs on discrete projects. Their biggest partners are Henry's Fork Foundation (HFF), Teton Regional Land Trust and TNC. FTR has worked particularly closely with HFF through a new form of collaboration in which the two entities share staff. TNC has increasingly been a partner in the Teton watershed, whereas Trout Unlimited is less present there than it is in other Idaho geographies. In its collaboration with TNC, FTR identifies key projects in the basin that require significant land acquisitions and water transactions components and then goes to TNC to utilize their financial and structural capacity to implement those components. With these roles, FTR and TNC have collaborated on a discrete project with 1,000 acres of water rights. For her work on this project, TNC has been funding Sarah Lien, FTR's Water Resources Director (Amy Verbeten and Anna Lindstedt, personal communication).

Other NGO partners include American Rivers, the Greater Yellowstone Coalition and LegacyWorks, a conservation catalyst group. FTR has increasingly worked with issue-specific groups as well on discrete projects. This includes Teton Valley Trails & Pathways, Valley Advocates for Responsible Development and others.

The benefit of collaborating with such a wide range of entities is that FTR can organize different entities on specific projects. Any number of these entities could be organized around what FTR is trying to accomplish on any given project. This helps FTR utilize entities with specific interests, expertise and capacities that are best suited for a specific project. An example of this is FTR's Farms & Fish Initiative, in which Teton Soil Conservation District, Teton County Farm Bureau, Teton Regional Land Trust, HFF and local stakeholders have been organized to form the Teton Water Users Association (Friends of the Teton River n.d.). Other examples include the Teton Creek Collaborative and Teton Creek Stakeholders Groups (Amy Verbeten and Anna Lindstedt, personal communication).

Priority Conservation Issues and Efforts

Conservation Issues The primary conservation issue that drives much of the work in the Teton River watershed is the population decline of Yellowstone cutthroat trout. The watershed had historically supported flourishing populations of YCT, which would making spawning runs into the mountain tributaries in the watershed. However, between 1999 and 2003 populations of YCT declined by 95% due to a variety of natural and human causes. These include overfishing, habitat destruction from grazing, logging and mining, drought causing spawning reaches to run dry, predation from larger, more aggressive lake trout, interbreeding with introduced rainbow trout and outbreaks of disease in spawning grounds (Teton Regional Land Trust 2020).

Due to the wide range of causes for YCT decline, priority conservation issues for FTR are not limited to restoring and conserving their populations. Their mission is to work for clean water and healthy streams in addition to a vibrant wild fishery. The three major surface water quality threats to the Teton River, as

identified by the Idaho Department of Environmental Quality (IDEQ) are sediment, temperature and nutrients. Groundwater quality issues are due to increased residential development and dependence on private wells. Streamflow and habitat alterations have also been recognized as important factors impacting both surface water quality and hydrologic function of the watershed's stream channels, floodplains, riparian areas and natural wetlands. FTR focuses its work on addressing these issues as well as improving its YCT fishery.

Strategic Approach At a high level, FTR's strategy is to implement programs and projects based on community education and cooperation with landowners, citizens and agency partners. Their conservation efforts have been prioritized based on strong science, as FTR has established their own original research and monitoring programs. The first five years of the organization was spent establishing baseline data by monitoring water quality and quantity, performing habitat health assessments and studying YCT populations, spawning location, movement patterns and mortality. With this baseline of information, FTR then began prioritizing conservation and restoration projects that were seen as "low-hanging fruit". These efforts were smaller, primarily focused on upper Teton River tributaries and were supported by science and landowners (Amy Verbeten and Anna Lindstedt, personal communication). Examples of "low-hanging fruit" projects include irrigation diversion improvements, fish passage, streambank erosion and sediment reduction projects. FTR worked at a quick pace at first to knock off many of these projects so that they can in effect prevent hydrologic and ecologic conditions from declining further. This allowed them to shift their focus to more complicated, larger-scale projects that require more planning and funding. With a focus on bigger projects in recent years, FTR has been able to be more selective about the projects they do implement. They have also continued their research and monitoring efforts over time to assess current conditions and evaluate how effective their work has been.

