

2022-2024 ACCOMPLISHMENTS REPORT



Scott Dam on the Eel River. Credit: Kyle Schwartz/California Trout

**FEDERAL INTERAGENCY
FISH PASSAGE TASK FORCE**

I. Introduction

The Bipartisan Infrastructure Law (BIL), enacted in 2021, provided \$2 billion across the federal government for the removal, rehabilitation, or repair of obsolete, outdated, or hazardous instream barriers to fish and other aquatic life. The Federal Interagency Fish Passage Task Force (Task Force) is a voluntary collaboration of all the agencies who received funding for this purpose, as well as other federal agencies whose mission, expertise, or resources are valuable to the strategic implementation of this once-in-a-generation conservation opportunity.

TASK FORCE MEMBER AGENCIES	
<ul style="list-style-type: none"> • U.S. Fish and Wildlife Service (USFWS) • National Oceanic and Atmospheric Administration (NOAA) • U.S. Forest Service (USFS) • Bureau of Reclamation (USBR) • Federal Highway Administration (FHWA) • U.S. Army Corps of Engineers (USACE) • Federal Emergency Management Agency (FEMA) 	<ul style="list-style-type: none"> • Environmental Protection Agency (EPA) • U.S. Geological Survey (USGS) • Department of Energy (DOE) • Natural Resources Conservation Service (NRCS) • Bureau of Land Management (BLM) • National Park Service (NPS)

Since 2022, the Task Force has worked to develop an efficient, coordinated, and holistic approach to restore aquatic ecosystems. Agencies on the Task Force have shared approaches, expertise, and resources to extend the reach of any one agency’s program, welcomed new project partners, and considered tangible ways to make agency missions more “fish friendly.” Member agencies have also leveraged each other’s networks to share funding opportunities, participated on interagency review panels for project selection, and gathered regularly to engage stakeholders and learn from each other.

Restoration of aquatic ecosystems will play a pivotal role in conserving U.S. lands and waters and enhancing communities’ resilience to natural disasters. This work achieves the dual objectives of boosting the adaptive capacity of the nation’s ecosystems and revitalizing local communities and economies by providing jobs while safeguarding aging infrastructure.

The Task Force hopes to build on this foundation and serve as a catalyst to address critical environmental, societal, and economic goals long after BIL funding has been expended, to set an example of institutional changes within the federal government and realize a paradigm shift in how federal agencies work together to achieve common goals.

This report provides an overview of the current challenges as well as the successes achieved in a few short years, outlines strategic coordination actions to maximize impact, and reflects the Task Force’s transformative commitment to the environment and communities.

II. The Collaborative Nature of Fish Passage Projects

Before we begin, it is important to remind the reader that fish passage projects are inherently collaborative. States and local governments, nonprofits, regional watershed groups, tribes and consortia working at the local level are the enablers of these important projects. It is these entities that feel the changes in the landscape most directly, come together to talk to landowners and local governments, spend years advocating for change, and cobble together funding and expertise. Even

for projects completed on federal land, nonfederal partners are enlisted as force multipliers. It is into this environment that the agencies of the Task Force engage as catalysts. By providing regional and nationwide data, best practices and construction standards, technical assistance and funding, federal agencies serve as enablers and problem solvers. The Task Force purposefully comes together to improve the efficiency and effectiveness of these local fish passage champions.

III. The Fish Passage Problem

Across the country, the natural movement of fish and other aquatic organisms is severely restricted by numerous artificial barriers—dams, culverts, and other obstructions—that threaten ecosystems and functionality of the nation's waterways. These threats impact the well-being of the environment, the economy, and communities.



Wells Lock and Dam in Elizabeth, WV. Credit: USFWS

This is a nationwide and pervasive problem. The National Aquatic Barrier Inventory has identified over **552,136 dams** and **265,595 road stream crossings/culverts** and more instream structures are being catalogued every day. Of those, roughly 137,183 have been identified as moderate barriers to fish passage.

Migratory fish hold immense economic and cultural value. They are integral to the heritage and traditions of many communities as well as support commercial and recreational fishing that boost local economies.

When migratory species are unable to reach their spawning grounds, their populations decline. This decline results in a cascade of negative ecosystem impacts for other species that rely on fish as a food source, not only other aquatic organisms, but birds, mammals, and humans. Barriers also fragment habitats, preventing genetic exchange which is vital for maintaining healthy and resilient fish populations. In addition, the accumulation of sediments and altered river flow caused by barriers degrade water quality and habitat conditions, exacerbating the ecological damage.

By removing barriers, the Task Force is investing in the resilience of the environment and the vitality of communities for current and future generations.

IV. Fish Passage by the Numbers

Since the introduction of the BIL, Task Force agencies have allocated over \$1 billion to over 600 projects across the country that, when complete, will open thousands of miles of stream and river habitat. These projects, which include dam removals, culvert replacements, and fishway creation, are occurring voluntarily with broad community support and landowner consent in rural areas, small towns, urban areas, and on publicly owned and Tribal land. Check out the [Fish Passage Portal](#) to view a map of funded projects!

These projects will help restore federally listed threatened and endangered species such as Bull Trout, Atlantic, Coho, and Chinook Salmon, Freshwater Mussels, Green and Gulf Sturgeon, Steelhead, and the Trispot Darter. In fact, strategic and systematic removal of instream barriers and restoration of aquatic habitats were critical activities that contributed to the [recent delisting of the Apache Trout](#). These restoration efforts also benefit other ecologically and recreationally important species nationwide.

