CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

Statement of Mr. William C. Baker

President, Chesapeake Bay Foundation

Prepared for The Subcommittee on Water Resources and Environment hearing on "Protecting and Restoring America's Iconic Waters"

June 25, 2019

Introduction

Good morning Chairwoman Napolitano, Ranking Member Westerman, and members of the subcommittee, I am Will Baker, President of the Chesapeake Bay Foundation (CBF). Thank you for inviting me, on behalf of CBF's Board of Trustees, staff, and more than 275,000 members, to participate in today's hearing.

For more than 50 years, the CBF has been working to protect and restore the Chesapeake Bay and its rivers and streams. The Chesapeake Bay is America's largest estuary and a unique and critical ecosystem. Its 64,000 square mile watershed—from Cooperstown, New York to Cape Henry, Virginia and westward to the Allegheny Mountains—is a large part of the Mid-Atlantic states. More than 18 million people live in the Chesapeake Bay watershed, a number that is increasing by roughly 150,000 each year.

The Chesapeake Bay is a national treasure, a resource of worldwide significance, and an economic resource for the region. The Chesapeake Bay produces approximately 500 million pounds of seafood a year.[1] The Bay's iconic blue crabs and oysters are immensely important to the economy and culture of the Bay region. In 2016, Maryland and Virginia brought in $299.5 million in landings revenue, supported just over 30,000 jobs, and generated approximately $726,391,000 dollars in sales.[2] Recreational fishing supported 13,501 jobs, and generated $1.368 billion dollars in sales.[3]

Unfortunately, due to decades of pollution, those numbers are only a fraction of what they once were. Historically every summer, excessive nitrogen and phosphorus pollution from human activities would plague the Chesapeake Bay and its tributaries with dead zones—areas with low amounts of oxygen in the Bay. With little or no oxygen, fish, crabs, oysters, and other aquatic animals literally suffocate. The decline of oysters over the last 30 years, for example, has meant a loss of more than $4 billion for Maryland and Virginia. [4] Further, excess nitrogen and phosphorous fuels deadly algae blooms that block sunlight from reaching the critical underwater grasses habitat that crabs and fish rely on.

Fortunately, we have a plan to save this critical natural resource: The Chesapeake Clean Water Blueprint. And the plan is working. Underwater grasses are growing, dead zones are getting smaller, and blue crab populations are rebounding. Studies estimate that a fully restored Bay is worth $22 billion per year.[5]

History of Chesapeake Bay Cleanup

The Bay cleanup has a long and storied history, but the road to get to this point has not been easy. The Chesapeake Bay is one of the most complex ecosystems in the world.

The cleanup effort began in 1976 when Congress directed EPA to undertake a comprehensive study of the Bay focused on its water quality and living resources. Six years later, the U.S. Environmental

[1] Chesapeake Bay Program, *Facts and Figures,* https://www.chesapeakebay.net/discover/facts

[2] NOAA, *Fisheries Economics of the United States, 106, 2017,* https://www.fisheries.noaa.gov/resource/document/fisheries-economics-united-states-report-2016

[3] *Id.*

[4] Chesapeake Bay Foundation, *On the Brink: Chesapeake's Native Oysters*, July 2010, https://www.cbf.org/document-library/cbf-reports/Oyster_Report_for_Release02a3.pdf

[5] https://www.cbf.org/document-library/cbf-reports/the-economic-benefits-of-cleaning-up-the-chesapeake.pdf

Protection Agency (EPA) report identified nutrient pollution as the greatest threat to the Bay and recognized that the problem would need to be addressed by all of the watershed states, not just Maryland and Virginia. The report provided an innovative intergovernmental and inter-jurisdictional solution. The "Chesapeake Bay Program" was formed that December—with the governors of Maryland, Pennsylvania and Virginia, the Mayor of the District of Columbia, the Administrator of the EPA and the Chair of the Chesapeake Bay Commission signing the Chesapeake Bay Agreement of 1983.

In February 1987, Congress passed the reauthorization of the Water Quality Act of 1987 (Clean Water Act), which included a provision, known as Section 117, that codified the Chesapeake Bay Program and authorized Congress to continue funding the important restoration effort at $13 million annually.[6]

This led to the *1987 Chesapeake Bay Agreement*, which for the first time included specific quantitative goals and commitments; the centerpiece of which was to reduce nutrient pollution to the Bay by 40% by 2000.

