



STREAM HEALTH OUTCOME

SRS 4TH CYCLE: 2024-2026 WORK PLAN

OUTCOME: Continually improve stream health and function throughout the watershed. Improve health and function of 10 percent of stream miles above the 2008 baseline for the Chesapeake Bay watershed.

MANAGEMENT APPROACH 1: Identify an appropriate suite of metrics to measure the multiple facets of stream health to complement, but not replace, the watershed-wide Chessie BIBI (Chesapeake Basin-wide Index of Biotic Integrity)

ACTION 1.1: Determine and report progress.

→ **What are the steps needed for this action?**

- A. ICPRB (Interstate Commission on the Potomac River Basin), USGS (United States Geological Survey) and EPA CBPO (Environmental Protection Agency - Chesapeake Bay Program Office) provide recommendations for organizations responsible to periodically acquire and process available stream data from Bay States and DC.
 - Possible Responsible Parties: ICPRB, USGS, CBPO Data Team, STAR team (Scientific, Technical Assessment and Reporting)
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: 2026
- B. Acquire and process available stream data from Bay States and District of Columbia for the period of 2018 – 2023. The next call for data is in 2024.
 - Possible Responsible Parties: ICPRB, USGS, CBPO Data Team
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: 2026
- C. ICPRB calculates and reports % change in Chessie BIBI index. CBPO will publish and disseminate results.
 - Possible Responsible Parties: ICPRB, USGS, CBPO Data Team, STAR team
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: 2026

ACTION 1.2: Identify additional parameters/metrics to describe and quantify stream health and its stressors to complement, but not replace, existing biological indicators (e.g., Chessie BIBI).

→ **What are the steps needed for this action?**

- A. Consolidate and summarize existing Bay Program, USGS and other relevant research on stream and riparian metrics to include databases associated with the Chessie BIBI, USGS, Chesapeake Bay Healthy Watersheds Assessment
 - Possible Responsible Parties: SHWG, Healthy Watersheds GIT, USGS
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: 2026

- B. Collaborate with USGS as a part of their Science Plan to investigate and define stream stressors and their management to improve stream health, and their development of a suite of models and research for identifying additional biological indicators of stream health beyond the Chessie BIBI.
 - Possible Responsible Parties: SHWG, USGS
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: 2026
- C. Complete Phase 3B of the “Management Approaches to Reduce Stressors of Stream Health”
 - Possible Responsible Parties: SHWG
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: December 2025
- D. Submit funding request to support Phase 3C of the “Management Approaches to Reduce Stressors of Stream Health” plan to discuss findings, identify options, and come to consensus on additional indicators and next steps.
 - Possible Responsible Parties: SHWG
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: Fall 2025
- E. Use information from relevant research to add metrics associated with stream and riparian area health in the monitoring and assessment of the outcome goal.
 - Possible Responsible Parties: SHWG, Habitat GIT, Healthy Watersheds GIT
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: 2026

→ **How do we expect these actions to fill the priority factor or gap? What do you expect to happen when the actions are completed?**

- ◆ These actions fill the following priorities and information gaps:
 - Assessment of stream health towards CBP outcome goal for the period of 2018-2023.
 - Watershed-wide and stream metrics other than current biological indices, such as the Chessie BIBI, to assess physical and chemical health and functions of streams.
- ◆ When the actions are completed, we will have the second interval progress report for the Chessie BIBI data. We will also be finalizing the additional indicator metrics for progress assessments. These two actions will help guide our goals for Beyond 2025.

→ **What are the goals or metrics you will use to determine the impact of your actions?**

- ◆ Updates to the Chessie BIBI indicator on Chesapeake Progress with the second interval data assessment.
- ◆ Development of additional indicators of stream health, to be used to better inform actions and practices to improve stream health.

→ **How will we collect and assess the data that we want to monitor and how will we use the data?**

- ◆ N/A

→ **How will we communicate the results?**

- ◆ Presentation of findings to CBP Management Board
- ◆ Final reports shared across CBP network
- ◆ Press releases for completion of significant items
- ◆ Presentations during SHWG meetings

MANAGEMENT APPROACH 2: Provision of adequate funding and technical resources to support comprehensive ecosystem improvement in watershed management practices, in addition to nutrient and sediment reductions.

ACTION 2.1: Support pooled monitoring approach and other monitoring efforts throughout Chesapeake Bay watershed to inform watershed best management practices that demonstrate stream and riparian ecosystem improvement.

