Yakima Tributary Access & Habitat Program

Strategic Plan

Yakima Tributary Access & Habitat Program

Washington Resource Conservation & Development Council

With funding from the

Bonneville Power Administration

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CHAPTER 1: PROGRAM SUMMARY

1.0 INTRODUCTION

The Yakima Tributary Access and Habitat Program (YTAHP) was developed to restore salmonid passage, protect fish from diversion entrainment, and to enhance riparian and instream habitat on Yakima River tributaries that historically supported salmonids.

The program objectives are to: a) eliminate salmonid mortality caused by impingement and entrainment into surface water diversions and artificial waterways; b) restore habitat connectivity by providing fish passage at man-made barriers, such as diversion dams, culverts, siphons and bridges; c) improve degraded instream habitat resulting in enhanced spawning and rearing habitat for ESA-listed Middle Columbia Steelhead and other native salmonids; d) restore riparian habitat and function to increase shading, reduce stream temperature, improve water quality, and provide a future source of woody debris; and d) complete inventories in key tributaries targeted for salmon and steelhead restoration to identify fish passage and screening needs.

The YTAHP developed from a number of groups actively engaged in watershed management, and/or habitat restoration within the Yakima River Basin. Current YTAHP membership includes: Washington Resource Conservation and Development (RC&D - program administrator), Kittitas County Conservation District (KCCD), North Yakima Conservation District (NYCD), Washington Department of Fish and Wildlife (WDFW), Kittitas Conservation Trust (KCT), Mid-Columbia Fisheries Enhancement Group (MCFEG), and the Yakama Nation (YN). Future membership is open to entities with similar interests and goals and may include the South Yakima Conservation District and Benton County Conservation District.

Bonneville Power Administration's Fish and Wildlife Program (BPA) has funded the Yakima Tributary Access and Habitat Program since 2003. Over the past two decades, YTAHP has evolved into an efficient and effective watershed restoration program; implementing over 227 projects throughout the Yakima Basin (see Accomplishments 2002 to Present) in a prioritized and coordinated manner.

YTAHP is supported by various private and governmental entities throughout the basin. Through its diverse core team membership, the YTAHP has proven capable of working with landowners to successfully implement projects with significant benefit to native salmonids. YTAHP has successfully coordinated efforts of other resource management entities and co-managers in the Yakima Basin to gain additional benefits for fish and wildlife from the proposed projects.

The program may evolve through time, based on resource needs and core team membership. This strategic plan will evolve with the program to reflect the current role and goals of the YTAHP. The general mission will remain the same: to restore the quantity, quality, connectivity and functions of tributary habitat for salmon and steelhead recovery.

1.1 BACKGROUND

Many factors, occurring over more than a century, have contributed to a decline in native salmonid populations within the Yakima River Basin. Commercial harvest beginning in the 1800s, unscreened surface water withdrawals, construction of dams and other man-made fish barriers, habitat degradation, introduction of hatchery fish, introduction of non-

native species, predation pressure, urban development, agricultural and timber practices, climatic cycles and other causes have all played a role in the decline of salmonid populations.

The significance of these declines is reflected in listings under the Endangered Species Act (ESA) in the Middle Columbia region, which includes the Yakima River Basin. The United States Fish and Wildlife Service (USFWS) listed the Columbia River bull trout (*Salvelinus confluentus*) distinct population segment as threatened on June 10, 1998 and the National Oceanic and Atmospheric Administration (NOAA) Fisheries listed the Middle Columbia River steelhead (*Oncorhynchus mykiss*) as threatened on March 25, 1999.

Since these listings, numerous watershed planning and salmon recovery efforts in the Yakima Basin have occurred. Most watershed plans and recovery documents list barrier removal and diversion screening as high priorities for fish recovery, including: the Yakima Subbasin Plan, Yakima Basin Salmon Recovery Plan, Yakima Steelhead Recovery Plan, Yakima Bull Trout Action Plan, Yakima Basin Limiting Factors Analysis, Yakima River Basin Watershed Management Plan, federal Biological Opinions and other resource plans. Since at least 1881 Washington State has had laws requiring the protection of fish life by screening water diversions. While these laws have been on the books for more than a century (see RCW Chapters 77.55 & 77.57), they have been difficult to implement and enforce. The YTAHP facilitates a voluntary program in which landowners can come into compliance with current fish passage and screening laws with considerable cost sharing advantages—a win-win situation for native fish and landowners. Habitat quality is also identified as a key factor limiting the productivity of these listed species.

There has been active screening of Yakima River mainstem diversions for nearly 40 years through the Fish Passage and Protective Facilities Program, a cooperative effort lead by the United States Bureau of Reclamation (BOR) with Bonneville Power Administration (BPA) Fish and Wildlife Program funding. Phases I (1980s) and II (1990s to 2006) of the Program resulted in the completion of numerous projects that protect fish from entrainment into artificial irrigation waterways and provide passage through diversion dams and other man-made obstructions. Several of these projects were large, multi-million dollar efforts that are now operational, screening diverted river water for irrigation and other purposes.

In spite of these significant efforts, there are still hundreds of unscreened or improperly screened diversions and other passage and habitat problems for fish in the Yakima Basin tributaries. There are hundreds of identified passage barriers; total barriers, partial, seasonal, and/or life stage barriers. Barriers include culverts, bridge structures, pushup dams, inadequate flow, concrete dams and channel constrictions. The removal of full adult barriers, juvenile barriers, partial and seasonal barriers allows access to the often less disturbed upper watershed habitat throughout the Yakima Basin. Fish passage for all life stages not only provides spawning accessibility for adults, but valuable tributary rearing habitat for juveniles; protecting them from the often high and variable flows of the mainstem Yakima and Naches Rivers. The YTAHP contributes to other recovery efforts in the basin to reestablish salmonid populations in all historical areas.

The ESA listing of steelhead and bull trout in the Yakima Basin has increased pressure to comply with current fish passage and screening laws. Lack of habitat availability has also been identified as a key factor in reduced productivity of these listed species. The YTAHP was designed to continue to address screening and passage needs in Yakima

River tributaries as well as enhance instream and riparian habitat features in the basin using a well-coordinated, prioritized approach.

1.2 PROGRAM STRUCTURE

The YTAHP core team members work with project partners and facilitate coordination of local, state, tribal and federal agencies with interest and experience in fish and habitat enhancement activities, water management, and/or stewardship of the land. The YTAHP acts as a liaison between regulatory agencies, funding entities and private landowners, ultimately leading to efficient and effective project implementation. The YTAHP is organized into four functional groups/teams (Table 1). Members of these teams interact within and between teams to efficiently move projects through to completion. It is expected that individuals will serve on more than one team and that teams will change to best meet the needs of individual projects. In addition, other members and/or entities will be included as appropriate. The groups are described below.

1. Administration

The RC&D is a core team member and administers the YTAHP program. They have an intergovernmental contract with the BPA to implement and administer YTAHP. The RC&D has entered into inter-local agency agreements with other core team members that describe work expected, methods of payment and records maintenance for the program. In addition, the RC&D organizes regular program meetings and fulfills the program reporting requirements to BPA.

2. Program Management

The YTAHP was organized to facilitate collaboration of the local, state, tribal, and federal entities with interest and experience in fish recovery activities. Currently the core team for YTAHP is comprised of RC&D, NYCD, KCCD, WDFW, YN, KCT, and MCFEG. Core team members will work cooperatively to manage and provide direction to the program.

Additional entities often join in the YTAHP core team discussions and may participate in project planning and implementation if their goals and objectives align with YTAHP principles and funding allows. Examples include US Bureau of Reclamation, US Fish and Wildlife Service, Washington Department of Ecology, Trout Unlimited, Irrigation Districts and Washington Water Trust.

