

Western Native Trout Initiative’s “portfolio concept” approach for advancing landscape-scale trout conservation

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Abstract

Native trout fisheries in the western United States are both economically and culturally important, yet many populations have seen dramatic declines due to habitat loss and fragmentation, climate change, and competition and hybridization from nonnative species. To help address these challenges, the Western Native Trout Initiative (WNTI) was established in 2005 and approved as a regional National Fish Habitat Partnership in 2008. Over the past two decades, the WNTI has served as a catalyst to help implement large-scale conservation, directing over US\$11.4 million in grants—leveraged with \$57 million in matching funds—toward 254 priority projects. These efforts have allowed conservation partners to successfully remove 171 fish passage barriers, reconnect over 1,400 miles of habitat, and have contributed to advancing seminal range-wide genetic studies and status assessments for many western native salmonids. One key strategy in the WNTI’s success at catalyzing conservation efforts is employing a “portfolio concept,” a landscape-scale approach that bundles high-priority, vetted projects into strategic investment packages for public and private funding sources. We present a case study from the Bear River basin to demonstrate how this model can accelerate the pace of restoration, benefiting both native salmonids and sympatric species while benefiting local communities. Using a combination of science-based prioritization, multi-agency coordination, and creative public outreach, the WNTI has been working for 20 years to revitalize native trout across the western USA.

Keywords: Cutthroat Trout, habitat restoration, landscape-scale, native trout, portfolio

Introduction

Trout fisheries across the USA represent powerful economic values (Loomis, 2005; Maillett & Aiken, 2015), but also represent tremendous cultural (Kershner et al., 2019) and ecological importance (Dauwalter et al., 2020).

As iconic sport fish and historically important subsistence resources, trout fisheries have held tremendous cultural significance for centuries (Trotter, 2008; but see the excellent review by Brown et al., 2019). In Europe, subsistence trout fisheries and their evolution into sport fisheries can be traced back to the 10th century (Hoffmann, 2016). In North America,

native trout fisheries have played similarly important roles of many Native American cultures (Lyons, 2015; Yu, 2015). Trout have inspired humans for generations, having been the subject of countless works of art, literature, and film. Native trout are the official state fish in 9 of the 12 western states (with species of Pacific salmon *Oncorhynchus* spp. or steelhead *O. mykiss* designated in Alaska, Oregon, and Washington) and recent surveys show that anglers consider conserving native trout a top conservation priority for state agencies (Maher et al., 2024). With over two dozen recognized species and subspecies of native salmonids throughout the western

USA, trout are a significant contributor to rural economies and cultural identities, with anglers placing a high value specifically on fishing for native cutthroat trout (Loomis, 2005; Pitts et al., 2012).

Despite their socioeconomic importance, the distribution and abundance of most native trout lineages have substantially declined relative to historical levels across the western USA (Penaluna et al., 2016; Shepard et al., 2005; Thurow et al., 1997; Young, 1995). Widespread declines are attributable to a suite of anthropogenic factors, including irrigation, grazing, mining, logging, road networks and overfishing. Contemporary threats include competition, predation, and hybridization from nonnative fishes (such as Brook Trout *Salvelinus fontinalis* and Rainbow Trout *O. mykiss*). Beginning in 1966, Gila Trout *O. gilae* were listed under the Endangered Species Protection Act (which would later become the modern Endangered Species Act [ESA]). Listings for Paiute Cutthroat Trout *O. henshawi seleniris* and Greenback Cutthroat Trout *O. virginalis stomias* would follow in 1967, and Lahontan Cutthroat Trout *O. henshawi* in 1970. All four would transition as Threatened or Endangered under the modern ESA between 1973–1975, while Little Kern Golden Trout *O. aguabonita whitei* would be listed as Threatened under the ESA by 1978. In the mid- and late-1990s, additional formal petitions for listing included Westslope Cutthroat Trout *O. lewisi*, Bonneville Cutthroat Trout *O. v. utah*, Yellowstone Cutthroat Trout *O. v. bouvieri*, Rio Grande Cutthroat Trout *O. v. virginalis*, Colorado River Cutthroat Trout *O. v. pleuriticus*, and Coastal Cutthroat Trout *O. clarkii*, with Bull Trout *Salvelinus confluentus* being ESA-listed as Threatened in 1998. Continued human population growth, coupled with climate change-mediated habitat damage and expansion of nonnative fishes has increased the urgency of securing and improving the status of western native trout (Bell et al., 2021).

While successful conservation and recovery actions were occurring, management of western native trout had been addressed in a fragmented approach through various recovery plans, conservation agreements, state management plans, or other documents targeting one species or subspecies at a time. Needed conservation actions to secure trout populations are often costly and remain inadequately funded, and few agencies have sufficient staff to meet these needs. The need for additional resources for inland trout conservation among state and federal agencies was recognized by state fish and wildlife agency directors and other members of the Western Association of Fish and Wildlife Agencies (WAFWA). The WAFWA Inland and Marine Fisheries Committee was established in 2003, whose members recognized that some trout species existed in relative obscurity in the western USA, where the focus for funding was on anadromous salmon and steelhead. They envisioned an organization that could coordinate conservation efforts on range-wide scales across multiple agencies and jurisdictions with a focus exclusively on native trout: the Western Native Trout Initiative (WNTI).