→ **What are the steps needed for this action?**

- A. SHWG provides input to Chesapeake Bay Trust's (CBT) existing pooled monitoring research program, including topics for research and dissemination support of the effort/results prior to issuance of the request for proposal.
 - Possible Responsible Parties: SHWG, CBT, CBT's Pooled Monitoring Advisory Committee
 - Geographic Location: Maryland, District of Columbia, Virginia (as program funders); Chesapeake Bay Watershed (applicable research)
 - Timeline for Completion: Annually
- B. SHWG and members provide input on short- and long-term funding at the request of CBT to support opportunities to expand and develop efforts (e.g., to other Bay Program jurisdictions) of the research program.
 - Possible Responsible Parties: SHWG, CBT, potential funders
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: Annually
- C. Set a schedule and identify partners to find selected research studies and/or their application beyond the study to present at SHWG meeting(s), providing an opportunity to ask new questions, clarify the current state of scientific knowledge for comprehensive ecosystem improvement, and refine the top key restoration questions in the community for future study.
 - Possible Responsible Parties: SHWG, CBT
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: Annually

ACTION 2.2: Support SHWG partners on their programs, tasks or projects to develop tools, models and other resources related to stream health, including the effects and implications of population growth, land use change, and continued development of climate change.

→ **What are the steps needed for this action?**

- A. Complete the Goal Implementation Team (GIT) funded project "Literature review and meta-analysis of existing stream ecosystem metrics known to be affected by climate change and stream restoration practices"
 - Possible Responsible Parties: SHWG, CBT, Stroud Water Research Center
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: 2025
- B. Collaborate with USGS on their Chesapeake Bay Activities that relate implementation of management practices and land use to stream stressors and stream health outcomes.
 - Possible Responsible Parties: USGS, SHWG
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: ongoing

- C. Coordinate with other work groups for information exchange and consistent vision for action.
 - Possible Responsible Parties: CBP work groups
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: ongoing

ACTION 2.3: Assessment and Prioritization of Stream Monitoring Network Coverage

→ **What are the steps needed for this action?**

- A. Hold a stream health monitoring workshop to assess gaps and deficiencies in the current monitoring network.
 - Possible Responsible Parties: University of Maryland Baltimore County, STAR, SHWG
 - Geographic Location: Watershed wide
 - Timeline for Completion: 2025

→ **How do we expect these actions to fill the priority factor or gap? What do you expect to happen when these actions are completed?**

- ◆ These actions will improve our scientific knowledge and understanding of streams and their response to management interventions. More information about the extent of comprehensive ecosystem improvement will be available.
- ◆ The stream monitoring workshop will lay the groundwork for us to begin filling in the gaps of stream monitoring for progress tracking and impacts of watershed management actions.

→ **What are the goals or metrics you will use to determine the impact of your action?**

- ◆ Amount of funds distributed for research by SHWG partners
- ◆ Completion of the monitoring network assessment
- ◆ Prioritization of areas lacking monitoring to guide future funding requests.
- ◆ Number of additional linear feet/miles which are monitored

→ **How will we collect and assess the data that we want to monitor and how will we use the data?**

- ◆ Funding data will be collected from the pooled monitoring program, USGS, GIT funding program and other efforts. It will demonstrate commitment and ongoing investments in understanding stream health.
- ◆ Prioritization and expanding the monitoring network will be assessed by the number of sites monitored annually over time.

→ **How will we communicate the results?**

- ◆ Updates at SHWG meetings
- ◆ Reports and graphics

MANAGEMENT APPROACH 3: Have active and engaged participation by local communities with Federal and State partners as a central component of Bay watershed restoration (*See Management Strategy for full Approach*).

ACTION 3.1: Engage with local communities and include targeted engagement with under-served, overburdened communities to increase participation in stream health concerns.

→ **What are the steps needed for this action?**

- A. Develop a one-page plain-language document on stream health and communities, written specifically for the targeted audience to assist in communicating with those communities
 - Possible Responsible Parties: SHWG, Communications WG, Fostering Chesapeake Stewardship GIT
 - Geographic Location: Chesapeake Bay Watershed

- Timeline for Completion: December 2025
- B.** Prepare outreach material in languages to reach communities with limited English proficiency
- Possible Responsible Parties: SHWG, Communications WG, Fostering Chesapeake Stewardship GIT
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: December 2025
- C.** Identify communities based on EPA’s Environmental Justice Screening Tool and other available resources, including USGS work relating to environmental justice and restoration project planning
- Possible Responsible Parties: SHWG; Communications WG, Fostering Chesapeake Stewardship GIT
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: December 2026
- D.** Meet with community representatives to discuss the SHWG’s goals and understand and document their concerns
- Possible Responsible Parties: SHWG; Communications WG, Fostering Chesapeake Stewardship GIT
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: December 2026

ACTION 3.2: Improve communications and understanding of stream health.

→ **What are the steps needed for this action?**

- A.** Develop summary documents and other communication materials of the results of the “Management Approaches to Reduce Stressors of Stream Health” reports
- Possible Responsible Parties: SHWG, Communications WG, CBP Data Team
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: December 2026
- B.** Continue to collaborate with CBP partners, State and local governments to inform landowners, as well as the general public, of beneficial stream restoration and maintenance practices. This includes individual homeowner practices (e.g. rain barrels, lawn care) and their impact on the community, the streams in their own backyards and public places.
- Possible Responsible Parties: SHWG, Communications WG, Fostering Chesapeake Stewardship GIT, Local Leadership WG
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: December 2026
- C.** Prepare short videos of stream health and importance of healthy stream systems; small actions individuals can take to improve streams.
- Possible Responsible Parties: SHWG, Communications WG, Fostering Chesapeake Stewardship GIT
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: December 2026

ACTION 3.3: Committed cooperation and coordination with other groups within the Chesapeake Bay Program to assure shared resources and information and further the goals of the Chesapeake Bay Watershed Agreement.