When the Chesapeake Bay partners missed their 40% nutrient reduction goal, the state governors, the mayor of DC, the EPA and the Chesapeake Bay Commission signed the *Chesapeake 2000* agreement, which included more than a hundred ambitious commitments, including a re-affirmation of the 40% nutrient reduction goal and a commitment to reduce sediment and nutrient loads sufficient to remove the Bay and its tidal rivers from the impaired waters list by a 2010 deadline. Also, in 2000, both Delaware and New York signed a Memorandum of Understanding with the other Chesapeake Bay Program partners and agreed to adopt the Water Quality goals of the *Chesapeake 2000* agreement. West Virginia followed suit in 2002.

When the Chesapeake Bay Program failed to meet its water quality goals again in 2007, CBF along with several signatories to the Chesapeake Bay Agreements, and local partners sued the EPA for failure to comply with the Clean Water Act and the terms of the Chesapeake Bay Agreements. A settlement was finalized in May 2010 that explicitly incorporated the TMDL process, providing a legally binding, enforceable commitment that EPA would take specific actions to ensure that pollution to rivers, streams, and the Chesapeake Bay is reduced

[6] In 2000, Congress passed a reauthorization of Section 117 of the Clean Water Act, which did not substantially alter the approach or make up of the Chesapeake Bay Program but did increase the authorization level to $40 million annually. For the last several years, funding for the Bay Program has been around $73 million annually.

sufficiently to remove the Bay from the federal "impaired waters" list.

In December 2010, the EPA and the Bay jurisdictions finalized the Chesapeake Bay total maximum daily load (TMDL), which sets limits on nitrogen, phosphorus and sediment pollution necessary to meet water quality standards.[7] It also formed jurisdiction-specific plans to achieve those pollution limits—together known as the Chesapeake Clean Water Blueprint. EPA and the Bay jurisdictions agreed to implement 60 percent of their Bay cleanup practices by 2017 and 100 percent by 2025. To develop these plans, Bay jurisdictions worked with local governments to take advantage of their knowledge about sources so that the pollution reduction requirements were equitably distributed and one sector was not burdened at the expense of another.

In June of 2014, representatives from the entire watershed signed the Chesapeake Bay Watershed Agreement.[8] For the first time, Delaware, New York, and West Virginia committed to full partnership in the Bay Program. The agreement includes the Chesapeake Clean Water Blueprint goals for 2017 and 2025, but also established goals for habitat restoration and conservation, improving fisheries, increasing public access public access, and environmental literacy, to name a few.

The Chesapeake Bay Blueprint is an International Model

The Chesapeake Bay Blueprint is an international model for environmental improvement. The partnership between state, federal, and local governments has been central to the Bay's improving health. And organizations like the Chesapeake Bay Foundation have played a key role in holding all parties to their commitments. But, I cannot understate the importance of federal leadership.

Even after the Bay Agreement was signed and the Chesapeake Bay Program formed, the states recognized that they were going to miss their 2010 cleanup goals, and they requested federal leadership. On June 19, 2008 at the Chesapeake Bay Program's Principal's Staff Committee, Virginia Secretary of Natural Resources L. Preston Bryant made a motion to develop a TMDL by the end of 2010. The motion to develop the TMDL was approved without dissent. Simply put, Bay states recognized that setting the Bay total maximum daily load for nitrogen, phosphorus and

[7] The "Chesapeake Bay TMDL" actually applies to 92 impaired segments, *See* http://www.epa.gov/chesapeakebaytmdl/,

[8] https://www.chesapeakebay.net/what/what_guides_us/watershed_agreement

sediment was a job that only EPA—with its cross-state jurisdiction and team of scientists—could do.

This federal leadership, with its heightened level of commitment and accountability, has proved to be the vital ingredient necessary to get the cleanup on track and create what Dr. Donald Boesch, President Emeritus of the University of Maryland Center for Environmental Science, called "The Moment in Time" to save the Bay. When the Blueprint was established, he wrote, "…this is not just a moment in time, but the only moment our society will ever have to restore the Bay. As a scientist, I am trained to rely on empirical evidence rather than wishful thinking. There is just no evidence for concluding that we will have another chance after 2025 given the record of performance and additional mounting pressures that will result from population growth and climate change."[9]

How We are Doing—the *State of the Bay* and the Blueprint

For decades, CBF's biennial *State of the Bay* report has tracked the Bay's health.[10] Over the last ten years it has improved, but the slow improvements to water quality and impact on the living resources of the Chesapeake Bay system continues to be a concern.

