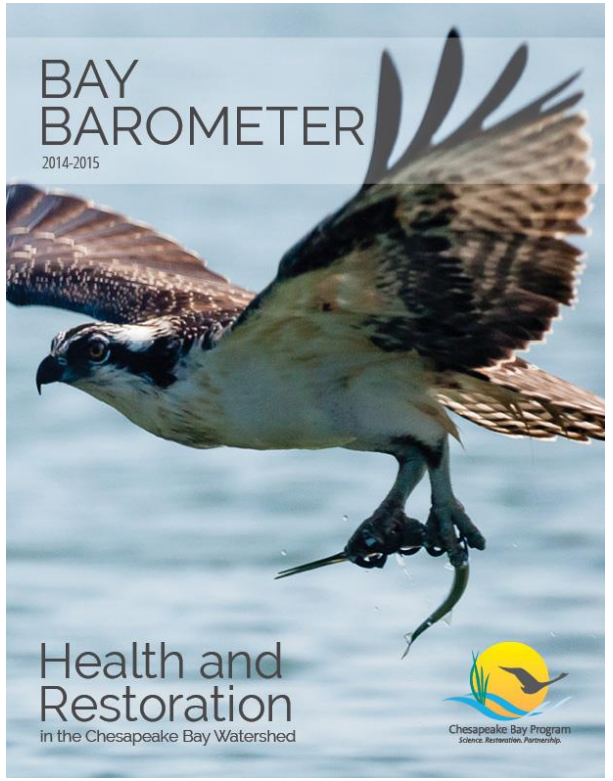
Bay Barometer

Health and Restoration in the Chesapeake Bay Watershed (2015 to 2016)

What is it?

- Annual report on watershed health and restoration
- Retrospective summary of previously published indicators



Who is it for?

- Chesapeake Bay Program partners
- The interested public (especially students and teachers)

What does it look like?

- Clean design and simple structure
  - Watershed Agreement themes: Abundant Life, Clean Water, Protected Lands, Engaged Communities and Climate Change
- Comprehensive coverage of Watershed Agreement outcomes
  - Fifteen are addressed with traditional indicators
  - Where indicators are not available, outcomes are addressed with highlights from the year's news

What's New in 2017?

- New Indicators
  - Diversity
  - Sustainable Schools
  - Oysters

What does it say?

- Positive Trends:
  - Nitrogen, phosphorus and sediment loads (monitored data) and reducing nitrogen, phosphorus and sediment pollution (modeled data)
  - Attaining water quality standards
  - Underwater grass abundance
  - Blue crab abundance, oysters
  - Black duck
  - Restoring fish passage, restoring wetlands, protecting lands and establishing public access sites

What does it say?

- Negative Trends:
  - Planting forest buffers

What does it say?

- News Stories:
  - Tree canopy
  - Healthy watersheds
  - Forage fish
  - Fish habitat
  - Blue crab management
  - Brook trout
  - Toxic contaminants
  - Land use
  - Citizen stewardship
  - Local leadership
  - Climate resiliency

Abundant Life: Habitats

Positive Trends

Underwater Grasses

In 2015, there were an estimated 91,621 acres of underwater grasses in the Chesapeake Bay. This surpasses the Chesapeake Bay Program's 2017 restoration target two years ahead of schedule and marks a 49 percent achievement of the partnership's 185,000-acre goal.

Wetlands

Between 2010 and 2015, 7,623 acres of wetlands were created or reestablished on agricultural lands. This marks a nine percent achievement of the 83,000-acre goal.

Abundant Life: Habitats

Positive Trends

Fish Passage

Progress toward the goal to restore historical fish migration routes is measured against a 2011 baseline of 2,510 stream miles open to the migration of fish. Between 2012 and 2015, 817 additional miles were opened to fish passage, including almost 300 miles in Virginia and more than 500 miles in Pennsylvania. This marks an 82 percent achievement toward reaching the goal of opening 1,000 miles.

Black Duck

According to survey results, an average of 51,332 black ducks were observed in Chesapeake Bay watershed states between 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 51 percent of the 100,000 bird goal.

