



**Yakima Tributary Access
& Habitat Program**



Annual Report

FY 2022

Project No. 2007-398-00

**This Report Covers Work Performed Under BPA Contract 89876 (Expense)
This Report Was Completed Under BPA Contract 92053 (Expense)**

April 1, 2022 – March 31, 2023

Prepared by:

Brian D. Miller

Washington Resource Conservation and Development Council
Yakima, WA

Prepared for:

U.S. Department of Energy
Bonneville Power Administration
Division of Fish and Wildlife
Portland, OR, 97208-3621

June 2023

“This report was funded by the Bonneville Power Administration (BPA), U.S. Department of Energy, as part of BPA's program to protect, mitigate, and enhance fish and wildlife affected by the development and operation of hydroelectric facilities on the Columbia River and its tributaries. The views in this report are the author's and do not necessarily represent the views of BPA.”

The Yakima Tributary Access & Habitat Program was formed in 2001 in response to the listing of Middle Columbia River steelhead and bull trout under the Endangered Species Act. The objectives of the program are to screen surface water diversions, restore fish passage and enhance salmonid habitat. The focus of the program is on Yakima River tributaries that historically supported salmonids and on riparian areas where fish passage is restored. The YTAHP fills a unique and important role in salmonid recovery by facilitating a voluntary program in which private landowners can come into compliance with fish screening and passage laws.

Since its inception and first BPA contract in 2002, and early projects in 2003 YTAHP has:

- Implemented 221 projects in Yakima River tributaries.
- Restored fish passage to 251 miles of Yakima River tributary habitat used by salmonids for spawning and rearing.
- Screened 452 cubic feet per second (58,922 acre feet) of water.
- Trusted 67.6 cfs (3,876 acre feet) of water to instream flow.
- Revegetated 222 acres and 17 miles of stream.
- Expended \$15.6 million toward habitat restoration.
- Leveraged \$26.9 million in funding from other sources as match for project implementation.

This report covers program activity for FY 2022 from April 1, 2022 through March 31, 2023 and includes one contract between the Washington Resource Conservation & Development Council (RC&D) and Bonneville Power Administration (BPA). The YTAHP project number is 2007-398-00 and the contract number for this period is 89876 (Expense).

The funding from BPA supports YTAHP activities described in this report and enables YTAHP to construct projects as well as maintain program planning and administration, support project development, including planning, design and permitting, and conduct landowner outreach and coordination. Additionally, YTAHP participants frequently apply to other funding sources to enhance project implementation capabilities. These supplemental sources include Natural Resources Conservation Service, WA Salmon Recovery Funding Board, WA Fish Barrier Removal Board, WA Department of Ecology, and other local, state and federal programs.

The RC&D maintains contracts with the following YTAHP participating entities: Kittitas County Conservation District (KCCD), North Yakima Conservation District (NYCD), and the Washington Department of Fish and Wildlife (WDFW). These contracts are supported by funding from BPA. Additional YTAHP partners include the Kittitas Conservation Trust (KCT), Mid-Columbia Fisheries Enhancement Group (MCFEG), Yakama Nation (YN), and Benton Conservation District that may or may not have project-specific direct contracts for services, but attend YTAHP meetings, seek permit assistance and collaborate on various project elements, such as permits, design or revegetation.

BPA funding for FY 2022 supported the implementation of 6 fish passage and habitat restoration projects, ongoing riparian vegetation and site stewardship on 4 projects and provided significant work toward project development, permits, design and/or funding for

an additional 7 projects. The projects completed in FY 2022 cumulatively resulted in restoring fish passage to .1 mile of tributary habitat and installing .25 miles of riparian planting and installing .13 miles of livestock exclusion on 6 streams in the Yakima Basin. YTAHP also leveraged \$1.3 million in funding from other sources committed to project implementation.

The report summary includes links to previous YTAHP Annual Reports, the YTAHP Strategic Plan and Biological Monitoring Report, and YTAHP 2023-2027 project planning documents.

The following is a list of YTAHP accomplishments for FY 2022, including constructed projects, and projects receiving ongoing revegetation maintenance, and/or or significant planning activity.

Kittitas County - Completed Projects

- 1. Coleman Creek 4.3 - Beard/Lueck** – The Coleman Creek River Mile 4.3 project was a collaboration between the Washington Department of Fish & Wildlife, Yakama Nation, Kittitas County Conservation District, Mid-Columbia Fisheries Enhancement Group and private landowners. The project removed a partial fish passage barrier, installed a compliant screen on an existing irrigation pump diversion, added boulder clusters to enhance instream habitat, and planted compatible vegetation. KCCD

Riparian Revegetation, Weed Management and Other Project Maintenance

- M1. Cooke Creek (Cherry Creek Tributaries)** - (Construction FY19) Planting and maintenance of riparian trees and shrubs completed as part of the Cooke Creek (Cherry Creek Tributaries) (Stream Mile 0.94 and 1.28) fish passage projects (diversion removals, fish screen). KCCD
- M2. Coleman Creek 3.4 - Olmstead Park** - (Construction FY20) Maintenance of riparian plantings completed as part of the Coleman Creek 3.4 - Olmstead Park fish passage project (diversion removal, fish screen, pedestrian bridge). KCCD
- M3. Parke Creek 1.01 and 1.37** (Construction FY22) - (Construction FY19) Maintenance of riparian plantings completed as part of the **Parke Creek 1.01 and 1.37** fish passage project (diversion removals). KCCD
- M4. Coleman 4.3 - Beard/Lueck** – Planting of 0.1 acres of riparian vegetation in this reach of Coleman Creek as part of a larger project planned to achieve fish passage and improve instream habitat. Work completed by Mid-Columbia Fisheries Enhancement Group. KCCD

Kittitas County Significant Planning, Permitting and/or Engineering

- P1. Cascade at Coleman Intersection** – Design work on this project continued from previous contracts. Technical Work Group meetings were held and design adjustments are underway to address all comments received. This project involves both removal of the unscreened concrete diversion and the structures that currently pass Coleman Creek under Cascade Irrigation District’s canal and installation of a new diversion structure with a fish screen and fishway as well as a siphon to pass the CID canal under Coleman Creek to allow for streambed restoration. KCCD
- P2. Coleman Creek 4.4 - Schomer/Beard Fish Passage** – Design work on this project continued with multiple meetings with the YTAHP technical working group, the landowner and design engineers to assess options and select an alternative. This is an irrigation water diversion on Coleman Creek (stream mile 4.4) that is a fish passage barrier and is not screened to protect fish from entrainment in the system. KCCD
- P3. Naneum 2.9 and 3.2 - Screening and Passage** – Design work on this project continued as the landowner assessed the options and worked toward a decision about the on-farm irrigation systems that will inform final design. This project involves both removal of the diversions and upgrades to the on-farm delivery and application systems. KCCD

P4. Naneum - Ellensburg Water Company Intersection - Site visits, survey and conceptual design work occurred during this contract period. This project is fish passage focused with the removal of the structures at the intersection of Naneum Creek and the Ellensburg Water Company canal. The design will include installation of a siphon to pass the canal under the restored streambed and installation of access bridges to replace existing structures. KCCD

Yakima County – Completed Projects

- 2. Naches River-Edgar Riparian Fencing and Planting-** (RM 5): This project created a protected riparian buffer along the Naches River and supplemented the existing vegetation to help create species diversity and habitat for fish and wildlife. Approximately 100 potted trees and shrubs native to the area were planted, species included black cottonwood, coyote willow, and golden currant. In addition, approximately 500 feet of livestock exclusion fencing was implemented creating an average buffer width of 50 feet and approximately 1,300 feet of old fence was replaced to maintain livestock exclusion from the river and its side channels. NYCD.

