



Chesapeake Bay Program
A Watershed Partnership

STATE OF THE CHESAPEAKE BAY PROGRAM

Summary Report to the Chesapeake Executive Council

November 20, 2008

GREETINGS TO THE EXECUTIVE COUNCIL . . .

The Executive Council meeting is an important event to reflect on our past year and to continue to address the accumulated impacts of nearly 400 years of human activity in the Chesapeake watershed and Bay. This “State of the Program” report is intended to recap the year, frame the issues and set the stage for the Executive Council’s important deliberations and leadership of the Chesapeake Bay Program.

The past year has been one of leadership, innovation, enhanced coordination and accountability, marked by actions large and small that will advance our progress. Despite important restoration steps by Federal, state, local and private partners, sobering reports of Bay conditions remind us of the significant challenges ahead. The watershed and Bay face many challenges, yet the single greatest threat is from nutrients (nitrogen and phosphorus) and sediment, largely from non-point sources. They continue to cascade from our tributaries with debilitating effects on water quality and the ecosystem.

As we reach our 25th year as a partnership, we continue to tack strategically against the winds of population, development and well-known and emerging threats to the Bay and its watershed. With new tools, strategies and approaches, fresh commitments and the know-how born of creative thinking and exhaustive third-party evaluations, we begin our next quarter century as a partnership better positioned for the bold and urgent actions necessary to restore the watershed and Bay.

We are on the verge of a new alignment of forces: economic, social and political that can position us to take advantage of a new “green movement.” The easy fixes have been made . . . only the difficult decisions remain. The strength of our partnership will guide us to both the collective and individual solutions that will succeed.

It’s a pleasure to serve you . . .

JEFF LAPE, *Director, Chesapeake Bay Program*

Our Precious Watershed and Bay *A Quick Review*

1. Protecting the Chesapeake Bay begins with protecting the 100,000 streams and rivers that comprise the Chesapeake watershed. What we do on the land, impacts the watershed and ultimately the Bay.

2. The Bay Program annually reports on the health of the Chesapeake Bay using a comprehensive array of health measures. The Bay Program’s 2007 Health and Restoration Assessment (March 2008) and independent reports by the University of Maryland and the Chesapeake Bay Foundation show the Bay is severely degraded. (See Figure 1.)

- Low dissolved oxygen levels during summer throughout much of the Bay’s tidal waters.
- Tidal rivers suffer from algal blooms and severely reduced water clarity.
- Underwater bay grasses remain at a third of the desired acreage.
- Critical habitats continue to be at risk and the Bay’s food web is out of balance.
- Most stocks of fish and shellfish are still well below historic levels because of poor water quality and harvest pressures.
- Hundreds of miles of streams and rivers throughout the watershed are impaired due to local water quality problems.



Chesapeake Bay watershed.

The Chesapeake watershed . . . extends 64,000 square miles and is home to nearly 17 million people in portions of six states and the District of Columbia.

The Chesapeake Bay . . . is North America’s largest and most biologically diverse estuary and is home to more than 3,600 species of fish, plants and animals.

3. Over the past 25 years, the Chesapeake Bay Program and the partners, individually and collectively, have achieved important gains to offset a variety of destructive impacts.

The Chesapeake Bay Program has reached its 25th year as a partnership. Without the efforts of this Program and partnership, the state of the Bay would be far worse. A few examples of what has been accomplished can inspire us to take new bold steps. In the last 25 years, the Bay Program and partners have achieved important progress:

- Developed the science, monitoring data, models, and measures that are recognized as the best and most extensive in the country and often around the world.
- Adopted the nation’s first consistent water quality standards and assessment procedures, prompting major state and local investments in nutrient removal technologies across hundreds of wastewater treatment facilities.
- Placed a moratorium on striped bass harvests, leading to restoration of the stock that supports 90 percent of the Atlantic Coast population.
- Established nutrient management plans on 3.2 million farmland acres.
- Advanced use of conservation tillage is being practiced on more than 2 million acres.
- Planted 5,722 miles of streamside forested buffers.
- Restored 12,532 acres of wetlands.
- Preserved nearly 1 million acres of forests, wetlands, farmland and other natural resources.
- Removed blockages to more than 2,000 miles of spawning grounds to help restore migratory fish.

