



CHESAPEAKE BAY COMMISSION 2020

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“At the Commission
table, I cannot tell who is
a Republican and who is a
Democrat.”

— Senator Mike Waugh (Pa.)

(1955-2014)

40 YEARS OF POLICY FOR THE BAY

FORTY YEARS AGO, THE DECLINING HEALTH AND PRODUCTIVITY OF THE Chesapeake Bay prompted the General Assemblies of Maryland and Virginia to create the Chesapeake Bay Commission to lead and coordinate their joint efforts to restore the ailing estuary. Pennsylvania joined as an equal member in 1985, forming the current tri-state legislative body.

Composed of 21 members, seven from each state, fifteen of the Commission's members are state legislators, representing the diversity of the Bay's people, places and political identities. A cabinet member represents each governor. A citizen representative from each state completes the membership. Collectively, these leaders define the Commission's identity, determine its direction, and share its workload.

The Commission's charge is to address the breadth of issues that threaten the health of the Bay watershed. Commission members craft and secure passage of laws, policies and budgets that balance many competing interests. The Commission has been a signatory to each Chesapeake Bay Agreement and is a member of the Chesapeake Executive Council, serving as the legislative voice of the multi-jurisdictional, federal-state Chesapeake Bay Program Partnership. The Commission also serves as a liaison to the U.S. Congress on policy and budgetary matters related to the restoration of the Bay watershed.

The year 2020 marks the Commission's 40th anniversary, giving it an opportunity to reflect not only on its history and accomplishments, but also on its future.

This report pays tribute and offers thanks to the 127 state legislators, cabinet secretaries, and private citizens who have served on the Commission and given freely of their time, thought and initiative in this noble and essential cause — the restoration of the nation's greatest estuary.



CHESAPEAKE BAY COMMISSION 2020

WHO WE ARE



CHAIRMAN

Gene Yaw,
Senate of
Pennsylvania



VICE-CHAIR

Guy Guzzone,
Maryland State
Senate



VICE-CHAIR

David Bulova,
Virginia House of
Delegates

2020 MEMBERS

NUMBERS REFER TO STARS ON MAP

- 1 The Hon. Gene Yaw, Chairman ♦ Senate of Pennsylvania
- 2 The Hon. David Bulova, Vice-Chair ♦ Virginia House of Delegates
- 3 The Hon. Guy Guzzone, Vice-Chair ♦ Maryland State Senate
- 4 The Hon. Robert S. Bloxom, Jr. Virginia House of Delegates
- 5 The Hon. Tony Bridges. Maryland House of Delegates
- 6 The Hon. Sarah K. Elfreth Senate of Maryland
- 7 The Hon. G. Warren Elliott Pennsylvania Citizen Representative
- 8 The Hon. Garth D. Everett Pennsylvania House of Representatives
- 9 The Hon. Keith Gillespie Pennsylvania House of Representatives
- 10 The Hon. Nancy D. Guy Virginia House of Delegates
- 11 The Hon. Jeannie Haddaway-Riccio Secretary of Natural Resources, Maryland
- 12 The Hon. Emmett W. Hanger, Jr. ♦ Senate of Virginia
- 13 The Hon. Lynwood W. Lewis, Jr. Senate of Virginia
- 14 The Hon. Sara Love Maryland House of Delegates
- 15 The Hon. Scott Martin Senate of Pennsylvania
- 16 The Hon. Patrick McDonnell Secretary of Environmental Protection, Pennsylvania
- 17 The Hon. Thomas McLain "Mac" Middleton Maryland Citizen Representative
- 18 The Hon. Dana M. Stein ♦ Maryland House of Delegates
- 19 The Hon. Matthew J. Strickler Secretary of Natural Resources, Virginia
- 20 The Hon. P. Michael Sturla ♦ Pennsylvania House of Representatives
- 21 The Hon. Dennis H. Treacy Virginia Citizen Representative
- 22 The Hon. Bernie Fowler Member Emeritus
- 23 Rear Admiral Charles W. Rock Naval Liaison

♦ Member of the Executive Committee



WHERE WE ARE FROM

IN THE COURSE OF THE CHESAPEAKE BAY Commission's 40-year history, 127 individuals have contributed a combined 813 years of service to the Commission. This map shows the towns and cities represented by each of the Commission's current and former members. Multiple cabinet secretaries are represented by one symbol at each state capital.

LEGEND

- ★ 2020 Members
- Past Members

Watershed Boundary

PENNSYLVANIA

HARRISBURG

Chambersburg

York

Lancaster

MARYLAND

Baltimore

Columbia

Bethesda

Fairfax Station

Waldorf

Prince Frederick

Mount Solon

VIRGINIA

Hanover Courthouse

RICHMOND

Norfolk

Virginia Beach

Mappsville
Accomac

0 10 20 30 40
MILES

ESTABLISHING ROOTS

FROM THE TIME NATIVE AMERICANS FIRST settled on the shores of the Chesapeake, the natural resources of the watershed have provided sustenance and shelter for countless generations of humans. The first European explorers commented on the abundance of aquatic life — the oyster beds that impeded their navigation, the massive sturgeon pulled from the water.

This abundance of living resources is a characteristic of estuaries, places where fresh and salt water mix. The fundamental well-being of the Chesapeake watershed's citizens was and is inextricably linked to the health and vitality of this estuary, its land, and the rivers that feed it.

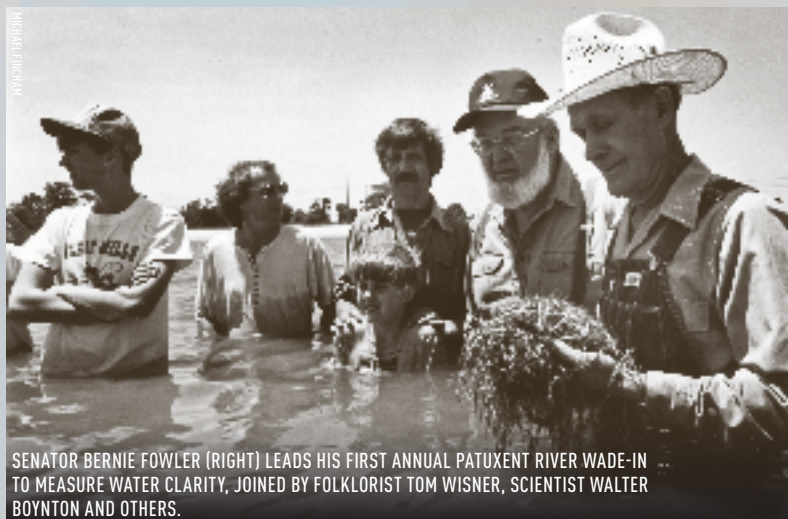
By the 1970s, disturbing trends had worsened and reports of fish die-offs and crabs fleeing oxygen-starved water became common. Citizens and policy leaders knew something was not right, but Bay science was still in its infancy. Maryland U.S. Senator Charles "Mac" Mathias, whose Congressional committee oversaw the newly created Environmental Protection Agency, sponsored legislation initiating an in-depth study of the Bay.

The EPA analysis confirmed the troubling conditions — low to no dissolved oxygen in the tidal waters every summer and poor water clarity. It also pointed to the cause — an overabundance of nutrients, particularly nitrogen and phosphorus, that led to oxygen-depriving algae blooms. But the report stopped short of recommending how to

correct these conditions for a watershed spanning 64,000 square miles, six states and the District of Columbia.

Meanwhile, Maryland and Virginia state legislators were exploring a bi-state partnership, triggering a two-year effort to define how such an arrangement might work. In 1978, legislation was passed in both states to form the Commission's precursor, the Chesapeake Bay Legislative Advisory Commission, to examine how to enhance the management of the Chesapeake Bay across state lines.

After examining models from around the country, the conclusion was reached that the Bay region needed an entity focused on legislative action — laws and budgets. Thus, the *raison d'être* for the Chesapeake Bay Commission.



SENATOR BERNIE FOWLER (RIGHT) LEADS HIS FIRST ANNUAL PATUXENT RIVER WADE-IN TO MEASURE WATER CLARITY, JOINED BY FOLKLORIST TOM WISNER, SCIENTIST WALTER BOYNTON AND OTHERS.

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TIMELINE

THE CHESAPEAKE BAY COMMISSION HAS BEEN A catalyzing force for change in watershed policy. This work has been done primarily through the passage of state legislation, successful advocacy at the federal level, and publication of policy reports that spur meaningful change.

Follow the history of the Chesapeake Bay Commission from before its founding to the present day through the timeline that runs along the bottom of the pages of this report.