Riparian Revegetation, Weed Management and Other Project Maintenance

- M5. Cowiche Creek-Naches-Cowiche Canal Siphon-** (FY 2018, RM 0.6): Plant stewardship and weed control. NYCD.
- M6. Wenas Creek-Riparian and Water Quality Enhancement-** (FY 2020, RM 12) Plant stewardship and weed control. NYCD.

Yakima County Significant Planning, Permitting and/or Engineering

- P5. Wenas Creek Fish Passage and Screening-** (RM 16): Planning and project development activities intended to improve fish screening and passage at two irrigation diversions, as well as to improve passage, flow management, and provide water measuring at the existing diversion dams that divide north and south fork flows. The project is located on Wenas Creek and will also include water conservation measures. Anticipated implementation FY 2025. NYCD.
- P6. Purdin Ditch Fish Screening and Piping-** (RM 14): Planning and project development activities intended to improve fish screening and passage at the Purdin Ditch gravity diversion, as well as replace the 3 mile long ditch with a pressurized pipeline. The project is located on Wenas Creek. Anticipated implementation FY 2024. NYCD.
- P7. Edgar Riparian Restoration and Protection Phase 2-** (RM 10): Activities continued from Phase 1 on a different parcel, aimed addressing several factors limiting Mid-Columbia steelhead production in the Naches River and its tributaries by protecting and enhancing existing riparian and floodplain habitat through livestock exclusion and planting riparian trees and shrubs. Anticipated implementation FY 2023. NYCD.

Notes:

cfs – Cubic feet per second, measure of water flow in instantaneous volume past a point.
RM - River mile is a measure of distance in miles along a river or stream from its mouth (RM 0.0) and is used as a project locator.

ACKNOWLEDGEMENTS

The successful execution of this project is due in large part to the cooperation and participation of many people, particularly the following:

Michelle O'Malley	Bonneville Power Administration
Anna Lael	Kittitas County Conservation District
Mark Crowley	Kittitas County Conservation District
Mike Tobin	North Yakima Conservation District
Justin Bader	North Yakima Conservation District
Rebecca Wassell	Mid-Columbia Fisheries Enhancement Group
Mitchell Long	Kittitas Conservation Trust
Cassandra Weekes	Washington Department of Fish and Wildlife
Josh Rogala	Washington Department of Fish and Wildlife
John Marvin	Yakama Nation
Kelly Clayton	Yakama Nation
Thomas Colman	Washington RC&D President
Brian Miller	Washington RC&D YTAHP Program Manager

TABLE of CONTENTS

Executive Summary

Acknowledgements

Table of Contents

List of Tables and Figures

List of Acronyms

1. Introduction

2. Background

3. Program Overview

3.1. Administration

3.2. Program Management

3.3. Project Development & Implementation

3.4. Engineering and Technical Support

3.5. Regulatory Compliance

3.6. Monitoring

4. Scope of Work, Work Elements and FY 2022 Accomplishments

5. Summary

References

Appendices (see separate file)

Appendix A: Award History

Appendix B: Annual Report History

Appendix C: FY 2022 Project Pictures

LIST of TABLES and FIGURES

- Table 1. YTAHP Roles and Responsibilities
Figure 2. Map of Yakima River Basin

LIST of ACRONYMS

ACOE	US Army Corps of Engineers
AID	Ahtanum Irrigation District
BLM	US Bureau of Land Management
BPA	Bonneville Power Administration
BOR	US Bureau of Reclamation
cfs	cubic feet per second
CREP	Conservation Reserve Enhancement Program
CWA	Federal Clean Water Act
DAHP	WA Department of Archaeology and Historic Preservation
Ecology	WA Department of Ecology
EPA	US Environmental Protection Agency
EQIP	Environmental Quality Incentives Program (NRCS)
ESA	Endangered Species Act
FRIMA	Fisheries Restoration and Irrigation Mitigation Act
HPA	Hydraulic Project Approval
JARPA	Joint Aquatic Resources Permit Application
KCCD	Kittitas County Conservation District
KCT	Kittitas Conservation Trust
KCWP	Kittitas County Water Purveyors
MCFEG	Mid-Columbia Fisheries Enhancement Group
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NYCD	North Yakima Conservation District
PI	Fish Passage Priority Index
RC&D	Washington Resource Conservation & Development Council
RFEG	Regional Fisheries Enhancement Groups
SFRB	WA Recreation & Conservation Office Salmon Recovery Funding Board
SEPA	Washington State Environmental Policy Act
SSHEAR	Salmonid Screening, Habitat Enhancement, and Restoration Section
SPI	Screening Priority Index
TWG	Technical Work Group
USFS	United States Forest Service
USFWS	United States Fish & Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WE	Work Element
YTAHP	Yakima Basin Tributary Access and Habitat Program
YN	Yakama Nation

Yakima Tributary Access & Habitat Program

1. INTRODUCTION

The Yakima Tributary Access & Habitat Program (YTAHP) was organized to cooperatively restore salmonid passage to Yakima River tributaries that historically supported salmonids and to improve habitat in areas once access is restored. More specifically, the program screens surface water diversion structures to prevent fish entrainment into artificial waterways; provides for fish passage at man-made barriers, such as diversion dams, culverts, siphons and bridges; enhances in-stream and riparian habitat; and provides information and assistance to landowners interested in contributing to the improvement of water quality, water reliability, fish recovery and riparian habitat.

Beginning in 2000, the idea behind YTAHP developed from a number of groups actively engaged in natural resource management, watershed restoration, irrigation management and/or landowner assistance in the Yakima River Basin. These groups included the Kittitas County Conservation District (KCCD), North Yakima Conservation District (NYCD), Kittitas County Water Purveyors (KCWP), US Bureau of Reclamation (Reclamation, US BOR), Washington Department of Fish and Wildlife (WDFW), Ahtanum Irrigation District (AID) and the South Central Washington Resource Conservation and Development Council (RC&D).