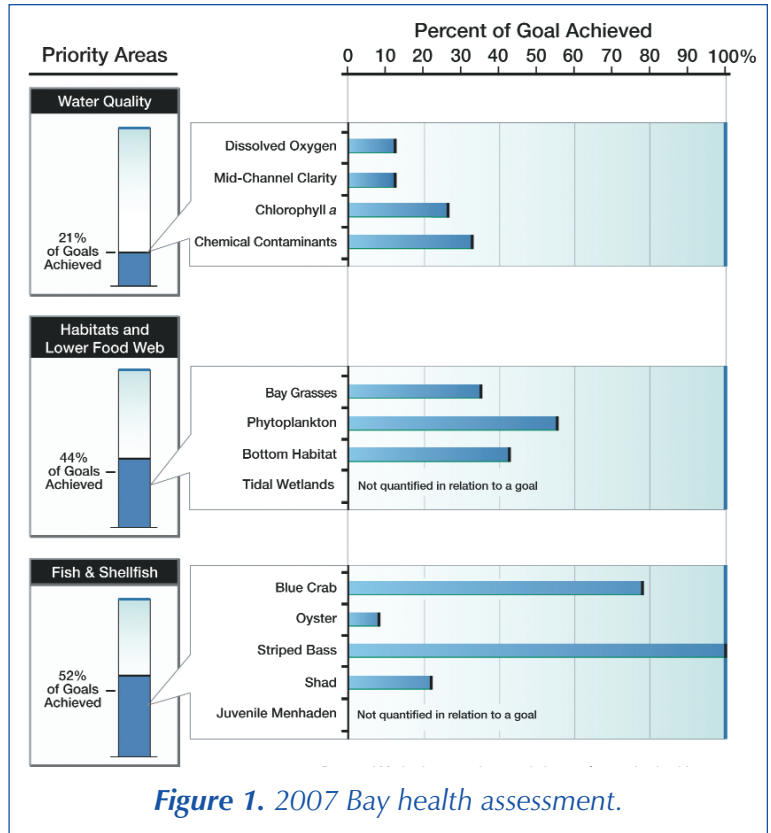


Figure 1. 2007 Bay health assessment.

Nutrients and Sediments: Key Sources, Progress and Challenges

1. The primary sources of nutrients are well known. We need to implement actions across all sources (agriculture, point sources, air deposition, and urban and suburban runoff). (See Figure 2.)

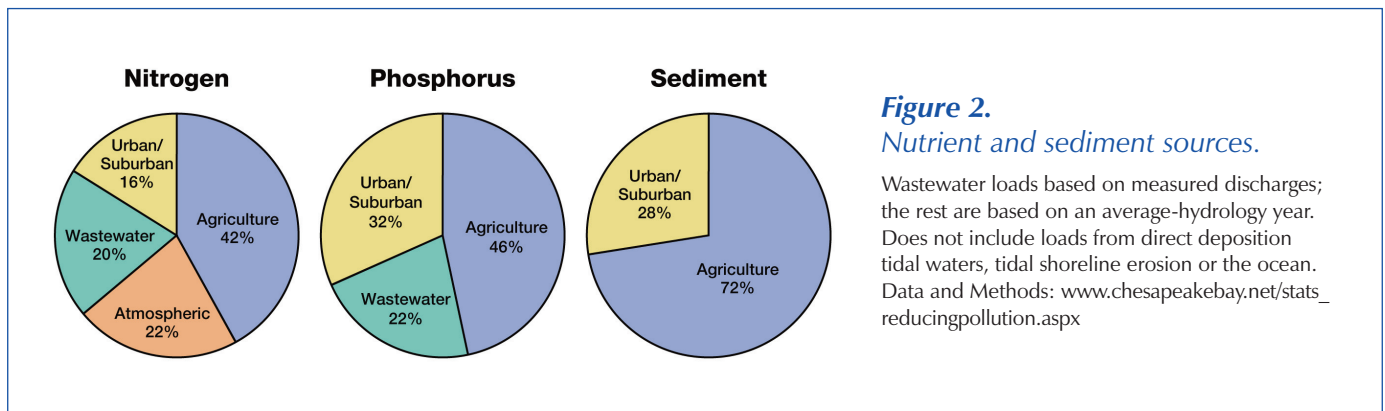


Figure 2. Nutrient and sediment sources.