The other side of FTR's approach is an education program intended to teach the current and future generation of community members in the watershed. Their goal is to integrate education within the community through a two-way transfer of knowledge. Through this education program, they offer tours and events for local community members, as mentioned previously (Section 4.1). Engaging the community through these events helps FTR to grow and monitor the community's capacity for working towards its conservation goals. It also builds and maintains key partnerships with private landowners and stakeholders. In addition, FTR has been intentionally building stakeholder groups at the subwatershed level to increase capacity for planning and implementing specific projects within those subwatersheds. For example, they have done this in the Teton Creek subwatershed by organizing various partner entities into the Teton Creek Collaborative and Teton Creek Stakeholders Groups (Amy Verbeten and Anna Lindstedt, personal communication).

Project Types and Scale The projects implemented by FTR are categorized into four main project types – water quality, water quantity, fish passage and migration and stream habitat and function. Water quality projects are focused on protecting and improving surface and groundwater quality for the health of the watershed's communities and aquatic ecosystems. Examples of specific projects implemented by FTR towards this goal include:

- Community education and incentives programs to test well water, properly dispose of hazardous waste and maintain septic tanks;
- Stream stabilization and habitat restoration projects to reduce sediment inputs to streams; and
- On-farm best management practices to improve soil health and reduce runoff and nutrient input through partnerships with local agricultural producers.

FTR’s water quantity projects seek to improve stream flows and the availability and predictability of water supplies for human and environmental needs. They implemented a streamflow restoration program in 2006 which utilizes cooperative, voluntary actions to improve streamflow in the tributaries to the Teton River. They have partnered with agricultural producers and other landowners on projects to improve irrigation infrastructure and on-farm conservation. An example of this is FTR’s Farms and Fish Initiative, in which they have utilized its coalition of partners to provide financial incentives and support for local agricultural producers to implement conservation farming and best management practices. This includes water conservation, soil health and aquifer recharge efforts. Since 2016, \$750,000 in funding has been secured for this initiative (Friends of the Teton River n.d.).

Fish passage and migration projects seek to protect and restore connected migration routes of native YCT to improve their reproductive success and increase populations. Towards this goal, FTR conducted a comprehensive assessment of potential barriers to fish passage in 2005. Many of the barriers identified in this assessment were either irrigation diversion structures that acted as small dams that were impassable at low flows or canals with high entrapment potential for fish. Since 2006, FTR has worked with willing landowners and canal companies on projects to improve outdated infrastructure with more fish-friendly headgates. They have also installed fish ladders or step pools in certain locations where there were significant blockages to upstream migration.

Stream habitat and function projects focus on improving hydrologic function of the mainstem Teton and its tributaries. They focus on improving geomorphology by implementing bio-engineering techniques to stabilize stream banks and create instream habitat for fish and wildlife. The best example of this work is in Teton Creek, where they have performed a geomorphology project near the city of Driggs. They continue to expand on that project both upstream and downstream of the original project site.

In the first few years, FTR’s efforts were focused on the mainstem and tributaries of the upper Teton River but have since been expanded to the lower reaches of the watershed as well. The scale of FTR project implementation for each of the primary project types has been specific to reaches or segments of the mainstem Teton River and its tributary subwatersheds. Projects along the mainstem Teton River are broken down into several reaches – Headwaters to South Bates Bridge, South Bates to Packsaddle Road crossing, Packsaddle to Harrops Bridge, Harrops to Felt Dam and Felt Dam to Wilford Dam. For the tributaries like Teton Creek and Trail Creek, for example, project reaches are broken into Upper and Lower segments. The exceptions to this are Bitch Creek and Canyon Creek, the important tributaries lower in the watershed which are considered as one reach for project implementation. Based on FTR’s extensive monitoring and research programs, priority rankings are determined for each reach based on risk scores that include YCT population significance, climate change risk, habitat degradation, water quality, land use change and non-native competition, among other factors.

Project Cost Estimates Project implementation in the Teton watershed comes with both social and on-the-ground costs. FTR has provided examples of specific projects prioritized for future implementation and their estimated costs. The costs of different project types are summarized below (Table 1).