In the early 2000s, coordination among natural resource agencies to direct native trout conservation began to improve. With changes in inland native trout policy, the states of Colorado, New Mexico, Idaho, Montana, Nevada, Utah, and Wyoming; the U.S. Fish and Wildlife Service; and the U.S.

Forest Service increased coordinated conservation efforts through range-wide status assessments and established inter-agency coordination teams. They also adopted shared conservation strategies and formulated a cutthroat trout genetics protocol (Utah Department of Wildlife Resources, 2000). In 2005, WAFWA officially launched the WNTI as a unified commitment to improving the effectiveness of management actions and increasing public awareness of conservation needs of these iconic imperiled species. Twelve western state fish/wildlife agency directors and the Pacific States Marine Fisheries Commission signed a memorandum of understanding officially agreeing to participate in the Initiative. By February 2008, the WNTI was approved as a regional Fish Habitat Partnership under the National Fish Habitat Partnership (NFHP) Program (NFHP, 2006). The WNTI represents the first time that government agencies, nongovernmental organizations, and private sector interests came together to improve the status of western native trout and provide a new approach to increase the return on investment of the time, money, and workforce dedicated to range-wide native trout conservation. Since inception, the WNTI has provided significant new attention to addressing a common theme—revitalizing native trout resources across the western United States.

Approach

The WNTI's mission is “To serve as a key catalyst for the implementation of conservation or management actions for western native trout, through partnerships and cooperative efforts, resulting in improved species status, improved aquatic habitats, and improved recreational opportunities for native trout anglers across western states.”

Geographic scope

The WNTI works collaboratively with private and public partners as a catalyst to protect, restore, and enhance 21 native trout and char species. Our geographic scope includes 12 western states—Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming—covering an estimated 1.8 million square miles of public and privately managed lands. The WNTI is guided by a steering committee comprised of representatives from the 12 western state fish and wildlife agencies, 3 federal natural resource management agencies (U.S. Fish and Wildlife Service, Bureau of Land Management, U.S. Forest Service), Native American tribes (currently vacant), Canadian provincial fish and wildlife agencies (vacant), and a conservation nonprofit representative (Trout Unlimited). The WNTI's organizational structure and status as a WAFWA initiative provides integrated relationships with western state and federal fish and wildlife agencies and species-specific interagency conservation teams to assist the steering committee in identifying and developing high-priority projects.

Goals

The WNTI's major programs and activities are outlined in its strategic plan document (WNTI, 2016b), guided by input from its steering committee. Our approach includes increasing

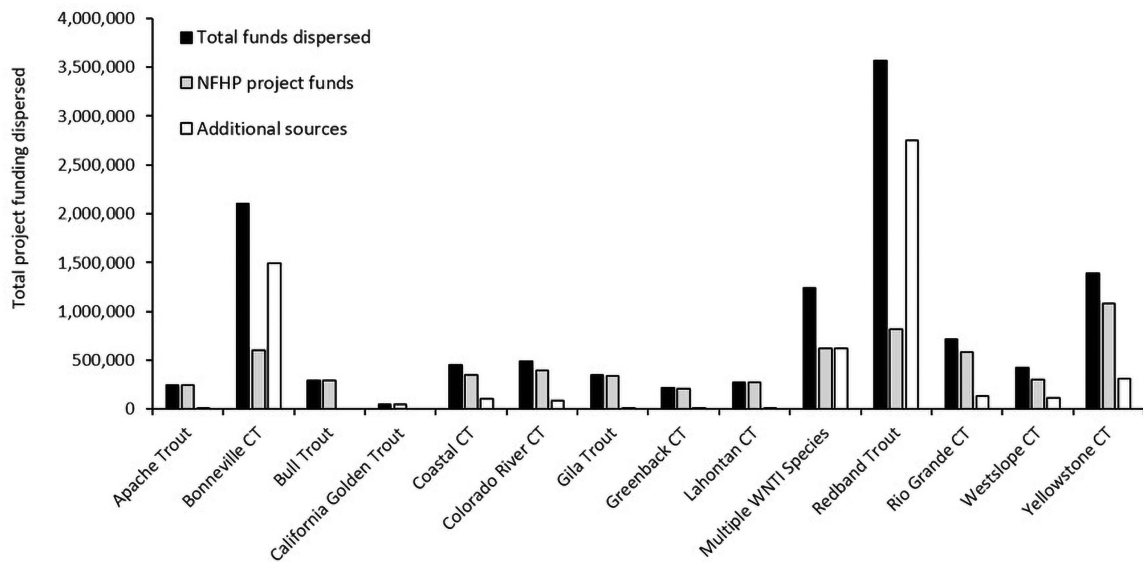


Figure 1 Western Native Trout Initiative (WNTI) project funding expenditures by species (in US\$ million) for total project funding dispersed (black bars), National Fish Habitat Partnership (NFHP) funds (gray), and other additional sources, including both public and private funding sources (open), by taxa. Higher expenditures reflect recent WNTI strategies described above directing resources to “species of emphasis” and “portfolios” of conservation projects (e.g., Bonneville Cutthroat Trout [CT] and redband trout) to catalyze conservation efforts for those taxa.

coordination between resource management agencies and local community groups; leveraging and focusing public and private resources on common priorities; raising awareness for the importance of western native trout; and increasing accountability by measuring the impact of our work through time.

