

Fish Passage Outcome Sub-Chapter

Fish Passage Outcome: Improve habitat and water quality while creating more resilient and sustainable populations of fish and other aquatic organisms by removing barriers throughout the Chesapeake Bay watershed's coastal and freshwater rivers and streams.

- Restore passage and connectivity to at least 150 miles of aquatic habitat every two years.

Baseline and Current Condition

Across the Chesapeake Bay watershed, over 6,960 dams and 1,397 road-stream crossings are classified as 'severe barriers' that fragment our rivers and streams. Fish passage projects are vital to restoring connectivity to aquatic communities including migratory and resident fish and freshwater mussels throughout the watershed.

Dams, road-stream crossings, and other instream barriers block diadromous fish (those that migrate between sea and freshwater to complete their life cycle) from accessing their historic spawning and rearing habitats, contributing to declines of migratory species including American Shad, Hickory Shad, Alewife, Blueback Herring, and American Eel. Resident fish, including species of conservation concern and Brook Trout, are also significantly impacted by habitat fragmentation caused by instream barriers. Fish populations may also be negatively impacted by degraded habitat quality (e.g., water quality including acid mine drainage and thermal barriers), and other impacts driven by changing environmental conditions.

The Fish Passage Workgroup (Workgroup) supports efforts to restore aquatic connectivity through actions such as removing obsolete dams, installing fish lifts or technical fishways, and replacing culverts. Aquatic communities in the Chesapeake Bay will benefit from increased access to habitats necessary for spawning, rearing, refuge, and foraging. These efforts also improve habitat and water quality and deliver social benefits including increased safety, recreational opportunities, and lower infrastructure maintenance and repair costs.

Workgroup members and their partners remove dams, install fishways (when dam removal is not feasible), and replace culverts to restore fish passage across the watershed. From 1989 to 2025, approximately 28,919 miles of river and stream habitat in the Chesapeake Bay watershed have been re-opened to fish passage. These projects are evaluated and prioritized across the watershed using the [Chesapeake Fish Passage Prioritization Tool](#) (Tool) jointly developed by the Workgroup and The Nature Conservancy.

Monitoring Progress and Indicators

Indicator: Miles of Aquatic Habitat Opened

Workgroup members and coordinators from each jurisdiction use the Tool to document completed fish passage projects and calculate upstream functional network (UFN, Figure 1) restored annually. The UFN is reported as the river and stream miles of habitat opened every two years through the Strategy Review System. This standardized process maintains consistency and comparability of reporting from across the watershed, and results in a reliable dataset that supports integrity of the indicator.

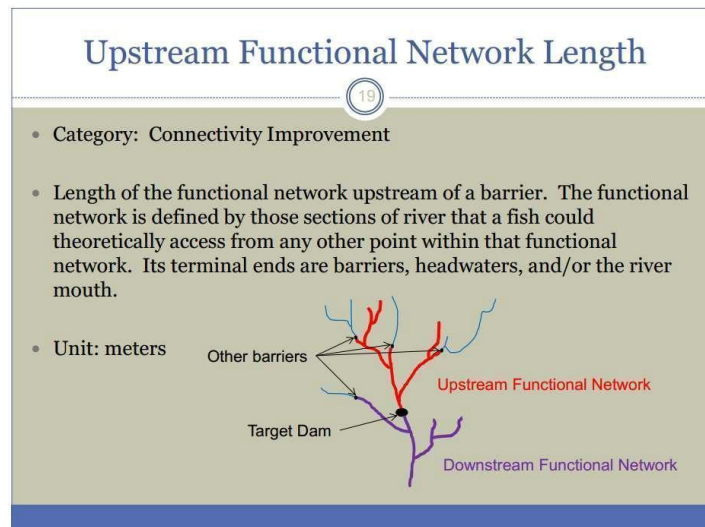


Figure 1: Description of Upstream Functional Network Length

Fish Passage Outcome Situation Analysis

The following table identifies challenges that will impact progress towards attaining the Fish Passage Outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Thriving Habitat, Fisheries & Wildlife Goal Team as being priorities for the Fish Passage Workgroup to seek to address or make progress against through the development of Workplan activities.

Challenges	Within CBPs ability to influence	Outside of CBP's ability to influence
Community/landowner willingness to allow barrier removal projects	X	
Limited State and Federal Legislation to facilitate fish passage	X	
Insufficient funding to incentivize projects or support implementation and capacity building	X	
Limited understanding of ancillary social and safety benefits among dam owners, policymakers, and local governments	X	
Lengthy, complex permitting processes and infrastructure conflicts (e.g., sewer/water line relocations) for barrier removal and road-stream crossing projects	X	
Target species populations in decline region-wide*		X
Selecting the most cost-effective projects for implementation given limited funding	X	

Snapshot of Signatory Programs

Managing a large and difficult restoration and conservation program with “no assurance about the level of funds that may be available beyond the short term” (GAO, 2028) is a challenging undertaking that requires individual and collaborative action from signatory partners, as well as the many communities and individuals who live, work, play and learn in our region. This “Snapshot of Signatory Resources” seeks to better recognize the significant contribution that individual signatory partners and federal agencies make towards outcome attainment. The existing programs and funding spotlighted below are not intended to represent the full range of resources available or required to support progress towards outcome attainment; only the “biggest ticket” programs are included for each outcome and signatory partner. It is important to note that funding is reported from a single point in time (fiscal year 2025) and is not representative of future investments. Identifying the most critical programs and resources that exist at a particular moment in time can help the partnership focus its collaborative efforts on activities that have the greatest impact, and which do not duplicate the work of existing programs.

