FISH PASSAGE OUTCOME
HABITAT GOAL IMPLEMENTATION TEAM

2014 WATERSHED AGREEMENT: GOAL & OUTCOME LANGUAGE

FISH PASSAGE OUTCOME:

Continually increase access to habitat to support sustainable migratory fish populations in Chesapeake Bay freshwater rivers and streams. By 2025, restore historical fish migratory routes by opening an additional 132 miles every two years to fish passage, with restoration success indicated by the consistent presence of alewife, blueback herring, American shad, hickory shad, American eel and brook trout, to be monitored in accordance with available agency resources and collaboratively developed methods.

VITAL HABITATS GOAL:

Restore, enhance and protect a network of land and water habitats to support fish and wildlife, and to afford other public benefits, including water quality, recreational uses and scenic value across the watershed.

OUTCOME DISPOSITION ADVICE TO MANAGEMENT BOARD: UPDATE

The Fish Passage Workgroup recommends updating the current outcome to include:

- An increase from 132 to 150 miles every two years because this increase is achievable, and
- Incorporate all fish (resident and migratory), and other aquatic dependent organisms (freshwater mussels, reptiles, amphibians, etc.).

Consideration of Challenges and Opportunities in Achieving the Outcome- The Workgroup believes these changes better reflect the future goals, opportunities, and challenges of the Fish Passage outcome. In considering this new outcome, we recognize the following challenges and opportunities as well as the timescale needed to complete this outcome, how the outcome relates to the Bay Agreement mission, and the resources needed to achieve this outcome:

- We recognize the benefits of aquatic connectivity for all native species and their habitats , including migratory and resident fish, and other aquatic dependent organisms (freshwater mussels, reptiles, amphibians, etc.). Aquatic organism passage is essential to the long-term resilience and sustainability of the ecosystem and the people that live in the Chesapeake Bay.
- Increasing collaboration with the Brook Trout Workgroup and others, we will consider thermal barriers, chemical barriers, and acid mine drainage as impediments to AOP, not just traditional physical barriers. Removing these types of barriers will also work to improve many Bay Agreement goals, including but not limited to improved water quality and long-term climate resilience and ecosystem sustainability.
- Barrier removal will be achieved through dam/blockage removal, fish passage structures, stream bypasses, culvert improvements, chemical/acid mine drainage remediation, and elimination of thermal barriers.
- Aquatic Organism Passage (AOP) restoration including dam removal and road stream crossing improvements will also improve resilience of infrastructure and reduce negative implications, frequency, and severity of flood events, thereby helping to mitigate climate change impacts.
- Culvert and road/stream barriers present an opportunity to reach goals because many of these

projects are on local, state, or federal property or right of ways where project support is easier to obtain. Collaboration with these government agencies presents a unique opportunity to not only maintain infrastructure but improve it with AOP and flood considerations in mind.

- We recognize that funding (especially federal funding) is a critical component of meeting our goals. Loss of federal funding will likely mean that goals are not met. However, mitigation and state revolving fund programs could provide additional funding. We will work with the Bay Program to develop these opportunities. The Chesapeake Fish Passage Prioritization tool evaluates and prioritizes opportunities throughout the watershed. Additionally, social science and outreach are resources needed to build landowner and stakeholder support for dam removal and road-stream crossing improvement projects.
- This outcome conducts stream restoration with a focus on shallow water living resources. With new emphasis on other types of physical barriers (stream flow dynamics & geomorphology) and chemical barriers (ex. acid mine drainage), the scope of work is expanded for the Fish Passage Workgroup.
- Continue to work with Dam Safety Programs and regulatory agencies to streamline the regulatory process to create efficient and cost-effective methods to authorize dam removal projects.

Benefits to People- Dam removals and increased passage serve an important stream restoration function to improve water quality and lead to a healthier, more resilient Chesapeake Bay. Dam removals also mitigate flood risk, reduce infrastructure maintenance, and improve safety.

How the Outcome Relates- The Fish Passage Workgroup acknowledges that this outcome relates well with the Brook Trout and Stream Health Workgroups, in addition to Water Quality and Healthy Watersheds GITs.

- ***Brook Trout:*** *Our primary goal of restoring connectivity directly benefits brook trout populations by providing the opportunity for brook trout habitat expansion. Temperature barriers are also a subject of overlap between our two workgroups.*
- ***Stream Health:*** *In relation to the Stream Health Workgroup, stream head cuts and culverts are a barrier for aquatic organisms. Stream restoration work addressing flow dynamics and geomorphological change that cause barriers to aquatic organism passage (AOP) could be necessary for connectivity for living resources in shallow water habitats.*
- ***Water Quality:*** *Dam removal improves water quality, and if acid mine drainage/chemical barriers are considered as AOP barriers in the future, there is clear overlap with Water Quality GIT goals.*
- ***Healthy Watersheds:*** *With a new emphasis on conservation in the pillars of the Chesapeake Bay Program, collaboration with the Healthy Watershed Workgroup is intuitive to ensure connectivity through state-identified healthy ecosystems and conserving those areas.*

What Is the Value Added by Having the Chesapeake Bay Program Work on the Fish Passage Outcome?

- Connects the State managers for shared learning and monitoring. The Bay Program has also provided support for updating the Fish Passage Prioritization tool.
- Aquatic Organism Passage is a bridge between multiple goals and is a mode of increasing habitat for multiple species focused on many different groups within the program.
- The Bay Program and specifically the Bay Commission provides legislative opportunity and support to needs identified by those working within the Fish Passage Workgroup.
- The Bay Program provides a commitment from the jurisdictions within the watershed to address findings and implement best management approaches.