The WNTI’s trout conservation efforts broadly contribute toward four major programmatic goals, which include the following:

- Goal 1: Protect intact watersheds and enhance or restore habitats that have been impacted by human activities or catastrophic natural events.
- Goal 2: Protect, restore, and enhance western native trout populations and measure success in improving the status of western native trout.
- Goal 3: Develop and implement effective communication, education and outreach programs as a tool to increase public awareness and encourage partnerships that benefit western native trout.
- Goal 4: Develop collaborative approaches and partnerships among agencies and stakeholders that emphasize cooperation and shared effort and increase funding to implement high-priority projects for the protection, restoration, or enhancement of western native trout.

The WNTI works through a collaborative, multistate approach that requires involvement of a wide range of partners and stakeholders across each species’ range. The WNTI and our partners combine science-based assessments with expert and local knowledge to establish joint priorities for conservation at a landscape scale across each species’ native range. We partnered with over 200 other state fish/wildlife agencies, federal natural resource agencies, nonprofit organizations, interagency species management and conservation teams, and others in the public and private sector. These

partnerships are key to the WNTI’s success in catalyzing existing and ongoing native trout habitat conservation efforts across the western USA.

20 Years of WNTI

Protect intact watersheds and restore habitats

As one of the NFHPs, the WNTI’s main priority is the protection and restoration of habitat for western native trout and char (Family Salmonidae). From 2005 through 2025, WNTI disbursed over US\$6 million in federal NFHP funds and an additional \$5.4 million in other foundation grants, leveraged with over \$57 million public and private matching dollars, for 254 priority native trout conservation projects (Figure 1). By leveraging funding provided by the NFHP, the WNTI and our 450 partners have successfully improved the status of western native trout populations in 12 western states, including Alaska (Figure 2). With the collaboration and coordination of WNTI partners, together, we have removed 171 barriers to fish passage, reconnected 2,292 km of native trout habitat, and placed 38 protective fish barriers to conserve important native trout conservation populations (Table 1). In addition, the WNTI has funded 1,016 watershed, fish population, and habitat surveys and assessed 4,129 stream kilometers (Table 1).

Protect, restore, and enhance populations

The WNTI has produced several science and data products to support native trout conservation, management, and collaboration. These have included writing and distributing status assessment summary reports, funding range-wide assessments and research (Dauwalter et al., 2019), and supporting database development. In fiscal year 2021, the WNTI helped fund a range-wide Yellowstone Cutthroat Trout (YCT) genetic assessment through the University of Wyoming. This multi-year dissertation project collaborated among multiple state,

