

CHESAPEAKE BAY COMMISSION 2016 POLICY FOR THE BAY



A TRI-STATE PARTNERSHIP

PENNSYLVANIA



REPRESENTATIVE GARTH EVERETT
CHAIR

MARYLAND



DELEGATE TAWANNA GAINES
VICE-CHAIR

VIRGINIA



DELEGATE SCOTT LINGAMFELTER
VICE-CHAIR

COMMISSION MEMBERS WORK IN PARTNERSHIP TO ADDRESS ENVIRONMENTAL challenges across the watershed, relying on science and monitoring data to overcome differences of party, background and culture in their home districts. As the only signatory of the Chesapeake Bay Agreements that represents the legislative branch of government, the Commission plays a unique policy and budget role.

2017 MEMBERS

- ◆ The Hon. Garth D. Everett, *Chairman* Pennsylvania House of Representatives
- ◆ The Hon. Tawanna P. Gaines, *Vice-Chair* Maryland House of Delegates
- ◆ The Hon. L. Scott Lingamfelter, *Vice-Chair* Virginia House of Delegates

The Hon. Richard L. Alloway II Senate of Pennsylvania
 The Hon. Mark J. Belton Secretary of Natural Resources, Maryland
 The Hon. David L. Bulova Virginia House of Delegates
 The Hon. G. Warren Elliott Pennsylvania Citizen Representative
 The Hon. Bernie Fowler Maryland Citizen Representative
 The Hon. Barbara A. Frush Maryland House of Delegates
 The Hon. Keith Gillespie Pennsylvania House of Representatives
 ◆ The Hon. Guy J. Guzzone Senate of Maryland
 The Hon. Emmett W. Hanger, Jr. Senate of Virginia
 The Hon. Patrick McDonnell Secretary of Environmental Protection, Pennsylvania
 The Hon. Maggie McIntosh Maryland House of Delegates
 ◆ The Hon. Thomas McLain "Mac" Middleton Senate of Maryland
 The Hon. Margaret B. Ransone Virginia House of Delegates
 ◆ The Hon. P. Michael Sturla Pennsylvania House of Representatives
 The Hon. Dennis H. Treacy Virginia Citizen Representative
 ◆ The Hon. Frank W. Wagner Senate of Virginia
 The Hon. Molly Ward Secretary of Natural Resources, Virginia
 The Hon. Gene Yaw Senate of Pennsylvania

Rear Admiral John C. Scorby, Jr. Naval Liaison

◆ Member of the Executive Committee

A BI-PARTISAN APPROACH

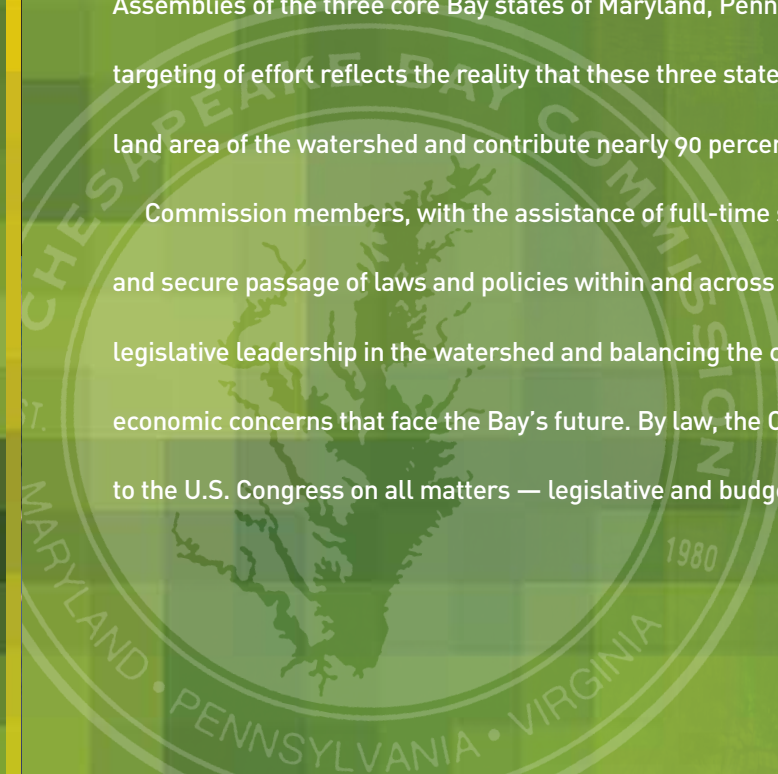
THE CHESAPEAKE BAY COMMISSION IS A TRI-STATE LEGISLATIVE BODY CREATED in the 1980s to advise the General Assemblies of Maryland, Pennsylvania and Virginia on matters of Baywide concern. Twenty-one members (seven from each state) define the Commission's identity, determine its direction and share its workload. Fifteen are state legislators, three are cabinet-level secretaries representing their governors, and three are citizen representatives.

