





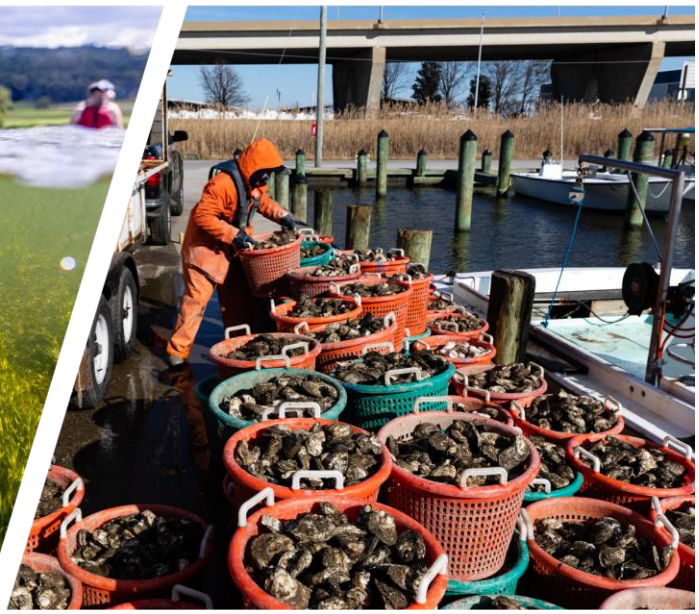

Chesapeake Bay Program
Science. Restoration. Partnership.

Strategic Plan

DRAFT Released for PSC Review

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Chapter 1. Introduction

About the Chesapeake Bay Program

The Chesapeake Bay Program (CBP) is a regional partnership that has coordinated the restoration, conservation and protection of the Chesapeake Bay and its watershed since 1983. The Chesapeake Executive Council (EC), which is composed of the signatory partners listed below, directs CBP in accordance with the Chesapeake Bay *Watershed Agreement* (*Watershed Agreement*):

- Chesapeake Bay Commission, a tri-state legislative body;
- Commonwealth of Pennsylvania
- Commonwealth of Virginia
- District of Columbia
- State of Delaware
- State of Maryland
- State of New York
- State of West Virginia
- U.S. Environmental Protection Agency, representing the federal government

Partnership and collaboration are the foundation of CBP, which is supported by a range of federal and state agencies, local governments, nongovernmental organizations, academic institutions, watershed groups and others. Everyone in this great watershed is invited to take actions to help realize the partnership's vision:

> *"We envision a Chesapeake Bay region where clean water flows, wildlife thrives and farms, forests and fisheries are healthy and productive. It is a place where people from all walks of life feel connected to the land, to the Bay and local waterways, to their communities and to the rich cultural heritage that makes this watershed unique. Together, we are building a future that is environmentally and economically sustainable, resilient and full of possibility—where everyone can enjoy and help conserve the natural beauty of the Bay, and the lands and waters that surround it, today and for generations to come" (Watershed Agreement, 2025).*

Documents Guiding CBP Work

Revised in 2025, the *Watershed Agreement* describes partners' voluntary commitment to shared goals, outcomes and targets that advance the restoration, conservation and protection of the Chesapeake Bay and its watershed. Building off the *Watershed Agreement*, this Strategic Plan will "outline the means for accomplishing each outcome and its targets as well as monitoring, assessing and reporting progress and coordinating actions among partners and stakeholders as necessary" over the next six years. As, at times, subject matter experts use technical language to ensure there is a clear understanding of the management approaches to be undertaken, this Strategic Plan is

primarily written for internal CBP audiences who will collaborate on plan implementation. Recognizing the importance of transparency, partners developed an Executive Summary and Strategic Plan webpage that utilize plain language. The Strategic Plan webpage will also maintain a downloadable version of the complete Strategic Plan.

The Strategic Plan is complemented by a series of separate, outcome-specific workplans, which describe specific actions that will be initiated over the next three years in association with identified management strategies. Each workplan states the resources needed and available to complete activities, potential sources to fill gaps, and specific deliverables and/or impacts that will result from activity completion. The relationship between the *Watershed Agreement*, the Strategic Plan, and the workplans is illustrated in Figure 1.



Figure 1: Relationship between key Chesapeake Bay Program documents

Structure of the Strategic Plan

This Strategic Plan is comprised of introduction and accountability chapters, goal chapters comprised of management strategies that outline the means for accomplishing each outcome of the *Watershed Agreement*, and associated appendices. The **accountability chapter** addresses program-wide adaptive management and monitoring, assessing and reporting of progress. This information is supplemented in each outcome subsection by more specific information about the "**Baseline and Current Condition**" and "**Measuring Progress and Indicators**." The "**Situation Analysis**" in each goal chapter and outcome subsection describes challenges and factors affecting partners' work toward goal and outcome attainment.

"**Management Approaches**" outline the general tactic needed to fill gaps in existing efforts, address the challenges that are described in the "**Situation Analysis**" and identify the CBP's role in each approach. The "**Situation Analysis**" and "**Management Approaches**" each describe:

- How partners will address changing environmental conditions;
- How signatories, other state and federal agencies, local governments, Indigenous representatives, and nonprofit and private partners are engaged;
- Where actions, tools, financial support and technical assistance are needed to empower local governments and others; and
- The steps are necessary to facilitate greater participation in achieving the Outcome

Appendix A includes a "**Snapshot of Signatory and Federal Agency Programs**" that recognizes the significant contribution that partners make toward outcome attainment. Though this content only spotlights a small number of featured programs, it helps partners avoid duplicating existing efforts and target collaborative efforts to areas where a partnership approach adds value. Appendix B highlights key "**Statutory Authorities**."

Strategic Plan Development and Participation in Implementation

Within 18 months of finalizing revisions to the *Watershed Agreement*, goal teams, supported by outcome authors from workgroups and action teams, developed this Strategic Plan and secured the approval of the Policy Steering Committee (PSC). In addition to soliciting stakeholder input during workgroup and goal team meetings, the Strategic Plan development process included a period for public feedback (Figure 2).

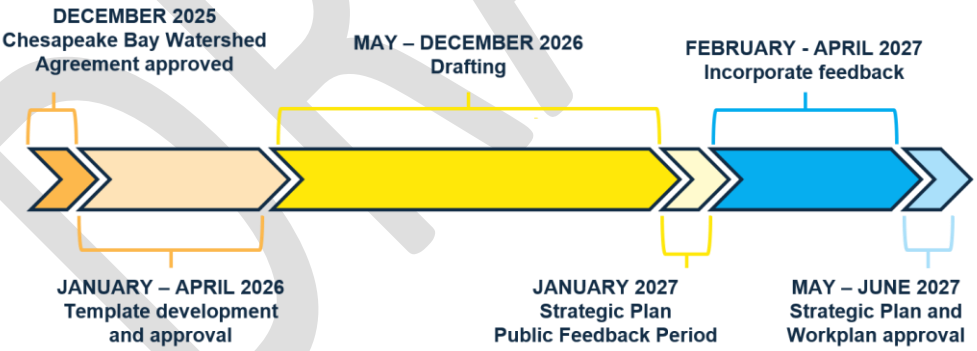

Figure 2. Strategic Plan development timeline

The *Watershed Agreement* notes that, "participation in developing Management Strategies or in the achievement of outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatories and other partners are welcome and encouraged to contribute to the development or implementation of Management Strategies. Entities that choose to engage in this way are listed as

“Participating Partners” in the relevant outcome-specific subsection(s), with the commitments of signatories and federal agencies summarized in Appendix C. On a triennial basis, signatory partners will update the list of outcomes that they commit to participate in and implement. “Participating Partners” are further defined in the workplans, where Lead(s), Signatory Partners and Other Partners are included for each activity.

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Chapter 2. Accountability and Adaptive Management

Chesapeake Bay Program Accountability and Adaptive Management

Through the *Watershed Agreement*, CBP established principles that include employing adaptive management for continuous improvement and operating "with transparency and accountability in program decisions, policies, actions and reporting on progress to strengthen public trust and confidence in our efforts," (2025). Accountability for the *Watershed Agreement*, the Strategic Plan and workplans includes a close connection to CBP's organizational structure and governance. Committees and groups that are assigned responsibility for the development and implementation of specific plans receive oversight from the supervising body and are expected to monitor, assess and report progress through transparent, program-wide mechanisms. Subsequent content in this chapter expands on the accountability relationship of responsibility and oversight for each of CBP's three key planning documents (the *Watershed Agreement*, the Strategic Plan, and the Workplans). Progress review and plan revision are linked to drive proactive and corrective action, prevent progress from stalling or regressing, and to align with three cycles that exist within CBP's adaptive management framework[1] (Figure 3).

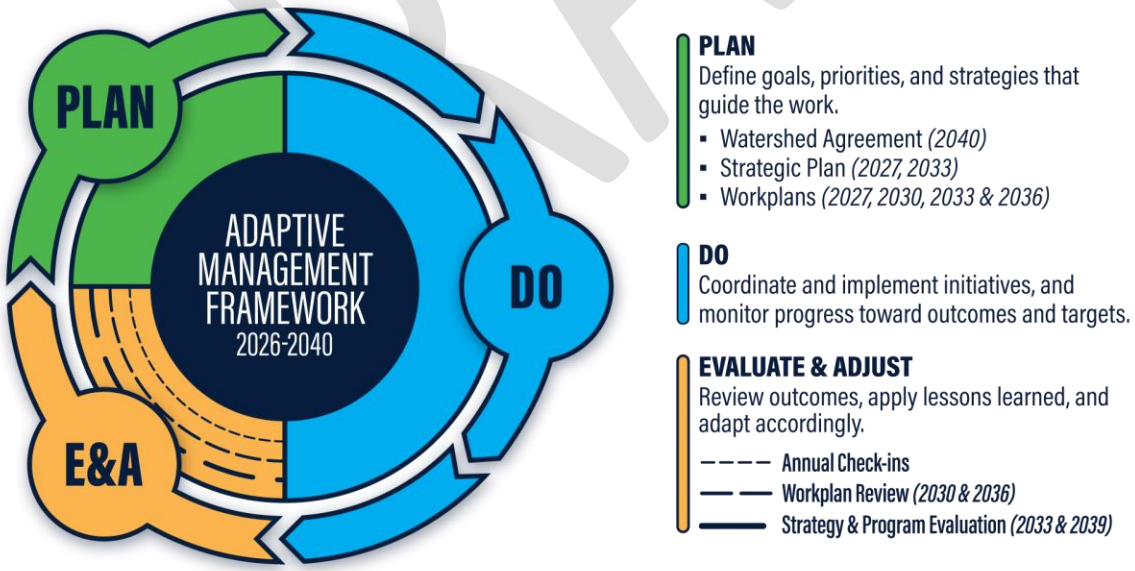

Figure 3 Chesapeake Bay Program adaptive management framework

[1] The adaptive management framework and accountability mechanisms substantially revise the previously employed Strategy Review System by increasing the time to implement management approaches and activities, reducing administrative processes and paperwork and replacing Quarterly Progress Meetings and Biennial Reviews with Annual Check-Ins, Workplan Reviews and Strategy and Program Evaluation.

CBP defines adaptive management as "a framework for strategic planning, action and evaluation leading to knowledge acquisition and continuous improvement in the management of the CBP and collaborative efforts toward the achievement of goals and outcomes of the *Watershed Agreement*" (*Governance and Management Framework for the Chesapeake Bay Program (GMF),* 2026). The *Watershed Agreement*, the Strategic Plan and its management strategies, and the workplans were produced as part of the "plan" portion of the adaptive management framework. The "do" or "action" portion of the adaptive management framework will involve implementation of the management approaches and activities described in this Strategic Plan and the workplans, respectively. Implementation is continued throughout the adaptive management cycle. "Evaluating and adjusting" will be instituted through Annual Check-Ins, Workplan Reviews and six-year Strategy and Program Evaluations. Each of these evaluations supports program learning, decision-making, strategy improvement and accountability.

Each of the following three sections relates one of CBP's planning documents to a specific assessment and adaptive management mechanism. Oversight and responsibility roles related to the partnership structure are described for each document.

The Chesapeake Bay *Watershed Agreement* and Annual Check-Ins

The EC is ultimately responsible for implementing and providing public accountability on progress toward meeting *Watershed Agreement* goals. Annual EC meetings enhance visibility and public support for partnership work. The PSC translates the EC's restoration vision by setting policy, determining priorities and tracking implementation progress on behalf of and with oversight from the EC. The PSC's Annual Check-In meetings enable accountability and adaptive management by giving the partnership a collaborative, public forum to report on the status of implementation progress and funding, seek advice from advisory committees and address implementation needs. Annual Check-Ins keep the partnership coordinated and responsive to emerging challenges and opportunities.

The Strategic Plan and Strategy and Program Evaluations

Goal teams are responsible for the development and implementation of the Strategic Plan and its management strategies and are held accountable for these efforts by the PSC, which approves the strategies. These strategies are developed and implemented over the course of a six-year cycle, which concludes with a Strategy and Program Evaluation. Conducted by an independent third party and guided by the PSC, these evaluations assess (1) progress toward goals, outcomes and targets; (2) the effectiveness of existing strategies; (3) alignment with *Watershed Agreement* principles; and (4) the functioning of CBP governance, structure, operations and practices. Evaluation results, coupled with input received during a public feedback period, inform revisions to the Strategic Plan and its management strategies for the next six-year cycle. The 2039 Strategy and Program Evaluation will prompt amendments to the *Watershed Agreement* in 2040.

The Workplans and Workplan Reviews

Workplans describe collaborative implementation activities that advance progress toward outcome attainment and set clear expectations for success. These documents are developed and implemented by outcome leads, such as workgroups or action teams, and are reviewed and approved by goal teams. Accountability and adaptive management are enabled through synchronized, cross-program Workplan Reviews, which occur at the end of the workplan's three-year cycle. Workplan Reviews are administered by each goal team. During each Workplan Review, outcome leads report progress toward completing stated workplan activities, and document implementation successes, challenges and opportunities for improvement. Workplan Reviews culminate in a CBP-wide symposium that initiates the development, review and launch of the next iteration of workplans. Workplan reviews will be incorporated into the Strategy and Program Evaluations conducted in 2033 and 2039.

Monitoring, Assessing, and Reporting Progress

Monitoring, assessing and reporting on progress are cornerstone commitments of the CBP to transparency, accountability and adaptive management. Through its Indicators Framework, ChesapeakeProgress and Bay Barometer, CBP delivers publicly accessible and scientifically robust products to communicate attainment of the *Watershed Agreement* outcomes and targets.

To determine whether implemented management approaches and activities are having the

intended effect and to track progress toward *Watershed Agreement* outcomes and targets, CBP has established an Indicators Framework. Indicators measure either the direct outputs of activities implemented as part of this Strategic Plan and related workplans, or the environmental, programmatic or system condition related to those outputs and activities. Alternatively, qualitative results, case studies or other information may be documented. When an indicator is not used, this Strategic Plan describes how progress toward outcome or target attainment will be demonstrated, how often progress will be assessed and how CBP will communicate progress to support partner decision-making and accountability. Indicator and other methods are summarized in outcome subsections and are further described on ChesapeakeProgress.

ChesapeakeProgress is a CBP website that provides accurate, up-to-date and accessible data and information on indicators of environmental health, restoration, conservation and stewardship. This website helps oversight groups track CBP's progress toward the attainment of *Watershed Agreement* outcomes and targets. Supplemental materials on ChesapeakeProgress, such as metadata and additional detail on how underlying data are collected, analyzed and interpreted, contribute to scientific integrity.

The Bay Barometer is an annual CBP publication that highlights program accomplishments and reports progress toward the attainment of *Watershed Agreement* outcomes and targets based on updates from the preceding year. Using plain language to convey technical information to a public audience, the report provides insights into the status of Bay resources and progress toward the goals of the *Watershed Agreement*. Together, ChesapeakeProgress and the Bay Barometer support accountability through transparency by allowing the public to access critical data and information that reflects progress toward outcome and target attainment.

Transparency and Future Public Feedback

As a critical part of accountability, CBP is committed to operating transparently. In addition to reporting data and trends on ChesapeakeProgress and in the Bay Barometer, the CBP website provides online access to the *Watershed Agreement*, Strategic Plan and workplans. Documentation associated with Annual Check-Ins, Workplan Reviews and Strategy and Program Evaluations will also be posted online. CBP further demonstrates its commitment to transparency by ensuring that, with limited exceptions, all meetings where the partnership conducts regular business or makes decisions are open for public observation (GMF, 2026).

"Given that the public holds the EC accountable for the *Watershed Agreement* goals… the partnership highly values public participation and follows operating standards that allow

for accessible and robust engagement" (GMF, 2026). During CBP public meetings, opportunities for members of the public to participate in discussions and provide feedback on agenda topics are provided at the discretion of chairs. Additionally, a formal public feedback period will be hosted to seek input on the Strategic Plan revision in 2033 and the *Watershed Agreement* revision in 2040. Stakeholder input will be thoughtfully solicited and integrated, where appropriate, into CBP plans at these critical junctures.

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Chapter 3. Management Strategies for Goal 1: Thriving Habitat, Fisheries and Wildlife

Thriving Habitat, Fisheries, and Wildlife Goal

Protect, restore and sustain fisheries and wildlife, as well as the network of land and water habitats they depend on, to promote a balanced and resilient ecosystem and support local economies and recreational opportunities.

Introduction & Overview

Governance Context & Implementation Directives

While the Chesapeake Bay Program (CBP) facilitates regional alignment of resources, priorities, policy, scientific integration, and progress monitoring, the CBP partnership does not directly manage land, water, or living resources. Statutory authority over fish and wildlife management and protection, land use, and habitat restoration resides within individual signatory jurisdictions (states, the District of Columbia, and federal management agencies). Water quality regulations are separately administered under Clean Water Act (CWA) authorities by the U.S. Environmental Protection Agency (EPA) and watershed jurisdictions.

Achieving the Thriving Habitat, Fisheries and Wildlife (THFW) outcomes relies on leveraging regional science, funding, and management to guide local, state, and federal decision-making, ensuring that voluntary and regulatory actions achieve maximum ecological impact.

Situation Analysis for Goal 1: Thriving Habitat, Fisheries and Wildlife

Across all of the Goal Team's eight outcomes, living resources face cumulative stressors from environmental shifts, land-use changes, and resource constraints.

		Outcomes							
Challenge Category	**Shared Chapter-Level Challenge**	1.1 Blue Crabs	1.2 Brook Trout	1.3 Fish Habitat	1.4 Fish Passage	1.5 Oysters	1.6 Stream Health	1.7 SAV	1.8 Wetlands
Changing Environmental Conditions	Climate-driven impacts (rising water temperatures, sea level rise, altered hydrology, extreme weather) degrading tidal and freshwater habitats	X	X	X	X	X	X	X	X

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	and shifting species distributions.								
Ecosystem-Based Science & Management	Gaps in science and data integration needed to support ecosystem-based fisheries management, multi-species forage assessments, and targeted habitat restoration.	X	X	X	X	X	X	X	X
Habitat Degradation & Land Use	Historical and ongoing habitat loss driven by land-use changes, coastal development, altered stream channels, and legacy water quality impairments.	X	X	X	X	X	X	X	X
Capacity & Living Resource Leadership	Sustaining the funding, long-term technical partnerships, staffing pipelines, and leadership commitments required for ongoing living resource conservation.	X	X	X	X	X	X	X	X
Cross-Jurisdictional Alignment	Coordinating policy, regulations, and resource allocation across multiple state and federal jurisdictions with differing statutory frameworks.	X	X	X	X	X	X	X	X
Community Engagement	Engaging local communities and waterfront stakeholders—especially in areas where human activities and critical habitats overlap most heavily—to build stewardship and guide local actions.	X	X	X	X	X		X	X

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Goal Team-Wide Strategic Connections & Synergies

The success of the THFW Goal is deeply interwoven with other Chesapeake Bay Watershed Agreement goals, requiring explicit integration across teams:

- **Clean Water Goals (TMDL Synergy):** Fish and wildlife habitat assessments and implementation successes, stream health metrics, and SAV targets directly align with the Agreement's clean water objectives. Best available science from fish

habitat mapping provides a framework to prioritize water quality practice implementation (such as TMDL Best Management Practices) in areas that deliver the highest co-benefits for living resources.

- **Healthy Landscapes:** Conserving riparian buffers, forested watersheds, wetlands, community greenspaces, and coastal shorelines preserves the structural land-water connections needed to sustain coldwater species (e.g., brook trout), freshwater mussels, and upland and aquatic ecosystems. Ensuring integration of adaptation strategies will strengthen resilience of fisheries, wildlife and habitats to changing environmental conditions.
- **Engaged Communities:** Connecting local decision-makers, private landowners, and waterfront residents with habitat science drives stewardship. Engaging residents who live near the water, as well as individuals who work or recreate on the Bay and its tributaries, helps mitigate local user conflicts while promoting habitat protection and ecosystem services.

Management Approaches for Goal 1: Thriving Habitat, Fisheries and Wildlife

To address cross-cutting challenges and support outcome attainment across all eight subchapters, the THFW Goal Team will pursue the following core management approaches:

Management Approach 1.0.1: Advance Ecosystem-Based Science for Fisheries, Habitat and Wildlife.

Leverage best available science, spatial modeling, and watershed-wide fish habitat assessments to fill gaps in ecosystem-based aquatic resource management, evaluations of forage availability, and habitat restoration and protection prioritization.

Management Approach 1.0.2: Strengthen Cross-Jurisdictional Coordination & Living Resource Policy

Facilitate alignment among state and federal resource agencies as well as non governmental organizations and private entities to harmonize management policies, support joint monitoring, and coordinate regional restoration priorities.

Management Approach 1.0.3: Align Habitat Restoration with Clean Water & Landscape Initiatives

Partner with Clean Water and Healthy Landscapes Goal Teams to prioritize and align implementation of TMDL BMPs, habitat restoration, and land conservation in areas that maximize benefits to both living resource resilience and water quality.

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Management Approach 1.0.4: Expand Community Engagement in Shallow-Water & Living Resource Zone

Collaborate with the Engaged Communities Goal Team to build awareness among local leaders, coastal communities in tidal and nontidal areas, and landowners to empower local stewardship to protect aquatic and adjacent upland habitats.

Management Approach 1.0.5: Build Capacity, Technical Networks, and Adaptive Leadership

Support partner capacity by identifying, implementing, and institutionalizing long-term funding mechanisms, technical assistance networks, and workforce development strategies necessary to sustain living resource programs over the six-year cycle.

Management Approach 1.0.6: Facilitate cross Workgroup and Goal Team coordination

Work across THFW workgroups and those of other Goal Teams to identify complimentary outcome priorities, areas of collaboration, and opportunities to address shared challenges.

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Blue Crabs Outcome

Blue Crab Outcome: Achieve a sustainable Bay-wide blue crab fishery through cross-jurisdictional coordination that supports healthy blue crab populations and thriving fish communities.

- Maintain blue crab abundance and harvest rate targets as determined by the most recent benchmark status assessment.
- Achieve cross-jurisdictional coordination by annually evaluating and communicating blue crab population status to resource managers and the public through the Blue Crab Advisory Report.

Note: Chesapeake Bay Stock Assessment Committee (CBSAC) clarifies that the term "fish communities" in the outcome should be interpreted as "fishing communities," reflecting the Committee's focus on sustainable fishery management and support for the crabbing industry rather than broad ecosystem health. Additionally, CBSAC recommends updating the term "status assessment" to "stock assessment" in the first target statement. "Benchmark stock assessment" is the standard fisheries management term for a formal, comprehensive evaluation of population health, which more accurately aligns with the intent and underpinning science of this target.

Baseline and Current Condition

A significant decline in the blue crab population in 1998 followed by continued low abundances through 2008 drove jurisdictions to rethink the management framework for the blue crab fishery in the Chesapeake Bay. A 2011 benchmark stock assessment emphasized the need to protect the spawning stock and identified female-specific biological reference points for management. These reference points were revised in the 2017 stock assessment update and adopted for management in 2020. Through 2026, the status of the Chesapeake Bay blue crab stock was evaluated by comparing estimates of adult female abundance from the Chesapeake Bay Blue Crab Winter Dredge Survey (WDS) and female exploitation rates from harvest reports to these female-specific biological reference points.

Since 2014, the stock has not been overfished, and overfishing has not been occurring as defined by the management reference points; however, concerns resurfaced in 2020 with declining abundances and, in particular, low recruitment (juvenile crabs). In 2023, a new benchmark stock assessment was conducted to re-evaluate the dynamics of the population and the fishery. The benchmark, completed in June 2026, revised the outlook of

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the stock and recommended new management reference points for both mature females and males. Starting in 2027, the status of the Chesapeake Bay blue crab stock will be determined through an annual stock assessment update that will provide a comparison of sex-specific estimates of abundance and fishing mortality relative to the new corresponding reference points. A recruitment reference point was also developed and can be used to provide additional context for changes in the population and fishery.

Monitoring Progress and Indicators

The status of the Chesapeake Bay blue crab population is assessed annually by the CBSAC, which functions as the CBP Blue Crab workgroup. Historically, stock status was evaluated solely based on WDS estimates of adult female abundance and calculated female exploitation rates from harvest reports. These estimates were compared to target and threshold reference points for adult female abundance and female exploitation identified in the 2011 benchmark stock assessment and 2017 update. If adult female abundance fell below the threshold reference point, the stock was considered overfished (or depleted). If the female exploitation rate exceeded the threshold reference point, overfishing was occurring.

Starting in 2027, CBSAC will conduct annual stock assessment updates by running the 2026 benchmark stock assessment model using new data from the previous year, including the most recently completed WDS data. Model-estimated abundances and fishing mortalities for both males and females will be compared to the corresponding management reference points. Stock status will be determined based on where the model estimates fall in relation to the threshold reference points. If abundance estimates fall below the threshold, the stock will be considered overfished (or depleted). If fishing mortality estimates exceed the threshold, overfishing is occurring. Abundances below the threshold and fishing mortality above the threshold would indicate that fishery managers need to limit harvest to conserve the population. A recruitment reference point developed in the 2026 stock assessment can also be used as a population indicator.

Each year, CBSAC publishes the abundance and harvest estimates, the stock status, and the resulting management advice in the annual Blue Crab Advisory Report, which is distributed to fishery managers and the public.

Situation Analysis for Outcome 1.1: Blue Crabs

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and

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outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

Challenges	Within CBPs sphere of influence	Outside of CBP's sphere of influence
Consistent high male exploitation rates	**X**	
Improved commercial and recreational harvest estimates	**X**	
Land-based pollution (hypoxia)*	X	
Changing environmental conditions (temperature/salinity)		X
Predation pressure (e.g., blue catfish, red drum)*		X
Standardization of data across jurisdictions (Data Hub)	**X**	
Habitat availability (SAV, marsh)*	**X**	
Interjurisdictional coordination	**X**	

Management Approaches for Outcome 1.1: Blue Crabs

Management Approach 1.1.1: Maintain Sustainable Population Based on Best Available Science

CBSAC will assess blue crab stock status annually based on sex-specific abundance and fishing mortality estimates and the corresponding reference points identified in the stock assessment update. CBSAC will make management recommendations for the upcoming crabbing season based on the status of the stock. Jurisdictions will be responsible for responding to CBSAC recommendations through appropriate management action that will ensure a sustainable population.

Management Approach 1.1.2: Enhance Harvest Estimates and Quantification

Jurisdictions will continue to promote electronic reporting systems for commercial crabbing to improve real-time harvest data. Work will continue to address gaps in recreational harvest data and better quantify effort to determine the efficacy of limited-entry, pot-limit, and seasonal closure regulations.

Management Approach 1.1.3: Quantify Environmental and Ecological Drivers

CBSAC will identify and support research needs that will improve understanding of blue crab population dynamics and inform management decisions. Research priorities include habitat availability, predation (e.g., blue catfish), food availability, and environmental stressors (hypoxia, temperature, and oceanic conditions).

Management Approach 1.1.4: Standardization and Accessibility of Data

CBSAC will develop and maintain a data hub to house all relevant blue crab data sets including commercial harvest data, trawl survey data, and WDS data. Standardizing and compiling all of these data sets in one location will streamline the annual stock assessment update process and provide more opportunities for collaborative, Bay-wide blue crab research projects. Access to these data will be provided at the discretion of the data custodians and will be limited to CBSAC members conducting the stock assessment and other applicable research projects and approved research partners.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, "participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners:**
  - Maryland Department of Natural Resources (MDNR)
  - Virginia Marine Resources Commission (VMRC)
- **At-Large Members of the Blue Crab Workgroup (CBSAC):**
  - Potomac River Fisheries Commission (PRFC)
  - University of Maryland Center for Environmental Science (UMCES)
  - Virginia Institute of Marine Science (VIMS)
  - National Oceanic and Atmospheric Administration (NOAA)
  - Morgan State University, Patuxent Environmental & Aquatic Research Laboratory (PEARL)

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Brook Trout Outcome

Brook Trout Outcome: Protect and enhance brook trout within the Chesapeake Bay watershed by increasing occupancy, abundance and resilience to changing environmental conditions.

- By 2040, increase brook trout occupancy by 1.5% (233 miles) in watersheds supporting healthy populations while achieving no net loss in other watersheds.
- By 2040, increase abundance at 10 long-term monitoring sites.
- By 2040, reduce identified threats by 15% to increase brook trout resilience in watersheds supporting healthy populations.

Baseline and Current Condition

Wild (stream born) brook trout populations occupy approximately 30% of their historic range. Within the Chesapeake Bay watershed, most wild brook trout are found in headwater streams where human disturbance is minimal and forest cover is greater than 68-75% (Hudy et al. 2008, Wagner et al. 2013).

The 2016 Eastern Brook Trout Joint Venture (EBTJV) assessment, established as a baseline, indicated 1,713 wild brook trout patches in the Chesapeake Bay watershed, covering 33,250 square kilometers. The 2024 CBP Brook Trout Workgroup Facilitating Brook Trout Outcome Attainability report documented a 0.5% net increase in occupancy from 2016–2023. This net increase, combined with newly discovered populations, brings the total area of allopatric (i.e., brook trout only) occupied habitat to 15,305 square kilometers.

Table 1: 2024 changes in brook trout occupancy in the Chesapeake Bay Watershed (Rummel et al. 2024)

Population Category	**2016 Baseline Area (km^2)**	**2024 Apparent Total Area (km^2)**	**Apparent Net Gain (km^2)**	**Adjusted Net Gain (km^2)**	**Confirmed True Net Gain (km^2)**
Total Occupied Brook Trout	**33,213**	**36,168**	**+2,955**	**+742**	**+167**
Allopatric (Brook trout only)	19,402	15,305	-4,097	*Unknown*	*Unknown*
Sympatric (With	13,811	*20,863*	+7,052	*Unknown*	*Unknown*

brown/rainbow trout)					

Explanation of Net Gain Categories:

- Apparent Net Gain (+2,955 km^2): The raw difference in total area between the 2016 and 2024 assessments, representing an 8.9% increase.
- Adjusted Net Gain (+742 km^2): The recalculated gain after removing 2,212 km^2 of newly sampled "unassessed waters". State biologists noted that these areas were likely already occupied by brook trout in 2016, but simply hadn't been sampled yet, making this an estimated 2.2% “true” increase rather than an 8.9% increase.
- Confirmed True Net Gain (+167 km^2): The most accurate, verified estimate of newly occupied habitat. This is calculated by taking the adjusted net gain and additionally removing any

Specific Area Shifts for Allopatric and Sympatric Populations: The final assessment does not provide the exact final net gain totals for the allopatric and sympatric sub-categories, but instead details the following specific spatial changes between 2016 and 2024:

- +3,114 km^2: Catchments that had no brook trout in 2016 became **allopatric** in 2024.
- +1,739 km^2: Catchments that were **sympatric** in 2016 shifted to **allopatric** in 2024.
- -1,347 km^2: Catchments that were **allopatric** in 2016 shifted to **sympatric** in 2024.
- -665 km^2: Catchments that were **allopatric** in 2016 shifted to having no brook trout present in 2024.

Monitoring Progress and Indicators

Indicator: Brook Trout Occupancy**.**

Progress is assessed using the EBTJV’s 3–5 year range-wide assessment. Jurisdictions report annual habitat gains and losses (km^2) to the EBTJV using a standardized occupancy reporting protocol for integration into their range-wide assessment reports. Progress will be assessed relative to percentage gains in healthy watersheds and no net loss in other watersheds.

Indicator: Abundance Monitoring**.**

Jurisdictions conduct annual monitoring at 10 long-term Brook Trout Abundance Monitoring Sites (BTAMS), and report population census data to the Brook Trout Workgroup (BTWG).

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Indicator: Reducing Identified Threats.

The BTWG uses the Habitat Tracker to document restoration projects (e.g., forested riparian buffers, aquatic organism passage, acid mine drainage, dirt and gravel road improvements) and land conservation projects to monitor progress toward this outcome.

Situation Analysis for Outcome 1.2: Brook Trout

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

Challenges	Within CBPs sphere of	Outside of CBP's sphere of
Land development and habitat fragmentation	X	
Climate change: Increased water temperature, droughts, flashier storms*		X
Changes in water chemistry (e.g., 6PPD-q, fracking water)	X	X
Legacy Acid Mine Drainage (AMD)	X	
Undersized/blocking culverts (fish passage)	X	
Livestock access to streams	X	
Increasing human population strain		X
Consistency in interjurisdictional funding		X
Data consistency in eDNA/occupancy monitoring	X	

Management Approaches for Outcome 1.2: Brook Trout

Management Approach 1.2.1: Identify and Communicate Priority Focal Areas.

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Use Trout Unlimited's Conservation Portfolio and Management strategy to help identify restoration priorities in watersheds supporting healthy populations (i.e. stronghold and persistent patches).

Management Approach 1.2.2: Refine and Apply Decision Support Tools.

Educate managers on the use of Trout Unlimited's Eastern Brook Trout Conservation Portfolio, the Chesapeake Bay Fish Passage Prioritization Tool, NACC, and the USGS ecoSHEDS website to adapt to changing environmental conditions.

Management Approach 1.2.3: Continue and Expand Monitoring.

Jurisdictions will continue assessment reporting to EBTJV to track occupancy. A minimum of two BTAMS will be identified in each jurisdiction in 2026 to establish a new long-term monitoring network to track abundance of brook trout (10 total). Expand the use of eDNA to complement ongoing monitoring efforts to better inform brook trout losses and track occupancy progress.

Management Approach 1.2.4: Targeted Restoration of Strongholds.

Implement priority restoration practices that address aquatic organism passage, AMD, dirt and gravel road runoff, riparian forest buffers, livestock exclusion, and unprotected lands to expand occupancy and increase resiliency in priority watersheds. Use the Habitat Tracker to track progress.

Management Approach 1.2.5: Management Approach 1.2.5Provide science to support management

Coordinate with academic and federal partners to model groundwater influence on stream temperatures, emerging water quality threats, and assess the impacts of land use and climate change on population dynamics.

Management Approach 1.2.6: Implement recommendations of 2026 STAC Report, as funding and partner interest allows.

Establish and maintain Brook Trout Collaborative with State, Federal, County, and NGO partners. Work with partners to share conservation grant opportunities and coordinate project tracking.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, “participation in developing

Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners:**
  - TBD, will need to be added after November by signatory partners
- **Other Partners:**
  - U.S. Fish and Wildlife Service
  - U.S. Geological Survey
  - National Park Service
  - USDA Forest Service
  - USDA Natural Resource Conservation Service
  - EBTJV
  - Trout Unlimited
  - Western Pennsylvania Conservancy
  - West Virginia University
  - Eastern and Western Pennsylvania's Coalitions for Abandoned Mine Reclamation
  - Various county governments/DOTs.
  - Maryland
  - New York
  - Pennsylvania
  - Virginia
  - West Virginia

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Fish Habitat Outcome

Fish Habitat Outcome: Fish Habitat Outcome: Achieve and maintain suitable shallow water fish habitat in tidal and nontidal areas for key species through focused water quality conservation and restoration improvements informed by assessments of habitat and fisheries information.

- Improve the quantity and quality of tidal shallow water fish habitat above baseline conditions as determined by a Bay-wide assessment of fish habitat conditions.
- Increase the consideration of forage species in fishery management decision-making for key predators by developing annual reports of prey status as good, uncertain, or poor.
- Improve the quality of nontidal fish habitat by continuing to assess the overall condition and suitability in the watershed to support healthy communities and inform effective restoration, conservation and management actions.
- By 2040, improve 270 stream miles of waters impaired by acid mine drainage to continually increase available habitat supporting fish populations.
- Develop comprehensive freshwater mussel conservation plans for 10 tributaries and implement key recommendations from at least five of these plans by 2040.

Baseline and Current Condition

Tidal Fish Habitat

The watershed-wide assessment will provide the quantitative baseline for tidal shallow water fish habitat, utilizing the Habitat Suitability Index (HSI) to score 92 tidal segments. The model will be integrating substrate, wetlands, SAV, bathymetry, shoreline armoring, and WQ data along with fish survey data for three species (croaker, juvenile striped bass and bay anchovy). The HSI is under development with initial demonstration models expected late 2026-early 2027.

Forage Fish

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The foundational work for assessing forage baseline is here.

Nontidal Fish Habitat

Baseline assessments are ongoing to identify healthy fish communities and target conservation and restoration. Efforts have compiled needed predictors and response data sets that have led to completion of an interim 1:100k assessment and a soon to be released 1:24,000 assessment that satisfies this need.

The 1:24,000 map scale assessment is also predicting watershed-wide conditions back to 1985, which can help evaluate long-term trends and thus optimal improvement goals. Going forward, the non-tidal fish habitat team will increase its interaction with the Stream Health WG (and other WGs like Brook Trout and Invasive Catfish) to leverage their efforts to improve our assessment of fish habitat. The assessment would also benefit from adding additional measures to the existing metric-based assessment, including incorporating key fish species of interest (e.g. Brook Trout), fish health, and important instream stressors.

Acid Mine Drainage (AMD)

The spatial extent and severity of historical legacy impacts from acid mine drainage (AMD) vary across the Chesapeake Bay watershed, though impairment remains high in South-Central and Central Pennsylvania and Western Maryland. Hundreds of legacy coal mine discharges release heavy metals—primarily iron, aluminum, and manganese—and low-pH water into local tributaries, with Pennsylvania alone accounting for over 1,300 AMD-impaired stream miles within the Bay basin. In Western Maryland, hot spots remain concentrated in Garrett and Allegany counties, impacting key sub-watersheds of the North Branch Potomac River. While active lime dosing and passive limestone treatment systems have mitigated localized acidity, AMD remains a primary chemical stressor limiting aquatic biodiversity in impacted upper-watershed streams.

Freshwater Mussels

The availability of historic as well as contemporary freshwater mussel survey data varies considerably across the Bay watershed; therefore, uncertainty about current conditions for freshwater mussels is generally high. Despite uncertainties, most of the Bay watershed's native freshwater mussel species populations are declining. Of the approximately two dozen extant native species, four species are federally listed as endangered (2) or threatened (2) and ten are considered vulnerable/at-risk by at least one Bay jurisdiction. Only three species are considered to have secure/stable populations in the Bay watershed.

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Monitoring Progress and Indicators

Indicator: Tidal Fish Habitat Assessment

Use of the Habitat Suitability Index (HSI) scores across 92 tidal segments to assist in the prioritization of water quality improvements and habitat conservation & restoration opportunities.

The HSI is still under development and decisions regarding which elements will serve as indicators and how often the HSI will be updated will need to be determined by both the Fish habitat WG and Clean Water Goal Team.

Indicator: Forage Status Reports

Potential suite of forage metrics: (1) Relative prey abundance/biomass, (2) Diet-based indices, (3) Prey-Predator Ratios (PPR), (4) Consumption-Prey Ratios (CPR), (5) Other (e.g., predator condition) tracking 14 dominant forage groups that also assess when status is good, marginal or poor.

The foundational work for developing these forage indicators is provided in more detail here.

Indicator: Nontidal Habitat Suitability

Refinement of the existing metric-based assessment of fish habitat. Occupancy and/or abundance for key species of interest. Identify key invasive species and their effect on fish habitat in partnership with the Invasive Catfish WG. Refinement and expansion of health assessments of key species. Once a team is established, agree on a set baseline and improvement target based on members expertise and experience.

Indicator: AMD Remediation Progress

Number of AMD stream miles improved which demonstrate sustained improvements in fish habitat by reaching the water quality and biological standards required to support healthy aquatic life, as documented through state-level biological monitoring and assessments

Indicator: Freshwater Mussel Plan Implementation

Conservation plans developed for ≥ 10 tributaries. Number of key recommendations implemented.

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Situation Analysis for Outcome 1.3: Fish Habitat

The following table identifies challenges that will impact progress towards attaining the Fish Habitat Outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Workgroup members as being priorities for the Fish Habitat Workgroup to seek to address or make progress against through the development of Workplan activities.

Challenges	Within CBPs sphere of	Outside of CBP's sphere of
Tidal Fish Habitat		
Shoreline Condition*/Local Land Use	**X**	**X**
Availability of data	**X**	
Environmental Drivers of Recruitment*		**X**
Forage		
Data Gaps in Forage Monitoring	**X**	
Variable Habitat Requirements by Species	**X**	
Environmental Drivers of Recruitment*		**X**
Nontidal Fish Habitat		
Changes in flow regimes*	**X**	
Shoreline Condition*/Local Land Use	**X**	**X**
Acid Mine Drainage		
Regulatory/Fiscal Constraints on AMD Restoration	**X**	
Freshwater Mussels		
Data sharing across jurisdictions	**X**	
High uncertainty within FWM population demography		**X**
Invasive Species*	**X**	
Challenges for all Targets		
Changing Environmental Conditions*		**X**
Differences in management strategies across jurisdictions	**X**	
Funding availability	**X**	

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Management Approaches for Outcome 1.3: Fish Habitat

Management Approach 1.3.1: Conduct 2026 Baseline Assessment for Tidal Fish Habitat and Utilize Results for Water Quality Prioritization

Habitat conditions are not currently used by the CBP to target water quality and habitat restoration actions that could have a greater positive impact on living resources. The development of a HSI creates a common science based baseline by which the CBP can better target water quality and habitat improvements with the goal of more effectively improving living resource outcomes. This approach executes a Bay-wide HSI analysis. Workflow includes habitat data compilation (NOAA), statistical analysis (UMCES/USGS/EPA), modeling (VIMS), and segment scoring/review (CBP). Tiered targeting will identify "hot spots" for restoration based on HSI scores. The HSI outputs will be shared through a coordinated process between THFW GT and Clean GT to utilize the results in identifying priority areas for water quality improvements that can be integrated into WIPs and to identify synergies with other outcomes where joint restoration initiatives could occur. Updated tidal fish habitat assessments will be planned and implemented to track changes through 2040.

Management Approach 1.3.2: Integrate Forage Species into Fisheries Management

Many forage species in the Chesapeake Bay watershed are not managed, however, their importance as food for managed predators (such as Striped bass) is well known. Changes in forage species composition and abundance in the watershed can therefore impact managed predators, yet information on forage dynamics and impacts to higher trophic levels is not currently considered when making fishery and habitat management decisions. The development of forage indicators can address this gap by developing clear and useful information that can inform fishery and habitat management decisions. Development of annual forage status reports to inform knowledge of predator-prey dynamics. Monitor 14 forage groups (e.g., Menhaden, Anchovy, Mysids, Polychaetes). Utilize gastric evacuation models to quantify predatory demand by six biomass-dominant predator fishes (Striped bass, summer flounder, weakfish, Atlantic croaker, white perch, spot). Information will be shared via annual forage reports.

Management Approach 1.3.3: Continuous Assessment of Nontidal Habitat Quality

Refinement of assessment tools to monitor habitat suitability, supporting informed land management and planning.

Management Approach 1.3.4: Prioritize Acid Mine Drainage (AMD) Restoration Sites

Addressing AMD relies on collaborative communication, comprehensive water quality monitoring, and targeted aquatic resource data to effectively identify and prioritize watersheds and measure stream mile improvements. By implementing strategic active and passive treatments and projects, the Partnership will focus on remediating degraded streams to maximize habitat availability for fish populations.

Management Approach 1.3.5: Develop and Implement Freshwater Mussel Conservation

Plans Develop conservation plans that may contain, yet not be limited to, inclusion of the following:

1. Synthesize existing/available information to: map and categorize habitat in order to define historic range according to a combination of population status, habitat condition, and habitat vulnerability. Note that key recommendations may be: conduct FWM surveys to close data gaps; develop habitat suitability models; generate conservation/restoration opportunity maps.
2. Take actions to maintain and conserve existing populations.
3. Implement actions to improve population health and diminish threats to key populations.
4. Increase species representation and population redundancy through augmentation and reintroduction.
5. Adopt monitoring programs to inform recovery and adaptive management strategies.

Freshwater Mussels Workgroup intends to identify ≥ 10 tributaries and count implementation for key recommendations from ≥ 5 tributaries by 2040.

Participating Partners

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- Signatory Partners:
    - TBD, will need to be added after November by signatory partners
- Other Participating Partners:
    - Chesapeake Bay Foundation
    - NOAA
    - EPA
    - USGS
    - Delaware Department of Natural Resources and Environmental Control (DNREC)

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Fish Passage Outcome

Fish Passage Outcome: Improve habitat and water quality while creating more resilient and sustainable populations of fish and other aquatic organisms by removing barriers throughout the Chesapeake Bay watershed's coastal and freshwater rivers and streams.

- Restore passage and connectivity to at least 150 miles of aquatic habitat every two years.

Baseline and Current Condition

Across the Chesapeake Bay watershed, over 6,960 dams and 1,397 road-stream crossings are classified as 'severe barriers' that fragment our rivers and streams. Fish passage projects are vital to restoring connectivity to aquatic communities including migratory and resident fish and freshwater mussels throughout the watershed.

Dams, road-stream crossings, and other instream barriers block diadromous fish (those that migrate between sea and freshwater to complete their life cycle) from accessing their historic spawning and rearing habitats, contributing to declines of migratory species including anadromous and catadromous fish. Resident fish and other aquatic organisms, including species of conservation concern and Brook Trout, are also significantly impacted by habitat fragmentation caused by instream barriers. Fish populations may also be negatively impacted by degraded habitat quality (e.g., water quality including acid mine drainage and thermal barriers), and other impacts driven by changing environmental conditions.

The Fish Passage Workgroup (Workgroup) supports efforts to restore aquatic connectivity through actions such as removing obsolete dams, installing fish lifts or technical fishways, and replacing culverts. Aquatic communities in the Chesapeake Bay will benefit from increased access to habitats necessary for spawning, rearing, refuge, and foraging. These efforts also improve habitat and water quality (including drinking water supplies) and deliver social benefits including increased safety, recreational opportunities, and lower infrastructure maintenance and repair costs.

Workgroup members and their partners remove dams, install fishways (when dam removal is not feasible), and replace culverts to restore fish passage across the watershed. From 1989 to 2025, approximately 28,919 miles of river and stream habitat in the Chesapeake Bay watershed have been re-opened to fish passage. These projects are evaluated and

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prioritized across the watershed using the Chesapeake Fish Passage Prioritization Tool (Tool) jointly developed by the Workgroup and The Nature Conservancy.

Monitoring Progress and Indicators

Indicator: Miles of Aquatic Habitat Opened

Workgroup members and coordinators from each jurisdiction use the Tool to document completed fish passage projects and calculate upstream functional network (UFN, Figure 1) restored annually. The UFN is reported as the river and stream miles of habitat opened every two years through the Strategy Review System. This standardized process maintains consistency and comparability of reporting from across the watershed, and results in a reliable dataset that supports integrity of the indicator.

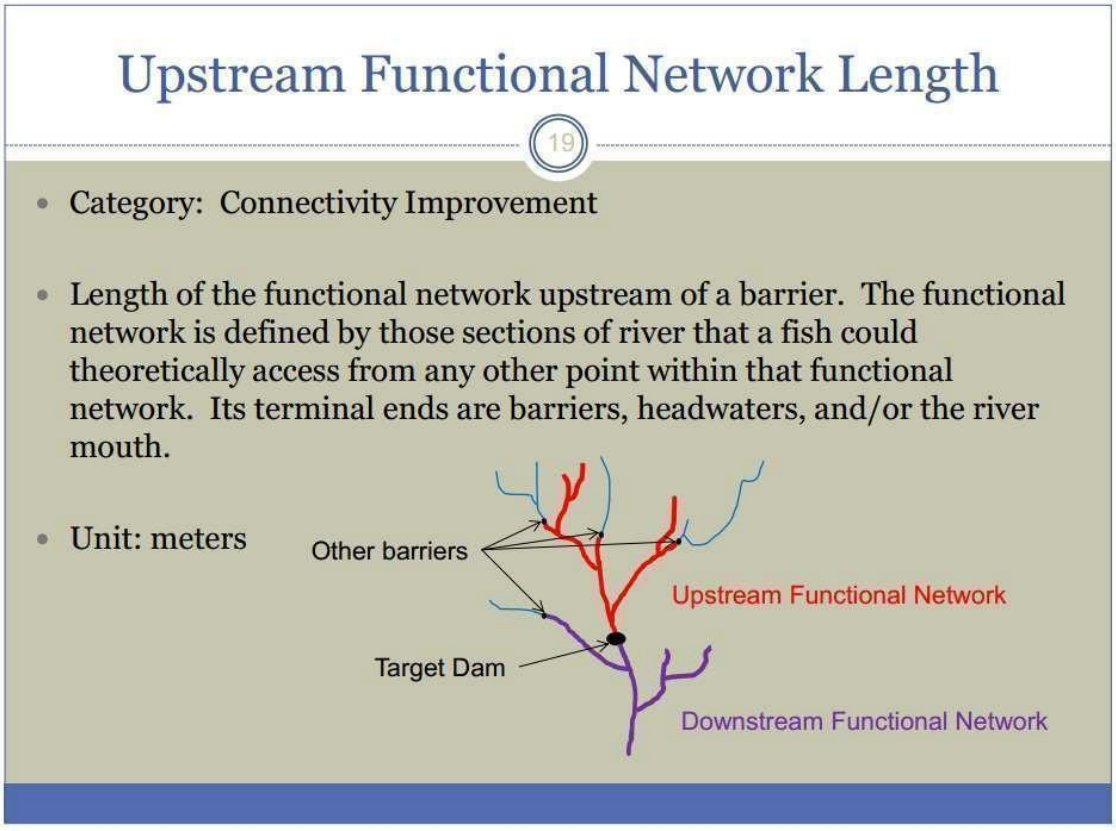

Figure 4. Description of Upstream Functional Network Length

Situation Analysis for Outcome 1.4: Fish Passage

The following table identifies challenges that will impact progress towards attaining the Fish Passage Outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges

are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by Workgroup members as being priorities for the Fish Passage Workgroup to seek to address or make progress against through the development of Workplan activities.