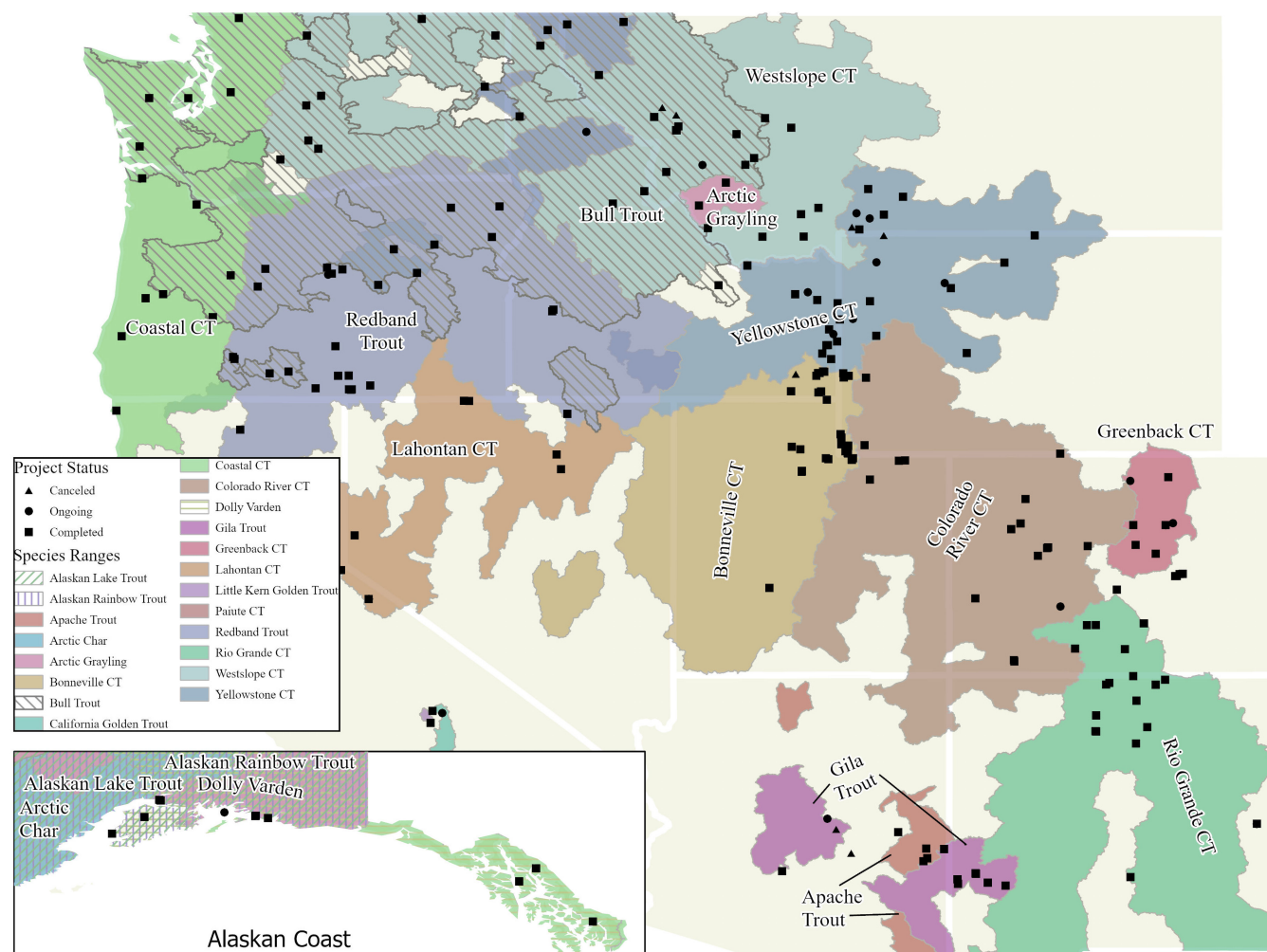


Figure 2 Geographical extent of the Western Native Trout Initiative (including Alaska) and funded project locations from 2005 to 2025, shown across various native trout species/subspecies ranges.

federal, and nongovernmental partners to collect and analyze genetic samples across the entire range of YCT and is scheduled for publication in 2026. Sampling included 231 wild populations and 12 hatchery lineages and encompassed Idaho, Montana, Nevada, Utah, and Wyoming, making it one of few studies performed at this scale. The WNTI has produced summary status assessments for 21 inland native salmonids, with several undergoing updates. Most recently, the WNTI published updated status reports for Gila Trout (WNTI, 2023b) and Apache Trout (WNTI, 2025) with plans to update the reports for Bull Trout and Arctic Grayling *Thymallus arcticus* in 2026. In 2024, the WNTI received grant funding to replace the aging range-wide databases for the YCT and Westslope Cutthroat Trout interagency conservation teams. Working across multiple agencies, the WNTI's support was critical in developing these new conservation tools using funds granted through the Multistate Conservation Grant Program. The updated databases will help facilitate future range-wide status assessments and is hosted on the Conservation Efforts Database platform under the U.S. Geological Survey's Forest and Rangeland Ecosystem Science Center. (U. S. Fish and Wildlife Service & U.S. Geological Survey, 2026).

Develop and implement effective outreach

The WNTI takes a multifaceted approach to outreach by developing messaging strategies at the partnership level (general messages about fish habitat, native trout conservation, regional western issues and the WNTI itself), the species or state-specific level, and the project level.

The WNTI's Campaign for Western Native Trout (<https://bit.ly/4xbkMzZ>) is an ongoing, multiyear effort, with each year building upon previous years' outreach accomplishments. The overall goal is to engage strategic partners and the public to expand support and promote the importance of healthy native trout habitats and watersheds to water supply, agriculture, recreation, and local economies. Campaign activities vary each year with core components that include an e-newsletter (<https://bit.ly/45L57LW>) produced 4–6 times annually, a news blog (<https://westernnativetrout.org/blog/>), a full-color annual report, an inspirational multimedia story map (WNTI, 2023a) and a consistent social media presence (Facebook, <https://www.facebook.com/westernnativetrout/>; Instagram, <https://www.instagram.com/westernnativetrout/>; YouTube, <https://www.youtube.com/@WesternnativetroutWNTI/videos>). Additionally, the WNTI has produced two films

Table 1 Summary of Western Native Trout Initiative conservation and restoration actions since inception in 2005. CT = cutthroat trout.

