



# State of the Chesapeake Bay Program

*Report to the Chesapeake Bay  
Program Executive Council*

**June 2017**

# Executive Summary

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The Chesapeake Bay Program partnership is a unique and regional collaboration that brings together leaders and experts from a vast range of agencies and organizations. Partners work through Goal Implementation Teams (GIT), Workgroups and Advisory Committees to collaborate, share information and set goals. Following the adoption of the 2014 *Chesapeake Bay Watershed Agreement* (Agreement), the partners crafted Management Strategies, and subsequently, work plans for the outcomes included within the Agreement. This Executive Summary is a companion to the State of the Chesapeake Bay Report (Report), a document which fulfills the obligation of the Principals' Staff Committee (PSC) to the Executive Council (EC), noted in the Agreement, to "report on implementation of Management Strategies every two years" after the adoption of these strategies in 2015.

The Report provides an overview of the state of the Chesapeake Bay Program in several areas:

- our progress toward our outcomes, as demonstrated by our indicators;
- our continued and ongoing pursuit of a more collaborative and inclusive culture;
- our construction of a new biennial Strategy Review System (SRS) to examine progress toward our commitments, considering new information and adjusting as necessary; and
- our discussions as a partnership at a two day kick-off meeting of this system in February 2017.

The Chesapeake Bay Program's biennial SRS is a two-year process that will support our Adaptive Management Decision Framework and improve our effectiveness in achieving the Goals and Outcomes of the Agreement. During this process, the partnership will review its progress toward the Agreement, identify the management approaches and actions that are or are not working; consider scientific, fiscal and policy developments; and adjust our Management Strategies and work plans as needed. The system is not intended to focus on where we are falling short, but on how we can work together and support each other to improve our collective successes.

The SRS begins with a two day meeting designed to provide a broad review of where and why we have and have not made progress toward the Agreement over the previous two years, and identify issues and developments in the scientific, fiscal and policy fields that could impact Goal and Outcome achievement.

Issues identified during this two day meeting will inform subsequent and more detailed quarterly progress meetings, in which the Management Board will review progress toward individual outcomes, apply new opportunities and understandings, identify changes to management approaches and/or actions, and, where appropriate, offer input to support work plan revisions.

The Chesapeake Bay Program uses a suite of environmental health, restoration and stewardship indicators to track progress toward the Agreement. These indicators support the partnership's adaptive management-based decision-making process and highlight the critical work that is furthering the commitments we have made. The Report not only highlights the co-benefits and connections that exist between these indicators, but also provides an overview of the factors that influence their progress. A brief summary of progress is included below.

In terms of restoration, the Chesapeake Bay is at a critical tipping point. The watershed is resilient, vibrant and healthy in many ways; but it is also out of balance in others. A brief summary of our indicators is below; celebrate the vibrancy we are witnessing while continuing to address the challenges of the ecosystem.

**Protected Lands:** Data collected between 2015 and 2016 show that, since 2010, approximately one million acres of land in the Chesapeake Bay watershed have been permanently protected from development, marking a 50 percent achievement of the goal to protect an additional two million acres of land from development by 2025. This brings the total amount of protected lands in the watershed to 8.8 million acres.

**Fish Passage:** Between 2012 and 2015, 817 additional miles of fish migration routes were opened, including almost 300 miles in Virginia and more than 500 miles in Pennsylvania. This marks an 82 percent achievement of the goal to open 1,000 stream miles to fish passage by 2025.

**Underwater Grasses:** In 2016, preliminary data indicates an estimated 97,433 acres of underwater grasses in the Chesapeake Bay. This surpasses the 2017 restoration target and marks a 53 percent achievement of the 2025 goal to reach and sustain 185,000 acres of underwater grasses across the Chesapeake Bay. The diversity of bay grass species has also increased, contributing to the resilience and rebuilding of the ecosystem.

**Blue Crab Abundance:** Between 2016 and 2017, the abundance of adult (age 1 +) female blue crabs in the Chesapeake Bay increased 31 percent from 194 million to 254 million. This number is above the 70 million threshold and the 215 target, marking the highest amount ever recorded by the Bay-wide Blue Crab Winter Dredge Survey.

**Oyster Restoration:** Six out of ten Chesapeake Bay tidal tributaries have been selected for oyster restoration. Each of these sites is at different levels of progress: in Maryland, 564 acres of oyster reefs are considered "complete"; in Virginia, 158 acres are considered the same. As of April 2017, about 380 acres of oyster reefs remain to be restored.



**Water Quality Standards:** During the 2013 to 2015 assessment period, an estimated 37 percent of the Chesapeake Bay and its tidal tributaries met water quality standards. This marks an almost 10 percent increase from the previous assessment period, but is far below the 100 percent attainment that is needed for clean water and a stable aquatic habitat.

**Nitrogen, Phosphorus and Sediment Loads:** From October 2014 to September 2015, approximately 217 million pounds of nitrogen, 9.9 million pounds of phosphorus and 2.9 billion pounds of sediment reached the Chesapeake Bay: a 25 percent, 44 percent and 59 percent drop from the previous year, respectively. These estimates are based primarily on monitoring data from the Bay's major rivers and wastewater treatment facilities.

