Brook Trout

Brook Trout Action Team | Habitat GIT

CHESAPEAKE BAY WATERSHED AGREEMENT OUTCOME LANGUAGE

PROPOSED DRAFT OUTCOME LANGUAGE: Protect and enhance brook trout within the Chesapeake Bay watershed by increasing:

- Occupancy in stronghold and persistent patches by 1% and no net loss in other patches by 2035
- Abundance at 10 (2 per state) sentinel monitoring sites within priority patches by 2035
- Resiliency within stronghold and persistent patches by reducing identified threats by XX% through BMP implementation by 2035

EXISTING 2014 OUTCOME LANGUAGE: Restore and sustain naturally reproducing brook trout populations in Chesapeake headwater streams with an eight percent increase in occupied habitat by 2025.

PROPOSED TARGET	New Target / Update of Existing Target	Date estimate for target being developed
Occupancy in stronghold and persistent patches by 1% and no net loss in other patches by 2035	**Update of Existing Target**	n/a
Abundance at 10 (2 per state) sentinel monitoring sites within priority patches by 2035	**New Target**	n/a
Resiliency within stronghold and persistent patches by reducing identified threats by XX% through BMP implementation by 2035	**New Target**	Late May 2025

*Detailed activities will be included in an updated work plan

SUPPORTING INFORMATION

Rationale and context for proposed draft outcome language:

There are two major updates to the Brook Trout Outcome Language:

1. The “no net loss” statement of the Occupancy target (previously the 2014 outcome) and
2. The addition of Abundance and Resiliency as outcome attainment metrics.

When the original 2014 outcome was drafted, the 8% number did not take into consideration the expansion of brook trout stressors within the watershed over the 10 year period. With continued urbanization of the watershed, rising water temperatures, emerging toxins, and other stressors the actual increase since 2014 was actually +0.5% in occupied brook trout habitat.

Anticipating continually increasing brook trout stressors, the workgroup proposes a new occupancy target of 1% increase in occupied habitat in stronghold and persistent patches by 2035. Additionally, with the elevation of conservation as a pillar of the Bay Program in mind and the desire to sustain current brook trout populations, the workgroup proposes “no net loss” in other brook trout habitats as part of the target.

The addition of an “Abundance” target provides a metric for jurisdictions to determine if healthy populations are starting to decline and implement corrective habitat practices to maintain or increase abundance. Sustained or increasing brook trout in stronghold and persistent patches is a good indicator that land use and stream health are improving.

Lastly, the workgroup recognizes the reality of poor land use practices and uncertain changing environmental conditions and suggests including a “Resiliency” target. There are multiple possible stressors such as riparian and upland deforestation, acid mine drainage, livestock access to streams, barriers to aquatic passage, toxins, and competition with other non-native trout species, among others that vary in priority within each brook trout patch. To address this, the workgroup proposes (having identified major stressors in each stronghold and persistent patch) reducing the total number of threats by XX% through BMP implementation by 2035.

1.

Methodology for data collection and tracking of each Target (Optional):

- Occupancy in stronghold and persistent patches by 1% and no net loss in other patches by 2035
    a. Jurisdictional monitoring of previously documented brook trout populations.
        i. Where logistically feasible, and at biologist’s discretion, the amount of occupied habitat may be inferred through downstream occupancy, as it was in the Trout Unlimited GIT-funded project to identify +0.5% brook trout occupied habitat.
- Abundance at 10 (2 per state) sentinel monitoring sites within priority patches by 2035
    a. Fish counts at sentinel monitoring sites using electrofishing depletion surveys.
    b. Before, After, Control, Impact (BACI) sampling efforts prior to and following habitat enhancement projects to determine net adult brook trout population increase.
- Resiliency within stronghold and persistent patches by reducing identified threats by XX% through BMP implementation by 2035
    a. Initial GIS analysis to quantify total threats in stronghold and persistent patches.
    b. Project data, following BMP implementation, will be input into the Chesapeake Bay Habitat Tracker