Species	Project count	Barriers removed	Barriers constructed	Stream kilometers opened	Hectares reopened or enhanced	Population assessments	Habitat assessments	Stream miles assessed
Apache Trout	5	–	1	17	–	4	3	–
Bonneville CT	42	60	5	555	49	12	48	84
Bull Trout	9	5	–	47	23	1	3	568
California/Little Kern Golden Trout	3	–	–	–	–	2	1	134
Coastal CT	12	11	–	19	5	30	41	19
Colorado River CT	16	2	1	126	–	4	2	–
Gila Trout	9	–	2	–	–	31	18	138
Greenback CT	10	1	3	19	2	1	3	48
Lahontan CT	8	–	4	253	–	–	1	5
Multiple species within range	41	16	2	297	123	55	54	958
Columbia River Redband Trout	31	32	–	283	579	260	30	298
Rio Grande CT	19	13	9	106	1	19	5	27
Westslope CT	15	10	5	330	85	6	4	108
Yellowstone CT	34	21	6	242	83	337	41	1,741
Total	254	171	38	2,292	949	762	254	4,129

showcasing ongoing partnerships benefitting Bonneville Cutthroat Trout (WNTI, 2016a, 2020), as well as multiple additional short videos highlighting WNTI restoration projects.

In 2019, the WNTI launched the Western Native Trout Challenge (<https://westernnativetroutchallenge.org/>), a program that celebrates our western native trout legacy by recognizing anglers who catch trout and char in their native ranges across the 12 WNTI states. This “trout slam” promotion was developed in close partnership with the steering committee member agencies, and features three tiers of completion (expert, advanced, and master). The basic accomplishment requires catching at least six eligible taxa across four states. As of November 2025, 1,983 anglers (including 322 anglers under age 18) have registered for the program, with 478 anglers completing one or more levels. Registration fees (\$25/each) have directly contributed to the WNTI’s Small Grants program (see below) and produced a host of trout-centric outreach products. Spinoff outreach products have included multiple national articles (<https://bit.ly/4xi5k5l>) from journalists, tourism bureaus (Ritz, n. d.) and a 14-video YouTube series from the Tenkara Rod Company (2022). The program continues to gain popularity, with over 15,600 Challenge website views annually, and a dedicated Facebook group of 900+ members.

The WNTI’s Small Grants program (<https://bit.ly/3SFGixU>) provides an additional mechanism to fund conservation

actions with a focus on education and outreach. Launched in 2011 and supported with a combination of the NFHP, private donations, and registration fees from the Western Native Trout Challenge, these grants fund collaborative local and community-based programs that provide a variety of outreach, volunteer engagement, or project design and monitoring activities that contribute toward western native trout conservation. Currently, Small Grants program funds are unique, as they are generated through fees associated with the Western Native Trout Challenge or from private donations, making the WNTI one of only two Fish Habitat Partnerships to administer separate grant funding solicitations. While grant awards are typically capped at \$5,000 or less, the WNTI has funded over 62 projects with \$289,000 in funding since the program’s inception. Projects within the program have successfully expanded public awareness of western native trout conservation through a variety of media and methods. This program has jointly funded the design and printing of nine posters in a series called “Get to Know Your Native Trout.” These artistic posters describe the distribution and natural history of the focal species, along with angling and conservation tips, and have become extremely popular for state agencies and elementary school programs. In another example, the WNTI partnered with the Utah Department of Natural Resources and Utah Wildlife Federation in commissioning a Bonneville Cutthroat Trout mural (<https://bit.ly/4xi5k5l>)



Figure 3 Artist Chris Peterson puts the finishing touches on a 100-ft-long Bonneville Cutthroat Trout mural in a bicycle path tunnel in Logan, Utah, cofunded by the Western Native Trout Initiative Small Grant program and the Utah Wildlife Federation. Photo by Matt McKell.

4zuSEJQ). The 30-m-long trout is the centerpiece of a massive mural adorning the inside of a popular bike path tunnel in Logan, Utah (Figure 3).

The portfolio concept

The WNTI's fourth goal is centered around developing collaborative approaches and partnerships. Given the WNTI's broad geographic scale and species of interest, conservation projects were often distributed across several states and species, often funded in piecemeal fashion. With limited resources available for projects, the steering committee began exploring methods to develop and leverage partnerships to effect trout conservation on a landscape scale while maximizing limited funding. Starting in 2017, the WNTI implemented the "Species of Emphasis" concept, a rotating selection of three of its focal species. This concept focused project selection and funding for selected species to accelerate conservation efforts during a 3-year focal period. In addition, the WNTI sought new funding sources beyond the NFHP to support its identified priorities. Our strategy of using a Species of Emphasis prioritization process combined with non-federal fundraising efforts would ultimately become known informally as the WNTI's "portfolio concept."

Portfolio concepts have been used to guide conservation efforts with an underlying theory that diverse assets will contribute to ecological resiliency (Figge, 2004). However, various frameworks often differ in how the portfolio is applied.

For example, Haak and Williams (2012) described the assets within their portfolio as a diversity of trout populations contributing to categories of a 3-R framework (Shaffer & Stein, 2000). The portfolio assets described in Al-Chokhachy et al. (2018) were a suite of biological criteria (e.g., genetic purity) used to rank populations of YTC by their conservation value.