1975

U.S. Senate Appropriations Committee charges EPA "to conduct an in-depth study of the Chesapeake Bay which shall be applicable to other areas of the country."



Chief Sponsor
U.S. Senator
Charles "Mac"
Mathias, Jr. (Md.)

FORMING THE COMMISSION

IN 1980, THE STATES OF MARYLAND AND Virginia established the Chesapeake Bay Commission. The enabling statutes clearly articulated the fundamental mission of the Commission:

- to assist the legislatures in evaluating and responding to mutual Bay concerns;
- to promote intergovernmental cooperation and coordination for resource planning;
- to promote uniformity of legislation where appropriate;
- to enhance the functions and powers of existing offices and agencies; and
- to recommend improvements in the management of Bay resources.

Not long after the Commission's creation, Pennsylvania saw the synergies that were emerging from the Maryland-Virginia arrangement. Pennsylvania joined in 1985, recognizing its critical role in the improvement of the Bay's waters and the significance of the Commonwealth's water resources to its people and economy.

Over four decades, the socially diverse and politically balanced membership of the Commission has proven essential to its effectiveness. Members successfully balance the difficult and entangled scientific, ecological, social and economic concerns that challenge the Bay's future. Despite a trend toward fractured government along political and ideological grounds, the Commission remains a unified voice for a unified purpose.

Who's at the table?



Three state Delegations with seven members each:

- Two Senators
- Three House members
- One Governor or Cabinet Secretary
- One citizen representative

Together, working across state and party lines, the members of the Commission anticipate the needs and respond to the challenges presented by the ongoing efforts to preserve and restore the Chesapeake Bay, its tributaries, its communities and its economies. An incubator of and for environmental leaders, the Commission's members have over time evolved to become champions for restoration.

Since the Commission's inception, its members have led the legislative adoption of hundreds of laws and policies designed to improve the health of the watershed (see pages 8–9). The pages that follow provide some of the highlights of the legislative and policy achievements of the Commission during its first 40 years.

1978

Via legislation, Maryland and Virginia form the Commission's precursor, the Chesapeake Bay Legislative Advisory Commission, to begin a two-year study.

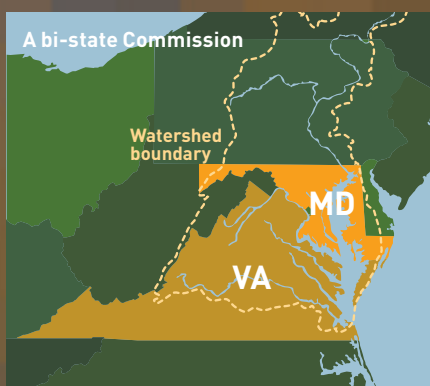


Co-Chairmen
Senator Joseph V. Gartlan, Jr. (Va.) and Eugene Cronin, Ph.D. (Md.)



1980

The bi-state Chesapeake Bay Commission is established by law in Maryland and Virginia.



1981

Commission hires staff and adopts bylaws.



First Chairman
Senator Joseph V. Gartlan, Jr. (Va.)

DRIVING COLLABORATIVE POLICY

THE MEMBERS OF THE CHESAPEAKE BAY Program Partnership, which now guides the restoration efforts under the 2014 Watershed Agreement, are the six Bay states, the District of Columbia, the Commission and the EPA, representing nearly a dozen federal agencies. But at the time of the Commission's creation this partnership did not exist.

As the first leg of this multi-jurisdictional partnership, the Commission was and is instrumental in formulating and guiding it. A signatory to each Bay Agreement and a member of the Program's Executive Council, the Chair of the Commission is the only member of the Council who

represents the legislative branch of government and multiple jurisdictions. With a membership that transcends political boundaries, the Commission has always taken a broad, holistic view of Bay policy.

At a more detailed level, the Commission has tackled innumerable tasks such as chairing the drafting of the *Chesapeake 2000* agreement, drafting policy statements and directives for the Executive Council, and managing dialogues. The relatively small size and lean staff of the Commission provide it with a nimbleness not found in a large bureaucracy.

The Program is now very large with dozens of implementation teams, work groups and action teams. Commission staff serve on many such groups, always on the lookout for potential policy changes that would require legislative action.

BROAD CONSTITUENCIES

But the real Bay partnership is not limited to the formal signatories of the Bay agreements. The input of citizens, local governments, and scientists is formally recognized through special Advisory Committees that are integral components of the Program's management structure. The Commission worked hard to ensure their creation. The Commission also fostered the development of funding partnerships — like the Chesapeake Bay Funders Network — to ensure the strategic



CHESAPEAKE BAY PROGRAM

IN 2007, THEN-CHAIRMAN MARYLAND DEL. JIM HUBBARD (LEFT) ADDRESSES FELLOW CHESAPEAKE EXECUTIVE COUNCIL MEMBERS ON THE COMMISSION'S WORK TO INFLUENCE THE FEDERAL FARM BILL AND CONGRESSIONAL APPROPRIATIONS FOR THE BAY.

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1982

Commission works to resolve the exclusion of watermen from fishing across state lines and sponsors reciprocity legislation one year later in both Maryland and Virginia.



Chairman
Senator
Catherine I.
Riley (Md.)

1983

Commission sponsors the historic "Choices for the Chesapeake: An Action Agenda" conference to receive the EPA study. Nearly 1000 attend.



Signing the first Chesapeake Bay Agreement

1984

Maryland and Virginia Delegations support financial assistance and land use legislation that enhance Bay water pollution control programs.



Delegation Chairmen
Senator Thomas A.
Rymer (Md.)
Senator Joseph V.
Gartlan (Va.)





PENNSYLVANIA REP. MIKE STURLA, EXECUTIVE DIRECTOR ANN SWANSON, VIRGINIA DEL. SCOTT LINGAMFELTER AND MARYLAND DEL. MAGGIE MACINTOSH RUN A MODELING EXERCISE TO ASSESS THE IMPACTS OF BMP IMPLEMENTATION ON WATER QUALITY.

application of private dollars. The Funders Network provides a forum for the many philanthropic organizations that support the restoration of the Bay to find synergies, thereby leveraging investments while avoiding competition.

Hundreds of organizations — like local farm bureaus and watershed alliances — are critical to the effort, as is the engagement of innumerable citizens in the watershed. Recognizing this truth, the Commission members have sponsored dozens of bills, some described in this report, prompting citizens to reduce their pollution and contribute financially to Bay restoration. The passage of legislation in each member state to formally designate the second week of June as “Chesapeake Bay Awareness Week,” timed to coincide with Commissioner Emeritus Senator Bernie Fowler’s

annual Patuxent River wade-in, has inspired events throughout the watershed to celebrate the Bay and efforts to restore its health. And the Commission’s iconic “Entering the Chesapeake Bay Watershed” signs, that span the perimeter of the watershed, remind millions each year that they are in a special place.

SCIENCE DRIVEN

The benefits of the Commission’s involvement as a partner in the Program have been remarkable. The watershed is now the best studied estuary in the world. Data collection and analysis is

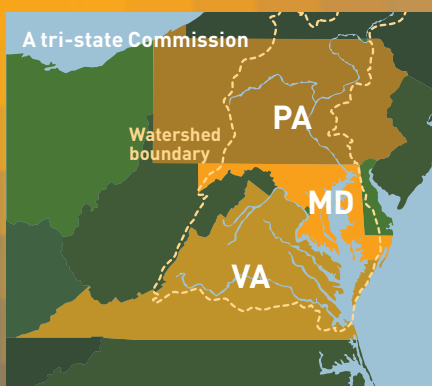
standardized, rigorous and transparent. Long-term monitoring stations track water flows and chemistry 24/7. This could only have been dreamed of in 1980.

The Program’s highly refined “bay model,” which drives management objectives and assesses the impacts of on-the-ground action, is now in its sixth iteration. The model allows Program partners, including the Commission, to test options for achieving improved water quality. Access to these tools helps the Commission to focus its public policy efforts.

When significant questions remain, the Commission supports the research to get them answered. As legislators, Commission members are uniquely positioned to provide for the region’s academic institutions that have been so critical to understanding the watershed and its complexities.

1985

The Commonwealth of Pennsylvania joins the Commission by law as an equal partner.



1986

Commission introduces resolutions in Maryland and Virginia to develop nutrient load limits for each tributary to the Bay and to coordinate the effort Baywide.



Chairman Delegate Thomas A. Rymer (Md.)

1987

Commission signs the second Chesapeake Bay Agreement while the Congress amends the Clean Water Act to make EPA’s coordination of the Bay Program a statutory responsibility.