Despite its political composition, the Commission is bi-partisan and consensus-based. Its mandate is to address a broad range of issues, taking into account the pollution sources, land uses, living resources and human impacts that threaten the health of the Bay and its watershed, a 64,000-square-mile area encompassing six states, our nation's capital and 1,800 local governments.

The full range of urban, suburban and rural life enjoyed in the watershed is represented, with each member contributing his or her unique perspective and expertise. Knowledge is gained at quarterly Commission meetings and in the field through dialogue with constituents, stakeholders and scientists.

Strategically, the Commission focuses on the activities and actions of the General Assemblies of the three core Bay states of Maryland, Pennsylvania and Virginia. This targeting of effort reflects the reality that these three states constitute over 80 percent of the land area of the watershed and contribute nearly 90 percent of the nutrient loads.

Commission members, with the assistance of full-time staff in each state, craft, coordinate and secure passage of laws and policies within and across the states, setting the bar for legislative leadership in the watershed and balancing the complex ecological, social and economic concerns that face the Bay's future. By law, the Commission also serves as a liaison to the U.S. Congress on all matters — legislative and budgetary — of Baywide concern.



THE COMMISSION IN ACTION 2016

COMMISSION MEMBERS VIEW GROUNDBREAKING STREAM HEALTH RESEARCH AT STROUD WATER RESEARCH CENTER, PA.



MD. DEL. MAGGIE MCINTOSH LEARNS THAT WHILE SOME RIVERS ARE STILL DEGRADING, MOST ARE IMPROVING



VA. SEN. EMMETT HANGER PROMOTES LIVESTOCK STREAM EXCLUSION DURING CHESAPEAKE BAY AWARENESS WEEK

2017 CHAIR REP. GARTH EVERETT, FROM LANDLOCKED NORTH-CENTRAL PA., EXPERIENCES THE PRODUCTIVITY OF TANGIER SOUND



PA. SEN. GENE YAW, DEP. SEC. PATRICK MCDONNELL AND REP. KEITH GILLESPIE HOST THE COMMONWEALTH'S LEGISLATIVE LEADERSHIP AT THE SMITHSONIAN



2016 VICE-CHAIR DEL. SCOTT LINGAMFELTER (VA.) AND CHAIR SEN. MAC MIDDLETON (MD.)



PA. REP. MIKE STURLA AND PA. SEN. RICH ALLOWAY COMPARE OPTIONS TO ESTABLISH A CLEAN WATER FUND IN PENNSYLVANIA

SCIENTISTS EXPLAIN THE NEGATIVE IMPACTS TO STREAMS OF HISTORIC MILL DAMS AND LIVESTOCK ACCESS



MD. DEL. BARBARA FRUSH SPONSORED SUSTAINABLE OYSTER HARVEST LEGISLATION IN 2016



VA. SEN. FRANK WAGNER EXAMINES CASE STUDIES OF PUBLIC-PRIVATE PARTNERSHIPS



MD. DEL. TAWANNA GAINES (CENTER) PROMOTES GREEN INFRASTRUCTURE IN HER URBAN DISTRICT

THE WORK OF THE DELEGATIONS IN 2016

IN MARYLAND

With Maryland on-track to meet its 2017 water quality goals under the TMDL, Commission members focused on maintaining that progress by supporting land conservation.

Maryland's Program Open Space (POS) preserves natural areas, protects historic places, and develops parks. Full funding of POS and other land conservation programs is critical to achieving the Chesapeake Bay Watershed Agreement goal to preserve an additional 2 million acres by 2025. Unfortunately, recent state budgets have diverted funding from POS to Maryland's General Fund.

After working with a broad group of stakeholders, Commission members effectively sponsored legislation to repay \$90 million in previous POS diversions. The bill also requires repayment of any future diversions.

