

YAKIMA BASIN INTEGRATED PLAN: Bull Trout 10-year Plan for 2023–2033

In 2009, the U.S. Bureau of Reclamation (Reclamation) and the Washington State Department of Ecology (Ecology) convened the Yakima River Basin Water Enhancement Project (YRBWEP) Workgroup to more thoroughly review studies and information produced over the preceding 30 years. The workgroup formulated a comprehensive and integrated solution for the Yakima River basin's water resource problems and ecosystem restoration needs. Fish habitat enhancement was identified as one of the seven elements to include in the preliminary Yakima Basin Integrated Plan (YBIP). Workgroup subcommittees were convened to provide input on the proposed YBIP and supporting technical work to develop the final YBIP. The fish Habitat Subcommittee was formed to provide direction for the YBIP's salmon, steelhead, and bull trout habitat restoration efforts. The Habitat Subcommittee reviews and considers many potential projects for multiple purposes, including funding recommendations, letters of support, partnership coordination, and technical assistance. The Habitat Subcommittee's role is to provide technical review of YBIP actions that have a positive or negative impact on fisheries habitat.

This 10-year plan has the following purposes:

- Guide development of the state YBIP budget requests and 10-year capital plan
- Guide Reclamation/YBIP budget requests and allocations related to habitat protection and restoration
- Serve as a vehicle for commitments by Reclamation and other voluntary participants such as Ecology and the irrigation districts in Reclamation's bull trout consultation.

This 10-year plan is a living document, and the Habitat Subcommittee members can propose modifications to the plan prior to the development of the biennium budget. In addition to this plan, the Habitat Subcommittee works with project managers in the basin to document and track potential projects and their benefits and cost estimates. This project tracker will be maintained and updated as future projects are identified and considered by the Habitat Subcommittee.

This 10-year plan is intended to inform and provide synergy with other funding opportunities such as the Salmon Recovery Funding Board (SRFB), Floodplains by Design, congressionally directed funding, U.S. Army Corps of Engineers funding, and a variety of other state and federal grant programs.

A key YBIP goal is to improve fisheries productivity. Enhancing and protecting core habitat and population strongholds are critical to achieving the fisheries goals of the YBIP. The YBIP goals include restoration of native fish populations such that these populations will be self-sustaining, healthy, and harvestable. Reaching this goal is intended to be, and only can be, accomplished through implementing multiple elements of the YBIP, such as fish passage at reservoir dams, improvement of instream flows, and structural and operational modifications at water management facilities. Because of the interconnected nature of the projects and subcommittees, the benefits of successful implementation across projects are synergistic and cumulative. The YBIP's habitat program is a key part of reaching the healthy, self-sustaining, and harvestable goal. This document outlines the habitat actions that the Habitat Subcommittee will accomplish from 2023–2033.

The Habitat Subcommittee has developed this updated 10-year plan to describe lessons learned since convening and to set the subcommittee up for successful budgeting and project execution through the

end of the YBIP's initial implementation phase. Several technical memoranda were published to aid this effort, including:

- Yakima Basin Integrated Plan (YBIP Workgroup 2011)
- Recovery Plan for the Coterminous United States Population of Bull Trout (USFWS 2015)¹
- Mid-Columbia Recovery Unit Implementation Plan (RUIP) (USFWS 2015)²
- Yakima Bull Trout Action Plan (YBTAP) (Yakima Basin Bull Trout Action Plan Working Group 2012)³
- Yakima Basin Bull Trout Action Plan Actions Update (Yakima Bull Trout Working Group 2017)⁴
- Bull Trout Enhancement (BTE) Plan, Reclamation 2018)⁵

Several partnering organizations and affected landowners would participate in individual projects. Below is a partial list of entities that may participate, with others also likely to be involved, along with private interests, as applicable:

- Irrigation districts
- Kittitas Conservation Trust (KCT)
- Kittitas County
- Kittitas County Conservation District
- Mid-Columbia Fisheries Enhancement Group (MCFEG)
- Nature Conservancy
- Trout Unlimited
- Reclamation
- United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)
- United States Fish and Wildlife Service (USFWS)
- United States Forest Service (USFS)
- Washington Conservation Corps
- Washington Department of Natural Resources
- Washington Department of Fish and Wildlife (WDFW)
- Ecology
- Washington State Department of Transportation
- Washington Water Trust
- Yakama Nation

¹ Recovery Plan for the Coterminous United States Population of Bull Trout, 2015. United States Fish and Wildlife Service. https://www.fws.gov/sites/default/files/federal_register_document/2015-24670.pdf.