The WNTI's application of the concept differs in that the diverse assets are an array of habitat restoration projects, assembled under a common theme with a specific geographic scope and target taxa. The WNTI sought to identify high-priority projects and match those with a variety of potential public and private funding sources. This effort invests conservation effort and funding in a diversity of priority restoration projects. While often used for conservation planning, this portfolio application represents a major shift in how the WNTI identifies projects, solicits fundraising, and builds momentum to implement additional projects. Our process starts with the WNTI collaborating with the various trout-focused interagency conservation teams. The interagency conservation teams' leadership assesses existing strategies for recovery (including restoration, protection, and enhancement) for each prioritized species. The WNTI then works with each species team to prioritize needs, cross needs with the WNTI's strategic plan, and determine specific actions the WNTI can support to advance identified strategies. This approach emphasizes strategic, data-driven, conservation planning that addresses species threats and landscape-level benefits, with an emphasis on

filling data gaps, persistence of priority populations, and reducing impacts from human land use. This prioritization approach complements traditional management and restoration by encouraging communication among stakeholders and partners. The process lays the groundwork for future coordination and cooperation among agencies by identifying priority conservation and habitat improvement actions. The Bear River portfolio is a case study that exemplifies how this portfolio concept has dramatically increased the scale and pace of habitat restoration to benefit native fishes.

Case study: the Bear River portfolio

The Bear River has its headwaters in the northwestern Uinta Mountains and flows for approximately 500 miles through Utah, Wyoming, and Idaho before terminating in the Great Salt Lake. It is a “working river” with nine main-stem dams and numerous tributary irrigation diversions that have fragmented the watershed. Native Bonneville Cutthroat Trout (BCT) are found throughout the Bear River basin, exhibiting a variety of life history strategies, including resident, fluvial, and adfluvial forms. This project portfolio began in 2017 with the interagency BTC Conservation Team partners working together with the WNTI to identify and prioritize restoration projects in the Bear River basin. Project identification and prioritization relied on the input of the interagency team partners, with projects intended to address goals/objectives identified in related management plans and conservation agreements (BCT Conservation Team, 2019). The team assembled descriptive project information and metrics for all the highest priority projects in the drainage that would benefit not only BCT, but other native species, such as Green Sucker *Pantosteus virescens* and Northern Leatherside Chub *Lepidomeda copei*. Information collected included project descriptions, species that benefitted, overall conservation impact, and estimated implementation costs. In the Bear River example, the theme focused on addressing aquatic connectivity, connecting stronghold habitats, and enhancing resilience to extreme environmental conditions and fluctuations for these highly migratory trout. A major benefit to this approach is assembling all the projects in one place, with descriptions, methodology, ecological and community benefits, and implementation costs, which provided project partners as well as potential funders with a view of conservation needs on a landscape scale.

This initial effort focused on 10 BCT populations in the Bear River basin by securing partnerships and financial resources for projects addressing aging infrastructure and barriers to fish movement. Between 2018 and 2024, the completed portfolio secured funding for 19 projects in Idaho, Utah, and Wyoming. Funds were directed to conservation partners including Trout Unlimited, U.S. Fish and Wildlife Service, U.S. Forest Service, Bureau of Land Management, Wyoming Game and Fish Department, Idaho Department of Fish and Game, and the Northwestern Band Shoshone Nation (Thompson et al., 2023). These partners then implemented projects to remove 24 push-up dams and diversion structures, perched culverts, and a concrete dam, restoring access for BCT to 145 miles of stream habitat (Figure 4). Projects also addressed extreme bank erosion and land loss while

improving habitat. The upgrades to aging and dilapidated irrigation infrastructure significantly benefited private landowners (thereby garnering public support of these efforts) by improving water supply reliability and reducing operations and maintenance costs. The WNTI secured over \$1.68 million of the total project value (nearly \$6 million) through the Resources Legacy Fund’s Open Rivers Fund—a significant return on investment for a program initially funded through NFHP investment (Figure 1).

Restoration efforts were complemented by a comprehensive outreach program that helped bring broader attention to the success of the Bear River portfolio. Outreach products include the mural co-funded through the WNTI’s Small Grants program (described above; <https://bit.ly/4hRMnS5>), a film produced by the Resources Legacy Fund (WNTI, 2022), a film produced by Trout Unlimited (2024), a comic strip series produced by the U.S. Fish and Wildlife Service (Kornblut, 2023), an Op Ed in the Salt Lake Tribune (Sparks & Thompson, 2021), an article by the Intermountain West Joint Venture (2020), and a Trout Unlimited article (Prettyman, 2021). The WNTI website hosts many of these outreach items on our dedicated Bear River project portfolio webpage (<https://bit.ly/4gov3Sk>).

Lessons learned

The WNTI’s strategy to solicit funding for related projects under a portfolio is an excellent example of how funds can be leveraged to accelerate conservation actions. Previously, WNTI resources were allocated similarly across several taxa (Figure 1). However, the WNTI’s strategic shift to rotating Species of Emphasis, followed by assembling related portfolios has directed more resources to those specific taxa. The WNTI’s first portfolios were developed for BCT and Columbia River Redband Trout *Oncorhynchus mykiss gairdneri* (hereafter, “Redband Trout”). The disproportionate expenditures for those taxa with portfolios reflects the success of this strategy. Additional private and public funding for BCT and Redband Trout portfolios greatly exceeded that available through the NFHP program alone (Figure 1) and primarily occurred after implementing this strategy in 2017.