IMPROVING WATER QUALITY

THE ORIGINAL EPA STUDY TO ANALYZE THE Bay's rapid loss of aquatic life identified excess nutrient and sediment pollution as the main source of the Bay's degraded water quality. The significant improvements since then are best explained through the lens of the four Watershed Agreements and the legislation they inspired.

1983

The first Bay Agreement was a simple one-page document, oriented to intergovernmental management matters. It created the Chesapeake Executive Council to facilitate leadership dialogue. It created the Implementation Committee to ensure collaboration among environmental agency managers. It also created the EPA Chesapeake Bay Program Office to serve as a liaison among the Bay partners.

During those formative years, each signatory returned to its home turf to address issues raised by the EPA study. What we now consider basic and ordinary environmental laws and programs were the result.

For example, both Maryland and Virginia passed laws to reduce sediment pollution from construction sites and banned the use of phosphorus in detergents. Pennsylvania, where agriculture has always played a large role as a source of excess nutrient and sediment pollution, adopted cost-share programs aimed at incentivizing farmers to implement agricultural

conservation practices to reduce both nutrient and sediment pollution.

1987

By this time, it was clear that the restoration of the Bay required a more clearly defined set of goals and objectives rather than simply stating a general commitment to cooperative management. The 1987 agreement did just that, defining 32 specific commitments, including an unprecedented commitment to reduce pollution by 40 percent by 2000. In 1992, amendments drafted by Commission staff expanded this numeric target to the Bay's largest tributaries.

On the legislative front, Commission-led action continued unabated. Pennsylvania adopted a ban on phosphorus in detergents, enacted agricultural nutrient management legislation, and laid the groundwork for its financing of environmental projects in Growing Greener. Virginia enacted the landmark Water Quality Improvement Act, passed the Poultry Waste Management Act, and established its Land Conservation Fund. Maryland enacted cutting-edge legislation on forest conservation and smart growth.

2000

Chesapeake 2000, or "C2K," was the most comprehensive agreement to date, committing the partners to an aggressive strategy for future restoration actions. It established five broad goals and an ambitious set of 102 commitments to reduce

6

1988

Commission leads drafting efforts for the Bay Program's report, *Population Growth and Development in the Chesapeake Bay Watershed to the Year 2020*.



Chairman
Delegate W. Tayloe
Murphy, Jr. (Va.)

1989

Pennsylvania passes Phosphate Laundry Detergent Ban, joining Maryland (1985) and Virginia (1987) in a region-wide approach.



1990

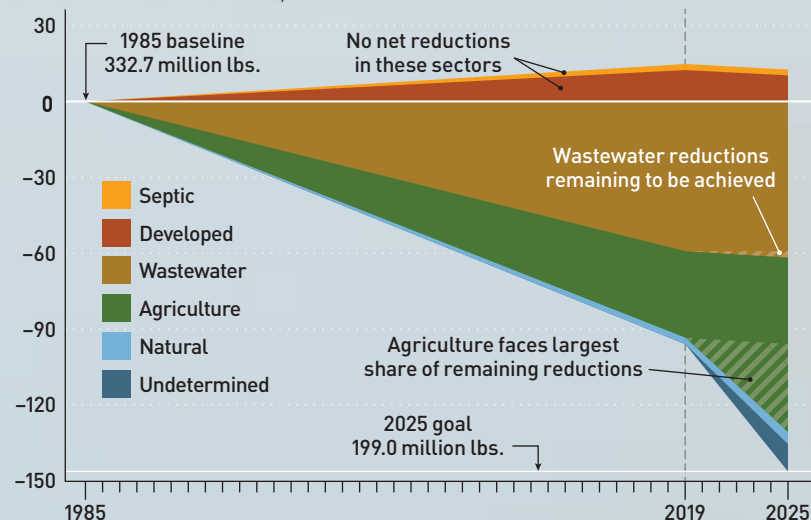
Following extensive stakeholder involvement, the Commission issues a report on recreational boat pollution which results in revisions to state and federal law.



Chairman
Kenneth J. Cole (Pa.)

Where nitrogen reductions are coming from

CHANGE IN NITROGEN LOADINGS, MILLIONS OF POUNDS PER YEAR



pollution, restore habitats, protect living resources, promote sound land use practices and engage the public. The Commission took the lead in drafting this groundbreaking agreement.

Most important was the water-quality section, which became the dominant driver for the next decade. Removing the Bay from the EPA list of "impaired" waters became the primary focus of the work of the Program. C2K acknowledged that if the Program was unsuccessful in removing these waters from the impaired waters list by 2010, the federal government would develop a cleanup plan known as a Total Maximum Daily Load, or TMDL.

In the legislatures of the Commission's member states as well as in the U.S. Congress, the

agreement spurred initiatives that funded sewage treatment plant upgrades, installed advanced septic systems, incentivized land preservation, and garnered never-before-seen levels of federal dollars for agricultural conservation practices.

2014

When it became clear that the 2010 deadline would not be met, EPA in conjunction with the Bay states developed and adopted a federal TMDL. This tool became the driver of water-quality

improvement efforts across the Bay watershed. Its implementation led to the signing of the most recent Bay agreement.

Under the first three agreements, much had been accomplished. While the population in the watershed had doubled, the phosphorus pollution levels had been cut in half, with nitrogen down by a quarter. The 2014 agreement reiterated the region's commitment to clean water, while enhancing commitments to land conservation, living resources and access.

Since then the Commission has championed legislation to fund land conservation, protect oyster reefs, manage stormwater and provide regulatory certainty to farmers.

1991

Commission hires scientists to study the genetic composition of shad in the Bay; findings result in resolutions in all three states pressing hydroelectric plants to install fish passage at their dams.



Policy Report
Genetic Analysis of Shad Entering Chesapeake Bay

1992

Pennsylvania Delegation explores the use of phytase in the Netherlands to reduce phosphorus pollution, resulting in widespread use in the watershed.



Phytase is an animal feed additive

1993

Pennsylvania passes the Nutrient Management Act, requiring large farms to control their pollution.



Chairman
Representative
Jeffrey Coy (Pa.)

LEADING THROUGH LEGISLATION

AS STATE LEGISLATORS, CHESAPEAKE BAY Commission members have been instrumental in the passage of 40 years' worth of legislation and funding to support the Bay's restoration, from regulating paint on boat hulls to appropriating hundreds of millions of dollars. Here are some of the measures they have championed:

FEDERAL

- EPA Chesapeake Bay Program
- Bay Program Partners — USGS, NPS, NOAA, USFS, NRCS, USFWS, DOD, and USACE
- Recreational Boat Pump-Out
- Ballast Water Management
- Blue Plains Wastewater Treatment Plant Funding
- Farm Bills

MULTI-STATE

- Tributyltin Bans
- Fishing Licenses & State Reciprocity
- Erosion & Sediment Control
- Non-Tidal Wetlands
- Blue Crab Targets and Thresholds
- Striped Bass Moratoria
- Environmental Education
- Recreational Boat Pollution
- Brown Fields
- Fish Passage
- Oil Spill Immunity
- Phosphate Detergent Bans
- Lawn Fertilizer Standards
- Chesapeake Bay Awareness Week

PENNSYLVANIA

- Ag Non-Point Source Abatement Program
- Farmland Preservation Program
- Agricultural Nutrient Management
- "Clean & Green" Preferential Tax Assessment
- Growing Greener Grants
- Municipal Planning Code Omnibus Amendments
- Wastewater Treatment Bonds
- Manure Hauler & Broker Certification
- REAP Ag BMP Tax Credits
- Stormwater Authorities
- Forest Buffer Offsets
- Conservation Excellence Grant Program
- Keystone Tree Fund

MARYLAND

- Critical Area Program
- Program Open Space
- Chesapeake Bay Trust and License Plate Fund
- Stormwater Control and Utilities
- Striped Bass Management
- Agricultural Nutrient Management
- Sewage Treatment Plant Compliance
- Forest Conservation
- Rural Legacy
- Animal Waste Technology Fund
- Green Print
- Non-Native Species
- Smart Growth
- Bay Restoration Fund
- Stormwater Management
- Clean Cars

8

1994

Commission adopts a resolution calling for the Bay Program to develop a riparian forest buffer policy, focusing the region on the importance of trees.



Chairman
Senator Elmo
Cross, Jr. (Va.)

1995

Commission explores the impact of ballast water discharge into Bay waters, spurring state and federal legislation.