The funded projects represent just a small portion of the overall need. Requests for USFWS and NOAA funding are estimated to exceed \$2 billion over the first three years of funding opportunities, while only \$368 million was available. The substantial number of unfunded projects underscores that barriers to fish passage will remain a challenge after BIL funds are exhausted, highlighting the need for continued funding at this scale to address this critical issue.

V. An In-Depth Look at Anticipated Conservation Benefits

The anticipated ecological benefits from completing barrier removal projects are substantial and include:

- Recovered populations of aquatic species and other wildlife that rely on fish and healthy aquatic ecosystems for food, shelter, or spawning habitat.
- Improvements in water quality.
- Habitat and safe corridors for terrestrial species as well as stopover locations and food sources for migratory birds.

Population Restoration and Recovery

The number one benefit of fish passage projects is the rebound of fish and aquatic species populations. Access to previously restricted habitat allows for the re-establishment of natural migration patterns, increased oxygen, and expansion of cold-water habitat that many species need to thrive. Restored and recovered fish populations help to rebuild the entire food chain for aquatic and terrestrial predators in freshwater and the ocean. This, in turn, increases catch for industrial and recreational fisheries, and cultural and subsistence benefits for Tribes.

For example, New Hampshire's Maxwell Pond dam on Black Brook (pictured here), a century-old structure, created an impoundment that had been polluted by nearby industrial sites for decades, putting it on EPA's CWA list of impaired waters. The removal of the dam returned the free-flowing condition of the river, and dissolved oxygen levels rebounded to the point that Black Brook can again sustain aquatic life.



*Maxwell Pond Dam on Black Brook.
Credit: EPA*

Improving Water Quality

Removing a dam can rapidly improve water quality, benefiting humans and wildlife. A flowing stream reestablishes the natural flow of sediment, increases oxygen levels and reduces water temperature. Reconnecting the floodplain and creating vegetation buffers along waterways serve as a filter for pollutants from streets, lawns, farms and other sources.

The most recent Clean Water Needs Survey (2022), a compilation of state information on water quality investment needs, estimated a need of over \$94.4 billion to sufficiently address pollution related to runoff (nonpoint source pollution) over the next 20 years. A third of that (\$33.5 billion) is for hydromodification projects including dam removal, highlighting the connections states see between improving water quality and removing dams and other barriers.

Providing Safe Passage for Migratory Birds and Terrestrial Wildlife

Restored habitats, in and along streams and rivers, provide essential breeding grounds for many species of migratory birds, such as warblers and flycatchers, and further provide critical stopover habitat and cover for resting and feeding during migration from wintering and breeding areas.

EPA has long recognized the water quality benefits of barrier removal and stream restoration efforts. Although EPA was not appropriated specific BIL funds for fish passage, they have worked with the Task Force to promote the co-benefits of water quality and fish passage through their existing Clean Water Act related programs such as:

Nonpoint Source Pollution Program (CWA Section 319) funds, creating best management practices related to fish passage, riparian buffers, stream channel restoration, habitat improvement, and more.

State Revolving Funds (SRFs), which can offer low-cost financing for water quality infrastructure, including dam removal.

Geographic programs, working with well-established partners over decades to invest in watershed scale projects to improve water quality, estuary and watershed health, provide ecological improvements for living resources, and promote social and community benefits.

Case Study: Fish Passage and Migratory Birds on Lake Erie

Western Lake Erie provides critical stopover habitat for millions of migrating birds who stop to rest and feed in the riparian corridors along its shores. NOAA and the USFWS are working to restore fish passage throughout the River Raisin watershed in southeast Michigan. USFWS funded the removal of the Brooklyn Dam in Jackson, MI in 2022, and NOAA is funding the removal of Dam #4, downstream in Monroe, MI. These BIL-funded projects will help restore natural stream function to this watershed and reestablish riparian area habitats for migrating birds in this critical flyway.

The Department of Transportation (DOT) recognizes the connection between habitat connectivity for aquatic species and reducing the more than 1 million wildlife vehicle collisions that occur annually. These collisions cost more than \$8 billion and result in tens of thousands of serious injuries and hundreds of fatalities on U.S. roadways every year. DOT has established the Wildlife Crossings Program that provides grants to federal, state, regional, and municipal entities to reduce wildlife vehicle collisions by improving habitat connectivity for both terrestrial and aquatic species. In addition to grants, they are developing design standards for crossings, providing technical assistance and training, and developing guidance for statewide Transportation and Wildlife Action plans that engage transportation professionals in considering habitat connectivity in their everyday jobs.

VI. Importance of Modeling and Monitoring to Success of Aquatic Restoration Projects

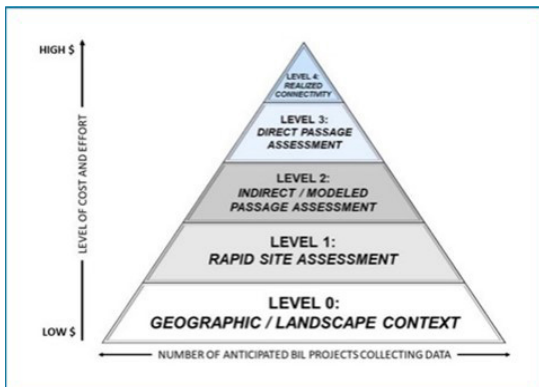
Monitoring the effectiveness of barrier removal and the response of the natural ecosystem are essential to successful aquatic restoration recovery. Monitoring project sites over time demonstrates the effect of the barrier removal on the response of the water body and allows scientists to incorporate lessons learned into improved culvert design, dam removal etc. Because population recovery can take several generations over a span of years, modeling the effects of barrier removal is essential to predict ecological outcomes, such as changes in fish populations, species diversity, and overall ecosystem health following barrier removal. Being able to better understand how variables such as barrier height, water flow rates, and habitat quality interact, agencies and partners can help combine and prioritize projects that yield the highest ecological returns such as natural migration patterns, floodplain connection, cold-water habitats, water quality, recreational opportunities, and economic benefits to name a few.