**Estimated Pollution Reduced:** Computer simulations show that pollution controls put into place in the Chesapeake Bay watershed between 2009 and 2015 lowered nitrogen loads by eight percent, phosphorous loads 20 percent and sediment loads seven percent. Experts attribute this drop to a number of factors, including the increased implementation of agricultural conservation practices; a drop in the atmospheric deposition of nitrogen; and significant reductions of nitrogen and phosphorous loads in the wastewater sector. For the first time – and ten years ahead of schedule – the Chesapeake Bay Program partnership as a whole met its 2025 pollution reduction targets for the wastewater sector. Pollution reducing practices are in place to achieve 31 percent of the nitrogen reductions, 81 percent of the phosphorus reductions and 48 percent of the sediment reductions necessary to attain application water quality standards.

**Forest Buffers:** Between 2014 and 2015, about 64 miles of forest buffers were planted along the rivers and streams in the Chesapeake Bay watershed. While this marks progress toward the outcome, it is significantly less than the progress made in the past years: at 836 miles below the 900-mile-per-year goal, it is the lowest restoration total in the past 16 years, meeting only seven percent of the 2025 goal.

**Public Access:** Between 2010 and 2016, over 130 public access sites were opened throughout the Chesapeake Bay watershed, making a 43 percent achievement of the goal to open 300 new sites by 2025. There are now 1,269 public access sites in the Chesapeake Bay watershed.

**Diversity:** In 2017, results of the first-ever Chesapeake Bay Program diversity profile were released. Almost 85 percent of respondents self-identified as white or Caucasian, while 13 percent identified as non-white or non-Caucasian. Of those respondents who

identified as white, about one third identified themselves as a member of Chesapeake Bay Program leadership, while one quarter identified themselves as non-white. Non-white respondents who identified themselves as Bay Program leadership comprise only three percent of total profile respondents.

**Sustainable Schools:** In 2015, 12 percent of public and charter schools in the Chesapeake Bay watershed – a total of 502 schools – were certified sustainable by the U.S. Green Ribbon Schools, Virginia Naturally Schools, Maryland Green Schools and National Wildlife Federation Eco-Schools USA programs.

**Wetlands:** Between 2010 and 2015, 7,623 acres of wetlands were created or re-established on agricultural grounds, marking a nine percent achievement of the 83,000 goal.

**Black Ducks:** According to the U.S. Fish and Wildlife Service's annual Mid-Winter Waterfowl Survey, an average of 51,332 black ducks were observed in the Chesapeake Bay watershed through 2013 and 2015. This marks a five percent increase from the average number of black ducks observed in the region between 2012 and 2014 and a 51 percent achievement of the 100,000 bird goal.

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## Introduction

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The Chesapeake Bay Program (CBP) partnership is a unique and regional collaboration that brings together leaders and experts from a vast range of agencies and organizations. Each CBP partner uses its own resources to implement Chesapeake Bay restoration and protection activities. Partners work through CBP's goal implementation teams, workgroups and committees to collaborate, share information, and set goals.

Following the adoption of the 2014 *Chesapeake Bay Watershed Agreement*, the partners crafted Management Strategies and, subsequently, work plans for the outcomes included in the Agreement. This document fulfills the obligation of the Principals' Staff Committee (PSC) to the Executive Council (EC), noted in the 2014 Agreement, to "report on implementation of Management Strategies every 2 years" after the adoption of these strategies in 2015. This report provides an overview of the state of the Chesapeake Bay Program in two primary areas: first, our progress toward our outcomes, as demonstrated by our indicators; and second, our continued and ongoing pursuit of a more collaborative and inclusive culture vis our implementation of a new "Biennial Strategy Review System" that examines progress toward our commitments, considers new information, and adjusts as necessary.

In recognition of the above two objectives, this report is organized in two major sections. First, the "This Is Progress" section demonstrates the enhanced resiliency of the watershed attributable to program efforts as well as the remaining challenges we face in implementing our restoration and protection work. This section also includes relevant updates from the partnership's "Goal Implementation Teams" – the six multi-partner teams that are the primary

facilitators of Outcome implementation. Second, the “Culture of Collaboration” section provides a summary of projects and efforts that reflect a shift in the Program’s approach to integrate collaboration into the fabric of the partnership. This includes a description of the new “Biennial Strategy Review System” (SRS) and a summary of the two day SRS kick-off meeting held February, 2017.





## This Is Progress.

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The Chesapeake Bay Program uses a suite of environmental health, restoration and stewardship indicators to track progress toward the [Chesapeake Bay Watershed Agreement](#). These indicators support the partnership’s adaptive management-based decision-making process and highlight the critical work that is furthering the commitments we have made. In addition to appearing in [Bay Barometer](#), our annual review of environmental health and restoration, these indicators are published on [ChesapeakeProgress](#), which was built to support federal, public and internal oversight of our work. Some of these indicators track the factors that influence our ability to achieve our goals. Others track whether we are putting our management approaches and actions in place. Still others track whether we are achieving the goals and outcomes that will support our vision of a sustainable watershed. It is important to note that we are making progress toward all of our outcomes—even those currently without performance indicators. In fact, important work is furthering our commitments at all levels of the partnership. More detailed information on this work is available on ChesapeakeProgress and will be included in the next report to the Chesapeake Executive Council, following the first full implementation the Biennial Strategy Review System.