Project Type	Cost Estimate Range - Social	Cost Estimate Range - On the Ground
Barrier Removal	\$15,000 - \$60,000	\$90,000 - \$1,000,000
Fish Screens	\$15,000 - \$60,000	\$85,000 - \$2,000,000
Flow Restoration	\$15,000 - \$300,000	\$400,000 - \$2,500,000
Habitat Restoration	\$15,000 - \$750,000	\$150,000 - \$25,000,000
Non-native Trout Management	\$20,000 - \$180,000	\$15,000 - \$500,000

Table 1. Cost estimates for various FTR project types. Source: FTR

Funding

Program	Federal Source(s)	State Source(s)	Other Source(s) - Private, Foundation, Local	Example Project(s)	Funding Received
Stream Habitat & River Restoration	NFWF - Bring Back the Natives, USFWS - Partners Program	Idaho Fish and Wildlife Foundation	Cushman Family Foundation, Donald C. Brace Foundation, Jackson Hole One Fly Foundation	Teton Creek Corridor Project	\$500,000
Stream Flow Restoration and Monitoring	BOR WaterSMART, Columbia Basin Water Transactions Program (Bonneville Power Administration)	Idaho Water Resource Board	N/A	Canyon Creek	\$74,000
Farms & Fish Initiative	NFWF - Conoco Phillips Spirit Award, NRCS - CIG, NRCS - RCPP	Idaho Department of Environmental Quality	TNC, Putnam Family Foundation	Soil & Water Health, Aquifer Recharge, others	\$4,000,000 (total for initiative)
Fisheries Research & Monitoring	NFWF - Freshwater Restoration Accounting Fund	N/A	John and Mary Wilkes Short Foundation	Tributary Trout Assessment (4th annual)	\$75,000
Fish Passage Restoration	USFWS	N/A	Teton Conservation District (WY), Jackson Hole One Fly Foundation, Patagonia	Automated Fish Screen System on Hog Canal	\$24,000
Water Quality and Well Water Testing	N/A	N/A	Community Foundation of Teton Valley, Silver Star Communications, Teton Conservation District (WY)	Cost-share Well Water Testing Program	\$17,000

Table 2. FTR funding source summary by program with example projects. Source: FTR.

Federal Funding Sources FTR has secured funding from Bureau of Reclamation, USFWS, NRCS, NFWF and EPA grant programs. Reclamation money has primarily come through its WaterSMART program. They have used this in the past for projects in Canyon Creek and projects related to the failed Teton Dam. Initial BOR grants for the latter came out of recommendations from the Basin Plan for the Henry’s Fork Snake River, which included some specific efforts being targeted towards replacing the Teton Dam. In recent years, however the focus of Teton Dam work has been on aquifer recharge rather than dam rebuild. WaterSMART grand funding has been used to research and implement that. In addition to WaterSMART, FTR has received funding for project planning through BOR’s Collaborative Watershed Management Program (CWMP). Looking forward, FTR also recently applied for WaterSMART funding for a fish screen as well as submitted a proposal for another grant through Reclamation’s new Environmental Water Resources Projects program.

USFWS funding has come through the Partners for Fish and Wildlife Program (Partners Program). The Partners Program offers technical and financial assistance to landowners, managers, tribes, corporations, schools and nonprofits interested in improving wildlife habitat on their land. As such, this funding has been used for stream habitat, fish passage and river restoration projects in the Teton watershed. Through NRCS, FTR has secured funding through its Regional Conservation Partnership Program (RCPP) and Conservation Innovation Grants (CIG) programs. These are both for its Farms & Fish Initiative, with the RCPP funding going towards the Soil Health Initiative and CIG going towards the Aquifer Recharge Initiative. NFWF has provided funding for FTR’s ongoing research and monitoring programs to track YCT populations and habitat in the watershed. This funding has been secured through its Freshwater Flow Restoration Accounting Fund program. In addition, NFWF’s Bring Back the Natives program has funded stream habitat and river restoration activities in the watershed. EPA’s Environmental Education grant has been used for FTR’s community education and outreach programs.