A Tool for Addressing Climate Impacts on Fish Populations

The ecological modeling used in the design of fish passage barrier removal projects indirectly helps model potential climate resiliency benefits. Climate forecasting coupled with species distribution models can predict changes in water temperature distribution following barrier removal, identifying areas where cold-water habitats will expand or contract. This is particularly important as expanding these habitats provides refuges for temperature-sensitive species like trout, contributing to their long-term survival.

Case Study: Population Recovery after Elwha River Dam Removals, WA

Population models for the Elwha River Restoration project in Washington State predicted that the removal of two dams (Elwha and Glines Canyon) would result in significant increases in the carrying capacity for salmonid populations by reconnecting upstream habitats and allowing the downstream movement of sediment and wood. Field studies have indeed shown rapid recolonization by migratory fish, including eight anadromous species, within five years of dam removal. Models such as this can help gain support and funding for projects.



USGS developed a *Framework for Biological Monitoring and Project Evaluation of BIL Fish Passage Projects* for use across the federal government. This hierarchical framework integrates comprehensive project details and metadata, ranging from geographic context to intensive biological assessments, to enhance the prioritization and implementation of fish passage and habitat connectivity projects. This scalable framework can be used on projects with various levels of complexity (see image). Using a common framework can facilitate interagency collaboration, accelerate the improvement of restoration approaches and techniques, support adaptive management, assist in targeting and combining projects, refine predictive models and enhance transparency and accountability.

VII. Projected Benefits to Human Health and Quality of Life

Fish passage projects have benefits far beyond the ecological. These projects create jobs and revitalize local economies by enhancing recreational fishing and paddling opportunities. They indirectly reduce hazardous flooding and improve public safety while also increasing quality of life and mental well-being for humans through connections to the outdoors. Promoting these benefits has been a primary objective of the Task Force as it works to expend this funding strategically and bring these projects to new community partners.

Jobs Created and Economic Benefits

Fish passage projects themselves generate economic activity, directly and indirectly, through planning, design, and construction project activity funding. Each of these project phases supports area businesses, creates jobs in the community, and generates income.

NOAA and USFWS economic impact research on projects like those funded by BIL estimate that between \$1.3-1.5 million dollars are returned to the local economy with every \$1 million invested and create an average of 13 jobs (these projections are conservative, primarily measuring jobs supported, labor income, and value added, and it is possible that the return on investment is higher). While these findings only reflect a subset of projects completed by two agencies, they demonstrate that investing in aquatic conservation projects yields a positive economic investment in nearby communities.

More Durable and Reliable Infrastructure

Aging culverts can be ineffective or fail for many reasons during a storm event: they are too small to pass the high volume of water, they get plugged with debris, or they are simply degraded with time and become damaged with the force of the excess water. Task Force agencies have developed design processes for making culverts more friendly to aquatic organism passage, and more resilient to future climate impacts.

While these wider designs have a higher construction cost than a traditional culvert, the upfront investment provides significant cost savings over time. Adopting a long-term mindset is beneficial to communities near a river, the aquatic species within the river, and the local governments that manage both the river and their municipal budgets.

Projects can also generate long-term economic benefits for communities through savings from averted damages to private and public infrastructure.



Undersized culverts at Gills Creek, SC. Credit: USFWS.



Gills Creek with a new culvert designed for fish passage. Credit: USFWS.

A [study of culverts in Vermont's White River Watershed](#) following record flooding in 2011 due to Tropical Storm Irene illustrates the advantage: the two fish friendly culverts designed according to USFS' [Stream Simulation](#) methodology and installed before Irene incurred no maintenance or replacement costs, while four undersized road crossings failed, causing \$728,000 in road damage.

Improved Public Safety on Rivers – Removing Low Head Dams

Across the nation, there are hundreds of thousands of smaller dams that support agricultural and community water and power needs. Some of these dams no longer support their intended uses, are old, and unsafe. More specifically, low head dams can create dangerous, circular currents immediately downstream that can trap a swimmer or kayaker and result in death by drowning. Second to culverts, low-head dams are estimated to be the most abundant aquatic barriers on the landscape. The removal of these dams benefit fish while also improving public safety and recreational opportunities and removing liability for dam owners. not only benefit fish, but improve public safety and recreational opportunities, while also removing liability for dam owners. Low-head dam removal is a rising topic in the dam safety community, and due to its connection with municipal drinking water, it provides an opportunity for agencies to work together to improve outcomes for both ecological and human communities.



*Low-head dam with warning sign.
Credit: NWS*

Case Study: Low-Head Dam Removal on Urban Waterways

Several communities along the Great Miami River in southwest Ohio are exploring ways to address the low-head dams scattered along the river. National Water Trail users have been a driving force behind both the removal of these structures and the safe, sustainable development of local waterways. Communities like Dayton and Hamilton have developed riverfront plans to expand parks, multi-use trails, and other public river-oriented amenities along their urban waterfronts.