Wastewater loads based on measured discharges; the rest are based on an average-hydrology year. Does not include loads from direct deposition tidal waters, tidal shoreline erosion or the ocean. Data and Methods: www.chesapeakebay.net/stats_reducingpollution.aspx

2. Given the need to reduce nutrients (nitrogen and phosphorus) and sediments, our science has allowed us to calculate the reductions needed to attain a healthy Bay.

- In 2000, we identified the need to reduce nitrogen loads by 110 million pounds, phosphorus loads by 6.3 million pounds and sediment loads by 0.9 million tons.
- Accounting for all the actions reported as implemented through 2007, we estimate we have reduced nitrogen loads by 22.8 million pounds, phosphorus loads by .9 million pounds and sediment loads by .3 million tons since 2000.
- Charting our efforts shows progress, but led us to the conclusion that we would not meet our 2010 goals at the current pace.

3. Based on the *current* rate of implementation (2000–2007), the nitrogen load reduction goal is estimated to be achieved by 2034 and phosphorus by 2050 (at the basin wide scale). (See Figure 3.)

- State progress on meeting their nitrogen allocations: District–2009; New York–2020; Delaware–2021; West Virginia–2024; Pennsylvania–2032; Maryland–2037; and Virginia–2044.
- State progress on meeting their phosphorus allocations are: the District (achieved), Delaware–2009; New York–2022; Virginia–2035; and Maryland–2085.
- Even when we do implement the programs and strategies that achieve the nutrient and sediment reductions by point and nonpoint sources, there will be a further lag time—years, perhaps as much as a decade—for the Bay’s ecosystem to fully respond.
- This underscores that there are three major achievements that are required to restore the Bay: 1) the programs, tools and resources are put in place to prompt the nutrient reductions; 2) the programs result in the needed reductions; and 3) the Bay responds to the reductions and Bay health is observed.