The data and information that support our indicators are drawn from a range of trusted sources, including government agencies, academic institutions, nongovernmental organizations and direct demographic and behavior surveys. In some cases, this data and information dates back three decades, and in others, data collection began shortly before the *Chesapeake Bay Watershed Agreement* was signed. Using these indicators to take a high-level look at our progress is a critical piece of the Biennial Strategy Review System. Following are brief

summaries of progress toward our Watershed Agreement Outcomes, as based on those indicators and categorized into seven major themes.

## Healthy Watersheds Theme

Healthy watersheds bring resilience to the region in the form of clean water, critical habitat and social and economic benefits. Our watershed jurisdictions have set their own definitions of healthy waters and watersheds, and a map of state-identified healthy waters and watersheds is available. While the datasets behind this map may be subject to future revisions and updates, the Healthy Watersheds Goal Implementation Team has agreed that the 2015 datasets will serve as the baseline from which to assess watershed health and measure progress toward this outcome. New healthy waters and watersheds may be added in the future. The team is working to determine a method of evaluating and tracking these state-identified healthy waters and watersheds over time.

Healthy streams are essential for healthy watersheds. Over the last decade, thousands of samples have been collected to help us determine the health of these streams. In 2010, our indicator of stream health ranked 43 percent of streams in excellent, good or fair condition and 57 percent in poor or very poor condition. Experts are working to refine this indicator as a more precise measure of stream health and gather more recent data.

We safeguard streams and rivers by removing the dams, culverts and other barriers that inhibit their flow and by protecting the lands around them from development. Over the last six years, approximately 1,004,577 acres of land in the watershed have been permanently protected. This marks an achievement of 50 percent of our conservation goal and brings the total amount of protected land in the watershed to 8.8 million acres. We have also seen positive progress in our work to reopen historic fish migration routes in order to increase available habitat to migratory fish.



Over the last five years, 1,126 miles of streams have been opened to fish passage. This total includes 565 miles in Virginia and 538 miles in Pennsylvania, and surpasses the initial 1,000-mile goal. Partnership members are currently evaluating appropriate next steps, including possibly setting a new goal to further progress.

Environmentally sensitive brook trout are one of the migratory species named in our Fish Habitat outcome; therefore, continued use of available prioritization tools for fish passage will help us achieve our Brook Trout outcome. State and federal agencies, research institutions and non-governmental partners continue to identify and protect priority habitat, target stream

restoration and increase the watershed’s recently defined area of “wild brook trout only” habitat.

According to the Eastern Brook Trout Joint Venture (EBTJV), wild brook trout occupy 33,200 square kilometers of habitat in the watershed, including streams they share with brown and rainbow trout. There are 13,500 square kilometers of “wild brook trout only” streams, which is the baseline from which progress will be measured and which means 14,600 square kilometers serves as our restoration goal. The Bay Program is working to incorporate the EBTJV five-year brook trout census as a formal indicator of progress. As part of our work to restore additional fish habitat, the Fish Habitat Decision Support Tool was recently developed to provide access to data and results from multiple fish habitat assessments.

The tool helps resource managers identify restoration projects that will support aquatic species facing threats from climate change and development at multiple scales in multiple regions, including the Bay watershed. The Fish Habitat outcome targets those habitats that fish and shellfish use at critical points in their life histories.

## Aquatic Life Theme

Underwater grasses provide food and shelter to fish and wildlife, add oxygen to the water, absorb nutrient pollution and reduce shoreline erosion. In 2016, preliminary data indicates an estimated 97,433 acres of underwater grasses grew in the Chesapeake Bay. This surpasses our 2017 restoration target and marks a 53 percent achievement of our goal. Experts attribute this boost in bay grasses to a strong increase in the tidal freshwater and moderately salty regions of the Bay. Widgeon grass, in particular, expanded in the latter region, but because it is a “boom and bust” species whose abundance can rise and fall from year to year, a widgeon-dominant spike is not guaranteed to persist in future seasons.



If we see continued growth in these underwater grass beds, we should see improvements in the wider ecosystem and in the abundance of some fish and shellfish species. Blue crabs rely on bay grasses for nursery habitat and refuge from predators. Between 2016 and 2017, as seagrasses were expanding, the abundance of adult female blue crabs in the Bay increased 31 percent from 192 million to 254 million. This number is above the 70 million threshold and the 215 million target, and marks the highest amount ever

recorded by the Bay-wide Blue Crab Winter Dredge Survey. The Bay Program also tracks harvest as a measure of progress toward the Blue Crab Management outcome. According to the Chesapeake Bay Stock Assessment Committee, an estimated 15 percent of the female blue



crab population was harvested in 2015. This is below the 34 percent overfishing threshold. An updated assessment is expected in 2017.

