BIENNIAL STRATEGY REVIEW SYSTEM
Chesapeake Bay Program

Narrative Analysis

BROOK TROUT OUTCOME – JULY 30, 2021

The narrative analysis summarizes the findings of the logic and action plan and serves as the bridge between the logic and action plan and the quarterly progress meeting presentation. Based on what you learned over the past two years from your successes and challenges, you will describe whether the partnership should make adaptations or change course.

Use your completed pre-quarterly logic and action plan to answer the questions below. After the quarterly progress meeting, your responses to these questions will guide your updates to your logic and action plan. Additional guidance can be found on ChesapeakeDecisions.

1. Examine your red/yellow/green analysis of your management actions. What lessons have you learned over the past two years of implementation?

   The BTWG has emphasized stakeholder needs and science support as those are areas where the team has had the greatest opportunity for direct action. The most successful actions were those conducted by state/federal/other partners and aligned with their priorities as part of their on-going specific programs. This approached worked well as we where able to accomplish 22 of our 28 Action Items. This led to a number of advances and publications on brook trout genetics, groundwater interactions, and stream temperature.

   Full implementation of action activities continues to be hampered by limited capacity to implement or coordinate actions at the scale necessary to overcome the detrimental impacts to brook trout habitat throughout the watershed and make progress toward the Outcome. As a result, developing additional metrics to quantify conservation actions that substantially contribute to maintaining current high quality brook trout habitat and tracking all watershed restoration activities is moving slowly. We are trying to transition to more active enhancement through direct actions rather than spending limited time on meeting and planning.

   Another area where we have struggled is with cross-GIT collaborations and developing synergies across common goals and objectives. For example, engagement with other CBP teams to identify opportunities and options for communicating brook trout information to local decision makers.

   The impact of the pandemic was also felt by all BTWG members and contributed to delays in some activities.

2. Regardless of how successful your short-term progress has been over the past two years, indicate whether we are making progress at a rate that is necessary to achieve the outcome you are working toward. The example graph below illustrates this concept. As noted during our last SRS Review, we still need staff support for comprehensive data collection/analysis across the watershed. Therefore, we don't have the data necessary to compare against the Outcome trajectory.

   Most importantly, resources available to the BTWG and associated stakeholders are insufficient to adequately restore and sustain brook trout populations at the watershed-wide scale necessary to overcome the detrimental impacts to brook trout habitat across the watershed.

3. What scientific, fiscal, and policy-related developments will influence your work over the next two years?

   Scientific

   We will be working with partners and stakeholders to help them understand the management implications of new research findings. For example, recent results indicate that allopatric brook trout showed greater movement rates and more even spatial distributions within streams than sympatric brook trout, suggesting interference competition by brown trout for access to forage habitats located outside thermal refugia. This suggests that removal of introduced brown trout may facilitate native brook trout expansion and population viability in downstream reaches. In addition, results of a new fish habitat assessment (FHAT), STAC Genetics Workshop, and STAC Temperature Workshop will all provide new information to help inform conservation and restoration decisions and actions. New projects related to climate change and groundwater impacts on stream temperatures will provide better information to guide restoration actions.

   Policy

   There are several recent legislative/policy actions that will likely affect our efforts going forward. The America Conservation Enhancement (ACE) Act and ChesapeakeWILD component provide direction and authorization for fish habitat programs generally and increased emphasis on habitat conservation and restoration. The Surface Mining Control and Reclamation Act funds abandoned mine drainage treatment, an important restoration activity to mitigate loss of brook trout habit. There is a bill in the Congress that would extend the collection of coal reclamation fees through 2036 and increase the minimum annual payment that some states receive from $3 million to $5 million. The MD Dept. of the Environment is developing a stream temperature TMDL to help protect coldwater streams. We will be working with them on relevant topics. Finally, the current Administration is increasing emphasis on climate change such that all Federal agencies are prioritizing the effects of climate change and mitigation strategies.

   Fiscal

The insufficient resources available to the BTWG and associated stakeholders to adequately address impacts as noted above include funding for conservation, restoration, and monitoring activities needed to increase efforts on the primary barriers to the Outcome. If the FY22 budgets for Federal agencies are funded at currently proposed levels, there could be increases in funding for Chesapeake Bay-related programs.

4. Based on your response to the questions above, how will your work change over the next two years?

While we don't have a good measure of our trajectory, we do know that the drivers and stressors causing loss of brook trout occupancy are increasing throughout the watershed. Future projections of land-use and climate change are not favorable so the gap between those stressors and efforts to mitigate them will continue to grow without major increases in investments to address them. The Vital Habitats Goal is to restore, enhance and protect a network of land and water habitats to support fish and wildlife. What is needed are actions that address the entirety of the interconnected network of land and water as much as possible.

Therefore, we will engage BTWG members and other stakeholders to identify and implement large-scale priority action items with the greatest impact including

- Increasing or maintaining at least 75% riparian forest cover in all brook trout watersheds
- Fencing livestock out of brook trout streams
- Developing better private landowner engagement and conservation incentives
- Promote land stewardship

Brook Trout are specifically identified as one of the four indicator species in EO 13508 because "they reflect the habitat health and hold great ecological, commercial and recreational significance". While challenging, these large-scale priority action items also address the barriers affecting other Outcome as they are intrinsically connected to Healthy Watersheds, Fish Passage, Forest Buffers, and Protected Lands through hydrological and ecological processes

We will also continue to align BTWG action items with those of state/NGO agencies conducting on-the-ground conservation and restoration projects as well as working closely with brook trout scientists. We plan to incorporate current and future impacts of land use and climate change on brook trout habitat drivers and stressors.

We will be working with stakeholders to understand the use and application of decision support tools, e.g., Ecosheds Integrated Catchment Explorer (ICE), MD-DNR Coldwater Resources Mapping Tool.

Hopefully, we can find the resources needed, including submitting a GIT proposal, to fund final development and implementation of a tracking spreadsheet/tool for all

partners (including NGOs) to report progress using common metrics. Ideally this will include CBP staff

We will also continue to collaborate with other CBP teams (Healthy Watersheds, Fish Passage, Riparian Buffers) on connected actions, e.g., reforestation, aquatic connectivity, etc.

5. What, if any, actions can the Management Board take to help ensure success in achieving your outcome?

The BTWG has started working with state members to identify needs that are specific to the conditions in that state. For example, the biggest need in MD is to increase riparian forest cover to at least 75% in all brook trout watersheds with an estimated cost of $50M. In WV, the best opportunities for brook trout stream restoration is on private lands, but it is not possible to use public funds to enhance fisheries on private lands with no public access for fishing. Need integrated and concerted effort to develop appropriate landowner incentives program, e.g., conservation easements or land purchases.

We need the help of the MB to work with the BTWG and the appropriate agencies and organizations to increase efforts to implement the large-scale priority action items with the greatest impact. This includes providing CBP staff support to help develop and maintain the tracking tool needed to collate and analyze data for all conservation and restoration activities throughout watershed in order to determine our progress towards the Outcome.