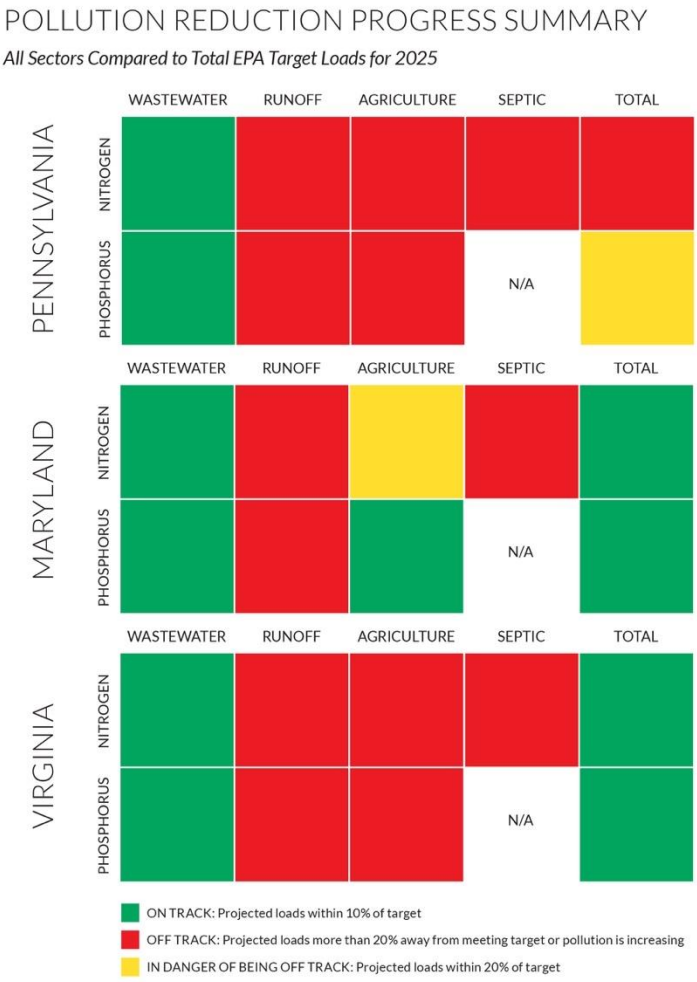
Since the Blueprint's beginning in 2010, the Bay has been improving. But as this year's State of the Bay shows, progress is never a straight line.

Simply put, the Bay suffered a massive assault in 2018. Extraordinary weather flushed enormous amounts of nitrogen, phosphorous, and debris—mostly from Pennsylvania, but also from other regions—off our lands and into the Bay. As a result, the *State of the Bay* score fell one point to a 33.

[9] http://www.capitalgazette.com/cg2-arc-ce7685b2-dfe6-5489-929f-b81e5cd86754-20120211-story.html

[10] https://www.cbf.org/about-the-bay/state-of-the-bay-report/

Still, there are heartening signs that the Bay is building resiliency. Bay grasses remain intact and recent studies indicate an improving trend in underwater dead zones over the long term. But the system remains dangerously out of balance. And new challenges like climate change and a federal administration attempting to roll back fundamental environmental protections are threatening success.



With a little less than seven years to go until the 2025 deadline set for achieving the commitments of the Blueprint, we can see that while we have made great strides, we have a long way to go. CBF recently issued our State of the Blueprint. While no state is completely on track, Maryland and Virginia are close to having the programs and practices in place to restore water quality and meet the 2025 goal. Pennsylvania is not on track.

Virginia is on track to achieve its 2025 goals, provided it accelerates efforts to reduce pollution from agricultural sources and growing urban and suburban areas, while continuing progress in the wastewater sector. Virginia has a strong roadmap for success; the key is implementation.

Maryland is on-track to meet its overall nutrient reduction targets by 2025, due in large part to investments to upgrade sewage treatment plants, which have exceeded goals, and in farm management practices. Pollution from developed lands and septic systems continues to increase, challenging the long-term health of Maryland's waterways. While the Blueprint provides a path to the 2025 goals, it is short on strategies to maintain them. The plan relies on annual practices that are less cost effective and don't provide as many benefits for our climate and our communities as permanent natural filters.

Pennsylvania is significantly behind in implementing the pollution reducing practices necessary to achieve the 2025 goals, particularly from the agricultural and the urban/suburban stormwater sectors. Wastewater treatment plants have met and exceeded goals and targets for making reductions by 2025. But agriculture and stormwater efforts have fallen significantly behind. While most farmers embrace conservation, a lack of financial and technical support has stifled progress. Keeping soils, nitrogen, and phosphorus on the land instead of in the water is good for soil health, farm profitability, and life downstream.