Reducing Flood Risk

Fish passage projects can reduce flood risk by removing in-stream barriers such as small dams, diversion structures, and culverts that are damaged or too small. Many of these structures were designed decades ago and are no longer capable of passing flows from more frequent and extreme precipitation events. The resulting backup of water or associated debris increases flood risk for communities, leading to washed-out roads, property damage, and damage to expensive infrastructure.

Fish passage projects can help mitigate flood risk through the following example scenarios:

Old dams that have outlived their design life are at higher risk of catastrophic failure resulting in uncontrollable floodwaters and potential loss of life downstream. Dam removal reduces the risk of upstream flooding by restoring the natural flow of water in the impounded section of the river and allows for the natural movement of sediment downstream, expanding the river's storage capacity.

Barrier removal or other process-based restoration methods help open and reconnect the river to the riparian corridor and/or historic floodplain, which act as natural storage sites for floodwaters, reducing the amount of floodwater that makes it beyond the immediate surroundings of the river.

Right-sizing culverts or culvert-to-bridge replacement allows the structure to pass higher volumes of water during storm events when an undersized culvert would have been overwhelmed and damaged, likely resulting in damage to or washout of the nearby road and greater risk of flooding.

FEMA is adopting this long-term mindset by changing how it calculates the benefits and costs of projects that protect against future disasters. Future impacts are now given higher value in its Benefit Cost Analysis process, helping to reverse the long-term trend of undervaluing projects with climate, health, and transportation benefits that are often incremental and occur over many years.



*New bottomless culvert in Springville, AL.
Credit: USFWS*

Case Study: Fish Passage Reduces Community Flood Risk

In Springville, Alabama, USFWS partnered with the city government to undertake a fish passage project to both protect habitat for the federally listed Trispot Darter and reduce flooding to the city's 70-acre multipurpose sports complex. The complex, which serves thousands of children, had been plagued by flooding issues caused by the existing culvert, forcing the city parks department to spend more resources on restoring and maintaining brand new fields. The new "bottomless culvert" allows the stream to swell to the width of its natural banks reducing backup flooding in the sports complex and saving municipal resources.

VIII. Broadening Our Reach for Fish Passage Partners

BIL funding is not just an opportunity to fund more projects, but an opportunity to expand the number of partners and bring awareness of the nexus between fish passage and other ecological and human benefits. Congress recognized these connections by providing funding and authority to agencies such as FEMA, USBR, and USACE who are traditionally responsible for the safety and construction of barriers such as dams, and DOT, who is heavily involved in setting standards and providing funding for culverts and other barriers associated with our nation's road system.

Future Opportunity

Through DOE, the Task Force may be able to engage the Federal Energy Regulatory Commission (FERC) to help clarify the timing and process when a dam owner wishes to relinquish their license for dam removal purposes when their license term is expiring.

Inclusion of these new federal partners provided an opportunity to reach out to their partners and stakeholder communities who may not traditionally have seen connection between their work and ecological conservation. One Task Force objective has been to highlight how fish passage, infrastructure, and public projects can offer multiple mutual benefits.

The Task Force has also been working to share lessons learned and outreach strategies to improve relationships with disadvantaged communities, both urban and rural, so that the benefits of fish passage can be felt across the nation.

Re-Affirming Commitment to Tribal Partnerships

Tribal nations, consortia, and organizations have long been important leaders in fish passage projects. The BIL funding has allowed more direct investment to Tribal organizations that improve Tribal capacity to plan, design, and manage a future project pipeline. NOAA created a separate competitive grant opportunity just for Tribal applicants and has awarded over \$97 million to 29 projects in the first two rounds of funding¹. This is a huge step in lowering the barrier to entry for Tribal applicants, who may face greater capacity and resource challenges for grant application and administration than other applicants. Importantly, the funds from this grant can be used for the development of future projects and not just for project construction, an important capacity-building mechanism for ensuring that Tribal projects are ready for future competitive grant opportunities.

Investing in Tribal Capacity

With a \$5.4 million NOAA grant to work on Atlantic Salmon restoration in the Penobscot watershed, the Penobscot Tribe will expand its ability to manage current and future projects and to hire a technician. The Penobscot Nation will also bring on a project manager to liaise with the Tribal community to ensure their input is considered throughout the restoration process.

Disadvantaged Communities

Another of the Task Force's strategic objectives has been to ensure the benefits of fish passage and aquatic connectivity projects are available to and meet the needs of historically disadvantaged or underserved communities. Delivering multi-benefit projects that include improved fish passage as well as enhanced economic activity, reduced flood risk, improved water quality, and/or increased recreational access are the primary way to accomplish this.

¹ [NOAA's Tribal Priority Fish Passage Projects Selected for Funding](#)

Case Study: [Kellogg Dam Removal Project](#)

This project, which was awarded NOAA funding in 2024, will benefit migratory fish, increase the safety and resiliency of transportation infrastructure, and create educational and recreational opportunities for the community in Milwaukie, Oregon.” The census tract where the dam is located was identified as the second-most diverse in Milwaukie, and as a low-income community. Additionally, the Milwaukie-Mt. Scott Watersheds were identified in 2022 as having high environmental burdens and a low environmental justice score, especially in the area near the dam. The dam was built in 1858 and has not been operational for over a hundred years; its removal will restore access to upstream spawning grounds for Chinook and Coho salmon, decrease water temperatures, and help restore the natural floodplain. In addition to these ecological benefits, the project leaders have worked with the community to ensure a wider array of benefits:

- Removing sediment from the pond upstream of the dam will reduce contaminants and improve water quality.
- Replacing the dam, which was supporting a road bridge, with a new structure that improves the safety of Milwaukie’s transportation infrastructure.
- Installing a pedestrian underpass, connecting the pond behind the dam to the Lower Willamette River Waterfront and increasing accessibility for outdoor recreators and those trying to reach nearby public transit stops.
- Engaging the local high school, where students will “participate in monitoring research projects related to the restoration work and learn workforce development skills they could use in environmental jobs.”