These participating partners submitted two grant applications under the 2000 provincial review process for the Columbia Plateau and another for the 2001 Action Plan. The Northwest Power Planning and Conservation Council (NPPCC) conducted a three-year rolling review of fish and wildlife proposals to identify proposals for BPA funding starting in FY 2000. This rolling Provincial Review solicited, reviewed and prioritized project proposals to implement its Fish and Wildlife Program. See Appendix A for summary.

The Yakama Nation (YN) also participated in the early stages of the program's development and in fiscal year 2004 the Yakama Nation Safe Passages program was incorporated into YTAHP. Additional funding to help cover the Safe Passages projects was included in the fiscal year 2005 YTAHP budget. The KCWP, BOR and AID are no longer active in the program. Collectively, the WDFW, KCCD, NYCD, YN, RC&D as well as the Mid-Columbia Fisheries Enhancement Group (MCFEG), Kittitas Conservation Trust (KCT) and Department of Ecology (Ecology) are referred to as the YTAHP Core Team.

This report covers YTAHP activities funded entirely or in part by the Bonneville Power Administration (BPA) project 2007-398-00 during FY 2022 (April 1, 2022 - March. 31, 2023), for contract number 89876 (expense) BPA funding for FY 2022 supported the implementation of 6 fish passage and habitat restoration projects, ongoing riparian vegetation and site stewardship on 4 projects and provided significant work toward project development, permits, design and/or funding for an additional 7 projects. The projects completed in FY 2022 cumulatively resulted in restoring fish passage to .1 mile of tributary habitat and installing .25 miles of riparian planting and installing .13 miles of fencing on 6 streams in the Yakima Basin. YTAHP also leveraged \$1.3 million in funding from other sources committed to project implementation.

2. BACKGROUND

The Yakima River is a tributary to the Columbia River and is located in Kittitas, Yakima and Benton Counties in south central Washington. Native salmon populations in the Yakima River Basin have significantly declined from historic levels. The significance of these declines is reflected in listings under the Endangered Species Act (ESA). The Middle Columbia steelhead distinct population segment, which includes the Yakima Basin, was listed by National Marine Fisheries Service [NMFS, or NOAA Fisheries], as threatened under the ESA on March 25, 1999 (64 FR 14517). The U.S. Fish and Wildlife Service (USFWS) listed the Columbia River bull trout distinct population segment, including the Yakima Basin, as threatened on June 10, 1998.

Since these listings, numerous watershed planning and salmon recovery efforts in the Yakima Basin have occurred. Several watershed plans and recovery documents list barrier removal and diversion screening as high priorities for fish recovery, including: the Yakima Subbasin Plan, Yakima Steelhead Recovery Plan, Yakima Limiting Factors Analysis, federal Biological Opinions and the Yakima River Basin Watershed Management Plan. Habitat quality is also identified as a key factor limiting the productivity of these listed species.

Since the early 1980s, there has been a screening program primarily addressing large Yakima River mainstem diversions through the Fish Passage and Protective Facilities Program, lead by the US Bureau of Reclamation with BPA Fish and Wildlife Program funding, Phase I (1980s) and Phase II (1990s to 2006). In spite of these significant past efforts, there are still many unscreened diversions and other passage and habitat challenges for fish in the Yakima Basin tributaries. Currently, there may be several hundred complete or partial fish passage barriers remaining in Yakima River tributaries. Many of these barriers are dams and unscreened diversions associated with early water rights and are located on private property.

3. PROGRAM OVERVIEW

The program was created to support salmon recovery efforts by assisting landowners. YTAHP addresses surface water diversion screening, fish passage and riparian habitat in Yakima River tributaries (Figure 1) using a well coordinated, prioritized approach. The program is cooperative in nature, engages a dedicated permit specialist and uses the unique role of Conservation Districts to assist property owners, on a voluntary basis, to address needs.

Participating YTAHP entities funded through Project 2007-398-00 are the Washington Resource Conservation & Development Council (RC&D), Kittitas County Conservation District (KCCD), North Yakima Conservation District (NYCD) and Washington State Department of Fish and Wildlife (WDFW). Others working on the YTAHP core team include the Kittitas Conservation Trust (KCT), Mid-Columbia Fisheries Enhancement Group (MCFEG), Yakama Nation (YN), Benton Conservation District (BCD) and WA Department of Ecology. The program participants then work with local, state and federal agencies, landowners, municipalities and non-profits to implement projects. See Table 1. YTAHP Roles and Responsibilities.

3.1. Administration

The RC&D maintains an agreement with BPA and currently administers contracts locally with the KCCD, NYCD, and WDFW to implement YTAHP. The RC&D's mission is to

facilitate natural resource and rural economic development projects across the three counties in the Yakima Basin and fits well with YTAHP approach. The RC&D holds contracts with core team members, with each member (KCCD, NYCD & WDFW) vouchering to the RC&D for program related expenses. The RC&D then vouchers to BPA monthly and reimbursements are distributed to each RC&D subcontractor to cover eligible costs.

The RC&D handles grant administration, accounting, invoice voucher preparation, maintaining PISCES inputs, coordinating with BPA Contract Officer on contracting requirements, budget tracking, work element categories, monitoring, project updates; annual reporting and scheduling core team meetings.

3.2. Program Management

The RC&D and core team members jointly manage the program, including program organization, program consistency preparing and updating the YTAHP Strategic Plan, various presentations and outreach, monitoring plan development and implementation, finding and organizing technical support and training, producing the program annual plans and other functions as necessary. The core team includes those entities funded under BPA through the RC&D and others invited to participate, currently the KCT, MCFEG, BCD, YN and Ecology.

The original YTAHP Strategic Plan was drafted in 2001 to provide a framework for the Program. The Strategic Plan is considered a work in progress and has been amended periodically (2004, 2007, 2016, 2017, 2018, 2019, 2020, 2021 and 2023). The Strategic Plan includes the program scope, organizational structure, communication objectives, stream survey approach, barrier prioritization method, and options for project implementation and funding. As stream survey data is compiled, individual tributary reports are prepared which identify stream conditions and potential projects. Individual projects are initiated as interested landowners approach YTAHP members and project plans are developed that include permit needs, engineered designs, budgets and likely implementation scheduling.

The first BPA support for YTAHP was from the Drought Action Plan in FY 2002 (see <http://www.nwppc.org/fw/projectselection/actionplan/Default.htm>). Additionally, BPA funding has been provided through the Provincial Review process from FY 2003 through FY 2013, from FY 2014 through FY 2022 through the Geographic Review, and continues to be funded through the 2022 Anadromous Fish Habitat Review. (see <http://www.nwppc.org/fw/program/Default.htm>). Additional funding for project implementation is regularly sought from the WA State Salmon Recovery Funding Board (SRFB), WA Department of Ecology, various USFWS and WDFW programs, Irrigation Efficiencies and other cost share programs through the Natural Resource Conservation Service, Washington State Conservation Commission, and other state and federal programs.