Challenges

A healthy Bay is in sight—but the Blueprint to save the Chesapeake Bay is at a critical juncture. There are four main challenges: Pennsylvania, regulatory rollbacks, climate change, and federal funding.

1. Pennsylvania

A chain is only as strong as its weakest link, and that is also true for the partnership between the six Bay states, the District of Columbia, and the Environmental Protection Agency (EPA) to restore water quality across the region. Unfortunately, Pennsylvania's leaders have failed to uphold their promise to reduce pollution to its surface and groundwaters since the partnership was launched in 2009.

Pennsylvania has never met its nitrogen reduction targets and its current plan to achieve the 2025 goal is woefully inadequate, detailing only two-thirds of actions necessary to achieve its goal. Furthermore, the resources to implement the plan do not currently exist. There is a shortfall in funding of nearly $257 million a year.

Continued failure by Pennsylvania legislators to support those working for cleaner waters with technical and financial assistance means failure for the entire partnership.

Second, recent deregulatory efforts could be devastating to the Chesapeake's recovery, in particular weakened Corporate Average Fuel Economy (CAFE) and the proposed Clean Power Plan replacement.

2. Proposed Regulatory Rollbacks

Maintaining strong protections for streams and wetlands is essential to the health and restoration of the Chesapeake Bay. Wetlands act as buffers that absorb pollution, reduce storm surges, and help control flooding, and the Bay receives half of its water from an intricate network of creeks, streams, and 1.7 million acres of wetlands. Repealing the 2015 Clean Water rule and changing the definition of "Waters of the United States" rule would limit Clean Water Act protections for many streams and wetlands.

Air pollution not only poisons our lungs and heats our planet but eventually ends up in our water. Approximately one-third of the nitrogen entering the Chesapeake Bay comes from air pollution. Much of it is in the form of nitrogen oxides from power plants, cars and trucks, and industrial sources, which can drift hundreds of miles before falling to the ground and into local waterways. In crafting the Chesapeake Bay Blueprint, the EPA relied on pollution reductions from air regulations, but the Trump administration's air rollbacks put the health of the Bay and its residents at risk. The Safer Affordable Fuel-Efficient Vehicle Rule will relax fuel efficiency standards for cars and light-duty trucks that produce greenhouse gas emissions and nitrogen oxides. And, the Affordable Clean Energy Rule (ACE) announced on Wednesday, June 19th falls short of the reductions in nitrogen oxides that were anticipated under the Clean Power Plan and relied upon to meet the commitments of the Chesapeake Bay Blueprint. Furthermore, both will worsen the impacts of climate change—another key challenge to Bay restoration efforts.

3. Climate Change

Healthy estuaries are the first line of defense for coastal areas worldwide, providing protection from climate change impacts. Estuarine systems capture and sequester carbon. Forested buffers along our streams hold soil in place during heavy storms, cool waters and trap additional carbon.

Unfortunately, the Bay—and its surrounding states—are also negatively impacted by the effects of climate change including sea-level rise, extreme weather, warming temperatures, and ocean acidification.[11]

EPA has noted that average temperatures have risen between 1895 and 2011 by almost two degrees Fahrenheit and projections indicate warming of 4.5 to 10 degrees by the 2080s.[12] Average U.S. precipitation has increased since the 1990s, and the frequency and intensity of heavy precipitation events is increasing due to climate change.[13] Within 20 years, nearly 170 U.S. communities will be chronically inundated with flooding[14] and more than 70% of these communities will be in Louisiana and Maryland: the "canaries in the coal mine" for sea level rise.[15] Sea level rise threatens to inundate small coastal communities and major cities alike in the Chesapeake Bay region. In Maryland alone, it threatens to flood over 61,000 homes by 2100, valued at $19 billion.[16] Entire inhabited islands are now underwater in the Chesapeake Bay, with more likely to follow if greenhouse gas (GHG) emissions do not decrease substantially.[17] In Norfolk, Virginia, sea level rise poses significant risk to the public and military infrastructure and operations.[18]

Wetlands can help to mitigate some of those effects, but they are also threatened by sea level rise. As we have noted, these important filters reduce the level of pollutants entering the Bay,[19] help protect against flooding by absorbing stormwater and protect coastal

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[11] EPA, Chesapeake Bay Program, *Climate Change,* https://www.chesapeakebay.net/issues/climate_change

[12] *Id.*

[13] U.S. Global Change Research Program, *Climate Science Special Report: Fourth National Climate Assessment,* 19, 20, 2017.