The strength of this approach comes from identifying a suite of priority projects that resource managers and stakeholders have collectively agreed to, then assembling them into a collection of related projects with a unifying theme. Thus, the information necessary for administrators (e.g., goals, objectives, benefits, deliverables, cost, etc.) to fund potential projects is contained in one location, making it easier to attract and pursue potential funding sources that best match each project type. Readers can think of this as “one stop shopping” for potential funders wanting to invest in beneficial conservation actions. These projects have been fully developed, vetted by interagency conservation teams and the WNTI steering committee, and thoroughly reviewed by private landowners, who are often the most critical reviewers. Assembled portfolios have allowed the WNTI to take advantage of unexpected funding sources, such as new grant announcements or philanthropic interests, which can then be matched with a related project.

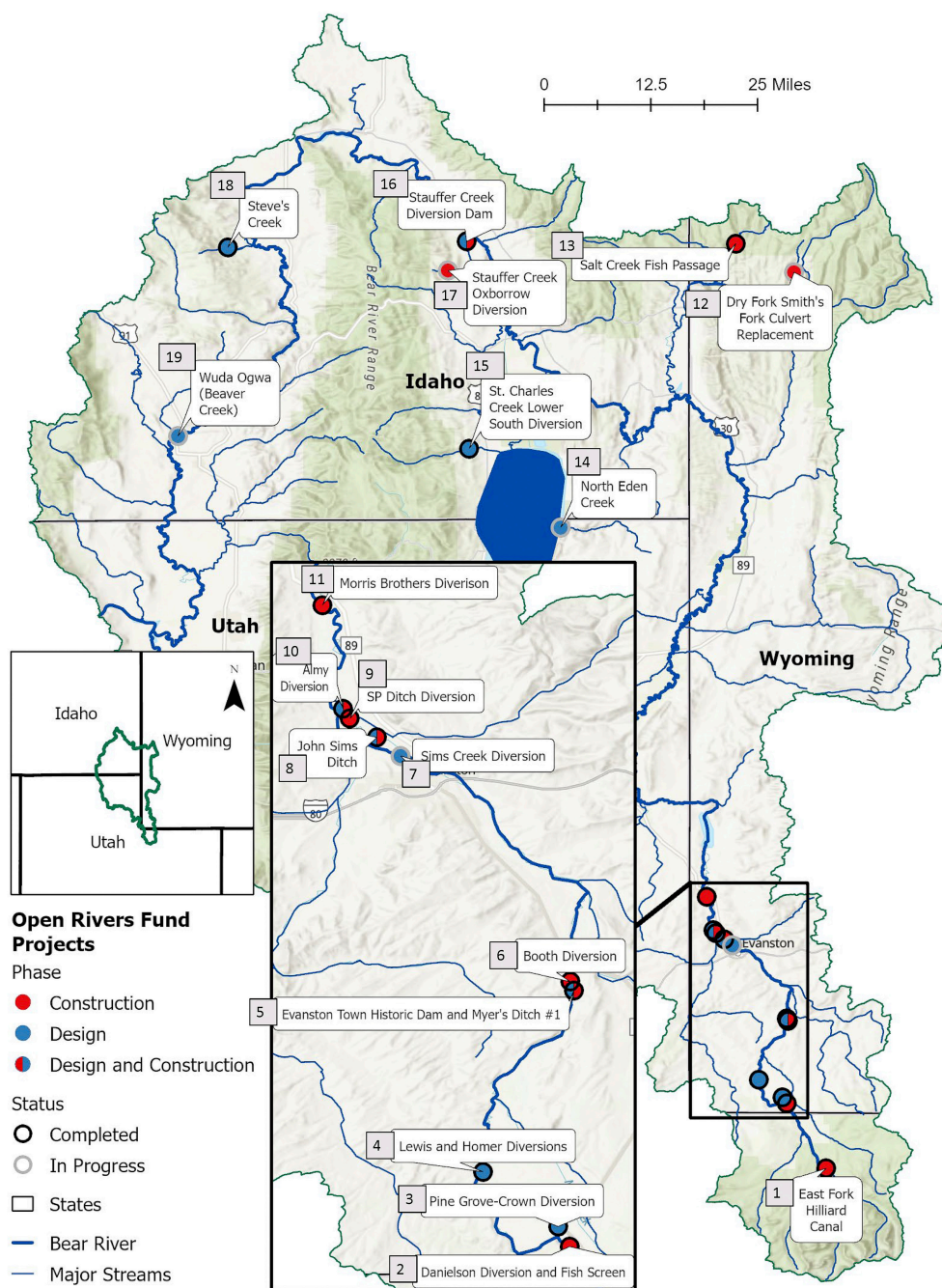


Figure 4 Location of 19 projects benefiting fish passage and connectivity for Bonneville Cutthroat Trout in the Bear River basin funded by the Resources Legacy Funds' Open Rivers Fund. The inset map highlights 10 projects on the main-stem Bear River near Evanston, Wyoming. Adapted with permission from Thompson et al. (2023).