Policy Report
*The Introduction
of Nonindigenous
Species to the
Chesapeake Bay
via Ballast Water
(1996)*

1996

Commission convenes the Bi-state Blue Crab Advisory Committee (BBCAC), an eight-year interstate

effort to develop scientifically based targets and thresholds Baywide.



BBCAC Co-Chairmen
Delegate Robert
S. Bloxom (Va.)
Delegate John
F. Wood (Md.)

The Chesapeake Bay Program Partnership



VIRGINIA

- Water & Sewer Assistance Authority
- Clean Water Revolving Loan Fund
- Dredged Material for Beach Nourishment
- Chesapeake Bay Preservation Areas
- Wetlands Enforcement
- Chesapeake Bay License Plate
- Chesapeake Bay Restoration Fund
- Forestry Water Quality
- Nutrient Management Certification
- Agricultural Stewardship
- Agricultural BMP & Equipment Tax Credit
- Water Quality Improvement Fund
- Poultry Waste Management
- Land Conservation Foundation and Fund
- Land Preservation Tax Credit
- Stormwater Program Consolidation
- Nutrient Credit Exchange

- Living Shorelines
- Septic Tanks
- Clean Water Commerce
- Chesapeake & Coastal Bays 2010 Trust Fund
- Agricultural Certainty
- Microbeads in Personal Care Products
- Farms & Families Program
- Organic Materials Recycling
- Forest Conservation Study
- Oysters — Stock Assessment, Sanctuaries and Restoration

- Major Point Source Upgrades
- Crab Dredging Ban
- Resource Management Planning
- Alternative On-Site Sewage Systems
- Public-Private Partnerships for Stormwater
- Wasteload Allocation Review
- Combined Sewer Reporting
- Riparian Oyster Plantings
- Firefighting Foam PFAS Prohibition
- Stormwater and Wastewater Funding Needs Assessments

1997

Virginia passes the Water Quality Improvement Act providing significant restoration funding.



Virginia Delegation Chairman
Delegate W. Tayloe Murphy, Jr.

1998

The first of 14 Chesapeake Bay Watershed boundary highway signs is erected, marking the farthest reaches of the watershed in Maryland, Pennsylvania, and Virginia.



Boundary Marker, Ocean City, Md.

1999

Pennsylvania passes "Growing Greener," establishing grant funding for environmental stewardship and watershed protection.



Pennsylvania Delegation Chairman
Representative Arthur D. Hershey

SUPPORTING AGRICULTURAL CONSERVATION

DURING THE COMMISSION'S 40-YEAR tenure, no subject area has dominated its attention, deliberations and action like agriculture. The reasons are simple: agriculture is a dominant land use across the watershed, it is vitally important to each state's economic and social well-being, and it is the most significant source of nutrient and sediment pollution.

The Commission's approach has always been to seek win-win solutions for the Bay and the dedicated farmers who work the watershed's landscape. As legislators, the Commission's job has been to ensure the policies and budgets were in place — at the federal and state level — to support and leverage farmers' existing efforts and new opportunities to reduce pollution.

In the federal realm, the Commission's advocacy on the Farm Bills has ensured support for the Bay region's priorities. For example, the Commission's 2005 report on potential enhancements to the Farm Bill resulted in the creation of the Chesapeake Bay Watershed Initiative, delivering \$260 million to Bay farmers and targeting funding to areas of greatest environmental concern. In 2014, the Farm Bill expanded this concept to a new national Regional Conservation Partnership Program.

Early on, the Commission identified animal manure as a major contributor to elevated levels of nutrient pollution. Always looking for innovative solutions, the Commission sponsored scientific inquiry, public discourse, and policy analysis on



SEN. EMMETT HANGER (VA.) HEARS FIRSTHAND FROM SHENANDOAH VALLEY FARMERS ABOUT THE VALUE OF TECHNICAL ASSISTANCE.

viable options to lessen this impact, such as using manure as a feedstock for energy generation.

In May 2015, the Commission released a report titled *Healthy Livestock, Healthy Streams*, highlighting the impacts of livestock pollution from direct stream access and recommending simple policy solutions. Subsequently, the Virginia Delegation spearheaded 100-percent cost-share funding for livestock stream exclusion in the Commonwealth.

The Commission has always understood the importance of technical assistance (TA), the personalized assistance provided to implement agricultural conservation practices. Its salient policy report titled *Boots on the Ground — Improving Technical Assistance for Farmers*, issued in 2017, identified strategies to increase and enhance TA capacity, watershed-wide.

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2000

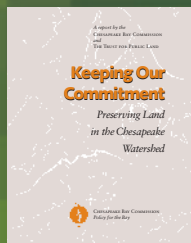
After leading an 18-month drafting process, the Commission signs the *Chesapeake 2000* agreement (C2K) and immediately launches an effort to find financial support for its implementation.



Chairman
Senator Bill
Bolling (Va.)

2001

Commission outlines land preservation policy options. The region's goal: to preserve 20 percent of the land in the watershed by 2010.



Policy Report
*Keeping Our
Commitment:
Preserving Land
in the Chesapeake
Bay Watershed*

2002

Commission launches the Bay Funders Network, connecting grantmakers across the watershed to learn, share and develop collaborative strategies.

Contributes \$45 million annually to Bay restoration



PROTECTING OPEN SPACE AND FORESTS

FROM ITS BEGINNING, THE COMMISSION has appreciated, understood, and acted upon the inextricable link between land use and water quality. The *Chesapeake 2000* agreement (C2K) for the first time established a numeric land conservation goal: to conserve 20 percent of the land within the watershed by 2010.

The Commission responded to this challenge with a sense of urgency, forging a partnership with the Trust for Public Land to quickly generate baseline data on the effectiveness of land conservation efforts and enumerate land preservation opportunities tailored to each state. Guided by this landmark analysis, *Keeping Our Commitment: Preserving Land in the Chesapeake Watershed*, in 2010 the Program met its goal.

Working with an expanded group of partners, the Commission then turned its attention to a new set of land conservation goals and the capacity to achieve them. *Conserving Chesapeake Landscapes: Protecting Our Investments, Securing Future Progress* was released in December 2010, presenting state-specific recommendations for achieving the new land conservation goals.

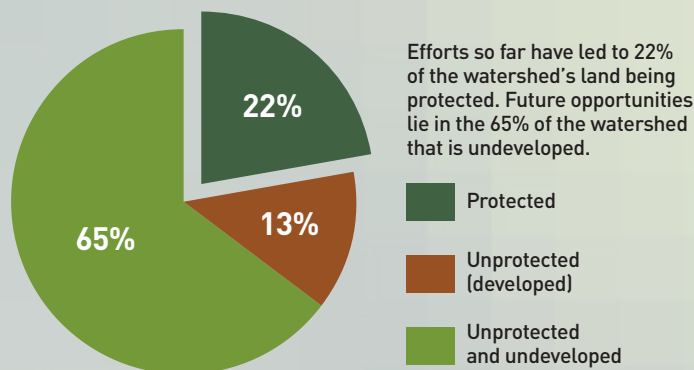
At the same time, the Commission helped lead the creation of the Chesapeake Conservation Partnership, a coalition of diverse organizations and agencies engaged in land conservation in the Chesapeake Bay watershed.

As the Bay Program transitioned to a more regulatory framework under the federal TMDL, there was among the Commission's members

a concern that land conservation would lose its placement among restoration priorities. The Commission responded with the publication of *Crediting Conservation: Accounting for the Water Quality Value of Conserved Lands Under the Chesapeake Bay TMDL*, outlining the policy changes needed to ensure land conservation remained a high-value proposition watershed-wide.

During its tenure, the Commission has also pursued land conservation priorities on Capitol Hill. Realizing the importance of connecting people to the Bay, the Commission helped Congress establish the National Park Service's Chesapeake Bay Gateways and Watertrails program in 1998. The program provides technical and financial assistance to communities and organizations to increase public access to the Chesapeake Bay and its tributaries. The Commission also promoted the establishment of the Captain John Smith National Historic Trail.

Land protection efforts and opportunities



2003

In *The Cost of a Clean Bay*, the Commission estimates the actual price tag for implementing C2K and sets out to find the funding.



Chairman
Representative
Russ Fairchild (Pa.)

2004

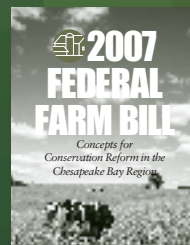
Recognizing a huge shortfall in funding, the Commission identifies the top cost-effective strategies while pursuing passage of Maryland's Bay Restoration Fund.



Policy Report
Cost-Effective Strategies for the Bay: 6 Smart Investments for Nutrient and Sediment Reduction

2005

Realizing the importance of agriculture, the Commission leads effort to expand funding for conservation programs supported by the Federal Farm Bill.