[Signatory Name]

- [\[Featured Program with hyperlink\]](#) ([Appropriations for Fiscal Year 2025]) [one sentence max description of how program relates to Outcome attainment]

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Management Approaches for Outcome 4: Fish Passage

Management Approach 1.4.1: Prioritization Efforts for Fish Passage Projects

To prioritize projects, the Workgroup will use the Tool to assess the likely ecological "return on investment" associated with a fish passage project. Project prioritization may be conducted in coordination with the state barrier removal communities of practice (e.g., [Virginia Stream Barrier Removal Task Force](#)). The Tool provides data on 39 metrics available from 5 prioritization categories

including: Connectivity Status, Connectivity Improvement, Watershed and Local Condition, Ecological, and Size/System Type. Other available map layers will be used to prioritize fish passage restoration at instream barriers and to ensure projects provide socioeconomic benefits to local communities. In general, high-priority barrier removal projects have the following qualities (not in order of priority):

- Reconnects habitat for migratory and resident fish
- Provides benefits to multiple species including species of conservation concern and species supporting commercial and recreational fisheries
- Achieves the largest habitat gains
- Improves access to high-quality habitat
- Provides community co-benefits

Management Approach 1.4.2: Funding Fish Passage Projects

Leverage Workgroup to identify and secure all available sources of funding in support of aquatic habitat connectivity efforts to include traditional and innovative sources. Continue to participate in the grant application process to either directly apply for grants to fund feasibility, design, and fish passage implementation or provide technical assistance to partners that apply. Restoration funding is often available through the National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, Chesapeake Bay Trust, and National Fish and Wildlife Foundation. Further, infrastructure funding may also be used to fund fish passage projects with transportation or dam safety nexuses

Work collaboratively with dam owners and hydropower operators to voluntarily explore, maintain, and improve fish passage facilities in support of aquatic connectivity objectives. Work with bank sponsors to implement fish passage as form of compensatory mitigation

Management Approach 1.4.3: Project Development

Develop new barrier removal projects using the Tool that also provide ancillary benefits to owners and communities. Collaborate with state and federal regulatory programs to streamline permitting activities and accelerate project timelines for priority passage enhancement projects. This could include identification of common permitting challenges and/or development of guidance documents for the regulated community

Management Approach 1.4.4: Dam Removal

Share effective strategies to increase dam owner and local community support for dam removal projects and foster a system of cooperation for fish passage restoration

The Workgroup will strive to develop:

- A model for dam owner (and broader community) engagement that can be replicated in communities throughout the region and beyond
- A pool of three to five high-priority dam removal projects with willing dam owners and completed baseline (i.e., feasibility) assessments that are ready for implementation

Management Approach 1.4.5: Road-Stream Crossings

Invite federal and state Departments of Transportation (DOT) to become Workgroup members and to attend Workgroup meetings, prioritize potential projects, and work collaboratively to implement restoration

Management Approach 1.4.6: Local Participation

Engage with local governments, watershed associations, nonprofits and the private sector, including private landowners, and disseminate information regarding the benefits of aquatic habitat connectivity.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, “participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices” (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners**

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- **Other Participating Partners**

- American Rivers
- Anne Arundel County's Department of Public Works
- BioHabitats
- Chesapeake Research Consortium
- Delaware Department of Natural Resources and Environmental Control
- District of Columbia Department of Energy and Environment
- Interstate Commission on the Potomac River Basin
- Maryland Department of Natural Resources
- National Aquatic Connectivity Collaborative
- National Oceanic and Atmospheric Administration
- Natural Resources Conservation Service
- New York State Department of Environmental Conservation
- Pennsylvania Fish and Boat Commission
- Princeton Hydro
- Smithsonian Environmental Research Center
- Trout Unlimited
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- Virginia Department of Wildlife Resources
- West Virginia Department of Natural Resources

Appendix 1. Signatory Statutory Authorities Driving Outcome Attainment

The law and regulation of signatory partners may support, justify or motivate their participation in the collaborative work of the Chesapeake Bay Program related to the attainment of specific Outcomes and Targets of the Watershed Agreement.

The following documentation identifies core statutory authorities that provide part of the impetus for the attainment of Chesapeake Bay Watershed Agreement Outcomes and their related Targets. While Chesapeake Bay Program partners acknowledge that the Chesapeake Bay Watershed Agreement is voluntary, subject to the availability of appropriated funds, and does not preempt, supersede or override any other law or regulation applicable to each signatory, they also acknowledge that the law or regulation of individual signatories can support each partner’s participation in outcome attainment. The table below is not an exhaustive list of all relevant laws and regulations. Rather, this appendix identifies the driving motivators that can bring about signatory partner engagement in efforts described in this Strategic Plan, associated Management Strategies, and Workplans.

Goal 1: Thriving Habitats, Fisheries, and Wildlife

[illegible]