3.3. Project Development & Implementation

To prepare the groundwork for project implementation, initial program steps included an examination of existing stream conditions. Stream assessments were conducted on all or parts of many of the streams in the Yakima River Basin. These stream assessments were generally conducted by Conservation District staff walking the streams to identify man-made structures, such as bridges, culverts; canal crossings (often siphons) and irrigation diversion structures. These structures were then evaluated for fish passage

and diversion fish screening compliance with state and federal criteria.

Once the stream assessments were done and potential projects identified, they were prioritized using an existing protocol (from the WDFW Salmonid Screening, Habitat Enhancement, and Restoration (SSHEAR) Section (now Environmental Restoration Technical Assistance (ERTA), see [Fish passage inventory, assessment, and prioritization | Washington Department of Fish & Wildlife](#)) High priority passage and screening projects, those with high biologic value for salmon recovery, were targeted for project development. In addition, projects of other priority levels were considered if there were strong landowner support and involvement, readily available funding or opportunities for broad collaboration and long-term benefits. The current program focus is removing barriers on the lower few miles of most tributaries and on several high quality tributaries to their headworks. Updates to these stream assessments are anticipated and new project priority numbers determined.

The Conservation Districts play a valuable role in working with landowners on resource management needs and provide technical assistance to that end and help coordinate with funding sources. Under YTAHP, the Conservation Districts continue this type of assistance and may also act as liaison with regulatory agencies and engineering service providers, and community outreach. The Conservation Districts also assist in coordinating complementary programs such as irrigation efficiencies, Environmental Quality Incentives Program (EQIP), Conservation Reserve Enhancement Program (CREP), etc.

As stream assessments were completed, the KCCD and NYCD each held public meetings to share the stream assessment data with local stakeholders (landowners, water right holders, municipalities, special districts) and describe resources available (YTAHP, NRCS, SRFB, Ecology, etc.) and inquire as to stakeholder's interests as they related to passage, screening, stream habitat and salmon recovery efforts generally. YTAHP projects were developed by working with landowners who expressed interest in diversion screening, dam modification, irrigation conversions (gravity to pressurized systems), water conservation and riparian habitat enhancement. As projects advance, a YTAHP core team member works with project the owner on desired outcomes, design needs, funding sources and engages engineers and prepares grant applications. The sponsor also works with the technical workgroup (TWG) and permit specialist on project permitting and design review.

3.4. Engineering and Technical Support

A critical component for project development is engineering services including designs and specifications, procurement of materials, and scheduling, contracting and construction oversight. The Washington Conservation Commission cluster engineers provide some design and engineering, job cost estimates, and assistance in the permitting process. In addition, private engineering firms are often hired to perform or supplement this work.

YTAHP recognizes the need for consistent technical review of proposed projects to identify specific goals, objectives and risks and facilitate project development such that the goals are met upon implementation. The technical work group (TWG) consists of project sponsors, agency and/or consulting engineers, the permit coordinator, biologists, and regulators. The TWG will complete and review engineering designs and provide technical assistance on all proposed projects. The TWG provides a consistent review

group with common guidelines and engineering standards and includes regulatory agencies to assist in the preparation of permit application packages such that permit review and issuance is rapid and effective. Engineers, fabricators, and biologists from the WDFW, conservation district engineers, consulting engineers, and other stakeholders and regulators will participate in the TWG. In addition, members of the technical work group will facilitate and coordinate biological monitoring for YTAHP projects.

3.5. Regulatory Compliance

YTAHP has a permitting biologist who works collaboratively with federal, state, tribal and local agencies to obtain the necessary permits and approvals for implementation of each YTAHP project. This includes engaging the regulatory staff during project development to review the designs and provide feedback, preparing all the permit applications and environmental documents, being responsive to regulatory reviewers, and facilitating conference calls and site tours for environmental evaluation purposes.

Having a dedicated permitting biologist results in consistent collaboration and strong partnerships with regulatory reviewers. These partnerships have resulted in effective and efficient pre-construction and post-construction compliance permitting.

The permitting specialist works directly with BPA, NOAA Fisheries, USFWS, USACOE, WA Dept. of Fish & Wildlife, WA Dept. of Ecology, tribes, local governments, and others as appropriate.

Permits and approvals include ESA Section 7 consultation with NMFS and USFWS, the National Environmental Policy Act, National Historic Preservation Act § 106 consultation, Joint Aquatic Resource Permit Application (JARPA) and USACOE Dredge and Fill Permit (Clean Water Act § 404), Ecology Water Quality Certification (CWA § 401), WDFW Hydraulic Project Approval (HPA), DNR State Owned Aquatic Lands, Shorelines Management Act and Critical Areas (local jurisdiction); and State Environmental Policy Act (SEPA) environmental checklist.

3.6. Monitoring

YTAHP continually monitors its progress in three ways. First, for program function, the Core Team members and partners meet monthly to discuss project development, funding opportunities, and issues impacting fish recovery within the Yakima Basin. These meetings facilitate the discussions on how YTAHP is functioning, ensures that resource needs are met for all interested parties and that the founding principles of YTAHP are being followed.

Second, each individual project is monitored for proper installation and performance. Newly constructed projects will be monitored to ensure the structures are stable and functioning as designed at several different flows. The project sponsors will visit project sites to assess compliance with federal and state passage and screening criteria as well as overall functionality. If problems with the structure and/or function are discovered during these assessments, adaptive maintenance will be applied as quickly as possible to correct the problem.

Third, YTAHP has tracked biological responses before and after project implementation by monitoring fish abundance trends above and below certain barrier correction projects, per the [YTAHP Monitoring Plan](#). YTAHP's project data have demonstrated that after a barrier is removed, anadromous fishes move upstream into the restored tributary habitat.