Like blue crabs, forage fish have complex relationships with living resources in the watershed. Recent research projects have explored the importance of forage species. In 2014, the Scientific, Technical Advisory Committee sponsored a forage workshop that produced a science-based list of the most important forage species in the Bay. The University of Maryland Center for Environmental Science assessed abundance trends and variability for several species from this list and developed nutritional profiles for key predators. An evaluation of the impact that environmental factors can have on forage populations and variability is expected in June of 2017. The Maryland Department of Natural Resources has also developed and published draft benchmarks of striped bass nutrition and forage availability.

We protect, restore and sustain aquatic living resources by improving water quality and managing our own land use, urban and suburban development, and harvest pressure. These same actions will help us restore native oyster reefs to tributaries in Maryland and Virginia. Six tributaries have been selected for oyster restoration, each at a different level of progress. In Maryland, 564 acres of oyster reefs are considered “complete”; in Virginia, 158 acres of oyster reefs are considered the same. Some of these reefs have undergone restoration as part of our efforts following the adoption of the Watershed Agreement, while others have undergone previous restoration work or already meet our criteria for a restored reef. As of April 2017, about 380 acres of oyster reefs remain to be restored. Restoration targets for the Piankatank and Lynnhaven are being finalized, and four more tributaries will be selected for restoration.

## Water Quality Theme

Strong fisheries and stable habitats can only exist if the Bay’s waters are clean. Clean water depends on our ability to curb nutrient pollution, sediment pollution and toxic contaminants.

Nutrient and sediment pollution can harm the Bay. Our most recent water quality monitoring data show both nutrient and sediment loads were below the 25-year average in 2015. Looking at the difference between the last two data points, between 2014 and 2015, nitrogen loads fell 25 percent; phosphorus loads fell 44 percent; and sediment loads fell 59 percent. Because a large portion of pollution loads enters the Bay from the rivers within its watershed, we track loads and trends at nine River Input Monitoring stations. In some cases, long-term pollution trends reflect our work to improve water quality: long-term trends in nitrogen are improving at six stations.





Long-term trends in phosphorus and sediment are more variable, and short-term trends show less improvement. Dry weather and below-average river flow played a big role in the pollution drop observed between 2014 and 2015. So, too, did local efforts to reduce pollution, which states report as part of our work to track progress toward the TMDL. Some of the most effective pollution-reducing work includes reductions of nutrients in the wastewater sector and the increased implementation of agricultural conservation practices. Our Watershed Model shows that pollution controls put in place over the last six years have lowered nitrogen loads eight percent, phosphorus loads 20 percent, and sediment loads seven percent compared to 2009 levels.



Not all pollution reducing practices are being put in place at the rate we may have anticipated. Forest buffers stabilize stream banks, prevent pollution from entering waterways and provide food and habitat to wildlife. Planting forest buffers is one of the most cost-effective best management practices in the region, but planting rates reached their lowest total of the last 16 years in 2015 and have only once in the past two decades met the 900-mile annual goal. Complex factors are at play, including a lack of coordination

among agencies and insufficient assistance for farmers and landowners. To meet these challenges, our partners are working to improve the coordination and delivery of forest buffer programs; align forest buffer programs with land management programs; and make existing forest buffer programs more appealing.

Just as best management practices are the foundation of pollution-free waterways, clean water is the foundation of a healthy Bay. Our most recent assessment of water quality—which examines dissolved oxygen, water clarity and chlorophyll *a* as a measure of algae growth—shows that 37 percent of the tidal Chesapeake met water quality standards in the last assessment period between 2013 and 2015. This is far below the 100 percent attainment needed for clean water and a stable aquatic habitat, but marks an improvement from the previous assessment period.

According to our most recent data, 74 percent of the tidal Chesapeake Bay is partially or fully impaired by toxic contaminants. Working with stakeholders, the Toxic Contaminants Workgroup has determined its research agenda should address the following: supplying information related to the safe consumption of fish and shellfish; understanding the influence of contaminants harming fish and shellfish; documenting the sources, occurrence and concentrations of these contaminants; assessing the relative risk of these contaminants and the mitigation options that could inform policies for their prevention; and gathering information on issues of emerging concern. Our baseline understanding of each of these issues differs.

## A Culture of Stewardship Theme

The long-term success of our restoration work will depend on the support of the people who call this watershed home. As individuals and organizations direct their time, talent and resources toward environmental restoration, our community of citizen stewards will become larger, broader and more diverse.

We know we can encourage the growth of citizen stewards by fostering personal connections with the natural world. Between 2010 and 2016, over 130 boat ramps, fishing piers, and other sites that give the public access to open space and waterways were opened. This marks a 43 percent achievement of the 300-site goal and bring the total number of access sites in the region to about 1,269. In terms of citizen stewardship, work is underway to develop a method of measuring change in public attitudes



associated with environmental stewardship, as well as environmentally friendly behavior and volunteerism. We expect to publish the first year of data for this index in summer 2017.