3. Project Sponsors

Any member of the core team can be a project sponsor; most projects are sponsored by NYCD, KCCD, MCFEG, YN and/or KCT. Project sponsors are responsible for coordinating communication between the different groups in YTAHP, facilitating project planning, provide information for permitting and funding, as well as the construction and implementation activities. In addition, project sponsors will be responsible for obtaining landowner agreements and monitoring the structural integrity of implemented projects. Access agreements should be maintained at each barrier removal project to facilitate biological monitoring activities pre- and post implementation.

4. Technical Work Group

YTAHP projects are reviewed and evaluated by a skilled technical working group (TWG) consisting of project sponsors, engineers, the permit coordinator, biologists and regulators. The TWG reviews the engineering designs and provides technical assistance.

This process facilitates project development incorporating the interests of many stakeholders throughout the planning process. Projects can often be implemented more

rapidly and create greater benefits to the watershed through YTAHP's collaborative processes. Oftentimes, collaborating with other groups results in cost-share opportunities through joint planning, engineering or in-kind contributions.

WDFW is designated as lead entity for completing environmental and cultural resource permit application packages. The permitting coordinator will work with the regulatory entities, namely BPA, NOAA Fisheries, USFWS, USACE, WDFW, Ecology, local governments, the YN, and others as appropriate.

1.3 PROGRAM OVERVIEW

Below is an overview of some of the primary functions and processes that occur in the YTAHP. More details can be found in the respective chapters.

Communication

Communication is an important component to the success of YTAHP. Communication efforts include outreach to local communities, prospective cooperators, and coordination with other Yakima Basin Watershed groups. The TWG provides early and ongoing communication with regulators to ensure project compliance. Cooperation among project sponsors and recovery groups will reduce duplication of efforts and parlay available funding, leading to greater watershed benefits. (See chapter 2.)

Project Prioritization

Many of the major tributaries in Kittitas and North Yakima Counties were inventoried using WDFW Salmonid Screening, Habitat Enhancement and Restoration (SSHEAR) protocol beginning in the mid-2000s. Based on those surveys, landowner cooperation, relationship to other projects, and the Priority Index (PI) numbers for barriers and the Screening Priority Index (SPI) numbers for diversions, projects are prioritized for implementation. Priority numbers may be recalculated after downstream projects are implemented and other prioritization schemes may also be incorporated. In streams that are not inventoried using the SSHEAR protocol, or the PI and SPI numbers have not been updated, projects are prioritized based on local knowledge and expertise. Tributaries are prioritized based on the occupancy of ESA-listed steelhead and the lowermost downstream barrier(s) and surface water diversion(s) are generally the highest priority.

In addition, habitat enhancement projects also need to become part of the work that YTAHP does to support fish recovery in the basin. (See chapter 3.)

Project Development and Implementation

Successful project implementation by the YTAHP is a result of a highly collaborative and cooperative process with a diverse group of participants with varying conservation interests. Project sponsors exhibit a high degree of skill in the development and management of these projects to get to the implementation phase. Project planning undergoes technical review from several sources, ranging from private landowners to hydraulic engineers. Once a project plan has been reviewed and accepted by the TWG, the applicable permits and environmental authorizations must be obtained. Throughout the planning and review process, the project sponsor must obtain and maintain access and maintenance agreements with the cooperators and other private landowners. The project sponsor is also responsible for contracting services necessary for project completion. (See chapter 4.)

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.

Funding

Through their Fish and Wildlife Program, Bonneville Power Administration provides the base funding for the YTAHP. This long-term funding provides leverage for project sponsors when applying for additional grants requiring matching funds (e.g. SRFB, FBRB, NRCS, etc). Additional contributions come from in-kind services from the core team and project participants. Since 2002, YTAHP's BPA funding has helped obtain $25.6 million more in matching funds. Many YTAHP projects include a cost share and/or in-kind component from the private landowner. (See chapter 6.)

Table 1. Yakima Tributary Access and Habitat Program Functional Groups/Teams.

Team	Membership[1, 2]	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 MCFEG BPA	Program organization and schedules, assigning tasks and tracking progress, program consistency, forming partnerships, updating planning documents, producing applications for funding, finding and organizing technical support, producing the program annual plans, and other functions as necessary.
Project Sponsors	Core Team	Plan and coordinate projects, facilitate landowner and community involvement and outreach, oversee project management
Technical Work Group	WDFW NOAA USFWS YN KCCD USACOE NYCD BPA YBJB KCT Ecology DAHP Local Government	The technical work group (TWG) provides the engineering, biological, implementation, and fabrication technical assistance. The permitting coordinator participates with the TWG as well.

CHAPTER 2: COMMUNICATION

2.0 INTRODUCTION

Communication is vital to the success of the Yakima Tributary Access and Habitat Program. Communication efforts include outreach to local communities in the program area to both inform and solicit potential project cooperators, and coordination with other groups working on habitat enhancement, conservation, and/or land and resource management in the Yakima Basin. Internal collaboration by YTAHP core team members and its participants is integral to the program's success.

2.1 OUTREACH AND COLLABORATION

The YTAHP has established positive working relationships with local communities, landowners, watershed groups, regulatory agencies, and the organizations that core team members represent. The program receives broad-based support from local, regional and state entities concerned with private landowner rights, natural resources conservation, and salmon recovery.

Outreach

The rapport between Conservation Districts and their local communities has helped facilitate the implementation of YTAHP projects and gain support for the program. The traditional role of Conservation Districts has been to conserve natural resources while assisting landowners through implementation of beneficial land management practices. During 2000 and 2001, fish screening workshops were held in both Kittitas and Yakima Counties to share with local communities the current laws on fish screening and passage and the resulting implications that recent ESA listings of steelhead and bull trout may have within the Yakima River Basin. In these workshops, the Conservation Districts and the Kittitas County Water Purveyors (KCWP) introduced YTAHP as a future program, amongst others, to assist landowners in voluntary compliance with state and federal screening and passage laws. Currently, landowners and the public are informed of YTAHP activities through newsletters, websites, articles, public presentations, fair booths, conferences, field tours and other forms of outreach.

When a private landowner cooperates with the YTAHP to implement a project, they are included as an integral member of the team. Landowners are apprised of the comparable costs of maintenance and operation of their corrected barriers and/or removal of the barrier, and of other alternatives in terms of effectiveness, time, equipment and safety. Contact will be maintained with those landowners from the identification of the project through the completion and monitoring of the project. Landowners will play a key role in monitoring the project and informing core team members of its operation and function.

Individual landowners have also provided outreach opportunities for the YTAHP. Neighbors have taken notice when projects are implemented and have asked participants about the program. This has increased awareness and participation in the YTAHP.

Collaboration

The YTAHP is based on a collaboration of entities interested in improving fish and wildlife habitat and/or assisting landowners in conserving natural resources. The Yakima Basin is home to diverse entities, including irrigation and agricultural interests, municipalities, tribal interests, local, state and federal agencies, private landowners, developers, recreational interests and environmental groups. The YTAHP often

collaborates with these entities on projects, resulting in broad-based support for the program and its projects. Through coordination with other organizations, YTAHP hopes to reduce duplication of effort and to ensure actions taken address broad watershed issues.

When a YTAHP project is proposed, representatives from interested agencies and groups are included in the planning process as part of the TWG. This facilitates project development incorporating the interests of many stakeholders early in the planning process. Projects can often be implemented more rapidly and create greater benefits to the watershed through collaborative processes. Oftentimes, efforts to work with other groups results in cost-share opportunities through joint planning, engineering or in-kind contributions.

In addition to project planning, a collaborative approach has been taken to monitor the biological response variables to projects implemented by YTAHP. We are currently coordinating our efforts with those of the Yakima-Klickitat Fisheries Program (YKFP), the Yakama Nation Fisheries Department (YN), WDFW fish program, and the Yakima Basin Fish and Wildlife Recovery Board.

2.2 INTERNET INFORMATION

The YTAHP meeting agendas and minutes can be found on the WA RC&D website. Kittitas County Conservation District and North Yakima Conservation District also maintain YTAHP information on their websites. A link to this information can be found in attachment 1.