Policy Report
2007 Federal Farm Bill, signed by five governors. The bill passed in 2008.

SUSTAINING LIVING RESOURCES

BLUE CRABS

THE ICONIC CHESAPEAKE BLUE CRAB, THE most commercially important fishery in the Chesapeake, has been a focus of Commission action since its beginning. As one of its first policy actions, the Commission worked to resolve concerns related to non-resident fishing and crabbing in Maryland and Virginia. In 1982, the Commission called for a Bay-wide fishery management plan and improved monitoring of the stock, reflecting its 360-degree world view.

The Commission's most significant action on sustaining the Blue Crab fishery was its creation of the Bi-State Blue Crab Advisory Committee (BBCAC) in 1996. Formed to provide an official structure

for dialogue and coordinated management of the fishery, the BBCAC brought together legislators, watermen, processors, scientists, and state agency representatives in a cooperative forum. During its eight-year tenure, the BBCAC was chaired by Commission members Delegate John F. Wood, Jr. of Maryland and Delegate Robert S. Bloxom of Virginia.

A Technical Work Group, composed of 12 prominent scientists and economists, served as advisors to the BBCAC. Chaired by the Commission's Executive Director, Ann Swanson, the work group provided ongoing analysis and issue identification critical to ensuring the proper management of the blue crab fishery.

BBCAC's eight-year effort generated a new paradigm for crab management in the Bay, using the best science, transparent management objectives and measurable targets. BBCAC's work still impacts blue crab management today.

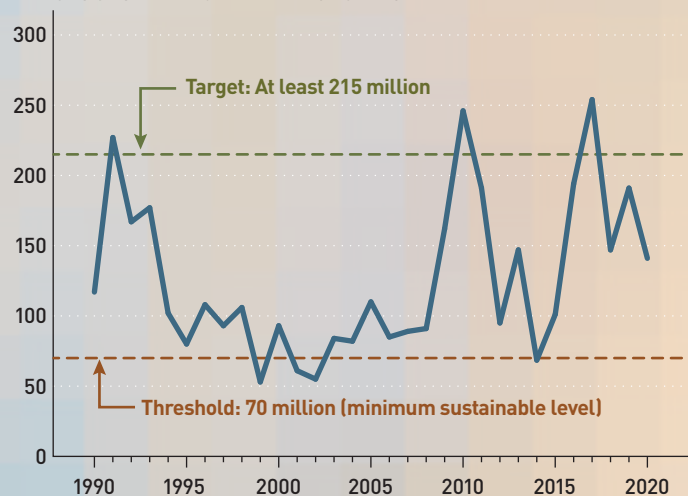
OYSTERS

A cornerstone species for the Bay, oysters uniquely do two things: They build three-dimensional reef structures, creating habitat for themselves and other aquatic species. And they filter gallon after gallon of Bay water, removing polluting nutrients.

The Commission has always recognized the significance of this species, for both its ecological and commercial importance. Commission members have led numerous efforts to foster a sustainable oyster industry, honoring the traditions of the wild harvest while promoting modern day aquaculture.

Crab populations in flux

MILLIONS OF SPAWNING FEMALE BLUE CRABS



12

2006

Commission helps to secure federal designation of the Captain John Smith Chesapeake National Historic Trail, promoting public access and recreation along 3,000 miles of waterways.



2007

Maryland passes the Chesapeake Bay 2010 Trust Fund to advance progress in meeting nonpoint source restoration goals.



Chairman
Delegate James
Hubbard (Md.)

2008

Commission champions Congressional action to establish the Farm Bill Chesapeake Bay Watershed Initiative, securing \$260 million to support agricultural nutrient and sediment reductions.



Chairman
Representative Arthur D.
Hershey (Pa.)

The provision of sufficient and suitable substrate, hatchery-produced “spat,” or seed oyster, and adequate enforcement have been important to the Commission. Setting aside sanctuary areas to allow for long-term rebuilding of the reefs has also been a priority.

At the Commission’s urging, the various Chesapeake Bay Agreements have incorporated commitments to increasing oyster abundance and habitat. And at both the state and federal levels, the Commission has secured millions of dollars for large-scale reef restoration and sponsored legislation to ensure the long-term protection of these investments.

STRIPED BASS

In the early-1980s, declines in the striped bass populations resulted in the Commission calling for interjurisdictional responses, including increases in minimum catch size. Despite the adoption of several responses, the population continued to decline and in 1984 the Commission recommended a temporary moratorium on striped bass fishing in Maryland waters. This ban over time was key in the population’s recovery — a well-recognized conservation success story.

FISH PASSAGE

With historic spawning and nursery areas amputated by dams and culverts, the Commission has long supported restoring access to those areas for anadromous fish. It fostered the inclusion of

specific measurable goals in each Bay Agreement since 1987. The object has been to continually increase access to habitat to support sustainable migratory fish populations. Achievement of the goal will be realized by the consistent presence of alewife, blueback herring, American shad, hickory shad and American eel. Commission members have successfully advocated for the funding needed to remove dams and other obstacles to fish migration in Bay-state budgets. Of particular note, the Commission led early efforts to support a significant fish passage and transport program at Conowingo Dam.



INTERACTIONS WITH SCIENTISTS AND WATERMEN IN THE FIELD GIVE COMMISSION MEMBERS FIRST-HAND EXPERIENCES THEY CAN DRAW FROM WHEN CRAFTING POLICY

2009

Commission completes a series of policy reports on biofuels, exploring the co-benefits of bioenergy and conservation.

Biofuels Policy Reports 2007, 2008, 2010



2010

Commission proposes six regional strategies to improve land conservation policy in the watershed.



Policy Report
Conserving Chesapeake Landscapes: Protecting Our Investments, Securing Future Progress

2011

Maryland and Virginia pass laws to limit the nutrient content in maintenance lawn fertilizer, reducing pollution from developed lands.



Delegation Chairmen
Senator Thomas “Mac” Middleton (Md.)
Senator Mary Margaret Whipple (Va.)

EMPOWERING POLICY WITH FUNDING

FROM THE INCEPTION OF THE WATERSHED restoration effort, the questions of cost and funding have always been paramount. During the Commission's tenure, its membership has included many appropriators, including chairs of state House and Senate budget committees. This has helped provide the Commission with an informed perspective on the relationship of the fiscal demands of restoration within the context of the much larger state and federal budgets.

In 2003, the Commission published *The Cost of a Clean Bay*, the first attempt to objectively quantify the financial needs of achieving the *Chesapeake 2000* goals. The report demonstrated the essential need for the targeting of financial resources to maximize the value of each dollar spent. This value

maximization has been a consistent consideration in Commission decisions and actions.

One year later, the Commission took an intensive follow-up look at a broad suite of pollution control options and for the first time assessed the benefits and costs of their widespread adoption. *Cost Effective Strategies for the Bay* identified six practices that provided "the biggest bang for the buck" and charted a path for implementation of these practices. These practices have driven much of the water quality improvement that has been achieved to date.

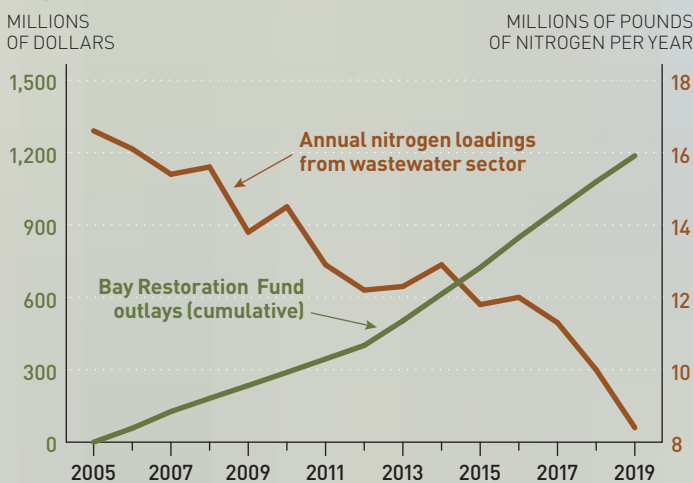
In addition, state legislative action championed by Commission members has provided both the annual appropriations and dedicated accounts that have supported restoration. Highlights include the following:

MARYLAND

Technology upgrades at the state's wastewater treatment plants (WWTPs) have been the main source of nutrient pollution reductions achieved thus far in Maryland. The Bay Restoration Fund, created in 2004, has served as the major source of funds for these upgrades. Commission members have led the efforts to secure some \$1.6 billion for the fund. Other beneficial uses of the fund include septic upgrades, septic connections to WWTPs, and cover crop plantings.