² Mid-Columbia Recovery Unit Implementation Plan for Bull Trout (*Salvelinus confluentus*), 2015. United States Fish and Wildlife Service. <https://www.seattle.gov/light/skagit/relicensing/cs/groups/secure/@scl.skagit.team/documents/document/cm9k/ndy1/~edisp/prod465603.pdf>

³ Yakima Bull Trout Action Plan. 2012. Yakima Bull Trout Action Plan Working Group. <https://ybfwrb.org/wp-content/uploads/2017/09/YBTAP-9-2012-FINAL-small.pdf>

⁴ Yakima Basin Bull Trout Action Plan Actions Update. 2017. Yakima Basin Bull Trout Work Group. https://ybfwrb.org/wp-content/uploads/2020/12/2017_BTAP_Actions_Update.pdf

⁵ Bull Trout Enhancement Plan. 2018. U.S. Bureau of Reclamation.

- Yakima County

1 Bull Trout Conservation

Bull trout were listed as threatened under the Endangered Species Act (ESA) in 1998 with the Yakima River basin determined to be a core area within the Middle Columbia Recovery Unit. The Yakima River basin is home to 15 populations of bull trout, most exhibiting an adfluvial life history, although fluvial and resident populations also exist. Because of their migratory nature, bull trout need connected watersheds to meet their habitat requirements—generally described by the “4 C’s”: cold, clean, complex, and connected. The Habitat Subcommittee seeks to address these needs by advancing projects that promote connectivity and gene flow between populations; reduce degradation; and, where populations are critically depressed, support rescue, rearing, and supplementation.

Projects will primarily improve fish passage into streams above the five major water storage reservoirs in the Yakima River basin and restore degraded habitat in many tributaries, thereby enhancing instream, riparian, and floodplain habitats that are vital spawning and rearing grounds for bull trout. These projects will also conduct passage, habitat, and ecosystem assessments; complete project designs and engineering; and construct both temporary and permanent fish passage facilities. In addition to bull trout, these projects will benefit sockeye and other anadromous populations as they are reintroduced into reservoirs and allow greater flexibility for reservoir operations that benefit Yakima River basin fisheries. Full implementation of the Tieton Fish Passage Complex (Clear Creek Dam, South Fork Tieton Bridge Replacement, and Tieton Dam) will be mutually beneficial for bull trout and anadromous salmonids as they historically coexisted in many of these habitats. While many projects are focused on the depressed populations in the upper Yakima River, future projects should also focus on relative strongholds (e.g., South Fork Tieton). We fully support the Yakima River basin’s collaborative bull trout rescue and rearing program and acknowledge that it will be a central part of Yakima River basin bull trout restoration over the next 10 years. The YBIP Bull Trout Research & Recovery Facilities will be a key component to facilitate in this rescue and rearing program.

We seek input from the Yakima River basin Bull Trout Working Group (BTWG), which recommends projects targeting:

- Adult (passage) and juvenile (passage and rearing capacity) life stages
- Habitat connectivity (passage), floodplain, and channel restoration (to restore flow)
- Population maintenance (hatchery rearing, supplementation, and possible reintroduction)

In developing this draft, the Habitat Subcommittee focused on identifying bull trout conservation actions that:

- Are scientifically defensible and biologically sound.
- Support the success of the YBIP and ensure net benefits to bull trout from water supply proposals.
- Recognize funding from other critical sources, such as SRFB and other Ecology funding programs that provide the primary funding for bull trout in the Yakima River basin, which allows YRBWEP and YBIP funds to be concentrated on specific, often large-scale, projects. The YBIP and YRBWEP

funding for bull trout is intended to complement, leverage, and enhance these restoration efforts to achieve the healthy, self-sustaining, and harvestable fisheries goal of the YBIP.

- Enhance bull trout habitat in major ways with water supply funding but also look for other opportunities (e.g., infrastructure funds). Bull trout projects related to both the Reclamation Yakima Project Operations Biological Opinion and the Kachess Drought Relief Pumping Plant (KDRPP) may be funded in the Water Supply element of the YBIP.