Challenges	Within CBPs sphere of	Outside of CBP's sphere of
Community/landowner willingness to allow barrier removal projects	**X**	
Limited State and Federal Legislation to facilitate fish passage	**X**	
Insufficient funding to incentivize projects or support implementation and capacity building	**X**	
Limited understanding of ancillary social and safety benefits among dam owners, policymakers, and local governments	**X**	
Lengthy, complex permitting processes and infrastructure conflicts (e.g., sewer/water line relocations) for barrier removal and road-stream crossing projects	**X**	
Target species populations in decline region-wide*		X
Selecting the most cost-effective projects for implementation given limited funding	**X**	
Invasive species may be able to spread if barriers are removed.	**X**	

Management Approaches for Outcome 1.4: Fish Passage

Management Approach 1.4.1: Prioritization Efforts for Fish Passage Projects

To prioritize projects, the Workgroup will use the Tool to assess the likely ecological "return on investment" associated with a fish passage project. Project prioritization may be conducted in coordination with the state barrier removal communities of practice (e.g., Virginia Stream Barrier Removal Task Force). The Tool provides data on 39 metrics available from 5 prioritization categories including: Connectivity Status, Connectivity Improvement, Watershed and Local Condition, Ecological, and Size/System Type. Other available map layers will be used to prioritize fish passage restoration at instream barriers and to ensure projects provide socioeconomic benefits to local communities. In general, high-priority barrier removal projects have the following qualities (not in order of priority):

- Reconnects habitat for migratory and resident fish and other aquatic organisms

- Provides benefits to multiple species including species of conservation concern and species supporting commercial and recreational fisheries
- Achieves the largest habitat gains
- Improves access to high-quality habitat
    - Consider invasive species when evaluating barrier removal
- Provides community co-benefits

Management Approach 1.4.2: Funding Fish Passage Projects

Leverage Workgroup to identify and secure all available sources of funding in support of aquatic habitat connectivity efforts to include traditional and innovative sources. Continue to participate in the grant application process to either directly apply for grants to fund feasibility, design, and fish passage implementation or provide technical assistance to partners that apply. Restoration funding is often available through the National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, Chesapeake Bay Trust, and National Fish and Wildlife Foundation. Further, infrastructure funding may also be used to fund fish passage projects with transportation or dam safety nexuses

Work collaboratively with dam owners and hydropower operators to voluntarily explore, maintain, and improve fish passage facilities in support of aquatic connectivity objectives. Work with bank sponsors to implement fish passage as form of compensatory mitigation

Management Approach 1.4.3: Project Development

Develop new barrier removal projects using the Tool that also provide ancillary benefits to owners and communities. Collaborate with state and federal regulatory programs to streamline permitting activities and accelerate project timelines for priority passage enhancement projects. This could include identification of common permitting challenges and/or development of guidance documents for the regulated community

Management Approach 1.4.4: Dam Removal

Share effective strategies to increase dam owner and local community support for dam removal projects and foster a system of cooperation for fish passage restoration

The Workgroup will strive to develop:

- A model for dam owner (and broader community) engagement that can be replicated in communities throughout the region and beyond
- A pool of three to five high-priority dam removal projects with willing dam owners and completed baseline (i.e., feasibility) assessments that are ready for implementation

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Management Approach 1.4.5: Road-Stream Crossings

Invite federal and state Departments of Transportation (DOT) to become Workgroup members and to attend Workgroup meetings, prioritize potential projects, and work collaboratively to implement restoration

Management Approach 1.4.6: Local Participation

Engage with local governments, watershed associations, nonprofits and the private sector, including private landowners, and disseminate information regarding the benefits of aquatic habitat connectivity

Participating Partners

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- **Signatory Partners**
  - TBD, will need to be added after November by signatory partners
- **Other Participating Partners**
  - American Rivers
  - Anne Arundel County's Department of Public Works
  - BioHabitats
  - Chesapeake Research Consortium
  - Delaware Department of Natural Resources and Environmental Control
  - District of Columbia Department of Energy and Environment
  - Interstate Commission on the Potomac River Basin
  - Maryland Department of Natural Resources
  - National Aquatic Connectivity Collaborative
  - National Oceanic and Atmospheric Administration
  - Natural Resources Conservation Service
  - New York State Department of Environmental Conservation
  - Pennsylvania Fish and Boat Commission
  - Princeton Hydro

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- Smithsonian Environmental Research Center
- Trout Unlimited
- U.S. Environmental Protect Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- Virginia Department of Wildlife Resources
- West Virginia Division of Natural Resources

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Oysters Outcome

Oysters Outcome: Increase ecosystem benefits from oysters through reef habitat restoration, sustainable harvest, and aquaculture.

- By 2040, restore or conserve at least 2,000 additional acres of oyster reef habitat concentrated primarily in restoration focus areas to provide ecosystem service benefits.
- Maintain sustainable oyster abundance through oyster fisheries and aquaculture practices.
- Maintain reefs established under the 2014 Chesapeake Bay Watershed Agreement to achieve restoration success metrics.

The Oyster Workgroup will oversee Targets 1 and 3, while a dedicated Action Team will spend the next 12 months developing the detailed implementation plan for Target 2. Following this planning phase, the Action Team's efforts will be integrated into the Oyster Workgroup's operations.

The 2025 outcome transitions from a tributary-specific model to a broad, large-scale restoration strategy in focus areas determined by the Oyster Workgroup. This updated framework also facilitates greater participation from community organizations, whose projects will contribute toward the overall acreage targets.

Baseline and Current Condition

Oyster Restoration

The 2014 Chesapeake Bay Watershed Agreement guided the restoration of native oyster habitat and populations in 10 Bay tributaries. Partners achieved this goal in late 2025.

- **Tributaries Restored:** 10 (5 in Maryland, 5 plus a 6th "bonus" tributary in Virginia).
- **Total Reef Habitat Restored (10 Tributaries Initiative):** 1,905 acres.
- **Total Oysters Planted:** 7.3 billion.
- **Total Bay-wide Cost:** $121.16 million.

Oyster Maintenance

- **Tributaries Restored:** 10 (5 in Maryland, 5 Virginia).
- **Total Reef Habitat Restored (10 Tributaries Initiative):** 1,905 acres.

Oyster Fishery

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- **Total acreage of oyster reefs monitored within the fishery :** ~10,000 acres monitored in Virginia.
- **Estimate of non-monitored oyster reef acreage:** Establishing this baseline will require further discussion of the Action Team.
- **Harvest trends in MD and VA:** Harvest is stable in Maryland and more impacted by market conditions than resource health. In Virginia, the level of harvest is determined by season length and market conditions and is not limited by available resources or the market size oyster population.
- **Brief description of sustainable management practices in each jurisdiction (MD, VA, PRFC):** Season lengths, harvest gear, and areas can be adjusted based on condition of the resource (abundance) and the ability to target replenishment effort inputs at a level that can sustain fishing effort. Maryland works with the county Oyster Committees and other stakeholders on closing and opening areas to oystering based on market abundance and effort; seasons and daily limits can be adjusted by public notice based on stakeholder input, survey results, and stock assessments. The Potomac River Fisheries Commission (PRFC) is advised by its Oyster/Clam Committee and Oyster Strategic Planning Panel to revise seasons, harvest restrictions and areas.
- **Assessments of Population in MD and VA:** Stable or increasing over long-term average. Maryland completed a Benchmark Oyster Stock Assessment in 2024 and is currently working on an update assessment for 2026. A five year review of the Oyster Management Plan was completed in 2026 to evaluate the management of the public fishery, sanctuaries, and aquaculture sectors to the objectives in the plan.
- **Aquaculture baseline VA:** Containerized hatchery-based aquaculture (surface and bottom cages) production is stable or increasing over 10-year average.
- **Aquaculture baseline MD:** Maryland's hatchery-based oyster aquaculture has grown steadily in both scale and production since the state overhauled its leasing and permitting system in 2010. Most operations are relatively small, averaging about 20 acres, with leaseholders managing just one or a few plots. Roughly 20 percent of these businesses use intensive containerized gear, while the remainder focus on extensive bottom culture.

Monitoring Progress and Indicators

2,000-Acre Reef Restoration Goal

- **Indicator:** The primary indicator will be the number of restored reef acres that meet the updated success metrics. NOAA will lead a process to evaluate the 2014

Chesapeake Bay Watershed Agreement metrics and recommend revised standards for the 2025 outcome.

- **Monitoring:** Future monitoring will focus on ensuring the 2,000 acres of restored or conserved reefs meet revised success metrics as determined by the oyster success metrics review process.
- **Reporting: T**racking **Oyster Reef restoration** implementation and performance will be the responsibility of the Oyster Workgroup.

Maintenance (Stewardship) of '10 tributaries'

- **Indicator:** The workgroup will consider continuing the current success metrics for these areas or developing new metrics through the review process.
- **Monitoring:** When revised oyster metrics are available, the Oyster Workgroup will identify specific indicators and monitoring protocols to apply to this target.
- **Reporting:** Performance assessments will be based on monitoring results, and tracking will be the responsibility of the Oyster Workgroup.

Oyster Fishery

The Oyster Fishery and Aquaculture Action Team will spend the next 12 months developing a detailed implementation plan including indicators.

- **Indicator:** TBD by Oyster Fishery and Aquaculture Action Team.
- **Monitoring:** TBD by Oyster Fishery and Aquaculture Action Team.
- **Reporting:** TBD by Oyster Fishery and Aquaculture Action Team.

Situation Analysis for Outcome 1.5: Oysters

The following table identifies challenges that will impact progress towards attaining the 2040 Oyster Outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

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Challenges	Within CBPs sphere of	Outside of CBP's sphere of
Funding for long-term restoration and monitoring	X	
Permitting and regulatory compliance	X	
Environmental changes (temperature, salinity, disease, oyster reproduction levels)*		X
Funding for seed production capacity	X	
Substrate availability, cost and acceptability	X	
Maintaining reef structural integrity		X
Public outreach, coordination and support	X	

Management Approaches for Outcome 1.5: Oysters

Management Approach 1.5.1: Strategic Expansion of new Oyster Reef Habitat Restoration or Conservation:

Partners recognize the success achieved from focused large-scale restoration and intend to apply a similar collaborative approach to restore or conserve 2,000 additional acres of non-harvest oyster reef that follows these key elements:

- **Clear Shared Goal:** Unify regional stakeholders under this single, well-defined restoration target.
- **Strategic Partnerships:** Leverage federal, state, and non-profit strengths to expand operational capabilities.
- **Collaborative Planning:** Jointly design and execute synchronized, in-the-water restoration projects.
- **Collective Metrics:** Use shared science-based protocols to ensure accountability and adaptive management.
- **Engaged Public and Sustained Resources:** Foster community stewardship and secure reliable funding pipelines.

More specifically, the Oyster Workgroup anticipates that implementing restoration or conservation for 2,000 additional acres of non-harvest oyster reef habitat primarily in defined restoration focus areas will require:

- Defining "restoration focal areas," including specific acreage thresholds.

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- Identifying locations for the additional 2,000 acres (approximately 1,100 acres in Maryland and 900 acres in Virginia).
- Developing restoration implementation plans in coordination with multiple partners.
- Establishing a process to include and account for community-based restoration projects.
- Establishing revised success metrics to evaluate oyster restoration performance.
- Develop a monitoring program based on the revised oyster metrics.

Management Approach 1.5.2: Adaptive Management and Monitoring:

Continue monitoring tributaries previously restored under the 2014 Chesapeake Bay Watershed Agreement to ensure they meet revised success metrics. Utilize monitoring data to guide adaptive management to ensure these tributaries continue to provide ecosystem services and remain protected as non-harvest areas through 2040.

Establish revised success metrics to evaluate oyster restoration or conservation performance for areas established under the 2025 Chesapeake Bay Watershed Agreement and develop a monitoring program based on these revised oyster metrics.

Management Approach 1.5.3: Sustainable Oyster Fishery and Aquaculture in each Jurisdiction: An Action Team will be established to collaborate with jurisdictions to:

- Define sustainable commercial oyster harvest and aquaculture practices.
- Provide recommendations to each jurisdiction based on these definitions and establish coordination between state and federal partners.

The recommendations from this Action Team will be integrated with the Oyster Workgroup for implementation.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, “participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices” (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners:**
    - Maryland Department of Natural Resources
    - Virginia Marine Resources Commission
    - National Oceanic & Atmospheric Administration
    - Chesapeake Bay Commission
- **Other Partners:**
    - Potomac River Fisheries Commission
    - U.S. Army Corps of Engineers
    - Oyster Recovery Partnership
    - Chesapeake Bay Foundation
    - Christopher Newport University
    - Virginia Institute of Marine Science
    - Smithsonian Environmental Research Center
    - Community based organization

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Stream Health Outcome

Stream Health Outcome: Improve and protect local stream health and function, including their living resources and ecosystem services throughout the watershed, using the best available science to inform land management, planning and conservation.

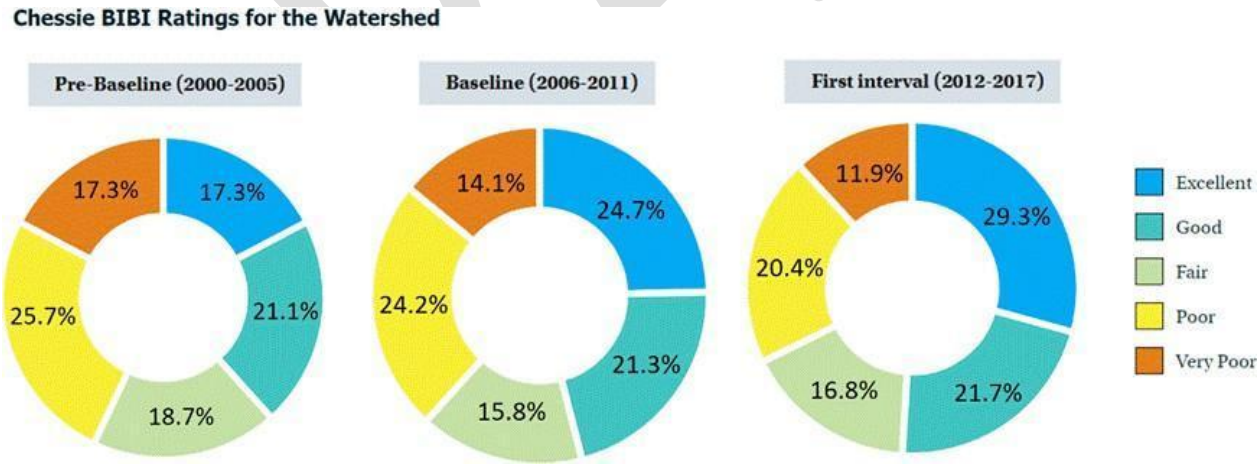
- Improve the health and the ecological integrity of at least an additional 4,340 (approximately 3%) nontidal stream miles every six years.

Baseline and Current Condition

Stream Health Outcome

This outcome is currently tracked via improvements in the Chesapeake Basin-wide Index of Biotic Integrity (Chessie BIBI). See the Monitoring Progress and Indicators section for more information about the Chessie BIBI.

The Stream Health Workgroup analyzed the Chessie BIBI scores for stream health between 2000 and 2023 in four distinct intervals for the 2014 Chesapeake Bay Agreement progress. For purposes of CBP reporting, scores that rate Excellent, Good, and Fair indicate "healthy" stream macroinvertebrate populations.



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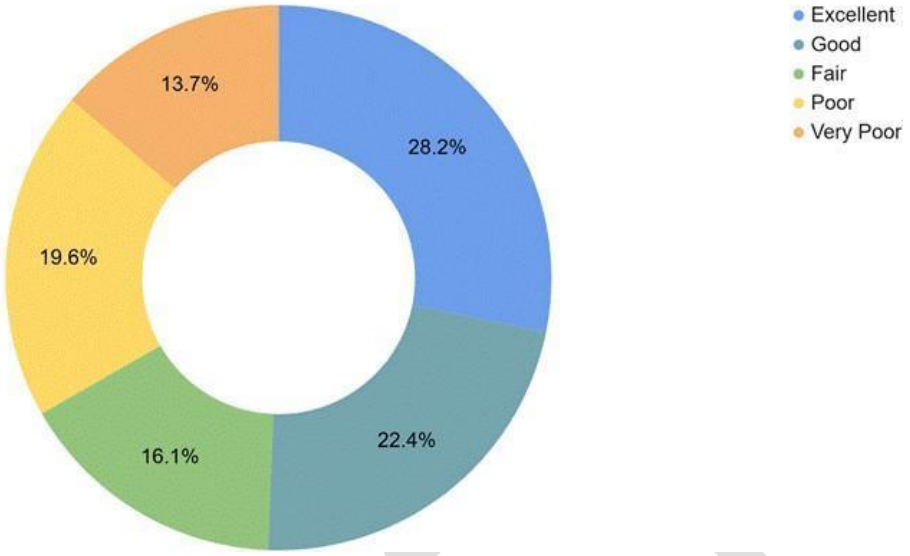
Chessie BIBI Ratings for the Watershed, Second Interval (2018 - 2023)



The most recent interval, 2018 - 2023, will be used as the new baseline for tracking the Stream Health indicator outcome for the next six-year interval.

Monitoring Progress and Indicators

Monitoring: Stream Health Outcome

CBP uses the Chessie BIBI as the primary stream health indicator. The Chessie BIBI is a multi-metric index of biological health from benthic macroinvertebrate data.

Benthic macroinvertebrate indices are a biological endpoint which will reflect overall improvements in stream health. The data comes from individual federal, state, county and volunteer benthic macroinvertebrate datasets which are collected with similar procedures. The CBP Data Center acquires this raw data every six years, along with additional physical habitat and water quality data collected by program partners. The Interstate Commission on the Potomac River Basin (ICPRB) calculates and reports the index with a common method agreed to by the Stream Health Workgroup.

Additional information on the Chessie BIBI and the most recent interval analysis can be found in the ICPRB reports Stream Biological Health in the Chesapeake Bay Watershed and the 2018 - 2023 Update.

Currently, the Chessie BIBI (Chesapeake Basin-wide Indicator of Biological Integrity) is the sole indicator of stream health utilized by the Stream Health Workgroup (SHWG). While it is an excellent indicator of the overall biotic community, the data necessary for analyses are collected in 6-year increments throughout the watershed. The Chessie BIBI does not necessarily reflect Best Management Practice (BMP)-driven improvements in hydraulics,

geomorphology, and physicochemical qualities because the site-specific scores are averaged by location and time periods. However, hydraulics, geomorphology and physicochemical parameters are also components of stream health and must be in good condition to support biological communities. The workgroup is exploring additional metrics for a variety of environmental stressors to help future investigations characterize Chesapeake watershed health and assess the reasons for the current trends.

Situation Analysis for Outcome 1.6: Stream Health

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by Workgroup members as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

Challenges	Within CBPs sphere of	Outside of CBP's sphere of
Pressures Directly Influencing Stream Health		
Excessive sediments in-stream		X
Excessive nutrients in-stream (e.g.: from untreated runoff, leaky wastewater infrastructure; etc.)		X
Loss of forested riparian and wetland areas	X	
Significant changes in watershed hydrology* (e.g: overland flow increases in impervious cover; inadequate stormwater management controls)		X
Toxicity of effluent from resource extraction activities (i.e., acid mine drainage, fracking).		X
Increased in-stream temperatures*		X
Increased salts in streams* (Road de-icing practices)	X	
Invasive species*		X
Alterations to channel flow* (e.g.: Higher and lower discharges than expected in stream channels; "flashy" flow)		X
Alterations to channel form (e.g.: Piped and channelized streams; undersized culverts;		X

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Endocrine disrupting chemicals and other contaminants		X
Degraded soils in riparian area		X
Physical and chemical barriers to connectivity increase stream fragmentation*	X	
Limited availability of land to retrofit and implement upland BMPs in urban areas)		X
Challenges to Improving Stream Health		
Lack of common watershed, stressor and stream assessment and restoration guidelines.	X	
Limited integration of water quality and living resource goals during WIP BMP implementation.	X	
Stormwater and other NPDES permits focus on specific aspects of water quality, which may or may not be the only stressors for stream aquatic life.	X	
Inadequate financial resources to support local implementation efforts.	X	
Inadequate infrastructure to communicate newest research and technical guidance to jurisdictions.	X	
Current lack of Chesapeake Bay TMDL crediting for stream health beyond modeled nutrient and sediment reductions	X	
Limited research into resource tradeoffs for BMP implementation	X	
Public perception of stream restoration	X	
Need additional biological stressor identification and prioritization procedures.	X	
Need additional monitored metrics that correlate with priority stressors identified for measurement.	X	
Need to examine the differences between observed and modeled trends in stream health metrics.	X	
Need more robust stream restoration monitoring to evaluate the potential improvement in stream functions and resource trade-offs from BMP implementation.	X	
More research is needed to guide the selection of achievable reference conditions/design approaches based on watershed and stream functions to include an urban reference continuum.	X	
Need BMP site prioritization tools, such as identifying nutrient hotspots in stream valleys where erodible geologic materials and soils contain excess nutrients, or to increase habitat connectivity.	X	

Management Approaches for Outcome 1.6: Stream Health

Management Approach 1.6.1: The definition of stream health and ecological integrity for this outcome uses a watershed-wide metric, the Chessie BIBI, to measure the changes in stream health and function over time. This Management Strategy proposes a definition of

stream health that provides a common framework for additional reporting and tracking incremental improvements in stream health using multi-metric indicators.

Identify an appropriate suite of metrics to measure the multiple facets of stream health to complement, but not replace, the Bay-wide Chessie BIBI.

- Develop metrics/composite indices from routinely collected, non-biological data to measure changes in certain stream functions to assess regional changes and trends.
- Collaborate with the Healthy Landscapes Goal Team to identify marginal streams where restoration activity in-stream or in the watershed may improve stream functions and health. Once identified, work with the partnership and funders to develop incentives to build on existing efforts to target beneficial restoration activity.
- Bring together jurisdictional biological stressor identification approaches and thresholds for comparison. Identify overlaps between the approaches and explore the possibility of Chesapeake Watershed-wide BSID.
- Investigate use of eDNA as an additional biological indicator of stream health.

Management Approach 1.6.2: The provision of adequate funding and technical resources for watershed management practice implementation is necessary to support comprehensive ecosystem and biological improvements, in addition to nutrient and sediment reductions.

- Explore partnerships to provide training to jurisdictions and other entities related to improving stream health and habitat, including BMP design, implementation and cost-effectiveness analysis.
- Continue collaborating with the Chesapeake Bay Trust's Pooled Monitoring program, and partner with other organizations such as the Chesapeake Monitoring Cooperative, for researchers to inform watershed best management practices that demonstrate stream and riparian ecosystem improvement.
- Establish an on-going stream restoration monitoring consortium and data clearinghouse within the CBP to share project data.
- Develop monitoring guidance for stream restoration projects to standardize pre-and post-restoration data collection and reporting.
- Support the continued scientific research and analysis of key topics, including:
    - Information on the co-benefits of BMPs
    - How much upland retrofit implementation is needed to optimize stream functional improvement when stream restoration and stormwater retrofits are installed as part of an integrated restoration plan

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- Investigate the effects and implications of changing environmental conditions, population growth and continued landscape development on stream health, including various metrics associated with healthy streams and future potential.
- Effects and trade-offs of stream restoration BMPs

Management Approach 1.6.3: Active and engaged participation by local communities with federal and state partners is central to Bay watershed restoration. Improvements to stream health and function will rely upon significant investments by local communities, municipal, county governments and watershed groups, to implement restoration and conservation actions. Ongoing coordination with stream health stakeholders (e.g., state and federal stream and wetland regulatory authorities, natural resource agencies, local governments, non-profit organizations, watershed BMP practitioners, researchers and local communities) needs to be improved to identify and remove barriers to improving stream health.

The SHWG should work with CBP partners, including the Engaged Communities Goal Team, to enhance the information available for local governments, organizations and landowners to support beneficial watershed best management practices to improve local stream health.

- Engage with local governments and other entities to inform landowners, as well as the general public, of beneficial stream and riparian best management practices 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.
- Provide research or documentation that identifies the nexus between improving stream health and broader public welfare.

Management Approach 1.6.4: Develop and promote holistic Stream Restoration Best Management Practice design guidelines that identify the level of degradation and improvement of stream biology and key stressors/factors limiting potential biological improvement.

- Develop case studies to document biological response in stream with various management interventions, and include consideration of watershed influences, such as where in the watershed the project is located, source of stressors, and nearness to donor reaches.

- Discuss with other CBP Goal Teams how to recognize stream biological function improvement or maintenance of high quality aquatic life as credits towards meeting the Bay TMDL and other agreement outcomes.
- Develop improved stream restoration guidance for biological improvements or maintenance of higher quality systems.
- Develop design guidelines to include greater consideration of resource tradeoffs and other Chesapeake Bay Agreement goals and outcomes.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, "participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- Signatory Partners
    - TBD, will need to be added after November by Signatory Partners
- Other Partners
    - U.S. Geological Survey
    - Interstate Commission on the Potomac River Basin
    - Delaware Department of Natural Resources and Environmental Control (DNREC)

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Submerged Aquatic Vegetation Outcome

Submerged Aquatic Vegetation Outcome: Sustain and increase the habitat and ecosystem benefits of SAV in the Chesapeake Bay. Achieve and sustain the outcome of 196,600 acres of SAV Bay-wide necessary for a restored Bay.

- Measure progress against the following targets for each salinity zone:
  - Tidal Fresh: 21,700 acres.
  - Low Salinity: 13,100 acres.
  - Medium Salinity: 126,000 acres.
  - High Salinity: 35,800 acres.
- Measure progress toward this Outcome against interim targets of 90,000 acres by 2030, 95,000 acres by 2035 and 100,000 acres by 2040.

Baseline and Current Condition

SAV is a critical component of the Chesapeake Bay ecosystem. It improves water quality by absorbing excess nutrients, attenuates wave and current energy to protect shorelines, supports fish and shellfish by providing habitat and nursery grounds, and mitigates the impacts of changing environmental conditions. The Chesapeake Bay Program's SAV Workgroup has reviewed the historic record, as well as photographic evidence from the 1930s to present, and determined that the Bay has historically supported at least 196,600 acres of SAV. This is the acreage upon which the SAV Outcome is based.

To monitor progress toward the SAV Outcome and goal attainment, impacts from changing environmental conditions, response to management actions, and the functional value of these shallow water habitats, the SAV Workgroup coordinates a three-tiered, hierarchical monitoring effort that includes the Chesapeake Bay-wide SAV Survey (Tier 1), the Chesapeake Bay SAV Watchers Program (Tier 2), and the Chesapeake Bay SAV Sentinel Site Program (Tier 3). The three-tiered approach allows us to not only estimate SAV acreage and density across the Bay, but also collect detailed SAV habitat data while providing educational volunteer opportunities to communities across the watershed.

In 1984, 38,958 acres of SAV were mapped in the Chesapeake Bay and its tidal tributaries. Since then, estimated totals have ranged from that historic low to a high of 108,078 acres in 2019, maintaining a long-term average of 70,898 acres. In 2025, SAV covered an estimated 89,385 acres of Bay bottom.

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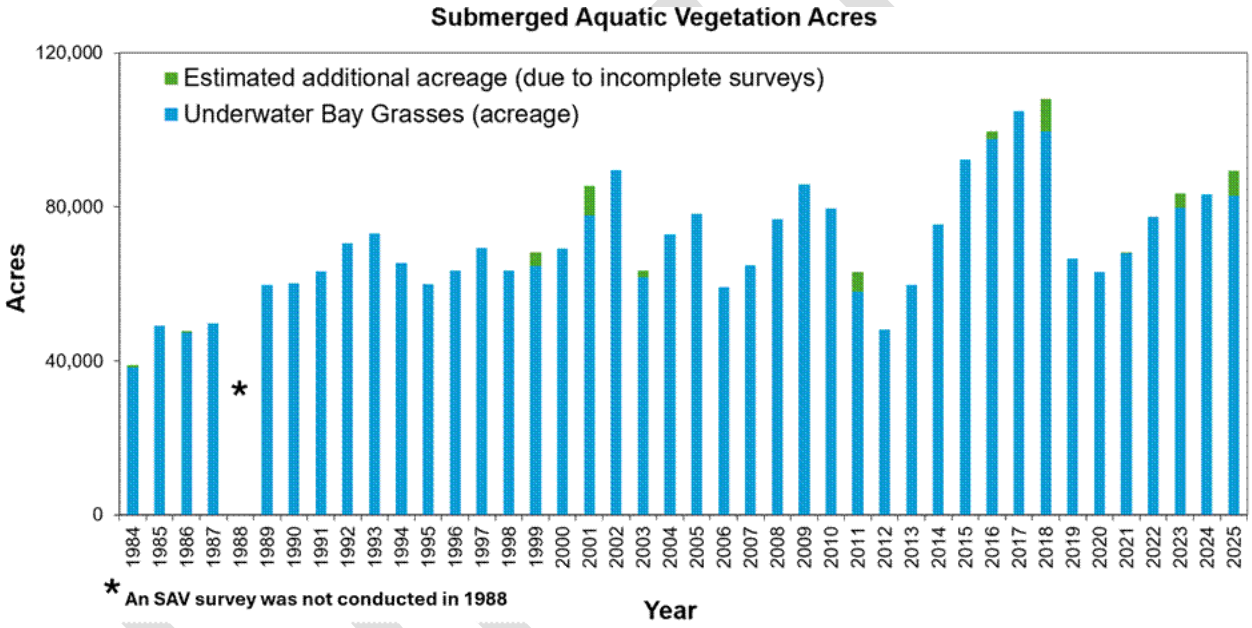
Monitoring Progress and Indicators

Indicator: SAV Acreage

The Chesapeake Bay-wide SAV Survey began in 1984, and is the primary mechanism for tracking SAV Outcome progress and attainment. The Survey uses imagery and data collected from planes and satellites, as well as Tier 2 and Tier 3 ground observations, to delineate SAV beds throughout the Bay and its tidal tributaries. Acreage data from the Survey will be used to assess progress towards the SAV Outcome, as well as its interim and salinity zone goals, on an annual basis. If areas of the Bay are inaccessible for surveys in any given year, additional acreage in those areas is estimated from the previous year's data, as seen in the graph below.



Situation Analysis for Outcome 1.7: Submerged Aquatic Vegetation

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by Workgroup members as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

Challenges	Within CBPs sphere of	Outside of CBP's sphere of
1. Habitat Conditions and Availability: **To reach our SAV Outcome and goals, adequate shallow water habitat (space and water clarity) must remain available for SAV to expand into, but multiple challenges threaten habitat conditions and availability. Some challenges include:**		
Degraded or Unstable Water Quality*	X	
Shallow Water Use Conflicts	X	
Shoreline Alteration and Armoring that negatively impact SAV	X	
Direct and Indirect Impacts Associated with Changing Environmental Conditions including Increasing Sea Levels, Temperatures, Precipitation, Pathogens, and Invasive Species*		X
2. Protection of Existing and Recovering SAV: **Regulations prohibiting certain activities detrimental to SAV must be adequate to protect new and expanding SAV beds throughout the Bay. Some challenges include:**		
Dredging and Filling in Potential SAV habitat	X	
Fishing and Aquaculture Practices	X	
Shoreline Alteration and Armoring that negatively impact SAV*	X	
Necessary Regulatory Updates are Challenging, Time Consuming, and Require Legislative Expertise	X	
3. SAV Restoration Potential and Activity: **Direct SAV Restoration is an important component of Chesapeake Bay SAV Recovery, but we are lacking in capacity and infrastructure. Some challenges include:**		
Lack of Funding for Direct SAV Restoration Projects	X	
Inadequate SAV Restoration Capacity and Infrastructure	X	
Lack of a Commercial SAV Seed Supply	X	
Lack of Tools for Appropriate SAV Restoration Site Selection	X	
Limited Capacity by SAV Restoration Practitioners and Lack of Formal Training Program for SAV Restoration Techniques	X	
4. SAV Research and Monitoring: **Annual Bay-wide SAV monitoring at multiple levels of scale is essential to track progress toward the SAV Outcome, to prioritize efforts to minimize impacts, in guiding appropriate management actions, and in guiding needed SAV research; SAV research and monitoring must be more effectively funded and supported. Some challenges include:**		
Uncertain Capacity to Maintain Long-Term Funding for the Chesapeake Bay-wide SAV Survey	X	
No funding for the Chesapeake Bay SAV Watchers Program	X	

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No funding for the Chesapeake Bay SAV Sentinel Site Program	X	
Limited funding for SAV Research		X
***5. Public Perception, Knowledge, and Engagement:* Public perception and engagement surrounding SAV in Chesapeake Bay are growing but remain limited. Some challenges include:**		
Stakeholders are generally unaware of the importance of SAV or regard it negatively	X	
Need for additional SAV-Specific Curriculum in Public Education		X

Management Approaches for Outcome 1.7: Submerged Aquatic Vegetation

Management Approach 1.7.1: Support Efforts to Conserve and Restore Current and Future SAV Habitat and Habitat Conditions

The SAV Workgroup will support efforts to conserve and restore current and future SAV habitat and habitat conditions. The most critical action for restoring SAV is to achieve the Clean Water Goal. This strategy is being implemented by meeting pollutant allocations set by the Chesapeake Bay TMDL and through the work of multiple Chesapeake Bay Program teams, including the Clean Water Goal Team and the Healthy Landscapes Goal Team.

Management Approach 1.7.2: Protect Existing and Recovering SAV

The SAV Workgroup will work to protect existing SAV by supporting efforts to characterize threats and develop protection measures, evaluate SAV protection laws and regulations, and make recommendations to update laws, regulations, and policies when necessary.

Management Approach 1.7.3: Restore SAV

The SAV Workgroup will lead and support efforts to actively restore and mitigate SAV loss where possible, targeting sites with suitable habitat quality and high potential to benefit living resources, as well as vulnerable coastal communities and infrastructure.

Management Approach 1.7.4: Enhance SAV Research and Monitoring

The SAV Workgroup will lead and support efforts to continue the Bay Program's three-tiered, hierarchical SAV monitoring effort and address data gaps in shallow water habitat and living resource monitoring data.

Management Approach 1.7.5: Enhance Community Involvement, Education, and Outreach

The SAV Workgroup will work to expand efforts to educate and engage the public about the critical importance of SAV, the ecosystem services and socio-economic benefits it

provides, and include community scientists and volunteers in SAV monitoring and restoration efforts.

Participating Partners

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- **Signatory Partners**
  - TBD, will need to be added after November by signatory partners
- **Other Partners**
  - Virginia Institute of Marine Science
  - Old Dominion University
  - University of Maryland
  - St. Mary's College of Maryland
  - Smithsonian Environmental Research Center
  - Tetra Tech, Inc.
  - The Chesapeake Bay Foundation
  - The Nature Conservancy
  - ShoreRivers
  - Arundel Rivers Federation
  - Severn River Association
  - Gunpowder Riverkeeper
  - Maryland
  - Virginia
  - Washington, D.C.
  - Delaware Department of Natural Resources and Environmental Control (DNREC)
  - U.S. Federal Government

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Wetlands Outcome

Wetlands Outcome: Restore, create, enhance and protect wetlands to support people and living resources, including waterbirds and fish, and provide water quality, flood and erosion protection, recreation and other valuable benefits to people.

- By 2040, restore or create at least 3,000 acres and enhance 15,000 acres of tidal wetlands, focusing on habitats that support populations of waterbirds and represent healthy wetlands across the watershed.
- By 2040, restore or create at least 3,000 acres and enhance 15,000 acres of nontidal wetlands, focusing on habitats that support populations of waterbirds and represent healthy wetlands across the watershed.

Baseline and Current Condition

There is no current consistent Chesapeake Bay tidal and non-tidal watershed-wide wetland acreage and function tracking. There are various tracking approaches using data integrated from federal, state, and local conservation databases, and personal communication. A Bay-wide baseline will need to be established following the 2025 Bay Agreement adjustments, utilizing high-resolution remote sensing and data layer syntheses. The baseline will be used to assess progress towards the Wetlands Outcome.

- **Tidal Wetlands:** Baseline conditions indicate steady losses of coastal marshes due to sea level rise, wave erosion, shoreline hardening and development. Upland migration is heavily restricted by human infrastructure. The current trend shows a net decrease in functional marsh area, though restoration via living shorelines, sediment additions and flood mitigation projects has increased locally (Chesapeake Bay Program, 2023).
- **Non-Tidal Wetlands:** Baselines established from historical tracking show massive historic losses due to agricultural drainage and urban development. Current conditions show that while degradation of existing wetlands continues due to invasive species and altered hydrology, restoration gains on agricultural lands are slowing the rate of net loss, leading to a trend that remains the same or slightly decreasing (Chesapeake Bay Program, 2023).

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Monitoring Progress and Indicators

Indicator: Wetland Status and Trends

Monitoring wetland aerial extent. Data are collected by multiple entities over various timelines using variable approaches.

Indicator: Wetland Restoration, Creation and Enhancement

Tracks annual additions in wetland acreage achieved through voluntary programs.

Indicator: Waterbird Population Estimates

The waterbird indicator will use population estimates from relevant biological seasons (i.e., breeding pairs, total wintering population, etc.) to assess population trends of focal species identified by stakeholders. This will incorporate a range of scientific and citizen science survey data yet to be determined, to assess historic and present populations.

Expected Changes Under the New 2025 Bay Agreement:

The previous 2014 Agreement focused heavily on gross historical acreage targets (e.g., restoring 85,000 acres and enhancing 150,000 acres). The 2025 Bay Agreement transitioned toward a wetland tracking effort focused on acreage with the intention to factor in changing environmental condition losses (like sea level rise) and prioritizes functional resilience and verified wetland performance and explicitly incorporates living resources including waterbirds and fish.

Situation Analysis for Outcome 1.8: Wetlands

The following table identifies critical challenges impacting both tidal and non-tidal wetland restoration efforts across the watershed. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by Workgroup members as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

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Challenges	Within CBPs sphere of	Outside of CBP's sphere of
CBP and partner capacity to sustain long-term tracking and update inventories	X	
Workforce knowledge and technical capacity for restoration design	X	X
Property owners' willingness to adopt voluntary restoration practices including economic barriers and incentive structures as a barrier to restoration adoption.	X	X
Inadequate, fragmented, or unaligned funding streams limit achievement of the Wetlands Goal	X	X
Changing environmental conditions: accelerated tidal marsh loss due to erosion and drowning from sea level rise; increased hydrologic variability, changing precipitation patterns, drought, and flood impacts affecting non-tidal wetlands across the watershed.		X
Manage for marsh migration potential including retrofits for hardened shorelines and infrastructure blocking upland marsh migration*	X	
Regulatory updates and shifting legal definitions of federally regulated waters (WOTUS)		X
Opportunities to address historic agricultural drainage networks and ongoing land conversion pressures	X	X

Management Approaches for Outcome 1.8: Wetlands

Management Approach 1.8.1: Seek Plan Implementation, Enhance Collaboration, Engagement, Funding and Information Transfer.

The WWG/ CBP has recently sponsored two plans: Accelerating Non-Tidal Wetland Restoration Across the Bay and The Tidal Wetlands Strategic Plan. Both of these extensive plans provide recommendations on a breadth and depth of issues to address voluntary restoration. Additional resources address needs for collaboration, funding, outreach and engagement.

Management Approach 1.8.2: Improve Wetland Tracking, Mapping, Monitoring, and Functional Assessment Capacities

The Wetlands Workgroup will collaborate to address severe data gaps by investigating funding opportunities and options for updating outdated tidal and non-tidal wetland maps.

This includes integrating satellite remote sensing and advanced remote data to accurately identify marsh priority migration corridors and interior headwater basins. Develop approaches for measuring tidal and non-tidal wetland health as it relates to wetland function and resilience through either remote sensing or field based data collection.

Management Approach 1.8.3: Scale Up Landowner Outreach and Technical Assistance

To overcome barriers to voluntary landowner participation, the workgroup will partner with outreach and technical experts like NGOS, academia and state entities to support and promote aligned outreach toolkits used by Bay Program Partners. Efforts will focus on demonstrating the wildlife, economic, recreational including wildlife viewing, and ecologic benefits and value of wetlands.

Management Approach 1.8.4: Build Restoration Workforce and Partnership Capacity

Addressing the regional shortage of qualified restoration professionals, this approach establishes localized training pipelines. The Wetlands Workgroup will identify training opportunities and encourage the training of contractors, regulators, and conservation planners in ecological engineering for tidal and non-tidal wetland creation and restoration.

Management Approach 1.8.5: Understand Responses of Living Resources

Supporting thriving populations of living resources, like waterbirds and fish, requires suitable habitat. The partnership will identify key environmental factors influencing these species, assess their capacity to respond to changing threats, and evaluate the impact of watershed restoration efforts. To track populations accurately over time, partners will integrate data across agencies. We will further support data to be collected in a manner that enables incorporation into relevant decision making processes.

Management Approach 1.8.6: Funding

The WWG will recommend new and increased funding to achieve the wetland outcomes. This is critical to be able to access and leverage increased federal funds, and other funding, that will be available.

Participating Partners

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legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners**
  - TBD, will need to be added after November by Signatory Partners
- **At-Large Members of the Wetlands Workgroup and Other Partners**
  - State of New York
  - State of West Virginia
  - Delaware Department of Natural Resources and Environmental Control (DNREC) and Natural Resources Conservation Service (NRCS)
  - Commonwealth of Pennsylvania
  - District of Columbia
  - Chesapeake Bay Commission
  - EPA / Federal Agencies (USACE, USGS, NOAA, USFWS, DoW)
  - State of Maryland
  - Commonwealth of Virginia
  - The Nature Conservancy (TNC)
  - Chesapeake Bay Trust (CBT)
  - Ducks Unlimited
  - Center for Coastal Resources Management (VIMS)
  - University of Maryland Center for Environmental Science

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Chapter 4. Management Strategies for Goal 2: Clean Water

Clean Water Goal

Reduce pollutants entering the Bay and its rivers to achieve the water quality necessary to support aquatic life and wildlife, and support human health.

Situation Analysis for Goal 2: Clean Water

Clean water is the foundation of healthy fisheries, habitats, farmlands and communities across the Chesapeake Bay watershed. Reducing the pollutants that degrade the Bay and its rivers remains central to the partnership's shared Vision. Over more than four decades of partnership, and through fifteen years of implementing the Chesapeake Bay Total Maximum Daily Load, the Bay Program partners have achieved measurable reductions in nitrogen, phosphorus and sediment. The partnership has built and improved its monitoring, modeling and assessment capacity that offers insights and accountability alongside that progress.

As acknowledged at Executive Council meeting in December 2025, much has been accomplished, and much remains to be done. Population growth, the loss of farm and forest lands, aging infrastructure, emerging contaminants and changing environmental conditions continue to press on water quality. The reductions still needed are increasingly concentrated where they are hardest and most costly to achieve.

The three Outcomes under this Goal describe complementary dimensions of the work to achieve Clean Water that supports aquatic life, wildlife, and human health.

- Reducing Excess Nitrogen, Phosphorus and Sediment (RENPS) focuses on implementing and maintaining the practices and controls needed to reduce nutrient and sediment loads and meet water quality standards (WQS).
- Toxic and Emerging Contaminants (T&EC) aims to reduce the amount and effect of toxic contaminants through a renewed, value-added emphasis on connecting researchers, managers and practitioners across the watershed.
- Water Quality, Standards Attainment and Monitoring (WQ, SAM) sustains the core networks and analyses that allow the partnership to measure changing conditions, interpret trends, and understand the lag between pollutant reductions and the Bay's response.

These Outcomes are not uniform in the maturity and depth of partnership resources and organizational sophistication available to advance them. However, they share many challenges, some of which the partnership is positioned to influence more directly than others. This Management Strategy reflects a deliberate focus on those where a coordinated, watershed-wide approach adds the greatest value and is most likely to

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accelerate and demonstrate progress within the next six years. As the partnership has learned across more than forty years, implementation is locally inspired and driven: local governments, farmers, tribes, military installations, businesses, watershed organizations and community members are essential partners in this work. The Goal-wide Challenges and Management Approaches, as well as the three following outcome-specific subchapters describe how the partnership can better engage, inform and resource its network of partners in order to achieve the Clean Water Goal and its three outcomes. The Outcome-level situation analyses identify the challenges specific to each Outcome. The Management Approaches translate this shared understanding into the concrete, accountable actions that will be reflected in workplans, it is these actions that the partnership will pursue to achieve clean water for the people and living resources of the Chesapeake Bay.

In the table below, the Goal Team has summarized the most critical challenges facing each of its Outcomes that are within CBP's ability to impact or influence. The Goal Team and its Workgroups, as appropriate, have identified those challenges shown in **bold** as more critical for Workgroups to begin addressing within the next six years via the development and implementation of Management Approaches. Challenges associated with changing environmental conditions (CEC) are denoted with an asterisk (*).

Table 2. List of critical challenges associated with the three outcomes under the Clean Water Goal

	Outcomes		
Challenges	2.1 RENPS	2.2 T & EC	2.3 WQ,SAM
Adaptively managing by revising nitrogen, phosphorus and sediment targets with the latest science and the latest generation of modeling tools (Phase 7)	X		
Updating and applying latest science or data into partnership tools and products through partnership review and approval processes	X		X
Tracking, reporting and verifying implemented Best Management Practices (BMPs)	X		

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Identifying gaps in information and analysis to better understand observed trends and response gaps to management actions and changing environmental conditions	X		X
Understanding and communicating the ability of BMPs or management actions to provide multiple benefits across varying audiences or scales	X	X	X
Communicating the causes of the lag between implementation of practices which reduce pollutant loads to attainment of WQS (i.e., ecosystem response gaps)	X		X
Addressing administrative, programmatic or regulatory constraints or uncertainties that may slow or impede data-sharing, tracking, reporting, verification, innovation and/or implementation.	X	X	X
Identifying and addressing the causes of gaps between planned implementation and actual implementation (i.e., BMP implementation gaps).	X		
Addressing nutrient mass imbalances, complex systemic dynamics, or changes that impact our ability to meet goals, improve plans, or develop innovative strategies (e.g., fertilizer and agricultural markets; growth of developed footprint in less-regulated non-MS4 areas)	X		X
Increasing resources and technical workforce capacity to provide technical assistance, plan, design, implement and accelerate BMP implementation.	X		
*Physical constraints (e.g., CEC, landscape characteristics or ownership) or realities (e.g., aging infrastructure)	X	X	X
Increasing funding and technical workforce capacity to maintain installed BMPs now and into the future.	X		
Addressing monitoring network operational vulnerabilities; Providing resources and capacity to grow or sustain monitoring networks			X
Improving monitoring data use and incorporation within partnership models.			X

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Communication of monitoring results and difficulties conveying progress across many multiple audiences, timelines, or spatial scales			X
*Seasonal and habitat-specific differences in responses make it difficult to set expectations and interpret progress consistently			X
Sources Information Gap: Limited understanding of the occurrence, concentrations and sources of toxic contaminants in different landscape settings.		X	
Fish Consumption Information Gap: Limited understanding of the effects of legacy and emerging contaminants on both ecological health and human health, through fish consumption.		X	
Emerging Contaminants Information Gap: Fast pace of change and limited knowledge on emerging contaminant issues.		X	
Toxics Mitigation Practices and Co-benefits: Limited information on the current best practices to mitigate contaminants, and the co-benefits of these practices on reducing nitrogen, phosphorus and sediment.		X	
Technical Network Connectivity: Limited connectivity among groups hinders technical information transfer within the partnership and beyond.		X	

Management Approaches for Goal 2: Clean Water

Management Approach 2.0.1: Continue to improve the effectiveness of the Clean Water Goal Team (CWGT) and its workgroups by enhancing coordination, communication, information sharing, adaptive management, and innovation as it strives to achieve Clean Water goals and outcomes.

Participating partners continue to push the CWGT to improve its operations and effectiveness, with communications and cross-coordination regarding the most frequently requested areas for improvement. The revised Agreement and CBP structure afford ample opportunities to be creative and innovative in how it operates and works together. This management approach recognizes a timely need for continuous improvement. It also includes efforts that are likely to be cross-goal or cross-outcome in nature, such as exploring the role of the Bay Program in understanding and communicating how BMP

implementation and maintenance provide multiple benefits beyond nutrient and sediment reductions, such as reducing toxic contaminant exposure, improving, soil health or reducing coastal and inland flooding.

Management Approach 2.0.2: Expand local capacity and technical assistance through strategic cross-partnership collaboration, particularly the Workforce, Land Use Planning & Decision Support, and Local Government Leadership outcomes.

This is inclusive of all sectors engaged throughout the watershed. This seeks to build the sustained operational capacity of local governments, conservation districts, and trusted local organizations that provide technical assistance to select, design, install or maintain BMPs. This approach may include collaborative efforts to assess and generate pathways to train, hire, and retain workers in conservation, restoration and environmental positions. This can continue proactive outreach by partners to historically underrepresented entities, including tribal nations, to co-design, implement and maintain local restoration projects that bring jobs and other benefits to communities.

Management Approach 2.0.3: Assess and integrate jurisdictional data sources to improve the accuracy of model predictions.

In support of the Agreement's Principles, the partnership will continue ongoing efforts to evaluate new or improved jurisdictional and other data sources for integration into our tools for improved accuracy in modeling and planning. Workgroups – including Agriculture, Urban, Watershed Technical, and others – will be core contributors within the partnership structure to assess and evaluate partners' data for continued incorporation or application within modeling tools and/or CBP analysis or products.

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Reducing Excess Nitrogen, Phosphorus and Sediment Outcome

Reducing Excess Nitrogen, Phosphorus and Sediment Outcome: Implement and maintain practices and controls to reduce nitrogen, phosphorus and sediment. These reductions are necessary to achieve the applicable water quality standards, as described in the Bay TMDL. Those water quality standards support living resources and protect human health, as required by the Clean Water Act.

- Through 2030, signatories will continue to accelerate completion of all interim water quality planning targets through implementation of Chesapeake Bay Watershed Implementation Plans, two-year milestone commitments and other innovative strategies to achieve and maintain reduced levels of nitrogen, phosphorus and sediment.
- By December 31, 2030, revise the planning targets approved by the Principals' Staff Committee for nitrogen, phosphorus and sediment, incorporating the latest watershed modeling, monitoring data and research findings, and develop new or amended Watershed Implementation Plans to meet the updated targets by 2040.
- Demonstrate net reductions in nitrogen, phosphorus and sediment through multiple lines of evidence, including modeling and monitoring data.