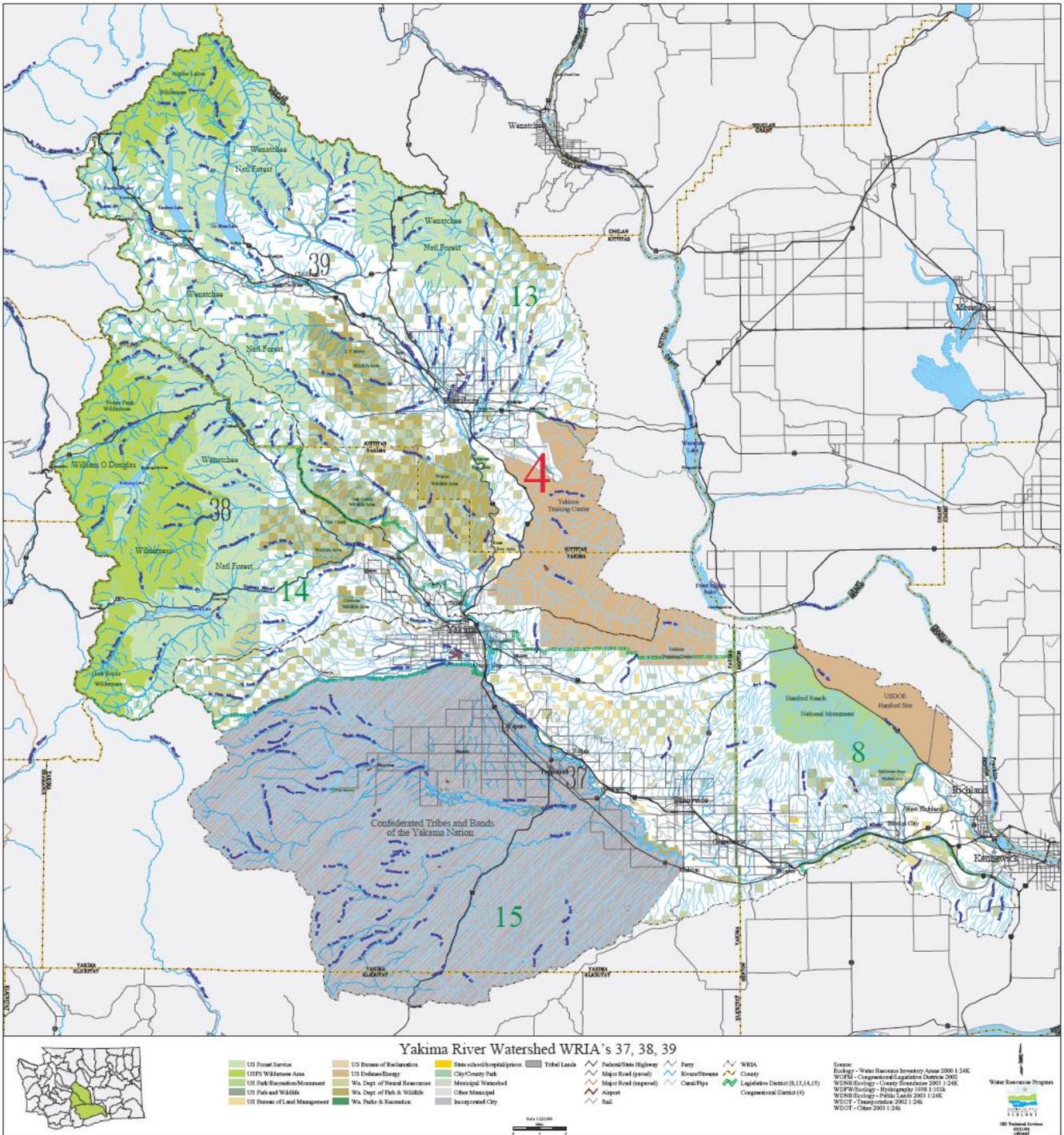
However, YTAHP is not funded – nor has the capacity – to do RM&E and the monitoring of basin-wide fish response is left to other programs with a focus on monitoring.

YTAHP continually collaborates with other fisheries programs and experts in determining the effectiveness of salmon recovery efforts basin wide. The coordination of monitoring efforts across programs also reduces duplication and provides a more comprehensive picture of the effects of fish recovery efforts in the Yakima Basin.

Table 1. Yakima Tributary Access & Habitat Program Roles and Responsibilities.

Team	Membership	Responsibilities
Administration	RC&D	Grant administration, accounting, invoice preparation, coordinating with BPA and core team on budget tracking and project updates for grantor(s), BPA reporting.
Program Management (Core Team)	RC&D WDFW KCCD NYCD YN KCT YBJB Ecology MCFEG YBFWRB WWT	Program organization and schedules, assigning tasks and tracking progress, program consistency, forming partnerships, updating Strategic Plan, producing applications for funding, finding and organizing technical support, producing the program annual plans, and other functions as necessary. Open invitation to BPA to attend and participate. USFWS attends semi-regularly.
Project Sponsors	Core Team	Plan and coordinate projects, facilitate landowner and community involvement and outreach, oversee project management.
Technical Work Group (TWG)	WDFW NOAA USFWS YN KCCD US ACOE NYCD Ecology BPA YBJB KCT Local Governments DAHP	The technical work group (TWG) provides the engineering, biological, and fabrication technical assistance. The permitting coordinator (housed at WDFW) participates with the TWG as well. Entities participation varies as appropriate for the needs of each project.

Figure 1. Map of Yakima River Basin



4. SCOPE of WORK, WORK ELEMENTS and ACCOMPLISHMENTS

The Scope of Work during the April 2022 through March 2023 period for the Yakima Tributary Access and Habitat Program is designed to restore fish passage, protect fish from entrainment into irrigation infrastructure, and to restore salmonid habitat. Specific project level objectives are proposed annually for a variety of passage barrier removals, diversion screening and riparian enhancements.

To meet this scope and objectives, numerous work elements (WE) were implemented for the program administration, project management, project design and permitting and habitat improvements were pursued. (For a further description of work elements, see: [Statements of Work \(bpa.gov\)](https://www.bpa.gov))

General Work Elements to Identify Projects

191- Watershed Coordination & 119- Manage & Administer Projects- YTAHP core team members participate in community education, landowner outreach and project coordination efforts. Many of the barriers to fish passage, surface water diversions, and/or riparian habitat are on private property. YTAHP projects are voluntary, meaning they are only done with a willing landowner. The Conservation Districts, particularly, have long histories of working with the private landowners. The cooperative relationships they have with landowners and the trust they have developed enable them to engage landowners about YTAHP objectives and their potential participation in restoration efforts. This YTAHP outreach reaches thousands of people annually through news articles and presentations, tours, conferences and fairs. In addition, YTAHP frequently acts as liaison between landowners and agencies during project development.

115- Produce Inventory or Assessment (Stream Surveys)- Early on YTAHP conducted stream surveys to prepare an inventory of existing conditions, including locations of diversions, barriers, culverts, etc. By 2004 more than 240 miles of stream were surveyed following the WDFW-SSHEAR protocol. Most of the priority tributaries have been surveyed, however those surveys are now ~15 years old. There has been a lot of great work accomplished, but we still have more to do. Additional survey efforts are needed in some areas to update the inventory of remaining fish passage barriers and diversion screening needs. The Ahtanum Creek assessment was completed in 2018, and the Wenas Creek assessment was completed in 2019, allowing YTAHP to prioritize the remaining passage and habitat projects in these watersheds.