CHAPTER 3: PROJECT PRIORITIZATION

3.0 INTRODUCTION

All YTAHP projects go through YTAHP's tried-and-true vetting process. Projects are prioritized based on available Priority Index numbers, alignment with the Priority Actions in the Yakima Steelhead Recovery Plan, and the Primary Resource Concerns for both the North Yakima and Kittitas Conservation Districts. When a YTAHP project is proposed, representatives from interested agencies and groups are included in the planning and design process. Projects are discussed with the YTAHP Core Team during monthly YTAHP meetings.

Our 2023-2027 prioritized project list can be found here: Project Planning Spreadsheet

3.1 PROJECT IDENTIFICATION AND PRIORITIZATION

Passage and Screening Projects

Initial SSHEAR surveys provided a ranking of tributaries for existing and potential salmonid habitat. Barriers and diversions within each stream were identified and scored quantitatively based on biological factors at each site and given a Priority Index (PI) or Screening Priority Index (SPI) number. Biological variables evaluated include status of fish species present, life stages impacted, migration timing of affected species/life stages, upstream habitat available, historical abundance, current and historical water quality and other habitat features. The prioritization list is ecologically based which means that addressing the highest rated barriers and diversions represents the greatest potential benefit for native salmonid species within the Yakima Basin.

The YTAHP generally implements projects from the most downstream-identified barrier or diversion and working upstream. This approach provides the most immediate benefits to migrating fish upon implementation. Projects may be proposed outside of this sequence when they present high biological priority and/or extraordinary opportunity, strong local support, supplemental funding, or address specific ESA compliance issues.

Because the YTAHP's focus is on working with voluntary private landowners, key factors such as landowner willingness, funding availability and project sponsorship can also influence project prioritization and implementation scheduling.

Habitat Enhancement Projects

The YTAHP provides voluntary opportunities to landowners to improve habitat, including: water quality, instream flows, riparian habitat, floodplain connectivity, instream complexity, and water use efficiency. Often times, these projects are not identified in the tributary assessments, but are recognized by the core team as a critical component in watershed health and salmon recovery.

In conjunction with local knowledge and expertise from the Core Team and YTAHP partners, existing resources such as the Yakima Basin Steelhead Recovery Plan, Yakima Basin Integrated Plan, Yakima Bull Trout Action Plan, local watershed assessments, etc. will be used to identify habitat enhancement projects. Projects will generally fall within three types of restoration categories, category 1 being the highest priority and most ecologically beneficial (Roni et al., 2002).

Project categories:

Category 1: Projects that reconnect isolated habitat: Floodplain connectivity, side-channel connectivity, other off-stream connections, etc.

Category 2: Projects that create and sustain habitat: Instream flow, water quality, riparian restoration, road relocation, sediment input, etc.
Category 3: Projects that provide instream habitat enhancement (May be in conjunction with category 1 and 2 projects): Large wood or boulder placement.

Habitat enhancement projects will be introduced to the core team and go through the technical review process, just like a screening or passage project. Often, habitat components are incorporated into screening and passage projects to achieve maximum biological benefits. Core team members and TWG members have expertise advising project proponents on methods to protect and enhance fish and wildlife habitat when working near streams. Instream actions may include using bioengineering tools for bank stability, grade controls, and instream and floodplain habitat complexity. Riparian and upland habitat enhancement activities benefit from the Conservation Districts' programs associated with erosion control and irrigation efficiencies programs. In addition, livestock control fencing and planting native vegetation in the riparian buffer provides great benefit to fish and wildlife habitat restoration.

As with screening and barrier removal projects, YTAHP's focus working with voluntary private landowners may influence project implementation scheduling based on landowner willingness.

3.2 ADDITIONAL PLANNING

As YTAHP continues to implement fish screening, passage, and habitat projects in priority watersheds, it should also maintain participation in other ongoing recovery actions. There is the potential for YTAHP to play a valuable role in the success of restoration actions associated with the Yakima Basin Integrated Water Resource Management Plan, Yakima River Basin Water Enhancement Project, Ecology TMDL projects, Voluntary Stewardship Program, and County Flood management needs. Yakima and Kittitas Counties are similar in that both include agricultural communities with irrigated lands and numerous salmonid bearing streams. For these reasons, the YTAHP is applicable and highly effective at addressing fish passage and habitat concerns to aid in salmonid recovery.

Stream assessments are updated when needed and new inventories are completed when a new focal tributary is identified. In 2018, YTAHP completed an updated assessment on Ahtanum Creek (38 miles total) to determine remaining fish passage and screening needs and identify new habitat restoration opportunities. In 2019, YTAHP completed a new inventory of fish passage and screening needs on Wenas Creek (25 miles total) after adult ESA-listed steelhead were documented consistently utilizing the stream.

Assessments are conducted utilizing Washington Department of Fish & Wildlife's protocol provided via their Fish Passage & Screening Division. YTAHP's fish passage and screening data are entered into the publicly accessible Washington Department of Fish & Wildlife Fish Passage Barrier and Surface Water Diversion Screening Inventory (FPDSI) database.

CHAPTER 4: PROJECT DEVELOPMENT & IMPLEMENTATION

4.0 INTRODUCTION

Project sponsors use the tributary assessments to approach landowners and initiate project development based on their prioritization score and overall habitat benefits to fish. Alternatively, a landowner can approach a core team member with a potential project. Once a project has been proposed, the project sponsor introduces the project to the core team and initiates the technical work group process. Project sponsors facilitate the project development and management while regularly keeping the core team and TWG involved, providing essential biological, engineering and permitting assistance (Figure 2). During planning and implementation of projects, core team members work to incorporate components that enhance fish habitat.

4.1 DESIGN DEVELOPMENT

The YTAHP project sponsors are responsible for selecting engineers (in-house or consulting) to plan, design, and provide construction oversight during implementation. The selected engineers will work with core team members, landowners, project sponsors, BPA and TWG participants during the planning and design phases. If the project is adjacent to municipal infrastructure, the appropriate city, county or state entity will be contacted and invited to participate.

Engineering and Procurement

A key component of projects will be engineering designs and procurement of materials. The YTAHP can take advantage of the Conservation Districts' ability to use the Counties' small works rosters to procure engineering services, materials, and construction labor contracting for projects estimated to be less than $200,000.

The Yakima Basin has a significant resource base of qualified and experienced engineers, biologists, fabricators and contract managers. The following are current sources of technical assistance that may be consulted for YTAHP projects within the Yakima Basin. Several of these groups are included in the core team and are regular TWG participants.

1. **Washington Department of Fish and Wildlife (WDFW).** WDFW has biologists and engineers who specialize in watershed restoration, including fish passage and screening issues. Additionally, the WDFW's Restoration Division within the Habitat Program and the Yakima Construction Shop have longstanding experience and expertise in screen design, fabrication, installation, operation, and maintenance.

2. **Yakama Nation (YN).** Biologists from the Yakama Nation Fisheries Department provide technical assistance, funding, project oversight, and biological information to assist in YTAHP project development and implementation.

3. **National Marine Fisheries Service (NMFS).** NMFS has provided engineering, technical, and biological support for YTAHP projects as well as other fish protection facilities in the Yakima Basin. Their concurrence is required as part of the Habitat Improvement Program's Biological Opinion (HIP BO) agreement between BPA and NMFS on fish screening and passage projects.

4. **Conservation Districts**. The conservation districts in the Yakima River Basin currently retain engineers who provide the engineering and designs for several

YTAHP projects. Conservation Districts' staff offer expertise in irrigation efficiency, water quality, and water conservation practices as well as enhancement of riparian buffers in addition to their ability to manage projects efficiently.

5. **Natural Resources Conservation Service (NRCS).** NRCS has programs and personnel that assist with watershed improvement projects on private land. Many of their programs complement the YTAHP goals and many projects have incorporated both programs, resulting in increased benefits to the watershed.