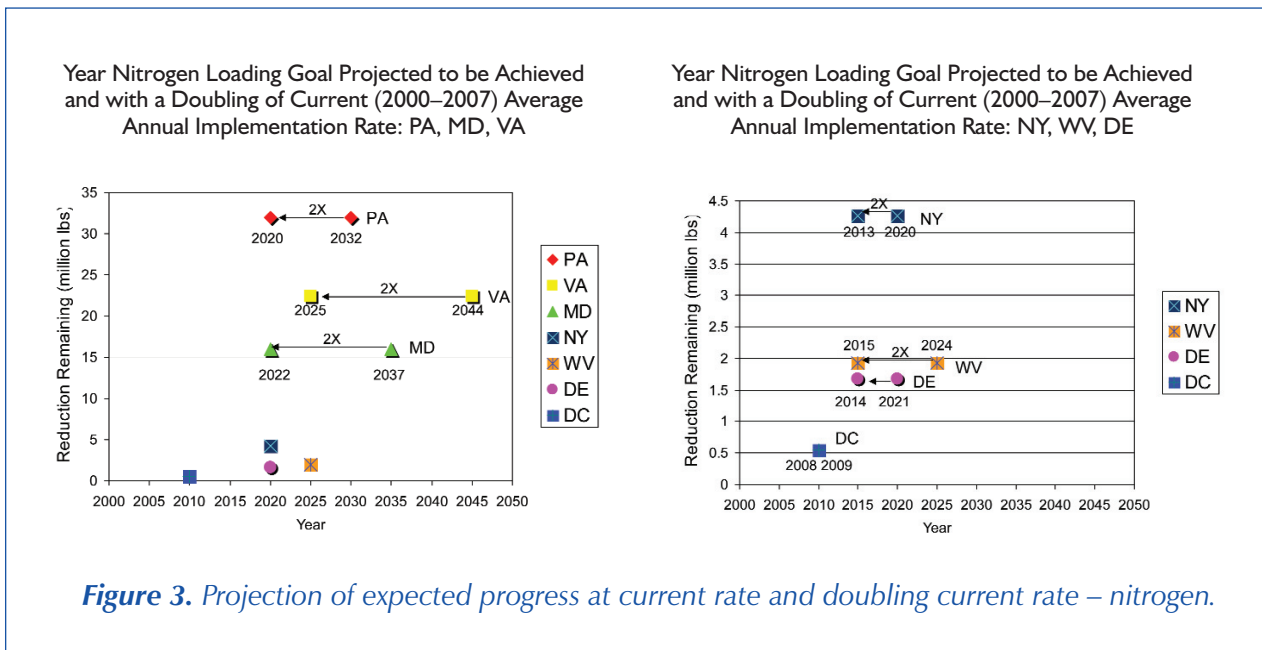


Figure 3. Projection of expected progress at current rate and doubling current rate – nitrogen.

THE YEAR IN REVIEW

What Has Happened and What Has Been Accomplished

1. The Executive Council (2007) commitment to be “champions” for innovation and implementation has spurred leadership, new ideas, greater emphasis on implementation, and early results.

- The champion approach has allowed partners to try new and different approaches and strategies without the burdens of having to reach consensus from everyone.
- Champions keep partners informed of their progress and report on the results. Where successful, it is hoped that other partners would learn, adapt and implement correspondingly effective approaches.
- Champion actions have included leadership and progress by many partners. Examples of champion actions are summarized on pages 5 and 6.

2. The Chesapeake Action Plan (CAP), submitted to Congress in July 2008, enhances the coordination, transparency, accountability and management of the Bay Program.

- The CAP aligns our strategies and actions to the five goals of the *Chesapeake 2000* agreement.
- An activity database captures the implementation actions of ten Federal agencies, six states, DC, CBC and others. It identifies over \$1 billion in restoration action in 2007.
- All partners have access which will result in enhanced coordination and synergy.
- Management dashboards show status and projected progress and set the stage for identifying obstacles and needs. (See Figure 4.)

3. The Principals’ Staff Committee (PSC) has approved a new organization structure to better emphasize the critical goals and priorities of the program. (See Figure 5.)

- The reorganization will begin to change the business model of the Program, clarify roles, and expand contributions of other partners.
- Six Goal Implementation Teams, aligned to the major C2K goals, will coordinate specific actions and strategies to achieve focus and results.
- Implementation of the new structure is expected by February 2009.

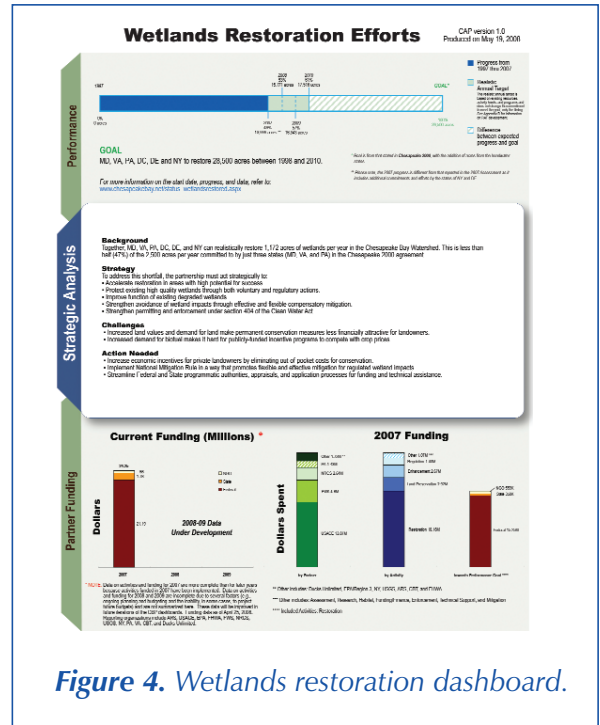


Figure 4. Wetlands restoration dashboard.