122- Provide tech. review & recommendation & 144- Identify & select projects- The Stream Surveys provide data which can be used to assist in prioritizing projects. Using the data collected, projects are given PI and/or SPI numbers. The WDFW SSHEAR process uses a Fish Passage Priority Index (PI) model to consolidate the many factors which affect project feasibility into a manageable framework. The Screening Priority Index (SPI) model was created to consolidate the many variables relevant to water diversions. Potential projects are discussed by the YTAHP core team and the Technical Work Group (consulting engineers, agency experts). PI and SPI scores are given considerable weight but practical considerations, such as landowner willingness, are also included in the selection process. Projects with a high potential benefit to fish passage, screening, and/or habitat enhancement, which also have a potential for implementation are selected for further development through the engineering and permitting phase.

Work Elements to Develop Projects

175- Produce Design- Engineered designs are developed in-house at the Conservation Districts or through consulting engineers contracted through YTAHP. One or more conceptual designs are prepared and presented to the TWG for critical input. A preferred design is then pursued for the project and used for permitting and budgeting purposes. Project engineering can be a lengthy process. Many federal and state agencies have an interest in the design of the project and the construction methods used so there are often several iterations of the design to meet regulatory criteria.

165- Produce Environmental Compliance- Almost every project requires numerous permits or approvals from several local, state and federal agencies and jurisdictions. YTAHP is structured so that these agencies are involved early on in project design. A primary purpose of the YTAHP process is that projects are designed and constructed in conformance with agency regulations and the best available science. Even with early involvement by the reviewing agencies it generally takes four to six months or longer to complete the permitting process for a single project.

208- Irrigation Infrastructure Construction or Replacement- The installation of a pump screen is a relatively simple project but it does entail evaluating the irrigators' needs, pumping equipment water source and obtaining the necessary permits and authorizations. YTAHP partners generally work with the WDFW Fish Screening Program staff and irrigation vendors to complete this evaluation and specify the type of pump screen needed.

Work Elements to Construct Projects

During this reporting period 6 fish passage and habitat projects were implemented, 4 projects received vegetation management and an additional 7 projects received significant planning, design and/or secured funding, including some or all of these work elements:

- Plant Vegetation
- Maintain Vegetation
- Remove/Breach Fish Passage Barrier
- Produce Design and/or Specifications
- Install Fence

List of Accomplishments

The following is a list of YTAHP accomplishments for reporting period April 1, 2022 through March 31, 2023:

FY 2022 YTAHP Accomplishments

April 2022 through March 2023

Project No. 2007-398-00

Contract: 89876 (Expense)

Kittitas County - Completed Projects

- 1. Coleman Creek 4.3 - Beard/Lueck** – The Coleman Creek River Mile 4.3 project was a collaboration between the Washington Department of Fish & Wildlife, Yakama Nation, Kittitas County Conservation District, Mid-Columbia Fisheries Enhancement Group and private landowners. The project removed a partial fish passage barrier, installed a compliant screen on an existing irrigation pump diversion, added boulder clusters to enhance instream habitat, and planted compatible vegetation. KCCD

Riparian Revegetation, Weed Management and Other Project Maintenance

- M1. Cooke Creek (Cherry Creek Tributaries)** - (Construction FY19) Planting and maintenance of riparian trees and shrubs completed as part of the Cooke Creek (Cherry Creek Tributaries) (Stream Mile 0.94 and 1.28) fish passage projects (diversion removals, fish screen). KCCD
- M2. Coleman Creek 3.4 - Olmstead Park** - (Construction FY20) Maintenance of riparian plantings completed as part of the Coleman Creek 3.4 - Olmstead Park fish passage project (diversion removal, fish screen, pedestrian bridge). KCCD
- M3. Parke Creek 1.01 and 1.37** (Construction FY22) - (Construction FY19) Maintenance of riparian plantings completed as part of the **Parke Creek 1.01 and 1.37** fish passage project (diversion removals). KCCD
- M4. Coleman 4.3 - Beard/Lueck** – Planting of 0.1 acres of riparian vegetation in this reach of Coleman Creek as part of a larger project planned to achieve fish passage and improve instream habitat. Work completed by Mid-Columbia Fisheries Enhancement Group. KCCD

Kittitas County Significant Planning, Permitting and/or Engineering

- P1. Cascade at Coleman Intersection** – Design work on this project continued from previous contracts. Technical Work Group meetings were held and design adjustments are underway to address all comments received. This project involves both removal of the unscreened concrete diversion and the structures that currently pass Coleman Creek under Cascade Irrigation District's canal and installation of a new diversion structure with a fish screen and fishway as well as a siphon to pass the CID canal under Coleman Creek to allow for streambed restoration. KCCD
- P2. Coleman Creek 4.4 -Schomer/Beard Fish Passage** – Design work on this project continued with multiple meetings with the YTAHP technical working group, the landowner and design engineers to assess options and select an alternative. This is an irrigation water diversion on Coleman Creek (stream mile 4.4) that is a fish passage barrier and is not screened to protect fish from entrainment in the system. KCCD

P3. Naneum 2.9 and 3.2 - Screening and Passage – Design work on this project continued as the landowner assessed the options and worked toward a decision about the on-farm irrigation systems that will inform final design. This project involves both removal of the diversions and upgrades to the on-farm delivery and application systems. KCCD

P4. Naneum-Ellensburg Water Company Intersection- Site visits, survey and conceptual design work occurred during this contract period. This project is fish passage focused with the removal of the structures at the intersection of Naneum Creek and the Ellensburg Water Company canal. The design will include installation of a siphon to pass the canal under the restored streambed and installation of access bridges to replace existing structures. KCCD

FY 2022 YTAHP Accomplishments

April 2022 through March 2023

Project No. 2007-398-00

Contract: 89876 (Expense)

Yakima County – Completed Projects

- 2. Naches River-Edgar Riparian Fencing and Planting-** (RM 5): This project created a protected riparian buffer along the Naches River and supplemented the existing vegetation to help create species diversity and habitat for fish and wildlife. Approximately 100 potted trees and shrubs native to the area were planted, species included black cottonwood, coyote willow, and golden currant. In addition, approximately 500 feet of livestock exclusion fencing was implemented creating an average buffer width of 50 feet and approximately 1,300 feet of old fence was replaced to maintain livestock exclusion from the river and its side channels. NYCD.

Riparian Revegetation, Weed Management and Other Project Maintenance

- M5. Cowiche Creek-Naches-Cowiche Canal Siphon-** (FY 2018, RM 0.6): Plant stewardship and weed control. NYCD.
- M6. Wenas Creek-Riparian and Water Quality Enhancement-** (FY 2020, RM 12) Plant stewardship and weed control. NYCD.