6. **Washington Department of Ecology (Ecology).** Ecology provides information to confirm adjudicated water rights during the planning process. In addition, water meters are typically installed with new fish screening projects to assist landowners in compliance with state laws mandating metering on all surface water diversions.

7. **United States Fish and Wildlife Service (USFWS).** USFWS provides technical assistance and funding for several YTAHP projects throughout the basin through the Partners for Fish and Wildlife Program.

8. **United States Bureau of Reclamation (BOR).** Biologists, screening experts, and engineers with the BOR often assist in design and/or review of YTAHP projects and readily share data and available information with project sponsors. The Yakima River Basin Water Enhancement Project (YRBWEP) partners on numerous YTAHP projects through technical assistance provided by staff (BOR, Ecology, USFWS) and through funding.

9. **Manufacturers and Fabricators**. Established and new businesses are available to manufacture pump screens and materials or fabricate parts of screens. Many businesses are updating their designs and materials to meet new screen requirements and other habitat needs.

Technical assistance from other sources is sought out and used as each project dictates based on the unique components associated with planning and implementation.

4.2 ENVIRONMENTAL REGULATIONS

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.

4.3 AGREEMENTS

Cooperative agreements with property owners describing site access, individual roles and responsibilities, and cost share responsibilities for installation and maintenance of new structures will be necessary prior to construction. In addition, access agreements with the landowners will be sought out to allow biological monitoring at barrier removal project sites.

Contracts for the procurement of materials and implementation of structures are generally handled through the project sponsors and the project engineer.

4.4 PROJECT IMPLEMENTATION

Prior to groundbreaking activity associated with project implementation, the appropriate agreements, approvals, permits, and contracts must be in place. Once the project is ready for implementation, the project sponsors and engineer will provide construction oversight with assistance from the permitting coordinator to ensure the project is constructed as designed and according to the environmental provisions. The project sponsor is responsible for monitoring the physical structures as well as the operation and maintenance after implementation (chapter 5).

4.5 IMPLEMENTATION REPORTING

Project sponsors will document each project's progress through photographs and oral reports to the core team. On a project-by-project basis, documentation of project progress may include daily written notes, in-house observation or contracted inspection.

Upon completion of a project, it will be the responsibility of the project sponsor, Contractor and permit coordinator to ensure all of the reporting requirements to the appropriate regulatory and funding agencies are met.

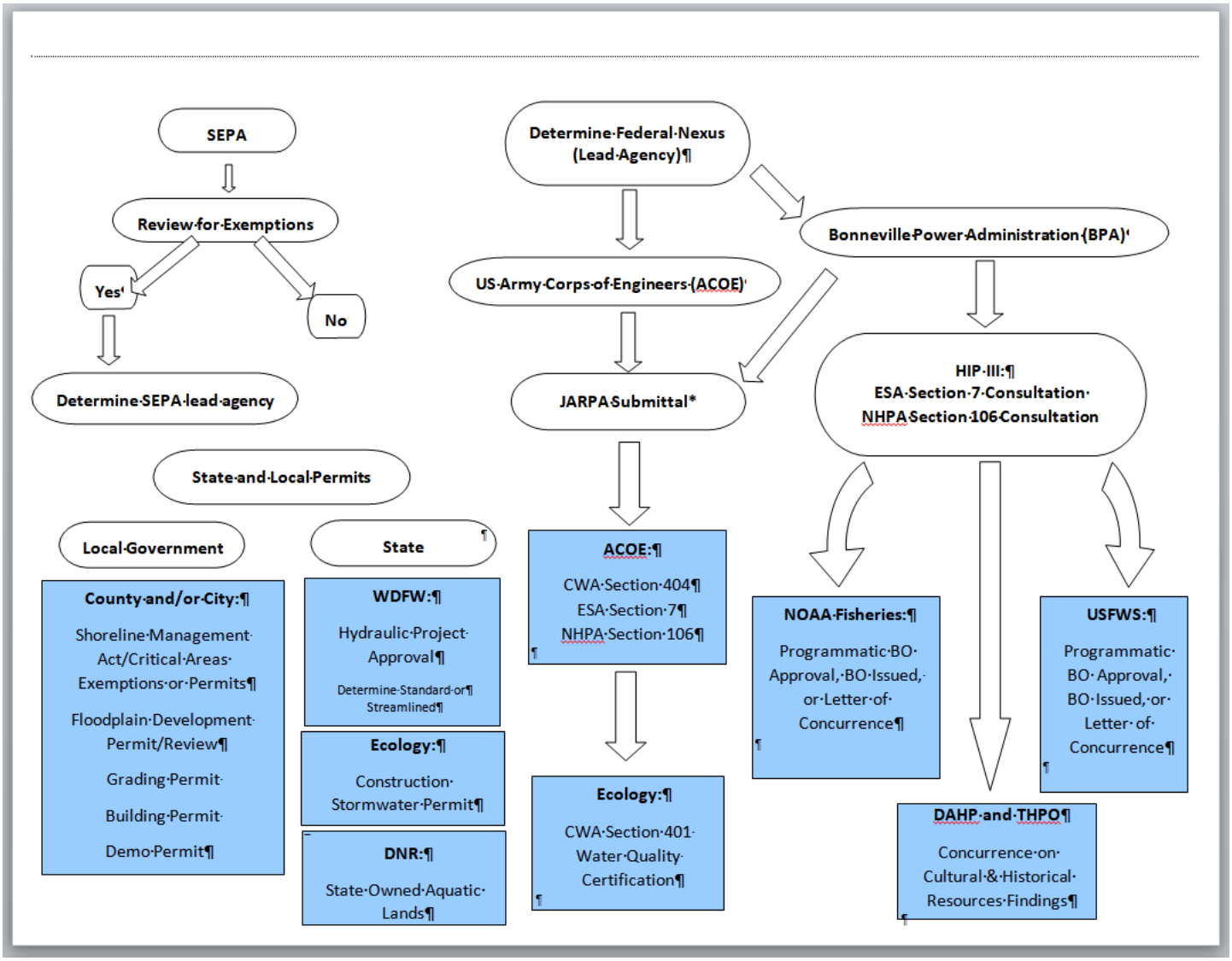


Figure 1. Project Permitting Flowchart. This is a general diagram detailing the YTAHP permitting process prior to project implementation. Shaded boxes represent permits or authorizations that may be necessary. **Acronyms:**

SEPA: State Environmental Policy Act
ACOE: US Army Corps of Engineers
BPA: Bonneville Power Administration
HIP: Habitat Improvement Program
ESA: Endangered Species Act
NHPA: National Historic Preservation Act
JARPA: Joint Aquatic Resources Permit Application
NOAA: National Oceanic and Atmospheric Administration
USFWS: US Fish & Wildlife Service
DAHP: Department of Archaeology & Historic Preservation
THPO: Tribal Historic Preservation Office
WDFW: Washington Department of Fish & Wildlife
DNR: Department of Natural Resources

* **YN Water Code Permit –** required when working on streams that are on or adjacent to the Yakama Indian Nation Reservation