Dam Safety

Dam removal represents a large percentage of fish passage projects, but the dam safety and aquatic conservation communities have not always had much exposure to each other, much less a dedicated collaborative relationship. The Task Force has been working to increase its outreach to the dam safety community and promote dam removal as a viable safety measure that also happens to benefit the aquatic environment.



Talbot Dam is slated for removal in Billerica, MA.
Credit: USFWS

FEMA has been working with the Task Force to promote the message that projects that help aquatic species can also have positive public safety impacts at and around a dam. This has included the creation of a fish passage liaison between UFSWS and FEMA – a USFWS employee on detail to FEMA to promote dam removal as related to fish passage efforts and public safety considerations. The detailee has worked on the development and socialization of factsheets [highlighting the benefits of dam removal](#) and [aquatic organism passage at high hazard potential dams](#), held webinars on these topics for states and FEMA regional staff, and presented them to FEMA HQ and Regional staff.

This strengthened relationship between FEMA, USFWS, and NOAA has allowed for more outreach into the dam safety community at large, including state dam safety officials, the Interagency Committee on Dam Safety (ICODS), the National Dam Safety Review Board, and a presentation on dam removal and fish passage at the 2023 Association of State Dam Safety Officials annual conference. This kind of cooperative messaging is especially critical to raise the profile of dam removal in the dam safety community and the availability of funding outside of that community, particularly since project costs average millions of dollars. It will also help build an important bridge between the conservation and infrastructure communities, with benefits to both.

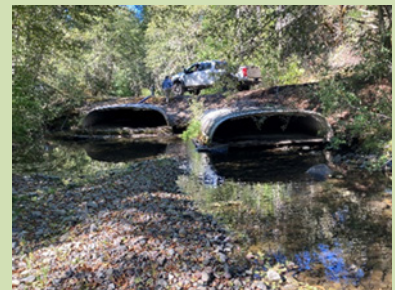
Transportation

The transportation community is responsible for public safety on roadways and for the maintenance of the thousands of aging culverts that were once installed to protect those roads from floodwaters. FHWA was awarded over a billion dollars in the BIL to allocate to culvert replacement and removal projects for anadromous fish over five years.

To allocate these funds, FHWA established a grant program for which USFWS and NOAA shared their expertise in drafting the notice of funding opportunity (NOFO) and participated in the application review panels. This is an example of a collaborative federal approach that hopefully represents a larger shift in the conservation community in which this occurs more frequently. The sharing of expertise also reduced the technical burden on FHWA and allowed for greater awareness across agencies of where projects are being implemented on the ground.

Case Study: Wiyot Tribe Flood Resilient Channel

This collaborative federal approach has worked in other ways during the implementation of grant funds on the project level. FHWA awarded the Wiyot Tribe of Northern California \$470,000 to design a flood resilient channel spanning bridge at Butte Creek where a culvert barrier currently stands. The barrier is located on a road managed by the Bureau of Land Management and will provide full passage for summer- and winter-run Steelhead as well as Pacific Lamprey.



Culverts that will be replaced at Butte Creek. Credit: BLM

In addition to being a collaborative partner within the federal family, FHWA has enthusiastically invested in making it easier for their partners to learn more about this opportunity, apply for funding, and create competitive applications that are likely to be funded. A few examples of these activities include:

- Spreading the word about the connection between fish passage and public safety at six industry events and conferences around the country in 2023 and 2024.
- Hosting a [resources page](#) for practitioners in culvert removal and replacement, including trainings and technical resources.
- Developing training materials including an [implementation guide](#) for potential project proponents on aquatic organism passage.

Water Quality

The EPA's Clean Water State Revolving Fund (CWSRF) is an excellent example of partnership that addresses the intersection of aquatic conservation, infrastructure, and public health. This low-cost financial mechanism between federal and state governments has resulted in the allocation of \$283 million over the last four years to 172 agreements involving hydromodification, \$23 million of which was used specifically for dam removals. While the SRFs are traditionally viewed as infrastructure programs, they can support landscape improvements such as dam removal where the primary benefit will still be to water quality. The dam removals will also result in the many incidental ecological benefits outlined in Section V.

Case Study: Dam Removal Improves Drinking Water Quality

In the Upper Ohio River Valley, USFWS worked with EPA's Region 3 Office and other partners on three dam removals in the West Fork River which improved water quality in the river and resulted in lowering drinking water treatment costs by approximately \$50,000 in just one year.

The BIL has also allowed for several other longstanding EPA studies and partnership programs to ramp up their efforts. Through the Great Lakes Restoration Initiative (GLRI), EPA is providing \$100M for the removal of the Gorge Dam on the Cuyahoga River. EPA and its local partners have been working for decades to improve the quality of the river, and this long-needed infusion of cash will provide multiple benefits, including the removal of 875,000 cubic yards of contaminated sediment, creating the potential for Lake Sturgeon reintroduction, and restoring habitat.

IX. The Power of Working Across Agencies

There is no shortage of barriers on the landscape, and no shortage of partners who have been working for years to identify these barriers, lay the groundwork, plan, and implement the projects that address them. The most challenging barriers often have the greatest potential benefits, and costs that often can only be addressed with the scale of funding provided by the BIL. Some projects are a single large barrier, while in other instances, multiple barriers across a watershed need to be addressed to see the resulting benefits. From its inception, the Task Force has recognized that greater federal coordination, built upon the constant, often years- or decades-long efforts of the local coalitions at the project sites, can be key to bringing these projects to fruition.