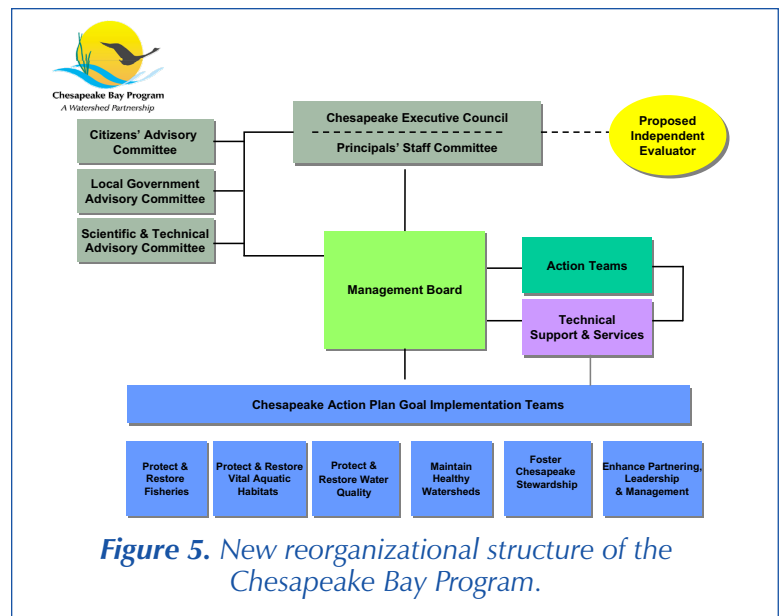


Figure 5. New reorganizational structure of the Chesapeake Bay Program.

2008 Champion Action Areas

Goal	Champion Area	Progress
Protect & Restore Fisheries	Blue Crab Restoration <i>Maryland, Virginia</i>	Implemented bi-state regulations to reduce the harvest of female crabs in the Chesapeake Bay by at least 34 percent.
Protect & Restore Vital Habitats	Restore Wetlands <i>New York/Upper Susquehanna Coalition</i>	Established a 501(c)(3) wetland trust to leverage funds; constructed 60 non-tidal wetlands designed to maximize functionality; and conducted hands-on training on design criteria.
Protect & Restore Water Quality	Agriculture <i>Virginia</i>	Allocated \$20 million for agricultural best management practices and exploring innovative practices and cost-share programs.
	Carbon Sequestration <i>Delaware</i>	Delaware hosted a symposium to educate state agency staff about carbon sequestration opportunities; identified necessary elements of offset and trading programs; and analyzed the water quality benefits of agriculturally-based carbon offset projects.
	Farm Bill <i>CBC</i>	Through the passage of the 2008 Farm Bill, the Chesapeake Bay watershed was singled out to receive an additional \$188 million over five years for conservation programs.
	Blue Plains <i>CBC</i>	The Chesapeake Bay Commission helped arrange congressional tours and briefings and advocated for more Federal support to upgrade the Blue Plains wastewater facility. The House and Senate appropriated \$14 and \$16 million, respectively, for CSO upgrades.
	Growth and Development <i>DC, Navy, and U.S. EPA</i>	<p>The District of Columbia is tackling urban stormwater pollution head on by: agreeing to a new generation stormwater permit; launching the RiverSmart Homes program to better manage residential stormwater; implementing an aggressive Anacostia Restoration Plan; spending over \$1 million on low impact development projects, such as green roofs; and developing stronger stormwater legislation to reduce runoff pollution.</p> <p>The U.S. Navy is promoting and incorporating low impact development techniques into all new and redeveloped projects at their facilities throughout the Bay watershed. On November 18 & 19, 2008, the Navy held a two day symposium for Bay watershed facility managers on low impact and no impact development practices.</p> <p>EPA's Chesapeake Bay Program Office is implementing a "no runoff" challenge to motivate innovative and dramatic reductions in stormwater runoff by viewing rainfall and stormwater as a resource rather than a waste.</p>
	Innovative Technology Fund <i>Maryland, U.S. EPA</i>	Partnered to promote investments in new research and technologies to accelerate Bay restoration.
	Funding to Promote Innovation & Implementation <i>U.S. EPA</i>	EPA provided \$12.9 million for on-the ground implementation projects that use innovative, sustainable and cost-effective approaches to reduce nutrient and sediment runoff, with particular emphasis on agriculture and development. The grants will be awarded in the spring of 2009.
Conowingo Dam/Reservoir <i>Pennsylvania</i>	Pennsylvania and the U.S. Geological Survey pooled resources to better understand the movement of sediments behind Conowingo Dam on the Susquehanna River. A final report will be issued in September 2009. Pennsylvania will continue to address sources of upland sediment.	