2 Focal Areas

This section describes focal areas of this 10-year plan, including the upper Yakima River, Naches River and Ahtanum Creek, and Yakima River basin-wide projects.

2.1 Upper Yakima River

The upper Yakima River populations of bull trout can collectively be described as very weak with significant risk of extirpation and immediate need for action. They were historically adfluvial populations that included Kachess, Keechelus, and Cle Elum lakes. Today, the Cle Elum population is nearly, if not completely, extirpated. The current strategy is to continue hatchery rearing and supplementation of juveniles to increase abundance, maintain ongoing trap and haul of adults to provide connectivity for adfluvial populations, and continue restoration projects to enhance spawning and rearing habitat. The long-term goal is to implement full volitional passage at all Reclamation-operated dams. The basin continues to collaboratively develop a bull trout rescue and rearing program to increase abundance: WDFW and MCFEG rescue young-of-the-year bull trout from the Kachess River and Gold Creek, while the Yakama Nation rears the fish. USFWS conducts adult trap and haul to maintain connectivity and conducts passive integrated transponder (PIT)-tag (spawning tributaries) and acoustic monitoring (reservoirs) to evaluate actions and populations. Analyses to evaluate the efficacy of both actions are ongoing. The rescue and rearing program could be further developed to reintroduce fish to areas (e.g., Teanaway River) where they are extirpated and is a focal point for bull trout restoration in the upper Yakima River basin going forward (Table 1).

Table 1. Upper Yakima River bull trout populations, projects, status, and timelines

Bull trout population	Project	Timeline to implement	Goals
Gold Creek	Gold Creek Pond	Less than 5 years	Tributary access/reduce dewatering
	Gold Creek Instream Restoration	Less than 5 years	Tributary access/reduce dewatering/reduce juvenile stranding
	Gold Creek Land Acquisition	Less than 5 years	Tributary access/reduce dewatering
	Cold Creek Passage	More than 5 years	Tributary access/juvenile rearing habitat
Box Canyon Creek	Box Canyon Alluvial Fan	Less than 5 years	Tributary access/reduce dewatering
	Peekaboo Falls	Unknown	Tributary access

Bull trout population	Project	Timeline to implement	Goals
	Temporary Passage	Ongoing as needed	Tributary access/reduce dewatering
Kachess River	Upper Kachess Instream Habitat	Less than 5 years	Tributary access/reduce dewatering/reduce juvenile stranding
Gold Creek and Upper Kachess River	Rescue and Rear	Ongoing	Supplementation/population enhancement
Big Creek, Teanaway River, Taneum Creek, and Waptus River	Habitat Assessment	Ongoing	Reintroduction

2.2 Naches River Basin and Ahtanum Creek

The Naches and Ahtanum Creek bull trout contain some of the most robust adfluvial populations in the Yakima River such as the South Fork Tieton population, but also the only resident population in the Yakima River basin in Ahtanum Creek, which is critically low. They include the Rimrock foraging, migration, and overwintering (FMO) populations in the Tieton River that were historically fluvial but are now adfluvial using Clear Creek and Rimrock reservoirs. The Naches Basin also includes the adfluvial populations associated with Bumping Reservoir and fluvial populations found in the American River, Crow Creek, and Rattlesnake Creek. Ahtanum Creek contains a single resident population, perhaps once fluvial, that spawns in four tributaries of Ahtanum Creek. A primary strategy in this focal area is completion of the Tieton Complex of fish passage projects (Clear Creek Dam Fish Passage, South Fork Tieton Bridge Replacement, and Tieton Dam Fish Passage), which would restore connectivity for bull trout and anadromous salmonids throughout the Tieton River basin, increase operational flexibility, and buffer against the effects of climate change through the delivery of cool and timely water releases. (Table 2).