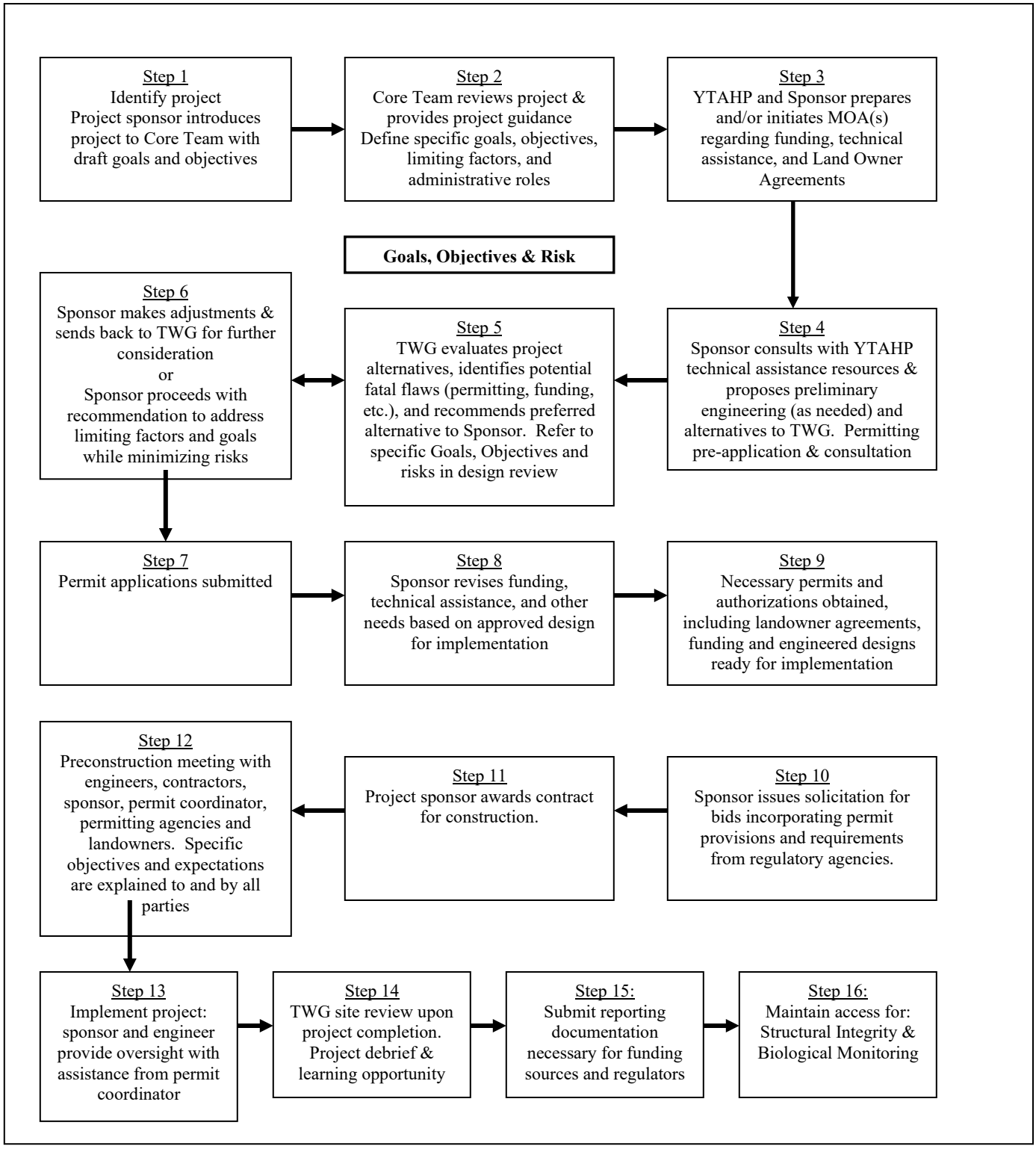


Figure 2. Flow chart for planning and implementation of a typical YTAHP project.

CHAPTER 5: MONITORING

5.0 INTRODUCTION

A monitoring component is an essential part of successful restoration programs. It is important to monitor the effectiveness and efficiency of the overall program function as well as the effects of individual projects. The YTAHP core team is comprised of several different entities working in collaboration, to ensure that the goals and objectives are carried out as stated in the strategic plan and in compliance with the overall mission of fish recovery. In addition, each project is monitored for structural integrity and function as well as biological response variables resulting from the implementation.

5.1 PROGRAM FUNCTION

YTAHP core team members meet monthly to discuss program function, project development, funding opportunities, and issues impacting fish recovery within the Yakima Basin. These meetings facilitate the discussions on how the YTAHP is functioning. The diversity of core team membership ensures that resource needs are met for all interested parties and that the founding principles of the YTAHP are being followed.

The strategic plan will be dynamic and updated as necessary based on monitoring the evolution of YTAHP and how it functions to best meet the resource needs. The update process will entail reviewing program objectives or project documentation and implementation, identifying problems or issues, then developing strategies for resolution and building those strategies back into out-year planning processes.

5.2 PROJECT INSTALLATION & PERFORMANCE

Newly constructed projects will be monitored to ensure the structures are stable and functioning as designed at several different flows. The project sponsors and TWG participants will visit project sites to assess compliance with federal and state passage and screening criteria as well as their overall functionality as it was designed. 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.

In addition, project sponsors will communicate regularly with landowners responsible for maintaining the new structures to check on their operation and maintenance requirements. Knowledge gained through these monitoring efforts will be shared with the core team and will lead to more efficient and effective projects in the future.

5.3 BIOLOGICAL RESPONSES

The over-arching goal of YTAHP projects is to increase the quantity, quality, connectivity and function of tributary habitat for native salmonids in the Yakima Basin. The YTAHP Core Team hypothesize that species richness and migratory salmonid abundance will increase upstream of man-made barriers once fish passage has been restored. 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 regularly collaborates with the entities who are funded to conduct monitoring in the Yakima Basin, namely the Washington Department of Fish & Wildlife (WDFW) and Yakama Nation (YN), who complete robust monitoring. To support monitoring in Yakima River tributaries, the YTAHP Core Team has purchased PIT array equipment (for installation/monitoring by others) and coordinated with private landowners for PIT array installation and access. YTAHP has also partnered to complete electrofishing surveys and spawning surveys.

YTAHP's data collection is often completed in collaboration with other agencies. YTAHP's data is shared with the YTAHP Core Team, partners, and private landowners. YTAHP's fish passage and screening data is entered into the publicly accessible Washington Department of Fish & Wildlife Fish Passage Barrier and Surface Water Diversion Screening Inventory (FPDSI) database.

Table 1. Summary of monitoring activities within YTAHP and in coordination with other natural resource managers.

Type	Purpose	Responsible Team	Parameters	Timing/ Frequency	Methods
Program Function	Are we doing what we said we would do?	Core Team	Administration, Deliverables to BPA, Project prioritization, selection, and implementation	Ongoing	Discussions at monthly meetings, update planning documents
Installation & Performance	Is the structure and function of the project as it was designed?	Project Sponsor and Technical Work Group	Screening and passage criteria, site specific based on defined goals and objectives	At project completion; and/or at intervals after project completion	Site assessments, landowner interviews
Biological Responses	Do trends suggest that species composition and/or abundance change post barrier correction?	Core Team and Technical Work Group	Biological presence, species richness, salmonid abundance, new spawning areas	Baseline pre-project and long-term monitoring post-implementation	Electrofishing surveys, redd surveys, snorkel surveys, collaboration with other entities and programs.

CHAPTER 6: FUNDING

6.0 INTRODUCTION

Bonneville Power Administration's Fish and Wildlife Program has funded the Yakima Tributary Access and Habitat Program since 2002. This funding facilitates program administration and management as well as funding for project planning and implementation. Project sponsors successfully use this long-term, baseline-funding source as leverage in obtaining matching funds from other grant sources. Additional contributions come from in-kind services of the core team and project participants. Since 2002, the BPA funding for YTAHP has been matched with $27.3 million from other sources. More than 255 miles of tributary habitat has been opened up to native fish passage with 453 cubic feet per second of water screened since 2002. Even with these accomplishments, within Yakima and Kittitas Counties, a significant number of diversions remain in need of adequate fish screens and fish passage. Additionally, as fish access these recently unblocked areas, it's imperative that the habitat be improved to maximize production potential for recovery of listed fish. Much work remains to be done. It is expected that some or all work will have a cost share component from landowners and irrigators.