Yakima County Significant Planning, Permitting and/or Engineering

- P5. Wenas Creek Fish Passage and Screening-** (RM 16): Planning and project development activities intended to improve fish screening and passage at two irrigation diversions, as well as to improve passage, flow management, and provide water measuring at the existing diversion dams that divide north and south fork flows. The project is located on Wenas Creek and will also include water conservation measures. Anticipated implementation FY 2025. NYCD.
- P6. Purdin Ditch Fish Screening and Piping-** (RM 14): Planning and project development activities intended to improve fish screening and passage at the Purdin Ditch gravity diversion, as well as replace the 3 mile long ditch with a pressurized pipeline. The project is located on Wenas Creek. Anticipated implementation FY 2024. NYCD.
- P7. Edgar Riparian Restoration and Protection Phase 2-** (RM 10): Activities continued from Phase 1 on a different parcel, aimed addressing several factors limiting Mid-Columbia steelhead production in the Naches River and its tributaries by protecting and enhancing existing riparian and floodplain habitat through livestock exclusion and planting riparian trees and shrubs. Anticipated implementation FY 2023. NYCD.

Notes:

cfs – Cubic feet per second, measure of water flow in instantaneous volume past a point.
RM - River mile is a measure of distance in miles along a river or stream from its mouth (RM 0.0) and is used as a project locator.

5. SUMMARY

Overall, the Yakima Tributary Access & Habitat Program has and will continue to address specific goals of the Yakima Sub-basin Plan, Yakima Basin Steelhead Recovery Plan, biological opinions, and other resource plans critical to native salmonid recovery. The program has achieved important enhancements that support aquatic species, particularly resident and anadromous fish, including ESA listed steelhead and bull trout. The involvement of local conservation and irrigation entities as well as communication with local elected representatives has broadened the awareness of the program and enhanced its ability to achieve its objectives. In addition, the program accomplishments will leverage subsequent work through the engineering designs, procured materials and general cost share that this program has provided. Additional grant applications have been and will continue to be made to further support program objectives.

BPA funding for FY 2022 supported the implementation of 6 fish passage and habitat restoration projects, ongoing riparian vegetation and site stewardship on 4 projects and provided significant work toward project development, permits, design and/or funding for an additional 7 projects. The projects completed in FY 2022 cumulatively resulted in restoring fish passage to .1 mile of tributary habitat and installing .25 miles of riparian planting and installing .13 miles of fencing on 6 streams in the Yakima Basin. YTAHP also leveraged \$1.3 million in funding from other sources committed to project implementation.

Future work under YTAHP may include: installation of screened diversions (both pump and gravity) following NMFS and WDFW criteria, removal of fish passage barriers, and restoration of habitat by planting of riparian buffers, installing livestock exclusion fencing, placement of LWD, floodplain enhancement and various on-farm irrigation improvements to improve instream water flow. The program will also supplement work done under other local, state and federal programs that support water conservation and habitat projects. Completion of another year's effort has strengthened opportunities for working on the private lands in two counties which will be vital to future efforts by YTAHP and others to protect and enhance Yakima River Basin habitat. It is again important to emphasize that this work is done on a voluntary basis and shows substantial support by the private landowners for pursuing projects of this type. Such support is essential to maximize future salmonid recovery efforts.

Public information on YTAHP can be found at the following Internet websites-

BPA publications: [2007-389-00: Project Summary \(cbfish.org\)](https://www.cbfish.org/2007-389-00-Project-Summary)

Washington RC&D YTAHP website: <https://www.washingtonrcd.org/ytahp>

KCCD YTAHP website: [YTAHP | KCCD](https://www.kccd.org/ytahp)

NYCD YTAHP website: <http://northyakimacd.wordpress.com/projects-and-program/yakima-tributary-access-habitat-program-ytahp/>.

2007-398-00 YAKIMA TRIBUTARY ACCESS & HABITAT PROGRAM (YTAHP)
Anadromous Fish Habitat and Hatchery Review project planning documents:
[YTAHP 2023-2027 | KCCD](https://www.kccd.org/ytahp)

REFERENCES

Biological Opinion, Reinitiation of Consultation on Operation of the Federal Columbia River Power System, Endangered Species Act-Section 7 Consultation. National Marine Fisheries Service, December 21, 2000.

Limiting Habitat Factors, Yakima River Watershed, Final Report. Washington State Conservation Commission, December 2001.

YTAHP Biological Monitoring Report, Yakima Tributary Access & Habitat Program, Washington Department of Fish and Wildlife, 2007.

See [YTAHP Monitoring Report for 2006 \(washingtonrcd.org\)](http://www.washingtonrcd.org)

Yakima River Basin - Watershed Assessment. Tri-County Water Resources Agency, June 2000.

Yakima Subbasin Summary (draft). Northwest Power Planning Council, August 3, 2001.

See [Yakima Subbasin Plan \(nwcouncil.org\)](http://www.nwcouncil.org)

YTAHP Strategic Plan, Yakima Tributary Access & Habitat Program. 2002, updated 2023.

See: [Chapter 1 \(washingtonrcd.org\)](http://www.washingtonrcd.org)

YTAHP Web Resources:

Washington RC&D Council, YTAHP: <https://www.washingtonrcd.org/ytahp>

NYCD, YTAHP: <http://northyakimacd.wordpress.com/projects-and-program/yakima-tributary-access-habitat-program-ytahp/>

KCCD, YTAHP: [YTAHP | KCCD](#)

MCFEG: [Mid-Columbia Fisheries Enhancement Group | Working with partners to make a difference for salmon \(midcolumbiafisheries.org\)](http://www.midcolumbiafisheries.org)

KCT: [Kittitas Conservation Trust – Roslyn, Washington](#)

WDFW, Salmon and Steelhead Conservation:

[Habitat recovery and protection | Washington Department of Fish & Wildlife](#)

YN Fisheries: [Yakama Nation Fisheries | Yakama Nation Fisheries \(yakamafish-nsn.gov\)](#) [One-Stop JARPA Resource Center \(wa.gov\)](#)

WA State JARPA (e-permitting): [One-Stop JARPA Resource Center \(wa.gov\)](#)

Appendices

Appendix A: Award History

Appendix B: Annual Report History

Appendix C: FY 2022 Project Pictures

APPENDIX A



Award History

Process: **2001 Action Plan**
Proposal: 2002-025-00 YTAHP
Sponsor: Kittitas County Water Purveyors (subsequently the RC&D)
Award: 2002: \$228,913 (\$5,543 not spent; June 02, shortened year)

Process: **2002 Provincial Review**
Proposal: 2002-025-01 YTAHP
Sponsor: Kittitas County Water Purveyors (subsequently the RC&D)
Award: 2003: \$695,608 (\$25,990 not spent)
2004: \$720,000 (\$24,612 not spent)
2005: \$879,935 (\$64 not spent)
2006: \$869,919 (\$10,080 not spent)

Process: **2007-2009 Provincial Review**
Proposal: 2007-398-00 YTAHP
2007-398-00 Yakima River Basinwide Tributary Passage & Flow
(Combines 2002-025-01, 2003-001-00 and 2007-020-00)
Sponsor: So. Central WA Resource Conservation & Development Council
Award: 2007: \$879,996 (Exp \$121,723 and Cap \$758,273)
2008: \$879,995 (Exp \$121,722 and Cap \$758,273)
2009: \$879,999 (Exp \$121,726 and Cap \$758,273)
2010: \$879,999 (Exp \$121,726 and Cap \$758,273)
2011: \$879,999 (Exp \$121,726 and Cap \$758,273)
2012: \$902,000 (Exp \$124,769 and Cap \$777,231)
2013: \$897,732 (Exp \$127,605 and Cap \$770,127)