Table 2. Naches River basin and Ahtanum Creek bull trout projects, status, and timelines

Bull trout population(s)	Project	Timeline to implement	Goals
North Fork Tieton	Clear Creek Dam Fish Passage	Less than 5 years	Tributary access
South Fork Tieton	South Fork Tieton Bridge Replacement	Less than 5 years	Tributary access
	Instream Restoration	Less than 5 years	Habitat enhancement
North Fork Tieton, South Fork Tieton, Indian Creek	Tieton Dam Fish Passage	More than 5 years	Tributary access

Bull trout population(s)	Project	Timeline to implement	Goals
Ahtanum Creek	Rescue and rear	Less than 5 years	Supplementation/population enhancement
	Habitat Enhancement	Less than 5 years	Ahtanum Creek mainstem habitat enhancement

2.3 Basin-Wide Projects

Some projects are focused less on a geographic footprint and more on basin-wide actions to support bull trout recovery for many populations (Table 3). YBIP Bull Trout Research & Recovery Facilities, such as LaSalle, Easton, and Marion Drain, will be key components to facilitate in this rescue and rearing program.

Table 3. Yakima River basin-wide bull trout projects, status, and timelines

Project	Action	Timeline to implement	Goals
Acoustic Tag Monitoring	Evaluate actions and populations	Ongoing	Evaluate trap and haul and bull trout rescue/rearing
Brook Trout Suppression	Remove brook trout/ investigate male (M _Y) brook trout introduction	Ongoing	Reduce bull trout/brook trout hybridization
Recreation Management	Work with USFS and other land managers to develop an Action Plan ⁶	Ongoing	Habitat enhancement/ water quality
Bull Trout Task Force	Outreach/project support	Ongoing	Poaching/recreational passage barriers/ monitoring/rescue
Mobile Steeppass	Provide connectivity/support trap and haul	Less than 5 years	Tributary access
Redd, Habitat, and Demographic Surveys	Monitor populations and actions	Ongoing	Monitoring/evaluation
Reservoir Delta Interaction Study and Implementation	Address sedimentation/ provide connectivity	Less than 5 years for study	Tributary access/reduce dewatering
Reservoir Delta Temporary Passage	Provide connectivity to existing spawning streams	Ongoing as needed	Tributary access/reduce dewatering

⁶ Action Plan to reduce impacts to include, but not limited to, locations such as Gold Creek watershed, Kachess watershed, and Box Canyon watershed

Project	Action	Timeline to implement	Goals
Trap and Haul/PIT-Monitoring	Provide connectivity/evaluate actions and populations	Ongoing	Monitoring/evaluation
Tributary Access	Ensure, maintain, and expand tributary access in reservoirs	More than 5 years	Tributary access in reservoirs to support juvenile rearing
WDFW Biologist Support	Population monitoring/project development	Ongoing	Monitoring/evaluation
YBFWRB Support	Coordinate Bull Trout Working Group	Ongoing	Coordinate bull trout activities/maintain and implement BTAP
Research and Recovery	Rescue, rear, and supplementation	Ongoing, less than 5 years	Healthy and harvestable populations; expand capacity Reduce juvenile stranding Reintroduction: weak and/or extirpated upper Yakima River basin populations

3 YBIP Funding

This section describes YBIP funding sources, including irrigation district funding, state funding, and federal funding.

3.1 Irrigation District

Irrigation districts are important partners in developing and funding bull trout work in the Yakima River basin. The Kittitas Reclamation District (KRD) has been instrumental in obtaining congressional funding to support a bull trout rearing facility near Easton, Washington. The Joint Board of Irrigators has an ongoing role in funding acoustic monitoring of bull trout in the upper Yakima River basin.

3.2 State

This section describes state YBIP funding, including Washington State and other states.

3.2.1 Washington State

Washington State appropriates funding to support YBIP through Ecology’s biennial budget. This 10-year habitat plan assumes continued appropriations from the 2023–2025 through 2031–2033 biennia. BTE projects have been funded largely through the surface water storage element in Ecology’s budget. Funding has come through the Water Supply element because bull trout actions identified in the 2017 BTE Plan are important to support the success of YBIP’s KDRPP project. We hope that coordination and collaboration will bring funds into the Yakima River basin and make our YBIP state funding go further.

3.2.2 Other States

Bull trout recovery actions in this 10-year plan are also supported by other stage funding sources, including the SRFB program, Ecology’s Streamflow, and the Floodplain and Water Quality Grant programs. Local partners have worked together to prioritize and coordinate these and other funding sources with YBIP-specific funding.

3.3 Federal

This section describes federal YBIP funding, including general federal project support and Reclamation project support.