6.1 FUNDING SOURCES

Core team members and others working with project cooperators actively pursue grant funds for project implementation. Several funding sources are currently available for salmon recovery or other habitat enhancement efforts, but they are experiencing reduced amounts for grant funding. Some funding sources are listed below:

1. Bonneville Power Administration, (BPA)

The Bonneville Power Administration funds fish enhancement programs (on a priority, scientifically evaluated basis) as mitigation for the installation and operation of the dams and power generating facilities in the Columbia River Basin. BPA has a provincial review process for each subbasin of the Columbia River to solicit, review and select projects for funding. This process occurs once every three years for each subbasin. Currently BPA funds the YTAHP Core Team and implementation of some projects. This base funding provides a source of matching funds for leverage in obtaining other grants.

2. Washington State Salmon Recovery Funding Board, (SRF Board)

The Salmon Recovery Funding Board administers grants to provide funding of habitat protection and restoration projects and related programs and activities that produce sustainable and measurable benefits for fish and their habitat. Local governments, private landowners, conservation districts, Native American tribes, non-profit organizations, and special purpose districts are eligible to receive funding.

Each project proposal must be submitted to a local lead entity group for review by a technical panel and a group of local citizen representatives. The lead entity groups then submit a prioritized list to the State SRF Board requesting funding. The Yakima River Basin established a lead entity in 1999, the Yakima River Basin Salmon Recovery Board (YRBSRB). In 2006, the Yakima Subbasin Fish & Wildlife Planning board (formed in 2001 to write the Subbasin Plan) combined with YRBSRB to form the Yakima Basin Fish and Wildlife Recovery Board (YBFWRB).

3. Yakima River Basin Water Enhancement Program, (YRBWEP)
The Yakima River Basin Water Enhancement Project Act of 1994 authorizes activities to reduce water diversions by improving conveyance and distribution systems and on farm irrigation facilities and by changing water operations and management. Conserved water will be used to increase instream flows and supplement drought-year irrigation needs. The Conservation Advisory Group was formed to assist in this program and was tasked with formulating a Conservation Plan. One component of YRBWEP is water conservation grants, which may be applicable to YTAHP, especially the habitat and water use efficiency objectives.

4. Natural Resources Conservation Service, (NRCS)
The US Department of Agriculture's Natural Resources Conservation Service sponsors technical assistance and cost share programs that may dovetail with or complement YTAHP projects. These include: Environmental Quality Incentives Program (EQIP), Wetlands Reserve Program (WRP), Conservation Stewardship Program (CSP) and Regional Conservation Partnership Program (RCPP).

5. Mitchell Act Funds
The Mitchell Act (16 *U.S.C.* 755-757; Act of May 11, 1938, as amended) authorizes the Secretary of Commerce to conduct activities for the conservation of fishery resources in the Columbia River Basin. This Act specifically directs that salmon hatchery be established, that engineering and biological surveys and experiments be conducted, and that fish protective devices be installed on diversions. It also authorizes agreements with State fishery agencies and the construction of facilities on State-owned lands.

6. Washington State Conservation Commission, (WSCC)
The mission of the Washington State Conservation Commission is to protect, conserve and enhance the natural resources of the state. The WSCC provides leadership, partnership and resources to support locally governed conservation districts in promoting conservation stewardship. There may be funding available for passage, screening, water use efficiency or habitat projects directly from the WSCC or in partnership with the NRCS.

7. National Fish & Wildlife Foundation (NFWF)
The National Fish and Wildlife Foundation provides grants on a competitive basis to projects that sustain, restore and enhance the Nation's fish, wildlife, plants and their habitats through the Keystone Initiative Grants, Community Salmon Funds, and other Special Grant Programs, including Columbia Basin Water Transactions Program. Since 2002, the NWFW has worked in partnership with the Bonneville Power Administration to administer the Columbia Basin Water Transactions Program. The program supports entities working to increase tributary flows for fish in the Columbia River Basin through water transaction projects.

8. Washington Department of Ecology
The Washington Department of Ecology has a Water Quality Combined Funding Program that includes Clean Water Act Section 319 federal grants and Centennial Clean Water Program grants. The Water Quality Combined Funding program is the annual single-application process to apply for funding from multiple sources all at once, for eligible projects that benefit water quality.

9. WA Fish Barrier Removal Board
The Washington State Legislature established the grant program of the Brian Abbott Fish Barrier Removal Board (FBRB) in 2014 to identify and remove impediments to salmon and steelhead migration. The FBRB evaluates fish passage projects and submits a priority project list to the Governor's Office and the Legislature for funding consideration. biennially. RCO manages grant agreements for all projects that receive funding.

10. USFWS
The USFWS partners with private conservation organizations, state and federal agencies and tribes for the Partners in Fish & Wildlife program. Together, with the landowner, this collective shares funding, materials, equipment, labor and expertise to meet both the landowner's restoration goals and our conservation mission.

11. Project Landowner
Project landowners contribute to project although they are sometimes difficult to quantify. Landowners contribute equipment usage, attorney's fees, water right change application fees and time committed for planning, permit input and review of designs.

12. Other Appropriations
There may be other funds made available by congress or Washington State that could be distributed through the SRF Board. The YTAHP will work with the Yakima Basin Fish and Wildlife Recovery Board to access such funds. In addition, core team members and project sponsors will continuously seek new funding sources to ensure implementation of important YTAHP projects.

ATTACHMENTS

1. Internet Resources - List of Entities and Websites
2. 2022 Anadromous Fish Habitat and Hatchery Review
3. References

ATTACHMENT 1: INTERNET RESOURCES - LIST OF ENTITIES AND WEBSITES

YTAHP Web Resources:

Washington RC&D Council: https://washingtonrcd.org/2024/02/28/yakima-tributary-access-habitat-program/

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)

KCT: Kittitas Conservation Trust – Roslyn, Washington

WDFW Fish Passage: Restoring fish passage | Washington Department of Fish & Wildlife

Yakama Nation Fisheries | Yakama Nation Fisheries (yakamafish-nsn.gov)

ATTACHMENT 2: 2022 Anadromous Fish Habitat and Hatchery Review

In 2021-2022, YTAHP completed the Northwest Power and Conservation Council's (Council) Anadromous Fish Habitat and Hatchery Review of projects funded under the Council's Columbia River Basin Fish and Wildlife Program.

The outcome of the review and Council's recommendation is for Bonneville and the Project Sponsor (YTAHP) to address condition #1 (objectives) and #3 (project selection and prioritization) in project documentation, and to consider other conditions and address is appropriate. (Council Decision Memorandum, April 5, 2022; Project #83, page 41.)