First fish passage partner workshop at the National Conservation Training Center in 2022. Credit: USFWS

Transformational Fish Passage

Recently, the Task Force collaborated with project partners on an effort to compile and showcase large-scale, aquatic habitat restoration projects that require high levels of coordination across both

federal and non-federal partners and align with the missions of multiple agencies. This initiative is an opportunity to showcase projects that not only advance ecosystem restoration but also bolster community resilience. The Task Force agencies are committed to working towards tangible steps to identify roadblocks to project completion that can be resolved with federal resources and expertise.

While some of these projects have received federal funding from BIL or other sources in the past, this initiative provides a national platform to enhance federal collaboration in the future. Some projects need additional funding and others will benefit from other kinds of federal support. Task Force agencies can contribute to these projects in a variety of ways either through funding, technical expertise for problem solving, or coordinated environmental compliance.

Through the first few years of BIL implementation, the significant demand for aquatic connectivity restoration is becoming clearer and the Transformational Fish Passage Projects continue to demonstrate this. The list of 70 projects currently represents project needs of over \$2 billion and is just a glimpse of the broader need.

The Task Force began by developing a list of criteria for projects and encourages partners to continue to develop and submit these high impact projects to the project solicitation page. These criteria were:

- An approximate project cost between \$10 million to \$50 million. Note: These estimated project costs are intended to target projects that require high levels of coordinated funding but are reasonable to pursue during the BIL funding timeline.
- Projects are anticipated to provide benefits to species, ecosystems, and communities, similar to the common project criteria agreed upon by the Task Force.
- Projects that could reasonably be completed within 3-6 years. Note: This estimated timeline is intended to focus efforts on projects that could take advantage of existing BIL funding.
- Projects that align with the missions of multiple federal agencies.
- Projects with support from multiple partners and local community.

Highlighting Transformational Fish Passage

BIL fish passage continues to receive [national recognition](#) for its broad benefits to ecosystems and communities across the country. Visit the [StoryMap](#) to learn more about ten of the over 70 Transformational Fish Passage Projects and read on below.

Oconaluftee River Restoration Led by a diverse coalition of local, State, and Tribal partners, the removal of Ela Dam and larger watershed restoration efforts on the Oconaluftee River in Whittier, North Carolina, aim to deliver significant benefits to local species representing the cultural heritage and traditional foods of the Eastern Band of Cherokee Indians. By dismantling the aging 341-foot-long dam, the project will restore natural sediment flow, protecting the downstream habitat of an endangered freshwater mussel and enabling the recolonization of culturally significant freshwater fish species. This restoration not only enhances biodiversity and climate resilience but reconnects the Cherokee people to the Oconaluftee River, reversing a century of physical and cultural separation and advancing environmental justice for the Tribe. To realize the reconnection and restoration of the Oconaluftee's 500+ miles of premium habitat, the local coalition leading the project are seeking to fill a dam removal funding gap of \$4 million.

St. Croix/Skutik River Restoration The *Skutik* (St. Croix River) watershed, spanning parts of Maine and New Brunswick, Canada, is a critical area for fisheries restoration, particularly for sea-run species like river herring. Poor fish passage at the watershed’s three mainstem dams—Milltown, Woodland, and Grand Falls—has long limited the productivity of these species. The removal of Milltown Dam in 2023 marked a significant step forward. Several state and federal agencies have fully funded the construction of advanced fish passage facilities at Woodland Dam, including almost \$40 million in BIL funds provided by several Task Force agencies. However, the success of this restoration effort hinges on completing the nature-like fishway at Grand Falls, which still requires \$35 million in funding. When fully realized, this project has the potential to create one of the largest river herring runs in North America, bringing wide-ranging ecological, economic, and cultural benefits to the St. Croix/Skutik watershed. For the Tribal communities, the project will restore vital cultural and subsistence resources, while also boosting local economies. The collaborative, voluntary partnership among federal agencies, conservation organizations, and local stakeholders underscores the project’s importance and its potential for long-term sustainability.

Partner Workshops

Before the creation of the Task Force, USFWS in collaboration with the National Fish Habitat Partnership and the Association of Fish and Wildlife Agencies convened a large workshop of federal and nonfederal partners in 2022 to discuss the full breadth of fish passage opportunities and identify shared goals and collaborative opportunities through the BIL. The workshop led to the eventual formation of the Federal Interagency Fish Passage Task Force. The Task Force convened a second partner workshop in 2023 to give updates on its

efforts and gather feedback about what was and was not working. These workshops have been valuable touchpoints for the federal family and its partners, providing the opportunity for open dialogue, access to agency leadership, and creative brainstorming from a large group of people passionate about the issue. The Task Force used input from the second partner workshop to help set its 2024 priorities. A third workshop is planned for 2025 and the Task Force hopes to continue these on an annual basis in the future.



IJA Fish Passage Workshop
July 18 - 20, 2022



**Federal Land Management Agency (FLMA)
Memorandum of Understanding (MOU)**

Another example of commitment to federal coordination regarding conservation of aquatic resources is the FLMA MOU, an agreement signed between the BLM, NPS, USFS, and UFSWS. This agreement “articulates the desire of the Parties to promote actions on federal lands...that maintain, restore, or improve aquatic connectivity and aquatic organism passage while protecting federal infrastructure from damage or failure risks associated with changing conditions such as climate change and urbanization.”² The MOU acknowledges a commitment to fish passage efforts in perpetuity and outlines specific activities to achieve the collective goal.