Commission members recognized that Maryland needed an analogous funding program to address nutrient and sediment pollution from agriculture

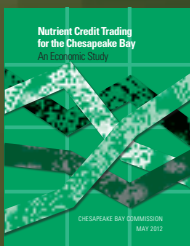
Bay Restoration Fund sees results



14

2012

Exploring the potential for cost savings, the Commission conducts a study with RTI International examining nutrient trading.



Policy Report
Nutrient Credit Trading for the Chesapeake Bay: An Economic Study

2013

Commission considers how to value land conservation as a reliable tool to reduce and control water pollution.



Policy Report
Crediting Conservation: Accounting for Water Quality Value Under the Chesapeake Bay TMDL

2014

Commission signs the 2014 Chesapeake Bay Watershed Agreement, recognizing the need to adapt management as new science emerges.



and stormwater runoff. In 2007, they moved legislation creating the Chesapeake Bay 2010 Trust Fund, which has to date targeted \$506 million on the most cost-effective on-the-ground pollution reduction projects for these sources, leveraging an additional \$225 million in matching dollars.

VIRGINIA

In 1997, Virginia members of the Commission led the creation of the Water Quality Improvement Fund. Its initial funding priority was technological improvements to the state’s wastewater infrastructure. Since then, the Fund has spent \$908 million on these improvements, resulting in significant nutrient pollution reductions to Virginia’s waters.

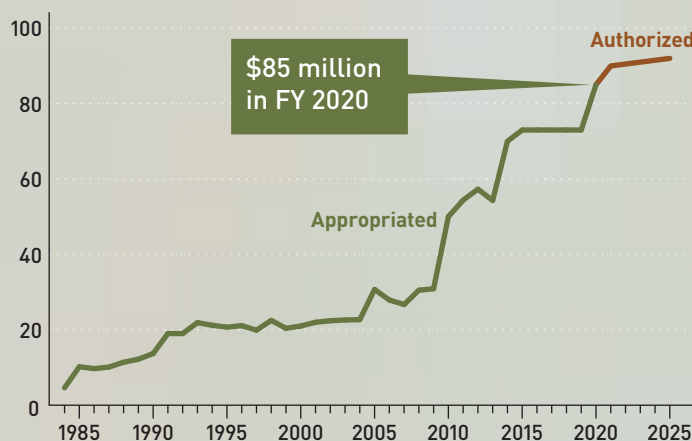
To achieve necessary reductions in agricultural nutrient and sediment pollution, Commission members led the creation of an income tax credit for farmers who implement pollution-reducing conservation practices. Additional legislation created a tax credit for farmers who invest in equipment that achieve these necessary pollution reductions.

PENNSYLVANIA

In 1999, the Commission’s Pennsylvania members led passage of the Environmental Stewardship and Watershed Protection Act, commonly known as *Growing Greener*. The program addresses pollution reductions by funding local, watershed-based planning, restoration and protection efforts. To support agricultural pollution reductions,

EPA Chesapeake Bay Program funding

MILLIONS OF DOLLARS ANNUALLY



Pennsylvania Commission members championed enactment of Resource Enhancement and Protection Tax Credits and Conservation Excellence Grants to farmers who implement on-the-ground practices that reduce pollution.

FEDERAL

As the Bay Program’s principal liaison to the U.S. Congress, the Commission has worked with the Bay watershed’s Congressional members to ensure the strategic deployment of the full resources of our federal government to Bay restoration efforts. Significant milestones are many, including securing \$260 million in dedicated Farm Bill funding for agricultural conservation practices and building the EPA’s Bay Program Office budget to \$85 million.

2015

Chairman Scott Lingamfelter (Va.) focuses the Commission on getting livestock out of the Bay’s waterways, triggering state and federal action.



Policy Report
*Healthy Livestock,
Healthy Streams*

2016

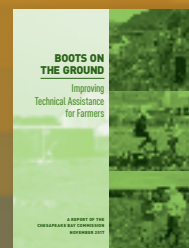
Virginia passes legislation paving the way for public-private partnerships for stormwater management, our most expensive challenge.



**Virginia
Delegation
Chairman**
Delegate Scott
Lingamfelter (Va.)

2017

Chairman Garth Everett (Pa.) focuses the Commission on ensuring technical assistance is available to farmers across the watershed.



Policy Report
*Boots on the Ground:
Improving Technical
Assistance for Farmers*

LOOKING FORWARD

DESPITE THE WISDOM OF THE COMMISSION'S founders, it seems unlikely that they could have anticipated 40 years of legislation, policy and budgets supporting not just improved water quality and living resources in the mainstem of the Chesapeake, but in the thousands of rivers, streams and creeks that supply its lifeblood of fresh water. In the face of a population that has almost doubled, excess nutrients have been cut in half. It is a remarkable achievement and truly a world-class model for ecosystem restoration.

But new and significant concerns increasingly impact the watershed. With thousands of low-lying acres and an enormous infrastructure dependent on the land-water interface, the Bay region is among the most vulnerable in the world to sea level rise.

Changes in precipitation patterns increase the potential for flooding everywhere. Responding to these direct results of climate change will drive new policy and new action by the Commission.

Perhaps the greatest threat to the restoration of the Bay and its watershed is that the need for and significance of restoration is not shared equally among all its citizens. During the 2020 Executive Council meeting, with the Commission's full endorsement, the Bay Program adopted a Diversity, Equity, Inclusion and Justice policy statement. The members of the Commission are steadfast in their commitment to address the impacts of discrimination and continuing environmental, economic and health disparities that disproportionately burden underserved communities, including

those of color, low-income status and indigenous populations.

There is still a long way to go. Each marginal reduction of nutrient or sediment pollution is often more difficult, more expensive than the prior reduction. Commission members will remain committed and alert to those opportunities that will not only move the needle but also will do so in a cost-effective way. Policies to address stormwater runoff and agricultural pollution, along with the availability of financial resources, will continue to be major concerns for the Commission as it works to stay true to its mission of a restored Chesapeake Bay.



Visit www.chesbay.us to see the Commission's 40th Anniversary Film

16

2018

Commission champions eight new priorities in the Farm Bill, resulting in significantly improved opportunities for restoration and funding.



Chairman
Senator Frank
W. Wagner (Va.)

2019

Pennsylvania passes the Conservation Excellence Grant Program designed to fund agricultural practices.



**Pennsylvania
Delegation
Chairman**
Senator Gene
Yaw (Pa.)

2020

Commission successfully advocates for the reauthorization of the Chesapeake Bay Program at unprecedented funding levels.



Policy Report
*Federal Agency
Budget Request
FY2020*

“We are seeing multiple, significant and persistent signs of bay and river restoration right now. This is the time to jump on this progress with all the tools, people, talent and resources that can be mustered and focus on the nutrient and sediment load reductions still needed. Right here in the Chesapeake Bay, we are proving that with focus and a steady hand, we can get the job done. The eyes of the world are on us.”

— Walter Boynton, Ph.D.

2017 Chesapeake Executive Council Meeting

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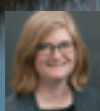
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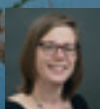
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Chesapeake Bay Commission
Policy for the Bay

Senate Environmental Resources and Energy

4/6/21, 10:00 a.m., Livestream

By Harrison Cann and Maggie Doldt, Pennsylvania Legislative Services

The committee held an informational meeting on the state of the Chesapeake Bay.

Chairman Yaw began by providing an overview of the Chesapeake Bay Commission (CBC), stating that many people do not know what it is or does. He noted that he is a member of CBC alongside Sen. Martin, as well as Representatives Keith Gillespie (R-York), Mike Sturla (D-Lancaster), and Johnathan Hershey (R-Juniata). He added that the other members include Warren Elliott, a citizen member, and Patrick McDonnell, secretary, Department of Environmental Protection (DEP). He explained that CBC is a formal compact approved by the legislatures of Pennsylvania, Maryland, and Virginia, and that it celebrated its 40th anniversary last year. Chairman Yaw recognized Ann Swanson, executive director, as a "reasonable environmentalist," and Marel King, Pennsylvania director, stating that they are valuable resources who understand what states can and cannot do. He continued that CBC's delegation is bipartisan and bicameral, with each state delegation including seven members. He clarified that CBC does not make rules and regulations but acts as a "helpful agent" in studying issues and looking at ways to help the bay. Chairman Yaw reported that 50 percent of the bay's freshwater comes from Pennsylvania and that the watershed touches 43 of Pennsylvania's 67 counties. He said there is "no question" the bay is important to Pennsylvania. He further explained that CBC's budget is very small and mainly used for administrative purposes. Chairman Yaw stressed that CBC does not give out grants but advocates for programs that would help the bay and states involved. He concluded that although many of his constituents do not know where the bay is and do not care for it because they live near the New York border, the quality of water across the state is still a priority for everyone.