Abundant Life: Habitats

Needs Improvement

Forest Buffers

Between 2014 and 2015, about 64 miles of forest buffers were planted along the Chesapeake Bay watershed's rivers and streams. While this marks progress toward the outcome, it is 836 miles below the 900-mile-per-year goal and the lowest restoration total of the last 16 years.

Abundant Life: Habitats

For Your Information…

Tree Canopy

Accurate tracking of urban tree canopy progress relies not only on information about tree plantings, but on net gain or loss over time. The Chesapeake Bay Program expects to track urban tree canopy change over time by using high resolution aerial assessments, which will be available for local government use – for free – in 2017. Along with these data, Chesapeake Forestry Workgroup partners will launch the Chesapeake Tree Canopy Network, a new web resource to help communities reach their tree canopy goals.

Fish Habitat

The Fish Habitat Decision Support Tool was developed with funding from the U.S. Fish and Wildlife Service to provide access to the extensive spatial data and results produced from multiple fish habitat assessments. The tool helps resource managers identify restoration projects that will support populations of aquatic species in the face of threats from climate change and development at multiple scales in multiple regions, including the Chesapeake Bay watershed.

Abundant Life: Habitats

For Your Information…

Brook Trout

Brook trout need clean, cold water to survive, and because of that fact their presence is a sign of a healthy waterway. However, agriculture, urbanization and mining activities have all taken their toll on brook trout habitat. According to the Eastern Brook Trout Joint Venture, wild brook trout occupy 13,495 square kilometers of habitat in the Chesapeake Bay watershed, which is very low compared to historical levels.

Abundant Life: Fish and Shellfish

Positive Trends

Blue Crab Abundance

Between 2015 and 2016, the abundance of adult (age 1+) female blue crabs in the Chesapeake Bay increased 92 percent from 101 million to 194 million. This number is above the 70 million threshold but below the 215 million target that would support a sustainable blue crab stock. According to the Chesapeake Bay Stock Assessment Committee, the blue crab stock is currently not overfished and overfishing is not occurring.

Oysters

Six Chesapeake Bay tributaries have been selected for oyster restoration: Harris Creek and the Little Choptank and Tred Avon rivers in Maryland, and the Lafayette, Lynnhaven and Piankatank rivers in Virginia. Each tributary that has been selected for oyster restoration is at a different level of progress.

Abundant Life: Fish and Shellfish

For Your Information…

Forage Fish

In 2016, researchers at the University of Maryland Center for Environmental Science released a report that developed a set of potential indicators to determine the status of forage species in the Bay and analyzed the diets of key predator fish. This research will help the Chesapeake Bay Program's Sustainable Fisheries team develop a strategy to assess forage.

Blue Crab Management

According to the Chesapeake Bay Stock Assessment Committee, the blue crab stock is currently not overfished and overfishing is not occurring. An estimated 15 percent of the female blue crab population was harvested in 2015, which is below the 25.5 percent target and the 34 percent overfishing threshold.

Clean Water

Positive Trends

Nitrogen, Phosphorus and Sediment Loads

During the 2015 water year (October 2014 to September 2015), approximately 217 million pounds of nitrogen, 9.8 million pounds of phosphorus and 2.9 billion pounds of sediment reached the Bay: a 25 percent, 44 percent and 59 percent drop from the previous year, respectively.

Estimated Pollution Reduced

Computer simulations show that pollution controls put in place in the Chesapeake Bay watershed between 2009 and 2015 lowered nitrogen loads eight percent, phosphorus loads 20 percent and sediment loads seven percent.

Clean Water

Positive Trends

Water Quality Standards Achieved

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 needed for clean water and a stable aquatic habitat.

Clean Water

For Your Information…

Toxic Contaminants

Toxic contaminants such as polychlorinated biphenyls (PCBs) are present in waters across the region, posing a threat to the health of wildlife and humans. A story map created by the Chesapeake Bay Program's Toxic Contaminants Workgroup and GIS Team will help track and ensure that restoration efforts are targeted in areas with a high prevalence of these contaminants.