Opportunity to Expand Technical Expertise

Agency staff that manage parks, refuges, national forests and grasslands, and other public lands on a day-to-day basis including dams, roads, etc. are typically not trained in aquatic organisms and fish passage and could be perpetuating new barriers as structures are built or repaired. A common training for engineering staff on the economic and natural resource contributions of barrier removal and fish passage projects and best management designs could lead to more barrier removals and lower maintenance costs for many land management agencies.

Sharing Expertise

As noted in Section VI, FHWA has partnered with the USFWS and the NOAA to assist in delivering its \$1 billion National Culvert Removal, Replacement, and Restoration Grant Program for anadromous fish restoration. Recently, FHWA also established interagency agreements with both NOAA and USFWS, bolstering regional technical and coordination capacity within these agencies. As part of this effort, NOAA and USFWS have created new Regional Culvert Liaison positions (funded by FWHA), dedicated to providing technical assistance to Tribes and underserved communities as well as grant applicants and awardees. These five-year positions play a crucial role in program development and review as well as project development and funding coordination across landscapes, helping to ensure the success of this important restoration initiative.

Common Project Criteria

One of the earliest Task Force activities was the creation of a set of nonbinding common criteria for fish passage projects. Member agencies could choose to include these in their funding opportunities (within the bounds of legislative and programmatic constraints) to advance a common set of goals across the country.

These agencies incorporated all three types of criteria into their evaluation criteria in their most recent NOFOs:

- Bureau of Reclamation, *WaterSMART Aquatic Ecosystem Restoration Program*
- Bureau of Reclamation, *WaterSMART Environmental Water Resources Projects*
- Federal Highway Administration, *Culvert AOP Program*
- National Oceanic and Atmospheric Administration, National Marine Fisheries Service, *Restoring Tribal Priority Fish Passage Through Barrier Removal and Restoring Fish Passage Through Barrier Removal*
- U.S. Fish and Wildlife Service, *National Fish Passage Program*

² [FLMA MOU](#)

Through these actions, federal agencies are incentivizing projects that look beyond the species to consider how projects fit into the wider environmental and community context. Incorporating these concepts into evaluation criteria means that projects that benefit all three categories will be rewarded in the competitive process with higher scores and are more likely to be funded.

Update to Grantmaking Processes

The BIL has also allowed federal agencies to rethink the Notice of Funding Opportunity (NOFO) process, particularly for those grant programs that were being set up from scratch. After hearing in the partner workshop how burdensome it is for partners to constantly apply for funding, FHWA created a single NOFO for years 2-5 of its Culvert AOP grant program that includes the open and close dates for applications through 2026. This allows applicants to prepare an application at any time and submit during the open period each year.

- The NOAA Restoring Tribal Priority Fish Passage Through Barrier Removal funding opportunity, a set-aside program for Tribal fish passage projects, incorporated feedback from Tribes during consultations and listening sessions and made changes to the grantmaking process to offer the following benefits over a traditional competitive application process:
 - o Broader evaluation criteria, allowing Tribes to make a case for their own priorities, rather than trying to make their projects fit into the prescribed priority areas.
 - o Inclusion of Traditional Ecological Knowledge (TEK) in the application evaluation criteria.
 - o Use of funding for capacity-building activities, not just project design and construction.
- The USFWS's National Fish Passage Program (NFPP) made several changes to its existing cooperative conservation model to increase transparency in process and facilitate the development of projects that achieve both local community needs and biological goals. Adding a Letter of Interest (LOI) step to the application process allows applicants to provide a brief overview of the project and access to discussion with USFWS regarding the project prior to spending the significant resources necessary for a full application.

Common Federal Criteria:

Fish Passage Benefits: Create the conditions for improvement and recovery of fish populations by connecting/creating high quality habitat for priority species.

Ecosystem Benefits: Create other natural resources benefits, many of which directly or indirectly improve species recovery or restoration.

Community Benefits: Create other community benefits, especially those benefits that accrue to Tribes and other disadvantaged communities or populations.

Barrier Inventory Goes Nationwide

The Southeast Aquatic Resources Partnership (SARP), with funding from the USFWS, expanded its National Aquatic Barrier Inventory (NABI) and Prioritization Tool to include all 50 states, Puerto Rico and the U.S. Virgin Islands. Through additional partnerships with federal agencies including USFS, BLM, NPS and NOAA, as well as state agencies, SARP has identified 552,136 dams and 265,595 road stream crossings assessed for aquatic organism passage barrier severity (of which 137,183 are at least moderate barriers to aquatic organisms). The Prioritization Tool at aquaticbarriers.org allows users to prioritize structures based on how they would reconnect high quality habitat within different geographic areas, using filters chosen by the users. In addition to inventory and prioritization, SARP is tracking miles opened and barriers removed per year. Using data from American Rivers and other partners, SARP has tracked over 2,800 dams removed and 6,700 culverts replaced, totaling over 202,000 miles opened for aquatic organisms to date.



Little River Dam in Tazewell County, VA is slated to be removed with BIL funds. Credit: UFSWS.

Aquatic Connectivity Teams

These resources have become a focal point for a community of practice, especially among state-level Aquatic Connectivity Teams—groups dedicated to uniting partners to identify, prioritize, and implement aquatic connectivity projects. Over the past year, SARP, alongside partners like American Rivers, The Nature Conservancy, and state and federal agencies, has helped establish six more of these teams. These efforts will not only build on existing work but also streamline project management, significantly increasing the extent of reconnected habitat across the United States.