In other budget-related matters, the Commission worked to fully fund the state Chesapeake Bay Trust Fund, which supports agricultural and other non-point source best management practices, a first in the Fund's ten-year history. The legislature also commissioned a study to determine whether Soil Conservation Districts, which help farmers install pollution reduction practices, are adequately funded.

Commission members were also successful with the passage of a study to determine sustainable harvest rates and management strategies for the public oyster fishery.

IN PENNSYLVANIA

With mounting evidence that Pennsylvania would not meet its 2017 TMDL goals, Commission members turned their attention to obtaining the necessary resources to get the Commonwealth back on track.

Throughout the year, the Commission worked with members of Congress to secure an additional \$28 million in federal and state dollars for Pennsylvania's Bay efforts.

In August, Commission members hosted a well-attended meeting for Pennsylvania legislative leaders and staff at the Smithsonian Environmental Research Center in Maryland. For many in attendance, it was their first encounter with the Chesapeake.

The meeting helped generate a renewed focus, and the Senate Agriculture & Rural Affairs and Environmental Resources & Energy Committees held a joint hearing, on the multi-billion-dollar funding gap. Commission members introduced four pieces of legislation designed to provide new funding to help fill the gap. While none passed, conversation galvanized around a new statewide Clean Water Fund that would receive revenue from a new water use fee. In December, Commission members met personally with Governor Wolf on this concept.

In parallel, negotiations continued with the Department of Agriculture and stakeholders on legislation sponsored by the Commission to reduce the nitrogen and phosphorus in lawn fertilizer.

IN VIRGINIA

With implementation of the TMDL continuing to highlight the role of local governments, Commission members championed legislation in 2016 to assist local partners in keeping Virginia on-track for clean water.

Intended to reduce the cost of compliance, legislation authorized public-private partnerships (P3s) for stormwater management. P3s allow private firms to provide traditional government services to maximize the efficiencies of the public and private sectors.

Water quality credit trading can also reduce compliance costs. Some Virginia municipalities have purchased low-cost nitrogen or phosphorus credits from another municipality rather than implement high-cost technology to achieve water quality goals. As a result of Commission leadership, municipalities can now use the Stormwater Local Assistance Fund to purchase nutrient credits. Commission leadership also yielded sediment credit trading.

Legislation introduced by Commission members addressed an unintended consequence of Virginia's Conflict of Interest Act; Bay farmers can now serve in a leadership role at their local Soil and Water Conservation District.

Finally, Commission members assisted with the passage of historic funding of \$72 million for agricultural best management practices and technical assistance.



BERNIE FOWLER "WADES IN" WITH CONG. STENY HOYER AND ROY DYSON

HONORING BERNIE FOWLER

Perhaps no individual has done more to inspire generations of Bay stewards than retired Maryland Senator Bernie Fowler, the longest serving Commission member with 32 years of service. Fowler is best known for making complicated restoration science understandable to the general public through his annual "Wade-In" to gauge water clarity on the Patuxent River.

In 2016, all three state delegations presented Fowler with honorary proclamations and championed legislation to establish "Chesapeake Bay Awareness Week" in their states. To be held every year in the second week of June, Chesapeake Bay Awareness Week will coincide with the Wade-In and encourage local special events like kayak trips, tree plantings, trash clean-ups, and nature walks that will engage the public in Bay restoration.

MARYLAND DELEGATION



DNR SECRETARY MARK BELTON, DEL. TAWANNA GAINES, SEN. MAC MIDDLETON, DEL. BARBARA FRUSH AND SEN. GUY GUZZONE

PENNSYLVANIA DELEGATION



AUTHOR TOM HORTON (BACK CENTER) WITH REP. GARTH EVERETT, SEN. GENE YAW, SEN. RICH ALLOWAY, WARREN ELLIOTT AND REP. KEITH GILLESPIE

VIRGINIA DELEGATION



SEN. EMMETT HANGER, DEP. SEC. RUSS BAXTER, DENNIS TREACY, SEC. OF NATURAL RESOURCES MOLLY WARD, DEL. DAVID BULOVA, DEL. MARGARET RANSONE, REAR ADM. JOHN SCORBY, DEL. SCOTT LINGAMFELTER

SIGNS OF PROGRESS . . .

Conditions in the Chesapeake Bay and its tributaries are showing noticeable signs of improvement. After more than 30 years of restoration, and half-way through implementation of a Clean Water Act Total Maximum Daily Load (TMDL), experts are speculating that the Bay may be nearing a “tipping point” to good health.