(continued)

2008 Champion Action Areas *(continued)*

Goal	Champion Area	Progress
Maintain Healthy Watersheds	Forest Conservation <i>U.S. Forest Service</i>	Most partners are on track to meet their 2012 forest protection goals set at last year's EC meeting. The U.S. Forest Service and Maryland hosted a workshop on forest sustainability for 109 local government representatives. Progress is being made on tracking forest conservation and developing ecosystem markets and a revolving loan fund for forest landowners.
	Biofuels <i>Pennsylvania, CBC</i>	Pennsylvania and the Chesapeake Bay Commission convened a 22-member Biofuels Advisory Panel that met throughout the year, culminating with the release of the <i>Next-Generation Biofuels</i> report at the Chesapeake Bay Biofuels Summit in Harrisburg, Pa., in September 2008.
Foster Chesapeake Stewardship	Engaging Local Governments <i>Maryland, West Virginia, and U.S. EPA</i>	Maryland has provided implementation funding to local communities through the Chesapeake and Atlantic Coastal Bays 2010 Trust Fund, and developed a new service to connect local governments with resources to help accelerate implementation. West Virginia is also assessing ways to engage communities, particularly with new communication tools and on stormwater issues.
Enhance Partnering Leadership, & Management	Enhancing Accountability <i>Maryland, U.S. EPA</i>	Using BayStat as a powerful management tool and forum, Maryland is focusing efforts to attain progress: Maryland funded efforts to address nonpoint source pollution; strengthened its Critical Area Program, including an emphasis on non-structural shoreline erosion solutions; doubled annual cover crop enrollment to 400,000 acres; and targeted Program Open Space to priority conservation areas. EPA, with the support of Federal, State and other partners, led development of the Chesapeake Action Plan (CAP) which has characteristics similar to BayStat. The CAP will enhance coordination and management of the Program, especially regarding implementation action, funding and accountability.

4. The Chesapeake Bay Program may be the world's most evaluated watershed program—with some 25 assessments and evaluations looking at every aspect of our work over the past five years.

- Despite the burdens these reviews create, they do make us wiser, more nimble and more effective.
- In 2008, the Government Accountability Office (GAO), at the request of Senator Mikulski, reviewed our progress to improve reporting and to create a comprehensive, coordinated implementation strategy. GAO acknowledged our recent positive actions with the Chesapeake Action Plan. We can expect the GAO to re-evaluate our progress in 2009.
- The EPA Inspector General issued its seventh report on the Bay Program. Among other things, we have committed to:
 - Enhance and implement the Chesapeake Action Plan.
 - Develop an explicit strategy to engage local governments and local watershed groups.
- In a related action, EPA's Inspector General called the Chesapeake Bay Program a "management challenge," noting that "EPA does not have the resources, tools, or authorities to fully address all of these challenges."

5. Partners share views with Congress on Reauthorization of the Chesapeake Bay Program.

- In July 2008, the U.S. House Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment, held a hearing on the Chesapeake Bay Program and ideas for reauthorization of Section 117 of the Clean Water Act. Eleven different representatives of partner organizations testified, representing a wide range of perspectives. Congress did not act on the Bay reauthorization this year.