Baseline and Current Condition

Target 1: Interim water quality planning targets through 2030

Cumulative progress toward this Target is assessed by comparing current difference from the interim water quality planning targets against the 2009 baseline established by the Chesapeake Bay Total Maximum Daily Load (Bay TMDL), when an estimated 297.1 million pounds of nitrogen, 16.8 million pounds of phosphorus and 18.8 billion pounds of sediment were delivered to the Bay. Jurisdictions report implemented best management practices and wastewater treatment facility load reductions annually. The partnership's Phase 6 suite of modeling tools translates those reports into estimated loads.

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As of 2025, estimated annual loads were 252.7 million pounds of nitrogen, 12.8 million pounds of phosphorus and 17.5 billion pounds of sediment. This represents reductions of roughly 15, 21 and 7 percent from the 2009 baseline respectively. Measured against the partnership's interim water quality targets, the watershed achieved 100 percent of the 18.6 billion pound sediment target, 90 percent of the 12.8-million-pound phosphorus target and 57 percent of the 219.5-million-pound nitrogen target.

The sources of those reductions have changed over time. From 2009 to 2017, point sources carried the effort: wastewater accounted for 150 percent of the watershed's net nitrogen reduction, offsetting load growth occurring in other sectors, and 68 percent of the net phosphorus reduction. From 2017 to 2025, nonpoint sources provided half of the nitrogen reduction, with agriculture accounting for 49 percent of that nonpoint share. The increased role of agriculture and other nonpoint sources reflects sustained investment in technical assistance, cost-share programs, and BMP implementation and verification, and is illustrated by successes such as record agricultural cost-share funding in Virginia, record cover crop enrollments in Maryland, and local stream delistings under Pennsylvania's Countywide Action Planning process.

Progress towards Phase III WIP commitments varies by sector and by jurisdiction. The wastewater sector has met nearly all its commitments. Progress in reducing loads in the agriculture and developed sectors is uneven. In several jurisdictions load growth from increased population, development in areas less regulated than areas with Municipal Separate Storm Sewer System (MS4) permits, and agricultural production has outpaced implementation, resulting in no net reduction. Most of the nitrogen reduction still needed is expected to come from the agriculture sector. The Conowingo Watershed Implementation Plan separately addresses the additional loads reaching the Bay now that the Conowingo Dam has reached dynamic equilibrium and no longer traps sediment and nutrients. Implementation under that plan remains early relative to its targets.

Target 2: Model development, revised planning targets, and new or amended WIPs by December 31, 2030 to meet the updated targets by 2040

The baseline for this Target is the current set of planning targets (i.e., the Interim Planning Targets) approved by the PSC and implemented through the Phase III WIPs, together with the separate Conowingo WIP targets and the additional load reductions needed to address changing environmental conditions 2025. These were established using the Phase 6 suite of modeling tools, and progress against them is currently simulated using CAST-23 as described above under Target 1.

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The partnership is developing the Phase 7 suite of modeling tools, which will incorporate updated datasets and methodologies agreed to by the partnership, with key methodological decisions being made during 2026. A calibrated Phase 7 suite of modeling tools is expected at the start of 2027 for partnership review, with final partnership-approved tools in 2028. Those tools are the basis for revising planning targets and for the new or amended Watershed Implementation Plans (WIPs) that will carry the partnership to 2040. Until revised targets are adopted and the new modeling tools are fully in use, the interim water quality targets described under Target 1 remain the measure of progress.

The language of Target 2 to integrate "the latest watershed modeling, monitoring data and research findings" applies to the Phase 7 modeling tools, but also acknowledges the partnership's interest in exploring the concept of "tiered implementation of the water quality goal." This ongoing effort extends from the Scientific and Technical Advisory Committee's Comprehensive Evaluation of System Response (CESR) report's recommendations and subsequent partnership decisions.

As of September 2026, the PSC has approved the schedule through the review and release of the Phase 7 model in early 2027 and 2028, respectively. The schedule and other details for both the final planning targets and WIP development are yet to be determined by the partnership.

Target 3: Net reductions demonstrated through multiple lines of evidence

The baseline for this target is the suite of indicators and tools that the partnership uses to measure progress towards load reductions and water quality improvement. Its current condition is measured by the degree to which those indicators and tools agree with one another. Modeled progress, based on annually reported BMPs simulated through the CBP modeling tools, remains the primary line of focus. In addition, other tools and analysis methods already exist and can be used by the Partnership:

- The TMDL Indicator, which combines monitored and modeled information to estimate progress in reducing annual pollution loading rates since 1995, and;
- METRIC, which compares monitored load trends with CAST-estimated load trends at Chesapeake Bay Non-Tidal Network stations.
- Long-term Non-Tidal Network trend analysis provides a further independent line of evidence.

These additional tools and analysis methods show that nitrogen and phosphorus loads are declining overall but increasing in certain areas. The TMDL Indicator shows measured progress, particularly for phosphorus, to be slower than the modeled simulations predict. The discrepancies between modeled predictions and observed conditions, referred to

within the partnership as response gaps, may reflect lag time between BMP installation and measurable water quality response, the performance of particular practices, landscape and soil characteristics, nutrient mass imbalances, or load growth offsetting implementation.

The principal gap this Target addresses is the need to utilize information from our robust water quality monitoring network along with our suite of modeling tools to best characterize the effectiveness of our pollutant reduction activities throughout the watershed.

Monitoring Progress and Indicators

The Bay Program and its partners rely on several existing metrics and tools to understand our progress in reducing excess nutrient and sediment loads. The primary lines of information used by the CWGT are described here, but the ways that we use them may shift as we explore the Outcomes and Targets described in this Chapter.

Modeled Load Reduction Indicator (MLRI)

The MLRI reports estimated nitrogen, phosphorus and sediment loads and the share of the necessary reductions achieved, based on BMPs and wastewater controls reported annually by the jurisdictions and simulated through the CBP modeling tools. It is updated annually following the jurisdictions' progress submissions. This is the partnership's primary reported measure of progress for Target 1. When the Phase 7 modeling tools and revised targets are in place, this Indicator will shift its application to Target 2, or possibly a revised version of Targets 1 and 2.

Nontidal Network Loads and Trends

Nutrient and sediment loads are monitored at 123 river and stream stations throughout the Chesapeake Bay watershed. Water quality samples collected from this nontidal monitoring network are used by the U.S. Geological Survey (USGS) to calculate trends--which describe how loads of nitrogen, phosphorus and sediment have changed over time--every year or every other year. These trends are used in METRIC.

TMDL Indicator

The TMDL Indicator combines monitored and modeled data to estimate progress in reducing annual pollutant loading rates since 1995 in response to implemented management practices reported by the jurisdictions. Because it incorporates observed water quality data, it provides the partnership's clearest current view of where modeled and monitored results diverge and is a principal reference point for Target 3.

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The following existing tools or products are notable for discussion of all three Outcome Targets and subsequent Management Approaches, but are not maintained on ChesapeakeProgress, the online platform that allows the public to track our progress toward the Chesapeake Bay Watershed Agreement, as official "Indicators:"

Monitored and Expected Total Reduction Indicator for the Chesapeake (METRIC)

METRIC is an application for comparing monitored load trends with modeled (CAST-estimated) load trends at Chesapeake Bay Non-Tidal Network stations. METRIC supports diagnosis of response gaps at the monitoring station and watershed scale and informs where additional research or implementation targeting may be warranted.

Tidal Trends

Each year, the Chesapeake Bay Program, Maryland Department of Natural Resources, Virginia Department of Environmental Quality, Old Dominion University, District of Columbia Department of Energy and the Environment, and Metropolitan Washington Council of Governments work together to produce Chesapeake Bay-wide summaries of water quality trends in tidal waters. These annual estimates of nutrients, dissolved oxygen, water clarity and other parameters at more than 150 monitoring stations help measure the health of the Bay and its response to management actions.

Situation Analysis for Outcome 2.1: Reducing Excess Nitrogen, Phosphorus and Sediment

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within CBP's ability to influence. Challenges associated with changing environmental conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches. The double asterisk (**) indicates challenges where the partnership may only have indirect influence, but where strategic efforts may add value towards achieving the outcome.

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Table 3. List of challenges associated with RENPS outcome, with indication of the partnership's relative ability to address the given challenge

Challenges	Within CBPs ability to	Outside of CBP's ability to
Adaptively managing by revising nitrogen, phosphorus and sediment targets with the latest science and the latest generation of modeling tools (Phase 7)	X	
Updating and applying the latest science or data into partnership tools and products through partnership review and approval processes	X	
Tracking, reporting and verifying implemented BMPs	X	
*Identifying and addressing gaps in information and analysis to better understand observed trends and response gaps to management actions and changing environmental conditions	X	
Understanding and communicating the ability of BMPs or management actions to provide multiple benefits across varying audiences or scales	X	
Communication and outreach of the lag from reducing pollutant loads to WQS attainment (ecosystem response gaps)	X	
Addressing administrative, programmatic or regulatory constraints or uncertainties that may slow or impede data-sharing, tracking, reporting, verification, innovation and/or implementation	**	
Identifying and addressing the causes of gaps between planned implementation and actual implementation (i.e., BMP implementation gaps).	**	
Nutrient mass imbalances and complex systemic changes that impact our ability to meet goals, improve plans, or develop innovative strategies (e.g., fertilizer and agricultural markets; growth of developed footprint in less-regulated non-MS4 areas)	**	
Resources and technical workforce capacity to provide technical assistance, plan, design, implement and accelerate BMP implementation	**	
*Physical constraints (e.g., CEC, landscape characteristics or ownership) or realities (e.g., aging infrastructure)		X
Funding and technical workforce capacity to maintain installed BMPs now and into the future	**	

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Management Approaches for Outcome 2.1: Reducing Excess Nitrogen, Phosphorus and Sediment

Recalling the top six challenges above, the first three Management Approaches will demand a significant amount of direct partnership effort through 2030. These first three approaches are particularly connected to Target 2.

Management Approach 2.1.1: Complete the Phase 7 Suite of Modeling Tools

The next generation of the Chesapeake Bay Program's modeling suite will incorporate new and updated datasets and methodologies that have been agreed to by the partnership. The draft modeling suite will be released by 2027 and will be reviewed by the partnership during that year. The final partnership-approved tools will be available starting in 2028 and will be the basis for further approaches to achieve the RENPS outcome, Target 2. Specifically, they will be used to set new planning targets to be achieved through new or amended Watershed Implementation Plans (WIPs).

Management Approach 2.1.2: Revise planning targets for 2040 based on the final Phase 7 suite of modeling tools

The partnership will revise planning targets to guide this outcome for 2040 based on the final Phase 7 modeling suite. See also Management Approach 2.1.5, as the methods for setting new targets are dependent or concurrent with exploring the fulfillment of recommendations from STAC's CESR report to pursue tiered implementation of the Chesapeake Bay TMDL.

Management Approach 2.1.3: Develop new or amended Watershed Implementation Plans (WIPs)

The Clean Water Goal Team will work collaboratively to identify how the partnership should adapt WIPs in response to new science, monitoring results, and management priorities and approaches. The Goal Team and associated workgroups will also support the partnership by providing updated tools and information that help partners revise or develop new WIPs and accelerate progress toward water quality goals.

The fourth RENPS management approach is particularly linked to Target 1, but with some overlap with lessons learned in pursuit of Targets 2 and 3.

Management Approach 2.1.4: Continue to increase implementation of Phase 3 WIPs through 2030 to achieve interim planning targets and share successful or emerging innovative strategies or opportunities to achieve greater nutrient and sediment reductions.

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Partners' ongoing implementation efforts remain a focus, and the Clean Water Goal Team will continue to share salient lessons and findings amongst the partners as they continue to implement the existing WIPs. This approach goes beyond tracking or updates alone, it includes efforts to improve how information is compiled, visualized, and conveyed to partners and the public, reducing confusion across disparate indicators and creating clearer, more holistic narratives of progress. This enables the partnership to effectively evaluate and, if appropriate, update the existing accountability framework to enhance its overall effectiveness at tracking, promoting achievement of reductions, and learning from these experiences. This approach will move beyond relying solely on modeled planning inputs by incorporating multiple lines of evidence, including monitored water quality data, to evaluate progress. This will seek to strengthen the partnership's ability to innovate and inform more targeted and effective implementation activities.

The next two management approaches are primarily connected with Target 2 but have significant overlap with the pursuit of Target 3.

Management Approach 2.1.5: Explore a tiered implementation structure for achieving nitrogen, phosphorus and sediment reductions.

Evaluate a tiered implementation strategy that prioritizes nutrient and sediment reductions based on modeling and assessment tools. This stepwise approach prioritizes receiving waters with a stronger potential for near-term living resource response and possible earlier attainment of water quality standards in targeted locations.

Management Approach 2.1.6: Assess nutrient mass imbalances and advance innovations that strengthen the adoption or performance of nonpoint source best management practices (BMPs).

This effort seeks to better understand and address implementation and response gaps, which are exacerbated by complex nutrient mass imbalances and systems that impact the adoption and long-term performance of practices. Thus, there is a benefit to identify and assess long-standing systemic nutrient mass imbalances (such as fertilizer surpluses, manure distribution challenges, growth of development outside of regulated MS4 areas) while strengthening coordination between notable programs (e.g., Clean Water Act Section 319(h) nonpoint source programs) and Bay partnership initiatives. This effort will be a longer-term endeavor that takes opportunities to expand a holistic view on overlapping topics, such as scaling up voluntary BMPs by utilizing social science data to understand behavioral motivations, eliminate implementation barriers for landowners and farmers, and optimize the co-benefits of practices that reduce multiple pollutants simultaneously. This can also include efforts to understand and assess the complex impacts of changing

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environmental conditions have on implementation, maintenance, and progress toward the RENPS outcome.

Management Approach 2.1.7: Incorporate additional lines of evidence into assessments of progress.

New or amended WIPs will be developed by the end of 2030, informed by the updated suite of Modeling Tools. Until then, for the period from 2026-2030, jurisdictions and partners will continue to strive for their interim planning targets, as agreed by the Policy Steering Committee (PSC) in August 2025. Innovative approaches and emerging opportunities to accelerate progress will be a focus during this period. The partnership can also use this period to test additional lines of evidence and enhance how existing monitoring and modeling information is applied for assessment, communication, and strategic purposes.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, "participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners**
    - [TBD, will need to be added after November by signatory partners]
- **Other Partners**
    - [This list will be confirmed at a later date]

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Toxic & Emerging Contaminants Outcome

Toxic & Emerging Contaminants Outcome: Reduce the amount and effect of toxic contaminants, such as PCBs, plastics, mercury and PFAS, on the waters, lands, fisheries, wildlife and communities of the Chesapeake Bay watershed through an increased understanding of their impacts and mitigation options.

- Promote information sharing between researchers, program managers and policymakers on the lessons learned, best practices and most up-to-date science, policy and communications around the toxic contaminants impacting the Chesapeake Bay watershed.

Baseline and Current Condition

Information Sharing

The Executive Council, in the revised Toxic and Emerging Contaminants outcome language, has prescribed a limited role for CBP regarding toxics mitigation because existing federal, state, and local level partnerships and programs meet many of the signatories' needs. Recognizing this, work within the partnership beyond 2025 will transition towards a value-added and strategic approach to disseminate information and connect researchers and practitioners. As of 2026, the Toxics Contaminants Workgroup (TCW) hosts approximately 14 technical presentations a year and has an average of 33 attendees per meeting, representing various federal and state agencies and academic and non-governmental organizations. Information sharing will be measured against this baseline and other metrics.

The Plastic Pollution Workgroup (PPoW) (formerly Plastic Pollution Action Team) has been leading partnership efforts related to plastics research, mitigation, and implementation by developing important research and monitoring strategies, such as the impacts of plastic on living resources. The team has provided input on a framework for plastic monitoring strategies in the Bay, a monitoring strategy document for microplastics in the Bay, and an ecological risk assessment conceptual model for microplastics in the Potomac River. Transitioning from its focus on the Action Team's original charge, progress on information sharing related to plastics will be measured by the completion, adoption and implementation of these products and by similar metrics to TCW's convening.

Extent of toxic contaminants in the Chesapeake Bay watershed

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In 2024, reported data for tidal waters in Delaware, Maryland, Virginia and the District of Columbia showed that 80% of the Chesapeake Bay's tidal segments are fully or partially impaired by toxic contaminants. These contaminants may include polychlorinated biphenyls (PCBs), metals, priority organics, per- and polyfluoroalkyl substances (PFAS) and unknown toxics, often resulting from industrial activities, agricultural runoff and urban pollution. Progress on the Toxic and Emerging Contaminants Outcome will be measured against this baseline from 2024 Integrated Reports, produced by jurisdictional partners under the federal Clean Water Act, as described via the indicator below.

Monitoring Progress and Indicators

Monitoring Progress: Information Sharing

An Indicator will not be used for this Target. The extent of information sharing between researchers, program managers and policymakers facilitated by CBP will be measured by presentations given, partners engaged at TCW and PPoW meetings, partners engaged through other venues, etc. This information will be shared in the annual Bay Barometer. Given the indirect, delayed impact of information sharing on actual reduction of toxic contaminants, measuring progress on information sharing will more directly reflect the work the partnership is doing to effect toxics reduction.

Indicator: Extent of toxic contaminants in the Chesapeake Bay watershed

Reductions in the amount and effect of toxic contaminants in the Chesapeake Bay watershed will be communicated through a distillation of the toxics- relevant portions of Integrated Reports developed by jurisdictions, which are required to be submitted biennially to EPA under sections 305(b) and 303(d) of the Clean Water Act. This indicator will be adapted from the previous Toxic Contaminants Policy & Prevention (TCPP) Indicator, with potential enhancements based on feedback from recent years, subject to capacity and workgroup interest. In addition, workgroup membership will explore indicator expansion to nontidal portions of the watershed to add value to the indicator for all signatories. Given the 2024 TCPP Indicator reported no change in toxic contaminant levels since 2014 and that such a measure is beyond the reach of TCW's direct influence, the new Indicator will be updated less frequently at a yet to be determined periodicity.

Situation Analysis for Outcome 2.2: Toxic & Emerging Contaminants

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within the

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CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

Table 4. List of challenges associated with the Toxic & Emerging Contaminants Outcome, with an indication of which are within the CBP's relative ability to influence

Challenges	Within CBPs ability to	Outside of CBP's ability to
Watershed-wide Status: Communicating clearly a watershed-wide status of toxic contaminants when jurisdictions differ in their data and/or assessment methods.		x
Sources Information Gap: Limited understanding of the occurrence, concentrations and sources of toxic contaminants in different landscape settings.	x	
Fish Consumption Information Gap: Limited understanding of the effects of legacy and emerging contaminants on both ecological health and human health, through fish consumption.	x	
Toxics Mitigation Practices and Co-benefits: Limited information on the current best practices to mitigate contaminants, and the co-benefits of these practices on reducing nitrogen, phosphorus and sediment.	x	
Emerging Contaminants Information Gap: Fast pace of change and limited knowledge on emerging contaminant issues.	x	
Plastics Information Gap: Lack of studies from the organismal to ecosystem scale showing the impacts of plastic pollution.	x	
Plastics Monitoring Gap: Lack of repetitive system-wide survey of microplastics in the Chesapeake Bay watershed.	x	
Plastics Resources Gap: Lack of access to and expertise in instrumentation and laboratory resources. Lack of human capital and funding.	x	
Relative Prioritization: Resource constraints for conducting research and developing a synthesis of products on toxic contaminants. The opportunity cost of the relative emphasis on nutrients and sediment constrains efforts focused on toxic contaminants.		x
Technical Network Connectivity: Limited connectivity among groups hinders technical information transfer within the partnership and beyond.	x	

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Management Approaches for Outcome 2.2: Toxic & Emerging Contaminants

Management Approach [2.2.1]: Share information on the occurrence, sources and effects of toxic contaminants, including emerging contaminants.

A limited understanding of the occurrence, sources and effects of toxic contaminants in different landscape settings continues to hinder efforts to target mitigation of those sources. TCW will host topical meetings to share the state of the science on contaminants of interest to CBP partners. The group will also continue to develop tools, reports and other materials, as interest and capacity allows, to communicate watershed-wide information on the state of toxic contaminants, including emerging contaminants of concern and contaminants in fish. This may include an update to the prior Toxic Contaminants Policy & Prevention Indicator Map, an assessment of fish consumption advisories, sharing results and lessons learned from source tracking studies, and an update to the publication Toxic Contaminants in the Chesapeake Bay and its Watershed: Extent and Severity of Occurrence and Potential Biological Effects (2012) to guide establishment of future toxic contaminant priorities.

Management Approach [2.2.2]: Synthesize and share research on the efficacy of mitigation practices and communicate the toxic contaminant reduction co-benefits of nutrient and sediment-focused best management practices.

To ensure information sharing has its intended impact, it is critical to improve partners' understanding of mitigation practices. TCW meetings will serve as a venue for sharing research on mitigation practices and success stories from jurisdictions to encourage the adoption of innovative and/or impactful practices. Through collaboration with other source sector workgroups in the Clean Water Goal Team, an emphasis will also be placed on sharing research on the co-benefits of best management practices to encourage the implementation of BMPs that provide the best reduction of toxic contaminants in addition to the reduction of nitrogen, phosphorus and sediment.

Management Approach [2.2.3]: Strengthen collaborative connections across the Chesapeake Bay Program and engage new partners and practitioners beyond CBWA signatories.

The strength of the TCW and PPoW is in their positioning as conveners of practitioners across the Chesapeake Bay watershed. To widen the visibility and impact of the two workgroups, a greater effort will be made to connect previously under-engaged groups by utilizing the existing network of members and interested parties to bring new people to

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meetings, attending events outside of workgroup meetings, and hosting joint meetings with other groups in the Chesapeake Bay Program, as interest and resources allow.

Management Approach [2.2.4]: Support development of a plastics monitoring program for the Chesapeake Bay watershed

Develop a watershed-wide program to monitor the status and trends of plastic pollution including microplastics for the Chesapeake Bay watershed. The 2024 Framework for Monitoring Plastic Pollution in the Chesapeake Bay makes recommendations on monitoring strategies across various media and includes scale, frequency and location. The framework focuses on leveraging and integrating into existing programs to limit resources required.

Management Approach [2.2.5]: Continue to research and disseminate microplastic pollution findings to understand the threats of plastic pollution to the Chesapeake Bay and its resources.

Continue to develop research studies, for example, ecological risk assessments to understand threats of plastic pollution to resources. The 2021 Microplastic Monitoring and Science Strategy for the Chesapeake Bay recommended support for research to understand microplastic pathways in the Bay, including trophic pathways that may affect living resources such as Striped Bass, Blue Crabs, Oysters, and other species critical to the Bay ecosystem

Management Approach [2.2.6]: Identify and implement management solutions to reduce the occurrence of plastic pollution in the Chesapeake Bay watershed.

Adopt a plastic pollution source reduction strategy for the Chesapeake Bay and revise the strategy periodically based on results from monitoring and other scientific research.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, “participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices” (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

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- **Signatory Partners:**
    - [TBD, will need to be added after November by signatory partners]
- **Other Partners**
    - [Placeholder: Partner/Agency/Organization Name]

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Water Quality, Standards Attainment and Monitoring Outcome

Water Quality, Standards Attainment and Monitoring Outcome: Measure changing water quality conditions by maintaining monitoring networks and tracking our collective progress toward achieving clean water throughout the Chesapeake Bay and its watershed.

- Maintain full core monitoring network operations (i.e., nontidal water quality, SAV, tidal water quality, benthic and community science) annually to support analysis and communication of water quality loads, trends and criteria attainment.
- Develop and expand partnership-approved approaches for assessing whether water quality criteria are being met for all designated uses. For dissolved oxygen criteria, establish an approved method by 2028 and apply the method for data analysis and reporting by the end of 2030.
- Maintain or exceed the rate of improvement in the water quality standards attainment indicator relative to the 1985-2022 baseline.
- Analyze and report status/loads, trends and factors affecting those trends for nontidal and tidal water quality.

Baseline and Current Condition

Over more than four decades, the Chesapeake Bay Program partnership has built and sustained one of the nation's strongest watershed and estuarine monitoring efforts, establishing core monitoring networks in the 1980s to support the analysis of Bay health status and trends. The CBP has maintained these networks through shared commitment, strategic reviews, and evolving science. These networks have been adapted over time to meet management needs and adapt to science-based recommendations supported by advances in continuous monitoring, tributary assessments, and emerging tools such as four-dimensional interpolation and satellite imagery. Together, these innovations and ongoing improvements in data synthesis and communication provide more accessible, actionable insights to track change and guide restoration progress.

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Target 1. Maintain full core monitoring network operations (i.e., nontidal water quality, SAV, tidal water quality, benthic and community science) annually to support analysis and communication of water quality loads, trends and criteria attainment.

Core monitoring networks within the Chesapeake Bay Program are stronger than ever. Rapid advances in sensor technology, data analysis, and scientific integration have expanded access to high-resolution data and created new opportunities to better inform decision-making and meet partner needs. Since 2022, enhancements have been made to core monitoring networks addressing recommendations provided to the PSC in response to their 2021 request to the Partnership (PSC 2022) for a plan to improve the status and capacity of CBP monitoring networks. Most recently, within the Chesapeake Bay Program, short-term funding support from the Infrastructure Investment and Jobs Act has been critical for maintaining several long-term monitoring networks.

Target 2. Develop and expand partnership-approved approaches for assessing whether water quality criteria are being met for all designated uses. For dissolved oxygen criteria, establish an approved method by 2028 and apply the method for data analysis and reporting by the end of 2030.

Methods for assessing all dissolved oxygen criteria and designated uses, including those needed by the jurisdictions for 305(b)/303(d) regulatory requirements, are being developed and will be shared with the Partnership to support tidal criteria attainment tools, with overall Partnership approval of dissolved oxygen assessment methods targeted for 2028.

Target 3. Maintain or exceed the rate of improvement in the water quality standards attainment indicator relative to the 1985-2022 baseline.

In 2012, the partnership tasked the Scientific, Technical Assessment and Reporting (STAR) Team with developing a method to assess and communicate progress toward water quality standards, resulting in the Estimated Achievement of Chesapeake Water Quality Standards Indicator that the partnership adopted in 2013. This indicator has been used by the Chesapeake Bay Program to track and publicly report progress since 2014 and remains part of its commitments under the revised 2025 watershed agreement for this target. The indicator shows that 29% of tidal waters have met applicable water quality standards in 2022 – 2024. Overall, the Indicator shows a positive trend of 0.15% per year between 1985–1987 and 2022–2024, suggesting that Chesapeake Bay water quality is on a recovery trajectory. However, this long-term trend slope is not statistically significant ($p = 0.248$). Our habitat and water quality recovery rates remain positive but is slowing down.

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Target 4. Analyze and report status/loads, trends and factors affecting those trends for nontidal and tidal water quality

The CBP partnership continues to assess nontidal and tidal water quality conditions across the Chesapeake Bay watershed through the partnership's long-standing monitoring networks, which provide consistent measurements of status, pollutant loads, and trends for nutrients, sediment, and related indicators. Current analyses show that while many locations exhibit improving trends relative to the 1985–2022 baseline, progress varies spatially due to differences in watershed inputs, hydrology, land-use change, environmental variability, and habitat-specific responses. These factors collectively influence both seasonal and long-term water quality dynamics, shaping the degree to which criteria are attained and informing management actions to sustain and accelerate improvements.

Monitoring Progress and Indicators

The Bay Program and its partners rely on several existing metrics and information to understand our progress in maintaining monitoring networks and tracking our collective progress toward achieving clean water throughout the Chesapeake Bay and its watershed. The primary lines of information used by the CWGT are described here, but the ways that we use them may shift as we explore the Outcomes and Targets described in this Chapter.

CBP Core Monitoring Programs

Sustained, long-term monitoring is a keystone of any effective ecosystem restoration effort, especially one at the scale of the CBP. Long-term monitoring and analysis help to document current and changing water quality, habitat and living-resources conditions and underpin the development of effective implementation, conservation and land-use strategies. The following are the four core CBP partnership monitoring networks: Nontidal Water Quality, Tidal Water Quality (including long-term monitoring and water column hypoxia monitoring), Submerged Aquatic Vegetation (SAV) and Tidal Benthic. These core monitoring networks are supported by the Environmental Protection Agency (EPA) as well as multiple federal, state and local entities.

Water Quality Standards Attainment Indicator

A multi-metric indicator that combines dissolved oxygen, chlorophyll-a and water clarity/submerged aquatic vegetation data across 92 management segments allows us to estimate progress toward water quality standards attainment in the Bay's tidal waters. The Partnership's water quality indicator provides a Bay-wide estimate of overall progress using shared monitoring data, but it does not replace official state regulatory assessments.

Individual states hold the legal authority under Clean Water Act Sections 303(d) and 305(b) to issue official water quality assessments and impairment listings in their even-numbered year Integrated Reports.

Nontidal Network Loads and Trends

Nutrient and sediment loads are monitored at 123 river and stream stations throughout the Chesapeake Bay watershed. Water quality samples collected from this nontidal monitoring network are used by the U.S. Geological Survey (USGS) to calculate trends--which describe how loads of nitrogen, phosphorus and sediment have changed over time--every year or every other year.

TMDL Indicator

The TMDL Indicator combines monitored and modeled data to estimate progress in reducing annual pollutant loading rates since 1995 in response to implemented management practices reported by the jurisdictions. Because it incorporates observed water quality data, it provides the partnership's clearest current view of where modeled and monitored results diverge and is a principal reference point for Target 3.

Tidal Trends

Each year, the Chesapeake Bay Program, Maryland Department of Natural Resources, Virginia Department of Environmental Quality, Old Dominion University, District of Columbia Department of Energy and the Environment, and Metropolitan Washington Council of Governments work together to produce Chesapeake Bay-wide summaries of water quality trends in tidal waters. These annual estimates of nutrients, dissolved oxygen, water clarity and other parameters at more than 150 monitoring stations help measure the health of the Bay and its response to management actions.

Situation Analysis for Outcome 2.3: Water Quality, Standards Attainment and Monitoring

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within the CBP's ability to influence. Challenges associated with Changing Environmental Conditions (CEC) are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

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Table 5. List of challenges associated with Water Quality, Standards Attainment & Monitoring Outcome, with an indication of which are within the CBP's relative ability to influence

Challenges	Within CBPs ability to	Outside of CBP's ability to
Mismatch between monitoring needs and available resources	X	
Unanticipated challenges that may impact monitoring activities		X
Monitoring network operational vulnerabilities	X	
High-priority gaps in monitoring coverage	X	
Network wide quality assurance coordination	X	
Coordinating multiple sampling agencies	X	
Lack of formal assessment methods for DO criteria across all designated uses, seasons, and durations	X	
Inability to fully report on the attainment status of DO criteria in Bay tidal waters consistently across jurisdictions		X
Difficulty communicating differences between partnership attainment metrics and jurisdictional regulatory assessment results	X	
Difficulty explaining environmental drivers behind observed attainment changes (e.g., wet years, pollutant loads)*	X	
Administrative/coordination barriers	X	
Communicating across audiences	X	
Lag between watershed load reductions and water quality standards attainment		X
Seasonal/habitat specific variability		X
Water quality trend interpretation difficulties	X	
Analytical gaps	X	
Explaining complex factors impacting uncertainties	X	
Pollutant load variability and the impact on nontidal and tidal water quality trends		X
Loads vs concentration interpretation challenges	X	
Changing environmental conditions*		X
Environmental lag times		X
Applying insights from small watersheds to larger areas	X	
Dynamics affecting pollutant delivery from the watershed to the Bay		X
Harmonizing datasets about management-practices and other water-quality predictors.	X	
Applying all partnership monitoring data in modeling tools	X	
Differences between monitoring data and model output	X	

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Communicating management-relevant implications of monitoring data and model output	X	
How to evaluate progress towards clean-water goals based on monitored water-quality data.	X	
Variability between observed water-responses		X
Explaining complex factors that impact nontidal and drivers that differ over time and location	X	
Isolating management-practice effects from water quality trends and data and model trends	X	

Management Approaches for Outcome 2.3: Water Quality, Standards Attainment and Monitoring

Management Approach 2.3.1: Sustain and Strengthen Core Partnership Monitoring Networks

Ensure long-term continuity and resilience of the Chesapeake Bay Program's core monitoring networks (i.e., nontidal water quality, tidal water quality, submerged aquatic vegetation (SAV), and tidal benthic) by addressing resource vulnerabilities, coordinating partner timelines, maintaining standardized protocols, ensuring the collection of high-quality data, and integrating monitoring priorities into policy and restoration frameworks.

Support monitoring and data consistency by fostering transparent, routine information exchange across sampling agencies and strengthening coordinated approaches to sampling methods and data management. Such information exchanges will enable partners to maintain the high-quality monitoring capacity essential for tracking watershed health, informing restoration decisions, and supporting adaptive management.

Management Approach 2.3.2: Develop and Implement Decision Rules for Assessing Water Quality Criteria for All Designated Uses

Develop formal assessment methodologies for all DO criteria and initiate review of SAV, clarity, and chlorophyll-*a* assessment methods.

Management Approach 2.3.3: Maintain or Exceed the Rate of Improvement in the Water Quality Standards Attainment Indicator

Track measurable improvements utilizing the Chesapeake Bay Program's water quality standards attainment indicator, which evaluates tidal waters for dissolved oxygen, water clarity/SAV, and chlorophyll-*a* performance. Promote consistent, transparent tracking of Bay-wide conditions and support science-driven decision-making built on long-term monitoring records and partnership-approved assessment methods. Over the next six

years, partners will work collaboratively to sustain the upward trajectory of indicator performance relative to the 1985–2022 baseline, communicate results clearly, incorporate new assessment methods as they are approved, and ensure that partners remain informed and engaged.

Management Approach 2.3.4: Maintain and Advance Water Quality Data Analysis to Address Information Gaps and Inform Science-Based Management Decisions

Develop partnership-supported integrated analytical tools that deliver actionable insights about pollutant loads and water-quality concentrations in the watershed and the Bay, in particular, by evaluating the effects of environmental conditions, watershed properties, human activities, and management practices. These insights will enhance the partnership's ability to analyze, interpret, and communicate changing water-quality conditions and their drivers. These tools will strengthen consistent interpretation across the Bay and its watershed and translate monitoring insights into clear, science-based information that supports management decisions.

Management Approach 2.3.5: Improve Monitoring to Model Integration and Transparency

Improve integration of partnership monitoring data into partnership-maintained modeling tools and provide clear documentation explaining how monitoring data inform load forecasts, watershed planning, and Outcome attainment. This integration will help the partnership evaluate the modeling accuracy, improve future modeling tools, and use monitoring data to more clearly evaluate progress towards attaining clean-water goals.

Management Approach 2.3.6: Develop Unified Progress Narratives and Communication Products Across Audiences and Scales

Compute concentrations, loads, and trends of water-quality conditions in the watershed and the Bay and strengthen the partnership's communication of these monitoring-based results and trends, as well as translation of monitoring results into actionable insights. Develop and deliver clear, audience-specific communication tools that explain not only how conditions are changing, but – through enhanced water-quality analyses – why they are changing. Communicating water-quality patterns and drivers across jurisdictions promotes increased understanding of progress, supports adaptive management, and clarifies the roles of management actions and external environmental forces.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, "participation in developing

Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners:**
  - [TBD, will need to be added after November by signatory partners]
- **Other Partners:**
  - [Placeholder: Partner/Agency/Organization Name]

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Chapter 5. Management Strategies for Goal 3: Healthy Landscapes

Healthy Landscapes Goal

Conserve, protect, restore and enhance landscapes of ecological, economic, recreational and cultural value to improve water quality, provide habitat for wildlife and increase resilience.

Situation Analysis for Goal 3: Healthy Landscapes

In the table below, the Goal Team has summarized the most critical challenges facing each of its Outcomes that are within CBP's ability to impact or influence. The Goal Team and its Workgroups, as appropriate, have identified those challenges shown in bold as critical for Workgroups to begin addressing within the next six years via the development and implementation of Management Approaches. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Note that the individual outcome subchapters vary in length and level of detail as some outcomes represent a continuation and enhancement of previous strategies while others are new and lack the same level of background information.

	Outcomes			
Challenges	**3.1 Adaptation**	**3.2 Healthy Forests**	**3.3 Land Use**	**3.4 Protected Lands**
3.0.1 Coordination: Effective and efficient coordination with other goals and their outcomes and management approaches	**X**	**X**	**X**	**X**
3.0.2 Funding: Inconsistent funding and availability of effective programs for planting and maintenance and long-term resilience monitoring; insufficient funding for land conservation capacity and technical assistance	X	X	X	X
***3.0.3 Land Use Change: Fragmentation and conversion of forests and tree canopy to other land uses; insufficient resources for land use planning assistance to reduce forest and farmland conversion; shoreline change due to sea level rise and marsh migration.**	**X**	**X**	**X**	**X**

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3.0.4 Scientific support for policies and regulations: Inadequate state and/or local policies that support effective reforestation, forest and tree canopy conservation, and forest management; overcoming regulatory and permitting hurdles that stall innovative nature-based engineering solutions.	X	X	X	X
3.0.5 Local engagement: Inadequate engagement with local governments to support planning decisions for forests and tree canopy and to draft complex, competitive federal grant proposals for adaptation projects.	**X**	**X**	**X**	**X**

Management Approaches for Goal 3: Healthy Landscapes

Management Approach 3.0.1: Coordinate activities across outcomes and goals

Healthy Landscapes outcomes are highly interrelated. Improving coordination will increase the impact of strategic conservation and restoration efforts across multiple outcomes and goals. For example, planting trees is the most effective practice for improving water quality and a nature-based solution to address changing environmental conditions. Similarly, conserving forests is critical to the protected lands' outcome and is often a stated objective in local land use plans. In addition, participation and coordination with several other outcomes including Public Access, Local Government Leadership, Stewardship, Stream Health, and Wetlands are needed to effectively achieve the Healthy Landscapes outcomes. The Healthy Landscapes Goal Team will host periodic joint meetings with the Engaged Communities and Thriving Habitat, Fisheries, and Wildlife Goal Teams to address these coordination challenges.

Management Approach 3.0.2: Identify and foster the development of funding opportunities

Additional sustainable sources of funding are needed both to support on-the-ground implementation of the Healthy Landscapes outcomes and workgroup and goal team activities to support on-the-ground implementation and monitoring to assess resiliency. Where quantifiable funding gaps exist for programs supporting Healthy Landscapes' outcomes, such as tree planting and maintenance or technical and capacity assistance for land conservation and adaptation strategies, the Healthy Landscapes Goal Team will work with its members to identify and/or support the development of funding opportunities.

Management Approach 3.0.3: Synthesize landscape conditions and change

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The conversion and fragmentation of forests threatens water quality, stream health, and wildlife habitat. The conversion of farms threatens food security, cultural heritage, and rural character of communities and landscapes. The Healthy Landscapes Goal Team will work with its workgroups to synthesize and communicate information across outcomes on changes in land use, ecosystem services, and strategies to address them. This information will be provided to the public and decision-makers in a variety of formats coinciding with the release of the most recent high-resolution land use datasets. Improving understanding of how the landscape is changing will help empower organizations and decision-makers with the information needed to design policies and programs supportive of conserving and restoring healthy landscapes that are resilient to changing environmental conditions.

Management Approach 3.0.4: Provide scientific support for policies and regulations

More effective state and local policies are needed to support reforestation, forest and tree canopy conservation, and forest management and for overcoming regulatory and permitting hurdles that stall innovative nature-based engineering solutions. Scientific support is also needed to identify locations in the landscape where restoration practices and land protection can be most effective, especially with changing sea levels, precipitation, and temperatures. The Healthy Landscapes Goal Team will work with members to identify and develop science and data to promote and disseminate more effective policies and implementation.

Management Approach 3.0.5: Effectively communicate science, data, and policies to local governments and others engaged in implementation activities

Engagement with local governments and non-governmental organizations is critical to the success of all four Healthy Landscapes' outcomes and engagement of local government leaders in Bay restoration efforts is the main objective of the Local Government Leadership outcome. The Healthy Landscapes Goal Team will work with the Engaging Communities Goal Team, Local Government Leadership Workgroup, and the Strategic Engagement Team to develop a collective strategy, ensuring that engagement activities are effective, coordinated, and complementary.

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Adapting to Changing Environmental Conditions Outcome

Adapting to Changing Environmental Conditions: Increase the capacity for pursuing solutions, including those that are nature-based, to improve planning and responses to changing conditions while balancing long-term resilience of watershed communities, economies and ecosystems.

- By 2040, support at least seven sub-watershed areas with knowledge-sharing and technical assistance to identify adaptation options with a preference for nature-based solutions. These solutions include restoration and protection projects that will help address risks to people, infrastructure and habitats from changes in temperature, precipitation and landscapes.
- By 2040, inform and lead to an increase in the implementation of the identified adaptation options that prioritize and integrate nature-based solutions in the above sub-watershed areas.

Baseline and Current Condition

The previous adaptation outcome under the 2014 Watershed Agreement did not have a formalized quantitative baseline or explicit project-tracking mechanisms for resilience-related projects. This was mainly due to the outcome being structured under the CBP's Scientific, Technical, Assessment, and Reporting (STAR) team where progress was assessed from a qualitative perspective on addressing science needs. Under the revised 2025 Watershed Agreement framework, the Adapting to Changing Environmental Conditions (ACEC) outcome now has defined targets. To facilitate progress on the targets, we are using a place-based, adaptation needs-driven approach across chosen sub-watershed areas. This strategy targets the unique impacts of changing environmental conditions—specifically changes in precipitation, changes in air and water temperatures, and sea level rise—on local landscapes within the sub-watershed area. Ideally, the selected seven sub-watershed areas will have varying geographic and development considerations (e.g., urban, suburban, rural) where the workgroup can build capacity for adaptation strategies, with a focus on nature-based solutions (NbS), to maximize resilience and ecosystem benefits across coastal (tidal) and inland (nontidal) areas.

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For each selected sub-watershed, we will determine a baseline condition against which adaptation needs will be measured. Baseline conditions will be analyzed using existing datasets to assess trends in precipitation, temperature, and sea levels and other environmental changes and by examining any existing vulnerability assessments and adaptation plans or similar products. Adaptation needs will be conveyed by local governments and stakeholders, and could include, but are not limited to, addressing issues around coastal and inland flooding, changes in hydrology/flow regimes, shoreline erosion, droughts or warming temperatures, habitat loss, invasive species, or other issues of local concern. If such information does not exist, the workgroup and participating signatories and members will support activities to empower jurisdictions and communities to develop the needed information.

Ultimately, the baseline will be defined by the current capacity of localities within a sub-watershed to understand changing environmental conditions and develop solutions to address adaptation needs, policies and funding. The workgroup, in coordination with signatories and members, will develop an inventory of candidate sub-watersheds and categorize current conditions based on land use, landscape geography, and the specific environmental stressors related to the adaptation needs within the sub-watershed and capacity to implement solutions. This information would be used to establish baselines at the watershed-scale and inform us where additional capacity-building is needed. Capacity to implement solutions includes connecting various partners, funding sources, and technical assistance that improves the likelihood of an increase in the implementation of adaptation options.

Monitoring Progress and Indicators

The previous adaptation outcome did not have any quantitative indicators. Instead, progress was assessed qualitatively based on collaborative projects being supported by the workgroup participants. Moving forward, the group will be evaluating options for quantitative indicators to track progress on the outcome. This outcome and its targets are unique in that they depend on the integration of stakeholder feedback on adaptation needs in the sub-watershed area. Collaboration and strategic networking will be key in monitoring progress.

To move forward in identifying and implementing appropriate adaptation strategies, including NbS and other resilience activities, we plan to take an adaptation planning-to-implementation pipeline approach where the workgroup and participating signatories and members will collaborate with local and regional partnerships presiding or working within a sub-watershed to share and deliver data and tools, assess adaptation needs, connect groups with adaptation best practices, and implement other knowledge sharing activities,

such as workshops to address specific adaptation challenges. These activities will aid groups in the sub-watershed area in advancing their use of NbS and other resilience activities where they are in the process. For instance, some areas may already have in-depth vulnerability assessments and have identified adaptation strategies but need improved information to support design and implementation. Others may be starting with an initial concept and need guidance on which adaptation strategies to consider.

The adaptation planning-to-implementation pipeline could vary depending on the jurisdiction's policies and resources. Flexibility will be key to work where local and regional partners are in the process and align technical assistance where needed. Examples of activities that the workgroup could support to empower local and regional groups with their adaptation needs include:

- Connecting partners with existing datasets and data tools to aid in their vulnerability assessments,
- Identifying innovative NbS strategies or hybrid green-gray infrastructure approaches that bolster multiple benefits (e.g. hazard mitigation, water quality improvements, habitat provision, outdoor recreation, economic vitality, etc.) for implementing groups to consider in their adaptation planning,
- Producing best practices on pre-project and post-project monitoring to assist in efforts to assess and track resilience progress and performance,
- Aligning research with adaptation efforts to improve and standardize NbS approaches over time,
- Translating project-level adaptation efforts to additive resilience, ecosystem services, and economic benefits across the sub-watershed,
- Highlighting new and enabling policies and legislation from state or local jurisdictions, and
- Identifying and sharing funding opportunities.

Progress will be measured based on the adaptation activities occurring in the sub-watersheds, building up to a minimum of seven sub-watersheds supported by 2040. Tracking progress would encompass documenting the workgroup's and participating partners' evolution through the adaptation planning-to-implementation pipeline across the selected sub-watersheds. The workgroup envisions direct involvement with knowledge-sharing and technical assistance activities under Target 1 with the goal that these activities would lead to an increase of identified adaptation options under Target 2 by participating signatories and organizations through strategic networking efforts. Tracking Target 2 will depend on developing reporting mechanisms with the participating partners.

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Future indicators will demonstrate progress made by sub-watersheds on the adaptation planning-to-implementation pipeline. We aim to develop "capacity-building" indicators to track progress. These could include the integration of resilience strategies into local comprehensive plans, the number of successful grant proposals submitted for projects, and the establishment of local policies/ordinances. Additionally, the workgroup aims to support activities to quantify the additive benefits across implementing NbS and other resilience activities for prioritized endpoints (e.g., reduced flooding damage, resilient habitat, reduced erosion, etc.). These will depend on the adaptation needs identified in the sub-watershed area. The workgroup will also explore engagement metrics, including an endpoint metric that indicates when a sub-watershed network is self-sufficient in advancing their adaptation pipeline.

Situation Analysis for Outcome 3.1: Adapting to Changing Environmental Conditions

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches. In some instances, the workgroup's ability to act will depend on the financial resources available.

Challenges	Within CBPs ability to	Within CBPs ability to act	Outside of CBP's ability to
Selecting which sub-watersheds to support that align with available expertise (operational for workgroup)		**X**	
***Lack of quantitative adaptation metrics and indicators for evaluating long-term resilience enhancement.**		**X**	
***Lack of centralized adaptation strategies project-tracking database**		**X**	
***Regulatory and permitting challenges that stall innovative nature-based engineering solutions.**	**X**		

***Short-term horizon (under 5 years) of major resilience grants, which discourages long-term adaptation planning and monitoring of progress of desired adaptation end-points.**	**X**		
***Lack of long-term datasets needed to better inform adaptation planning and design with NbS**		**X**	
Limited operational capacity to support localized, "boots-on-the-ground" relationship-building	**X**	**X**	
Limited technical capacity of local governments to draft complex, competitive federal grant proposals	**X**	**X**	
***Defining and quantifying impacts of changing climatic and environmental conditions**	**X**	**X**	
****Limited public and private landowner awareness regarding existing land-use transition incentives, cost-share options, and resilient easements.***		**X**	
Tradeoffs of implementing one NbS to address a particular issue (shoreline erosion, stormwater management), but may negatively impact other natural resources outcome (seagrass beds near living shorelines; marsh migration through forested landscapes).	X		
Future forward land use planning and strategies to address risks to private property.	X		
Long-term fiscal uncertainty for sustaining post-construction monitoring and maintenance after grant expiration	X		
***Accelerating rate of sea level rise drowning coastal wetlands and driving saltwater intrusion**			X
***Increasing frequency, duration, and peak intensity of heavy precipitation events and flash flooding**			X
***Warming atmospheric conditions driving chronic riverine and estuarine water temperature increases**			X
Cost inflation, material supply chain shortages (native seed stock, saplings), and localized labor constraints			X
High fiscal costs of project construction, ranging into millions of dollars per installation			X
Fragmented ownership (private, public, commercial) across sub-watershed limiting NbS strategy options at the landscape-scale			*X*

Management Approaches for Outcome 3.1: Adapting to Changing Environmental Conditions

Management Approach 3.1.1 Develop a Criteria and Stakeholder-Based Selection Strategy for Focus Sub-watersheds

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To maximize impact and regional representation, candidate sub-watersheds will be selected via data and stakeholder-informed solicitation and review process. Selection criteria will aim to integrate geographic diversity (e.g., urban/rural, tidal/nontidal), community and ecological vulnerability to changing environmental conditions, ecological indices, the presence of existing or planned institutional capacity, alignment with high-priority adaptation needs (e.g., flooding, hydrology changes, heatwaves, habitat protection), and applicability of nature-based solutions. This process will also aim to evaluate the potential for leveraging funding opportunities and programs (e.g., REPI Sentinel Landscapes, Whole Watershed Act, NFWF Coastal Resilience Fund) and the capacity for cross-outcome and partnership collaboration for watershed-level resilience, rather than relying solely on individual project opportunities. Other outcome workgroups will be consulted for relevant data and information during criteria development to inform the selection process. The selection of the seven sub-watersheds will occur incrementally to ensure adequate capacity-building for technical assistance and to allow for iterative improvements in our engagement (Management Approach 3.1.2) and technical assistance (Management Approach 3.1.3) approaches. Collaboration with the CBP Geospatial Science and Application Team (GSAT) is planned to leverage existing and new mapping of criteria.

Management Approach 3.1.2: Build Strategic Coalitions through Stakeholder Engagement and Connector Framework

The workgroup will act as a strategic "connector" and "translator," bridging the gap between high-level science and localized action. We will support activities, such as network mapping, that aim to improve our understanding of the institutional landscape, including local restoration practitioners, land trusts, and soil conservation districts—to advance adaptation efforts at the watershed scale. We will coordinate with the HLGT, Local Government Leadership Workgroup and the Strategic Engagement Team (SET) when developing the stakeholder engagement and connector framework to maximize existing relationships and reduce redundancy when working with partners in the sub-watersheds. We plan to move beyond opportunistic projects toward a framework that facilitates peer-to-peer knowledge exchange, leverages diverse funding sources, and matches local technical needs with regional expertise across the sub-watershed. Ultimately, this approach aims to empower networks to collaborate on identifying (Target 1) and implementing (Target 2) adaptation efforts within the sub-watershed for additive community and watershed-scale benefits. Strategic coalitions lead to a greater likelihood of advancing Target 2 of the ACEC outcome through combined resources and expertise. Signatories will aid in network-building to allow for the alignment of expertise and programs to support outcome progress.