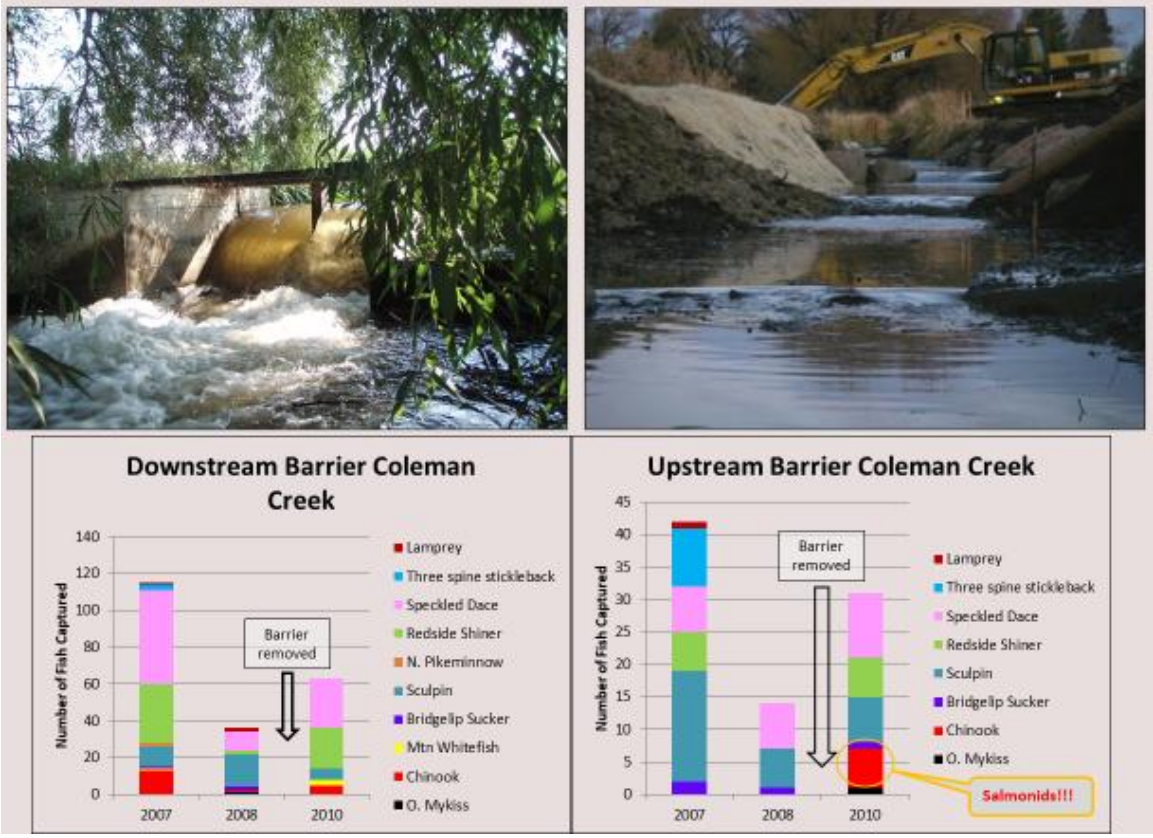
Comment #1 - SMART Objectives.
While the proponents provide a solid list of SMART objectives and detailed actions associated with each SMART objective, the time frame for achieving each of the objectives is given as 2027, which corresponds to the five years of funding sought. It was not clear which actions will be done in what year(s) during the five-years of the project. Please provide the annual goal for each objective to correspond to annual reporting so that progress towards meeting objectives can be readily tracked. Based on the overall quality of the proposal and the project's track record, the ISRP does not need to review the revised proposal.

Response: *Our 2023-2027 project spreadsheet can be found here:* Project Planning Spreadsheet .

Comment #2 – Summary of Monitoring Findings
The ISRP requests the proponents to fully describe the fish monitoring findings that are conducted as part of this habitat restoration effort and to describe if and how the information has been used to adjust the projects activities and future project selection. Some graphical and statistical analyses would be helpful.

Response: *YTAHP has not been previously funded for RM&E. Despite this, past and current comments received from the ISRP suggested that YTAHP implement a monitoring program to report the fish benefits of YTAHP projects. It's to be noted, that even with a robust program, effects of individual habitat restoration actions can be swamped by other variables such as climate variability, ocean conditions, and hydrology; particularly fish screening in the Yakima Basin.*

Despite this, YTAHP core team members have implemented simplistic site-specific monitoring at select barrier removal projects and collaborated with partners to fund and monitor salmonid distribution in the Yakima Basin. The goal of YTAHP's site-specific monitoring efforts is to document species present before and after project implementation in the immediate vicinity of the project area. This biological information combined with structural monitoring provides valuable information to landowners, fishery managers, project sponsors, and information for future funding requests.



The above represents site-specific monitoring performed at a YTAHP fish passage and screening project on Coleman Creek. The YTAHP core team and volunteers electrofished the project vicinity for two years prior to barrier removal and one year post barrier removal. These data demonstrate that after the fish barrier was removed, anadromous salmonids moved upstream and occupied previously inaccessible habitat. The YTAHP has repeated this level of site-specific monitoring on select projects throughout the years and it was thoroughly detailed in YTAHP's 2013 Geographic Review proposal to the NPCC and ISRP. This is a simple, yet informative approach and not intended to be a comprehensive habitat project effectiveness monitoring effort.

Furthermore, YTAHP core team members continue to collaborate with partners to fund new and ongoing PIT tag arrays and provide on-the-ground assistance with electrofishing and spawning surveys in YTAHP focal watersheds. For example, in 2021 the Kittitas County Conservation District (KCCD) partnered with the Yakama Nation & WDFW to fund the installation of a PIT tag array in Cherry Creek, which is situated at the downstream of many of YTAHP's projects. The array is the first on Cherry Creek and will provide valuable information on juvenile and adult salmonids utilizing the Cherry Creek system, which includes YTAHP's focal tributaries of Cooke, Caribou and Parke *Creeks. The array will be maintained and monitored by the Yakama Nation and WDFW and data will be shared amongst fish biologists, conservation partners and landowners, and uploaded to PTAGIS. Overtime, data will be used to help inform YTAHP watershed and project prioritization.*

The KCCD also continues to collaborate on ongoing post-project monitoring on Manastash Creek after an extensive effort that screened irrigation diversions and restored fish passage to the entire watershed. The Manastash project accomplishments were highlighted during YTAHP's 2013 Geographic Review and monitoring has continued in the meantime. The Manastash PIT tag arrays are maintained and monitored by the Yakama Nation and WDFW and data is shared amongst partners and uploaded to PTAGIS.

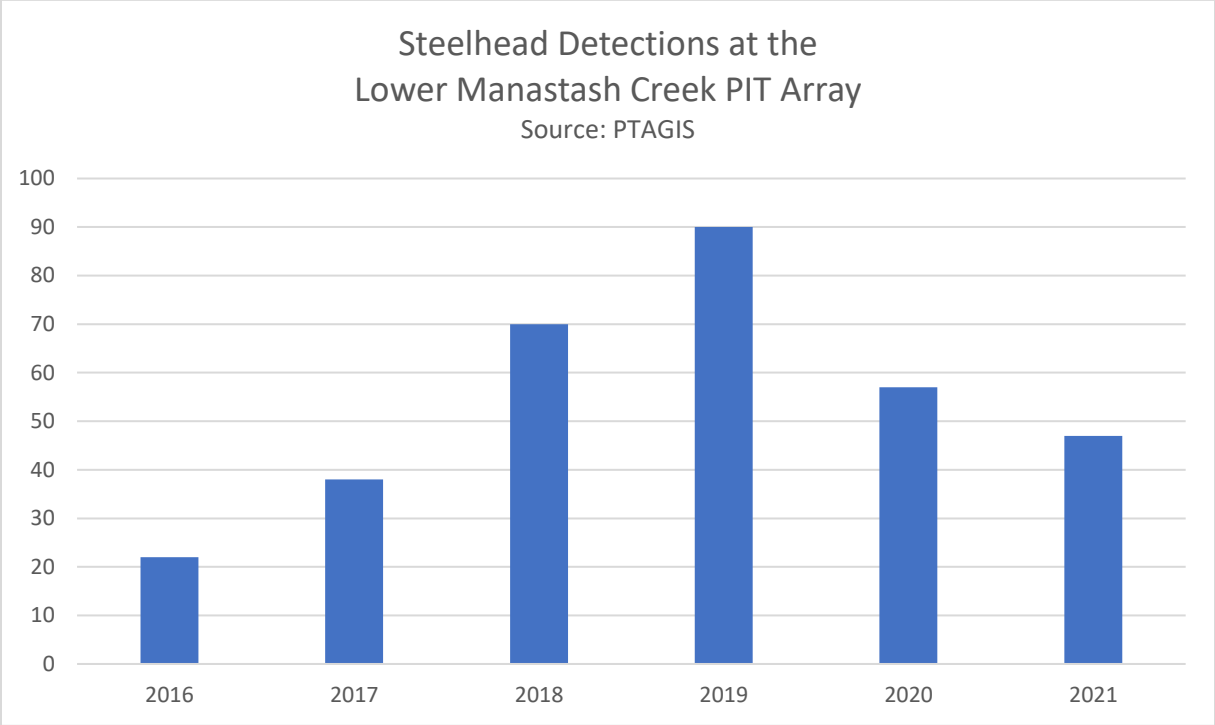


Figure 1. Annual steelhead detections at the Lower Manastash Creek PIT array. Data sourced from PTAGIS.