Building a more diverse community of citizen stewards begins with building a more diverse partnership. Increasing the inclusion of previously underrepresented communities in our work fosters creativity, drives innovation and ensures all people in the watershed can share in the vibrancy of the region. While age, gender, sexual orientation, religious faith, income level and other characteristics are important aspects of diversity, we have decided to focus first on expanding racial and ethnic diversity among the partnership. In 2016, the Alliance for the Chesapeake Bay distributed a diversity profile on behalf of the Chesapeake Bay Program to approximately 750 people who work for or with the partnership. More than 370 people responded. While some respondents declined to identify their race, almost 85 percent self-identified as white or Caucasian and about 13 percent self-identified as non-white or non-Caucasian. Leaders who did not identify as white or Caucasian make up 3 percent of total profile respondents.

## Next-generation Stewards Theme

The well-being of the watershed will soon rest in the hands of its youngest citizens. Strong, targeted environmental education can give students the skills they need to protect and restore their local watersheds. Data collected through an environmental literacy survey show that 21 percent of the 149 school districts that responded to a Chesapeake Bay Program survey identified as well-prepared to put a comprehensive and system approach to environmental literacy in place. Forty-three percent of respondents identified as somewhat prepared, and 36

percent identified as not prepared. Preliminary data collected through the same tool also explored whether school districts were providing so-called "Meaningful Watershed Educational Experiences" to at least one grade level in elementary and middle school, and at least one



course in high school. These experiences—which experts call MWEEs—can increase a student's understanding of environmental issues and connect her to the natural world. Preliminary data show that 35 percent of responding school districts reported providing MWEEs to at least one grade level in elementary school, 40 percent reported providing MWEEs to at least one grade level in middle school, and 29 percent reported providing MWEEs to at least one grade level in high school.

The environment in which students learn also plays an important role in environmental education: sustainable schools reduce the environmental impact of their buildings and grounds, improve the health of students and staff, and increase environmental literacy. In 2015, about one in ten public and charter schools in the watershed were certified sustainable. Maryland is home to most of these, with additional schools in Virginia, Pennsylvania and Washington, D.C.

## Climate Change and Resiliency Theme

We live and work in one of the most vulnerable regions in the nation to the impacts of climate change. Warming temperatures, rising seas, flooding coasts, eroding shorelines, extreme weather events and changes in the abundance and migration patterns of wildlife have already been observed in the region. Adapting to these changes will mean adjusting our policies as well as our protection and restoration efforts. Documenting and assessing the results of these adjustments will help us anticipate, withstand and adapt to the threats facing our living resources and communities. The Climate Resiliency Workgroup plans to develop a suite of indicators that will track climate change and resiliency in the watershed. This project will include the investigation of existing indicators and metrics, as well as the selection and development of indicators related to climate trends, climate impacts and programmatic progress.

While some of our indicators of environmental health were adopted before we formally committed to tracking climate trends, these indicators can shed light on changing environmental conditions. For example, tidal wetland abundance has long been tracked because wetlands provide critical habitat to wildlife. But wetlands are also quick to suffer climate impacts, which means their abundance—and the abundance of the critters that rely on them—can be useful indicators of climate change. Over the last two decades, tidal wetland abundance has hovered around 283,000 acres, with the next assessment expected to come out

this year. Populations of the American black duck—which offer insight into wetland health and food availability—have risen inconsistently: between 2013 and 2015, an average of 51,332 black ducks were observed in watershed states. This marks a five percent increase from the average number of black ducks observed in the region between 2012 and 2014, and 51 percent of the 100,000-bird goal.

While tidal wetland abundance provides valuable information in relation to climate change, our efforts to restore wetlands to the watershed have centered on doing so on agricultural lands. Between 2010 and 2015, 7,623 acres of wetlands were restored here. Recently identified barriers to wetland program adoption include a lack of awareness, concerns for privacy, financial uncertainty, a desire for flexibility, and an audience that can be difficult to reach.



## Local Action Theme

Forests, farms and wetlands provide valuable ecosystem services in the form of clean water and wildlife habitat. These landscapes also give us resources, food and opportunities to have fun in the natural world. Ensuring natural and working landscapes aren't converted to impervious surfaces will be critical to environmental and human health. Local governments play a critical role in this work.

Work is underway to develop a methodology and metrics for characterizing the rate of farmland, forest and wetland conversion; for measuring the extent and rate of impervious surface change; and for quantifying the potential impacts of land conversion on water quality, healthy watersheds and communities. Once published, this information will be updated every two to five years. It will also be used to launch a public awareness campaign. Work is also underway to support land conservation at the local level.

Urban tree canopy is broadly defined as tree plantings in communities of any size—including urban, suburban and rural—that are not on agricultural lands. Each watershed jurisdiction will have its own annual and long-term planning targets that will contribute to the 2,400 acre-goal. While these jurisdictions do report urban tree planting data to the U.S. Environmental Protection Agency, most do not yet have comprehensive or consistent tracking, reporting or verification systems in place. Furthermore, a high-resolution aerial tree canopy assessment—which would track net gain or loss of tree canopy over time—is still in the process of being completed for the entire watershed. As such, a more robust estimate of the baseline for this outcome is being developed as part of our goal to expand urban tree canopy and mitigate some of development's effects. This year, Forestry Workgroup partners launched the



Chesapeake Tree Canopy Network, a web resource to help communities reach their tree canopy goals.