Management Approach 3.1.3: Support Place-Based, Needs-Driven Technical Assistance for Additive Benefits

The workgroup and participating signatories and members will provide tailored technical assistance as appropriate that recognizes a spectrum of adaptation strategies for the selected sub-watersheds. While we prioritize nature-based solutions (NbS) for their multifaceted benefits, we will also coordinate with other CBP workgroups and their experts when considering gray or hybrid gray-green infrastructure, where they are determined to be the most effective mechanism for addressing local vulnerabilities. For NbS that cross over with other outcomes (e.g., wetlands, forest conservation, stream health), we will coordinate with the corresponding workgroup.

Assistance will focus on maximizing "additive benefits" such as supporting hazard mitigation, water quality improvements, habitat restoration, economic vitality, and other community goals. We will structure workgroup activities to deploy expertise, translate data, and build on lessons learned to help partners within the sub-watershed navigate the transition from initial concept (Target 1) to implementation (Target 2), providing guidance on best practices, funding, design, implementation pathways, and scaling adaptation considerations at the watershed-scale.

Adaptation strategies will encompass both tidal/coastal and nontidal/upland restoration and protection projects and other resilience activities, including, but not limited to:

- Wetland restoration
- Living shorelines
- Riparian forest buffers, tree canopy expansion and forest conservation
- Green infrastructure and small-scale stormwater management
- Stream and/or floodplain protection, restoration and floodplain management
- Other adaptation solutions, including hybrid approaches
- Resilience plans as the watershed-scale
- Community outreach programs
- Policy and regulatory examples
- Financing programs for adaptation
- Improvements to existing stormwater management and floodplain management infrastructure

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The Collaborative Tidal Marsh Adaptation framework, the NOAA Habitat Focus Areas, and Maryland's Whole Watershed Program are examples of place-based frameworks to inform the workgroup's strategy.

Management Approach 3.1.4: Promote Adaptation Monitoring, Data Integration, and Implementation Tracking to Assess Long-Term Resilience

To assess long-term resilience across selected sub-watersheds, the workgroup will help document standardized data-sharing mechanisms and best practices for monitoring and data collection at both the project and landscape scales. We will collaborate with partners and relevant outcome workgroups to identify the most effective ways to gather key information—such as using surveys or data calls —to track existing and proposed nature-based solutions (NbS) and evaluate implementation success. Synthesizing these monitoring practices and dataset insights will support better identification (Target 1) and implementation (Target 2) of adaptation projects, while establishing performance indicators for additive benefits. Additionally, we will coordinate with GSAT on data-sharing mechanisms to ensure findings from focus sub-watersheds are transformed into actionable products that guide resilience planning both locally and regionally.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, "participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners:**
  - [TBD, will need to be added after November by signatory partners]
- **Other Partners:**
  - Climate Resilience Network – University of Maryland
  - Hampton Roads Planning District Commission
  - Mid-Atlantic Regional Integrated Sciences and Assessment (RISA)
  - National Oceanic and Atmospheric Administration
  - U.S Department of Agriculture
  - U.S. Department of War

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- U.S. Fish and Wildlife Service

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Healthy Forests and Trees Outcome

Healthy Forests and Trees Outcome: Conserve, manage and restore forests and tree cover to maximize benefits for water quality, habitat and people throughout the watershed, with a particular focus on riparian areas and communities.

- Conserve tree canopy within communities by reducing the rate of loss of existing canopy and planting and maintaining 45,000 acres of community trees by 2040 to achieve a net gain in canopy over the long term.
- Conserve riparian forest by reducing the rate of loss of existing buffers and planting and maintaining 7,500 acres of forest buffers annually to achieve no less than 71.5% riparian forest cover by 2040 and 75% riparian forest cover over the long term.
- Achieve a net gain in forests over the long-term by reducing the rate of forest conversion to other land uses by 33%, permanently protecting a total of 9 million acres of forested land, and planting, maintaining and managing 202,000 acres of new forests by 2040.

Baseline and Current Condition

Community Tree Canopy

The Community Tree Canopy target has two major components: 1) tree planting and maintenance and 2) tree canopy change within communities.

1. Tree planting and maintenance: As of 2024, jurisdictions had reported a cumulative total of 17,082 acres of trees planted in communities since 2014, which serves as a baseline. Tree planting is measured using urban tree planting Best Management Practices (BMPs) reported by states annually to track progress towards the Chesapeake Bay Watershed Total

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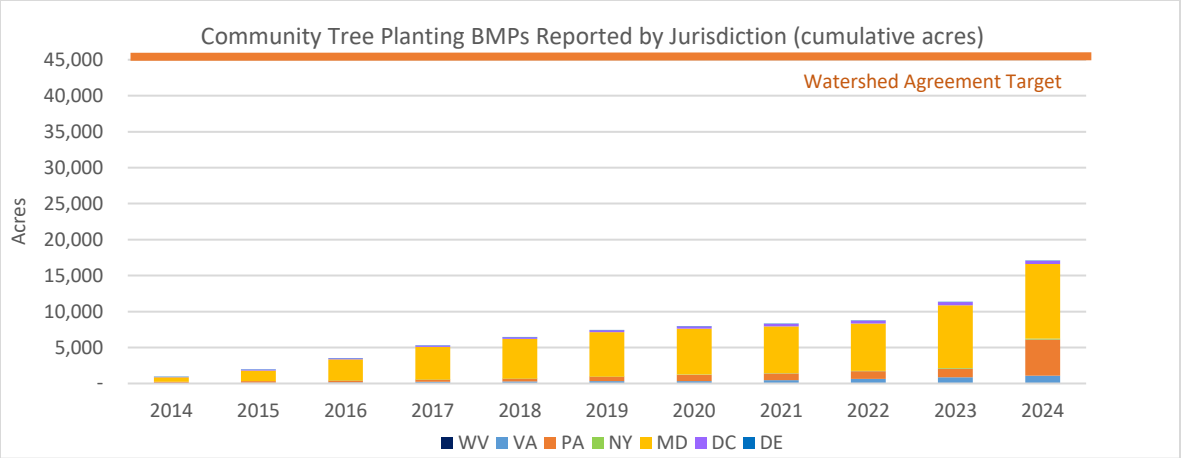

2. Tree canopy change within communities: Remotely-sensed land use/land cover (LULC) change data from 2021/2022 show a net loss of over 28,000 acres of tree canopy to development in communities since 2013/2014. On average, this reflects a rate of 3,755 acres of tree canopy loss annually, which will be used as a baseline for assessing changes in the rate of canopy loss. Although it may take between ten and fifteen years for tree plantings to become visible in the aerial imagery used to produce LULC data, tree canopy losses exceed the acres planted. Significant efforts are needed to reverse the declining trend and achieve a net gain in tree canopy.

Net Change in acres (2013/14-2021/22) for Healthy Forests and Trees Targets			
Jurisdiction (CB Only)	**Community Tree Canopy:** Net change in tree cover to development in census places	**Forest Buffers:** Net change in riparian forest cover (100 ft buffer)	**Forest Conservation:** Net change in forest cover to development
Delaware	-32	-337	-692.45
DC	0	2	-84.29
Maryland	-11,867	-1,828	-19,741.24
New York	-1,318	-2,991	-7,378.85
Pennsylvania	-3,709	-7,416	-28,841.97
Virginia	-11,873	-27,353	-48,813.33
West Virginia	-109	-2,018	-3,661.93
Total	**-28,908**	**-41,941**	**-109,214.06**
Average Annual Rate of Change	**-3,755**	**-5,587**	**-14,020**

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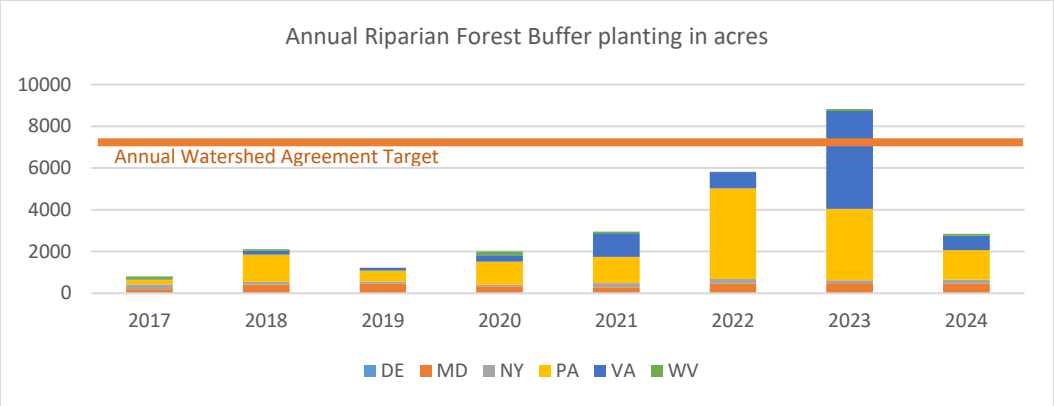
Forest Buffers

The Forest Buffer target has two major components: 1. Forest buffer planting and maintenance and 2. Riparian forest cover and change.

1. Forest buffer planting and maintenance: Between 2017-2024, on average 3,326 acres of riparian forest buffers were planted annually. In the most recent reporting period (2024), 2,848 acres were planted. Note that although the partnership has been tracking riparian forest buffer planting watershed-wide since 2010, previous years were tracked in miles to align with the previous Watershed Agreement.

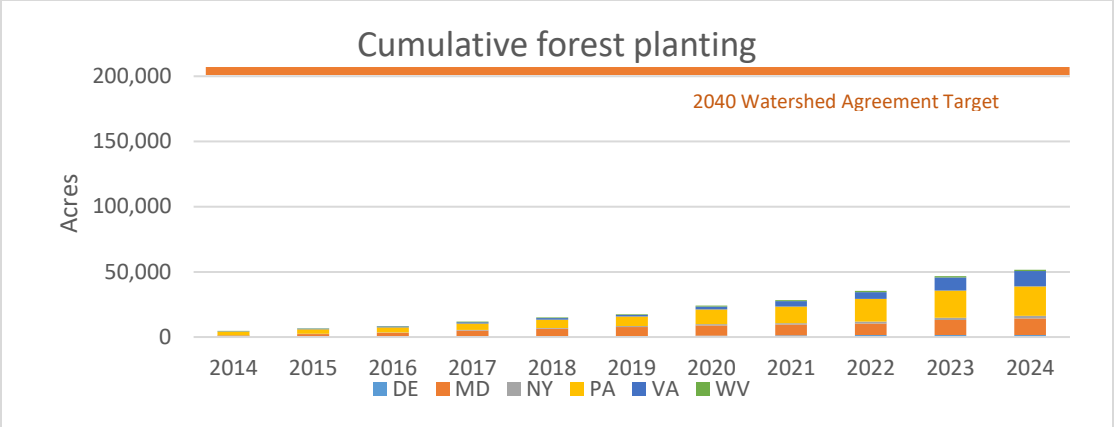


2. Riparian forest cover and change: Remotely-sensed LULC data showed that as of 2021/2022, 69.96% of riparian areas in the watershed are forested, but there was a net loss of 41,941 acres of riparian forest cover between 2013/2014 and 2021/2022 (see Net Change table under Community Tree Canopy target). On average, this reflects a rate of 5,587 acres of riparian forest loss annually, which will be used as a baseline for measuring changes in the rate of riparian forest buffer loss. The loss of riparian forest buffers highlights the need to pair robust forest buffer planting and maintenance programs with forest buffer conservation.

Forest Conservation

The forest conservation target has four primary components: 1. Forest conversion to other land uses; 2. Permanent protection of forested land; 3. Forest planting and maintenance; and 4. Forest management.

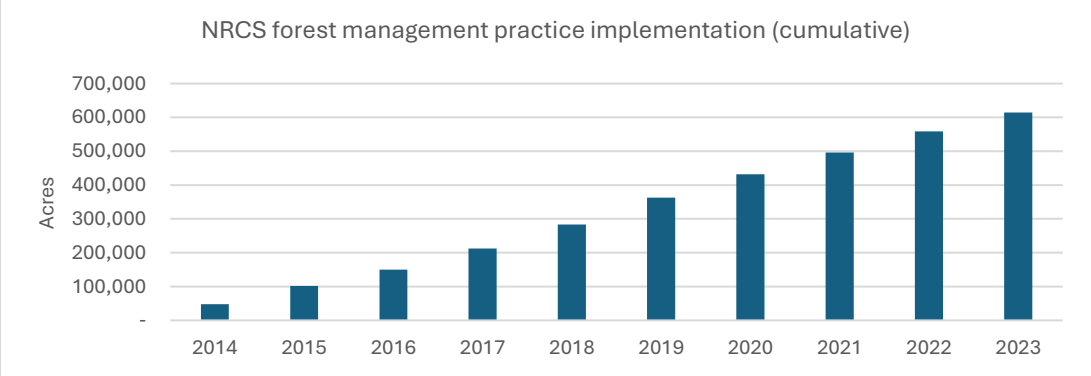
1. Forest planting and maintenance: As of 2024, jurisdictions had reported an estimated 51,684 acres of forest planting since 2014, which serves as a baseline. These acres include BMPs recognized by the Bay Program that convert land to a forested land use, including riparian forest buffers, agricultural tree planting and urban forest planting.



2. Forest conversion to other land uses: Remotely-sensed LULC change data from 2021/2022 show a net loss of 109,214 acres of forest to development since 2013/2014 (see Net Change table under Community Tree Canopy target). On average, this reflects a rate of 14,020 acres of forest loss annually. This annual rate of loss will be used as a baseline for measuring progress towards the target of reducing the rate of forest conversion to other land uses by 33%.
3. Permanent protection of forested land: An estimated 7,103,907 acres of forested land in the watershed has been permanently protected, which represents 77% of the total protected lands footprint in the watershed. This estimate is based on looking at the remotely-sensed LULC data from 2021/2022 within the footprint of the 2024 Chesapeake Bay Protected Lands dataset.

Jurisdiction	Acres of Protected Forest	Total Acres of Protected Land	Percent of Protected Lands in forest
Delaware	70,235	130,606	54%
DC	4,926	8,386	59%
Maryland	929,874	1,700,266	55%
New York	276,967	307,393	90%
Pennsylvania	3,023,979	3,688,214	82%
Virginia	2,493,238	3,118,595	80%
West Virginia	304,689	319,921	95%
Watershed	7,103,907	9,273,380	77%

4. Forest management: Between 2014-2023, there has been an estimated 614,033 acres of forest management on private lands in the watershed supported by the Natural Resources Conservation Service (NRCS). Additional management occurs on state and federally owned land, but there is not yet a watershed-wide dataset for quantifying the extent of forest management on private lands. Common private forest management activities include brush management, herbaceous weed treatment, upland wildlife habitat management, early successional habitat development and management, and forest stand improvement.



Note the original numeric targets were set based on planting trends and did not account for forest management activities, but forest management trends will be tracked from a 2014 baseline to align with other indicators and targets.

Planning is critical for effective forest management and stewardship. The US Forest Service Forest Stewardship Program supports private landowners in developing Forest Stewardship Plans (FSP) so landowners can identify their goals and the management activities needed to meet their goals. Program data show there are currently >11,000 active management plans within the watershed, covering 1.3 million acres of forest, with 71% of active FSP plans being "Managed Sustainably", which indicates these plans were verified through annual plan monitoring.

State	# of FSP Plans	Acres in FSP Plans	FSP Plan Implementation %	Acres of FSP Sustainably Managed
DE	93	10,819	84.41%	9,132
MD	8,534	798,423	85.78%	684,903
NY	505	70,624	65.50%	46,260

PA	414	107,645	39.34%	42,347
VA	1,519	285,208	81.24%	231,707
WV	276	69,567	83.49%	58,079
TOTAL	11,341	1,342,285	70.95%	952,364

Monitoring Progress and Indicators

Community Tree Canopy

The Community Tree Canopy indicator tracks tree plantings within communities annually to calculate cumulative tree planting progress from a 2014 baseline using annual progress data reported by jurisdictions to the Chesapeake Bay Program. The indicator also tracks tree canopy change within communities using the high-resolution LULC monitoring data every 4-5 years. Over time, the methods for tracking tree canopy loss may change as the high-res LULC data improves and understanding of change evolves.

Forest Buffers

The Forest Buffer indicator tracks annual riparian forest buffer planting using annual progress data reported by jurisdictions to the Chesapeake Bay Program. Under the 2014 Watershed Agreement, the indicator estimated progress in miles using state-reported data (in acres) and state-reported average buffer widths. However, the 2025 Watershed Agreement sets an acreage target so the indicator will be adapted to track progress in acres. The indicator also tracks riparian forest change using the high-resolution LULC monitoring data every 4-5 years. In addition to tracking progress on the indicator, we will also be investigating the high-res LULC data further to better understand the drivers of riparian forest loss.

Monitoring: Forest Conservation

A new indicator will be developed to track progress towards the new Forest Conservation target. This indicator will include four major components to cover the numeric targets:

1. Forest planting and maintenance: Tracked annually using annual progress data reported by jurisdictions to the Chesapeake Bay Program
2. Forest conversion to other land uses: Tracked every 4-5 years using the high-resolution LULC monitoring data. While we are currently focusing on forest conversion to development, with future iterations of the high-res LULC, we may also track conversion to other land uses (for example, agriculture).

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3. Permanent protection of forested land: Tracked using the Protected Lands dataset and the most recent high-resolution LULC data to calculate the amount of forested land within the Protected Lands footprint
4. Forest management: This component will likely leverage data both from the NRCS Resources Conservation Act (RCA) Data Viewer and the USFS Forest Stewardship Program on an annual time step. Taken together, the indicator will track both on-the-ground management activities and the planning needed to ensure management activities are having their intended outcomes. The Forestry Workgroup will start developing this new indicator in 2027 for communicating progress. In the interim, the Workgroup will continue tracking progress on all four components as new data is available.

Situation Analysis for Outcome 3.2: Healthy Forests and Trees Outcome

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches. In some instances, the workgroup's ability to act will depend on the financial resources available.

Challenges	**Within CBPs ability to**	**Outside of CBP's ability to**
Funding: Inconsistent funding and availability of effective programs for planting and maintenance	X	
Capacity: Workforce capacity for technical assistance, implementation and maintenance	X	
Maintenance and management: Insufficient maintenance of new plantings and inadequate or unsustainable long-term management of existing forests	X	
Land use change: Fragmentation and conversion of forests and tree canopy to other land uses	X	

Stressors: Increasing forest health pressures (invasive species, pests, disease, deer overabundance) degrading forest structure, function and resilience*	X	
Changing environmental conditions: Increasing variability in temperature and precipitation, saltwater intrusion, and extreme events (i.e. storms, droughts) degrading forest structure, function and resilience*		X
Nursery stock: Insufficient availability of planting stock reflecting the size classes, quality, quantity and diversity of species needed by partners	X	
Policy: Inadequate state and/or local policies that support effective reforestation, forest and tree canopy conservation, and forest management	X	
Local government engagement: Inadequate engagement with local governments to support planning and decisions to support forests and tree canopy	X	
Crediting and incentives: Chesapeake Bay Program water quality crediting framework and state MS4 programs do not consistently incentivize forest and forest buffer conservation, reforestation and long-term management and stewardship	X	
Landowner engagement: Barriers to effectively engage landowners to participate in planting, maintenance, management and conservation	X	
Markets: Insufficient forest products markets and processing infrastructure, particularly for low-value wood products	X	

Management Approaches for Outcome 3.2: Healthy Forests and Trees Outcome

Management Approach 3.2.1: Increase workforce capacity and tree supply to accelerate implementation:

Restoring and conserving forests and tree canopy across the watershed requires an extensive network of technical assistance providers to effectively engage private landowners and communities. Although volunteers and landowners play a critical role in planting and maintaining trees, private contractors are also essential for implementing restoration and management at scale. The Forestry Workgroup will collaborate with the new Workforce Workgroup to evaluate critical workforce needs and identify opportunities to fill these gaps. The Forestry Workgroup will also continue to act as a hub for knowledge and experience sharing to broaden the expertise of the existing workforce across governments, nonprofits, and academia so it can be strategically utilized to meet the Tree Canopy, Riparian Forest Buffers and Forest Conservation targets.

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Tree supply can also be a limiting factor for implementing effective restoration projects at scale. The Forestry Workgroup will seek to advance recommendations from the Addressing Regional Tree Supply Challenges and Opportunities project to support building a more consistent supply of high-quality nursery stock in the watershed. This will directly support implementation of the Tree Canopy target but also support efforts to scale up reforestation to support the Riparian Forest Buffers and Forest Conservation planting targets.

Management Approach 3.2.2: Bolster funding, programs and partnerships:

Maintaining sustainable sources of funding is critical for ensuring continued progress on the Tree Canopy, Riparian Forest Buffers and Forest Conservation targets and for maintaining a stable workforce that can implement programs and practices on the ground. Collaborative restoration and conservation efforts can help diversify funding streams and ensure projects are being delivered where they will have the greatest impact for the partnership. The Forestry Workgroup will work to broaden its engagement with new partners to support the funding and programs needed for effective implementation of the Healthy Forests and Trees outcome. This engagement will include organizations involved with forest management, stewardship and forest products to support implementation of the new Forest Conservation target.

Management Approach 3.2.3: Leverage networks to enhance coordination and restoration impact

Regional networks can support shared learning and effective communication to increase awareness about the value of forests and increase forest conservation and restoration across the landscape. The Forestry Workgroup will expand its role as a network of networks to facilitate communication and strategic, watershed-wide coordination supporting efforts to address the Tree Canopy, Riparian Forest Buffers and Forest Conservation targets. These efforts will include engaging workgroups under the Engaged Communities goal team to identify opportunities to meaningfully understand and engage networks of community stewards. The Forestry Workgroup will also work with the Strategic Engagement Team to leverage other Bay Program networks to improve coordination and impact where appropriate.

Coordination across federal, state and local leaders enables a policy environment that supports effective planning of reforestation, forest and tree canopy conservation, and forest management. Coordination includes working with other state agencies, including wildlife agencies, to work towards regeneration and a healthy forest understory. Improved planning and coordination will help focus forest conservation and restoration efforts in places that will maximize benefits for water quality, habitat and people, including in the

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headwaters. A cross-jurisdictional approach can also enable forest conservation and management at ecologically-meaningful scales. The Forestry Workgroup will continue to provide a platform for cross-jurisdictional coordination to support shared learning and the development of effective approaches for addressing challenges and maximizing impact across boundaries.

Management Approach 3.2.4: Address drivers of forest and canopy loss:

The Tree Canopy, Riparian Forest Buffers and Forest Conservation targets all set goals to reduce the loss of forests and tree canopy. There are multiple drivers of forest and canopy loss in the Chesapeake Bay watershed, including conversion to development and other land uses; changing environmental conditions; invasive plants, pests, and diseases; among others. Addressing drivers of loss to advance these targets will require a comprehensive approach that includes strengthening policies and ordinances to promote conservation, supporting land use planning efforts, working through regional networks to engage communities and private landowners, and using active management to address stressors.

As a new area of focus for the Bay Program, the Forestry Workgroup will work to implement the recommendations from the STAC Healthy Forests workshop report to support implementation of the Forest Conservation target. These efforts will include strengthening communications and engagement around forest conservation as well as exploring opportunities to support the expansion and diversification of forest product markets.

Management Approach 3.2.5: Expand outreach and engagement with local governments around forests and tree canopy

Local governments are critical partners for effectively conserving and restoring forests and tree canopy. However, it can be very challenging to effectively engage the myriad of local governments throughout the watershed who represent a wide range of communities with different priorities and decision-making processes. The Forestry Workgroup will work with other relevant Bay Program workgroups and support teams to develop more effective two-way communications channels and regular engagement with local government partners. This engagement will also inform the development of targeted resources to support local governments in better understanding the value of forests and tree canopy, strengthening policies and ordinances, improving land use decisions to limit further forest parcelization and fragmentation, and addressing regulatory barriers for sustainable forest management. The Forestry Workgroup will work with the Local Government Leadership Workgroup and the Strategic Engagement Team to increase engagement and further amplify the impact of

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any resources developed. This Approach is particularly relevant to the Tree Canopy target but will also support advancing the Riparian Forest Buffer and Forest Conservation targets.

Management Approach 3.2.6: Ensure adequate maintenance and management:

The Tree Canopy, Riparian Forest Buffer and Forest Conservation targets all set goals to maintain forests and tree post-planting. However, programs that provide financial support for planting activities do not consistently provide the needed financial support for the needed post-planting maintenance or the long-term stewardship and management of forests. The Forestry Workgroup will identify potential approaches to improve existing implementation programs or to develop new programs to ensure adequate maintenance and management. This could include extending grant timelines to ensure funding is available for longer-term maintenance and management or developing standalone programs specifically for maintenance and management.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, "participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners**
  - US Forest Service
  - USGS
  - NRCS
  - Delaware Forest Service
  - Delaware Department of Natural Resources and Environmental Control
  - DC District Department of Transportation
  - DC Department of Energy and Environment
  - Maryland Forest Service
  - New York Department of Environmental Conservation
  - Pennsylvania Bureau of Forestry
  - Virginia Department of Forestry
  - West Virginia Division of Forestry

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    - Chesapeake Bay Commission
- **Other Partners**
    - Alliance for the Chesapeake Bay
    - Cacapon Institute
    - Chesapeake Bay Foundation
    - Potomac Conservancy
    - Upper Susquehanna Coalition

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Land Use Planning and Decision Support Outcome

Land Use Planning and Decision Support Outcome: Develop and disseminate relevant and actionable land use information in consultation with local governments, to organizations and communities involved in local and regional land use planning. This information should include past, present and future conditions, as well as the potential environmental and socioeconomic consequences of changing conditions.

- Develop at least five use cases annually, informed by and provided at the county, watershed or municipal scale to inform land use planning and decisions and maintain the ecological integrity of watersheds supporting good stream health. Use cases can include watershed protection, aquatic connectivity, stormwater, tree canopy, agricultural preservation or redevelopment.
- Highlight at least two widely applicable land use cases annually to showcase best practices and share this information with local governments and partners through diverse communications products

Baseline and Current Condition

Land Use Planning and Decision Support Outcome

The Land Use Workgroup (LUWG) has made significant progress in generating foundational data to support land-use planning across the Chesapeake Bay watershed. High-resolution 1-meter land use/land cover (LULC) datasets have been produced for three points in time, giving partners an unprecedented level of detail on past and present landscape conditions. These datasets have proven highly valuable for analysis, communication, and planning, offering insight into development patterns, conservation needs, and environmental challenges. A fourth time step is under development and scheduled for release in 2028, which will further strengthen the ability to evaluate trends and change over time.

Despite these advances, the extent to which LUWG data are influencing actual land use decision-making remains only partially understood. While the LUWG has some awareness of how the data are being used, it lacks a comprehensive picture of the effectiveness, consistency, and depth of that use across jurisdictions. The current repository of LULC use cases includes approximately 39 examples documented in 2023 for the 2022 Edition of the LULC dataset. However, these use cases are for an outdated dataset and are not compiled

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in an easily accessible or well-communicated format, limiting their usefulness in demonstrating impact or supporting replication.

Outside of LUWG's own efforts, the Chesapeake Conservancy has independently collected more than 300 use cases involving hyper-resolution hydrography and land use/land cover data. These examples represent a promising body of evidence showing broad interest and application of high-resolution datasets. However, additional detail is needed for many of these cases to meet the specific requirements of the Land Use Planning and Decision Support Outcome—particularly around decision context, outcomes achieved, and opportunities for replication.

There have been some notable successes where land use data have been communicated effectively, such as the widely used Tree Canopy Fact Sheets and the Chesapeake Conservancy's development of a forest conservation technical study that supported reauthorization of Maryland's forest conservation act. These products demonstrated the potential for accessible, well-designed materials to reach local planners and decision-makers. However, the initiative was supported by one-time funding and was not tied to a broader, sustained strategy for delivering information to trusted local sources. As a result, while individual projects have shown promise, the LUWG lacks a systematic approach to ensuring that land-use data consistently reach the people and processes where they can shape decisions.

Overall, the baseline condition for the Land Use Planning and Decision Support Outcome reflects meaningful progress in data development and early communication efforts, but also a clear need for improved structure, accessibility, and sustained engagement. Strengthening the use-case repository, improving understanding of decision impacts, and building reliable pathways to trusted local entities are essential next steps in evolving from high-quality data creation to high-value decision support.

Monitoring Progress and Indicators

Indicator: Impervious Surface Cover (Net Change)

The Impervious Surface Cover Net Change indicator reports the extent of the Chesapeake Bay watershed that is covered by impervious surfaces, the net change in impervious cover over time and the types of impervious cover that most contributed to these changes. This indicator will also track increases in impervious cover associated with energy infrastructure (e.g., solar fields), road widening and new roads, and agricultural intensification.

Indicator: Impervious Surface Cover (Per Capita)

The Impervious Surface Cover Per Capita indicator tracks changes in impervious surface cover per capita within residential areas. By normalizing impervious cover relative to population, this measure helps evaluate land use policies and the impact of growth patterns on watershed health. Higher impervious surface per capita may indicate low-density or inadequate smart growth implementation. Conversely, declining impervious surface cover per capita may indicate more efficient land use, infill development, redevelopment or policy success in guiding growth toward areas with existing infrastructure.

Indicator: Natural Land Conversion Indicator

This indicator tracks the conversion of natural land cover – primarily forests and wetlands – to development. It reflects both ongoing development pressure and the effectiveness of conservation, zoning, and mitigation strategies intended to protect ecological integrity.

Indicator: Farmland Conversion Indicator

This indicator measures the rate at which farmland transitions to developed land uses. Farmland conversion is an important proxy for loss of rural open space character, changes in local economics, and shifts toward more land-intensive development patterns.

Indicator: Watershed Population

This indicator is an influencing factor, not a measure of performance. The decline in the health of the Chesapeake Bay is correlated to the rise in population in the watershed from 1950 through the 1980's. Projections through 2050 show continued population growth, loss of natural areas and increases in urban development, which are all challenges to protecting and restoring the Chesapeake. Population growth has correlated with the decline of the Chesapeake Bay.

Monitoring: Use Cases

The Land Use Workgroup (LUWG) will maintain an actively updated, publicly accessible repository of use cases for relevant land use data. This repository will serve as a centralized reference for local governments, planners, and partners seeking examples of effective planning, policy, and data application.

Every year, the LUWG will produce an "Impact Memo" that highlights at least five use cases that demonstrate impact and at least two widely applicable use cases. The document may summarize metrics, such as jurisdictions referencing use cases in plans or codes, documented changes to decisions or policies, co-benefits achieved, etc. The Impact Memo is intended to showcase successful land use data applications, support scalable adoption, and demonstrate progress toward maintaining watershed ecological integrity.

Situation Analysis for Outcome 3.3: Land Use Planning and Decision Support

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches. In some instances, the workgroup's ability to act will depend on the financial resources available.

Challenges	Within CBPs ability to influence	Outside of CBP's ability to influence
Wide variation in who makes land-use decisions, when they're made, and what data they use makes it hard to deliver consistent, targeted support across the watershed.		X
Building trust and recognition for the LUWG (and CBP data) among audiences that decision-makers already rely on as trusted sources.	X	
Identifying and addressing local priorities effectively and communicating CBP data so that it is relevant to local priorities and needs.	X	
Getting representative feedback on what information and formats would be most useful to a diversity of stakeholders.	X	
Diminished scientific capacity/workforce/expertise of federal agencies.		X
Adapting to rapidly evolving landscape-monitoring technologies.	X	
Strengthening our approach to collecting use cases and sharing information.	X	
Continued long-term financial support to monitor the landscape over time, as well as create tools and resources based on updated data.	X	
Changing technology to monitor the landscape.		X
Population growth.*		X
Vulnerability of high-value watersheds/habitats to development due to growth pressure.*		X

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Legislative authority to shape growth patterns can be difficult to obtain.		X
Dynamic permitting landscape.		X
Lack of strong communication between those creating the data and those who use it.	X	
Time lag of monitoring the landscape and producing the data.		X
Local government capacity to use the products produced.		X
Maintaining confidence in the data as it changes with new methods and data sources.	X	
Lack of network of translators and trusted sources to deliver relevant land use information to local decision makers.		X
Rapid expansion of emergent phenomena (e.g., data centers, warehouses, solar fields, and agricultural intensification).		X

Management Approaches for Outcome 3.3: Land Use Planning and Decision Support

Management Approach 3.3.1: Expand and Improve the Land Use Decision Support Use-Case Repository

The LUWG will enhance its use case repository by transforming it into a more accessible system that supports local planning and Chesapeake Bay restoration goals. The LUWG will refine the current use case survey, or create a follow-up survey, to collect essential details, such as problem framing, decision context, data sources, partners, methods, outcomes, and opportunities for replication. The LUWG will also develop a public-facing online viewer or story-map platform that allows users to search case studies by topic, jurisdiction, or watershed and explore examples through visual formats and links to relevant datasets. The viewer will be developed with extensive feedback from state and local partners to ensure it is useful and aligned with their needs.

To highlight progress, LUWG will publish an annual "Impact Memo" featuring at least five influential use cases and two broadly applicable examples. Jurisdictions will be encouraged to contribute and champion use cases for inclusion each year. The memo could also summarize metrics demonstrating how examples influence decisions, policies, and environmental outcomes across the watershed.

Management Approach 3.3.2: Strengthen Local Land Use Decisions Through Trusted Networks

The LUWG will work to strengthen local land use decisions through trusted networks by utilizing concepts from the Local Engagement Strategy, developed in coordination with the Local Government Leadership Workgroup (LGLW). The LUWG will leverage the Local Government Leadership Workgroup (LGLW) and the Local Government Advisory

Committee (LGAC) to identify local priorities, gather structured feedback on data products, and understand which information formats are most useful to local governments. This partnership will also help reveal the trusted communication channels that already exist with local governments. In addition to trusted sources represented on LGLW and LGAC, the LUWG will identify and engage influential networks such as watershed organizations, agricultural partners, non-profits, universities, or regional planning organizations that often serve as key conduits for land use information. Using insights from these networks, LUWG will update existing products or develop new communication materials to meet locally defined needs. Some examples of this may include creating impervious surface change summaries, updating tree canopy analyses, integrating parcel-level data with Chesapeake Bay Program land use datasets, identifying flood-prone areas, or mapping future development probability using land use forecasting tools.

Whenever possible, the LUWG will adapt, replicate, or promote existing use cases to help jurisdictions or trusted sources apply proven approaches without starting from scratch. Throughout this process, the LUWG will maintain consistent two-way communication with LGLW, LGAC and other trusted sources, creating regular opportunities for feedback and collaborative refinement of land use-related data and tools.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, "participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners:**
    - District of Columbia Department of Energy & Environment
    - Delaware Department of Natural Resources and Environmental Control
    - New York State Department of Environmental Conservation
    - Maryland Department of Planning
    - Pennsylvania Department of Environmental Protection
    - West Virginia Department of Environmental Protection
    - Chesapeake Bay Commission
    - U.S. Environmental Protection Agency

- **Other Partners:**
    - Hampton Roads Planning District Commission
    - Northern Virginia Regional Commission
    - Eastern Shore Land Conservancy
    - Chesapeake Conservancy
    - Choose Clean Water Coalition
    - U.S. Geological Survey

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Protected Lands Outcome

Protected Lands Outcome: Permanently protect critical landscapes within the Chesapeake Bay watershed to protect water quality, enhance biodiversity, support sustainable livelihoods, bolster local economies, honor cultural heritage and protect the mission and resilience of military installations.

- By 2040, permanently protect at least an additional 2 million acres of land above the 2025 baseline of 9.3 million acres. The 2 million acres will include specific targets for: riparian forests; wetlands (including migration corridors); natural areas supporting healthy streams; agricultural lands; tribal homelands; and urban and community greenspace.

Protected Lands Workgroup Statement

Development and land conversion are among the top stressors facing the Chesapeake Bay ecosystem. Permanently protecting lands from development is one way to combat the loss of forests, wetlands, and other valuable wildlife habitat.

Protecting land can prevent nonpoint source pollution from entering our waterways through the conservation of forests and other working lands like pasture and cropland with appropriate best management practices applied to prevent or minimize runoff. Many studies indicate that watersheds remain healthy if they retain 70-90% forest cover. Communities throughout the watershed also have many needs for protected lands to help ensure the safety and well-being of their residents such as protecting water supply, preventing flooding, supporting outdoor recreation and tourism, and maintaining economically viable working landscapes. Meeting these local protection needs can complement and reinforce the watershed-wide protection outcome and targets.

Definitions

Urban and Community Greenspaces: Publicly accessible lands in census-designated places and urban areas that provide opportunities for both passive and active recreation while offering exposure to nature. These public spaces deliver human health, community, and environmental benefits and include, but are not limited to, parks, trails, gardens, sports fields, waterfronts, outdoor gathering areas, and natural landscapes like forests or grasslands. Definition created by the Protected Lands Workgroup and the Public Access Workgroup in 2026

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Agriculture: Lands associated with the production of crops (e.g., grains, legumes, vegetables, fruits, nuts), used for grazing livestock (e.g., cattle, goats, sheep), or for producing fodder (e.g., hay and alfalfa). Definition from the Chesapeake Bay Land Use/Land Cover (LULC) Database 2024 Edition User Guide

Forest: Tree canopy with a natural understory that is part of a large patch. Large patches are at least 1-acre in area with a minimum patch diameter of 36-meters (~120 feet). Forest also includes small patches of contiguous tree canopy that do not meet forest area and/or width requirements, such as agricultural windbreaks and small woodlots, where the understory is assumed to be undergoing natural or managed succession. D*efinition adapted from the Chesapeake Bay Land Use/Land Cover (LULC) Database 2024 Edition User Guide*

Riparian Forest: Any Forest (as defined above) within 100 ft of shorelines, rivers, streams, and other lotic (flowing water features) D*efinition adapted from the Chesapeake Bay Land Use/Land Cover (LULC) Database 2024 Edition User Guide*

Wetlands: Wetlands are water influenced ecosystems that reduce flooding, filter pollution, support diverse wildlife, store carbon, and provide valuable recreational and cultural benefits. *Definition adapted from Chesapeake Bay Program White Paper on Common Terminology Around Wetlands Practices in the Chesapeake Bay Watershed*

Tribal Homelands: *Definition will be developed with the Indigenous Conservation Council. Will update document once definition is available*

Natural Areas Supporting Healthy Streams: A healthy stream is defined as fair, good, or excellent condition as measured by an Index of Biotic Integrity. Natural areas include: forests, early successional forests, forest clear cuts, tidal and non-tidal wetlands, beaches, and exposed lake and reservoir water margins. *Definition adapted from Stream Health Outcome and Chesapeake Bay Land Use/Land Cover (LULC) Database 2024 Edition User Guide*

Baseline and Current Condition

In 2025, there were 9.3 million acres of protected lands within the Chesapeake Bay Watershed. 7.1 million acres of protected forest, 811,000 acres of protected riparian forests, 1.3 million acres of protected lands used for agriculture, and 510,269 acres of protected lands within the census-designated places and urban areas footprint.

Note: The priority lands do not add up to 9.3 million as one parcel can be counted towards multiple priority landscape acres. For example, a protected forest parcel in a buffer would show up in both protected forest and protected riparian forest buffers. For more

information about the protected forests priority landscapes, please refer to the Healthy Forests & Trees outcome subchapter.

The Protected Lands Workgroup is working to create targets for each of the priority landscapes. The Targets will be in place by the end of 2027.

Our understanding of how these lands have changed over time continues to evolve, and our baseline assessments may shift as more complete data becomes available. The Land Trust Alliance and USGS are currently undertaking a project to improve the attribution of jurisdictional protected lands by adding dates of protection, enabling us to better track how land protection has progressed over time.

Monitoring Progress and Indicators

The following datasets will be used to monitor progress of overall protection as well as specific protection of our priority landscapes.

Chesapeake Progress Protected Lands Indicator (Chesapeake Bay Program Office. (2024). *Chesapeake Progress ProtectedLands_2024* (MapServer) [GIS dataset]. U.S. Environmental Protection Agency. https://gis.chesapeakebay.net/ags/rest/services/ChesapeakeProgress/cpProtectedLands_2024/MapServer)

Chesapeake Bay Land Use/Land Cover (LULC) Database 2024 Edition (Claggett, P. R., McDonald, S. M., O'Neil-Dunne, J., MacFaden, S., Walker, K., Guinn, S., Ahmed, L., Buford, E., Kurtz, E., McCabe, P., Pickford, J. A., Royar, A., Schulze, K., 2025, Chesapeake Bay Land Use/Land Cover (LULC) Database 2024 Edition: U.S. Geological Survey data release, https://doi.org/10.5066/P14BEBRC.)

Chesapeake Bay Watershed Riparian 30m 1:24k 2024 Edition (McDonald, S.M., Thompson, R.L., Katoski, M.P., Claggett, P.R., Ahmed, L., Fitch, A., and Wolf, J., 2024, Chesapeake Bay Watershed 1:24k 10, 30 and 90-meter Riparian Buffer Zones: U.S. Geological Survey data release, https://doi.org/10.5066/P99HZHQ0.)

National Wetlands Inventory (U.S. Fish and Wildlife Service. (n.d.). *National Wetlands Inventory (NWI) dataset* (FGDC metadata XML) [Data set]. U.S. Department of the Interior. https://documentst.ecosphere.fws.gov/wetlands/data/metadata/FWS_Wetlands.xml)

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Situation Analysis for Outcome 3.4: Protected Lands

Challenges	Within CBP's ability to influence	Outside of CBP's ability to influence
Data gaps in the Protected Lands Indicator Dataset- Attributes of the dataset are missing key amounts of data, limiting CBP's ability to understand conserved lands within the Chesapeake fully.	X	
Building relationships and trust within the Protected Lands Network- Jurisdictions have deep networks of implementers; the Bay Program does not. There is a need for the Bay Program to better coordinate with those doing the on-the-ground work	X	
Communication- There is a need for communicating the importance of protection and demonstrating how it contributes to the successful achievement of a wide range of goals, including the economic impacts. Communication should be targeted to multiple audiences: the public, legislators, donors, etc.	X	
Land Use Change* - Land use across the watershed is shifting, increasing disturbance and impervious surfaces. These changes boost runoff and nonpoint source pollution while also fragmenting natural and working lands, reducing habitat connectivity and agricultural productivity.	x	
Population change- The overall population in the watershed is increasing, but is not evenly distributed. There are some areas of the watershed that are seeing increases in population, while others are losing population. These population changes can shape how protection is perceived in rural, suburban and urban areas.		x
Funding- Partners are being asked to do more with fewer resources. There is a real need for funding for agency and partner capacity and technical assistance.	x	

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Management Approaches for Outcome 3.4: Protected Lands

Management Approach 3.4.1: Data, Tracking & Targeting

Accurate and comprehensive tracking of protected lands over time is essential to achieving the Protected Lands Outcome and its Targets.

High-quality data—particularly complete attribution of protection dates and public access status within the Protected Lands Indicator—are critical for assessing current conditions, setting up targets, and evaluating progress toward the Protected Lands Outcome.

This approach requires the Protected Lands Workgroup to coordinate with data managers to improve protected lands datasets' completeness and consistency, ensuring that all information is properly included and attributed so itcan be incorporated into the Protected Lands Indicator Database, making the database a comprehensive and reliable resource for tracking and analysis.

The Protected Lands Workgroup will also identify, quantify, and—where feasible—monetize the ecological, hydrological, and community benefits of land protection across the watershed, while assessing emerging issues and potential approaches for addressing them. These insights, along with jurisdictional plans (example: State Wildlife Action Plans), will help guide the strategic prioritization of conservation investments.

Management Approach 3.4.2 Funding Conservation & Protection

Sustained, accessible funding is critical for conserving and restoring protected lands. The Protected Lands Workgroup will work to expand both access to funding and the total resources available for protection and restoration activities. It will support partners in identifying and leveraging diverse funding opportunities, addressing challenges such as limited capacity. In collaboration with the Chesapeake Bay Program, the Workgroup will also explore ways to use appropriated funds more effectively.

To maximize long-term value, the Workgroup will promote conservation and restoration strategies that advance multiple outcomes—including water quality, habitat and forest protection, and community well-being—and encourage coupling conservation and restoration efforts to increase environmental and community benefits.

Management Approach 3.4.3 Engagement, Communication & Outreach

The Protected Lands Workgroup will strengthen land conservation and increase protection across the Chesapeake Watershed by actively engaging practitioners, improving communication resources, and expanding outreach that supports voluntary conservation and restoration activities.

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Over the next six years, the workgroup will engage directly with the Protected Lands Network—including land conservation practitioner networks (such as the Chesapeake Conservation Partnership), federal and state agencies, local governments, nonprofits, and community partners—to build trust and cultivate meaningful, collaborative relationships. Through regular engagement, workgroup meetings, and knowledge-sharing, the Workgroup will deepen its understanding of on-the-round challenges, opportunities, and priorities. These strengthened relationships will support coordinated conservation strategies, advance shared goals, and enhance long-term stewardship of critical lands throughout the region.

The Workgroup will also develop and provide communication resources that help jurisdictions, local governments, and partners convey the environmental, economic, military readiness, and community benefits of land conservation and protection, especially the protection of our priority landscapes. Tools such as fact sheets, case studies, and messaging materials will support informed decision-making and build broader support for conservation at local and regional scales.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, "participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners**
    - [TBD, will need to be added after November by signatory partners]
- **Other Partners**
    - [This list will be confirmed at a later date]

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Chapter 6. Management Strategies for Goal 4: Engaged Communities

Engaged Communities Goal

Engage and grow a community of local stewards and leaders through education, recreation and professional opportunities to ensure the long-term success of restoration and conservation efforts.

Situation Analysis for Goal 4: Engaged Communities

In the table below, the Goal Team has summarized the most critical challenges facing each of its Outcomes that are within CBP's ability to impact or influence. The Goal Team and its Workgroups, as appropriate, have identified those challenges shown in bold as critical for Workgroups to begin addressing within the next six years via the development and implementation of Management Approaches. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*).

	Outcomes					
Challenges	4.1 Local Government Leadership	4.2 Public Access	4.3 School District Environmental Literacy Planning	4.4 Stewardship	4.5 Student Environmental Literacy Experiences	4.6 Workforce
Fragmented coordination and communication across organizations and jurisdictions limit collective action.	X	X	X	X	X	X
Uneven capacity, governance structures, and geographic coverage create inconsistent implementation across the watershed.	**X**	**X**	**X**	**X**	**X**	**X**
Limited political commitment and institutional support constrain resources, leadership attention, and sustained support toward outcomes.	X	X	X	X	X	X
Sustaining resources, partnerships, staffing, leadership, and workforce pipelines			**X**	**X**	**X**	**X**

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Inconsistent metrics, data sharing, and evaluation approaches limit understanding of collective impact and adaptive management.	**X**	**X**	**X**	**X**	**X**	**X**
Changing environmental conditions can disrupt stewardship, agriculture, education, public access, and engagement activities and affect the timing, safety, and effectiveness of implementation.*	X	X	X	X	X	X
Gaps in agricultural literacy and agricultural workforce development hinder progress toward environmental stewardship and conservation goals.			X	X	X	X
Translating awareness into sustained participation and opportunities for action		X	X	X	X	

Management Approaches for Goal 4: Engaged Communities

Management Approaches for Goal 4: Engaged Communities Goal

Management Approach 4.0.1: Strengthen coordination, capacity-building, and knowledge exchange mechanisms to support more consistent implementation of outcomes across jurisdictions, organizations, and communities.

The partnership will identify opportunities to share successful approaches, expand access to technical assistance and resources, and support jurisdictions and partners in adapting strategies to their unique governance structures, community needs, and watershed conditions. Related actions will be incorporated into workplans for all Outcomes under the Engaged Communities Goal.

Management Approach 4.0.2: Build and sustain organizational, leadership, and workforce capacity needed to support long-term community engagement efforts.

The partnership will support the development and retention of the leaders, educators, practitioners, and workforce needed to advance Engaged Communities outcomes by strengthening pathways for recruitment, professional development, knowledge transfer, and partnership support. The partnership will identify opportunities to sustain funding, improve access to resources, and enhance organizational capacity so that communities

and organizations can maintain engagement efforts over time. Related actions will be incorporated into workplans for Local Government Leadership, School District Environmental Literacy Planning, Student Environmental Literacy Experiences, Stewardship, and Workforce Outcomes.

Management Approach 4.0.3: Establish shared approaches for measuring engagement and using data to guide adaptive management.

The partnership will improve the consistency, availability, and use of data needed to evaluate progress toward Engaged Communities outcomes by identifying shared indicators, strengthening data-sharing approaches, and supporting the development of evaluation methods that capture the impact of human-centered actions. The partnership will use shared information and lessons learned to assess progress, identify gaps, and adapt strategies to improve outcomes across the watershed. Related actions will be incorporated into workplans for all Outcomes under the Engaged Communities Goal.

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Local Government Leadership Outcome

Local Government Leadership Outcome: Increase knowledge and support the capacity of local government leaders in decision-making, such as land-use planning, to implement local actions that advance the Chesapeake Bay Watershed Agreement.

- Engage directly (e.g., roundtable discussions) with at least 400 local government leaders annually.
- Engage indirectly (e.g., newsletters) with at least 4,000 local government leaders annually.

Baseline and Current Condition

This outcome was modified during the *Chesapeake Bay Watershed Agreement* revision process in 2025, so no baseline or current condition exists; however, significant work on the previous Local Leadership Outcome can serve as a framework. The targets were developed based on estimated accounts of direct and indirect engagement annually, therefore the baseline will be zero at the start of each calendar year.

- Engage directly (e.g., roundtable discussions) with at least 400 local government leaders annually. A formal process for capturing direct engagement needs to be established to assess the progress of this target.
- Engage indirectly (e.g., newsletters) with at least 4,000 local government leaders annually. A formal process for capturing indirect engagement needs to be established to assess the progress of this target.