[14] Erika Spanger-Siegfried, *et. al*, *When Rising Seas Hit Home: Hard Choices Ahead for Hundreds of US Coastal Communities*, Union of Concerned Scientists 2, 2017.

[15] *Id.*

[16] Catherine Rentz, *Rising sea levels threaten $19 billion in real estate across Maryland*, study says, The Baltimore Sun, Oct. 28, 2017, https://www.baltimoresun.com/news/investigations/bs-md-suninvestigates-sea-level-20171026-story.html.

[17] Erik Ortiz, *How to Save A Sinking Island*, NBC NEWS, November 13, 2017, https://www.nbcnews.com/specials/deal-island; David Fahrenthold, *Last house on sinking Chesapeake Bay island collapses*, Washington Post, October 26, 2010, http://www.washingtonpost.com/wp-dyn/content/article/2010/10/24/AR2010102402996.html; Jon Gertner, *Should the United States Save Tangier Island From Oblivion*?, New York Times Magazine, July 6, 2016, https://www.nytimes.com/2016/07/10/magazine/should-the-united-states-save-tangier-island-from-oblivion.html.

[18] "Sea level rise at just one site can have a significant impact on [both military policy and] strategy. Hampton Roads, Virginia, dubbed 'the greatest concentration of military might in the world' for former Secretary of Defense Leon Panetta, is by itself an invaluable operational and strategic hub for both the United States and its allies. It …is the backbone of the U.S. Atlantic Fleet. It is also a low-lying site and very exposed to seal level rise and storm surge. If significant portions of the Hampton Roads infrastructure we regularly inundated, as is projected under a number of scenarios for the years 2023-2100, the impediment to force deployments for critical Atlantic, Mediterranean and Pacific war-fighting and humanitarian operations—many of which are tied to core strategic goals of the United States—would be significant." The Center for Climate and Security, Military Expert Panel Report: *Sea Level Rise and the U.S. Military's Missions, 23-24, 2016,* https://climateandsecurity.files.wordpress.com/2016/09/center-for-climate-and-security_military-expert-panel-report2.pdf.

[19] Chesapeake Bay Program, *Wetlands,* https://www.chesapeakebay.net/issues/wetlands

communities from storm surge and erosion,[20] but they can also serve as sites of carbon sequestration.[21] Wetlands inundated with saltwater from sea level rise, however, begin to disappear.[22] They are typically some of the first areas to be exposed to chronic flooding and while they can migrate in response to changes in water levels provided they have the space and time to do so,[23] the pace of sea level rise and changes in land use in coastal communities have weakened the ability of wetlands to migrate.[24] A decrease in the overall acreage of wetlands will lead to a decrease in the natural environment's ability to deal with increased rainfall. Forested buffers along creeks, tidal rivers, and the Bay are also impacted by seal level rise as saltwater seeps into the soil, killing trees and creating "ghost forests."[25]

In addition, warming waters—that have already been recorded in 92 percent of the Bay—deplete the level of available oxygen in the Bay.[26] This will have major repercussions as the Bay struggles with dead zones of hypoxic water from nitrogen and phosphorus pollution (these nutrients fuel algal blooms, creating hypoxic and anoxic areas in the Bay).[27] Warming ocean temperatures will only exacerbate the dead zone in the Bay because warmer water molecules hold less oxygen than colder water molecules.[28]

Finally, GHG emissions cause ocean waters to acidify. Our oceans are a sink for atmospheric carbon, absorbing about a quarter of the CO_2 released into the atmosphere each year.[29] This absorption is not without consequence: excess CO_2 is changing the saltwater chemistry.[30] A chemical reaction occurs between carbon dioxide, water, and

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[20] *Id.*

[21] Kevin D. Kroeger, *et al.*, Scientific Reports, *Restoring Tides to Reduce Methane Emissions in Impounded Wetlands: A New and Potent Blue Carbon climate Change Intervention,* September 20, 2017, www.nature.com/scientificreports.

[22] Joseph Kurt and Victor Unnone, *Climate Change and the Chesapeake Bay Total Maximum Daily Load: Policy Priorities and Options,* Virginia Coastal Policy Center, 4, 2016.

[23] Erika Spanger-Siegfried, *et. al, When Rising Seas Hit Home: Hard Choices Ahead for Hundreds of US Coastal Communities,* Union of Concerned Scientists, 10, 2017.