Local officials throughout the watershed vary in their knowledge of watershed issues and the capacity to implement restoration and protection initiatives. To help assess knowledge gaps and evaluate the need for a training program, the Bay Program's Local Leadership Workgroup is conducting a series of focus groups with elected officials from around the watershed to cover such topics as the most successful training programs for local leaders, how to best deliver information, funding, best practices, and what

areas need improvement. Lastly, work is underway to develop a methodology for measuring our work to increase the knowledge and capacity of local officials on issues related to water resources and the implementation of incentives that will support local conservation.

## Future Progress

Several factors could affect our continued progress toward these outcomes, including knowledge and support among lawmakers, landowners, local government officials and members of the public; knowledge and capacity among government agencies and nongovernmental organizations; the alignment of goals, priorities and resources among Chesapeake Bay Program partners; the availability of funding; population growth, development, human infrastructure, natural resource extraction and associated land use conflicts; the presence of invasive species; habitat quality, loss and fragmentation; water quality; climate change; and new science and research.



## Culture of Collaboration

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As the seven themes for the Biennial Strategy Review System suggest, our work crosses organizational boundaries. In the past year, Program staff have been striving to improve collaboration and recognition of co-benefits as a way of doing work. In fact, the management strategies themselves include sections on cross-GIT collaboration, which has led to cross-GIT actions and joint projects in work plans. Goal teams also submitted project proposals that incorporated cross-outcome collaboration team projects for set-aside extramural funding. Proposals that reflected a collaboration of goal teams were ranked more highly than those projects benefitting only a single workgroup or goal team. Funding was distributed based on the sum of several factors, including this collaboration.

In addition to this external work, teams within the Program are looking to continue to improve the collaboration the CBP has been known for since the first Agreement was signed in 1983. The Program's GIS team has supported a mapping project to visualize areas of project overlap and/or co-benefits with respect to both conservation and restoration and to use geographic data layers to answer management questions that show the intersection of priorities for multiple outcomes. The next iteration of this project will look at threats that multiple goal teams face in each of these areas. Several STAC workshops have explored the opportunity to maximize co-benefits of restoration and conservation work and to quantify ecosystem services. The Program's Scientific, Technical Assessment and Reporting (STAR) team, in coordination with the Goal Implementation Teams (GITs), conducted an in-depth analysis of science needs included in the work plans. During this process, STAR was able to facilitate collaboration where

research can serve more than one goal team and highlight relevant work happening outside the partnership.

Collaboration is also a key consideration in structuring meeting agendas for goal teams and Management Board around topics that call for input from diverse parts of partner organizations. With all of this work in mind, the Strategy Review System itself will consider, in terms of cross-goal and cross-outcome collaboration, what worked well, what did not work, and what comes next. GITs will have an opportunity to share successful models that could be further replicated, such as smart data layer maps overlaid to support strategic decision making. Themes determined for the SRS allow us to discuss the relationship among outcomes from varying goal teams and managed by different agencies, as well as the factors that influence those outcomes. All of these projects and efforts reflect a change in the institutional processes of the Chesapeake Bay Program, evolving toward an organization that functions like its championed ecosystem: collaborative, dynamic, and fluid.

## The Biennial Strategy Review System

The Chesapeake Bay Program's **Biennial Strategy Review System (SRS)** is a two-year process that will support our Adaptive Management Decision Framework and improve our effectiveness in achieving the Goals and Outcomes of the *Chesapeake Bay Watershed Agreement*. During this process, the partnership will review its progress toward the Watershed Agreement; identify the management approaches and actions that are or are not working; consider scientific, fiscal, and policy developments; and adjust our Management Strategies and Two-Year Work Plans as needed. The system is not intended to focus on where we are falling short, but on how we can work together and support each other to improve our collective success.

The SRS begins with a **Two-Day Biennial Review Meeting** designed to provide a broad review of where and why we have and have not made progress toward the Watershed Agreement over the previous two years and identify issues and developments in the scientific, fiscal, and policy fields that could impact Goal and Outcome achievement. Issues that are identified during the Two-Day Biennial Review Meeting will inform subsequent and more detailed "Quarterly Progress Meetings".

**Quarterly Progress Meetings** are meetings of the Management Board during which progress toward individual Outcomes is reviewed, new opportunities and understandings are applied, changes to management approaches and/or actions are identified, and, where appropriate, input is offered to support Two-Year Work Plan revisions. Each Outcome will receive individual attention from the Management Board during this review process, and each individual Quarterly Progress Meeting—of which there are seven—will be repeated every two years.