→ **What are the steps needed for this action?**

- A.** Have one member of the stream health workgroup, other than the Chesapeake Bay Program staffer, attend the work group meetings of other relevant CBT teams
- Possible Responsible Parties: SHWG

- Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: Ongoing
- B. Workgroup members/interested parties who are involved with other workgroups, can share updates during the Stream Health Workgroup Meetings on any relevant projects/activities being done by those workgroups.
- Possible Responsible Parties: SHWG, CBP GIT members
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: Ongoing
- C. Coordinate with Healthy Watersheds GIT, Forestry WG, Climate GIT, other Habitat GIT workgroups, and Water Quality GIT and CBP teams to hold joint meetings and discuss overlapping interests.
- Possible Responsible Parties: SHWG, CBP GIT members
 - Geographic Location: Chesapeake Bay Watershed
 - Timeline for Completion: Ongoing

→ **How do we expect these actions to fill the priority factor or gap? What do you expect to happen when these actions are completed?**

- ◆ These actions will address the public perception of streams and watershed management practices that impact stream health. The SHWG expects that general knowledge of streams and best management practices will increase, potentially leading to greater support and implementation of these practices.
- ◆ Coordination across the CBP entities will address the identified factor of “Partner coordination” which is needed to integrate the many aspects of ecosystem health and Bay outcomes. Better partner coordination will help us identify cross-cutting needs, research and tools to improve outcome achievement.

→ **What are the goals or metrics you will use to determine the impact of your action?**

- ◆ Number of people/general public interacting with communication materials (ex: number of website views, events with documents distributed)
- ◆ Number of communities connected and engaged with the SHWG

→ **How will we collect and assess the data that we want to monitor and how will we use the data?**

- ◆ Data will be collected from polls, website data, and reports from SHWG members.

→ **How will we communicate the results?**

- ◆ Updates during SHWG meetings
- ◆ Presentation of completed actions to MB during annual SRS cycle update.

MANAGEMENT APPROACH 4: Develop and promote holistic stream restoration design guidelines that identify the level of degradation and improvement of stream functions and key stressors/factors limiting potential uplift.

ACTION 4.1: Facilitate a series of meetings or workshops to summarize how different stream restoration approaches lead to different outcomes and tradeoffs associated with those approaches, as well as discuss ways to reduce unintended consequences.

→ **What are the steps needed for this action?**

- A. Develop a proposal which includes different stream restoration approaches for evaluation and the outcomes to be examined, such as aquatic life measures, a suite of water quality parameters important

for aquatic life, and habitat features associated with streams. Additional focus should be on the evaluation of trade-offs in stream restoration projects.

- Possible Responsible Parties: SHWG, STAC, Habitat GIT
- Geographic Location: Chesapeake Bay Watershed
- Timeline for Completion: 2025

B. Identify and obtain funding or dedicated resources to develop and implement workshops.

- Possible Responsible Parties: SHWG, STAC, Habitat GIT
- Possible Geographic Location: Chesapeake Bay Watershed
- Timeline for Completion: 2025

C. Create and facilitate the workshops. Outcomes may include guidelines and incentives to reduce trade offs which reduce stream health, and create incentives for comprehensive ecosystem improvements.

- Responsible Parties: SHWG, STAC, Habitat GIT
- Geographic Location: Chesapeake Bay Watershed
- Timeline for Completion: 2026

→ **How do we expect these actions to fill the priority factor or gap? What do you expect to happen when these actions are completed?**

- ◆ This action will contribute to a number of priorities and gaps outlined in the Management Strategy. It will increase our ability to manage stream restoration BMPs to reduce ecological stressors and limit resource tradeoffs and unintended consequences. A clear understanding and documentation of resource tradeoffs is necessary for guidelines to be developed which will promote holistic design beyond nutrient and sediment reduction. Additional incentives are likely needed to implement holistic restoration for comprehensive ecosystem improvements.

→ **What are the goals or metrics you will use to determine the impact of your actions?**

- ◆ Policy and guidance for change as needed and recommendations for additional work and research.
- ◆ Number of entities or projects conducted applying new guidelines.
- ◆ Number of operational changes for implementation of stream restoration projects.

→ **How will we collect and assess the data that we want to monitor and how will we use the data?**

- ◆ Data will be collected from post-workshop polls, state regulatory agencies, and reviews of new policies and guidance released over time,

→ **How will we communicate the results?**

- ◆ Meetings, presentations, and reports will be prepared in formats for various audiences, including agency policy makers, practitioners, and the public.