The portfolio strategy helped the WNTI accelerate the pace of project implementation among conservation partners but included challenges. This strategy greatly increases the speed at which project design or engineering could be completed, accelerating timelines for implementation. In the Bear River example, we implemented 19 projects in just a few years. Implementing projects had a synergistic effect and built momentum for additional projects. Implementing successful projects helped build trust with landowners and created momentum within the community, motivating adjacent landowners to participate and generate additional project

opportunities. However, this success also required a significant administrative burden. One of the primary challenges was managing all the various grants: requirements for matching funds, timing of when the awards had to be spent, and contracts management to implement projects.

The future of portfolios

The WNTI is continuing to build on the success of the Bear River portfolio and adapt the concept to additional species and watersheds. In 2018, the WNTI worked with multiple

partners in the Warner Basin of eastern Oregon to assemble a portfolio of 10 fish passage projects for interior Redband Trout. A similar facilitated process in 2019 funded six projects benefitting Rio Grande Cutthroat Trout in Colorado and New Mexico with funds from other federal (non-NFHP) and private sector partners. The same process is currently underway to develop portfolios of priority projects for Bull Trout, California Golden Trout, and Gila Trout across their current range. In addition, the WNTI is working with the interagency YCT conservation team to compile a YCT portfolio as well.

Since the WNTI can set its own priorities, we encourage applicants to create opportunities to benefit other sympatric native species. Often, aquatic restoration projects can provide as much benefit to other native fishes as to the trout present. For example, WNTI's Warner Basin portfolio (<https://bit.ly/4c3fVZs>) includes 10 projects to open 38.25 stream miles of Redband Trout habitat in eastern Oregon by 2027. The WNTI has secured almost \$1 million through the Resources Legacy Fund's Open Rivers Fund toward this portfolio to be completed over 9 years for a total cost of \$7,203,569. While benefitting trout, these fish passage projects will make significant contributions towards recovery of Warner Sucker *Catostomus warnerensis*, an ESA-listed species sympatric with Redband Trout.

Looking to the future, WNTI is considering how to further increase its impact and ability to make the most of its limited funding. The portfolio concept may be one pathway to identify projects and funding needed to benefit these iconic (but sometimes cryptic) species, gather available resources, and bring project implementers together with funding sources to complete this very important work. To improve these efforts, we will encourage development of new portfolios with a more explicit focus on priority watersheds. Project selection should be coupled with landscape-level assessments (Al-Chokhachy et al., 2018; Dauwalter et al., 2019) to ensure that projects address primary threats and fall into climate-resilient watersheds to realize the most conservation benefit (Isaak et al., 2017). There are immense possibilities for this type of comprehensive effort. Moving forward, the WNTI anticipates catalyzing and coordinating efforts with other habitat partnerships, management agencies, nongovernmental organizations, and private landowners to combine resources to make real change happen on the ground. As a NFHP, we are excited for the future and to see how the WNTI can continue driving conservation and recovery of western native fishes for the next 20 years.

Data availability

Data regarding WNTI restoration projects are available upon request from the corresponding author.

Ethics statement

No ethical guidelines were applicable to this study.

Funding

None declared.

Conflicts of interest

None declared.

Acknowledgments

Over the WNTI's 20-year history, there have been many people and organizations instrumental in making this initiative a success, many of whom are recognized on the WNTI Steering Committee page (<https://westernnativetrout.org/steering-committee/>). This section is only a small recognition of countless contributions. This work was supported in part by the National Fish Habitat Partnership program and the associated U.S. Fish and Wildlife Service staff who provide critical support in administering federal grant funding. We thank the many WNTI partner organizations for their commitment to the conservation and restoration of western native trout and implementing the projects and public outreach efforts that the WNTI has contributed to. The collaborative framework of many state, federal, tribal and nongovernmental organization staff that have contributed data, expertise, and logistical support to the WNTI has been amazing. Collaborations and financial support from individuals and private sector businesses have been instrumental in our success, particularly regarding funding our Small Grants program. We are grateful for Tyler Coleman's work supporting our social media and managing the Western Native Trout Challenge. Terry Crawford, former Director of the Nevada Department of Wildlife, deserves special recognition as "The father of the WNTI" for his role in developing the initiative. His vision cleared a path for fisheries leaders, administrators, and staff in western states to develop what would ultimately become the WNTI today. We are hugely grateful for the ongoing support of the WAFWA Fisheries Committee and its member states, the WAFWA leadership team and administrative staff, as well as the members of the WNTI steering committee who have continued to help make this Initiative a success. We also wish to thank Paul Dey and Brett Bowersox for their guidance and helpful reviews during the development of this manuscript. We acknowledge using AI (Gemini) to assist in writing the abstract, based on the text in this manuscript.

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