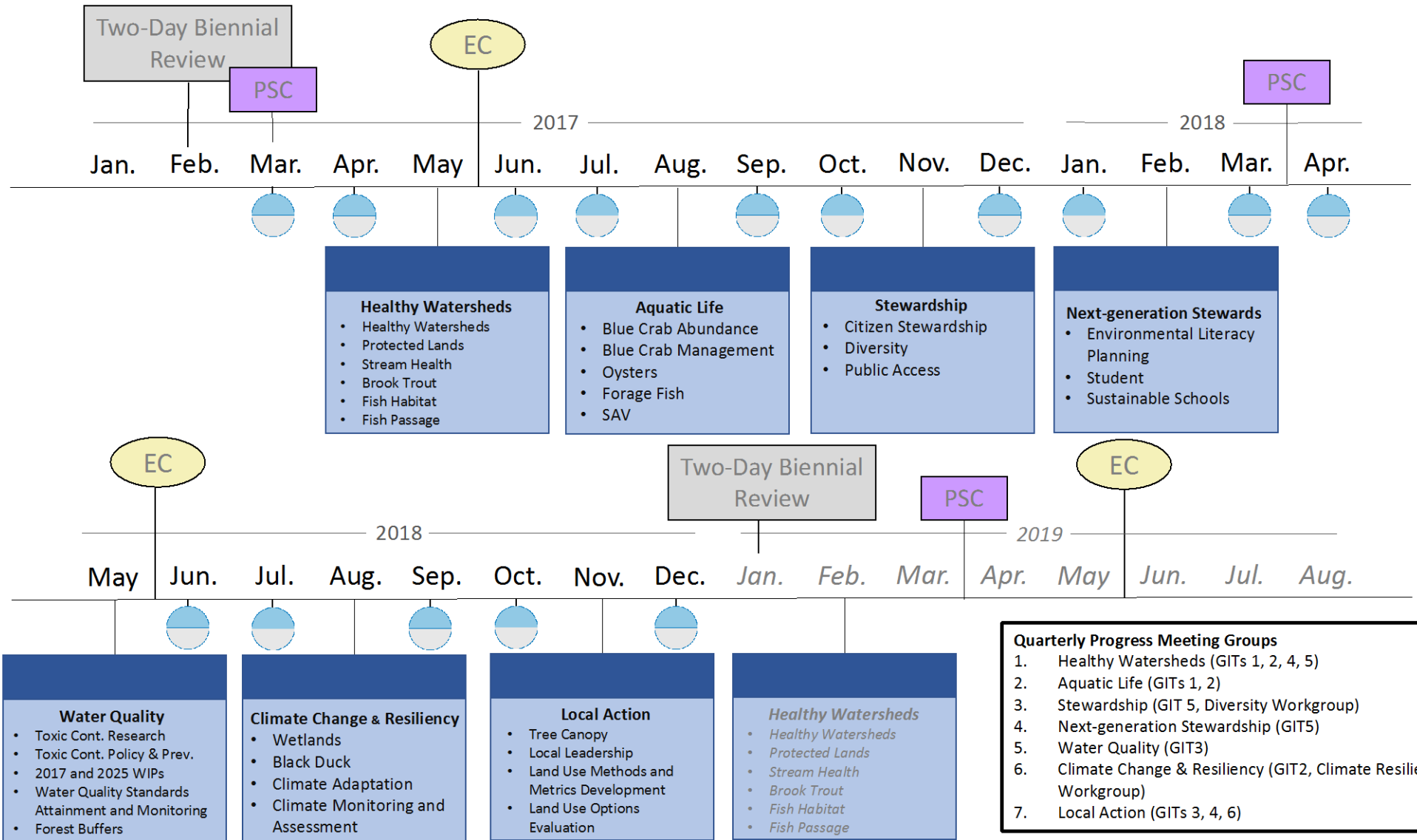
Throughout this process, the Management Board and Goal Implementation Teams (GITs) will work together to:

- Continually improve our ability to make better decisions through the use of the Adaptive Management Decision Framework,
- Describe our progress toward an Outcome,
- Identify and explain the actions that have or will play the biggest role in making progress, and
- Identify and explain how any knowledge we have gained or changes that have occurred since our Management Strategies and Work Plans were developed have or could change our logic and assumptions about an Outcome.

Results and actions from the Two-Day Biennial Review Meeting and Quarterly Progress Meetings will be regularly provided to the PSC, and PSC feedback will be shared with the Management Board, GITs, and other groups as appropriate. As per the 2014 Watershed Agreement, the PSC is also required to submit an annual report on Management Strategy implementation to the Executive Council. This document is the first of such reports.



# 2017-2018 Biennial Strategy Review System Schedule



# 2017-2018 Biennial Strategy Review System Schedule: Legend

Time-sensitive Topics

Quarterly Progress Meeting



**Quarterly Progress Meetings:** Meetings of the Management Board during which progress toward individual Outcomes is reviewed, necessary changes to management approaches and/or actions are identified, and, where appropriate, input is offered to support Two-Year Work Plan revisions.

**Interim Management Board Meetings:** Regular meetings of the Management Board. High-priority issues—whether newly identified or previously identified during a Quarterly Progress Meeting—should be addressed here, as needed.

Two-Day Biennial Review

**Two-Day Biennial Review Meeting:** A high-level retrospective review of where and why we have and have not made progress toward the *Chesapeake Bay Watershed Agreement* over the previous two years and an identification of issues and developments in the scientific, fiscal, and policy fields that could impact Goal and Outcome achievement.

