



[BROOK TROUT OUTCOME]
[HABITAT GIT/BROOK TROUT ACTION TEAM]

2014 WATERSHED AGREEMENT: GOAL & OUTCOME LANGUAGE

BROOK TROUT OUTCOME: Restore and sustain naturally reproducing brook trout populations in Chesapeake Bay headwater streams, with an eight percent increase in occupied habitat by 2025.

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
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Advice to Management Board:

The Brook Trout Action Team advises the Management Board to **update** the current brook trout outcome because it focuses solely on occupancy, and the outcome should be modified with language that expands to include metrics with elements of occupancy, abundance, and population and habitat resiliency.

- While occupancy is measurable and a useful indicator of brook trout presence, it alone fails to consider increases in brook trout abundance or habitat improvements, both measures of increased resiliency.
- Incorporating outcomes for occupancy, abundance, and resiliency provides the Brook Trout Action Team with the ability to strategically address the primary threats that brook trout face such as loss of upland and riparian forest cover, acid mine drainage, barriers to fish passage, livestock access to streams, untreated impervious surface runoff, various thermal stressors, competition with nonnative salmonids, and impacts from dirt and gravel roads.
- Incorporating these metrics and considerations facilitates cross-GIT coordination (e.g., Fish Passage, Stream Health, Toxic Contaminants, and Forestry outcomes, etc.) and leverages funding to focus our initiatives in an efficient and strategic manner that supports multiple workgroups to achieve their outcomes.

Consider the timescale for completing the outcome (5, 10, 15 years). Determine if achieving the outcome is an incremental step or is it a final outcome.

Benefits to brook trout from restoration efforts may take decades to be realized to a point where brook trout can recolonize a restored stretch of stream. However, these water quality and habitat improvements can be credited immediately by jurisdictions in **1-5 year** increments.

- The current occupancy outcome restricts state jurisdictional-resources to only document presence/absence. Meanwhile, existing brook trout populations face many threats and habitat impairments that could be addressed strategically through a resiliency based outcome that better allocates state resources.
- Reclassifying the brook trout outcome to include abundance and resiliency provides alternative outcome driven monitoring frameworks for state jurisdictions to guide restoration efforts and BMP tracking including habitat improvements, land conservation, and population resiliency measures that can be achieved in **10 years**.
- The Brook Trout Action Team unanimously agrees that an eight percent increase in occupancy in 10 years is an unachievable outcome, and that no net loss is more realistic.

Consider the risk or unintended consequences of removing or changing the Outcome:

Risks associated with removing brook trout as an outcome would greatly jeopardize the continued presence of viable populations of brook trout and the integrity of cold water streams within the Chesapeake Bay Watershed.

- While other outcomes include some BMPs that could benefit brook trout, there is minimal focus that specifically targets brook trout and/or cold water habitat within their management strategies.
- Brook trout have declined an estimated 70 percent of their historic range. Without a concerted effort to reduce this trend, a highly-valued species will continue to decline from the Chesapeake Bay Watershed.
- Coldwater habitat is the most at-risk of any aquatic habitat globally, and within the bay watershed. Removing the brook trout outcome would eliminate the only targeted effort to protect and restore both critical cold water habitat for all cold water-dependent species and clean source water for downstream communities.
- Brook trout are the only native salmonid in the Chesapeake Bay Watershed that are isolated to the coldest of stream and lake habitats. Removing this outcome would remove an ecological response indicator to both land use transformations and climatic warming trends.
- A concerted focus on brook trout conservation provides rural communities distantly removed from the bay with a reason to protect part of their natural heritage and respective cold water stream habitats and connects them to downstream communities.

Value to the Public

Brook trout is a tangible outcome for upstream communities, coalescing people around water quality improvements that improve local stream health as well as the health of the Bay. Brook trout are the state fish for four of the seven Bay watershed jurisdictions. Brook trout serve as an aquatic charismatic “mascot” to rural and economically depressed areas that rely on brook trout as part of their natural heritage, recreational angling, and in some cases, localized subsistence.

What value is added by having the Chesapeake Bay Program work on the outcome?

Brook trout serve as an umbrella species for the Chesapeake Bay Watershed and have significant ecological, economic, programmatic, and immense cultural significance. The values added by having a brook trout outcome in the Chesapeake Bay Program include:

- an opportunity for cross jurisdiction communication and sharing science and information (Brook trout are listed in five Chesapeake Bay watershed jurisdiction Wildlife Action Plans as a species in need of conservation).
- a systematic framework for cross-GIT and jurisdictional coordination to implement landscape-scale BMPs in an upstream to downstream approach that also reduces runoff, pollutants and nutrients that impact brook trout habitats, and
- a tangible and motivational target for other public and private investments into the Bay Watershed.
- encouraging other public and private investments into the Bay Watershed