State Funding Sources State funding makes up a small proportion of the money that FTR brings in for its projects. Idaho’s state natural resource agencies lack the capacity, personnel, or funding to support FTR projects akin to federal or other funding sources. For this reason, FTR typically refrains from requesting direct state funding but instead uses agencies as a conduit for seeking federal and other sources of funding. For example, funding from the Idaho Water Resource Board for streamflow restoration and monitoring comes from a subcontract through the Columbia Basin Water Transactions Program sponsored by the Bonneville Power Administration (within the U.S. Department of Energy). FTR

has also received EPA 319 Grant Program funds administered by the Idaho Department of Environmental Quality and landscape-scale restoration grants from USFS through the Idaho Department of Lands.

Other Funding Sources – Private, Local, Foundation Being in a tight-knit community has allowed FTR to tap into funding from local entities and private donors and foundations. Part of their approach to securing funding is to educate funders on their work. FTR wants to help form funder’s connection and interest in conservation by bringing them out into the field to experience firsthand the work that they are doing on the ground. They regularly receive funding from Patagonia and some other private foundations of stakeholders in the watershed (listed in Table 2). There are some private donors from Jackson, Wyoming, including the Jackson Hole One Fly Foundation and Teton Conservation District, but typically FTR targets donors with direct connection to the Teton River watershed. They have also received funding from the Western Native Trout Initiative, which is a public-private fish habitat partnership that works across the 12 western states to conserve native trout species.

Challenges, Opportunities, and Lessons Learned

FTR’s approach to implementing conservation projects was to start out by establishing scientific baselines and prioritizing small-scale projects based on those baseline conditions, before expanding to larger-scale projects that require more planning and funding. One key aspect of that approach was that it involved FTR being in “do it yourself” mode for the early years of its organization. In its initial years, this meant that FTR would attempt to use only their own capacity to plan and implement its conservation projects. This early phase was integral into its ability to learn about its strengths and weaknesses as an organization. This helped them understand the key pieces that they were capable of doing themselves but even more so helped them understand where to cultivate relationships to activate other partnerships. An example of this is its relationship with TNC. FTR has identified key projects in the basin that require significant land acquisitions and water transactions components but understand that they don’t have the financial or structural capacity to be able to do that themselves, so they partnered with TNC. They recognized TNC as the expert in land and water acquisition, let them handle that piece of their project and take credit for it. This was a win-win partnership for both entities.

In terms of funding, FTR’s approach created some challenges in the early run but paid off significantly in the long-term. In the early years of the organization, FTR worked with limited budgets from one-off grants for specific projects. It was important for them to work in a timely fashion on these projects so that they were not strapped for money during the last phases of implementation. Often, they were cut short on projects because they were limited by how many unrestricted (non-federal) dollars they could bring in. They found it challenging to secure capacity support funding. In recent years, their approach has shifted such that they seek multi-year grants and can plan several years ahead financially. This involves applying for planning grants to establish the data and close scientific gaps before project implementation. In turn, the time spent in the planning phases makes them more successful at getting funding for the implementation phases. Funders have a better idea of FTR’s objectives and have more confidence the project will be a good investment. This approach has allowed FTR to successfully bring in significant amounts of funding for project implementation.

A unique advantage that has allowed FTR to be successful in securing funding is that they have in-house expertise dedicated to fundraising (Anna Lindstedt). Typically, an entity of their size would rely on staff from larger NGOs like TNC or TU to raise money. This can create problems for the smaller entity, as their project objectives may not align with the larger entity that they turn to help secure funding. FTR is in a position to avoid that potential conflict by being capable of fundraising using their own in-house capacity. Another important advantage they have is excellent staff longevity and little turnover. This is because of the small, close-knit community of the Teton Valley – its people feel invested in both the watershed and the community itself. The longevity of its staff allows FTR staff to establish long-term relationships with funders and therefore become more successful at securing funding.

FTR's dedication to community education have been another critical component of its ability to develop partnerships with local landowners, agricultural producers and project sponsors. Through tours and events that it sponsors, FTR engages local community members, youth, potential project funders and partners alike. These groups learn firsthand about the conservation issues facing the Teton River and the type of work that FTR does in the watershed – an important experience that inspires community action. It is these principles that have contributed to the success of FTR in fostering effective collaborations and implementing win-win conservation projects in the Teton watershed.

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