[24] *Id.*

[25] *Id. See also* John Upton, *'Ghost Forests' Appear as Rising Seas Kill Trees, Climate Central*, Sept. 15, 2016, http://www.climatecentral.org/news/ghost-forests-appear-as-rising-tides-kill-trees-20701.

[26] *See Army Corps of Engineers and City of Norfolk Draft Integrated City of Norfolk Coastal Storm Risk Management Feasibility Study/Environmental Impact Statement*, October 2017, http://www.nao.usace.army.mil/NCSRM/

[27] EPA, Chesapeake Bay Program, *The Dead Zone*, https://www.chesapeakebay.net/state/dead_zone

[28] Chris Mooney, *Global warming could deplete the oceans' oxygen—with severe consequences*, Washington Post, April 28, 2016, https://www.washingtonpost.com/news/energy-environment/wp/2016/04/28/global-warming-could-deplete-the-oceans-oxygen-levels-with-severe-consequences/?utm_term=.00aa4517aaef.

[29] NOAA Pacific Marine Environmental Laboratory Carbon Program, *Ocean Acidification: the Other Carbon Dioxide Problem*, https://www.pmel.noaa.gov/co2/story/Ocean+Acidification

[30] NOAA Pacific Marine Environmental Laboratory Carbon Program, *What is Ocean Acidification?* https://www.pmel.noaa.gov/co2/story/What+is+Ocean+Acidification%3F

carbonate ions that reduces seawater pH depleting the concentration of carbonate ions and calcium carbonate minerals.[31] This negatively affects calcifying species by impairing their shell making ability. Ocean acidification threatens the growth and reproduction of oysters, clams, and other creatures with calcium shells.[32] The Chesapeake Bay blue crab population may be particularly susceptible to acidification because larval crabs spend a portion of their life offshore in the ocean. Blue crabs are a particularly important commercial species in the region's multi-billion-dollar seafood industry.[33]

Taken together, the effects of GHG emissions will impact the complex ecosystem—including water quality and habitat—needed for species survival in the Bay region. Indeed, these impacts are identified and reflected through various sections of the Chesapeake Bay Watershed Agreement.[34]

4. Federal Funding

As mentioned, funding remains a challenge for implementing the Blueprint. Full or increased funding is needed in a variety of programs that support the implementation of the Blueprint including:

U.S. Army Corps of Engineers (USACE) Programs

The U.S. Army Corps of Engineers (USACE) is a key partner in the Chesapeake Bay Watershed Agreement goal to restore oyster populations in 10 Bay tributaries in Maryland and Virginia by 2025. It provides significant technical expertise, logistical coordination, and funding for the construction and long-term monitoring of oyster restoration projects. USACE also completed a Chesapeake Bay Comprehensive Plan in 2018 that identified more than 300 restoration projects throughout the watershed in need of funding.

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[31] *Id.*

[32] Sarah M. Giltz and Caz M. Taylor, *Reduced Growth and Survival in the Larval Blue Crab Callinectes sapidus Under Predicted Ocean Acidification*, 36, J. of Shellfish Research, 481, 2017.

[33] Chesapeake Bay Foundation, *The Economic Importance of the Bay*, http://www.cbf.org/issues/what-we-have-to-lose/economic-importance-of-the-bay/

[34] One of the purposes of the Chesapeake Bay Restoration Act of 2000 was to "expand and strengthen cooperative efforts to restore and protect the Chesapeake Bay; and to achieve the goals established in the Chesapeake Bay Agreement." 33 U.S.C. § 1267. The Chesapeake Bay Agreement is an interstate compact as Congress developed and authorized the joint state action. *See Cuyler v. Adams*, 449 U.S. 433; 101 S. Ct. 703 (1981); *Seattle Master Builders Assoc. v. Pacific Northwest Electric Power & Conservation Planning Council*, 786 F.2d 1359 (9th Cir. 1986).; *Chesapeake Bay Watershed Agreement,* 2014, https://www.chesapeakebay.net/documents/FINAL_Ches_Bay_Watershed_Agreement.withsignatures-HIres.pdf

U.S. Department of Agriculture (USDA) Programs

Through several conservation programs, the U.S. Department of Agriculture works with farmers to plan and install voluntary practices that protect water quality by reducing the flow of valuable nutrients and sediments from agricultural lands into rivers and streams. The programs are funded through the Federal Farm Bill and support every state in the Chesapeake Bay watershed. They include:

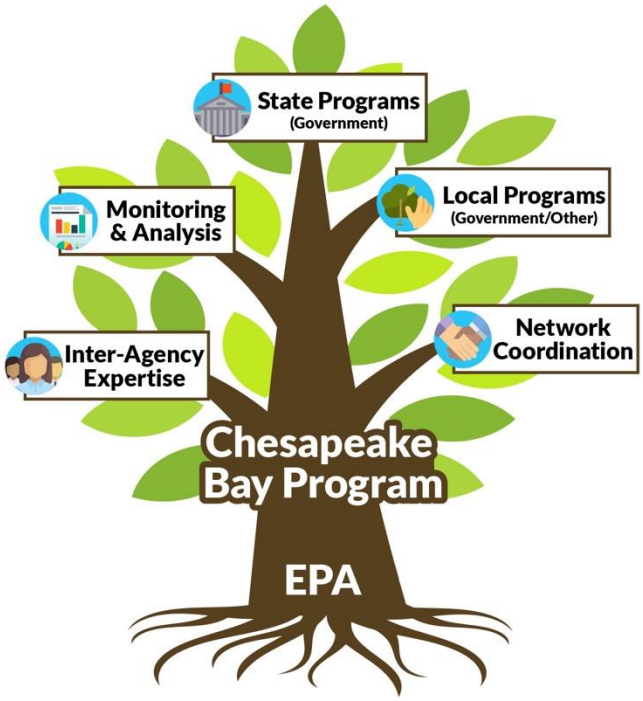
- Environmental Quality and Incentives Program (EQIP)
- Conservation Stewardship Program (CSP)
- Regional Conservation Partnership Program (RCPP)
- Conservation Reserve/Conservation Reserve Enhancement Program (CREP) *See how CREP and other programs are helping farmers reduce the amount of pollution entering local waterways and the Bay.*

Congress passed the Agriculture Improvement Act of 2018, or 2018 Farm Bill, into law on December 20, 2018. To ensure that these programs are put to the best use in the Chesapeake Bay region, *the maximum amount of funding contemplated by Congress should be appropriated*.

Chesapeake Bay Program

Perhaps one of the most important aspects of funding is the federal funding that supports the Chesapeake Bay Program. The Chesapeake Bay Program (CWA 117) provides targeted support to watershed states to meet their Blueprint goals. The Chesapeake Bay Program Office in Annapolis, Maryland coordinates the science, research, modeling, support services, monitoring, data collection, and other activities essential to Blueprint implementation. As a single cross-state ecological system, the Bay watershed requires this sophisticated level of attention. For example, the Bay Program is coordinating the development of trading and offset programs that both ensure pollution reduction requirements are met and create cost-effective options for states to meet their goals. But the lion's share of program funds go directly to grants and cooperative agreements that enable nonprofit organizations, state and local governments, colleges, universities, and interstate agencies to assist with Blueprint implementation.

Originally created under President Ronald Reagan, this supports complex cross-state collaboration and excellent stewardship of taxpayer dollars by providing states access to the watershed-wide science, research, modeling, monitoring, and data they need to efficiently plan, track, and adapt their restoration activities. Over 60 percent of program funds go to states, primarily through matching grant programs that drive local investment in state restoration priorities. **Increasing federal support for the program is an important step to save the Bay and repair some of the most damaged waterways in Virginia, Pennsylvania, and Maryland.** CBF recommends that additional funds be used to:



- Expand two grant programs—one that improves water quality and habitat in small, local waterways, and a second that supports innovative and market-based approaches to reducing pollution.

- Assist local governments in reducing pollution.

- Increase assistance to priority watersheds that will provide the most cost-effective pollution reductions.

Simply stated, the Chesapeake Bay Program is the glue that holds together the Blueprint. It is therefore important to not only increase funding to the program through the appropriations process, but to reauthorize the program as well. CBF supports the current proposals that have been introduced in the House and Senate that do just that.[35]

It is impossible to overstate how important robust and consistent federal funding for grants and loans and funding the Chesapeake Bay Program is for successful implementation of the Chesapeake Bay Blueprint.

[35] H.R. 1620 (116), *Chesapeake Bay Program Reauthorization Act,* S. 701 (116), *Chesapeake Bay Program Reauthorization Act.*

Conclusion

The Chesapeake Clean Water Blueprint has infused new life into the Bay cleanup. We are seeing accelerated implementation of practices that scientists agree will lead to improved water quality and ultimately a healing of the Bay. However, what is undone far exceeds what has been done to date. Now is not the time to rest, now is "The Moment in Time" that must be seized to accelerate Bay restoration to gain sufficient ground to overcome the continuing crush of population growth. The Bay has suffered centuries of degradation. But we do not have the luxury of time to save it. Now, in the final and most important phase of the clean-up effort, the Bay partnership must finish the job.