X. Building Technical Capacity

At the 2022 Partner Workshop, building capacity among federal and nonfederal partners emerged as an essential need. BIL funding enabled many Task Force agencies to establish or expand capacity-building programs that support efficient, effective barrier removal and foster a steady pipeline of future projects. This capacity-building spans activities from project identification and scoping through planning, design, construction, and post-project monitoring. Below are several examples of how the Task Force has leveraged BIL funding for capacity-building efforts.

Funding Opportunities for Planning, Design and Capacity Building

Several federal agencies have utilized funding not only for “shovel ready” projects, but to develop the next suite of high-quality opportunities through project planning and design. Some agencies have expanded eligible activities to include planning and design, while others have separate programs focused on building capacity within partners to accomplish some of these activities. Investments in project planning and design can increase partner capacity, encourage collaboration with local stakeholders, and improve project outcomes. Projects that receive funding for planning and design are also in a better position to advance in a competitive process for construction funding.

Case Study: Collaborative Planning Efforts at USBR

Under the WaterSMART Cooperative Watershed Management Program, Reclamation provides funding to grassroots, stakeholder-driven watershed groups for group development activities, watershed restoration planning, project design, and project implementation. The program provides capacity to watershed groups to encourage diverse stakeholders to create local, multi-benefit solutions. In 2023, Reclamation selected the Colorado Rio Grande Restoration Foundation, in partnership with the San Luis Valley Irrigation District, to receive approximately \$1.2 million to upgrade the diversion infrastructure for the Farmers Union Canal and Rio Grande #1 Ditch, in southwestern Colorado, to meet agricultural, ecological, recreational, and community needs. This project was identified in the Rio Grande Stream Management Plan, a collaborative planning effort that was previously funded through the WaterSMART Cooperative Watershed Management Program.

A New Way of Partnering

USFS invested \$40 million in 2022 and 2023 in its Keystone Agreement with Trout Unlimited (TU) to significantly expand TU's stream restoration design capacity to facilitate the assessment, prioritization, design, construction, and monitoring of fish passage projects across the National Forest System. TU and USFS have collaboratively developed over 120 fish passage projects that will be completed across more than 40 National Forests by 2027. This agreement will not only greatly expand fish passage project implementation, but will streamline the process for National Forests, leverage significant external funding, and complete accompanying priority fish passage projects on nearby private, state, and Tribal lands.

Increasing Technical Training

In calendar years 2022 and 2023, USFS technical experts doubled the number of annual stream simulation design training workshops, completing 13 weeklong aquatic organism passage design training events for approximately 600 participants, including more than half from outside of the agency. This reflects the soaring future demand for this training, and these numbers do not reflect the long waitlist of interested participants.

USFWS fish passage engineers have also been providing trainings for practitioners in project design and are collaborating with NOAA on an Engineering Design Guidelines manual for fish passage to provide consistent guidance on the design, operation, and maintenance of these projects.



High Street Dam in Bridgewater, MA will be removed with BIL funds. Credit: USFWS.

XI. Conclusion

The Task Force and its partners have accomplished much in a few short years, including a better understanding of the scale of the problem, greater appreciation for the many and varied benefits of fish passage projects, improved consideration of partner needs, and the power of working together across federal agencies. The members of the Federal Interagency Fish Passage Task Force will continue to work together to further efforts to expand the fish passage community in the nation by:

- **Working together to “scale up” barrier removal efforts.** Traditionally, barrier removal projects have been viewed through a project-by-project lens. Considering the sheer number of barriers on the landscape, new ways of bundling, funding, and executing projects, along with increasing the role of non-federal partners, may yield greater returns.
- **Collaborating on watershed-scale transformational projects.** These are the projects most difficult for any one agency to support on its own; they are large and often technically challenging, so partnerships can make all the difference in the strategic application of both expert and economic resources.
- **Looking for opportunities to reduce the creation of new barriers on the landscape.** While we will never have a barrier-free landscape, continually looking for opportunities to work in water resources management, transportation, agriculture, energy agencies and their related industries to adopt or develop “fish friendly” techniques will reduce the need for future barrier removals. These efforts can include reducing the creation or perpetuation of barriers on federal lands.
- **Improving the application experience for partners in applying for and managing federal funds.** This includes further expanding and improving Tribal co-stewardship, working to streamline and add value to application and project development processes, and reaching out to non-traditional partners, especially those who may face challenges or obstacles to applying.
- **Reaching outside the conservation community to find opportunities for projects that create co-benefits.** A huge number of barrier removal projects have economic, social, public health, water quality, and public safety benefits. By discussing these benefits at the beginning of projects and with a wider variety of people, the Task Force hopes to create even more enthusiasm for barrier removal and aquatic conservation projects and inspire others to act.
- **Resolving barriers to project success.** Environmental compliance and permitting are common challenges to advancing large numbers of projects efficiently. Under new rules, agencies may adopt Categorical Exclusions of other agencies. As agencies work to streamline compliance, sharing new approaches and successful examples will advance work.

Up Close and Personal

This kind of once-in-a-generation funding has allowed federal workers who have dedicated their careers to aquatic restoration and those new to the topic to think differently about their jobs. They have recognized the synergies in their missions. They have shared approaches, resources, and expertise. Most importantly, they have invested in long-term, durable relationships across federal agencies, deepened and expanded partnerships at the state, Tribal, community and non-profit levels, and laid a foundation for longstanding collaboration and strategic implementation. They are committed to making this approach the new normal.