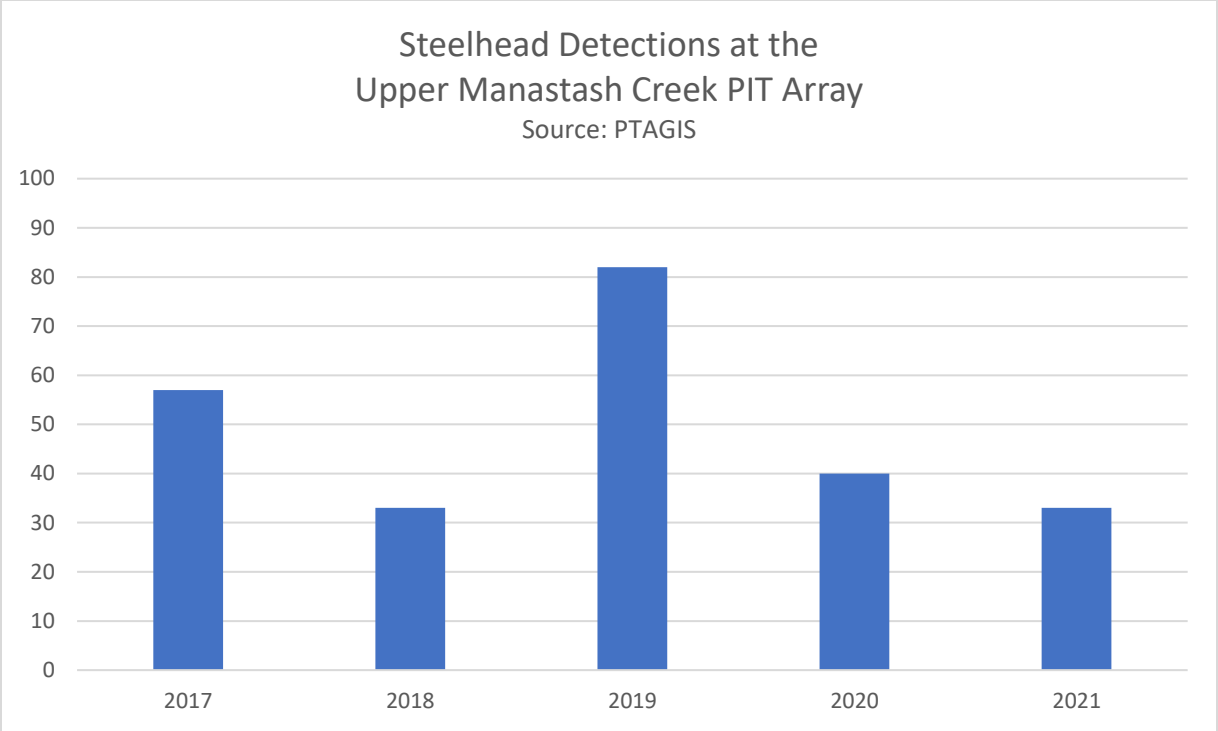


Figure 2. Annual steelhead detections at the Upper Manastash Creek PIT array. Data sourced from PTAGIS.

The Manastash Creek steelhead detections confirm that juvenile and adult steelhead are utilizing Manastash Creek habitat that was previously inaccessible prior to KCCD and YTAHP's work. Additionally, the detection of PIT tagged juvenile salmonids demonstrates that juveniles are safely and successfully migrating past the diversion facilities (YTAHP project sites).

Another example of YTAHP's on-the-ground collaborative monitoring is participation in steelhead and coho spawning ground surveys. Most recently, beginning in 2019, WDFW initiated an extensive effort to survey Upper Yakima River tributaries for spawning coho. Several of the target tributaries are also YTAHP focal tributaries. YTAHP lead surveys on these streams, which included Cherry, Parke, Caribou, Cooke and Coleman Creeks. After two years of surveys, biologists are getting a first look at adult coho abundance and redd distribution in the Upper Yakima tributaries. It's proposed to continue these surveys annually. Overtime, data obtained will be used to help inform YTAHP watershed and project prioritization.

Photo 1: A YTAHP Core Team member holds a partial coho carcass encountered at the confluence of Cherry and Badger Creeks.

Regarding riparian planting monitoring, the YTAHP project sponsors conduct two to four years of post-project stewardship which includes irrigation, weeding, mulching and supplemental planting to meet survivability metrics, if needed. We aim for 80% plant survivability after three years. Currently, the Kittitas County Conservation District is working with the Voluntary Stewardship Program to develop a Riparian Monitoring Protocol which will also be applicable to YTAHP projects.

In closing, YTAHP has implemented site-specific fish monitoring, but relies on long-term monitoring efforts in the Yakima Basin for population level responses to steelhead, spring Chinook, coho and other species of concern. YTAHP works closely with biologists and researchers from Washington Department of Fish and Wildlife (WDFW) and the Yakama Nation (YN) to share information and coordinate data sharing and monitoring efforts. These entities and programs have the staff, knowledge and resources to effectively monitor salmonids in the Yakima Basin and have dedicated funding to do.

Comment #3 – Project Selection Process

The ISRP requests a fuller description of the project selection process. In the reviewed proposal, it is stated that the project uses “YTAHP’s tried-andtrue vetting process” and that “Projects are prioritized based on available Priority Index numbers, alignment with the Priority Actions in the Yakima Steelhead Recovery Plan, and the Primary Resource Concerns for both the North Yakima and Kittitas Conservation Districts.” While this appears to be a plausible multi-faceted process, the actual mechanics of the process are obscure. Are fish production potential and habitat capacity incorporated in the prioritization process?

Response: *All YTAHP projects go through YTAHP's vetting process. YTAHP utilizes existing salmon and steelhead recovery plans to identify and prioritize focal watersheds. These plans were developed by local federal, state, tribal and non-profit partners and are rigorously vetted and held in high regard. Within a focal watershed, stream and reach specific data are consulted, such as the Department of Ecology's TMDL water quality improvement plans, habitat quantity and quality, salmonid occupancy and distribution, known fish passage barriers, and irrigation diversion screening needs. Potential focal streams and projects are discussed with the YTAHP Core Team and feedback is solicited. If data gaps remain, YTAHP may complete a stream assessment to inventory fish passage barriers and surface water diversion screening needs (YTAHP Objective 5).*

Once a pool of potential projects has been identified, prioritization is based on several different variables, which include: available Priority Index numbers that prioritize existing barriers and irrigation diversions based on the biological benefit to native salmonids; watershed specific Priority Actions that are specified in the Yakima Steelhead Recovery Plan; Primary Resource Concerns listed within the Annual and 5-year Plans for both the North Yakima and Kittitas Conservation District; and/or projects where there is a high biological priority presented, such as data showing concentrated spawning or rearing in reaches that are at or near unscreened diversions and barriers. Other factors that aid project prioritization include continued collaboration with the YTAHP Core Team, interconnection with other implemented restoration projects, funding availability, landowner willingness, and the long-term goals of each watershed.

Comment #4 – M&E Matrix (support)

As habitat projects and monitoring projects are not presented as part of an integrated proposal or plan, the need for a crosswalk to identify the linkages between implementation and monitoring is extremely important for basins or geographic areas. The ISRP is requesting a response from the Yakima Basin Habitat Project (199705100) to summarize the linkages between implementation and monitoring projects in the Yakima River basin. During the response loop, we ask this project to assist them in creating the summary and provide information to them about what is being monitored for this implementation project and where and when the monitoring occurs. A map or maps of locations of monitoring actions would be helpful in this regard**.**

ATTACHMENT 3: REFERENCES

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