Minority Chairman Comitta thanked Chairman Yaw for bringing the committee together to discuss this topic. She said she "could not agree more" that clean water is important, stating that clean water and clean air can lead to healthy people and a healthy economy. She added that there have been a lot of challenges in improving the quality of water in the bay and that "a lot more has to be done." She concluded that she is excited to learn more about the bay today.

Ann Swanson, executive director, CBC, remarked that CBC's job is to understand the facts and some of the policy, and the job of the legislature is to understand the policy and some of the facts. She said, "That combination can get us to a powerful place where we can move things forward." She noted that the Susquehanna River feeds into the Chesapeake Bay, and the bay contains two of the largest ports in the eastern United States in Baltimore and Norfolk-Newport News. She stressed that the bay is "extremely important." Swanson explained that the Susquehanna River fed what was the bay, and that when the glaciers melted and flooded the plains around the Atlantic, it created the Chesapeake Bay. Swanson said, "In the end it is Pennsylvania's bay and Pennsylvania's water." She emphasized the importance of understanding Pennsylvania's influence on the bay and its many species.

Swanson explained that CBC is a "tri-state legislative commission created by state law to advise the general assemblies of Pennsylvania, Maryland and Virginia on matters of bay-wide concern." She stated that it was established in 1980, with Pennsylvania joining in 1985. She stressed that bay restoration is not just about water, but also its air, living resources, conservation, and the people's connection to the water. She noted that 18 million people live in the bay's watersheds, all of which are within a 10-minute walk of a local stream. Swanson said that "water and resources were not respecting political boundaries" so an entity was needed to coordinate policies and recognize the difference between states. She reiterated that CBC does not create any laws but "brings facts and science to the table."

Swanson added that CBC's 2021 leadership includes Chairman Delegate David Bulova (D-Virginia) and Chairman Yaw and Sen. Guy Guzzone (D-Maryland) who serve as vice chairmen. She said it is an "extremely bipartisan and balanced organization," with seven members from each state delegation. She noted that Pennsylvania's members include Chairman Yaw, Sen. Martin, Representatives Gillespie, Sturla, and Hershey, Sec. McDonnell, and Elliott.

Swanson highlighted the Chesapeake Bay Program. She noted that the program includes the governors of Maryland, Virginia, Pennsylvania, New York, Delaware, West Virginia, the Mayor of Washington, D.C., a United States Environmental Protection Agency (EPA) administrator, and CBC. She stated that CBC has equal representation in the program and serves as the only legislative representative, advocating for federal funds and developing requests for agencies. She emphasized that CBC does not receive federal funds but is a "prominent player" in advocating for states. Swanson then displayed a satellite image of the bay, showing how widespread the watershed's effects are.

Pennsylvania's connection to the Chesapeake Bay, Swanson stated, is significant. She noted that half of Pennsylvania's land area, 30 percent of its population, and 57 percent of its farms are in the bay watershed. She added that Pennsylvania makes up 35 percent of the bay's watershed, and that the Susquehanna River provides 50 percent of the freshwater and 43 percent of the nitrogen pollution in the bay. She stressed that it is "an economic engine," but that Pennsylvania has to look at how it can get resources in place to address its pollutants.

Swanson continued that the water quality in the Chesapeake Bay is affected by excess nutrients and sediments. She stated that when there is too much nitrogen productivity, algal blooms will suck down oxygen and take it away from other organisms. She added that sediments running into the bay carry phosphorus which results in reducing the water's clarity and reduced photosynthesis. She then outlined where nitrogen reductions are coming from, stating that the goal is to reach 199 million pounds of nitrogen loadings by 2025. Swanson reported that in 1985, there were 332.7 million pounds of nitrogen loadings, coming from septic, development, wastewater, agriculture, natural, and other sources. She said that CBC has made progress in reducing wastewater loadings to about 250 million pounds despite increases in septic and development loadings. She emphasized that while this progress was made during a time of population growth, "we are not where we need to be." Swanson explained that the remaining reduction must come from agriculture because most of the reductions have already come from waste treatment.

Swanson displayed nitrogen reductions broken down by state, showing Pennsylvania's "little reduction" over the last 35 years. She stated that with only three and a half years left to get to the goal, Pennsylvania needs to reduce its nitrogen loads by 34 million pounds, which is "huge." She noted that Maryland has reduced its loads by 33 million pounds since 1985 so it is doable, but that the "timeframe is an issue." She reported that Pennsylvania has about 75 percent of its reductions focused on agriculture, trees, stormwater, and air, but that it still has to determine how to reduce its remaining load.

Swanson provided an overview of the resources needed to accomplish these reductions. She stated that there is a \$324 million funding gap, with about \$24 million needed for staff and administrative assistance. She noted that \$100 million would be focused on agriculture compliance, soil health, forest buffers, and grass buffers that can capture half of the nitrogen load. She remarked that Pennsylvania has the largest stream density of any state in the continental U.S. and that it also has the most impaired waters of any state. Swanson said, "No state needs a water fund more."

Marel King, Pennsylvania director, CBC, highlighted federal and state actions needed to improve the bay. She stated that 72 percent of the pollutant load reductions are planned to come from the agricultural sector. She noted that the budget request for fiscal year 2022 includes increased conservation technical assistance and targeted support to the Susquehanna River Basin and other high-impact agricultural basins. She explained that the conservation planning would provide practices and implementation assistance to farmers.

King noted that each state's legislature differs, with Virginia's 2021 session ending in February and Maryland's ending in April. She said that Pennsylvania's two-year session is just "ramping up." She referenced Senate Bill 475, Senate Bill 465, and Senate Bill 251, stating that Chairman Yaw is the prime sponsor on all of them. She said that Senate Bill 251, a bill that would provide standards for fertilizers applied to lawns, was passed in Maryland and Virginia 11 years ago but has been pending in Pennsylvania. She added that Pennsylvania's bill moved to the House in prior session, and she is hopeful it can "get over the finish line this time." King said that Senate Bill 465 is an agricultural cost-share bill

which is modeled after the dirt and gravel roads program. She reported that the primary sources of pollutants are abandoned mine drainage and agricultural sedimentation, and that the cost-share program would allocate money out to counties based on their number of agriculturally impaired streams. She continued that Senate Bill 475 is a nutrient procurement bill that would essentially pay private investors through a contract for their successes in procurement.

Swanson commented that although the procurement bill did not move in Pennsylvania last session, Maryland took up the language and has passed their version of the bill through the House and Senate. King stated that they are excited to see that happen in Maryland and for its potential in Pennsylvania. Concluding, she noted that a new cosponsor memo would designate \$250 million from federal funding to go toward non-point source mitigation efforts. She clarified that non-point sources refers to those that are not at the end of a discharge pipe, such as agricultural runoff and abandoned mine drainage. Swanson remarked that all of the bills highlighted would be commonwealth-wide initiatives because water quality affected all streams and not just those in the watershed. She said, "We need to get these programs over the finish line if we are going to protect waters for the next generations."

Chairman Yaw noted that the CBC is the only entity that "represents the legislative arm of the government" which makes them critical. He mentioned Swanson and King discussed legislation in Maryland and Virginia and a few years ago, Swanson decided it was important to have an expert on the organizational structure for each state. He stated he thought this was "a waste of time" but admitted he was wrong and that the presentation was "one of the more engaging presentations we have ever had." He noted the difficulty of passing a law in Pennsylvania because of all the different municipal and governmental entities. Chairman Yaw commented on the importance of organizational structure experts because there are many county level governments that have their own laws and regulations. Swanson mentioned that CBC will be offering another forum to the public on May 19 from 1:00 p.m. to 2:30 p.m. She recommended senators listen to the call or have staff listen because "it is so remarkable how each state is" and explained every state needs to "take their own path to get to the same goal." She added there are many impaired waters in Pennsylvania caused by agriculture, acid mine drainage, and urban runoff and storm sewage. She explained if Pennsylvania can address all three of those problems, there will be visible changes to the problem. Swanson noted that the commission is a tri-state commission created to focus on the area where 80 percent of the land and 90 percent of the pollutants come from those three states referenced.