PSC

**Principals' Staff Committee Meeting:** Regular meetings of the Principals' Staff Committee during which members can provide their input on significant changes or shifts in strategy and use the results of the Biennial Strategy Review System to prepare a report on implementation progress for the Executive Council.

EC

**Executive Council Meeting:** Regular meetings of the Executive Council during which members can offer concurrence and partner commitment to significant changes or strategy shifts, as needed.

# Summary from the SRS Kick-Off meeting

*Held February 6-7, 2017 in Cambridge, MD*

Partners met in February 2017 to kick off the Biennial Strategy Review System, reflect on new developments in science, finance and policy, and discuss ways that these developments, as well as our information about our progress, will inform the first 2-year cycle of quarterly progress meetings. The progress presentation was summarized in an earlier section of this document. This section contains main themes and notable points from the discussions on science, fiscal and finance development and policy at the local, state and federal levels.

## Science Panel

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### *Main message*

Broaden the application, incentives, partnerships, and impacts of BMP implementation in ways that support Outcomes beyond Water Quality.

### *Notable points*

- Consider Best Management Practices (BMPs) as systems and look for ways to reach not only water quality goals but also habitat goals.
- Consider both climate adaptation and mitigation.
- Take a regional approach to understanding climate change impacts and adapting as necessary.
- Agricultural financial incentives for BMPs are insufficient by themselves. Need to also pursue and expand “community conservation” (i.e. a sense of farmers bonding together as a community for the greater good) and market-oriented solutions, including collaborative stewardship, pay-for-performance, and auction models.
- Social science is an important tool to help us improve our programs by increasing the engagement from target audiences by better understanding the attitudes, motivations, and resulting behaviors of those target audiences.

## Fiscal and Finance Developments Panel

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### *Main Message*

Better recognize the value to be added by private investment in the Chesapeake Bay restoration, and work to remove the public sector barriers to private investment.

### *Notable Points*

- There are three fundamental questions for each of us to consider
  - What are the anticipated sources of funding outside the CBPO that you anticipate would support this work? In other words, who else cares?
  - How would those anticipated sources of financing work in concert with other financing mechanisms or sources of funding?

- What are the specific metrics that can be used to determine project funding success? Are those metrics current incorporated into the current project format?
- The public sector needs to support private investment by reducing risk and increasing certainty.
- Policy and program decisions are finance decisions.
- Budget changes will likely impact project funding and state grants.
- Public funding alone will not restore the Chesapeake Bay.
- Many BMPs can be financed as investments rather than loans or grants, thus making private investment in restoration more attractive.
- There is a need to develop a means of holding on to public funding until it is most cost effective to invest it. This would require a shift away from the current “use-it-or-lose-it” policies.
- Our partnership needs to develop a means to pool our resources, prioritize outcomes, and apply investment where it is most effective. This would likely involve the ability to spend funding across jurisdictional boundaries and sectors to get the most cost effective results per dollar.
- Both public and private financing have their strengths and weaknesses. It is unlikely that public sector financing will increase in the near future. The greatest opportunity exists in our ability to engage the power of the private sector.

## Policy Panel

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### *Main Message*

Better connect with and engage our public.

### *Notable Points*

- Shared leadership is key—we need to call upon the strength of the partnership for shared federal, state and local leadership.
- The adoption and continued, meaningful implementation of an adaptive management framework continues our legacy of solid science backing our work.
- Broadening partnerships is essential—we need to reach out to new partners and solidify inter-connectedness.
- We need to connect our work to messages and actions that people care about, like healthy outdoor spaces and healthy fish and wildlife populations, and their impacts to a healthy economy and robust society.

## Cross-Cutting Recommendations

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### *Main Message*

“We don’t have a pollution problem—we have a stewardship problem.” (e.g., we understand the means to reduce the pollution, but we lack the will and commitment to do so).



### *Notable Points*

- Social science should be a renewed focus across all Agreement Outcomes, with an emphasis on knowing the appropriate target audience, encouraging collaboration, and communicating to new audiences in terms that are compelling to them (economy, jobs, energy, health, safety, recreation).
- Do not underestimate “lurking” issues in science—there is a need to continue to invest in research and monitoring.
- Be open to changes in programs and flexibility in implementation as a result of social science research.
- We as a partnership (and the environmental community at large) need to adjust to the fact that behavior changes and ecosystem response take longer than expected.



## Conclusion

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This report summarizes the progress we have made thus far, as told by our indicators and GIT updates, and the changes to the institutional culture of the Chesapeake Bay Program to ensure that the Program is collaborative and strategic. The Biennial Strategy Review System was devised to further shift the Bay Program into collaborative thinking, problem-solving, and decision-making that is necessary for successful adaptive management. The system will pull together diverse groups of partners on a biennial basis to discuss broad themes of progress and challenges, and the quarterly progress meetings will allow still diverse subsets of those partners to discuss our outcomes in greater detail, with a focus on problem-solving and success replication. The shift to a collaborative culture and the analytic rigor built into the Strategy Review System will ensure that the Program continues to enhance its accountability, agility, and science-based decision-making capabilities well into the future.