The Local Leadership Outcome was first established in the *Chesapeake Bay Watershed Agreement* adopted in 2014. In 2022 and 2024, the Local Leadership Survey was distributed to local elected officials throughout the Chesapeake Bay watershed. The data supported an indicator that measured local official knowledge of federal regulations and self-reported actions of local officials. From 2022 to 2024, the self-reported knowledge of local officials about federal water resource regulations increased. In addition, there was an increase in self-reported actions to implement or enforce local water quality rules or regulations and in self-reported actions to apply for grants or other funding for water resource projects. While the survey indicated progress, it also illuminated the need for continued engagement and education of local government leaders, especially newer officials. Findings showed that local officials with less than two years of experience reported higher uncertainty of federal regulations, and the percentage of local officials

adopting new local rules, ordinances, or regulations decreased from 2022 to 2024. Currently, the future of the Local Leadership Survey is uncertain and additional methods to monitor progress may need to be considered. However, results from these surveys can be used to inform future Management Approaches, including those to monitor progress.

Monitoring Progress and Indicators

Monitoring: Direct Engagement with Local Government Leaders

Progress towards this outcome will be captured by documenting the direct engagement led by the Local Government Leadership Workgroup (LGLW) and the Chesapeake Bay Program (CBP) partners that increases the knowledge and capacity of local government leaders in decision-making to implement local actions that advance the *Chesapeake Bay Watershed Agreement*. Progress will be assessed on a yearly basis to quantify achievement of the target. Currently, direct engagement is captured by the workgroup coordinator for internal reporting and focuses solely on direct engagement led by the workgroup. Examples include attendees of the Wandering Waterways Tour Series (Example), attendees of roundtable discussions (Example), attendees of educational workshops and trainings (Virtual Example, In-Person Example). To minimize the reporting burden on local governments, the workgroup will leverage existing state and federal reporting channels to capture direct engagement. Signatory members will be responsible for annually gathering this existing data and sharing it with the workgroup. Another key element of tracking progress will be to coordinate across CBP's goal teams and workgroups to capture the full breadth of direct engagement with local government leaders across the partnership. To ensure consistent tracking across jurisdictions, a definition of "Direct Engagement" is provided below in Management Approach 4.1.1.

Monitoring: Indirect Engagement with Local Government Leaders

Progress towards this outcome will be captured by documenting the indirect engagement led by the LGLW and the Chesapeake Bay Program partners that increases the knowledge and capacity of local government leaders in decision-making to implement local actions that advance the *Chesapeake Bay Watershed Agreement*. Progress will be assessed on a yearly basis to quantify achievement of the target. Currently, indirect engagement is captured by the workgroup coordinator for internal reporting and focuses solely on indirect engagement led by the workgroup. Examples include local government trusted source publications (October 2024 Issue of Borough News (pages 66-68)) and user analytics on the Protect Local Waterways website. Progress towards this target was originally envisioned to be captured by tracking the Protect Local Waterways website analytics, including unique visits to the site and resource downloads. Protect Local Waterways is an

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online resource hub that serves as a guide on how local government leaders can help protect the health and vitality of local waterways. The future of Protect Local Waterways is uncertain. To minimize the reporting burden on local governments, the workgroup will leverage existing state and federal reporting channels to capture indirect engagement. Signatory members will be responsible for annually gathering this existing data and sharing it with the workgroup. Another key element of tracking progress will be to coordinate across CBP's goal teams and workgroups to capture the full breadth of indirect engagement with local government leaders across the partnership. To ensure consistent tracking across jurisdictions, a definition of "Indirect Engagement" is provided below in Management Approach 4.1.1.

Situation Analysis for Outcome 4.1: Local Government Leadership

The following table identifies challenges that will impact progress toward attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

Challenges	Within CBPs ability to influence	Outside of CBP's ability to influence
Local government officials' attention is divided by competing interests and priorities.		X
Limited scientific and technical capacity of local officials, including issues related to changing environmental conditions.*	**X**	
Routine turnover of elected and appointed officials		X
Engaging newly elected and appointed officials	X	
The complexity of the watershed and specific needs of each jurisdiction		X
Understanding the needs of local governments and tailoring outreach, education, and capacity building efforts	**X**	
Sustaining resources and funding for tracking knowledge and capacity of local officials	X	

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Sustaining resources and funding for developing and maintaining educational events and materials for local officials	**X**	
Addressing needs across the Chesapeake Bay Program workgroups to better engage local officials	X	

Management Approaches for Outcome 4.1: Local Government Leadership

The Local Government Leadership Workgroup relied on previous and existing publications that evaluated how to best increase the knowledge and support the capacity of local government leaders to develop the Management Approaches. This included, but is not limited to: Chesapeake Watershed Local Leadership Development Programs (2015), Strategic Outreach Education Program for Local Elected Officials (2017), Local Leadership Baseline Survey (2022), Planning for Clean Water: Local Government Workshop Reports (2023), Local Leadership Survey (2024), Network Science Technical Assistance (2026) and Local Government Technical Assistance Inventory and Gap Analysis Project (2026).

Management Approach 4.1.1: Measure progress toward increasing the knowledge and supporting the capacity of local government leaders.

Local government leaders are defined as elected officials, appointed officials, and staff who represent their local government at a meeting, training, or event. Direct Engagement is defined as two-way dialogue with active participants. Examples include conference panels, peer-to-peer learning exchange tours, roundtable discussions, hands-on trainings, interactive webinars and more. Indirect Engagement is defined as broadcast style communications that are seen or read by a passive observer. Examples include social media posts, blog posts, newsletters, magazine articles, website views, and more. The workgroup will annually track and report Direct and Indirect Engagement.

Management Approach 4.1.2: Serve as translators of complex scientific and technical resources and information.

Many local officials do not have scientific or technical knowledge, particularly around emerging issues, such as changing environmental conditions. Additionally, frequent turnover among elected and appointed officials results in loss of institutional knowledge and an ongoing need to engage and educate new leaders. Moreover, a broad spectrum of important and urgent issues constantly competes with local officials' time and resources. By translating scientific and technical information into plain language and demonstrating how actions to advance *Chesapeake Bay Watershed Agreement* outcomes align with local priorities, the partnership can support implementation of local actions. Because of the

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complexity of the watershed, outreach and education material will be tailored to the unique needs of each jurisdiction.

Management Approach 4.1.3: Increase the knowledge and support the capacity of local government leaders via existing channels of trusted communications and engagement.

Leverage existing channels of communication and engagement to effectively reach elected and appointed officials who lack scientific or technical knowledge, particularly around emerging or evolving environmental issues. Frequent turnover among elected and appointed officials results in loss of institutional knowledge and an ongoing need to engage and educate new leaders through sustained outreach, onboarding, and relationship-building efforts.

Management Approach 4.1.4: Strengthen the networks that support local government leadership capacity.

Many local governments do not have in-house scientific or technical capacity and rely on networks of support, such as municipal associations, planning organizations, technical assistance providers, conservation districts, and other trusted sources. By strengthening the capacity of these existing networks and supporting the development of engagement networks where gaps exist, the workgroup can more effectively amplify local and regional level technical assistance and maximize limited resources across the watershed.

Management Approach 4.1.5: Support goal teams and workgroups who want to engage with local officials.

Within the goal teams and workgroups of the Chesapeake Bay Program, there is growing interest in engaging local governments. As capacity allows, the Local Government Leadership Workgroup will coordinate with these groups to address needs across the partnership to better engage local officials, with a focus on the workgroups under the Engaged Communities Goal and Healthy Landscapes Goal. The Strategic Engagement Team will be a key partner in this effort.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, “participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices” (2025).

Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners:**
  - State of Delaware
  - District of Columbia
  - State of Maryland
  - State of New York
  - Commonwealth of Pennsylvania
  - Commonwealth of Virginia
  - State of West Virginia
  - Chesapeake Bay Commission
  - U.S. Environmental Protection Agency
- **Other Partners**
  - Metropolitan Washington Council of Governments
  - University of Maryland's Environmental Finance Center
  - Rappahannock-Rapidan Regional Commission
  - University of Delaware's Water Resources Center
  - Pennsylvania Chapter of the American Planning Association

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Public Access Outcome

Public Access Outcome: Create new and enhance existing public access sites in the Chesapeake Bay watershed through a combination of actions aimed at improving recreational opportunities and accessibility while addressing barriers to access by increasing the number, quality and geographic distribution of sites.

- By 2040, add at least 100 new sites providing access to natural lands and waters with a strong emphasis on providing opportunities for recreation where feasible.
- By 2040, improve at least 100 of the 1,451 existing public water access sites by upgrading or maintaining site grounds and structures, and expanding the range of active and passive recreation opportunities such as paddling, boating, trails, courts, piers, wildlife viewing and picnic areas.
- By 2040, improve at least 40 of the existing public water access sites by adding Americans with Disabilities Act (ADA) or Architectural Barriers Act (ABA) accessible features.
- Increase access to existing urban and community greenspaces identified in the protected lands dataset.

Baseline and Current Condition

The *Chesapeake Bay Watershed Agreement* adopted in 2014 called for 300 new public access sites to our waterways to be added throughout the watershed by 2025, with 2010 serving as a baseline year. This target was achieved in 2024, and by the end of 2025, a total of 317 new sites has been reported, bringing the number of mapped public water access points to 1,456, which may be viewed through this map viewer.

The *Chesapeake Bay Watershed Agreement* expands the targets of the Public Access Outcome to include an expanded definition of public access sites, calls for continued upgrades and maintenance of existing sites including ADA/ABA accessibility, and includes urban and community greenspaces. The Public Access Outcome reaffirms both the need for and the benefits of providing communities with access to these resources.

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New Access Site Target

Public access sites are those used expressly for public access that are owned, operated, and/or managed by any unit of federal, state, or local government, or a non-governmental organization operating under a memorandum of understanding (MOU), grant, or other agreement with a governmental agency.

The four types of water-based access that will be tracked towards the 100 new sites target, the 100 improved sites target, and the 40 ADA/ABA-improved sites target are as follows:

- Boat-related access: boat ramps and soft launches supporting motorized and non-motorized craft, as well as boat-in campsites, which include their own water access site.
- Swimming access: designated areas appropriate for swimming.
- Fishing access: piers, bank fishing facilities, or easements and parking adjacent to the water.
- Viewing access for water, wildlife, and shoreline areas: boardwalks and observation decks located at or leading to the water's edge.

A new access site is defined as:

- Development of a new public access facility on a new site.
- Development of a new type of access at an existing site. For example, if a fishing pier is developed at a site that currently has a boat ramp, the pier would count as a new public access site toward the goal.

The Public Access Workgroup has not yet defined access to natural lands. The workgroup will work to define access to natural lands in 2027, which will be used to track progress towards the 100 new sites target.

The distribution of existing water public access sites is as follows:

- Maryland: 653
- Virginia: 415
- Pennsylvania: 233
- West Virginia: 77
- New York: 40
- District of Columbia: 30
- Delaware: 8

The *Chesapeake Bay Watershed Agreement* redefined public access to include access to our natural lands in addition to our waterways. The Public Access Workgroup will develop a

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definition for access points to natural lands to support progress tracking toward the outcome.

ADA/ABA Accessibility Target

Of the existing database of public water access sites, the majority do not have an ADA/ABA accessibility attribute included in the dataset. 1181 sites are marked as unknown, 128 sites have at least one ADA-accessible feature, and 124 sites are listed as not ADA accessible. The data also does not specify which features are present. ABA accessibility is not currently attributed. Understanding the full picture of ADA- and ABA-accessible water access sites remains a goal of the workgroup.

Increasing Access to Urban and Community Greenspace Target

Urban and community greenspaces are defined as publicly accessible lands in census-designated places and urban areas that provide opportunities for both passive and active recreation while offering exposure to nature. These public spaces deliver human health, community, and environmental benefits and include, but are not limited to, parks, trails, gardens, sports fields, waterfronts, outdoor gathering areas, and natural landscapes such as forests and grasslands.

Public access is not fully accounted for in the Protected Lands indicator, which limits our understanding of the extent of accessible protected lands within census-designated places and urban areas. Additionally, a complete database of existing greenspaces at the watershed level does not currently exist, although many communities are mapped through the Trust for Public Land's (TPL) ParkServe analysis. Future collaboration between TPL's Park Serve Analysis and the Protected Lands Workgroup will assist in establishing a baseline of access to existing and future urban and community greenspaces.

Monitoring Progress and Indicators

At the beginning of each calendar year, Public Access Workgroup members will gather and submit jurisdiction data pertaining to our targets from the previous year. This data will encompass information on the four targets listed below. The Protected Lands Workgroup will supplement this data with an analysis of greenspace acreage in census-designated places and urban areas.

Annually, the Public Access Workgroup will compile, review, and submit to the Chesapeake Bay Program a comprehensive list of the metrics below related to public access sites:

Monitoring: Add at least 100 new public access sites.

Measurement Tool:

- Number of new public access sites added.

Monitoring: Improve at least 100 of the 1,451 existing public water access sites through upgrades or maintenance.

Measurement Tool:

- Number of sites upgraded. A qualitative list of upgrades will be developed by the workgroup in 2027 for tracking purposes.

Monitoring: Improve at least 40 of the existing 1,451 public water access sites through the addition of ADA or ABA features.

Measurement Tool:

- Number of sites improved with ADA or ABA features. A qualitative list of ADA or ABA features will be developed by the workgroup in 2027 for tracking purposes.

Monitoring: Increase access to urban and community greenspaces.

Measurement Tools:

- Urban and Community Greenspace Acreage Analysis – Acreage of publicly accessible greenspaces within census-designated places and urban areas. This information will be provided in collaboration with the Protected Lands Workgroup and the Trust for Public Land.
- Trust for Public Land's 10-minute Walk Analysis – Percentage of people living in census-designated places and urban areas that live within a 10-minute walk of a community and urban greenspace. This information will be provided in collaboration with the Trust for Public Land.

Situation Analysis for Outcome 4.2: Public Access

The Chesapeake Bay watershed is home to more than 18.5 million people. Ten million of them live along or near the Bay's shores, and another 150,000 people move into the watershed each year. As urbanization increases, fewer people have the opportunity to interact daily with the region's waters, forests, and open lands. Additionally, changing environmental conditions continue to underscore the importance of creating resilient public access spaces, as our natural lands, waters, and urban and community greenspaces serve as places where residents may escape extreme heat, access cooling waters, and protect communities from extreme weather events. Ensuring that these spaces are available, accessible, and distributed throughout the watershed can help

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communities benefit from the recreational, environmental, cultural, social, and economic value of waterways, parks, natural areas, and urban and community greenspaces.

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

Challenges	Within CBPs ability to	Outside of CBP's ability to
Insufficient funding to implement new sites, upgrades, and ADA accessibility projects		X
Lack of community support for new access sites	X	
Lack of publicly owned shoreline to implement new water public access sites		X
Insufficient budget for staff to manage and maintain new sites		X
Lack of community engagement strategies to understand where communities desire public access	X	
Lack of available public land in census-designated places and urban areas for conversion into greenspace		X
Technical expertise in ADA/ABA accessible features and best practices for project managers	X	
Lack of watershed-wide inventory of publicly accessible greenspaces	X	
Missing public access data attribution within the Protected Lands dataset	X	
Missing ADA/ABA accessibility data for existing public access sites	X	
Degradation of existing greenspaces and access sites due to flooding and other extreme weather events.*		X
Few public access technical assistance providers	X	X

Management Approaches for Outcome 4.2: Public Access

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Management Approach 4.2.1: Increase public awareness of existing access opportunities and available amenities.

The Public Access Workgroup will improve awareness of public access sites throughout the watershed by promoting accessible, user-friendly information about site locations, amenities, recreational opportunities, and accessibility features. The workgroup will encourage consistent and accurate information about public access sites across websites, maps, signage, and other public-facing resources, including information about ADA- and ABA-accessible features where available. The workgroup will support efforts to make information about public access sites easier to find, understand, and use when planning recreational activities, while encouraging jurisdictions and site managers to update information as site conditions and amenities change regularly. Awareness of existing access opportunities may increase use of these amenities and spaces, which in turn may justify funding for access site creation to meet capacity and community needs.

Management Approach 4.2.2: Identify gaps in public access to better prioritize public access development.

The Public Access Workgroup will use available data and planning efforts to identify gaps in public access to our natural lands, waters, and greenspaces throughout the watershed. The workgroup will consider factors such as the distribution and condition of existing sites, proximity to population centers and underserved communities, and other barriers to access. The workgroup will support approaches that identify and address barriers to access, including physical, informational, cultural, and socioeconomic barriers and explore how changing environmental conditions may impact the availability of access sites. The workgroup will use this information to help jurisdictions and partners identify areas where new sites could provide the greatest public benefit.

Management Approach 4.2.3: Facilitate financial support opportunities with jurisdictions for public access projects.

The Public Access Workgroup will work to identify state and federal programs that may serve as funding sources for public access projects. The workgroup will ensure that these funding sources are disseminated throughout our jurisdictions and to practitioners seeking to access these resources.

Management Approach 4.2.4: Increase engagement of the Public Access Workgroup with local governments and organizations implementing public access projects.

The Public Access Workgroup aims to provide technical assistance to support various stages of public access projects, including site assessment, planning, project design, and compliance/permitting. The workgroup will encourage partners at all levels to share and

use information, data, and recommendations from local and state plans, as well as resources created by the workgroup, and incorporate them into broader planning efforts. The workgroup will serve as a resource to help local jurisdictions enhance accessibility, promote sustainable practices, adapt to changing use patterns, and bolster resiliency efforts.

Management Approach 4.2.5: Facilitate partnerships with parks and community organizations to support the stewardship and maintenance of public access sites.

The Public Access Workgroup will encourage partnerships between state agencies, municipalities, counties, park authorities, regional planning organizations, land trusts, trail organizations, watershed organizations, tourism and destination organizations, conservation advisory bodies, community groups, and other local partners to support the ongoing stewardship, maintenance, and management of public access sites. The workgroup will encourage jurisdictions and site managers to develop opportunities for partner organizations to participate in park stewardship activities. The workgroup will also encourage partnerships that engage diverse and underrepresented communities and provide appropriate resources and guidance to sustain their involvement. These recreational partnerships will contribute to creating a broader, more engaged constituency for Bay restoration, conservation, and protection.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, "participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners**
    - State of Delaware
    - District of Columbia
    - State of Maryland
    - State of New York
    - Commonwealth of Pennsylvania
    - Commonwealth of Virginia

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    - State of West Virginia
    - Chesapeake Bay Commission
    - U.S. Environmental Protection Agency
- **Other Partners**
    - Baltimore Greenspace
    - National Park Service
    - NeighborSpace of Baltimore County
    - Trust for Public Land
    - U.S. Department of War
    - U.S. Geological Survey

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School District Environmental Literacy Planning Outcome

School District Environmental Literacy Planning Outcome: Increase the number of school districts that have policies and practices in place that support environmental education and sustainable schools.

- By 2040, reach all jurisdictional targets for the number of public school districts that are well prepared to deliver a comprehensive and system-wide approach to environmental literacy. Jurisdictional targets are as follows:
    - 24% of school districts in the District of Columbia
    - 86% of school districts in Maryland
    - 50% of school districts in Pennsylvania
    - 32% of school districts in Virginia
    - 50% of school districts in the West Virginia portion of the watershed

Baseline and Current Condition

School District Preparedness

In 2024, 302 local education agencies (LEAs)—44% of the total—were represented in the Chesapeake Bay Program's Environmental Literacy Indicator Tool (ELIT). This represents 74% of public elementary, middle, and high school students that live in the region. Students are defined as K-12 learners. ELIT includes questions that measure the degree of environmental literacy preparedness among school districts across the watershed. The survey was distributed to all LEAs within five jurisdictions (Delaware, the District of Columbia, Maryland, Pennsylvania, and Virginia); in West Virginia, the survey was only distributed to the eight LEAs in the watershed.

- 19% of respondents self-identified as "well-prepared" to put a comprehensive and systemic approach to environmental literacy in place.
- 57% of respondents self-identified as "somewhat prepared" to put a comprehensive and systemic approach to environmental literacy in place.
- 25% of respondents self-identified as "not prepared" to put a comprehensive and systemic approach to environmental literacy in place.

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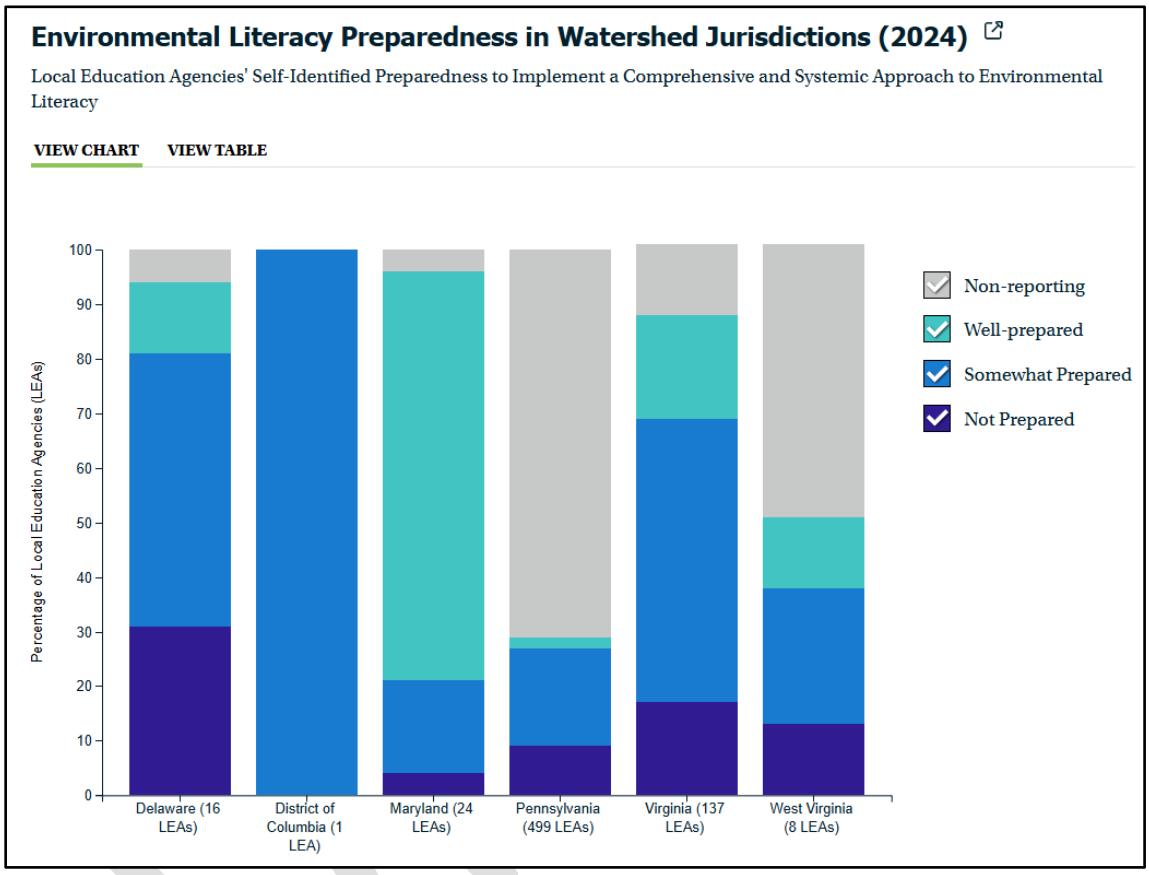
While preparedness levels have largely stayed steady over the last four cycles of data gathering, there was substantial evidence in 2024 that districts are improving the infrastructure elements measured in this indicator.

In addition, the number of sustainable schools in the Chesapeake Bay watershed increased by 19% from 501 in 2015 to 597 in 2021, indicating a positive trajectory. More recent data is not available.



Monitoring Progress and Indicators

Indicator: School District Preparedness

Progress toward Local Education Agency (LEA) preparedness has been measured biennially via the Environmental Literacy Indicator Tool (ELIT) since 2019. The 2024 survey data captured data from the 2023–2024 school year along with records from 2022 for districts who responded in 2022 but not in 2024. This resulted in a robust combined baseline dataset representing 302 LEAs across the watershed. The data set represents 74% of all public school students in the region. Larger urban districts have the highest reporting rates. Six elements are included in this indicator:

1. An established program leader for environmental education (providing effective, sustained, and system leadership).
2. An integrated program infusing environmental concepts into appropriate curricular areas.
3. Regular communication among staff responsible for environmental education curriculum and program implementation.
4. A support system in place that enables teachers and administrators to engage in high-quality professional development in content knowledge, instructional materials, and methodology related to environmental education.
5. A plan to ensure opportunities for all students to engage in meaningful watershed educational experiences (MWEEs) at the elementary, middle and high school levels.
6. Established community partnerships for delivery of environmental education, including implementation of MWEEs.

The questions that make up this indicator will be reviewed to determine how best to update the questions to align with the *Chesapeake Bay Watershed Agreement*.

Monitoring: Number and Distribution of Certified Sustainable Schools

Data is collected every two years from Sustainable Schools certification programs that meet criteria established by the Education Workgroup. Certified sustainable schools include public and charter schools within the Chesapeake Bay watershed that have been recognized as sustainable by the following programs: U.S. Green Ribbon Schools, National Wildlife Federation Eco-Schools USA (Bronze, Silver and Green Flag status), Maryland Green Schools, Pennsylvania Pathways to Green Schools, and Virginia Naturally Schools.

Situation Analysis for Outcome 4.3: School District Environmental Literacy Planning

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

Challenges	Within CBPs ability to influence	Outside of CBP's ability to influence
State and school district leadership understanding of and commitment to advancing the outcome	X	
Limited availability of funding and technical assistance for school district environmental literacy planning	X	
Dedicated staff focused on environmental literacy are not identified for all school districts, particularly in smaller school districts.	X	
Successful environmental literacy planning involves curriculum, facilities, and workforce experts, who rarely come together in a district for comprehensive, interdisciplinary planning.	X	
School districts have varied educational priorities and mandates, and environmental education is not always a focus area.		X
School districts vary in their commitment and resources to integrate sustainability and changing environmental conditions into facilities planning, construction, and operations.*		X
Environmental Literacy Plan templates and resources are not adopted uniformly across states and school districts.	X	
Local assets (e.g., businesses and public nature sites) and nonformal environmental education providers are not fully integrated into school district programming.	X	
Sustainable Schools certification programs are not uniformly known by all schools or districts, and there is no federal certification program.	X	
Lack of understanding of how to integrate environmental literacy into programs that address school district priorities (e.g., attendance, workforce, math, and literacy).	X	
Insufficient opportunities for school districts to collaborate and share best practices on environmental literacy, sustainability, and workforce planning	X	
Tracking and accountability gaps	X	
Policies addressing perceived liability concerns in some districts limit opportunities for outdoor learning.		X
Outdoor learning spaces do not exist on all school campuses, eliminating an easy-to-access, inexpensive opportunity for outdoor experiences.		X

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Management Approaches for Outcome 4.3: School District Environmental Literacy Planning

Management Approach 4.3.1: Support jurisdictional governance and accountability.

Build state leadership understanding, support, and accountability for environmental literacy using data-driven metrics and strategic communications. Leverage support to catalyze action at the regional, state, and local level, including improving cross-agency coordination to align policies, practices, and funding to accelerate environmental literacy efforts.

Management Approach 4.3.2: Ensure availability of high-quality planning resources.

Create and maintain resources, frameworks, and programming that enable school district leaders and personnel to seamlessly integrate high-quality environmental education, sustainable schools, and environment-based workforce programs directly into environmental literacy plans, capital budgets, and related policy and planning documents, supported by ongoing local feedback loops.

Management Approach 4.3.3: Strengthen state and local networks.

Build the capacity of state networks to support local networks, focused on strengthening partnerships between formal and nonformal education communities to develop and implement strategic and efficient systemic environmental literacy planning and implementation.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, "participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners**
    - State of Delaware
    - District of Columbia
    - State of Maryland

    - Commonwealth of Pennsylvania
    - Commonwealth of Virginia
    - State of West Virginia
    - Chesapeake Bay Commission
    - National Oceanic and Atmospheric Administration on behalf of the Federal Government
- **Other Partners**
    - Chesapeake Bay Foundation
    - Chesapeake Bay Trust
    - National Wildlife Federation
    - North American Association of Environmental Educators & Affiliates
        - Delaware Association for Environmental Education District of Columbia Environmental Education Consortium
        - Maryland Association for Environmental and Outdoor Education
        - Pennsylvania Association of Environmental Educators
        - Virginia Association for Environmental Education
    - State Environmental Literacy Networks
        - Maryland Environmental Literacy Advisory Network
        - Pennsylvania Environmental Literacy Network
        - Virginia Environmental Literacy Network

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Stewardship Outcome

Stewardship Outcome: Increase the public's participation in stewardship actions that contribute positively to lands, waters, wildlife, fisheries and communities throughout the Chesapeake Bay watershed.

- Through 2040, build the capacity of leaders in the community and environmental professionals with the social science data, technical assistance and support needed to develop, improve and carry out individual- and community-level stewardship programs, including those that will help advance Chesapeake Bay Watershed Agreement Goals and Outcomes.

Baseline and Current Condition

Achieving the *Chesapeake Bay Watershed Agreement's* water quality, restoration, and conservation goals depends on engaged residents who support community stewardship and take personal action. Historically, the Stewardship Outcome focused on increasing the number and types of volunteers with the knowledge and skills to engage in individual stewardship actions across the watershed. The revised Stewardship Outcome builds on the Chesapeake Bay Program's role as a regional convener, using a coordinated network of partners to influence on-the-ground programs.

In 2017, the first comprehensive survey of stewardship actions and attitudes, completed by 5,212 randomly selected watershed residents, produced a Stewardship Index score of 24 out of 100, with 100 representing the greatest opportunity and likelihood of adopting stewardship actions. The Index includes three components—Personal Action (38), Volunteering (23), and Advocating (19)—that collectively inform the overall score. Conducted again in 2023, the survey showed broad optimism and volunteerism, but persistent knowledge gaps about specific actions. It also found that more residents are willing to advocate for stewardship than are currently doing so. Most believe government involvement is important, though many express doubts about local government responses, suggesting a need to increase visibility of local efforts. Additional details on the surveys are available through Chesapeake Behavior Change.

A capacity assessment led by the Choose Clean Water Coalition, Alliance for the Chesapeake Bay, and OpinionWorks identified systemic capacity gaps that limit nongovernmental organizations' (NGO) ability to engage communities at scale. Without sufficient capacity, organizations may struggle to apply for and manage creative funding

streams, engage in professional development, invest in outreach and partnership models, and facilitate best-practices training. While many organizations report maintaining or increasing constituent engagement, a majority rate their engagement capacity as medium or low, and confidence in reaching new audiences remains limited. Addressing these needs is central to supporting community leaders and environmental professionals in designing and delivering effective stewardship programs.

Monitoring Progress and Indicators

Monitoring: Stewardship Network Initiatives in the Chesapeake Bay Watershed

To track increases in capacity, community-level action, and technical assistance, a selection of local stewardship initiatives led by the Chesapeake Bay Program partnership (e.g., Chesapeake Bay Stewardship Fund projects, volunteer cleanups, trainings, community science activities), collaborative networks, and practitioner toolkits will be documented and reported every two years on ChesapeakeProgress. Each project with geographic location information will appear on an interactive watershed map, accompanied by a summary. Where available, additional measures of program reach, participation, capacity, and impact will be reported.

Monitoring: Chesapeake Steward Map

The Chesapeake Steward Map strengthens connections and collaboration by identifying hubs, gaps, and opportunities to share knowledge and resources across the region. Individuals and organizations will be added regularly to help users find partners with shared interests and the expertise needed or offered to support stewardship programs. The number of stewards and organizations on the map, geographic coverage by jurisdiction or community type, and connections facilitated through map outreach will be documented and reported every two years to track and visualize progress towards growing network capacity through 2040.

Monitoring: Bay Stewardship Survey

The Bay Stewardship Survey focuses on the actions that more than 18 million people across the watershed take in their daily lives to improve ecosystem health, the public's perceptions and expectations about restoration, and the conditions that enable success. The survey describes stewardship across three facets—environmentally friendly behaviors, volunteerism, and civic engagement. Subject to future availability of funding, the survey will be conducted every five years and reported with trends by jurisdiction and demographic group to track changes in stewardship participation over time.

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Situation Analysis for Outcome 4.4: Stewardship

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

Challenges	Within CBPs ability to influence	Outside of CBP's ability to influence
Insufficient coordination among funders and local partners limits efforts to align resources, scale regional impacts, and reduce capacity constraints for grantees.	X	X
Creative, replicable models of effective stewardship, behavior-change, and social marketing campaigns are not broadly accessible.	X	X
Funding and capacity gaps limit environmental professionals' and community leaders' ability to implement stewardship programs.	X	X
The ability to measure and track stewardship program impacts is limited by a lack of shared, long-term data and common metrics.	X	
NGOs need greater technical assistance, support with funding applications, and capacity to secure resources for stewardship programs.	X	
Environmental professionals and community leaders have limited professional development and training opportunities.	X	X
A better understanding of watershed residents' knowledge of and willingness to participate in stewardship is needed to guide behavior-change campaigns.	X	
Existing markets often create disincentives for consumers to participate in stewardship actions.		X
Changing environmental conditions and extreme weather affect the success of environmental restoration and individuals' ability to participate in stewardship activities.*		X

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Lack of strong political support, enabling policy, and sustained public engagement can deter individual and community participation in stewardship actions.	X	X

Management Approaches for Outcome 4.4: Stewardship

Management Approach 4.4.1: Increase strategic coordination and collaboration among local programs to improve stewardship program effectiveness. Partner with local governments, NGOs, and funders to align resources and support pollution reduction, agricultural conservation practices, and environmental restoration goals. Foster partnerships that reduce resource constraints, improve coordination among funded programs, and strengthen stewardship outreach and support for public policy.

Management Approach 4.4.2: Share best practices for stewardship programs and strengthen communications and behavior-change capacity across the watershed. Develop and disseminate replicable program, communications, and social marketing toolkits to support public engagement campaigns. Provide training and technical assistance to help partners adapt, implement, and evaluate successful models that reflect community needs.

Management Approach 4.4.3: Increase volunteer recruitment, engagement, and community-led stewardship programs. Expand volunteer opportunities, including those at public access sites, to build knowledge, experience, and long-term stewardship among adults and youth. Encourage increased federal and state investment to leverage local and private funding for volunteer and community-led projects that provide learning and capacity-building opportunities.

Management Approach 4.4.4: Expand watershed residents' participation in science and monitoring and strengthen shared approaches for measuring stewardship impacts. Coordinate with the Education Workgroup to encourage K-12 student participation in stewardship activities as part of the Meaningful Watershed Educational Experiences (MWEEs) framework. Identify monitoring gaps where community science can support Best Management Practice (BMP) verification and habitat quality assessments. Develop common impact metrics and shared, long-term data systems across partners to track progress.

Management Approach 4.4.5: Increase access to training and technical assistance that support effective stewardship programs. Sustain and expand leadership and technical training platforms, and integrate watershed topics, including changing environmental conditions and social science best practices, into training for environmental professionals,

community leaders, and local government staff. Support NGOs and other organizations with grant applications, program design, and implementation.

Management Approach 4.4.6: Expand incentives and career pathways for emerging professionals, community leaders, and individuals engaged in stewardship. Coordinate with the Workforce Workgroup to support programs that combine education, certifications, and hands-on stewardship experience with workforce pathways that attract and retain new talent. Expand funding for programs that reduce barriers to students pursuing environmental careers, replicate community leadership models, and promote incentives for individual stewardship actions.

Participating Partners

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- **Signatory Partners**
  - State of Delaware
  - District of Columbia
  - State of Maryland
  - Commonwealth of Pennsylvania
  - Commonwealth of Virginia
  - State of West Virginia
  - U.S. Environmental Protection Agency
- **Other Partners**
  - Alliance for the Chesapeake Bay
  - Cacapon Institute
  - Interstate Commission on the Potomac River Basin
  - Penn State Extension

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Student Environmental Literacy Experiences Outcome

Student Environmental Literacy Experiences Outcome: Increase the number of students who participate in inquiry-based environmental literacy instruction with the aim of each student receiving at least one Meaningful Watershed Educational Experience, or MWEE, in elementary, middle and high school.

- By 2040, reach jurisdictional targets to result in at least 75% of public school students being enrolled in a school district that offers a MWEE for all students. Jurisdictional targets are as follows:
    - 65% of public school students in the District of Columbia
    - 97% of public school students in Maryland
    - 60% of public school students in Pennsylvania
    - 85% of public school students in Virginia
    - 50% of public school students in the West Virginia portion of the watershed

Baseline and Current Condition

Student Participation in MWEEs

In 2024, 302 local education agencies (LEAs)—44% of the total—were represented in the Chesapeake Bay Program's Environmental Literacy Indicator Tool (ELIT). This represents 74% of public elementary, middle, and high school students that live in the region. Students are defined as K-12 learners. ELIT provides data on the extent of Meaningful Watershed Educational Experiences (MWEEs) among schools:

- Elementary School Level: 31% of reporting LEAs provide system-wide MWEEs to at least one grade level, 39% provide some MWEEs to at least one grade level, and 30% have no MWEEs available.
- Middle School Level: 33% provide system-wide MWEEs to at least one grade level, 41% provide some MWEEs, and 26% have no MWEEs available.
- High School Level: 30% provide system-wide MWEEs in at least one course, 44% provide some MWEEs in at least one required course, and 26% have no MWEEs available.

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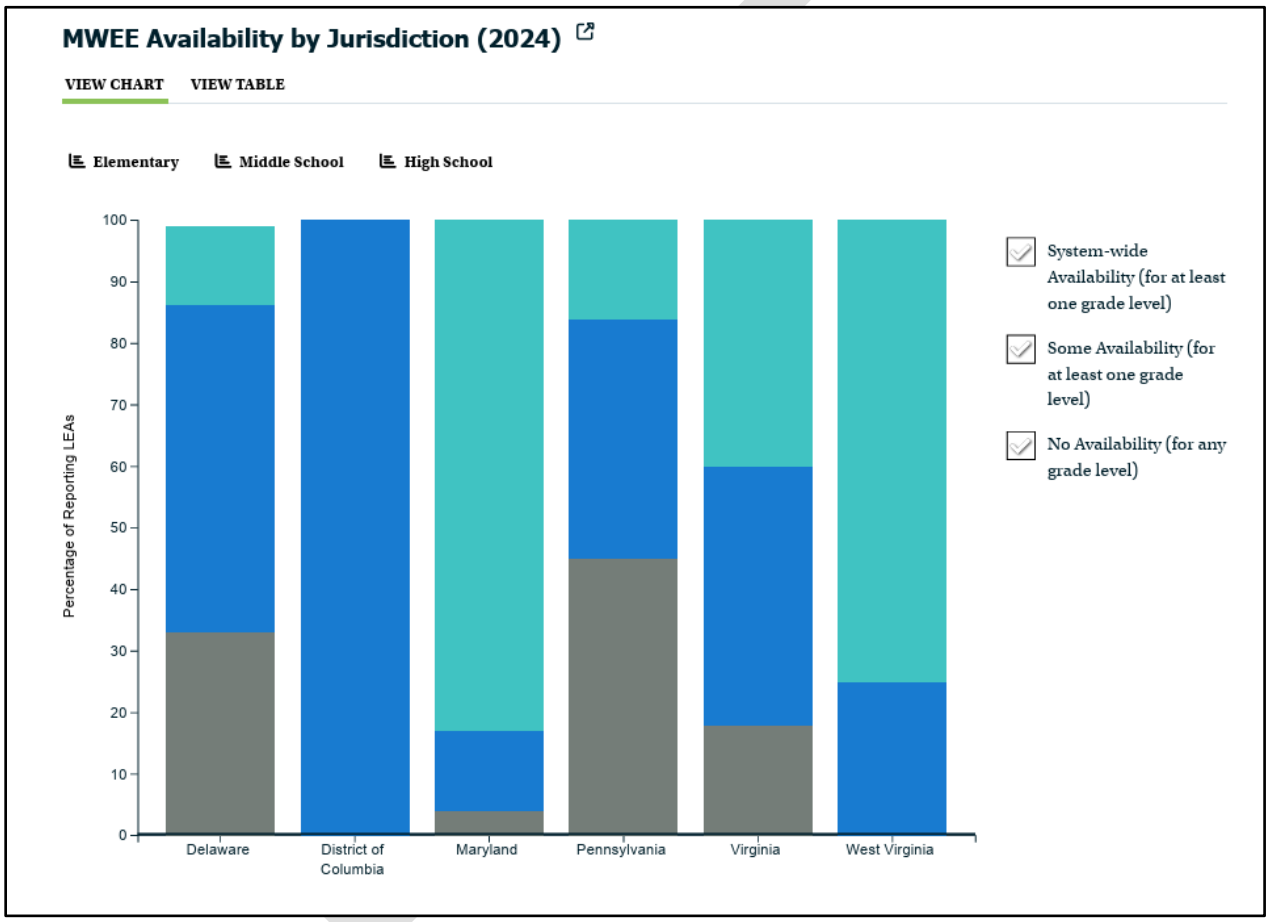
The trend in the data from 2022 to 2024 shows an increase in the availability of MWEEs in elementary, middle, and high schools throughout the region. When looking at the data from districts that reported in both 2022 and 2024, system-wide MWEE availability increased 9.6% at the elementary level, while districts with no MWEEs decreased 9.6%. At the middle school level, systemwide availability also increased 9.7%, while districts with no MWEEs dropped 8.2%. For high school students, the increase in system-wide MWEE availability was 12.6%, while no availability decreased 9.4%. These trends illustrate the continual growth in MWEE availability and engagement at all three grade bands described in this outcome.



Monitoring Progress and Indicators

Indicator: Student Participation in MWEEs by Grade Band

Progress toward the Student Environmental Literacy Experiences Outcome has been measured biennially via the Environmental Literacy Indicator Tool (ELIT) since 2019. The 2024 survey data captured data from the 2023–2024 school year, along with records from

2022 for districts who responded in 2022 but not in 2024. This resulted in a robust combined baseline dataset representing 302 LEAs across the watershed. The data set represents 74% of all public school students in the region. Larger urban districts have the highest reporting rates.

The ELIT survey monitors the depth and reach of inquiry-based environmental education instruction by collecting data on school district leadership, integrated curriculum, and the structural presence of MWEEs across grade bands. MWEE availability is tracked by grade bands (elementary, middle, and high school) and categorized as system-wide, partial, or non-existent.

The presentation of the 2024 data aligns with the outcome in the *Watershed Agreement* adopted in 2014 to deliver MWEEs in each grade band. With the shift in the outcome to target a percentage of students rather than the number of school districts in the watershed with a MWEE, the indicator will need to be re-calculated using existing underlying data dating back to 2019.

The presentation of the 2024 data aligns with the outcome in the *Chesapeake Bay Watershed Agreement* adopted in 2014, which called for delivering MWEEs in each grade band. With the shift in the outcome to target a percentage of students rather than the number of school districts in the watershed offering an MWEE, the indicator will need to be recalculated using existing underlying data dating back to 2019.

Situation Analysis for Outcome 4.5: Student Environmental Literacy Experiences

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

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Challenges	Within CBPs ability to influence	Outside of CBP's ability to influence
Absence or turnover in state education agency staffing for environmental literacy	X	
Not all jurisdictions have state-level environmental education mandates (e.g., regulations, policies, Executive Orders).		X
Existing High-Quality Instructional Materials (HQIM) often do not provide enough opportunities to use local context and the outdoors for instruction.		X
Education is locally controlled by school districts and their boards of education (approximately 800 districts in the region).		X
Not all school districts have partnerships with nonformal educators to help create and implement outdoor, inquiry-based learning.	X	
Inconsistent and fragmented funding streams for school districts and environmental education partners		X
Dedicated staff focused on environmental literacy are not identified for all school districts, particularly in smaller school districts.	X	
School districts have varied educational priorities and mandates, and environmental education is not always a focus area.		X
Tracking and accountability gaps	X	
Teachers often enter the classroom without training in outdoor learning.	X	
Schools are experiencing high teacher turnover and low recruitment for new teachers.		X
Risk aversion and liability concerns related to outdoor instruction		X
Underutilization of existing outdoor spaces on school grounds for MWEEs and the perception that MWEEs require expensive transportation to outdoor sites	X	

Management Approaches for Outcome 4.5: Student Environmental Literacy Experiences

Management Approach 4.5.1: Maximize use of impactful environmental literacy resources.

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Develop and disseminate environmental literacy resources that equip educators to advance state education priorities using inquiry-based instruction and MWEEs. Use a process that includes regional development, state-level promotion, and local network vetting and dissemination.

Management Approach 4.5.2: Scale and sustain inquiry-based learning and MWEEs.

Leverage intentionally connected regional, state, and local networks to secure funding, deliver training, and strengthen collaboration between formal and nonformal partners in support of systemic inquiry-based learning and MWEE programming.

Participating Partners

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  - National Oceanic and Atmospheric Administration (NOAA) on behalf of the Federal Government
- **Other Partners**
  - Chesapeake Bay Foundation
  - Chesapeake Bay Trust
  - National Wildlife Federation
  - North American Association of Environmental Educators & Affiliates
    - Delaware Association for Environmental Education
    - District of Columbia Environmental Education Consortium

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        - Maryland Association for Environmental and Outdoor Education
        - Pennsylvania Association of Environmental Educators
        - Virginia Association for Environmental Education
    - State Environmental Literacy Networks
        - Maryland Environmental Literacy Advisory Network
        - Pennsylvania Environmental Literacy Network
        - Virginia Environmental Literacy Network

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Workforce Outcome

Workforce Outcome: Increase the ability of all job seekers in the watershed to understand, participate and succeed in career pathways that positively support the Chesapeake Bay watershed.

- By 2040, inform and grow implementation of strategies that help students, educators and job seekers become aware of and understand environmental careers, and the in-demand skills and pathways to access these opportunities.
- By 2040, increase the number of postsecondary institutions and training providers offering industry-recognized credentials that support Chesapeake Bay Watershed Agreement Goals and Outcomes.
- By 2040, engage employers to support greater hiring and retention of workers trained in fields necessary to support Chesapeake Bay Watershed Agreement Goals and Outcomes.

Baseline and Current Condition

In 2024, the Chesapeake Bay Program partnered with WE Strategies to perform a Landscape Analysis regarding workforce programming and retention across the watershed. Participants in this study highlighted several gaps they have experienced, including the lack of awareness of green job pathways, lack of relationships between training providers and employers, and lack of professional development and advancement opportunities. Understanding this baseline perception of the green workforce landscape will aid in creating strategies to address these gaps.

The following themes arose from this study, which showcase the current conditions of workforce perceptions in fields that support *Chesapeake Bay Watershed Agreement* goals and outcomes:

- "Green jobs" are commonly thought of as jobs that are directly involved with environmental science, conservation, and being outdoors;
- Funding for professional development and career education opportunities is limited;
- Youth and emerging professionals may not have a clear understanding of important skills and future career paths within these fields, even after training programs are completed;

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- Salary and availability of permanent, long-term jobs are seen as barriers by prospective employees;
- Clear communication is lacking between training providers and employers, acknowledged by 84% of study participants.

A 2021-2022 study titled *Reviewing the Capacity of the Chesapeake Bay's NGO Community* reveals additional insights regarding recruitment, training, employment, and retention challenges for non-profit organizations across the Chesapeake Bay region. Non-profit organizations are important to consider when seeking to achieve the Workforce Outcome, because they represent a major type of employer engaged in Chesapeake Bay watershed implementation and improvement efforts. Study participants emphasized that lean staffing and difficulty recruiting and retaining staff were a large concern. Frequent staff turnover "damages the ability to build and maintain relationships with constituents and places a burden on remaining staff" (p.2). Staff turnover at funder organizations was cited as a challenge that makes non-governmental organization (NGO) efforts to secure funding through already complex grant requirements more difficult. NGOs cite limited access to funding for professional development, training opportunities, and coordination, outreach, and engagement of both jobseekers and employers as a barrier to success for an NGO's ability to maintain or grow their workforce or support workforce development programs.

Similarly, challenges in achieving Chesapeake Bay Program (CBP) goals due to workforce shortages have been discussed by the Scientific and Technical Advisory Committee (STAC) and the Local Government Advisory Committee (LGAC). In July 2021, a STAC report, *Overcoming the Hurdle: Addressing Implementation of Agricultural Best Management Practices (BMPs) Through a Social Science Lens*, recommended that the CBP should support new incentive structures for the development and retention of conservation professionals. In the 2019 *Stormwater and Green Infrastructure Workforce Development Report*, LGAC found there is significant demand for workforce to support implementation of BMPs and water infrastructure in local jurisdictions. LGAC followed up with a letter to the Executive Council recommending that they take a leadership role in promoting green infrastructure workforce development, training, and certification programs to support local economies and continue watershed restoration efforts.

The Workforce Workgroup intends to work strategically to ensure that all stakeholder groups in the Chesapeake Bay region are meaningfully included in efforts to achieve the Workforce Outcome and are brought into leadership and decision-making roles. Progress to achieve the Workforce Outcome will also be influenced by changing environmental conditions. Some careers and skillsets will increase in demand and new career opportunities and pathways will develop. New and emerging skills may be required, and

the existing workforce may require enhanced skillsets to adapt to changing environmental conditions.

Monitoring Progress and Indicators

The following potential indicators and monitoring approaches are proposed for the Workforce Outcome as a starting point for future decisions. A subcommittee of Workforce Workgroup members, industry representatives, and supporting staff will be convened to define target industries, evaluate available data, reach agreement on final indicators and relevant sector definitions, and establish the process and responsibilities for data reporting. The subcommittee should include a mix of training providers and representatives from signatories' Department of Labor and comparable relevant agencies, that are familiar with, and have access to, employment, job outlook, wage, and credentialing data. The subcommittee will work to finalize indicators by the end of June 2027. Because the industries that directly and indirectly touch the green sector are so broad, the subcommittee will identify 10-15 example occupations and sectors, defined as "Indicator Job Species," to more effectively and efficiently track and monitor progress towards this outcome across the Chesapeake Bay jurisdictions.

Monitoring: Job Placement within Chesapeake Bay Employment Sector

The Workforce Workgroup indicator development subcommittee will work to define a methodology and set of data to monitor job placement within the Chesapeake Bay employment sector. Potential data sources could include the Quarterly Census of Employment and Wages to track employment rates for a defined list of industry codes, data collected via programs like EARN Maryland, and more. Demographic data and current unemployment and underemployment status for a subset of indicator jobs should be monitored with placement, if possible, to ensure that all job seekers are participating and succeeding in career pathways. One source of this data is the US Equal Employment Opportunity Commission.