3.3.1 General Federal Project Support

The federal government appropriates funding that supports YBIP through several federal agency programs. These programs include both competitive financial assistance and grant programs and direct funding to agencies that support many YBIP projects.

Examples of federal agency competitive programs include:

- NRCS’s Regional Conservation Partnership Program
- Infrastructure Investment and Jobs Act (e.g., America the Beautiful, Tribal Climate Resilience, Reclamation’s Aquatic Ecosystem Restoration and Protection)
- USFWS’s Partners for Fish and Wildlife Program and National Fish Passage Program, Section 6
- Reclamation’s Water Smart Program
- USFWS’s Recovery Implementation Program

Where anadromous fish and bull trout coexist:

- McNary Mitigation Funds
- The National Oceanic and Atmospheric Administration’s (NOAA’s) Pacific Coast Salmon Recovery Fund (through SRFB)
- Bonneville Power Administration’s (BPA’s) Fish and Wildlife Program

3.3.2 Reclamation Project Support

Reclamation manages the YRBWEP, the purpose of which is to protect, mitigate, and enhance fish and wildlife habitat through strategic water management. Reclamation’s YRBWEP provides funding to all elements of the YBIP. Specific to the Habitat/Watershed Protection and Enhancement element, Reclamation is actively implementing projects authorized in 1994 Title XII and the 2019 Dingell Act. In addition, Reclamation’s YRBWEP is supporting the BTE Memorandum of Understanding (MOU). This MOU was signed by Reclamation, the Yakama Nation, USFWS, USFS, WDFW, and Ecology to provide a framework to coordinate and facilitate cooperation among the parties to support, develop, and implement bull trout restoration and enhancement actions within the Yakima River basin. The YRBWEP is supporting YBIP’s Habitat/Watershed Protection and Enhancement element and BTE actions.

Within the framework of Reclamation’s authorization, a program of actions continues to be implemented and refined as projects are monitored with significant input from the Yakama Nation, WDFW, MCFEG, and KCT, and assistance from USFWS members of the YRBWEP team. Bull trout-specific

project support includes fish passage, habitat protection and enhancement, and population restoration and monitoring. Current YRBWEP bull trout–focused projects include:

- Tributary enhancement: Per the Yakima River Basin Programmatic Tributary Investigation Report, Reclamation will continue to implement tributary enhancement projects and work collaboratively to identify efficient and effective means to increase instream flows to recover ESA-listed bull trout: USFWS monitoring and data analysis to refine projects for the greatest benefit (**10-year estimate: \$5M**)
- Clear Creek Dam Fish Passage (**10-year estimate: \$13M–15M**)
- South Fork Tieton Fish Passage funding (**10-year estimate: \$700k**)
- Yakama Nation’s Bull Trout Restoration and Monitoring Project (**10-year estimate: \$1.5M**)
- Easton Bull Trout Research & Recovery Facility (**10-year estimate: \$3M**)
- Reservoir Temporary Passage Program (**10-year estimate: \$700k**)
- Project technical and environmental compliance (**10-year estimate: \$1M**)

4 Vision for the Future

Some bull trout populations that were previously strongholds are now being identified as needing attention while others remain critically low. The Habitat Subcommittee supports projects that complement efforts to increase connectivity through fish passage implementation and bull trout reintroduction through the rescue and rearing program. We seek habitat projects that:

- Expand bull trout range and the number of local populations in the Yakima River basin using a combination of reintroduction strategies coupled with habitat actions that increase the odds of success once reintroduction occurs. The Easton Bull Trout Research & Recovery Facility, scheduled for completion in 2024, will be used to (1) rear rescued juvenile bull trout from upper Yakima River basin tributaries and (2) support the use of translocated juvenile fish to reestablish weak and/or extirpated upper Yakima River basin bull trout populations.
- Use fish passage as a tool to increase gene flow between bull trout populations and restore native food webs that include both anadromous fishes and bull trout.
- Conserve traditional bull trout strongholds that should benefit from fish passage implementation (e.g., South Fork Tieton).
- Maintain the collaborative conservation vision of the YBIP to achieve healthy, self-sustaining, and harvestable fisheries.
- Prioritize conservation and resilience of the most at-risk populations (e.g., Kachess River).