Process: **2013 Geographic Review**
Proposal: 2007-398-00 Yakima River Basinwide Tributary Passage & Flow YTAHP
Sponsor: So. Central WA Resource Conservation & Development Council
Award: 2014: \$904,926 (Expense \$127,605 and Capital \$777,321)
2015: \$904,926 (Expense \$479,834 and Capital \$425,092)
2016: \$904,926 Expense
2017: \$904,926 Expense
2018: \$901,476 Expense
2019: \$801,476 Expense
2020: \$801,476 Expense
2021: \$801,476 Expense
2022: \$801,476 Expense

Process: **2022 Anadromous Fish Habitat Review**
Proposal: 2007-398-00 Yakima Tributary Access & Habitat Program (YTAHP)
Sponsor: Washington Resource Conservation & Development Council
Award: 2023: \$858,227 Expense

APPENDIX B



Annual Reports

Period: FY 2002
Report: 2002-025-00 Yakima Tributary Access and Habitat Program
ID: DOE/BPA-00009726-1
Author: So. Central WA Resource Conservation & Development Council
Date: April 2003

Period: FY 2003
Report: 2002-025-01 Yakima Tributary Access and Habitat Program
ID: DOE/BPA-00011926-1
Author: So. Central WA Resource Conservation & Development Council
Date: December 2003

Period: FY 2004 (September 2003 – October 2004)
Report: 2002-025-01 Yakima Tributary Access and Habitat Program
Contract: 00011926
Author: So. Central WA Resource Conservation & Development Council
Date: December 2004

Period: FY 2005 (September 2004 – October 2005)
Report: 2002-025-01 Yakima Tributary Access and Habitat Program
Contract: 11926
Author: So. Central WA Resource Conservation & Development Council
Date: October 2005

Period: FY 2006 (October 2005 – September 2006)
Report: 2002-025-01 Yakima Tributary Access and Habitat Program
Contract: 24722
Author: So. Central WA Resource Conservation & Development Council
Date: October 2006

Period: FY 2007 (October 2006 – March 2008)
Report: 2002-025-01 Yakima Tributary Access and Habitat Program
Contract: 24722
Author: So. Central WA Resource Conservation & Development Council
Date: August 2008

Period: FY 2008 (April 2008 – March 2009)
Report: 2002-025-01 Yakima Tributary Access and Habitat Program
Contract: 24722
Author: So. Central WA Resource Conservation & Development Council
Date: December 2009

APPENDIX B



Annual Reports, continued

Period: FY 2009 (April 2009 – March 2010)
Project: 2007-398-00 Yakima Tributary Access and Habitat Program
Contract: 46802
Author: So. Central WA Resource Conservation & Development Council
Date: April 2010

Period: FY 2010 (April 2010 – March 2011)
Project: 2007-398-00 Yakima Tributary Access and Habitat Program
Contracts: 46802 Capital; 46861 Expense
Author: So. Central WA Resource Conservation & Development Council
Date: May 2011

Period: FY 2011 (April 2011 – March 2012)
Project: 2007-398-00 Yakima Tributary Access and Habitat Program
Contracts: 52299 Capital; 51799 Expense
Author: So. Central WA Resource Conservation & Development Council
Date: June 2012

Period: FY 2012 (April 2012 – March 2013)
Report: 2007-398-00 Yakima Tributary Access and Habitat Program
Contracts: 56617 Capital; 56682 Expense
Author: So. Central WA Resource Conservation & Development Council
Date: July 2013

Period: FY 2013 (April 2013 – March 2014)
Report: 2007-398-00 Yakima Tributary Access and Habitat Program
Contracts: 00060456/00064516 Capital; 00060457/00064515 Expense
Author: So. Central WA Resource Conservation & Development Council
Date: June 2014

Period: FY 2014 (April 2014 – March 2015)
Report: 2007-398-00 Yakima Tributary Access and Habitat Program
Contracts: 00064516 Capital; 00064515 Expense
Author: So. Central WA Resource Conservation & Development Council
Date: June 2015

Period: FY 2015 (April 2015 – March 2016)
Report: 2007-398-00 Yakima Tributary Access and Habitat Program
Contract: 00068444 Capital; 00068714 Expense
Author: So. Central WA Resource Conservation & Development Council
Date: June 2016

APPENDIX B



Annual Reports, continued

Period: FY 2016 (April 2016 – March 2017)
Report: 2007-398-00 Yakima Tributary Access and Habitat Program
Contract: 71584 Expense
Author: Washington Resource Conservation & Development Council
Date: June 2017

Period: FY 2017 (April 2017 – March 2018)
Report: 2007-398-00 Yakima Tributary Access and Habitat Program
Contract: 75738 Expense
Author: Washington Resource Conservation & Development Council
Date: June 2018

Period: FY 2018 (April 2018 – March 2019)
Report: 2007-398-00 Yakima Tributary Access and Habitat Program
Contract: 78789 Expense
Author: Washington Resource Conservation & Development Council
Date: June 2019

Period: FY 2019 (April 2019 – March 2020)
Report: 2007-398-00 Yakima Tributary Access and Habitat Program
Contract: 81849 Expense
Author: Washington Resource Conservation & Development Council
Date: June 2020

Period: FY 2020 (April 2020 – March 2021)
Report: 2007-398-00 Yakima Tributary Access and Habitat Program
Contract: 84929 Expense
Author: Washington Resource Conservation & Development Council
Date: June 2021

Period: FY 2021 (April 2021 – March 2022)
Report: 2007-398-00 Yakima Tributary Access and Habitat Program
Contract: 87467 Expense
Author: Washington Resource Conservation & Development Council
Date: June 2022

Period: FY 2022 (April 2022 – March 2023)- Pending
Report: 2007-398-00 Yakima Tributary Access and Habitat Program
Contract: 89876 Expense
Author: Washington Resource Conservation & Development Council
Date: June 2023

Yakima Tributary Access & Habitat Program

Fish Passage Barrier Removal, Fish Screening & Habitat Improvement



Coleman Creek 4.3 - Beard/Lueck-
Excavator holding a portion of the concrete dam
after it was removed from the stream channel.



Coleman Creek 3.4 - Olmstead Park-
The planting maintained at the project site included
several pollinator species including streambank holly
hock (*Iliamna vivularis*).



Wenas Creek Riparian Fencing-
Edgar: Implementing trees and shrubs.



Wenas Creek Riparian Fencing-
Edgar: After implementation.