The Workforce Workgroup indicator development subcommittee will identify 10-15 indicator jobs that are essential to Chesapeake Bay restoration and conservation progress. Indicator jobs will be linked to their Standard Occupational Codes (SOCs) as established by the Bureau of Labor and Statistics. The subcommittee will prioritize jobs which are representative of workforce needs to achieve *Chesapeake Bay Watershed Agreement* outcomes. Indicator jobs will also be organized and selected to ensure representation across educational requirements, geography, and sector, and identified via SOCs (e.g., Environmental Engineers (17-2081) and Agricultural Technicians (19-4012)). Indicator jobs will be representative of both degree-requiring and non-requiring pathways. Indicator job

selection will also consider and reflect new, emerging, and changing in-demand skillsets and occupational developments associated with changing environmental conditions. For example, occupations related to adaptive management, stormwater, or natural emergencies could emerge as jobs to track. Once an array of indicator jobs and associated data sources are identified, the workgroup will track employment-related trends to measure progress towards achieving the Workforce Outcome.

Monitoring: Increased Awareness, Resources, and Engagement

The Workforce Workgroup will track the cumulative development of tools, resources, products, and programming developed to support awareness of environmental careers and the in-demand skills and pathways to access these opportunities. Example resources and engagement activities include career days, seminars and webinars, efforts to embed workforce development in K-12 curriculum, career counselor engagement, creation of career guides and maps, and communication to promote and increase the availability of careers, career networks, internships, and mentorship opportunities.

Monitoring: Industry-Recognized Credentials Attained

More work is needed to define the method for how and what data will be collected under this potential indicator. One option is to use the Annual Workforce Innovation and Opportunity Act (WIOA) state performance reporting data and incumbent worker training outcomes for credential attainment for a defined sector. Signatories may have other ways of tracking attainment of industry-recognized credentials that could also be used. Once the indicator development subcommittee selects 10-15 indicator jobs, the industry recognized credentials (IRCs) associated with those jobs will be tracked and monitored. The Workforce Workgroup will seek to identify gaps and barriers in credentialing. Gaps may be more prevalent for indicator jobs associated with emergent in-demand skills or occupations (e.g., skills associated with changing environmental conditions). The workgroup acknowledges that not all industry-recognized credentials are recognized or valued by employers equally, and that work will be required to understand gaps in industry-recognized credentials, where new credentials may need to be developed, and how to effectively communicate these pathways.

Monitoring: Average Annual Sector Wages

The Workforce Workgroup will consider tracking wage growth and stagnation in identified sectors and jobs. Average wages of indicator jobs could be monitored on an annual basis and compared to a baseline year and relative to inflation. Wage growth or stagnation, particularly of the indicator jobs, may prove a valuable metric to track progress and challenges to achieve the Workforce Outcome. Cross-comparison of wage growth or

stagnation with the availability and accessibility of credentialing under the identified sectors may provide valuable insights about upward mobility, economic security, and other employment trends or needs across the Chesapeake Bay region.

Monitoring: Placement Trends in Green Career Training Programs

The Workforce Workgroup will monitor and track the success of select green career training programs including apprenticeships, fellowships, internships, corps, and corps-adjacent programs with primary success being defined as placement into a permanent job after completion of the program. Other values and successes from these types of programs could include attainment of credentials, skills, and initial work experiences that are supportive of a long-term career in the industry.

Situation Analysis for Outcome 4.6: Workforce

The following table identifies challenges that will impact progress towards attaining this outcome and its targets. This analysis considers scientific, environmental, fiscal or policy-related developments that have already or may influence work during the upcoming six-year Management Strategy cycle. Consideration is given to which challenges are within and outside of CBP's ability to influence. Challenges associated with Changing Environmental Conditions are denoted with an asterisk (*). Challenges listed in bold font have been identified by the Goal Team and its Workgroups as being priorities for the Workgroup to seek to address or make progress against through the development and implementation of Management Approaches.

Challenges	Within CBPs ability to	Outside of CBP's ability to
Funding, organizational capacity, and structural challenges:		
Lack of funding for workforce development programs for green careers	X	
Lack of organizational capacity to apply for and host workforce development opportunities	X	
Lack of technical assistance providers providing strategic support to increase awareness and opportunities for green sector jobs	X	
Low organizational capacity and insufficient funding to coordinate outreach and engagement to students and jobseekers (e.g., career fair attendance, materials distribution)	X	

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Low organizational capacity and insufficient funding to coordinate outreach and connect employers with training providers	X	
Lack of access to funding for professional development, training opportunities, and skill-building to attract and retain prospective jobseekers	X	
Prevalence of low-paid and seasonal entry-level positions create economic barriers, such as long-term job insecurities and retention challenges		X
Difficulty recruiting and retaining workers for jobs that occur outdoors (e.g., BMP maintenance) with increasing extreme weather*		X
Lack of networks connecting jobseekers to training providers	X	
Need for increased transparency in application and hiring processes, including salary transparency		X
Need for a shift toward skills-based hiring practices that are not highly restrictive to degree or background requirements	X	
Lack of capacity building funding to support NGOs in their real-time Human Resources and administrative needs		X
Policy and economic shifts could have impacts on certain sectors (e.g., visas, immigration, Artificial Intelligence).		X
Jobseeker awareness, clear pathways, and sector integration:		
Lack of clear definitions of "green careers" and "green workforce"	X	
Need for the identification of job codes associated with green careers and sectors	X	
Lack of clear pathways to support progression from entry to higher level roles	X	
Chesapeake Watershed Agreement-related jobs not prioritized by state labor offices	X	
Lack of universally accepted or required credentials and certifications		X
Need to identify existing and emerging industry-recognized credentials and understand their accessibility and value*	X	
Need for an increase in internship, apprenticeship, and work-based learning opportunities to increase K-12 student awareness of and interest in green careers	X	
Career awareness programming is seldom included in existing environmental literacy programming in meaningful or impactful ways.	X	
K12/CTE instructors lack access to and awareness of resources that support programming related to CBP jobs or need areas.	X	

Management Approaches for Outcome 4.6: Workforce

Management Approach 4.6.1: Engage schools and workforce development partners to increase student, educator, and job seeker awareness and understanding of skills and pathways to participate in green careers.

Expand career awareness and navigation by developing educational resources, supporting educator professional development, integrating career exploration into environmental literacy programs, supporting work-based learning experiences, and embedding workforce programming into school district policies and plans.

Management Approach 4.6.2: Increase access to, and attainment of, Industry Recognized Credentials (IRCs) that support *Chesapeake Bay Watershed Agreement* goals and outcomes.

To advance CBP goals, the Workforce Workgroup will serve as a data clearinghouse and convenor that identifies and shares aligned IRCs, develops new credentials of value to fill existing gaps, and evaluates the investments and barriers involved in accessing these occupational opportunities.

Management Approach 4.6.3: Engage employers to support greater hiring and retention of workers trained in fields necessary to support *Chesapeake Bay Watershed Agreement* goals and outcomes.

By leveraging jurisdiction networks of employers, training providers, and public agencies, the Workforce Workgroup will foster opportunities for employers to discuss challenges, needs, and opportunities across sectors with each other and with training partners to support pipeline development from job training to hiring. Among other activities, the workgroup will encourage mentorship programs as a method for increasing localized hiring, job retention, career advancement, and pathways that support job seekers in accessing sustainable living wage opportunities.

Participating Partners

The following partners participated in the creation of this Management Strategy and expressed their intention to collaborate on Management Strategy implementation over the next six years. Per the Chesapeake Bay Watershed Agreement, "participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Signatory partners may join implementation efforts at any time. Partners also recognize that Signatory participation is voluntary and may vary accordingly.

- **Signatory Partners**
    - District of Columbia: Department of Energy & Environment, Workforce Investment Council, DC Infrastructure Academy, DC Water

    - State of Maryland: Department of Natural Resources, Department of Environment, Department of Labor
    - Commonwealth of Virginia: Secretariat of Natural and Historic Resources, VA Department of Workforce Development and Advancement (Virginia Works)
    - Federal Government: National Oceanic and Atmospheric Administration, U.S. Environmental Protection Agency
- **Other Partners**
    - Chesapeake Stormwater Network
    - Howard EcoWorks
    - Chesapeake Conservation Landscaping Council
    - Alliance for the Chesapeake Bay
    - Choose Clean Water Coalition
    - Chesapeake Bay Foundation
    - Boxerwood
    - Baltimore Urban Water Partnership
    - Chesapeake Research Consortium

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Chesapeake Bay Program Strategic Plan



Appendices

Appendix A. Snapshot of Signatory and Federal Agency Programs

Managing a large and complex restoration and conservation program with "no assurance about the level of funds that may be available beyond the short term" (Government Accountability Office, 2008) is a challenging undertaking that requires individual and collaborative action from signatory partners, as well as the many communities and individuals who live, work, play and learn in our region. This Snapshot of Signatory and Federal Agency Programs seeks to better recognize the significant contribution that individual signatory partners and federal agencies make towards outcome attainment. The existing programs and funding spotlighted below are not intended to represent the full range of resources available or required to support progress towards outcome attainment; a maximum of three programs are spotlighted for each outcome and signatory partner. It is important to note that funding is reported from a single point in time (largely fiscal year 2025) and is not representative of future investments. Identifying the most critical programs and resources that exist at a particular moment in time can help the partnership focus its collaborative efforts on activities that have the greatest impact, and which don't duplicate the work of existing programs.

To assemble this Snapshot of Signatory and Federal Agency Programs, the Chesapeake Bay Program (CBP) requested information from the Chesapeake Bay Watershed Agreement signatory jurisdictions, the Chesapeake Bay Commission and participating federal agencies. The Snapshot of Signatory and Federal Agency Programs included here provides a compilation of the resulting submissions. CBP greatly appreciates but cannot verify the completeness or accuracy of the data provided below. Further, because the submitted data includes funding received from Federal sources, there may be double-counting between the state and Federal programs. It is also important to note that funding numbers shown may represent full program allocations across a whole jurisdiction, estimated values based on the portion of the program focused directly on Chesapeake Bay restoration activities or an estimated value based on the geographic proportion of a jurisdiction that falls within the Chesapeake Bay watershed. In other instances, entities could not determine appropriations at the time information was collected because support comes from a wide range of sources. The funding ultimately provided to Chesapeake Bay watershed efforts may differ from these estimates.

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Thriving Habitat, Fisheries, and Wildlife Goal 1

Blue Crabs Outcome

Maryland

- Blue Crab Winter Dredge Survey ($80K in FY25, and 3 FTEs) Estimates the abundance of the Chesapeake Bay blue crab population each winter to inform fishery management decisions.
- Cooperative Data Collection Program ($28K in FY25, and 2 FTEs) Collects catch composition data in the Maryland blue crab fishery to better understand harvest trends and changes in the population.
- Blue Crab Summer Trawl Survey ($10K in FY25, and 2 FTEs) Estimates the abundance and distribution of the Chesapeake Bay blue crab population each summer to better understand the fishery and changes in the population.

Virginia

- Blue Crab Monitoring ($289K in FY25) Funding to the Virginia Institute of Marine Science for collecting blue crab data, including conducting the Blue Crab Winter Dredge Survey.

Chesapeake Bay Commission

- As a tri-state legislative commission, the Chesapeake Bay Commission advances the goals of the Chesapeake Bay Watershed Agreement by working collaboratively with Bay Program partners to identify and pursue legislative, budgetary, and policy needs within the legislatures of our member states and the U.S. Congress.

National Oceanic and Atmospheric Association

- NOAA Center for Independent Experts Peer Review Program ($99,500 in FY25) provides external peer review for fish stock assessments. In FY25, this program funded the peer review of the new Chesapeake Blue Crab stock assessment
- NOAA National Center for Coastal and Ocean Science ($250,000 in FY25) Cooperative Oxford Lab (COL) studies important research topics in the Bay region. In 2025, COL conducted a blue crab study to improve understanding of the spatial patterns of blue crab recruitment in the Chesapeake and the environmental factors related to recruitment changes over time

Brook Trout Outcome

Maryland

- Brook Trout Translocation ($28K in FY25; $14K from NFWF Chesapeake WILD, $14K from Maryland special funds) Seeks to expand brook trout occupancy in Maryland

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by translocating individuals from stable populations to streams that have suitable habitat for brook trout but do not support any salmonid species.

- Brook Trout Propagation (shared funding source with brook trout translocation) Attempts to propagate wild brook trout in an isolation hatchery for use in new population establishment for the purpose of expanding brook trout occupancy.
- Brook Trout Habitat Improvement ($146K in FY25; $83K from state, $63K from USFWS's National Fish Passage Program and Chesapeake WILD) Improves brook trout habitat through riparian buffer planting and the removal of passage barriers in cold water streams.

New York

- New York State Trout Stream Management Plan – NYSDEC The NYS Trout Stream Management Plan guides the efforts and resources of NYSDEC toward managing New York's trout stream fisheries according to their ecological and recreational potential.

Pennsylvania

- Fish and Boat Commission State Wildlife Grants ($596,135 in FY25 with $249,480 from USFWS Wildlife & Sportfish Restoration and $346,655 from Pennsylvania). This program supports efforts for freshwater fish species including brook trout via annual grants.
- Fish and Boat Commission Habitat Management via Chesapeake Bay Implementation Funds ($1,729,698 in FY 25 with $500,000 in federal funds from EPA's Chesapeake Bay Implementation Grant and $1,229,698 from Pennsylvania). This program provides for funded PFBC staff to assist sportsmen and conservation groups on projects to improve fish habitat in local waterways; coordinate the removal of dams and other blockages to natural fish movement; and provide technical guidance.
- Department of Environmental Protection Growing Greener Plus Grant Program ($5,495,924 in FY25 from Pennsylvania). This grant program funds a variety of projects from design through construction including fish habitat and stream improvement projects and floodplain restoration projects involving legacy sediment removal.

Virginia

- Cold Water Streams Research – $135K: Monitoring and assessment of coldwater streams in DWR's Region 4, which constitutes brook trout habitat with a significant portion in Bay drainages.
- Wild Trout Management Plan: Implements and updates state Wild Trout Management Plan (next update due in 2028); this plan guides the Department of

Wildlife Resources' prioritization of work to be performed to maintain and enhance wild trout populations in the state.

- Wild Trout Management: The DWR implements fisheries programs focused on annual sampling and research of wild brook trout populations to monitor population status and health and to guide prioritization of regulatory actions and habitat restoration activities.

West Virginia

- WVDNR Coldwater Fisheries Management: The West Virginia Division of Natural Resources runs fisheries programs focused on sampling, researching, and regulating wild and native brook trout populations. Biologists use electrofishing surveys to monitor genetic diversity, track population health, and guide stream protections.
- Trout Unlimited Priority Waters Initiative: Trout Unlimited works on conservation, advocacy, and habitat reconnection in high-priority West Virginia watersheds like the Greenbrier, Gauley, Elk, and Potomac, often partnering with private landowners to fence livestock out of streams and stabilize banks
- Eastern Brook Trout Joint Venture (EBTJV): This regional partnership funds projects across Appalachia dedicated to restoring Coldwater habitats and supporting healthy wild brook trout populations.

Chesapeake Bay Commission

- As a tri-state legislative commission, the Chesapeake Bay Commission advances the goals of the Chesapeake Bay Watershed Agreement by working collaboratively with Bay Program partners to identify and pursue legislative, budgetary, and policy needs within the legislatures of our member states and the U.S. Congress.

U.S. Fish and Wildlife Service

- Ecological Services, including Partners for Fish and Wildlife and Coastal Programs ($5,361,000 in FY24), work to restore and protect healthy populations of fish, wildlife, and plants, as well as the environments upon which they depend.
- Fish and Aquatic Conservation Program - Chesapeake Watershed Investments for Landscape Defense (WILD) Grants Program ($531,300 in FY25) works with states, tribes, and communities to protect freshwater resources, manage fisheries, and restore aquatic habitats. The biggest change is the inclusion of the Chesapeake WILD Grant Program.

Fish Habitat Outcome

District of Columbia

- DC Wildlife Action Plan: (1 FTE) Describes threats to various habitats, actions to conserve species and habitats, and designates conservation opportunity areas; Draft of 2025 plan available from https://doee.dc.gov/service/wildlifeactionplan (currently under review by USFWS).
- Invasive Catfish Management: ($52K in FY26) DOEE manages invasive blue and flathead catfish in Washington, D.C. by monitoring populations and diets, encouraging high recreational removal (i.e., discouraging catch-and-release), and updating public consumption advisories.

Maryland

- Freshwater Mussel Monitoring and Assessment ($340.5K in FY25; $308K from state, $32.5K from USFWS's Cooperative Endangered Species Conservation Fund Grant and State Wildlife Grant) Staff in the program inventory and assess freshwater mussel populations and their habitat to draft restoration plans for implementation by mussel propagation biologists in the Warmwater Hatcheries program.
- State Wildlife Grants (1.1M in FY25; 715K from state, 413K from federal) These grants support the revision and implementation of the State Wildlife Action Plan, which guides restoration plan development and implementation for habitats of fish, among other animals.
- Fisheries Ecosystem Assessment Division ($422.5K in FY25; $211.3K from state, $211.3K from USFWS's Sportfish Restoration Program) This division assesses Bay shallow water habitat for effects of watershed development, warming temperatures, other habitat stressors, fishing, and watershed restoration activities on important fish populations.

Pennsylvania

- Department of Environmental Protection Abandoned Mine Land and Abandoned Mine Drainage Grant Program ($73,500,000 in FY25 with $63,700,000 from federal Department of the Interior Infrastructure Investment and Jobs Act funding and with $9,800,000 from federal Department of the Interior Abandoned Mine Land Economic Revitalization Program). This program supports projects associated with reclaiming abandoned coal mine lands or addressing abandoned coal mine drainage.
- Fish and Boat Commission State Wildlife Grants ($596,135 in FY25 with $249,480 from USFWS Wildlife & Sportfish Restoration and $346,655 from Pennsylvania). This program supports efforts for freshwater fish species including brook trout via annual grants.
- Department of Conservation and Natural Resource Community and Watershed Forestry Grants ($5,910,500 in FY 25 with $410,500 from the USDA Farm Service Agency's Riparian Forest Buffer Initiative and $5,500,000 from Pennsylvania). This

program supports riparian forest buffer planting helping to shade and improve habitat along streams for fish species.

Virginia

- Virginia Marine Resources Commission (VMRC; https://www.mrc.virginia.gov/) helps fund significant fisheries survey programs at the Virginia Institute of Marine Science with matching funds from the USFWS Sport Fish Restoration program and manages fisheries and estuarine and tidal habitats through its Fisheries Management Division and Habitat Management Division.
- Virginia Department of Wildlife Resources (VDWR; https://dwr.virginia.gov/) conducts numerous resource surveys and manages inland fisheries, habitats, habitat improvements, and fish stocking; it also creates fishing opportunities for the public.
- Statewide Freshwater Mussel Conservation Plan: The Department of Wildlife Resources has developed a statewide freshwater mussel conservation plan and propagates freshwater mussels at the Harrison Lake National Fish Hatchery in partnership with the U.S. Fish and Wildlife Service to augment and restore Atlantic Slope mussel populations.

West Virginia

- WV Stream Partners Program**:** Administered via the Department of Environmental Protection, this grant program ($100,000 annually) supports community-led watershed groups working to improve local stream health and aquatic habitats
- West Virginia Division of Natural Resources (WVDNR) Stream Restoration Program: This program uses natural stream restoration techniques, such as placing large woody material ("chop and drop" projects), to improve instream habitats for wild brook trout and other native species.

Chesapeake Bay Commission

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National Oceanic and Atmospheric Association

- NOAA Chesapeake Bay Office Fisheries Research Program ($194,500 in FY25) supports research that increases understanding of fish habitat use and conditions to inform management decisions. This research supports the development of the Bay-wide assessment of fish habitat conditions under the first target of the Fish Habitat Outcome.

U.S. Army Corps of Engineers

- Continuing Authorities Program - Section 206 ($44K for FY25) This program supports the restoration of aquatic and riparian habitats, directly contributing to the improvement of fish habitat. Study costs are cost-shared 50% federal, 50% non-federal and implementation is cost-shared 65% federal, 35% non-federal.
- Continuing Authorities Program - Section 14 ($574K for FY25) This program provides for emergency streambank and shoreline protection, which helps stabilize banks and prevent sedimentation that can degrade fish habitat. Study costs are cost-shared 50% federal, 50% non-federal and implementation is cost-shared 65% federal, 35% non-federal.
- Chesapeake Bay Restoration and Protection Program, Section 510 ($1M for FY26) This program supports sediment and erosion control; protection of eroding shorelines and streambanks; ecosystem restoration, including restoration of submerged aquatic vegetation; protection of essential public works; wastewater treatment and related facilities; water supply and related facilities; stormwater and drainage systems; beneficial uses of dredged material; and other related projects that may enhance the living resources of the estuary. Study and implementation costs are cost-shared 75% federal, 25% non-federal.

U.S. Fish and Wildlife Service

- Ecological Services, including Partners for Fish and Wildlife and Coastal Programs ($5,361,000 in FY24), work to restore and protect healthy populations of fish, wildlife, and plants, as well as the environments upon which they depend.
- Fish and Aquatic Conservation Program - Chesapeake Watershed Investments for Landscape Defense (WILD) Grants Program ($887,700 in FY25) works with states, tribes, and communities to protect freshwater resources, manage fisheries, and restore aquatic habitats. The biggest change is the inclusion of the Chesapeake WILD Grant Program.

Fish Passage Outcome

District of Columbia

- Fisheries Research Monitoring: (2 FTEs in FY25) DOEE's Fisheries Research Branch supports small-stream fish passage projects and monitors fish populations below and above blockages such as dams and culverts. DOEE is working to understand the impacts of large-river connectivity projects.
- Stream Restoration ($2,000,000 in non-construction years or $5,000,000 in construction years): DOEE's Restoration Branch plans, funds, and oversees activities that will protect and restore stream habitats in the District of Columbia.

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The intent of these activities is to improve water quality in the District's waterways and improve the ecological diversity found within the District's borders.

Maryland

- Fish Passage Program (No specific funding; 1 FTE supported this program in FY25) Staff in this program are responsible for supporting state and federal initiatives to ensure fish passage at targeted dams, or to remove stream blockages for complete restoration and allow passage for migratory fish.

New York

- Water Quality Improvement Project (WQIP) Program - NYSDEC ($1.4 million within watershed on aquatic connectivity or fish and wildlife habitat restoration and enhancement projects in FY25) - The WQIP program is a competitive, statewide reimbursement grant program that funds projects that directly improve water quality or habitat, promote flood risk reduction, restoration, and enhanced flood and climate resiliency, or protect a drinking water source.

Pennsylvania

- Fish and Boat Commission Anadromous Fish Restoration ($342,196 in FY 25 with $184,425 federal funds from NOAA's National Marine Fisheries Service and $157,771 from Pennsylvania). This program supports fish passage efforts and habitat improvements for anadromous fish species including American Shad while benefitting other migratory fish like American Eel.
- Department of Environmental Protection Dam Safety and Water Obstruction and Encroachment Programs ($49,500,000 in FY25 from Pennsylvania). These programs support dam removal with associated stream and floodplain restoration projects as well as review of stream obstructions and encroachments including bridges and culverts.
- State Conservation Commission Dirt and Gravel and Low Volume Road Maintenance Program ($15,000,000 in FY 25 from Pennsylvania). This program provides funding to eliminate stream pollution caused by runoff and sediment from dirt, gravel, and low volume roads and employs stream continuity principles for culvert and bridge replacements.

Virginia

- Ashland Mill Dam Removal – South Anna River - $20K - This effort reconnected 251 Upstream Functional Network miles. The DWR provided technical support throughout development of the project, conducted pre-removal fish monitoring, and continues to conduct post-removal monitoring, documenting all four alosines upstream of the removal area.

West Virginia

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- West Virginia Aquatic Connectivity Team (ACT): This collaborative group works to improve movement for aquatic life across the state. They train local partners on road-stream crossing surveys and build plans to protect at-risk species

Chesapeake Bay Commission

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- Fish and Aquatic Conservation Program - Chesapeake Watershed Investments for Landscape Defense (WILD) Grants Program ($575,000 in FY25) works with states, tribes, and communities to protect freshwater resources, manage fisheries, and restore aquatic habitats. The biggest change is the inclusion of the Chesapeake WILD Grant Program.

Oysters Outcome

Maryland

- Large-scale Oyster Restoration ($2.94M in FY25; $1.14M from state and $800K from the NOAA Restoration Center Office of Habitat Conservation) These funds were used to complete and maintain the restoration areas used to meet the 2025 commitment and begin work in the first sanctuary toward the 2040 acreage goal.
- Oyster Reef Construction (1 FTE supported this project in FY25; $24K in FY25 from NOAA) These funds are for oyster reef construction in Hooper Strait Sanctuary that will count towards the 2040 oyster restoration acreage goal.
- Fishery Management, Stock Assessment, and Enhancement ($2M in FY25 on oyster reef enhancement in fishery areas) Maintaining sustainable oyster abundance using a combination of harvest controls, habitat modification, and stock enhancement to meet biological reference point targets and thresholds.

Virginia

- Large-scale Oyster Restoration and Replenishment: Continuing at multiple locations and at similar scale to efforts undertaken to meet and exceed 2025 commitments, led by the Virginia Marine Resources Commission ($5.55M in FY25; at least $4M allocated in state funding in FY26).

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- Virginia Oyster Stock Assessment and Replenishment: Sustainable harvest maintained through ongoing monitoring, enhancement, and coordinated harvest control and other management measures.

Chesapeake Bay Commission

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U.S. Environmental Protection Agency

- Small Watersheds Grant Program (SWG) ($1.2M in FY25) The SWG program explicitly targets habitat restoration—including large-scale oyster reefs—as a funding priority to build sustainable reef structures and improve regional water quality.

National Oceanic and Atmospheric Association

- NOAA Office of Habitat Conservation Chesapeake Bay Oyster Restoration ($1.75M in FY25) Provides funding for the construction of oyster reefs as well as seeding and monitoring of restored reefs. NOAA also conducts its own targeted monitoring of reefs restored under the watershed agreement

U.S. Army Corps of Engineers

- Chesapeake Bay Oyster Restoration ($6.45M for FY24) This program focuses on constructing and restoring oyster reefs in the Chesapeake Bay to increase oyster populations and enhance their ecological benefits. Cost-shared 75% federal, 25% non-federal.
- Chesapeake Bay Restoration and Protection Program, Section 510 ($1M for FY26) This program supports sediment and erosion control; protection of eroding shorelines and streambanks; ecosystem restoration, including restoration of submerged aquatic vegetation; protection of essential public works; wastewater treatment and related facilities; water supply and related facilities; stormwater and drainage systems; beneficial uses of dredged material; and other related projects that may enhance the living resources of the estuary. Study and implementation costs are cost-shared 75% federal, 25% non-federal.

Stream Health Outcome

Delaware

- DNREC Biological Assessment Program* (FY25 – N/A**) to develop the Delaware Piedmont and Coastal Plain benthic IBIs. The IBIs, stemming from habitat and biology assessments, are being recalibrated to more appropriately estimate the

health of Delaware non-tidal streams. Streams in the Chesapeake Bay portion of Delaware will be visited in Fall 2026 and have not been surveyed in over 10 years. * Website is still being finalized.

- Nanticoke Watershed Alliance (NWA) Creekwatchers Citizen Monitoring Program (Estimated $30K in FY25) coordinates citizen scientist volunteers that collect water quality samples from across the Nanticoke Watershed in both Delaware and Maryland. These efforts result in the annual Nanticoke River Report Card.
- ** Appropriations come from a wide range of sources and could not be determined at this time.

District of Columbia

- Stream Restoration Program: ($2,000,000 in non-construction years or $5,000,000 in construction years) DOEE manages & implements stream restoration projects across D.C. The program monitors stream health on restored and unrestored streams in D.C. DOEE has worked on sites in the Oxon Run, Rock Creek, Potomac and Anacostia watersheds: Stream and Habitat Restoration | DOEE.

Maryland

- Jennings Run Lime Doser Project: ($18.7K in FY25) Following project completion in 2023, the installed electric-powered dosing unit along Jennings Run near Mount Savage, Maryland required 234 tons of calcium carbonate to treat and regulate the stream, which has resulted in significantly improved downstream water quality, elevating stream pH ranging from 3.0–3.8 to 6.6–7.3, generating net alkalinity, and substantially reducing heavy metal concentrations like aluminum (dropping from 12.1 mg/L to 2.85 mg/L).
- Chesapeake and Atlantic Coastal Bays Trust Fund ($74.5M in FY25) The Chesapeake and Atlantic Coastal Bays Trust Fund allows Maryland to accelerate Bay restoration by focusing limited financial resources on the most efficient, cost-effective non-point source pollution control projects.
- Maryland Biological Stream Survey (MBSS) ($1.1M in FY25) A randomized statewide survey that assesses the ecological health of the state's 16,000+ miles of freshwater, non-tidal streams, the MBSS tracks biological, chemical, and physical habitat conditions of streams which provides the best possible information for ensuring the protection and restoration of Maryland's stream resources.

New York

- Water Quality Improvement Project (WQIP) Program - NYSDEC ($310,165 within watershed on streambank restoration projects in FY25) - The WQIP program is a competitive, statewide reimbursement grant program that funds projects that

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directly improve water quality or habitat, promote flood risk reduction, restoration, and enhanced flood and climate resiliency, or protect a drinking water source.

Pennsylvania

- State Conservation Commission Agriculture Conservation Assistance Program ($33,918,000 in FY 25 from Pennsylvania). This program funds agricultural projects that reduce non-point source pollution in Commonwealth streams, rivers, and waterbodies.
- Department of Environmental Protection Countywide Action Plan Program ($22,958,688 in FY25 with $2,015,700 from EPA Chesapeake Bay Implementation Grant, $3,411,466 from EPA Chesapeake Bay Regulatory and Accountability Grant, $4,977,436 from EPA Most Effective Basin Funding, $5,332,693 from EPA Chesapeake Bay Infrastructure and Investment Jobs Act, $1,190,544 from EPA Local Government Implementation Grant, and $6,030,849 from Pennsylvania). This program funds a variety of nutrient-reducing implementation projects including agricultural best management practices, stream stabilization and enhancement projects, and floodplain restoration projects involving legacy sediment removal.
- Department of Environmental Protection Growing Greener Plus Grant Program ($5,495,924 in FY25 from Pennsylvania). This grant program funds a variety of projects from design through construction including fish habitat and stream improvement projects and floodplain restoration projects involving legacy sediment removal.

Virginia

- Healthy Waters Program (FY25: $99,150). Housed in the Department of Conservation & Recreation's Division of Natural Heritage (DCR-DNH), this is an inter-agency program supported by VCU to identify and maintain watersheds with high ecological integrity, defined as those that maintain high ecological integrity when viewed in a holistic assessment approach that considers, fish communities, in-stream habitat, stormwater inputs, invasive species, and natural flows. Ecologically healthy streams in Virginia are identified and ranked through a stream ecological integrity assessment known as the Interactive Stream Assessment Resource (INSTAR), as "outstanding," "ecologically healthy," "restoration candidate," or "compromised."
- Advancing Conservation and Restoration of Brook Floater and Associated Freshwater Mussels - $40K- – Surveys conducted by DWR, US Fish and Wildlife Service, and Virginia Tech for existing populations of Brook Floater and identification of suitable habitat in which to restore this rare freshwater mussel through propagation and release.

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- South River/DuPont Freshwater Mussel Restoration - $275K - Restores upwards of 10 species of freshwater mussels throughout the South River and South Fork Shenandoah River watersheds, with a target of releasing 200,000 mussels over an approximately 10-year period by DWR, USFWS and Virginia Tech.

Chesapeake Bay Commission

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U.S. Environmental Protection Agency

- Sewer Overflow and Stormwater Reuse Municipal Grant Program ($14.8M total in FY25-26): This program addresses infrastructure needs for combined sewer overflows (CSO), sanitary sewer overflows (SSO), and stormwater management and will award grants to states to make sub-awards to eligible entities for eligible projects.
- Small Watersheds Grant Program (SWG) ($4M in FY25): The SWG program promotes voluntary, community-based efforts to protect and restore the diverse and vital habitats of the Chesapeake Bay and its tributary rivers and streams.
- Innovative Nutrient and Sediment Reduction Grants Program ($1.6M in FY25): This competitive funding program accelerates regional watershed restoration projects to reduce nitrogen, phosphorus, and sediment loads entering the Chesapeake Bay.

U.S. Army Corps of Engineers

- Continuing Authorities Program - Section 206 ($44K in FY25) This program restores aquatic ecosystem structure and function, which directly improves overall stream health. Study costs are cost-shared 50% federal, 50% non-federal and implementation is cost-shared 65% federal, 35% non-federal.
- Continuing Authorities Program - Section 14 ($574K in FY25) This program helps stabilize eroding streambanks that threaten public infrastructure, thereby reducing sediment loads and contributing to better stream health. Study costs are cost-shared 50% federal, 50% non-federal and implementation is cost-shared 65% federal, 35% non-federal.

Submerged Aquatic Vegetation Outcome

Delaware

- DNREC Submerged Aquatic Vegetation (SAV) Program (FY25 – N/A**) is a new program that advances attainment of the Chesapeake Bay SAV Outcome by

monitoring SAV distribution and condition, expanding restoration capacity and implementation that supports the protection and recovery of underwater grass habitat in Delaware.

- Delaware Statewide Submerged Aquatic Vegetation (DeSSAV) Workgroup (FY25 – NA**) is co-chaired by DNREC and Delaware Sea Grant, DeSSAV supports attainment of the Chesapeake Bay SAV Outcome by coordinating partners and building statewide capacity for SAV monitoring, mapping, restoration, research, training, and outreach that inform and advance SAV protection and recovery.
- ** Appropriations come from a wide range of sources and could not be determined at this time.

District of Columbia

- Aquatic Resources Registry: (.5 FTE in FY25) DOEE conducts submerged aquatic vegetation surveys, this includes mapping beds, assessing species composition, and tracking long-term trends, to provide the District with a rigorous understanding of river conditions and restoration programs.
- Submerged Aquatic Vegetation Restoration Project: ($13K in FY26) DOEE implements submerged aquatic vegetation restoration in the Anacostia River. DOEE identifies viable planting sites, establishes native species, and monitors early growth to evaluate how restored beds contribute to long-term ecological recovery.

Maryland

- Bay-wide Submerged Aquatic Vegetation Aerial Survey and Monitoring Program ($95K in FY25) The SAV Aerial Survey is the first tier in the Chesapeake Bay SAV monitoring effort and tracks progress toward the Bay-wide SAV Restoration Outcome, near-term targets, salinity zone targets, and Maryland and Virginia state-wide and segment-specific targets.
- Chesapeake Bay SAV Watchers Program (No specific funding; 2 FTEs supported the program in FY25) Chesapeake Bay SAV Watchers is the second tier of the Chesapeake Bay SAV monitoring effort and is a program to provide volunteer scientists with an engaging and educational experience with SAV while also generating useful data for Bay scientists and managers.
- Chesapeake Bay SAV Sentinel Site Program (No specific funding; 3 FTEs supported the program in FY25) The Chesapeake Bay SAV Sentinel Site Program forms the third tier of the Chesapeake Bay SAV Monitoring effort; SAV sentinel sites are located in each of the Bay's four salinity zones (tidal fresh, oligohaline, mesohaline, and polyhaline) and are monitored by Bay scientists using a standardized, in-depth data collection protocol.

Virginia

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- Bay-wide Submerged Aquatic Vegetation Aerial Survey and Monitoring Program ($432K in FY25) The SAV Aerial Survey is the first tier in the Chesapeake Bay SAV monitoring effort and tracks progress toward the Bay-wide SAV Restoration Outcome, near-term targets, salinity zone targets, and Maryland and Virginia state-wide and segment-specific targets.
- Chesapeake Bay SAV Sentinel Site Program (No specific funding; 3 FTEs supported the program in FY25) The Chesapeake Bay SAV Sentinel Site Program forms the third tier of the Chesapeake Bay SAV Monitoring effort; SAV sentinel sites are located in each of the Bay's four salinity zones (tidal fresh, oligohaline, mesohaline, and polyhaline) and are monitored by Bay scientists using a standardized, in-depth data collection protocol.

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U.S. Environmental Protection Agency

- EPA Chesapeake Bay Program Office Submerged Aquatic Vegetation (SAV) Aerial Survey ($350,000 in FY25): Data collected through the annual SAV aerial survey are critical to tracking progress toward meeting the Chesapeake Bay Program partnership's goal of achieving and sustaining 196,600 acres of SAV Bay-wide.
- Clean Water State Revolving Fund ($227.5M in FY25): A federal-state partnership that provides low-cost financing to communities for a wide range of water quality infrastructure projects, including municipal wastewater facilities, nonpoint source pollution control, decentralized wastewater treatment systems, stormwater runoff mitigation, green infrastructure, estuary protection, and water reuse.
- Non-Point Source Program Grants (Section 319) ($9.2M in FY25): States, territories and tribes receive grant money that supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects and monitoring to assess the success of specific nonpoint source implementation projects.

U.S. Army Corps of Engineers

- Chesapeake Bay Restoration and Protection Program, Section 510 ($1M in FY26) This program supports sediment and erosion control; protection of eroding shorelines and streambanks; ecosystem restoration, including restoration of submerged aquatic vegetation; protection of essential public works; wastewater

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treatment and related facilities; water supply and related facilities; stormwater and drainage systems; beneficial uses of dredged material; and other related projects that may enhance the living resources of the estuary. Study and implementation costs are cost-shared 75% federal, 25% non-federal.

Wetlands Outcome

Delaware

- Environmental Quality Incentive Program (EQIP) ($152K in FY25) provides technical and financial assistance to agricultural producers and forest landowners to address natural resource concerns, such as improved water and air quality, conserved ground and surface water, increased soil health, reduced soil erosion and sedimentation, and improved or created wildlife habitat.
- Wetland Reserve Easement (WRE) ($649K in FY25) helps private landowners protect, restore, and enhance wetlands which have been previously degraded due to agricultural uses.

District of Columbia

- Wetlands Program: (3 FTEs; FY25 EPA Wetland Program development Grant $248,637) DOEE's wetland program maximizes opportunities to expand and enhance freshwater tidal wetlands within the Anacostia River and manages non-tidal wetlands via mapping and targeted restoration and conservation.
- Kingman Island Wetland Restoration Project (FY23-FY28: $1,500,000): Through this project, DOEE is proposing a variety of wetland restoration and enhancement strategies including tidal wetlands, submerged aquatic vegetation, freshwater mussel beds, and invasive plant management.

Maryland

- Chesapeake and Atlantic Coastal Bays Trust Fund ($74.5M in FY25) allows Maryland to accelerate Bay restoration by focusing limited financial resources on the most efficient, cost-effective, voluntary non-point source pollution control projects and water quality enhancement work; in FY25, five grants were awarded for wetland restoration that included over 100 acres of tidal and over 140 acres non-tidal wetland restoration work.
- Roots for Resilience (1 FTE equivalent supported this program from the state in FY25, $8.2M in FY25 from EPA's Climate Pollution Reduction Grant) This program is part of a four state (MD, VA, NC, SC) coalition that received an EPA Climate Pollution Reduction grant of over $400 million dollars, with a significant portion of the award to restore and enhance tidal wetlands, which in Maryland will occur on the lower Eastern Shore.

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- Resilience Through Restoration Initiative ($2.9M in FY25) The Resilience through Restoration Initiative supports on-the-ground implementation of restoration projects - including wetlands - to help protect communities from erosion, flooding, and other impacts of changing environmental conditions.

New York

- New York State Open Space Conservation Plan – NYSDEC The Open Space Conservation Plan (Plan) is a comprehensive statewide plan developed by NYSDEC and the Office of Parks, Recreation, and Historic Preservation (OPRHP) that describes current open space conservation goals, actions, tools, resources and programs administered by state and federal agencies and conservation nonprofits.
- Water Quality Improvement Project (WQIP) Program - NYSDEC (Wetland restoration, creation, and enhancement are eligible for funding, however none were awarded in FY25) – The WQIP program is a competitive, statewide reimbursement grant program that funds projects that directly improve water quality or habitat, promote flood risk reduction, restoration, and enhanced flood and climate resiliency, or protect a drinking water source.

Pennsylvania

- Department of Environmental Protection Dam Safety and Water Obstruction and Encroachment Programs ($49,500,000 in FY25 from Pennsylvania). These programs support floodplain restoration projects, and they also regulate impacts to wetlands with requirements for high-quality wetland mitigation banking as a form of compensatory mitigation.
- Department of Environmental Protection Countywide Action Plan Program ($22,958,688 in FY25 with $2,015,700 from EPA Chesapeake Bay Implementation Grant, $3,411,466 from EPA Chesapeake Bay Regulatory and Accountability Grant, $4,977,436 from EPA Most Effective Basin Funding, $5,332,693 from EPA Chesapeake Bay Infrastructure and Investment Jobs Act, $1,190,544 from EPA Local Government Implementation Grant, and $6,030,849 from Pennsylvania). This program funds a variety of nutrient-reducing implementation projects including agricultural best management practices, stream stabilization and enhancement projects, and floodplain restoration projects involving legacy sediment removal.
- Department of Environmental Protection Growing Greener Plus Grant Program ($5,495,924 in FY25 from Pennsylvania). This grant program funds a variety of projects from design through construction including fish habitat and stream improvement projects and floodplain restoration projects involving legacy sediment removal.

Virginia

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- The Virginia Marine Resources Commission (VMRC) accelerates coastal marsh resilience through mandatory living shoreline regulations and manages Virginia's tidal wetlands with the Commonwealth's local wetlands boards via a regulatory permit program established by the Tidal Wetlands Act in 1972.
- The Virginia Department of Environmental Quality (VDEQ) and Virginia Marine Institute of Marine Sciences (VIMS) prepared the Virginia Wetlands Program Plan which establishes "Voluntary Restoration and Protection" as a core functional element. Additionally, the VDEQ Virginia Coastal Zone Management Program has begun implementation of its FY26-30 Wetlands Strategy, with accompanying match-free funding estimated at $165k annually, intended to support statewide wetlands program improvements and policy development.
- Virgina DWR has a wetland program dedicated to providing wetland habitat management and restoration technical assistance to private and public landowners across Virginia. VDWR has received a $44.5 million-dollar sub-award from VDEQ through an Atlantic Coast Coalition EPA Climate Pollution Reduction Grant with goals of implementing several large-scale voluntary wetland restoration and enhancement projects through 2030.

West Virginia

- WVDEP Wetland Program & Assessment: Managed by the West Virginia Department of Environmental Protection, this program monitors, assesses, and regulates wetlands using the West Virginia Wetland Rapid Assessment Method (WVWRAM) to evaluate natural functions and ecological health

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U.S. Environmental Protection Agency

- Wetland Program Development Grants ($1.2M in FY25): This program provides eligible state, tribal, and local government agencies—along with interstate associations and universities—with crucial funding to build, refine, and accelerate comprehensive wetland conservation and management programs.
- Innovative Nutrient and Sediment Reduction Grants Program ($4.7M in FY25): This competitive funding program accelerates regional watershed restoration projects to reduce nitrogen, phosphorus, and sediment loads entering the Chesapeake Bay.

U.S. Army Corps of Engineers

- Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island ($13M in FY25) This project uses dredged material from the Port of Baltimore to restore remote island habitat, creating hundreds of acres of tidal wetlands. Cost-shared 75% federal, 25% non-federal.
- Mid-Chesapeake Bay Island Ecosystem Restoration ($96M in FY25) This project is restoring island habitat, including significant wetland acreage, at James and Barren Islands to increase habitat and improve coastal resilience. Cost-shared 75% federal, 25% non-federal.

U.S. Fish and Wildlife Service

- Ecological Services, including Partners for Fish and Wildlife and Coastal Programs ($5,361,000 in FY24), work to restore and protect healthy populations of fish, wildlife, and plants, as well as the environments upon which they depend.
- Habitat Conservation Program ($6,042,000 in FY24) establishes innovative partnerships that allow public and private sectors to work with the Service to address listed and at-risk species in an ecosystem context, generate long-term commitments to conserve these species, and deliver regulatory assurances to project proponents.
- Fish and Aquatic Conservation Program - Chesapeake Watershed Investments for Landscape Defense (WILD) Grants Program ($438,000 in FY25) works with states, tribes, and communities to protect freshwater resources, manage fisheries, and restore aquatic habitats. The biggest change is the inclusion of the Chesapeake WILD Grant Program.

USDA Natural Resources Conservation Service

- Wetland Reserve Easements (WREs) ($4,100,232 in FY25) NRCS enrolled 162 new WREs in FY25, representing a significant investment in wetland conservation and restoration.

Clean Water Goal 2

Reducing Excess Nitrogen, Phosphorous & Sediment Outcome

Delaware

- The Nutrient Management Planning Cost Share Program ($145K in FY 26) compensates producers for their required Nutrient Management Plans. These plans ensure that the producer is applying an appropriate amount of nutrients to grow the crops they plan to grow.
- The Manure Relocation Cost Share Program ($430K in FY 26) pays individuals to move manure from areas of high residual soil Phosphorus to areas of lower soil

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phosphorus, as well as to alternative uses other than immediate application to agricultural lands.

District of Columbia

- Stormwater BMPs: (approximately $3.7 million in FY24) DOEE reduces nitrogen, phosphorus, and sediment loads by installing stormwater BMPs across District public space. DOEE and District partners have installed over 150+ bioretention cells, dozens of green streets, and targeted curbside retrofits.
- Pollution Detection & Stream Restoration: : ($2,000,000 in non-construction years or $5,000,000 in construction years) DOEE's Illicit Discharge Detection and Elimination Program prevents nutrient and sediment pollution by investigating hundreds of reports each year, while the Stream Restoration Program stabilizes eroding channels, rebuilds floodplains, and also reduces sediment transport.
- RiverSmart Programs: ($2,100,000 in FY25) Through RiverSmart, DOEE partners with residents, schools, and businesses to install rain gardens, cisterns, permeable pavement, and other green infrastructure, while planting trees that filter stormwater, reduce nutrient runoff, and capture sediment before it reaches District waterways.

Maryland

- Chesapeake and Atlantic Coastal Bays Trust Fund ($74.5M in FY25) The Trust Fund allows Maryland to accelerate Bay restoration by focusing limited financial resources on the most efficient, cost-effective non-point source pollution control projects in coordination with local partners.
- Bay Restoration Fund ($127M in FY25) The BRF is a dedicated fund, financed by wastewater treatment plant users, to upgrade Maryland's wastewater treatment plants with enhanced nutrient removal (ENR) technology and a similar fee paid by septic system users to upgrade onsite systems and implement cover crops to reduce nitrogen loading to the Bay.
- Maryland Agricultural Water Quality Cost-Share Program ($7.6M in FY25) These Conservation Grants cover up to 100 percent of the cost to install BMPs on farms to control soil erosion, manage nutrients and safeguard water quality in streams, rivers and the Chesapeake Bay.

New York

- Water Quality Improvement Project (WQIP) Program - NYSDEC ($11.1 million within watershed for wastewater treatment improvement or vacuum trucks in MS4 areas in FY25) – The WQIP program is a competitive, statewide reimbursement grant program that funds projects that directly improve water quality or habitat, promote flood risk reduction, restoration, and enhanced flood and climate resiliency, or protect a drinking water source.

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- Water Infrastructure Improvement Program (WIIA) NYSEFC ($8.1 million within the watershed for wastewater treatment improvement) - The Water Infrastructure Improvement program provides competitive grants to help municipalities affordably undertake critical wastewater and drinking water infrastructure projects.
- Agriculture Nonpoint Source Abatement and Control (AgNPS) – NYSAGM ($6.25 million within watershed in FY25) - The AgNPS program is a cost-share grant program that provides funding and technical assistance to address and prevent potential water quality issues that stem from farming activities through planning and implementation of on-farm projects.

Pennsylvania

- Department of Environmental Protection Countywide Action Plan Program ($22,958,688 in FY25 with $2,015,700 from EPA Chesapeake Bay Implementation Grant, $3,411,466 from EPA Chesapeake Bay Regulatory and Accountability Grant, $4,977,436 from EPA Most Effective Basin Funding, $5,332,693 from EPA Chesapeake Bay Infrastructure and Investment Jobs Act, $1,190,544 from EPA Local Government Implementation Grant, and $6,030,849 from Pennsylvania). This program funds a variety of nutrient-reducing implementation projects including agricultural best management practices, stream stabilization and enhancement projects, and floodplain restoration projects involving legacy sediment removal.
- State Conservation Commission and Department of Environmental Protection Nutrient and Manure Management Program and Department of Environmental Protection Agricultural Source Abatement Fund ($10,605,070 in FFY25). This program implements statewide nutrient and manure management requirements on farms that produce and/or apply manure and supports staff at county conservation districts conducting on-the-ground conservation implementation and compliance assessments.
- State Conservation Commission Agriculture Conservation Assistance Program (ACAP) ACAP supports Pennsylvania farmers and agricultural landowners in their efforts to protect and enhance water quality. For 2025–2026, ACAP's total funding is the sum of the $154 million federal ARPA allocation and the $35.75 million state share from the Clean Streams Fund, with funds distributed to county conservation districts to implement BMPs and reduce agricultural pollution.

West Virginia

- AgEP - The West Virginia Conservation Agency, in cooperation with local conservation districts, successfully supported the implementation of approximately $1.9 million in conservation Best Management Practices (BMPs) by utilizing the Agricultural Enhancement Program (AgEP) funding to provide cost-share opportunities to eligible cooperators. https://www.wvca.us/AgEP.cfm

- Nonpoint Source Water Pollution Program: Run by the West Virginia Department of Environmental Protection, this effort funds local watershed projects, rain gardens, and stream restorations to control runoff through approximately $1.8 Million annually in federal grants and state match

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U.S. Environmental Protection Agency

- Signatory Implementation Grant Funding ($39.5M in FY26): This funding supports the management mechanisms established under the *Chesapeake Bay Watershed Agreement*, with an emphasis on state programs for control and abatement of nonpoint source nutrient and sediment loads.
- Innovative Nutrient and Sediment Reduction Grants Program ($10M in FY25): This competitive funding program accelerates regional watershed restoration projects to reduce nitrogen, phosphorus, and sediment pollution from entering the Chesapeake Bay.
- Water Pollution Control Section 106 Grants Program ($11.6M in FY25): Section 106 grants support state, interstate and tribal water pollution control programs. Funds can be used for water quality monitoring and assessment, water quality standards and Total Maximum Daily Load development and implementation, National Pollutant Discharge Elimination System permitting and enforcement, source water protection, and ground water protection.

U.S. Army Corps of Engineers

- Chesapeake Bay Restoration and Protection Program, Section 510 ($1M in FY26) This program supports sediment and erosion control; protection of eroding shorelines and streambanks; ecosystem restoration, including restoration of submerged aquatic vegetation; protection of essential public works; wastewater treatment and related facilities; water supply and related facilities; stormwater and drainage systems; beneficial uses of dredged material; and other related projects that may enhance the living resources of the estuary. Study and implementation costs are cost-shared 75% federal, 25% non-federal.