Healthy Watersheds

The District of Columbia is working to install low impact development (LID) in the Fort Dupont watershed, which will help to reduce stormwater runoff. Additionally, the District has initiated an Environmental Assessment to explore opportunities to restore streams and wetland areas to further improve the health of the Fort Dupont watershed so it can become the District's first healthy watershed. The assessment will be completed in late 2017, and the LID will be completed by the end of 2018.

Protected Lands

Positive Trends

Protected Lands

Data collected between 2015 and 2016 show that, since 2010, approximately 962,000 acres of land in the Chesapeake Bay watershed have been permanently protected from development. This marks an achievement of 48 percent of the goal to protect an additional two million acres, and brings the total amount of protected land in the watershed to 8.76 million acres.

Protected Lands

For Your Information….

Land Use

Released in December 2016, high-resolution land cover data developed by the Chesapeake Bay Program and its partners is a ground-breaking, innovative approach to show how land is used in the Chesapeake Bay watershed at a one meter by one meter resolution. This data will be used to inform Phase 6 of the Chesapeake Bay Watershed Model and provides 900 times the amount of information as the previous dataset.

Engaged Communities

Positive Trends

Public Access Sites

Between 2010 and 2015, 108 public access sites were opened to the public. This marks a 36 percent achievement of the goal to add 300 new access sites to the watershed, and brings the total number of access sites in the region to 1,247.

Sustainable Schools

In 2015, 29 percent of schools in the Chesapeake Bay watershed—a total of 4,310 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.

Engaged Communities

Positive Trends

Environmental Literacy

In 2015, 19 percent of the local education agencies that responded to a Chesapeake Bay Program environmental literacy survey self-identified as well-prepared to implement environmental education programs. About 40 percent self-identified as somewhat prepared, and 41 percent self-identified as not prepared.

Diversity

In 2016, almost 85 percent of respondents to a Chesapeake Bay Program diversity profile self-identified as white or Caucasian. About 13 percent self-identified as non-white or non-Caucasian. Of the respondents who self-identified as white, about one-third identified themselves as a member of Chesapeake Bay Program leadership.

Engaged Communities

For Your Information…

Citizen Stewardship

The Kids in Kayaks Program offers Baltimore City Public School 8th graders a unique outdoor education experience that inspires environmental stewardship by connecting students to natural landscape in their backyards. The program, sponsored by multiple partners including the National Park Service and the Baltimore National Heritage Area, is held in the fall and spring at Middle Branch Park on the Patapsco River.

Local Leadership

Local officials throughout the Chesapeake Bay 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 watershed training program, the Chesapeake Bay Program's Local Leadership Workgroup is currently conducting a series of focus groups with local elected officials from around the watershed to cover such topics as what are the most successful training programs for local leaders, how to best deliver information, sources for funding to implement projects and programs, best practices and what areas need improvement.

Climate Resiliency

For Your Information…

Climate Monitoring and Assessment and Adaptation

A report from the U.S. EPA on climate change trends included new information on stream temperatures in the Chesapeake Bay region. As stream temperatures rise across the watershed, efforts are being redoubled to increase conservation measures that cool the water, such as adding shade trees and removing dams.

Public Release Plan

- Media advisory and release
- Blog post and social media messages
- Printed copies mailed or otherwise distributed to:
  - Management Board
  - GIT and Advisory Committee Chairs, Coordinators and Staffers
  - Communications Workgroup
  - Education Workgroup

Date	Task	Person or Group Responsible
~~Nov. 15 to Nov. 23~~	~~Review text~~	~~Leadership, GITs~~
Dec. 8 to Dec. 16	Review text	MB, Comm. Workgroup
Dec. 21	Final text and images assembled	
Dec. 21 to Jan. 3	Draft first design	Stephanie
Jan. 3 to Jan. 10	Review first design	Leadership, Communications Office
Jan. 11	Design comments due	Rachel, Stephanie
Jan. 13	Design finalized	Stephanie
Jan. 16 to 17	Prepare files and send to printer	Stephanie
Jan. 21	Review and approve proof	Rachel, Stephanie
Jan. 23 to 27	Printing	Printer
End of January, early February	Public release	