In a highly complex ecosystem such as the Chesapeake Bay, biological processes can withstand a certain amount of pollution. But upon reaching a threshold, the pollution overwhelms the ecosystem and degradation occurs rapidly. Similarly, restoration can only occur when lower levels of pollution allow for positive biological responses.

Thanks to decades of research and sophisticated modeling tools, scientists know that decreases in nitrogen, phosphorus and sediment loads will improve Bay health over time. In 2016, that improvement is evident.

Water quality monitoring data compiled from 117 sites across the watershed by the United States Geological Survey (USGS) indicate a significant decrease in nutrients and sediment since 1985. In the most recent decade, over half of the monitoring sites

show reduced loads, especially in the Susquehanna watershed, which provides 50 percent of the Bay’s freshwater. Measured in pounds of nutrient or sediment runoff per acre of watershed, these trends indicate that wastewater treatment upgrades and best management practices on the land are having their intended effect of reducing water pollution.

Excess nutrients in the water contribute to rapid growth of algae, a process that ultimately results in low levels of dissolved oxygen. In the Bay, many areas have oxygen levels so low that no fish can survive, a condition known as hypoxia. Dissolved oxygen is further reduced by warm temperatures, meaning the hypoxic zone has historically been larger during the summer. While a record-hot summer of 2016 did see an expected increase in the area with hypoxia, there were *no* areas that saw a complete lack of oxygen (anoxia), a first in the 30 years of monitoring.

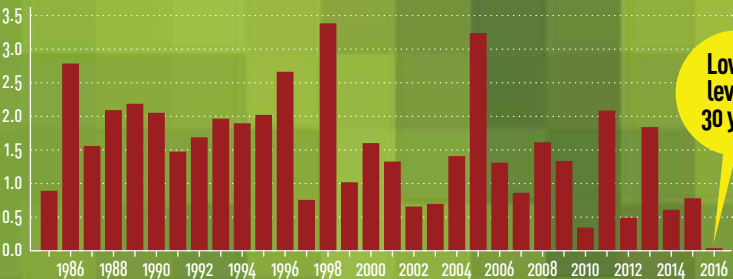
Another benefit of reducing nutrients and sediment is increased water clarity. The clearer the water, the greater the amount of sunlight for underwater grasses — important habitat for fish and crabs and a filter of sediment. The acreage of grasses in the Bay has been steadily increasing, and

between 2014 and 2015 the coverage increased over 20 percent to the highest level in 30 years. Some areas, like the Susquehanna Flats at the mouth of the Susquehanna River, now have almost complete coverage of grass.

All of these operations are evidence of a resilient system rebounding, putting the Chesapeake at the top of the tipping point curve. Continued pollution reductions are essential to take the Bay over the tipping point to sustainable health.

Late summer anoxic volume (cubic kilometers)

*Anoxic volumes computed from two-dimensional interpolations of Bay dissolved oxygen. Anoxia defined as DO < 0.25 mg/L. Interpolation based on Murphy et al. 2009



SOURCE: MD, DNR, CHESAPEAKE BAY PROGRAM, COMPUTED BY REBECCA MURPHY AND JEREMY TESTA

Lowest level in 30 years

. . . BUT CHALLENGES PERSIST

Despite the encouraging news of improved conditions in the Bay, several factors continue to hinder progress. Population growth, intensive agriculture, climate change and the disappearing capacity of lower Susquehanna dams to trap nutrients and sediment are causing experts to reexamine the effort necessary to achieve sustainable health.

More than 18 million people now live in the Chesapeake Bay watershed, a number that has doubled since the 1950s and is still increasing. While implementation of on-the-ground best management practices has outpaced the effects of increased wastewater flows, stormwater pollution continues to rise.

One-quarter of the Bay’s 64,000 square mile watershed is used for agriculture, supplying roughly half of the nitrogen, phosphorus and sediment to the Bay. With 84,000 farms in the watershed — 30,000 in Pennsylvania — here too, there is a lot to do.

Sea level rise, warmer water, and more intense storm events further challenge restoration. Rising sea level, exacerbated by land subsidence, threatens

not only to flood shoreline wetlands but also to displace existing communities. Increased flooding threatens to destabilize stream bank vegetation. More intense storm events flush more nutrients and sediments into the Bay. And warmer water leads to reductions in oxygen content in the water.