Sen. Hutchinson asked if the legislation Chairman Yaw is proposing includes acid mine drainage because he was not clear if that is a point source. King responded from the commission's perspective, acid mine drainage is a point source, and it is within the Section 319 Nonpoint Source Management Program. Chairman Yaw added that the money they are asking for would fund "a whole multitude of existing programs" so it is new funding, not new programs. King noted that this funding would go to things like the Conservation Excellence Grant Program, the Keystone Tree Fund, the Abandoned Mine Drainage Abatement and Treatment Program (AMDATP), and they would create some new programs like the procurement program. Swanson explained they are "trying to push strategic investment to target these new funds to the places to get the greatest bang for your buck." She noted that CBC is focused on the land and water resources of the Chesapeake Bay which means the resources sometimes go to Delaware, New York, West Virginia, and the District of Columbia. She explained when working at the federal level, they "always include the needs of those states" but they have been recently focused on more resources for Pennsylvania.

Sen. Hutchinson noted that Swanson discussed how Pennsylvania supplies 50 percent of the fresh water but 43 percent of the nitrogen. He asserted that she stated this "sounds like they are winning" and asked her to comment on that. Swanson stated she "would not say that is winning" because there are "major flows" from two of the biggest rivers from the Chesapeake Bay, and that is why 50 percent is coming into Pennsylvania. She explained nitrogen not only comes from rivers but from sewage treatment plants, agriculture, and air. She continued if there are seven states involved and Pennsylvania has 43 percent of the nitrogen, "that is a big chunk." She explained that there is a lot of land in Pennsylvania, but the nitrogen loads are still "disproportionately high."

Jill Whitcomb, director, Chesapeake Bay Program Office, Department of Environmental Protection (DEP), began by explaining that success is when the commonwealth is using best practice management implementation and best agricultural practices. She stated that DEP conducted a particular project through a 2020 implementation grant that was provided through the Environmental Stewardship Fund. She explained that these funds were provided directly to the counties so they could "accelerate their ability to get projects done on the ground." She continued that good practices include Department of Conservation and Natural Resources (DCNR) buffer planting funds that have "resulted in 110 acres of forest buffers in the last year." Whitcomb stated that DEP initiated an outreach campaign and works directly with the Pennsylvania Farm Bureau and hired one of the two positions to focus on tree bio lives. She also mentioned the Keystone Tree Fund generates \$20,000 a month, and 60 percent of that will be used for tree buffers and 40 percent to the TreeVitalize Grants Program. She added that storm water practice and green infrastructure are key to success and referenced a cap implementation grant that was completed in November 2020.

Whitcomb stated that DEP is continuing to build partnerships and noted that the Chesapeake Conservancy is working with seven counties in the Chesapeake Bay Watershed to locate small watersheds that can be restored. She continued that the York County Planning Commission has created a county-wide initiative that "worked as a catalyst to work with the United States Geological Survey (USGS)" to implement monitoring stations "to identify results of past actions to help inform future decisions." She commented on the Turtle Creek Partnership that is in Union County and has worked with the Pennsylvania Fish and Boat Commission (PFBC), DEP, and conservation districts and landowners to "restore miles of stream." Whitcomb said DEP has been able to use this model in south-central Pennsylvania "to provide the technical assistance for these stream restoration projects." She stated that DEP has worked with the Pennsylvania Department of Transportation (PennDOT) to collect information about storm water management on PennDOT roads. She added that the National Fish and Wildlife Foundation (NFWF) partnered with DEP "to administer the local government implementation grant funds" from EPA. Whitcomb stated that the Pennsylvania most affected basin funds will be administered by NFWF and is a result of work by the CBC to bring funds to basins for nitrogen reduction. She moved on to explain how counties are working with other entities so farmers and other members of the community "have buy-in to the county-wide action plan."

Whitcomb noted the Chesapeake Bay touches 43 Pennsylvania counties and broke those down by how each county is most affected. She stated that tier one counties are their main focus which include Lancaster and York. She explained that counties from different tiers came to work together to test drive the county-wide action plan process. She remarked that DEP worked with tier two counties to be proactive and create initiatives to fix their problems. She continued that phase two means working with tier three and four counties through CBC's regional offices with a voluntary program to help develop plans for counties and provide funds. Whitcomb added that DEP conducts webinar Wednesdays and touchbase Tuesdays to help engage counties and believes CBC has helped them reach their goals through funds and guidance. She highlighted the benefits of bringing counties together to learn from each other and described the collaborative nature of their meetings. She stated that DEP created a story map for the public to be educated about the Chesapeake Bay and to understand the local impacts. Whitcomb pointed out that their website also tracks Pennsylvania and its progress so people can directly see the changes they are making. She emphasized the need for resources and identified that DEP is required to report the state and federal funds they receive and that counties receive. She highlighted their other funding programs and noted that the Section 319 Nonpoint Source Management Program and Growing Greener Plus grants go to non-point source reduction, agricultural, storm water, and AMDATPs. Whitcomb explained that Section 319 Nonpoint Source Management Program refers to a federal grant, and CBC is required to match the dollars they receive. She noted that CBC had to put money towards a stewardship fund "to provide for counties to make staffing decisions." She stated that in January, coordinator grants leftover from tier one and two counties were allocated to tier three and four counties. Whitcomb continued that in the upcoming year, DEP's goal is to fund money to Lancaster and to Bedford and Centre Counties. She mentioned that regarding past implementation grants, DEP provided money they could, but there is a lot of demand for more resources and dollars. Whitcomb highlighted the importance of flexibility for counties on where funding goes towards projects they need. She explained that in the future, DEP will continue allocating grants and creating partnerships so counties are collaborating and "filling the gaps

where they are." She emphasized the need to share positive outcomes to motivate people to continue to move forward.

Chairman Yaw stated he does not understand if the phase one counties are those that need the most work. Whitcomb explained that Lancaster, Lebanon, York, Adams, Franklin, Cumberland, Bedford, and Centre Counties make up 54 percent of the nitrogen load in the bay, and therefore they are prioritized. Chairman Yaw agreed with starting with the major problem counties and moving upstream. Whitcomb added that this idea contributes to the "fine-scale targeting" by looking at the areas of highest impact to address first, leading to quicker restoration.

Chairman Comitta noted the southern corner of Chester County is in the watershed and asked how they get the biggest "bang for buck" in terms of cleaning the Chesapeake Bay. She noted that the major problem is likely money but wanted to understand the details. Whitcomb responded that the four practices in their watershed implementation program are the focus, the first being the agricultural compliance that includes manure management, erosion and sediment control, and nutrient management. She explained that the other practices are soil health practices, grass and forest buffers, and building fences so livestock cannot access the stream. She stated these typically have minimal costs, but it can sometimes cost more to get farmers to meet practices in place which is where federal and state funding helps. Whitcomb noted many farmers are struggling to make ends meet, especially with COVID-19, so they are trying to ensure they are allocating the funds necessary to fulfill these requirements. She explained that it would take longer to create new programs and guidelines than just allocating funds to existing programs.

Chairman Yaw mentioned one thing discussed with legislators from Maryland is that Maryland can put money in their own state, but would it be more beneficial for them to provide funding to programs in Pennsylvania. He noted that more money is not always the answer if there are unknowns about where to utilize it. He continued that if there are identifiable projects in Pennsylvania that show to help other states, that would likely be beneficial. Whitcomb added that the counties have been working on project lists that include implemented projects and planned projects so they know how much funding they need. Swanson added she has been in conversations with House members from Virginia and Maryland and explained "they want to find a way to assist Pennsylvania" but they need Pennsylvania to provide a funding source. She continued that Pennsylvania's impaired water map has direct overlap between impaired waters and counties that DEP has found to have the greatest investment in. She explained the need to focus on specific locations and practices that provide the "biggest bang for your buck" which will likely lead to other states helping.

Chairman Comitta thanked Chairman Yaw and those who participated today to help understand the interconnection of environmental issues. She added that she looks forward to working with Chairman Yaw to find funding sources and improve the quality of life in the Chesapeake Bay watershed. Chairman Yaw emphasized the informative nature of the meeting and noted before the pandemic, they had more meetings discussing the issue of clean water, but things got sidetracked. He stated his hopefulness to get back on track but noted they may now be a year behind schedule. Chairman Yaw commented that this issue is no longer an environmental issue but a living issue. He stated that people have not paid attention to the aftermath of the environmental impacts on their nitrogen load. He emphasized the importance of focusing on these impacts to understand how to better understand environmental concerns in the future.

Additional testimony was submitted by:

- Shannon Gority, Pennsylvania executive director, Chesapeake Bay Foundation.