The science is clear about what needs to be done, and the Blueprint is working. Underwater grasses are recovering. Blue crab populations are rebounding. The Bay's dead zone is shrinking. Communities are seeing cleaner streams, greener urban landscapes, and increased resilience. But the recovery is fragile. We are facing a variety of ongoing—as well as some emerging—challenges. Pennsylvania's leaders must live up to their commitments.

Climate change is an imminent threat. Regulatory rollbacks threaten progress toward clean water and air. And funding is at risk for programs key to the Bay's health.

As President Reagan said in his 1984 State of the Union, "Let us remember our responsibility to preserve our older resources here on Earth. Preservation of our environment is not a liberal or conservative challenge, it's common sense."

Clean water is our responsibility, our legacy to leave our children and grandchildren. We must succeed.

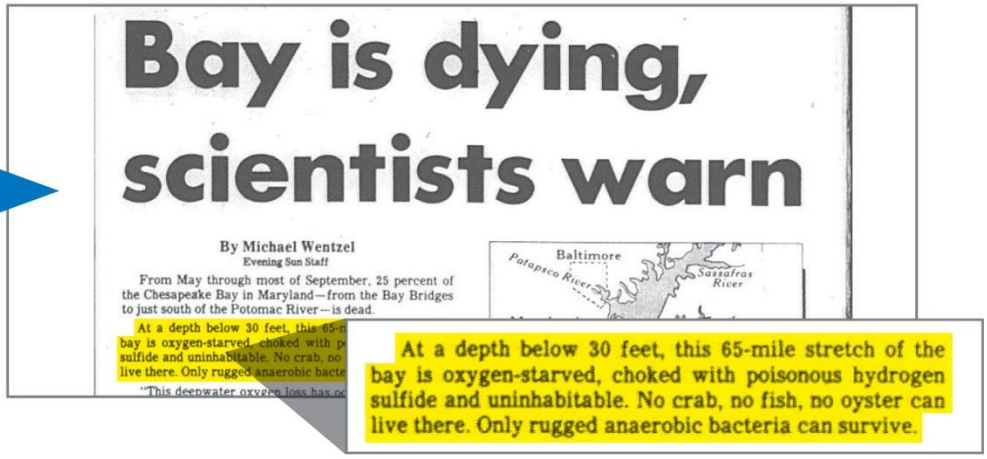
From Rock Bottom to Real Hope in 36 Years

A positive trajectory for the Chesapeake Bay

CHESAPEAKE BAY FOUNDATION

Saving a National Treasure

The Evening Sun
JULY 26, 1982



Bay is dying, scientists warn

By Michael Wentzel
Evening Sun Staff

From May through most of September, 25 percent of the Chesapeake Bay in Maryland—from the Bay Bridges to just south of the Potomac River—is dead.

Baltimore
Patapsco River
Sassafras River

At a depth below 30 feet, this 65-mile stretch of the bay is oxygen-starved, choked with poisonous hydrogen sulfide and uninhabitable. No crab, no fish, no oyster can live there. Only rugged anaerobic bacteria can survive.

The Smithsonian News Desk
JANUARY 4, 2018

Excerpted from "The ocean is losing its breath—here's the global scope":

"Halting climate change requires a global effort, but even local actions can help with nutrient-driven oxygen decline." *—Denise Breitburg, Marine Ecologist, Smithsonian Environmental Research Center*

As proof **Breitburg points to the ongoing recovery of Chesapeake Bay, where nitrogen pollution has dropped 24 percent** since its peak thanks to better sewage treatment, better farming practices and successful laws like the Clean Air Act. While some low-oxygen zones persist, the area of the Chesapeake with zero oxygen has almost disappeared.

The Baltimore Sun
JUNE 18, 2018

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Scientists say they're confident Chesapeake Bay health is 'significantly improving'

By Scott Dance · Contact Reporter
The Baltimore Sun

JUNE 15, 2018, 10:30 AM

For several years, some indicators have suggested that the Chesapeake Bay ecosystem is at its healthiest in generations. But scientists have been hesitant to call it a trend — until now.

They say they are sure: The estuary is on a "significant" upswing.

"We've been waiting for this moment where we could say the bay as a whole is getting better," said Bill Dennison, vice president for science applications at the University of Maryland Center for Environmental Science. "Now we can say it."