U.S. Department of War

- Clean Water Act - Military installations implement stormwater BMPs ($70M in 2025) to mitigate nutrient and sediment pollutants in runoff from buildings, roadways,

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parking lots, airfields, and natural areas to comply with Municipal Separate Storm Sewer System regulations and make progress toward Chesapeake Bay Total Maximum Daily Load federal planning goal commitments.

USDA Natural Resources Conservation Service

- Environmental Quality Incentives Program (EQIP), Agricultural Management Assistance (AMA), and Conservation Stewardship Program (CSP) ($319,511,028 in FY25) Financial assistance delivered primarily through EQIP, AMA and CSP to support conservation and resource-management efforts throughout the Chesapeake Bay watershed.

Toxic & Emerging Contaminants Outcome

Delaware

- DNREC Watershed Approach to Toxics Assessment and Restoration (WATAR) Program (FY25 – N/A**) supports a watershed-scale approach to evaluating where contamination comes from, how far it gets into Delaware's waterways and water bodies, and what effects it has on watershed health. Jointly managed between DNREC's Division of Watershed Stewardship – Watershed Assessment and Management Section (DWS-WAMS) and DNREC's Division of Waste & Hazardous Substances – Remediation Section (DWHS-RS).
- ** Annual appropriations are a mix of federal and state sources and cannot be determined at this time.

District of Columbia

- Single-Use Plastics Legislation (4 FTEs in FY25): DOEE reduces toxic inputs by regulating single-use plastics through measures such as the Straw Ban , the Bag Fee, and Food Service Ware Restrictions. These programs cut off upstream sources of microplastics and other harmful chemicals before they enter District waterways and communities.
- Anacostia River Sediment Project: ($1,100,000 in FY25) DOEE has been investigating contaminated sediments in the Anacostia River to identify legacy toxics, assess exposure pathways, and design remediation strategies that prevent pollutants from re-mobilizing into the water column or accumulating in fish, wildlife, and neighborhood environments.
- Product Stewardship & Reuse DC: (4 FTEs in FY25) DOEE advances toxics prevention through oversight and implementation of Paint Stewardship, Battery Stewardship, and Electronics Stewardship that ensure hazardous materials are safely collected and diverted from disposal. Reuse DC expands circular pathways that keep products in use and reduce contamination risks across the waste stream.

Maryland

- Maryland's Winter Maintenance Training ($50K and 1 FTE supporting the program in FY25) This training provides publicly-available education and strategies to reduce salt application during winter, leading to reduced chloride in the runoff.
- Maryland PFAS Action Plan and Activities (No specific funding; multiple MDE Units perform the activities described within this plan) Maryland's PFAS Action Plan lays out how the state is monitoring PFAS, reducing exposure, and helping communities respond to contamination.

New York

- Water Quality Improvement Project (WQIP) Program - NYSDEC ($3.3 million within watershed for salt storage or road salt reduction projects in FY25) - The WQIP program is a competitive, statewide reimbursement grant program that funds projects that directly improve water quality or habitat, promote flood risk reduction, restoration, and enhanced flood and climate resiliency, or protect a drinking water source.

Pennsylvania

- Department of Environmental Protection Water Pollution Control Program ($9,015,794 in FY25 from Pennsylvania in Section 106, Section 106 Supplemental and Section 604(b)) This program establishes water quality standards and then monitors to assess attainment of those standards within the waterways of Pennsylvania.
- Department of Environmental Protection Contaminants of Emerging Concern Studies These studies focus on contaminants of emerging concern (CECs), including pharmaceuticals, per- and polyfluoroakyl substances (PFAS), polycyclic aromatic hydrocarbons (PAHs), microplastics, endocrine disrupting compounds (EDCs), and neonicotinoid insecticides.

West Virginia

- WV Emerging Contaminants Working Group: Formed collaboratively by the West Virginia Department of Environmental Protection (WVDEP) and the Bureau for Public Health, this task force directly engages with public water systems to evaluate treatment processes, remove PFAS compounds, and safeguard drinking water
- WVDEP Office of Environmental Remediation (OER): Manages programs like the Voluntary Remediation Program and the Brownfields Assistance Program, which use certified Licensed Remediation Specialists (LRS) to oversee the cleanup of properties contaminated by legacy toxics (such as PCBs)

Chesapeake Bay Commission

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U.S. Environmental Protection Agency

- The Emerging Contaminants in Small or Disadvantaged Communities grant program ($133M in FY26): Provides states and territories (in the Mid-Atlantic region) with grants to public water systems in small or disadvantaged communities to address emerging contaminants, including PFAS.
- Brownfields Grants Program ($21M in FY25): Provides grants and technical assistance to communities, states, tribes and others (in the Mid-Atlantic region) to assess, safely clean up and help them to sustainably reuse contaminated properties.
- Clean Water State Revolving Fund ($227.5M in FY25): A federal-state partnership that provides low-cost financing to communities for a wide range of water quality infrastructure projects, including municipal wastewater facilities, nonpoint source pollution control, decentralized wastewater treatment systems, stormwater runoff mitigation, green infrastructure, estuary protection, and water reuse.

U.S. Fish and Wildlife Service

- Natural Resource Damage Assessment ($850,000 in FY24) evaluates and heals natural resources harmed by oil spills or releases of hazardous substances.

Water Quality, Standards Attainment & Monitoring Outcome

Delaware

- Delaware's Surface Water Quality Monitoring Program (FY25 – N/A**) collects data on the chemical, physical and biological characteristics of Delaware's surface waters, and these data are used to identify long-term trends in surface water quality, monitor achievement of Surface Water Quality Standards, calculate annual nutrient loads and track progress toward achieving TMDL targets, identify and prioritize high-quality and degraded surface waters, and evaluate the overall success of Delaware's water quality management efforts.
- DNREC's Division of Water Ambient Groundwater Monitoring Program (Estimated $30k in FY25 in the Chesapeake Bay Watershed) monitors statewide ambient groundwater quality and runs a network of monitoring wells across the state, including five monitoring wells in the Chesapeake Bay Watershed, which establish

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baseline water quality in Delaware's watersheds and assist in making recommendations to management for future policy considerations.

- ** Annual appropriations are a mix of federal and state sources and cannot be determined at this time.

District of Columbia

- Clean Water Construction ($30 million in FY25) The mission of the District of Columbia's Clean Water Construction program is to fund the design and construction of voluntary projects that provide clean water to District streams and rivers. Projects are selected for funding using the process described by the District of Columbia Project Priority Rating System (PPRS).
- RiverSmart Programs: ($2,100,000 in FY25) Through RiverSmart , DOEE partners with residents, schools, and businesses to install rain gardens, cisterns, permeable pavement, and other green infrastructure, while planting trees that filter stormwater, reduce nutrient runoff, and capture sediment before it reaches District waterways.
- Clean Rivers Project ($2,600,000,000 total for ongoing work): The Clean Rivers Project is DC Water's ongoing program to reduce combined sewer overflows (CSO's) into the District's waterways - the Anacostia and Potomac Rivers and Rock Creek. The Project is a massive infrastructure program designed to capture and clean wastewater during rainfalls before it ever reaches our rivers.

Maryland

- Maryland's Integrated Report of Surface Water Quality (IR) (No specific funding; 1.5 FTEs supported this program in FY25) Maryland works with VADEQ and the Bay Program to develop and refine new assessment methods to address how to assess all of the dissolved oxygen criteria established for the designated uses (e.g., Migratory Fish Spawning and Nursery) present in the Chesapeake Bay.

New York

- New York State Water Quality Monitoring Program – NYSDEC NYSDEC has comprehensive monitoring program strategy that serves all water quality management needs and includes NYSDEC staff and external partners, watershed groups, and the public.

Pennsylvania

- Department of Environmental Protection Water Pollution Control Program ($9,015,794 in FY25 from Pennsylvania in Section 106, Section 106 Supplemental and Section 604(b)) This program establishes water quality standards and then monitors to assess attainment of those standards within the waterways of Pennsylvania.

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- Department of Environmental Protection Section 319 Nonpoint Source Management Grants ($300,000 in FFY27) The Tier III Monitoring Project Type of the PA Section 319 Nonpoint Source Management Grant supports workforce certification and direct monitoring.

Virginia

- Virginia's Chesapeake Bay Monitoring Program ($3,482,208 in FY25, with $1,741,104 from EPA and $1,741,104 in State Match Funds) aims to continually improve the capacity to monitor and assess the effects of management actions being undertaken to implement the Bay Total Maximum Daily Load (TMDL) and improve water quality. The partnership uses the monitoring results to report annually to the public on progress made in attaining established Bay water quality standards and trends in reducing nutrients and sediment in the watershed.

West Virginia

- WVDEP Water Quality Standards Program**:** Defines the legal boundaries for pollutants entering West Virginia waters from wastewater plants, industrial sites, and storm sewers
- Total Maximum Daily Loads (TMDL)**:** Creates targeted "pollution budgets" and action plans for specific streams that fail to meet state water quality standards
- WVDA Environmental Programs (Moorefield)**:** Managed by the Department of Agriculture, this program tracks long-term water quality trends in agricultural streams and assists producers with nutrient management compliance

Chesapeake Bay Commission

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U.S. Environmental Protection Agency

- Signatory Monitoring Grants ($4.9M in FY26): This funding supports monitoring the Chesapeake Bay ecosystem with a focus on water quality and living resources throughout the watershed, as well as analysis of short-term and long-term trends.
- Water Pollution Control Section 106 Grants Program ($11.6M in FY25): Section 106 grants support state, interstate and tribal water pollution control programs. Funds can be used for water quality monitoring and assessment, water quality standards and Total Maximum Daily Load development and implementation, National Pollutant Discharge Elimination System permitting and enforcement, source water protection, and ground water protection.

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- Non-Point Source Program Grants (Section 319) ($9.2M in FY25): States, territories and tribes receive grant money that supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects and monitoring to assess the success of specific nonpoint source implementation projects.

National Oceanic and Atmospheric Association

- NOAA Chesapeake Bay Office ($434,000 in FY25) provides support for tidal water quality monitoring, specifically the water column hypoxia monitoring network

Healthy Landscapes Goal 3

Adapting to Changing Environmental Conditions Outcome

Delaware

- DNREC Climate and Sustainability Section (Estimated $2 million in FY25 in the Chesapeake Bay Watershed) is charged with coordinating state actions that reduce the greenhouse gas emissions that cause climate change and improving Delaware's resiliency to climate change impacts through technical assistance, financial incentives, policy development, pilot projects, and education initiatives.
- Tree for Every Delawarean Initiative (TEDI) (Estimated $78K in FY25 in the Chesapeake Bay Watershed) is a statewide effort supported by DNREC, the Delaware Forest Service, and other environmental stakeholders to improve air and water quality, preserve soil, and support wildlife – and they play a critical role in helping to fight climate change.

District of Columbia

- Climate Ready DC 2.0 ($315,000 in FY25): DOEE is updating the District's climate adaptation plan with new climate projections, vulnerability analyses, and sector-specific resilience strategies. DOEE aims to provide a foundation for preparing communities, infrastructure, and natural systems for future conditions within the District.
- Flood Resilience Programs: (Flood Smart Homes had $505,000 in FY25**)** DOEE advances neighborhood-scale flood resilience through initiatives like Flood Smart Homes and the Watts Branch Resiliency Study. DOEE combines household-level mitigation, watershed-scale analysis, and community engagement to reduce risk from riverine and interior flooding.
- Integrated Flood Model: ($1,500,000 in FY25) DOEE is developing an Integrated Flood Model that unifies riverine, coastal, and stormwater dynamics into a single

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analytical framework. This program gives the District a tool for evaluating flood hazards and guiding long-term resilience planning.

Maryland

- The Resilience through Restoration Initiative ($2.7M in FY25) This initiative prioritizes nature-based solutions to harness living shorelines, wetlands, and natural stormwater practices to maximize shoreline protection from the impacts of changing environmental conditions such as erosion and flooding.
- Maryland Office of Resilience (645K in FY25) Operating within the Maryland Department of Emergency Management, this office coordinates disaster and resilience initiatives across state government and with local governments, including through Maryland's Statewide Resilience Strategy that looks at risks from flooding, severe storms, sea level rise and saltwater intrusion, and extreme heat, among other threats.
- Whole Watershed Program (3.5 FTEs in FY25) This Program provides a holistic, highly collaborative, science-based approach to accelerate restoration and conservation of the Chesapeake Bay and Atlantic Coastal Bays through a five year pilot that targets five watersheds across Maryland with the goal of improving watershed health and resilience that results in shallow water habitat improvements, rapid delisting or ecological uplift, and captures multiple co-benefits for changing environments.

New York

- Climate Resilient Farming (CRF) - NYSAGM ($3.8 million within the watershed in FY25) CRF Program funds projects that mitigate the impact of agriculture on climate change for greenhouse gas emissions reduction and carbon sequestration, in addition to enhancing the on-farm adaptation and resiliency to projected climate conditions due to heavy storm events, rainfall, and drought.
- Green Resiliency Grants and Green Innovation Grant Program - NYSDEC/EFC ($3 million within the watershed in FY25) Green Resiliency Grants help flood-prone communities advance long-term community resilience and the Green Innovation Grant Program supports projects that utilize EPA-designated green stormwater infrastructure design and technologies.
- Resilient NY – NYSDEC The Resilient NY program develops state-of-the-art studies that investigate the causes of flooding and recommend projects to build resilience in flood-prone communities.

Pennsylvania

- Department of Environmental Protection Dam Safety and Water Obstruction and Encroachment Programs ($49,500,000 in FY25 from Pennsylvania). These programs

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support dam removal with associated stream and floodplain restoration projects as well as review of stream obstructions and encroachments including bridges and culverts.

- Department of Environmental Protection Growing Greener Plus Grant Program ($5,495,924 in FY25 from Pennsylvania). This grant program funds a variety of projects from design through construction including fish habitat and stream improvement projects and floodplain restoration projects involving legacy sediment removal. The Growing Greener Plus program also includes funding for Pennsylvania's Watershed Renaissance Initiative (aka Rapid Stream Delisting) and the implementation of projects under the Pennsylvania Stormwater Management Act (Act 167 of 1978) and the Pennsylvania Surface Mining Conservation and Reclamation Act (SMCRA). Act 167 encourages planning and management of stormwater runoff and requires counties and municipalities to prepare and adopt a plan and ordinances to regulate land development.
- Department of Environmental Protection Countywide Action Plan Program ($22,958,688 in FY25 with $2,015,700 from EPA Chesapeake Bay Implementation Grant, $3,411,466 from EPA Chesapeake Bay Regulatory and Accountability Grant, $4,977,436 from EPA Most Effective Basin Funding, $5,332,693 from EPA Chesapeake Bay Infrastructure and Investment Jobs Act, $1,190,544 from EPA Local Government Implementation Grant, and $6,030,849 from Pennsylvania). This program funds a variety of nutrient-reducing implementation projects including agricultural best management practices, stream stabilization and enhancement projects, and floodplain restoration projects involving legacy sediment removal.

Virginia

- Virginia Department of Conservation and Recreation (VA DCR): The Community Flood Preparedness Fund empowers coastal and inland communities to complete vulnerability assessments and execute action-oriented nature-based flood mitigation, allocating at least 25% of funds to low-income geographic areas.
- Virginia Department of Environmental Quality (VA DEQ): The Virginia CZM Program funds place-based spatial modeling, macro-scale SAV distribution tracking, and regional adaptation planning and coordination.
- The Virginia Office of Resilience was fully staffed as of May 2025, led by a Chief Resilience Officer and supported by a Resilience Coordinator and a Resilience Policy Advisor.

Chesapeake Bay Commission

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budgetary, and policy needs within the legislatures of our member states and the U.S. Congress.

U.S. Environmental Protection Agency

- Computer Modeling ($2.6M in FY25) The Chesapeake Bay Program uses state-of-the art science and monitoring data to replicate conditions of the watershed and predict how the Chesapeake Bay may respond to future conditions such as pollutant loads, land use changes and changing environmental conditions. Decision-makers at the federal, state and local levels use this information to determine how best to restore and protect local waterways, and ultimately, the Chesapeake Bay.
- Clean Water State Revolving Fund ($227.5M in FY25): A federal-state partnership that provides low-cost financing to communities for a wide range of water quality infrastructure projects, including municipal wastewater facilities, nonpoint source pollution control, decentralized wastewater treatment systems, stormwater runoff mitigation, green infrastructure, estuary protection, and water reuse.
- Non-Point Source Program Grants (Section 319) ($9.2M in FY25) States, territories and tribes receive grant money that supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects and monitoring to assess the success of specific nonpoint source implementation projects.

National Oceanic and Atmospheric Administration

- NOAA Office for Coastal Management ($7.4M in FY25) Provides funding for Maryland and Virginia's implementation of the Coastal Zone Management Act through the administration of their coastal zone management programs and National Estuarine Research Reserves. These programs support coastal habitat conservation and restoration, community resilience, education and public engagement, coastal hazard mitigation, and water quality protection.

U.S. Fish and Wildlife Service

- Ecological Services, including Partners for Fish and Wildlife and Coastal Programs ($5,361,000 in FY24), work to restore and protect healthy populations of fish, wildlife, and plants, as well as the environments upon which they depend.
- Natural Resource Damage Assessment ($850,000 in FY24) evaluates and heals natural resources harmed by oil spills or releases of hazardous substances.

Healthy Forests & Trees Outcome

Delaware

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- Urban and Community Forestry Program (Estimated $187K in the Chesapeake Bay Watershed for FY25) provides assistance to help municipalities, nonprofit groups, community associations, and homeowners to plant and care for their trees.
- Buffer Incentive Program ($20K in FY25 in Chesapeake Bay Watershed) provides incentives and support for implementation of forest buffer and grass buffers in Delaware's Chesapeake Bay watershed to landowners based on acreage placed into protection for 5-years.
- Forestland Preservation Program (Estimated $333K for FY25 attributed to Chesapeake Bay Watershed) protects working forest through perpetual conservation easements; these easements allow forest management activities, including timber harvests.

District of Columbia

- RiverSmart Programs: ($2,100,000 in FY25) Through RiverSmart, DOEE partners with residents, schools, and businesses to install rain gardens, cisterns, permeable pavement, and other green infrastructure, while planting trees that filter stormwater, reduce nutrient runoff, and capture sediment before it reaches District waterways.
- USFS Urban and Community Forestry Program ($293,000 in FY25) The District of Columbia receives annual core funding from the Forest Service's Urban and Community Forestry Program. This is critical to supporting the priorities of our State Forest Action Plan including capacity building and partnership development.
- Urban Forestry Advisory Council (3 FTEs in FY25) The Council ensures collaboration among District agencies and partners working toward the city's ambitious goal: 40% tree canopy coverage by 2032. UFAC advises on policies, programs, and partnerships that maintain, protect, and grow the District's urban forest.

Maryland

- 5 Million Trees Initiative ($15M in FY25) A partnership effort to plant 5 million trees across the state by 2031, including trees within communities and forest buffers.
- Healthy Soils Competitive Fund ($900K in FY25) Grants that support agroforestry practices to Maryland farmers and organizations that work with farmers to support innovative practices, such as agroforestry, that manage and improve soil health.
- Maryland Program Open Space ($34.7M in state funds in FY25) POS Stateside preserves natural areas for public recreation and watershed and wildlife protection across Maryland through the acquisition of fee simple land and conservation easements, while POS Local provides financial and technical assistance to local subdivisions for the planning, acquisition, and or development of recreational land or open space areas, including working lands, targeted ecological areas, productive farm and forest lands.

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New York

- Upper Susquehanna Coalition's Water Quality Program, Trees for Tributaries, and Watershed Forestry Steward Program ($580,000 through multiple state and federal funding sources) The USC Water Quality Program's goal is to increase implementation of riparian forest buffers, wetlands, grazing, stream corridor rehabilitation and afforestation projects.
- DEC private land forestry grant programs including the one-time Establishing Large Forest (ELF) ($1.2 million statewide) and Regenerate NY state-funded grant program ($500,000 statewide) support private landowners in establishing large forests upon unforested or deforested lands, improving the health of existing forests, and restoring forests.
- Urban and Community Forestry Grant and Community Reforestation Grant ($1.7 million awarded in watershed FY25) State grant programs for community tree inventories and management plans and support initiative to plant 25 million by 2033

Pennsylvania

- Department of Conservation and Natural Resources Forest Action Plan ($12,000,000 in federal funds and $10,700,00 in state funds for plan implementation in FY25). This plan describes current conditions and trends of forests across all ownerships, delineates priority landscapes, and provides a suite of broad strategies to ensure the long-term sustainability of Pennsylvania's forests and trees.
- Department of Conservation and Natural Resources Invasive Replace-ive Program ($50,000 in state funds in FY25). The inaugural Pennsylvania Invasive Replace-ive Program took place in 2025 with participants receiving over 1,300 native trees to support restoration efforts in their own landscapes.
- Department of Conservation and Natural Resource Community and Watershed Forestry Grants and Program ($7,410,500 in FY 25 with $410,500 from the USDA Farm Service Agency's Riparian Forest Buffer Initiative, $5,500,000 from Pennsylvania for Riparian Forest Buffers, $1,000,000 from Pennsylvania for Urban and Community Forestry, and $500,000 from Pennsylvania for conservation landscaping). This program and grants support riparian forest buffer planting, urban forest planting, urban tree canopy expansion, and conservation landscaping, helping to shade and improve habitat along streams and in developed areas, helping to improve air quality and human health, increasing property values and visitation in cities and towns, while reducing nutrient loading.

Virginia

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- Riparian Forests for Landowners (RFFL) – (FY25 $600,000) Zero-cost riparian buffer establishment program for private landowners wishing to establish a buffer on their property. Program covers site preparation, tree planting and one year of maintenance following planting
- Virginia Trees for Clean Water (VTCW) – (FY25 $660,000) - Establishment of long-term, sustained canopy cover to improve water quality throughout the state through community plantings, tree giveaways, and riparian buffer plantings
- Urban & Community Forestry Grants (U&CF) – (FY26 $255,000 state, and $255,000 federal) Promotes the protection and enhancement of urban and community forest ecosystems, tree planting, and the care of trees in cities, towns, and communities

West Virginia

- WV Project CommuniTree (CTree): This program provides technical assistance, trees, and planting supplies to volunteers for planting on public land. Run in partnership with organizations like the Cacapon Institute, it offers "CTree Kits" (which include trees, deer protection tubes, and mulch) to schools, parks, and churches. While the core kits target the Potomac Headwaters counties, technical planning support is widely recognized
- Tree City USA: A national framework supported locally by the WVDOF that helps West Virginia towns and cities manage, celebrate, and expand their public urban forests.
- Community Tree Grant (CTG): Offered by the WVDOF Urban Forestry division, this program provides funding specifically for urban tree planting and municipal forestry projects on public property. It is open to West Virginia municipalities, public schools, and non-profit organizations

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U.S. Environmental Protection Agency

- Innovative Nutrient and Sediment Reduction Grants Program ($9.5M in FY25): This competitive funding program accelerates regional watershed restoration projects to reduce nitrogen, phosphorus, and sediment loads entering the Chesapeake Bay.
- Small Watersheds Grant Program (SWG) ($7M in FY25): The SWG program promotes voluntary, community-based efforts to protect and restore the diverse and vital habitats of the Chesapeake Bay and its tributary rivers and streams.

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- Non-Point Source Program Grants (Section 319) ($9.2M in FY25): States, territories and tribes receive grant money that supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects and monitoring to assess the success of specific nonpoint source implementation projects.

U.S. Fish and Wildlife Service

- Fish and Aquatic Conservation Program - Chesapeake Watershed Investments for Landscape Defense (WILD) Grants Program ($1,274,800 in FY25) works with states, tribes, and communities to protect freshwater resources, manage fisheries, and restore aquatic habitats. The biggest change is the inclusion of the Chesapeake WILD Grant Program.

U.S. Forest Service

- USFS Urban and Community Forestry Program ($1.85M in FY24[2]) is dedicated to growing and maintaining urban and community trees, forests and green spaces.
- USFS Forest Stewardship Program ($495,589 in FY24[3]) enables the USFS to work in partnership with state forestry agencies, cooperative extension, and conservation districts to connect private landowners with the information they need to manage their forests and woodlands.
- USFS Forest Legacy Program ($0 in FY24[4]) is administered by the Forest Service in partnership with state agencies to encourage the protection of privately owned forest lands through conservation easements or land purchases.

USDA Farm Services Agency

- FSA Conservation Reserve Program ($33.7 million for Fiscal Year 2024) is a voluntary program that encourages agricultural producers to convert highly erodible and other environmentally sensitive acres to vegetative cover, such as native trees and riparian buffers.

USDA Natural Resources Conservation Service

- NRCS Environmental Quality Incentives Program ($51.8 million for Fiscal Year 2024) helps forest landowners integrate conservation into working lands.
- NRCS Conservation Stewardship Program ($20 million for Fiscal Year 2024) is the largest working lands conservation program in the United States that helps producers enhance natural resources and improve their business operations.

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[2] Estimated based on the total amount of funding awarded to a state, pro-rated by the % of the state's total population within the Chesapeake Bay watershed, since these funds support community forestry.
[3] Estimated based on the total amount of funding awarded to the states, prorated by the % of a state's private forested land within the Chesapeake Bay watershed, since these funds are invested in private forest management
[4] Funding is competitively awarded so varies significantly from year to year

Land Use Planning & Decision Support Outcome

Delaware

- Chesapeake Implementation Program (Estimated $200K in FY25 for Land Use and Decision Support in Chesapeake Bay Watershed) oversees several funding programs while working closely with related programs to help local governments, community groups, and landowners in the Chesapeake Bay Watershed take actions and make changes to protect and improve water quality in the watershed through planning and implementation.
- Delaware Office of State Planning Coordination (FY25 – N/A**) provides continuous improvement of the coordination and effectiveness of land use decisions made by state, county, and municipal governments while building and maintaining a high quality of life in the State of Delaware.
- ** Annual appropriations are a mix of federal and state sources and cannot be determined at this time.

District of Columbia

- Small Area Plans (DOEE does not have an associated funding amount)**:** DC's Small Area Plans are planning documents that guide land-use decisions at the neighborhood scale, shaping redevelopment, zoning updates, and public-realm investments; they provide a structured pathway for integrating stormwater management, tree canopy goals, and climate resilience into future growth across priority corridors and emerging development areas.
- Office of District Waterways Management ($270,000 in FY26) The Office of District Waterways Management advises District agencies on waterways adjacent land-use and infrastructure decisions that affect local rivers. The Waterways Advisory Commission provides guidance on environmental protection, stormwater pollution mitigation, and public access needs on waterways adjacent land. ODWM is developing the Waterways Advisory Plan, a framework that reconciles diverse priorities to support more resilient waterways.

Maryland

- Critical Area Commission ($2.9M in FY25) The Commission works with local area management programs to foster consistent, uniform, and sensitive development activity within the Critical Area - which includes all land within 1,000 feet of Maryland's tidal waters and tidal wetlands - to minimize the adverse effect of human activities on water quality and natural habitats.
- Planning Services Division and Local Assistance and Training ($2.7M in FY25) The Local Assistance and Training unit of the Maryland Department of Planning focuses

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on providing technical support, outreach, and training to Maryland's 23 counties and 157 municipalities, which help the state advance towards the Agreement's outcomes.

Pennsylvania

- Department of Community and Economic Development Community Planning Technical Assistance Program (C-TAP) helps local and county governments, along with municipal partner organizations, plan, prepare, and implement strategies that support long-term growth and development. C-TAP helps communities move confidently from idea to implementation, with up to 400 hours of technical assistance available per project.
- Department of Community and Economic Development Municipal Assistance Program (MAP) provides funding to assist local governments to plan for and efficiently implement a variety of policies, programs, or projects, and soundly manage development with an emphasis on intergovernmental approaches. Funding is available for two groups of activities: shared services, and community planning.$621,156 in grants were awarded in May 2026 to 14 projects across 14 counties.
- Department of Transportation Free Assistance to Municipalities to better integrate local land use, development, and transportation goals into the state transportation planning process. Any municipal staff member, government official, or planning partner is eligible to request free assistance to help during any stage of the land use and transportation planning or project development process.
- The Pennsylvania Municipalities Planning Code mandates that the Governor's Center for Local Government Services prepare a comprehensive State Land Use and Growth Management Report every five years, beginning in 2005. This requirement is codified in Section 107 of the Code, which defines the report as containing information, data, and conclusions on statewide growth and development patterns, plus recommendations for coordination of executive action, regulation, and programs. The most recent report was published in 2025: 2025 State Land Use and Growth Management Report - PA Department of Community & Economic Development

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U.S. Environmental Protection Agency

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- EPA Chesapeake Bay Program Office GIS Program ($2.8M in FY25): The Chesapeake Bay Program Office operates a geographic information system (GIS) program through interagency agreements with USGS and with additional support through a cooperative agreement to address the established and growing need for and use of geospatial data, maps, and analysis within the Chesapeake Bay Program partnership – particularly as it pertains to the acquisition and updates of the high-resolution land use / land cover datasets.
- Small Watersheds Grant Program (SWG) ($150,000 in FY25): The SWG program promotes voluntary, community-based efforts to protect and restore the diverse and vital habitats of the Chesapeake Bay and its tributary rivers and streams.

U.S. Army Corps of Engineers

- Planning Assistance to States (PAS) ($1.5M in FY25) This program provides technical assistance to states and local governments for developing comprehensive plans for water and land resources, directly supporting informed land use planning and decision-making. Assistance is 50% federal, 50% non-federal, unless it is an economically disadvantaged community, then assistance is 100% federally-funded.
- Floodplain Management Services (FPMS) ($1M in FY 2025) This program provides data, technical assistance, and guidance on flood hazards to help communities make informed decisions about land use in and near floodplains. Assistance is 100% federally-funded.

Protected Lands Outcome

Delaware

- Delaware Open Space Program (Estimated $3 million in Chesapeake Bay Watershed) aims to protect our natural and cultural resources, conserve biological diversity, protect parks, forests, wildlife areas, nature preserves, etc., to provide for outdoor recreation and allow for water resource conservation.

District of Columbia

- Office of District Waterways Management ($270,000 in FY26) The Office of District Waterways Management advises District agencies on waterways adjacent land-use and infrastructure decisions that affect local rivers. Through the development of the Waterways Advisory Plan, ODWM identifies priority access points and supports projects that improve connectivity, safety, and equitable access to waterfront spaces across the District.

Maryland

- Rural Legacy Program ($15.3M in FY25) This program provides grant funding for the preservation of the natural resources and resource-based economies of Maryland

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through the purchase of conservation easements and fee simple acquisitions located in designated protection areas, including prime agricultural and forest lands, wildlife habitats, and cultural resources that, if conserved, will promote resource-based economies and maintain the fabric of rural life.

- Maryland Agriculture Land Preservation Foundation (MALPF) ($24.5M In FY25) MALPF purchases agricultural preservation easements that forever restrict development on prime farmland and woodland and has permanently preserved land in each of Maryland's 23 counties amounting to over 350,000 acres since 1980.
- Maryland Program Open Space (POS) ($34.7M in FY25) POS Stateside preserves natural areas for public recreation and watershed and wildlife protection across Maryland through the acquisition of fee simple land and conservation easements, while POS Local provides financial and technical assistance to local subdivisions for the planning, acquisition, and or development of recreational land or open space areas, including working lands, targeted ecological areas, productive farm and forest lands.

New York

- New York State Conservation Partnership Program ($138,000 within watershed FY25) State grants used to leverage public and private funding for building capacity of land trusts to help advance open space protection farmland preservation, and resource conservation goals.
- Open Space Conservation Grant Program ($25 million statewide to be awarded in FY27) The goal of this grant program is to provide funding for land conservation partners across New York State, increase climate resiliency and adaptation, and support conserving 30% of NY's lands and waters by 2030 (30x30 initiative).
- Forest Conservation Easements for Land Trusts ($404,250 within watershed FY25) State grants for land trusts to protect forestland through conservation easements and provide community benefits.

Pennsylvania

- Department of Agriculture Farmland Preservation Program ($22,956,951 in FFY25; additional $17.9 million from county programs in FY25). The program is a partnership between all levels of government and non-profit organizations - with a common goal of saving prime farmland. The Pennsylvania Agricultural Conservation Easement Purchase Program was developed to strengthen Pennsylvania's agricultural economy and protect prime farmland. This program enables state and county governments to purchase conservation easements from farmers. The program was approved in 1988 and the first easement was purchased in December of 1989. To date, 6,600+ farms have been approved for easement purchases totally 660,000+ acres.

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- Keystone Recreation, Park and Conservation Fund. Created in 1993, the Key 93 initiative operated solely on realty transfer tax revenue, with 65% directed to Pennsylvania's Department of Conservation and Natural Resources (DCNR). The DCNR allocation supports the rehabilitation and enhancement of state parks, forestry, trails and river protection, emphasizing the importance of conserving natural resources and promoting outdoor recreation. Funds are also directed toward grants for local recreation projects that can have land acquisition elements, and grants for land trusts are provided to plan for and acquire open space.
    - 2025 land trust acquisition grants: $12.1 million
    - 2025 community acquisition grants: $2.9 million
- Oil and Gas Lease Fund. Established in 1955, the Oil and Gas Lease Fund supports conservation, recreation and flood control initiatives. It has enabled the purchase of state park lands, acquisition of mineral rights, infrastructure and trail upgrades, habitat protection and restoration, and the procurement of recreational equipment.

Virginia

- Office of Working Lands Preservation – (no dedicated funding) Work with public agencies and private groups to slow the loss of valuable working landscapes in Virginia through education, technical assistance, and accepting open-space easements.
- Forest Legacy – (FY25 $2,102,500 state required match and $8,410,000 federal) Partnership between DOF and USDA Forest Service to conserve forestland under threat of conversion to other land uses. Qualifying properties must be within identified Legacy Areas.
- Purchase of Development Rights Program – (FY25 - $437,500 distributed to participating counties with PDR programs, all within the Bay) Partnership between DOF and participating localities. DOF equally distributes the funding allocated to the Virginia Farmland and Forestland Preservation Fund to localities that can provide matching funds for the purchase of open-space easements.

West Virginia

- Outdoor Heritage Conservation Fund: A state program that gives out grants to protect important wildlife habitats, farmlands, and public recreation areas.
- West Virginia Division of Natural Resources: Protects public lands through hands-on restoration projects and runs the Master Naturalists Program to train environmental stewards.

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U.S. Environmental Protection Agency

- Clean Water State Revolving Fund ($227.5M in FY25): A federal-state partnership that provides low-cost financing to communities for a wide range of water quality infrastructure projects, including municipal wastewater facilities, nonpoint source pollution control, decentralized wastewater treatment systems, stormwater runoff mitigation, green infrastructure, estuary protection, and water reuse.
- Non-Point Source Program Grants (Section 319) ($9.2M in FY25): States, territories and tribes receive grant money that supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects and monitoring to assess the success of specific nonpoint source implementation projects.

U.S. Department of War

- The Readiness and Environmental Protection Integration Program: ($10.3M in FY25) protects military missions by helping to remove or avoid land-use or management conflicts near installations and by addressing existing or potential regulatory restrictions that could inhibit military activities This includes the protection of land outside military installation boundaries.

U.S. Fish and Wildlife Service

- National Wildlife Refuge System ($8,446,000 in FY24) works to protect iconic species and provides some of the best wildlife viewing opportunities on Earth. Through partnerships, the US FWS leads the way in developing community-driven conservation solutions that generate ecological and economic benefits for fish, wildlife, and people. Within the Refuge System, US FWS collaborates with landowners, Friends groups, and local communities.
- Fish and Aquatic Conservation Program - Chesapeake Watershed Investments for Landscape Defense (WILD) Grants Program ($1,408,500 in FY25) works with states, tribes, and communities to protect freshwater resources, manage fisheries, and restore aquatic habitats. The biggest change is the inclusion of the Chesapeake WILD Grant Program.

USDA Natural Resources Conservation Service

- Agriculture Land Easements (ALEs) ($8,962,610 in FY25) - In addition to financial assistance, USDA–NRCS made significant investments in conservation easements during FY 2025. The agency established 23 new ALEs covering approximately 3,343 acres

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Engaged Communities Goal 4

Local Government Leadership Outcome

Delaware

- DNREC Office of Environmental Finance (Estimated $111 million in FY25 in Chesapeake Bay Watershed) administers the Delaware Pollution Control Revolving Fund and provides technical and financial support to Delaware municipalities, private organizations, nonprofit organizations, and private organizations to promote water quality, protect natural resources, and reduce the risk of pollution from septic tanks and underground storage tanks.
- University of Delaware's Institute for Public Administration (IPA) (Estimated $118K in FY25 in Chesapeake Bay Watershed) addresses the policy, planning, and management needs of its partners by helping municipal and county officials understand planning, public service, and resource management.

Maryland

- Watershed Restoration Specialists (5 FTEs in FY25) These specialists provide planning and technical assistance support to local governments throughout the state in implementing restoration activities.
- Bay Restoration Fund ($127M in FY25) The BRF is a dedicated fund collected and distributed in partnership between the state and local governments to upgrade Maryland's wastewater treatment plants and onsite septic systems to address local priorities and improve water quality, and to support technical assistance.
- Planning Services Division and Local Assistance and Training ($2.7M in FY25) The Local Assistance and Training unit of the Maryland Department of Planning focuses on providing technical support, outreach, and training to Maryland's 23 counties and 157 municipalities, helping officials make decisions that advance the Agreement's outcomes.

New York

- Climate Smart Communities Grant ($90,000 within watershed FY25) Climate Smart Communities is a New York State program that helps local governments take steps in their communities to reduce greenhouse gas emissions and adapt to climate change.

Pennsylvania

- Department of Environmental Protection Community Clean Water Coordinator Program (approximately $1.8 million in FY25) supports local leadership and capacity-building in Chesapeake Bay watershed counties by funding coordinators who convene partners, engage municipalities, secure implementation funding, track progress, and facilitate Countywide Action Plan (CAP) implementation.

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Coordinators serve as local hubs connecting county governments, conservation districts, watershed organizations, and state agencies to advance water quality goals.

- Department of Environmental Protection Countywide Action Plan (CAP) Implementation Grants ($24 million in FY25, including approximately $9.6 million from Pennsylvania's Environmental Stewardship Fund and $14.4 million in federal EPA funding) support county and local implementation of Chesapeake Bay restoration priorities while strengthening local decision-making, intergovernmental coordination, and watershed planning. The grants fund projects identified through locally developed Countywide Action Plans and incentivize sustained engagement by county and municipal leaders.
- State Conservation Commission Dirt, Gravel, and Low Volume Road (DGLVR) Program (estimated $15-18 million annually in Chesapeake Bay watershed counties) helps municipalities reduce sediment pollution from locally owned roads through technical assistance, project grants, and required Environmentally Sensitive Maintenance (ESM) training. Delivered through county conservation districts, the program builds the knowledge and capacity of township supervisors, roadmasters, and municipal officials to integrate watershed protection into everyday infrastructure management and road improvement decisions.

Virginia

- Planning District Commissions | [$870,000 FY 2025] Virginia DEQ provides funding to support regionally delivered outreach, technical, and administrative assistance to local governments related to WIP programmatic actions and implementation activities.

Chesapeake Bay Commission

- As a tri-state legislative commission, the Chesapeake Bay Commission advances the goals of the Chesapeake Bay Watershed Agreement by working collaboratively with Bay Program partners to identify and pursue legislative, budgetary, and policy needs within the legislatures of our member states and the U.S. Congress.

U.S. Environmental Protection Agency

- Signatory Implementation Grant Funding ($39.5M in FY26): This funding supports the management mechanisms established under the *Chesapeake Bay Watershed Agreement*, with an emphasis on state programs for control and abatement of nonpoint source nutrient and sediment loads.

U.S. Fish and Wildlife Service

- National Wildlife Refuge System ($8,446,000 in FY24) works to protect iconic species and provides some of the best wildlife viewing opportunities on Earth.

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Through partnerships, the U.S. Fish and Wildlife Service leads the way in developing community-driven conservation solutions that generate ecological and economic benefits for fish, wildlife, and people. Within the Refuge System, US FWS collaborates with landowners, Friends groups, and local communities.

Public Access Outcome

Delaware

- The DNREC Open Space Program (Estimated $3.3 million in FY 25 in Chesapeake Bay Watershed) is guided by the Delaware Open Space Council, coordinates the acquisition of parks, open space, natural areas, forests, wildlife habitat, greenways, and waterways by expanding state parks and preserves, fish and wildlife areas, state forests and cultural resource sites.
- The DNREC Waterway Management Program (Estimated $433K in FY25 in Chesapeake Bay Watershed) oversees public access infrastructure such as state-managed channel navigation, dredging priorities, and local boat ramps that allow public boating, fishing, and crabbing access to coastal lagoons, rivers, and bays.

District of Columbia

- DC's Statewide Comprehensive Outdoor Recreation Plan (SCORP): **(**4 FTEs in FY26) DC's SCORP identifies priority needs for outdoor recreation and directs investment toward accessible, high-quality public spaces, including waterfront parks, trails, and boating access sites. The plan strengthens the District's contribution to the Chesapeake Bay Program's public access outcome by expanding equitable opportunities for residents to reach DC waterways and greenspaces.
- Clean (Green) Marinas Program: (DOEE does not have an associate funding amount) The District's Clean Marinas program (DC Clean Marina Partnership | DOEE), referred to as Green Marinas in the Comprehensive Plan, supports public access by improving environmental performance at marinas and boating facilities and promoting best practices that keep waterways safe and clean for recreational users.
- Office of District Waterways Management ($270,000 in FY26) The Office of District Waterways Management advises District agencies on waterways adjacent land-use and infrastructure decisions that affect local rivers. Through the development of the Waterways Advisory Plan, ODWM identifies priority access points and supports projects that improve connectivity, safety, and equitable access to waterfront spaces across the District.

Maryland

- Waterway Improvement Fund ($21.5M in FY25) Through the WIF Program, local governments can apply for grant funding designed to serve motorized boating

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needs. Supported initiatives include constructing or updating public boating facilities for waterway access, dredging and enhancing navigation in heavily used recreational channels, and procuring marine fire and rescue vessels to enhance public boating safety.

- 2026 Adaptive Facilities Transition Plan (No specific funding; 1 FTE supported the program in FY25) Provides guidance on prioritization of renovation of facilities.
- Program Open Space ($65.1M in FY25) This funding source provides various grant programs, including the greenspace equity program and rural legacy program, conserving natural resources while providing outdoor recreation opportunities for all citizens.

New York

- DEC Accessibility Program – NYSDEC – The DEC Accessibility Program is composed of ADA Accessibility Coordinators and focuses on expanding access for people of all ages and abilities.

Pennsylvania

- Fish and Boat Commission Boating Facility Grant Program (funded through boat registration fees, motorboat fuel taxes, restricted revenue accounts, and federal boating access funds) provides grants to municipalities, counties, and nonprofit organizations for the planning, acquisition, development, expansion, and rehabilitation of public boating facilities. The program supports new and improved boat launches, courtesy docks, parking areas, restrooms, and ADA-accessible features that expand public access to Pennsylvania's waterways and encourage recreational use of rivers, lakes, and streams.
- Department of Conservation and Natural Resources Community Conservation Partnerships Program (C2P2) (approximately $50 million awarded annually) supports local governments and nonprofit organizations in developing parks, trails, greenways, river access sites, and recreation infrastructure across Pennsylvania. Through planning, land acquisition, conservation, and rivers development grants, the program improves public access to natural lands and waterways while strengthening outdoor recreation opportunities and community connections to local natural resources.
- Pennsylvania Environmental Council (PEC) Statewide Water Trail Mini-Grant Program ($30,000 in FY25, funded in part through DCNR's Community Conservation Partnerships Program) provides competitive mini-grants to public entities and nonprofit organizations for projects along designated Pennsylvania Water Trails. Grants support improved physical and inclusive access to waterways, enhanced paddling and recreation opportunities, trail-to-trail connections, education and

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stewardship efforts, and projects that connect residents and visitors to Pennsylvania's rivers and streams.

West Virginia

- Statewide Wildlife Management Program: Run by the West Virginia Division of Natural Resources (WVDNR), this program improves public access to wildlife management areas (WMAs) by building and maintaining access roads, parking lots, trails, and public shooting ranges.

Chesapeake Bay Commission

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U.S. Fish and Wildlife Service

- National Wildlife Refuge System ($8,446,000 in FY24) works to protect iconic species and provides some of the best wildlife viewing opportunities on Earth. Through partnerships, the U.S. Fish and Wildlife Service leads the way in developing community-driven conservation solutions that generate ecological and economic benefits for fish, wildlife, and people. Within the Refuge System, US FWS collaborates with landowners, Friends groups, and local communities.

School District Environmental Literacy Planning Outcome

Delaware

- The Delaware Science Coalition (Estimated $573K in FY25 in Chesapeake Bay Watershed) manages science policy, curriculum, and professional development in participating districts and charter schools. The coalition works with district and charter representatives on science initiatives.

District of Columbia

- District Environmental Literacy Plan (24 FTEs in FY25) creates the framework for standards, achievement, professional development, assessment and leadership for individuals to thrive and achieve innovation in education. The Environmental Literacy Advisory Committee updates every three years and meets regularly to monitor implementation. The fourth update of the ELP will be released in 2027. DOEE meets deliverables of the ELP related to the School District Outcome through Riversmart Schools Program, and Sustainability best practices from the Sustainable DC Plan.

Maryland

- Maryland Outdoor Learning Partnership (No specific funding; 2 FTEs supported this program in FY25) The Partnership is a public-private stakeholder group that fosters state-wide collaboration, coordinates resources, and delivers recommendations so that all of Maryland's youth are empowered to grow as environmental stewards that access, conserve, and restore our natural resources to ensure a climate-ready Maryland.
- Maryland Association for Environmental and Outdoor Education ($281K in FY25) MAEOE provides mini-grants and stipend opportunities, which are funded through the Maryland State Department of Education under the Maryland Green Schools Act of 2019, the Maryland Green Schools program includes 702 schools in 23 local education agencies (LEAs) and a network of 45 Green Centers to support schools gaining and maintaining the award.

Pennsylvania

- Pennsylvania Environmental Literacy (PA ELit) Network (statewide; supported by the Pennsylvania Department of Education, U.S. Environmental Protection Agency, NOAA, and partner organizations) helps school districts build capacity for environmental literacy through six regional hubs, educator professional development, MWEE training, environmental literacy planning resources, and implementation support for Pennsylvania's STEELS standards. The network connects schools with environmental education providers and promotes systemic integration of environmental literacy across K-12 education.
- Intermediate Unit MWEE/STEELS Development Programs (delivered through Pennsylvania's Intermediate Units) provide school districts with technical assistance, professional development, curriculum support, and implementation planning for Meaningful Watershed Educational Experiences (MWEEs) and the STEELS standards. These programs help districts integrate environmental literacy and sustainability into classroom instruction, establish districtwide implementation plans, and expand outdoor and inquiry-based learning opportunities for students.
- Pennsylvania Gateway to Green (statewide; supported by PDE and partner organizations) serves as Pennsylvania's online hub for environmental literacy education. The platform provides school districts with STEELS-aligned instructional resources, environmental literacy planning tools, watershed education materials, and connections to environmental education providers that support district-wide implementation of environmental literacy programs.

Virginia

- Virginia Naturally Schools Recognition Program hosted by DWR [$5,000 FY 2025] recognizes the exemplary efforts undertaken by Virginia schools to increase the Environmental Literacy of its students

West Virginia

- Project Learning Tree (WVPLT): Run through the West Virginia Division of Forestry, this K-12 program uses forests as a window to teach critical thinking, math, science, and resource stewardship through professional educator workshops
- Project WET (Water Education Today): Managed alongside the WV Department of Environmental Protection, it offers interdisciplinary water-science activities, classroom guides, and statewide water festivals for students
- Youth Environmental Program (YEP): Sponsored by the DEP, YEP unites schools, 4-H clubs, and scouts to complete hands-on community environmental projects and local conservation efforts

Chesapeake Bay Commission

- As a tri-state legislative commission, the Chesapeake Bay Commission advances the goals of the Chesapeake Bay Watershed Agreement by working collaboratively with Bay Program partners to identify and pursue legislative, budgetary, and policy needs within the legislatures of our member states and the U.S. Congress.

National Oceanic and Atmospheric Association

- NOAA Bay Watershed Education & Training (B-WET) Program ($2.5M in FY26) provides grants for school district planning in the region.

Stewardship Outcome

Delaware

- The Stewardship Program (FY25 – N/A**) offers multiple tax incentive programs to keep properties in active forest management, along with offering a small state cost share program when timber revenues allow.
- ** Annual appropriations are a mix of federal and state sources and cannot be determined at this time.
- Delaware Community Conservation Assistance Program (DeCAP) ($628K in FY25) supports community and landowner-level implementation of backyard best management practices, including but not limited to tree plantings and riparian tree buffers, in the Chesapeake Bay watershed.

District of Columbia

- Trash Free Communities ($115,00 in FY25) supports a litter reduction campaign that focuses on creating behavior change using innovative approaches and place based art in local District communities.
- Community Stormwater Solutions Grants ($284,000 in FY25) provides funding for innovative, community-centered projects that improve the District's waterways.

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- Kingman Island Rangers ($262,000 in FY 2025) provides paid stewardship positions to full-time and part-time rangers that support operations, maintenance, and ecological restoration on Kingman and Heritage Islands, the District's first state conservation area. They also engage visitors in environmental education and stewardship programs.

Maryland

- Chesapeake Bay SAV Watchers Program (No specific funding; 2 FTEs supported the program in FY25). Chesapeake Bay SAV Watchers is a program to provide volunteer scientists with an engaging and educational experience with submerged aquatic vegetation (SAV) while also generating useful data for Bay scientists and managers.

New York

- The Citizens Statewide Lake Assessment Program (CSLAP) is a statewide volunteer lake monitoring program directed by DEC staff in collaboration with the NYS Federation of Lake Associations (NYSFOLA). There are 36 lakes within the Chesapeake Bay Watershed participating in CSLAP.
- The Water Assessments by Volunteer Evaluators Program (WAVE) is a statewide DEC program where volunteers collect, or sample "stream bugs" to assess water quality in wadeable streams in New York State. There are currently 260 WAVE volunteer sites within the watershed.