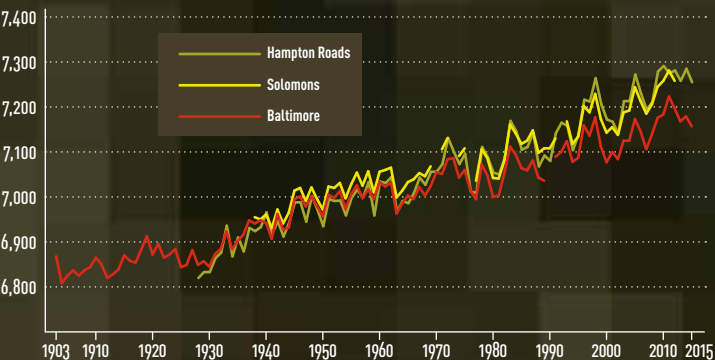
But perhaps the largest threat lies in the nutrients and sediment accumulating behind three large hydroelectric dams on the Lower Susquehanna. Each dam has created a giant settling pond upstream, storing sediment and associated nutrients. Over decades, the reservoir behind each dam has filled with this material, first at Safe Harbor, then Holtwood and now Conowingo.

The loss of trapping capacity at Conowingo, the final dam in the sequence, has caused the entire Lower Susquehanna to be in a state of “dynamic equilibrium.” The loads-in now equal the loads-out. The sediment and phosphorus that previously were trapped are now flowing downstream unimpeded. Therefore, despite reductions upstream, the loads at Conowingo have increased, at least temporarily.

So long as the inputs upstream of the Conowingo Dam continue to decrease, the Susquehanna’s loads to the Bay will ultimately decrease. But this will take expanded efforts, new funding and time. In the meantime, who will take responsibility for the pollutant loads no longer captured by the dam?

As each state prepares its “Phase III” Watershed Implementation Plan (WIP) for the TMDL, these challenges must be addressed. To be completed in 2018, the WIPs will describe the suite of actions necessary to meet the 2025 clean water deadline.

Annual mean sea level (mm), 1903–2015



SOURCE: NOAA

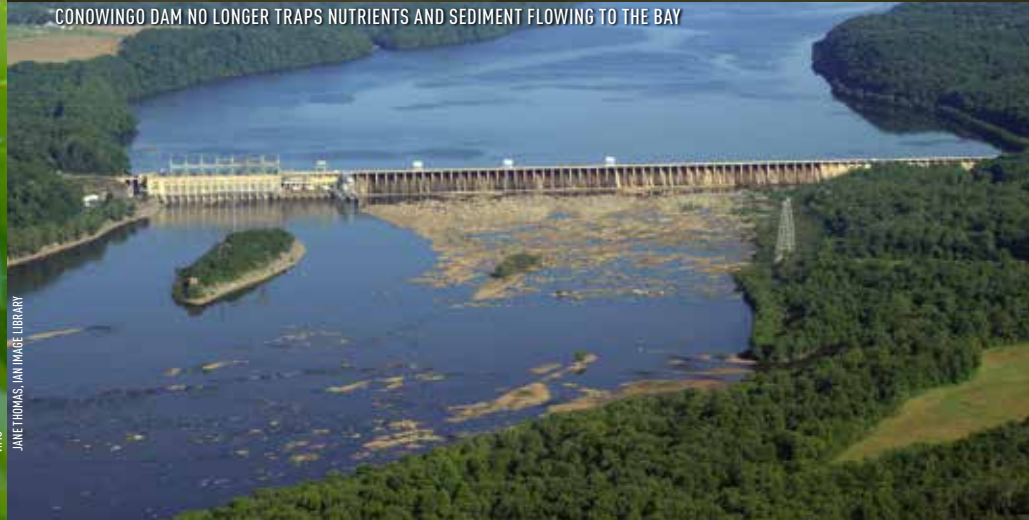
THE CHESAPEAKE’S VAST MONITORING NETWORK IS AMONG THE BEST IN THE WORLD



WATER CLARITY ALLOWS SEAGRASS TO FLOURISH, PROVIDING HABITAT AND RESILIENCY



CONOWINGO DAM NO LONGER TRAPS NUTRIENTS AND SEDIMENT FLOWING TO THE BAY



STORMWATER IS THE BAY’S FASTEST-GROWING POLLUTION SOURCE



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