Pennsylvania

- Master Watershed Steward Program (Penn State Extension, statewide; supported through Cooperative Extension (federal, state, and county) and partner funding) trains and supports volunteers to become local leaders in watershed stewardship through science-based education, restoration activities, and community outreach. Operating in 24 Chesapeake Bay counties with more than 1,080 active volunteers statewide, the program engages residents in stream monitoring, riparian buffer planting, habitat restoration, stormwater education, and public engagement projects that strengthen local stewardship capacity and improve watershed health.
- Lancaster Watershed Leadership Academy (Lancaster Clean Water Partners, Lancaster County and surrounding region; supported through participant tuition, scholarships, partner contributions, and watershed funding initiatives) develops community leaders who are inspired to take action on local water quality challenges through a year-long program combining watershed education, leadership development, peer networking, and hands-on learning. Since 2020, the Academy has equipped participants to advance clean water initiatives, lead community projects, strengthen collaborative partnerships, and engage residents in stewardship activities that support the goal of clean and clear water in Lancaster County by 2040.

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- Riparian Rangers (Alliance for the Chesapeake Bay and partners, multiple Pennsylvania counties; supported through grants from DCNR, the National Fish and Wildlife Foundation, the U.S. Forest Service, and other restoration partners) trains and supports volunteers to monitor and maintain newly planted riparian forest buffers throughout the Chesapeake Bay watershed. Volunteers conduct regular site visits, remove invasive species, repair tree shelters and stakes, and provide critical early maintenance that improves long-term buffer survival while expanding opportunities for residents to participate directly in stream restoration and watershed stewardship.

West Virginia

- West Virginia Master Naturalist Program: Run by the West Virginia Division of Natural Resources, this program trains individuals in natural history, interpretation, and environmental stewardship to help with local conservation projects and outdoor education
- Forest Stewardship Program: Administered by the WV Division of Forestry, this initiative helps private landowners manage and protect woodland properties for wildlife, timber, and recreation
- WV Save Our Streams (SOS): A West Virginia Department of Environmental Protection initiative that trains citizen scientists to monitor and protect local wadeable streams and rivers using biological evaluations (collecting benthic macroinvertebrates and testing physical/chemical conditions)

Chesapeake Bay Commission

- As a tri-state legislative commission, the Chesapeake Bay Commission advances the goals of the Chesapeake Bay Watershed Agreement by working collaboratively with Bay Program partners to identify and pursue legislative, budgetary, and policy needs within the legislatures of our member states and the U.S. Congress.

U.S. Environmental Protection Agency

- Small Watersheds Grant Program (SWG) ($11M in FY25): The SWG program promotes voluntary, community-based efforts to protect and restore the diverse and vital habitats of the Chesapeake Bay and its tributary rivers and streams.
- Innovative Nutrient and Sediment Reduction Grants Program ($11M in FY25): This competitive funding program accelerates regional watershed restoration projects to reduce nitrogen, phosphorus, and sediment pollution from entering the Chesapeake Bay.
- Local Science Monitoring Grant ($499,972 in FY25): This program supports capacity expansion and integration of local science-based monitoring partners into the

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Chesapeake Bay Program partnership through the Chesapeake Monitoring Cooperative. Through technical, programmatic, and outreach support, this program incorporates volunteer-based water quality and macroinvertebrate monitoring data into a publicly available, centralized data hub and enables data to be used by the Chesapeake Bay Program to assess the health of the Chesapeake Bay and watershed.

U.S. Fish and Wildlife Service

- National Wildlife Refuge System ($8,446,000 in FY24) works to protect iconic species and provides some of the best wildlife viewing opportunities on Earth. Through partnerships, the U.S. Fish and Wildlife Service leads the way in developing community-driven conservation solutions that generate ecological and economic benefits for fish, wildlife, and people. Within the Refuge System, US FWS collaborates with landowners, Friends groups, and local communities.
- Fish and Aquatic Conservation Program - Chesapeake Watershed Investments for Landscape Defense (WILD) Grants Program ($1,783,000 in FY25) works with states, tribes, and communities to protect freshwater resources, manage fisheries, and restore aquatic habitats. The biggest change is the inclusion of the Chesapeake WILD Grant Program.

Student Environmental Literacy Experiences Outcome

Delaware

- Delaware DNREC Division of Parks and Recreation (FY25 – N/A**) provides environmental education programming for K-12 audiences through educational centers operated by the Division of Fish and Wildlife.
- ** Annual appropriations are a mix of federal and state sources and cannot be determined at this time.

District of Columbia

- RiverSmart Schools: ($798,000 in FY25) RiverSmart Schools provide funding and training to DC Public and Charter Schools interested in transforming bland outdoor spaces into vibrant, green spaces to teach, learn, play, and manage stormwater runoff.
- Overnight Meaningful Watershed Educational Experiences (MWEE): ($700,000 in FY25) MWEEs are a framework that connect standards-based classroom learning with outdoor learning experiences to create a deeper understanding of the environment. The Overnight MWEE for fifth grade students that includes a three-day, two-night field study.
- Nature Near Schools Meaningful Watershed Educational Experience (MWEE): The District funds a Nature Near Schools (NNS) program for fourth-grade students that

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includes multiple hands-on and outdoor experiences throughout the school year. Funded $25,000 in FY25 for the sixth-grade Middle School MWEE that focuses on DOEE's sub watersheds.

Maryland

- Maryland DNR's Chesapeake and Coastal Grants Gateway, Outcome 4 ($150k in FY25) This grant program provides funding to improve student ability to take action benefiting Chesapeake and coastal ecosystems through professional development and training, curriculum expansion, outdoor learning, and stewardship.
- Chesapeake Bay Trust's Environmental Education Grants Program ($290K in FY25) This program uses state funds to support programs and initiatives in Maryland that advance environmental literacy and result in students having the knowledge, skills, attitudes, and motivation to take informed and responsible actions to protect and improve the environment.

Pennsylvania

- Department of Environmental Protection Environmental Education Grant Program ($700-800,000 awarded in FY25 to projects in the Chesapeake Bay watershed) supports schools, conservation districts, nonprofits, colleges, and other organizations in delivering hands-on environmental education programs for youth and adults. Funded through Pennsylvania's Environmental Education Act, the program supports Meaningful Watershed Educational Experiences (MWEEs), field investigations, STEELS-aligned curriculum, teacher professional development, and environmental stewardship projects that connect students directly to local environmental issues and solutions.
- Dive Deeper Summit (Penn State Extension, statewide) provides professional development for educators that strengthens their ability to deliver high-quality water education, Meaningful Watershed Educational Experiences (MWEEs), and STEELS-aligned instruction. Through hands-on training, watershed-focused learning, and connections to educational resources and partners, the summit equips teachers to expand environmental literacy experiences and outdoor learning opportunities for students throughout Pennsylvania.
- Department of Conservation and Natural Resources Watershed Education Program (supported through Pennsylvania's Environmental Education Fund) provides inquiry-based watershed education for students in grades 6-12 through classroom and field investigations, stream monitoring, data collection and analysis, stewardship projects, and community engagement. Delivered through Pennsylvania State Parks, the program supports STEELS standards and Meaningful Watershed Educational Experiences (MWEEs) by helping students investigate local watershed issues,

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conduct authentic environmental research, and participate in stewardship and civic-learning activities.

Virginia

- Virginia Watershed Education Programs Project (DCR). $250,000 available in FY25. This grant program provides funding for exemplary "meaningful watershed educational experiences" (MWEE) within Virginia's Chesapeake Bay watershed.
- Virginia Wildlife Grant Program | Virginia DWR $48,200 available in FY25. This program provides funding for outdoor activities such as boating, fishing, hunting, recreational shooting, and wildlife viewing. Yearly funding varies.
- The Virginia Trees for Clean Water Grant Program Up to $55,000 available to the entire commonwealth. This program encourages the creation of long-term, sustained canopy cover to improve water quality across the Commonwealth. Schools and organizations may apply to fund tree-planting efforts that raise public awareness of the benefits of trees and impacts on water quality.

West Virginia

- Cacapon Institute (PHLOW Program): The Cacapon Institute is a primary champion of MWEEs in West Virginia's Eastern Panhandle. Through their PHLOW (Potomac Headwaters Leaders of Water) initiative, they provide hands-on resources, classroom teaching assistance, and guidance. They help schools design and install watershed conservation practices directly on school grounds so students "learn by doing"

Chesapeake Bay Commission

- As a tri-state legislative commission, the Chesapeake Bay Commission advances the goals of the Chesapeake Bay Watershed Agreement by working collaboratively with Bay Program partners to identify and pursue legislative, budgetary, and policy needs within the legislatures of our member states and the U.S. Congress.

National Oceanic and Atmospheric Association

- NOAA Bay Watershed Education & Training (B-WET) Grants Program ($2.5M in FY26) provides grants to school districts and their partners to deliver high-quality STEM education for students and professional development for teachers.

Workforce Outcome

Delaware

- Delaware Pathways Program (Estimated $3 million in federal funds in FY25 in the Chesapeake Bay Watershed) helps to develop (1) environmental literacy competencies for Career Technical Education (CTE); (2) an environmental literacy

framework expanding on these competencies; and (3) a technical assistance and professional learning plan for implementation in related CTE programs of study.

District of Columbia

- Kingman Island Rangers ($262,000 in FY 2025) The Kingman Rangers is a job training initiative that prepares adults for entry-level jobs in the green sector while helping to beautify Kingman and Heritage Islands. The apprentices, called "Kingman Rangers," spend half of their time doing maintenance, landscaping, and construction projects on the island and the other half in the classroom working on basic job readiness skills.
- Green Fellows Leadership & Development Program ($54,000 per Fellow, avg 4-7 fellows/year) This Fellowship is a competitive paid opportunity designed for graduate-level students who are currently enrolled in a Master's degree program focused on public policy, public administration, urban planning, sustainability, energy, public health, or related fields. Candidates must attend a local college or university or be District residents enrolled in a Master's degree program. Green Fellows are embedded in one or more DOEE programs for up to ten months to work alongside professionals on program delivery, research, and policy development. Fellows are connected to programs that match their interests and skills, and they participate in cross-disciplinary and professional development trainings, field trips, and collaborative group projects.
- Green Zone Environmental Program ($250,000 in FY25): This program designed for youth and young adults, ages 14-24, includes the requirement to enroll in and be certified as eligible by the Department of Employment Services (DOES) Marion Barry Summer Youth Employment Program. Through hands-on projects, participants are introduced to energy, environmental, and sustainability issues that impact their neighborhoods and the District, while receiving career development training. The program also offers seasonal jobs to help implement the program for up to 12 weeks; successful staff are eligible for consideration for Green Ready, an internship program embedded in DOEE programs

Maryland

- Maryland Conservation Corp ($332K in FY25) The mission of the program is to provide young adults with opportunities for service in the community and the environment by preserving, protecting, enhancing, and restoring Maryland's natural resources.
- Maryland Veterans Conservation Corps ($192.5K in FY25) The focus of the VCC is to develop veterans professionally through training and on the job experience within the Maryland Park Service and the Department of Natural Resources.

New York

- NYS Environmental Bond Act – the Clean Water, Clean Air, and Green Jobs Environmental Bond Act includes significant labor provisions and will promote job creation by establishing an estimated 84,000 green jobs.

Pennsylvania

- Pennsylvania Department of Environmental Protection and State Board for Certification of Water and Wastewater Systems Operators Water and Wastewater Operator Certification Program The Water and Wastewater Systems Operators Certification Act created the State Board for Certification of Water and Wastewater Systems Operators. Pennsylvania Department of Environmental Protection administers the certification program for all water and wastewater operators in the Commonwealth.
- State Conservation Commission Agricultural Conservation Technician Apprenticeship Program (supported through apprenticeship workforce development funding and partner resources) provides paid, structured training for future conservation professionals, helping address workforce shortages in agricultural conservation and water quality implementation while developing the next generation of conservation district staff and technical assistance providers.
- Department of Conservation and Natural Resources and Department of Labor and Industry Pennsylvania Outdoor Corps ($5 million in FY25, administered by DCNR with support from the Department of Labor & Industry) provides paid conservation work experience, environmental education, and workforce training opportunities for young adults ages 15-25. Participants gain hands-on experience in habitat restoration, trail development, forestry, recreation management, and environmental stewardship while exploring career pathways in conservation, natural resource management, and outdoor recreation.

Virginia

- Department of Workforce Development and Advancement - Registered Apprentice Program ($2,016,058 for Fiscal Year 2025) Supports paid, work-based training that develops skilled workers, which include occupations critical to Chesapeake Bay restoration, including water infrastructure, environmental, and natural resource careers.
- Department of Workforce Development and Advancement - The HIRED Fund ($1,136,000 for Fiscal Year 2025) incentivizes employers to take on registered apprentices in fields like clean energy, and reimburses costs of training, education, and supplemental support services.
- Department of Workforce Development and Advancement - Community College FastForward & Workforce Credential Grant Program ($15M for Fiscal Year

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2025) Provides tuition assistance for short-term workforce training and industry-recognized credentials in high-demand fields, helping build the skilled workforce needed for occupations that support Chesapeake Bay restoration, infrastructure, and natural resource management.

West Virginia

- West Virginia HER/HEAR Program: A partnership between the West Virginia Office of Energy and Everblue created an 8-month apprenticeship program to build a robust energy efficiency workforce. Apprentices work alongside certified mentors to master residential and commercial building energy audits, green retrofits, and compliance

National Oceanic and Atmospheric Association

- NOAA Chesapeake Bay Internship Program offers summer internships in a range of fields including fisheries management, habitat assessment, ecology, scientific field support, data analysis, and education. ($37,000 in FY25)

Additional Snapshot Submissions

The following submissions were received from federal agencies but could not be sorted by outcome.

U.S. Geological Survey

- USGS Chesapeake Bay Activities: ($17.5M in 2026) Provides science to inform management and decision making associated with 14 different Watershed Agreement Outcomes. The science portfolio changes annually to align with both Partnership and Administration priorities, but generally supports Clean Water, Thriving Habitats, and Healthy Landscapes Goal Teams.

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Appendix B. Signatory and Federal Agency Statutory Authorities Driving Outcome Attainment

The law and regulation of signatory partners may support, justify or motivate their participation in the collaborative work of the Chesapeake Bay Program related to the attainment of specific outcomes and targets of the Watershed Agreement.

The following documentation identifies core statutory authorities that provide part of the impetus for the attainment of Chesapeake Bay Watershed Agreement outcomes and their related targets. While Chesapeake Bay Program partners acknowledge that the Watershed Agreement is voluntary, subject to the availability of appropriated funds, and does not preempt, supersede or override any other law or regulation applicable to each signatory, they also acknowledge that the law or regulation of individual signatories can support each partner's participation in outcome attainment. The table below is not an exhaustive list of all relevant laws and regulations. Rather, this appendix identifies the driving motivators that can bring about signatory partner engagement in efforts described in this Strategic Plan, associated Management Strategies, and Workplans.

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Thriving Habitat, Fisheries, and Wildlife Goal 1

Outcome: Blue Crabs	
Signatory	**Statutory Authority**
Maryland	COMAR 08.02.03 Blue Crabs
	MD Natural Resources Code § 4-215 Fishery Management Plans
	MD Natural Resources Code § 4-801-816 Crabbing
Virginia	VA Code § 28.2-200 et seq.
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
NOAA	Magnuson-Stevens Fishery Conservation and Management Act
USACE	Section 510, Water Resources Development Act of 1996, as amended
	Section 206, Water Resources Development Act of 1996, as amended
US FWS	Fish and Wildlife Coordination Act - Codified under 16 U.S.C. §§ 661–667e
	Clean Water Act - Codified under 33 U.S.C. § 1344

Outcome: Brook Trout	
Signatory	**Statutory Authority**
Maryland	MD Natural Resources Code § 4–205 Fishery Management
	MD Natural Resources Code § 4–215 Fishery Management Plans

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New York	SECTION 11-0503 Polluting streams prohibited Environmental Conservation (ENV) CHAPTER 43-B, ARTICLE 11, TITLE 5 | NY State Senate
	6 CRR-NY 701.25 Trout Waters. State Compilation of Codes, Rules and Regulations of The New York Title 6. Department of Environmental Conservation Chapter X. Division of Water Resources Subchapter A. General Article 2. Classifications and Standards of Quality and Purity
Pennsylvania	PA Clean Streams Law
	PA Code Title 58 Chapter 57 Subchapter A. Fisheries Policies
Virginia	29.1-103, 29.1-506, 29.1-531 Code of Virginia
West Virginia	Special Regulations: Specific streams and headwaters have catch-and-release or fly-fishing-only rules under W. Va. Code R. § 58-60-9 to protect wild native populations
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
USACE	Section 510, Water Resources Development Act of 1996, as amended
	Section 206, Water Resources Development Act of 1996, as amended
US FWS	Chesapeake WILD Act - 16 U.S.C. § 3703 note; enacted via Title I, Section 111 of the America's Conservation Enhancement (ACE) Act (Public Law No: 116-188)
	Fish and Wildlife Coordination Act - Codified under 16 U.S.C. §§ 661–667e

Outcome: Fish Habitat	
Signatory	**Statutory Authority**
District of Columbia	D.C. Law 21-282. Fisheries and Wildlife Omnibus Amendment Act of 2016.
Maryland	COMAR 08.02.03 Endangered Species
	MD Natural Resources Code § 4-208 Fisheries Management & Protection Fund
	MD Natural Resources Code § 4-209 Fisheries R&D Fund
Pennsylvania	PA Clean Streams Law; Dam Safety and Encroachments Act
	25 Pa. Code Chapter 105. Dam Safety And Waterway Management
	25 Pa. Code Chapter 102. Erosion And Sediment Control
Virginia	29.1-103, Code of Virginia
	29.1, Chapter 5, Article 6 of the Code of Virginia
	28.2, Chapter 12, Code of Virginia
West Virginia	West Virginia Code §20-13-2 focuses specifically on restoring, protecting, and providing habitats for plant and animal life, including

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	fish, in the state's rivers and streams through cooperative citizen and agency management programs
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
NOAA	NOAA Hydrographic Services ACT 15.U.S. Code §1511d-Chesapeake Bay Office
	Magnuson-Stevens Fishery Conservation and Management Act
USACE	Section 510, Water Resources Development Act of 1996, as amended
	Section 206, Water Resources Development Act of 1996, as amended
US FWS	Chesapeake WILD Act - 16 U.S.C. § 3703 note; enacted via Title I, Section 111 of the America's Conservation Enhancement (ACE) Act (Public Law No: 116-188)
	Anadromous Fish Conservation Act - Codified under 16 U.S.C. §§ 757a–757g.
	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee

Outcome: Fish Passage	
Signatory	**Statutory Authority**
District of Columbia	D.C. Law 5-188; D.C. Official Code § 8-103.01 et seq.) The Water Pollution Control Act of 1984, effective March 16, 1985, as amended
	D.C. Law 21-282. Fisheries and Wildlife Omnibus Amendment Act of 2016.
Maryland	MD Natural Resources Code § 4-501 Fish Passage Obstruction Prohibition
Pennsylvania	Dam Safety and Encroachments Act
	25 Pa. Code Chapter 105. Dam Safety And Waterway Management
	PA Code Title 58 Chapter 57 Subchapter B. Policy on Development of Hydropower at Existing or Proposed Dams in the Commonwealth
Virginia	29.1-532, 29.1-101.9 Code of Virginia
West Virginia	In West Virginia, the core statutory law that directly mandates and focuses on **fish passage** is West Virginia Code §61-3-47 (Dams or obstructions in watercourses; penalty).
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
USACE	Section 510, Water Resources Development Act of 1996, as amended
	Section 206, Water Resources Development Act of 1996, as amended

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US FWS	Chesapeake WILD Act - 16 U.S.C. § 3703 note; enacted via Title I, Section 111 of the America's Conservation Enhancement (ACE) Act (Public Law No: 116-188)
	Anadromous Fish Conservation Act - Codified under 16 U.S.C. §§ 757a–757g.

Outcome: Oysters	
Signatory	**Statutory Authority**
Maryland	COMAR 08.02.04 Oysters
	MD Natural Resources Code § 4-215 Fishery Management Plans
	MD Natural Resources Code § 4-1014 Oyster Sanctuaries
Virginia	Code of Virginia Title 28.2, Chapter 6
	Code of Virginia Title 28.2, Chapter 12
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Clean Water Act Section 117, 33 U.S. Code § 1267
	Clean Water Act Section 303, 33 U.S. Code § 1313
NOAA	NOAA Hydrographic Services ACT 15.U.S. Code §1511d-Chesapeake Bay Office
	Magnuson-Stevens Fishery Conservation and Management Act
USACE	Section 704(b), Water Resources Development Act of 1986, as amended
	Section 510, Water Resources Development Act of 1996, as amended
US FWS	Fish and Wildlife Coordination Act - Codified under 16 U.S.C. §§ 661–667e
	Clean Water Act - Codified under 33 U.S.C. § 1344

Outcome: Stream Health	
Signatory	**Statutory Authority**
District of Columbia	D.C. Law 5-188; D.C. Official Code § 8-103.01 et seq.) The Water Pollution Control Act of 1984, effective March 16, 1985, as amended
Maryland	COMAR 27.01.09.03 Endangered Species
	MD Environment Code § 15-11 Abandoned Mine Reclamation
New York	ARTICLE 17 Water Pollution Control Environmental Conservation (ENV) CHAPTER 43-B | NY State Senate
	ARTICLE 15 Water Resources Environmental Conservation (ENV) CHAPTER 43-B | NY State Senate
Pennsylvania	PA Clean Streams Law
	Federal Water Pollution Control Act (Clean Water Act)

Virginia	29.1-103, Code of Virginia
	10.1, Chapter 2, Article 3, Code of Virginia
West Virginia	West Virginia, volunteer water monitoring and community-based watershed protection efforts like "Save Our Streams" operate in connection with frameworks like the **West Virginia Stream Partners Program** found in West Virginia Code §20-13, while direct natural stream preservation is covered under the **Natural Streams Preservation Act** in West Virginia Code §22-13. [1, 2]
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Clean Water Act Section 319, 33 U.S. Code § 1329
	Clean Water Act Section 601, 33 U.S. Code § 1381
	Clean Water Act Section 221, 33 U.S. Code § 1301
USACE	Section 510, Water Resources Development Act of 1996, as amended
	Section 206, Water Resources Development Act of 1996, as amended
US FWS	Anadromous Fish Conservation Act - Codified under 16 U.S.C. §§ 757a–757g.
	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee

Outcome: Submerged Aquatic Vegetation	
Signatory	**Statutory Authority**
Delaware	7 DE Admin. Code § 7401-2.0, § 7401-3.0, and § 7401-4.5.6 – Surface Water Quality Standards - Establishes a Shallow-Water Bay Grass Designated Use and associated water quality criteria for portions of the Nanticoke River and Broad Creek.
District of Columbia	D.C. Law 21-282. Fisheries and Wildlife Omnibus Amendment Act of 2016. § 8–1731.02. Critical areas.
Maryland	MD Natural Resources Code § 4-213 Submerged Aquatic Vegetation
	MD Natural Resources Code § 4-1006.1 SAV Surveys
	MD Natural Resources Code § 4-11A.01 SAV Protection Zones
Virginia	28.2-1204.1, Code of Virginia
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Clean Water Act Section 117, 33 U.S. Code § 1267
	Clean Water Act Section 319, 33 U.S. Code § 1329
	Clean Water Act Section 601, 33 U.S. Code § 1381
USACE	Section 510, Water Resources Development Act of 1996, as amended
US FWS	Migratory Bird Treaty Act - Codified under 16 U.S.C. §§ 703–712.

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	Anadromous Fish Conservation Act - Codified under 16 U.S.C. §§ 757a–757g.

Outcome: Wetlands	
Signatory	**Statutory Authority**
Delaware	Public Law 115-334 (the Agriculture Improvement Act of 2018) https://www.nrcs.usda.gov/state-offices/delaware https://www.congress.gov/bill/115th-congress/house-bill/2
District of Columbia	D.C. Law 5-188; D.C. Official Code § 8-103.01 et seq.) The Water Pollution Control Act of 1984, effective March 16, 1985, as amended
	D.C. Law 21-282. Fisheries and Wildlife Omnibus Amendment Act of 2016. § 8–1731.02. Critical areas.
Maryland	MD Environment Code § 5-901-909 Nontidal Wetlands
	MD Environment Code § 16 Wetlands & Riparian Rights
	MD Natural Resources Article 8-18 Critical Area Protection Program
	COMAR 08.03.08 Threatened & Endangered Species
New York	ARTICLE 24 Freshwater Wetlands Environmental Conservation (ENV) CHAPTER 43-B | NY State Senate
Pennsylvania	25 Pa. Code Chapter 105. Dam Safety And Waterway Management
	Dam Safety and Encroachments Act
	Flood Plain Management Act
Virginia	29.1-103, 29.1-339.2 Code of Virginia
	28.2-104.1 and 28.2-1300 et seq. Code of Virginia
West Virginia	**W. Va. Code § 22-11-3** (Water Pollution Control Act) and **W. Va. Code § 22-26-2** (Water Resources Protection Act), which explicitly define wetlands as part of the state's protected "waters". [1, 2]
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Clean Water Act Section 104(b)(3), 33 U.S. Code § 1254
	Clean Water Act Section 303, 33 U.S. Code § 1313
USACE	Section 510, Water Resources Development Act of 1996, as amended
	Section 537, Water Resources Development Act of 1996, as amended (Poplar Island)
	Section 7002(5)(1), Water Resources Development Act of 2014 (Mid-Chesapeake Bay Islands)
US FWS	Chesapeake WILD Act - 16 U.S.C. § 3703 note; enacted via Title I, Section 111 of the America's Conservation Enhancement (ACE) Act (Public Law No: 116-188)
	Migratory Bird Treaty Act - Codified under 16 U.S.C. §§ 703–712.

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	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee

Clean Water Goal 2

Outcome: Reducing Excess Nitrogen, Phosphorous & Sediment	
Signatory	**Statutory Authority**
Delaware	Delaware Code, Chapter 22, Section 2220, Title 3
District of Columbia	D.C. Law 5-188; D.C. Official Code § 8-103.01 et seq.) The Water Pollution Control Act of 1984, effective March 16, 1985, as amended
	MS4 Permit; NPDES Permit No. DC0000221; Authorization to discharge under the National Pollutant Discharge Elimination System, Municipal Separate Storm Sewer System Permit; In compliance with the provisions of the Clean Water Act, 33 U.S.C. §§ 1251 et seq.
Maryland	COMAR 8.2A.02 Bays Trust Fund
	COMAR 26.03.13 Bay Restoration Fund
	MD Agriculture Code §8.701-706 Soil Conservation Pollution Control
New York	ARTICLE 58 Implementation of the "Clean Water, Clean Air, and Green Jobs Environmental Bond Act of 2022 " Environmental Conservation (ENV) CHAPTER 43-B | NY State Senate
	ARTICLE 17 Water Pollution Control Environmental Conservation (ENV) CHAPTER 43-B | NY State Senate
	ARTICLE 15 Water Resources Environmental Conservation (ENV) CHAPTER 43-B | NY State Senate
Pennsylvania	PA Clean Streams Law
	25 Pa. Code Chapter 102. Erosion And Sediment Control
	25 Pa. Code Subchapter D. Nutrient Management
West Virginia	The Water Pollution Control Act (NPDES Permits) - Statute: WV Code § 22-11-1 et seq. (Specifically WV Code § 22-11-4 and § 22-11-8)
	Infrastructure & Wastewater Nutrient Controls - Statute: WV Code § 22-28-5
	The Chesapeake Bay Restoration Initiative - Statute: WV Code § 22-11-30 [1]
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Clean Water Act Section 117, 33 U.S. Code § 1267
	Clean Water Act Section 106, 33 U.S. Code § 1256
	Clean Water Act Section 420 33 U.S. Code § 1342

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USACE	Section 313, Water Resources Development Act of 1992, as amended (Environmental Infrastructure)
	Section 219, Water Resources Development Act of 1992, as amended (Environmental Infrastructure)
US FWS	Anadromous Fish Conservation Act - Codified under 16 U.S.C. §§ 757a–757g.
	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee
	Clean Water Act - Codified under 33 U.S.C. § 1344
DOW	Clean Water Act – As per CWA 33 U.S.C § 1267, federal agencies that own or operate facilities or own property in the Chesapeake Bay watershed are required to participate in subwatershed planning and restoration and comply with the Chesapeake Bay Agreement.
	Clean Water Act, National Pollutant Discharge Elimination System (NPDES) permits may include municipal separate storm sewer system (MS4) permits, industrial stormwater permits, construction stormwater permits, and/or wastewater permits.

Outcome: Toxic & Emerging Contaminants	
Signatory	**Statutory Authority**
Delaware	7 DE Admin. Code Chapter 60
	7 DE Admin. Code Chapter 91
District of Columbia	D.C. Law 18-55. Anacostia River Clean Up and Protection Act of 2009.
	D.C. Law 23-211. Zero Waste Omnibus Amendment Act of 2020
	D.C. Law 5-188; D.C. Official Code § 8-103.01 et seq.) The Water Pollution Control Act of 1984, effective March 16, 1985, as amended
Maryland	COMAR 26.08.02.01 B.(3) Water Protection for Designated Uses
	COMAR 26.08.02.01 B. (1)(a) Surface Water Quality Standards
New York	SECTION 1112 Emerging contaminant monitoring Public Health (PBH) CHAPTER 45, ARTICLE 11, TITLE 1 | NY State Senate
	ARTICLE 17 Water Pollution Control Environmental Conservation (ENV) CHAPTER 43-B | NY State Senate
Pennsylvania	PA Clean Streams Law
West Virginia	W. Va. Code §22-11 (Water Pollution Control Act): Outlines the state's public policy to maintain water safety. It mandates permits for industrial facilities discharging wastewater to ensure they do not introduce dangerous levels of toxic chemical compounds into state rivers and streams
	W. Va. Code §22-12-4 (Groundwater Protection Act): Authorizes the WVDEP to set groundwater purity standards. It dictates that state

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	groundwater contaminant limits must be at least as stringent as those adopted by the federal EPA
	W. Va. Code §16-1-9A (Public Water Supply Protection): Requires the state to establish maximum contaminant levels (MCLs) and treatment techniques to prevent adverse health effects from contaminated public drinking water. [1, 2]
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Safe Drinking Water Act Section 1459A, 42 U.S. Code § 300j-19a
	Clean Water Act Section 601, 33 U.S. Code § 1381
	Comprehensive Environmental Response, Compensation, and Liability Act Section 104(k), 42 U.S. Code § 9604(k)
US FWS	Clean Water Act - Codified under 33 U.S.C. § 1344
	Fish and Wildlife Coordination Act - Codified under 16 U.S.C. §§ 661–667e

Outcome: Water Quality, Standards Attainment & Monitoring	
Signatory	**Statutory Authority**
Delaware	NUTRIENT MANAGEMENT Delaware Code Title 3 Chapter 22
	7 DE Admin. Code 7401
	7 DE Admin. Code 7101
District of Columbia	D.C. Law 5-188; D.C. Official Code § 8-103.01 et seq.) The Water Pollution Control Act of 1984, effective March 16, 1985, as amended
	MS4 Permit; NPDES Permit No. DC0000221; Authorization to discharge under the National Pollutant Discharge Elimination System, Municipal Separate Storm Sewer System Permit; In compliance with the provisions of the Clean Water Act, 33 U.S.C. §§ 1251 et seq.
Maryland	COMAR 26.08.02 Surface Water Quality Protection
	COMAR 26.08.02.01 B.(3) and 26.08.02.03 B Water Quality Criteria
New York	6 CRR-NY Part 703 Surface Water and Groundwater Quality Standards and Groundwater Effluent limitations. State Compilation of Codes, Rules and Regulations of The State of New York Title 6. Department of Environmental Conservation Chapter X. Division of Water Resources Subchapter A. General Article 2. Classifications and Standards of Quality and Purity
	ARTICLE 17 Water Pollution Control Environmental Conservation (ENV) CHAPTER 43-B | NY State Senate
Pennsylvania	PA Clean Streams Law
Virginia	§ 62.1-44.19:5. Water quality monitoring and reporting.
West Virginia	W. Va. Code § 22-11-7b: This is the core statute governing water quality standards. It directs the Secretary of the Department of Environmental

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	Protection (DEP) to select, maintain, and modify water quality standards. It outlines antidegradation procedures and establishes the specific evaluation methods to determine compliance with narrative and biologic components of state waters
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Clean Water Act Section 106, 33 U.S. Code § 1256
	Clean Water Act Section 117, 33 U.S. Code § 1267
	Clean Water Act Section 319, 33 U.S. Code § 1329
NOAA	NOAA Hydrographic Services ACT 15.U.S. Code §1511d-Chesapeake Bay Office
USACE	Section 313, Water Resources Development Act of 1992, as amended
	Section 219, Water Resources Development Act of 1992, as amended
US FWS	Anadromous Fish Conservation Act - Codified under 16 U.S.C. §§ 757a–757g.
	Clean Water Act - Codified under 33 U.S.C. § 1344.
	Fish and Wildlife Coordination Act - Codified under 16 U.S.C. §§ 661–667e

Healthy Landscapes Goal 3

Outcome: Adapting to Changing Environmental Conditions	
Signatory	**Statutory Authority**
Delaware	Delaware's Climate Action Plan (2025) - https://documents.dnrec.delaware.gov/energy/Climate-Plan/2025-Delaware-Climate-Action-Plan.pdf
District of Columbia	D.C. Law 16-234. Green Building Act of 2006.
	D.C. Law 22-257. CleanEnergy DC Omnibus Amendment Act of 2018.
Maryland	HB0254 Resilience Through Restoration Establishment
New York	ARTICLE 58 Implementation of the "Clean Water, Clean Air, and Green Jobs Environmental Bond Act of 2022 " Environmental Conservation (ENV) CHAPTER 43-B | NY State Senate
Pennsylvania	Stormwater Management Act
	Floodplain Management Act
	Alternative Energy Portfolio Standards Act, 2004 (Act 213) and 2007 (Act 35)
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Clean Air Act Section 202, 42 U.S. Code § 7521
	Clean Water Act Section 601, 33 U.S. Code § 1381

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	Clean Water Act Section 319, 33 U.S. Code § 1329
NOAA	NOAA Coastal Zone Management Act of 1972 (CZMA) (16 U.S.C. §§ 1451–1464)
US FWS	Anadromous Fish Conservation Act - Codified under 16 U.S.C. §§ 757a–757g.
	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee

Outcome: Healthy Forests & Trees	
Signatory	**Statutory Authority**
Delaware	State Forestry (Title 3, Chapter 10)
	Delaware Agricultural Land Preservation Act (Title 3, Chapter 9, Subchapter V)
District of Columbia	D.C. Law 24-152. Urban Forest Preservation Authority Amendment Act of 2022.
Maryland	Natural Resources Code §5–1607 Forestry
	MD Natural Resources Code §8–1801 Resource Protection Program
	MD Agriculture Code § 2-1901 Healthy Soils Program
New York	ARTICLE 58 Implementation of the "Clean Water, Clean Air, and Green Jobs Environmental Bond Act of 2022 " Environmental Conservation (ENV) CHAPTER 43-B | NY State Senate
	Tree Conservation and Urban Forestry Environmental Conservation (ENV) CHAPTER 43-B, ARTICLE 53 | NY State Senate
	SECTION 480-A Taxation of forest land Real Property Tax (RPT) CHAPTER 50-A, ARTICLE 4, TITLE 2 | NY State Senate
Pennsylvania	Conservation and Natural Resources Act (Act 18 of 1995)
	Keystone Tree Fund
West Virginia	W. Va. Code § 19-1B (Logging Sediment Control Act): Governs commercial timber harvesting, operator licensing (§ 19-1B-4), logger certification (§ 19-1B-7), and sediment/erosion control best management practices (§ 19-1B-12a)
	W. Va. Code § 11-1C-11 (Managed Timberland Program): Focuses on property tax classification and incentives for private landowners who practice planned, multi-purpose forest management and sustainable timber production
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Clean Water Act Section 117, 33 U.S. Code § 1267
	Clean Water Act Section 319, 33 U.S. Code § 1329

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US FWS	Chesapeake WILD Act - 16 U.S.C. § 3703 note; enacted via Title I, Section 111 of the America's Conservation Enhancement (ACE) Act (Public Law No: 116-188)
	Migratory Bird Treaty Act - Codified under 16 U.S.C. §§ 703–712.
	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee
USFS	Cooperative Forestry Assistance Act of 1978 (16 U.S.C. Chapter 41)

Outcome: Land Use Planning & Decision Support	
Signatory	**Statutory Authority**
District of Columbia	Zoning Act of 1938, approved June 20, 1938 (52 Stat. 797; D.C. Official Code § 6-641.01 (2008 Repl.); Green Area Ratio 11-C DCMR § 600
	D.C. Law 24-20. Comprehensive Plan Amendment Act of 2021
Maryland	COMAR 27 Critical Area Commission
	MD Public Safety Code §14–1201 - §14–1204 Office of Resilience
Pennsylvania	PA Clean Streams Law
	25 Pa. Code Chapter 102. Erosion And Sediment Control
	PA ACRE Law (Act 38)
	Pennsylvania Municipalities Planning Code
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Clean Water Act Section 117, 33 U.S. Code § 1267
USACE	Section 22, Water Resources Development Act of 1974, as amended (Planning Assistance to States)
	Section 206, Flood Control Act of 1960, as amended (Floodplain Management Services)
US FWS	Fish and Wildlife Coordination Act - Codified under 16 U.S.C. §§ 661–667e
	Clean Water Act - Codified under 33 U.S.C. § 1344

Outcome: Protected Lands	
Signatory	**Statutory Authority**
Delaware	Delaware Land Protection Act (creates the Open Space Program): https://delcode.delaware.gov/title7/c075/index.html
District of Columbia	D.C. Law 24-20. Comprehensive Plan Amendment Act of 2021.
	D.C. Law 24-336. Office of District Waterways Management Establishment Act of 2022
	Zoning Act of 1938, approved June 20, 1938 (52 Stat. 797; D.C. Official Code § 6-641.01 (2008 Repl.)
Maryland	CH546 Maryland the Beautiful Act
	MD Natural Resources Code § 5-9 Program Open Space

	COMAR 15.15 Maryland Agricultural Land Preservation Program
New York	ARTICLE 58 Implementation of the "Clean Water, Clean Air, and Green Jobs Environmental Bond Act of 2022 " Environmental Conservation (ENV) CHAPTER 43-B | NY State Senate
	SECTION 49-0113 Thirty by thirty conservation goal Environmental Conservation (ENV) CHAPTER 43-B, ARTICLE 49, TITLE 1 | NY State Senate
	TITLE 3 Open Space Land Conservation Projects Environmental Conservation (ENV) CHAPTER 43-B, ARTICLE 54 | NY State Senate
Pennsylvania	Agricultural Area Security Law (Act 43 of 1981 and Act 149 of 1988)
	Conservation and Natural Resources Act (Act 18 of 1995)
West Virginia	West Virginia Code Chapter 20 (Natural Resources): Governs the West Virginia Division of Natural Resources (WVDNR), covering the protection, development, and enjoyment of state parks, wildlife areas, public lands, and natural habitats
	West Virginia Code §8A-12-1 (Farmland Protection Programs): Focuses on protecting agricultural land and woodland as open-space land, controlling urban expansion, and establishing farmland protection boards
	West Virginia Code §20-12-2 (Conservation and Preservation Easements): Recognizes the public benefit of conservation easements to protect natural, historic, agricultural, and scenic resources
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Clean Water Act Section 319, 33 U.S. Code § 1329
	Clean Water Act Section 601, 33 U.S. Code § 1381
US FWS	Chesapeake WILD Act - 16 U.S.C. § 3703 note; enacted via Title I, Section 111 of the America's Conservation Enhancement (ACE) Act (Public Law No: 116-188)
	Migratory Bird Treaty Act - Codified under 16 U.S.C. §§ 703–712.
	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee

Engaged Communities Goal 4

Outcome: Local Government Leadership	
Signatory	**Statutory Authority**
Maryland	COMAR 26.03.13 Bay Restoration Fund
	COMAR 8.2A.02 Bays Trust Fund
Pennsylvania	Pennsylvania Constitution, Article I, Section 27 (Environmental Rights Amendment)

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	Pennsylvania Municipalities Planning Code (Act 247 of 1968)
	Pennsylvania Clean Streams Law (Act 394 of 1937)
Virginia	VA code § 62.1-44.15:67
	VA code § 62.1-44.15:75
	VA code § 62.1-44.39
	VA code § 15.2-1804.1
	VA code § 29.1-103.8
	VA code § 10.1-104.6.
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Clean Water Act Section 117, 33 U.S. Code § 1267
	Clean Water Act Section 319, 33 U.S. Code § 1329
US FWS	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee
	Fish and Wildlife Coordination Act - Codified under 16 U.S.C. §§ 661–667e

Outcome: Public Access	
Signatory	**Statutory Authority**
Delaware	Delaware Land Protection Act (7 Del. Code, Chapter 75).
District of Columbia	D.C. Law 24-20. Comprehensive Plan Amendment Act of 2021.
	D.C. Law 19-192. Anacostia Waterfront Environmental Standards Amendment Act of 2012.
	D.C. Law 24-336. Office of District Waterways Management Establishment Act of 2022.
Maryland	MD Natural Resources Code § 5-9 Program Open Space
	MD Natural Resources Code § 8-707 Waterway Improvement Fund
New York	Executive Law, article 15
Pennsylvania	Pennsylvania Constitution, Article I, Section 27 (Environmental Rights Amendment)
	Conservation and Natural Resources Act (Act 18 of 1995)
	Pennsylvania Municipalities Planning Code (Act 247 of 1968)
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
US FWS	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee
	Fish and Wildlife Coordination Act - Codified under 16 U.S.C. §§ 661–667e
	Clean Water Act - Codified under 33 U.S.C. § 1344

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Outcome: School District Environmental Literacy Planning	
Signatory	**Statutory Authority**
District of Columbia	DC Healthy Schools Act: Local Wellness Policies
	DC Official Code § 38–826.01(b)(2)(A): Establish goals for improving the environmental sustainability of schools.
	DC Official Code § 38–826.01(b)(2)(D): Establish goals for developing and implementing an Environmental Literacy Program.
Pennsylvania	Environmental Education Act (Act 24 of 1993)
	Public School Code of 1949
	22 Pa. Code Chapter 4 Academic Standards and Assessment (STEELS Standards)
Maryland	COMAR 01.01.2024.15 Maryland Outdoor Learning Partnership
	COMAR 13A.04.17.01 Environmental Literacy Programs
	SB0383 Maryland Association for Environmental & Outdoor Education
Virginia	VA code § 15.2-1804.1
	VA code § 29.1-103.8
	VA code § 10.1-104.6.
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
NOAA	33 U.S.C. § 893a(a),NOAA Ocean and Atmospheric Science Education Programs
US FWS	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee
	Fish and Wildlife Coordination Act - Codified under 16 U.S.C. §§ 661–667e
	Clean Water Act - Codified under 33 U.S.C. § 1344

Outcome: Stewardship	
Signatory	**Statutory Authority**
District of Columbia	The Water Pollution Control Act of 1984, effective March 16, 1985, as amended, (D.C. Law 5-188; D.C. Official Code § 8-103.01 et seq.) and Water Quality Research Grant Regulations of 1988
	D.C. Law 18-55. Anacostia River Clean Up and Protection Act of 2009
Maryland	COMAR 01.01.2024.15 Maryland Outdoor Learning Partnership
	COMAR 13A.04.17.01 Environmental Literacy Programs
Pennsylvania	Pennsylvania Constitution, Article I, Section 27 (Environmental Rights Amendment)
	Pennsylvania Clean Streams Law (Act 394 of 1937)
	Conservation District Law (Act 217 of 1945)

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West Virginia	West Virginia Code §31-21-4 outlines the mission to assist the Department of Environmental Protection (DEP) with a voluntary land stewardship program. [1]
	Voluntary Land Stewardship Program: West Virginia Code §31-21-7 allows site owners and remediation parties to enroll properties for long-term monitoring and environmental oversight
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
EPA	Clean Water Act Section 117, 33 U.S. Code § 1267
US FWS	Chesapeake WILD Act - 16 U.S.C. § 3703 note; enacted via Title I, Section 111 of the America's Conservation Enhancement (ACE) Act (Public Law No: 116-188)
	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee

Outcome: Student Environmental Literacy Experiences	
Signatory	**Statutory Authority**
Delaware	14 DE Admin. Code 501: Established Next Generation Science Standards (NGSS) as the adopted Content Standards in science.
	14 DE Admin. Code 503: Instructional programming aligned to NGSS (state adopted standards) in which all public school students in each grade K to 8 shall be enrolled in a science program that demonstrates alignment to the Department of Education's adopted science content standards, and all public school students in grades 9 to 12 shall complete the credits in science necessary to graduate from high school through courses that demonstrate alignment to the Department of Education's adopted science content standards.
District of Columbia	DC Healthy Schools Act: Environmental Literacy Program
	DC Official Code § 38-821.01(a): An Environmental Literacy Program is established within the Office of the State Superintendent of Education.
Maryland	COMAR 01.01.2024.15 Maryland Outdoor Learning Partnership
	COMAR 13A.04.16.02 Environmental Education
	COMAR 13A.03.02.03 Graduation Requirements
Pennsylvania	Environmental Education Act (Act 24 of 1993)
	Conservation and Natural Resources Act (Act 18 of 1995), Section 311 Environmental Education
	Smith-Lever Act of 1914 (7 U.S.C. §§ 341-349)
Virginia	8VAC2for AWS S0-132-70
	8VAC20-132-51
	Va. Code § 30-240
	MD Natural Resources Code §8-301

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Chesapeake Bay Commission	1985, June 25, P.L. 64, No. 25
NOAA	33 U.S.C. § 893a(a),NOAA Ocean and Atmospheric Science Education Programs
US FWS	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee
	Clean Water Act - Codified under 33 U.S.C. § 1344

Outcome: Workforce	
Signatory	**Statutory Authority**
District of Columbia	Subchapter II. Programs for Youth Employment§§ 32.342 – 32-347
Maryland	COMAR 8.2A.02 Bays Trust Fund
	MD Natural Resources Code § 21-209 Career & Technical Education Committee
New York	ARTICLE 58 Implementation of the "Clean Water, Clean Air, and Green Jobs Environmental Bond Act of 2022 " Environmental Conservation (ENV) CHAPTER 43-B | NY State Senate
Pennsylvania	Pennsylvania Workforce Innovation and Opportunity Act (WIOA) Combined State Plan
	Conservation District Law (Act 217 of 1945)
	Smith-Lever Act of 1914 (7 U.S.C. §§ 341-349)
	Water and Wastewater Systems Operators Certification Act
Virginia	Code of Virginia § 2.2-2037 – Powers and duties of the Department of Workforce Development and Advancement
	Code of Virginia § 2.2-2043 through 2.2-2053 – Registered Apprenticeships Authority
West Virginia	State Workforce Development Board & "High-Paying" Green Careers Statute: WV Code §5B-2B-3 and §5B-2B-4
Chesapeake Bay Commission	Va. Code § 30-240
	MD Natural Resources Code §8-301
	1985, June 25, P.L. 64, No. 25
NOAA	33 U.S.C. § 893a(a),NOAA Ocean and Atmospheric Science Education Programs
US FWS	National Wildlife Refuge System Improvement Act - Codified under 16 U.S.C. §§ 668dd–668ee
	Clean Water Act - Codified under 33 U.S.C. § 1344

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Additional Statutory Authority Submissions

The following submissions were received from federal agencies but could not be sorted by outcome.

U.S. Geological Survey

- 16 U.S.C. 661 et seq. The Fish and Wildlife Coordination Act of 1934 authorizes the Secretary of the Interior to prepare plans to protect wildlife resources, conduct surveys on public lands, and accept funds or lands for related purposes; authorize the investigation and reporting of proposed federal actions that affect the development, protection, rearing, and stocking of all species of wildlife and their habitat; and conduct actions to minimize impacts on fish and wildlife resources. The USGS Ecosystems program area conducts studies that address these authorities.
- 16 U.S.C. 715. The Migratory Bird Conservation Act of 1900 establishes the Migratory Bird Conservation Commission and authorizes the Secretary of the Interior to conduct investigations and publish documents related to North American birds. USGS conducts several studies on migratory birds through its research centers.
- 16 U.S.C. 742(a) et seq. The Fish and Wildlife Act of 1956 authorizes the Secretary of the Interior to conduct investigations, prepare and disseminate information, and make periodic reports to the public regarding the availability and abundance and the biological requirements of fish and wildlife resources. The act also authorizes the Secretary to provide a comprehensive national fish and wildlife policy and to develop, manage, and conserve fisheries and wildlife resources. The USGS addresses all of these requirements through activities in its Ecosystem program area.
- 16 U.S.C. 1451 et seq. The Coastal Zone Management Act of 1976 provides that each department, agency, and instrumentality of the Executive Branch of the federal government assist the Secretary of Commerce in carrying out research and technical assistance for coastal zone management. The USGS coordinates with states and other federal agencies in conducting studies that address coastal management.
- 16 U.S.C. 4701 et seq. The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 establishes a federal program to prevent introduction and control the spread of introduced aquatic nuisance species. USGS conducts studies that characterize invasive species, their spread, and potential control.

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Appendix C. Participation in Chesapeake Bay Watershed Agreement Management Strategies

The following partners participated in the creation of each respective outcome's Management Strategies and/or expressed their intention to collaborate on implementation. Per the Chesapeake Bay Watershed Agreement, "participation in developing Management Strategies or in the achievement of Outcomes varies by signatory based on differing priorities across the watershed. This participation may include commitments such as sharing knowledge, data or information, educating the public, working on future legislation and developing or implementing programs or verified practices" (2025). Partners may join implementation efforts at any time. Partners also recognize that participation is voluntary. As such, on a triennial basis, signatory delegations and federal agencies will provide a list of outcomes that they commit to participate in and implement

Chesapeake Bay Watershed Agreement Outcomes	Participating Jurisdiction/CBC	Participating Federal Agency (Bold = lead federal agency)
THRIVING HABITAT AND WILDLIFE GOAL		
Blue Crabs		
Brook Trout		
Fish Habitat		
Fish Passage		
Oysters		
Stream Health		
Submerged Aquatic Vegetation		
Wetlands		
CLEAN WATER GOAL		
Reducing Excess Nit., Phos. & Sed.		
Toxic & Emerging Contaminants		
Water Quality SAM		
HEALTHY LANDSCAPES GOAL		
Adpt. to Changing Envi. Conditions		
Healthy Forests and Trees		
Land Use Planning & Decision Sup.		
Protected Lands		
ENGAGED COMMUNITIES GOAL		
Local Government Leadership		
Public Access		
School District Envi. Lit. Planning		
Stewardship		
Student Envi. Literacy Experiences		
Workforce		

Information due on November 20th