6. Principals’ Staff Committee (PSC) endorses “Independent Evaluator” to assess the progress and results of implementation efforts by partners.

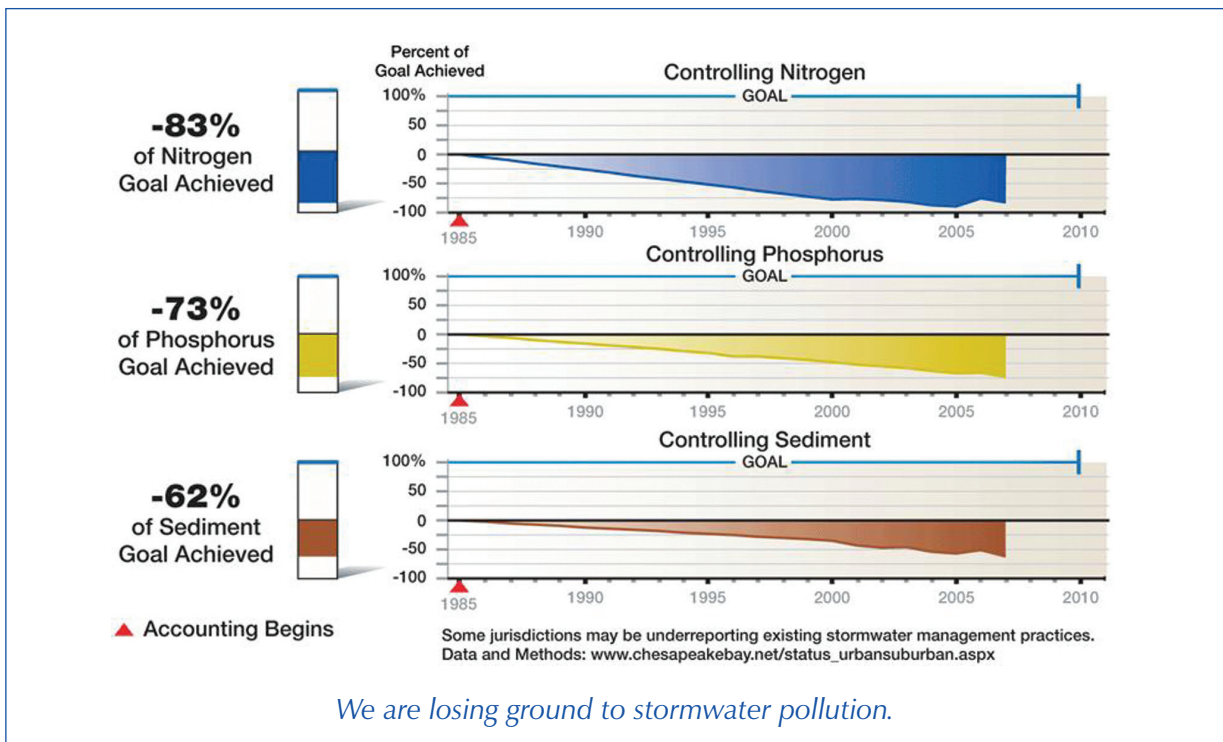
- The PSC recognizes the value of “champion” actions and the importance of flexibility of states and other partners to pursue different approaches and strategies for implementation (e.g., nutrient and sediment reduction efforts). The PSC also acknowledges the value and need for objective assessment of these implementation actions. The Bay Program will establish a formal means to contract the services of a national, independent science organization to perform independent reviews of our progress.

7. STAC reaffirms climate change concerns and opportunities for benefits of short term restoration actions.

- A new independent report released by the Program’s Scientific and Technical Advisory Committee (STAC), *Climate Change and the Chesapeake Bay: State-of-the-Science Review and Recommendations*, describes the impacts of climate change during the next century:
 - Rising sea levels and increased coastal flooding and submergence of wetlands.
 - Elevating water temperatures which will promote growth of harmful algae, loss of underwater bay grasses, and favor warmer water fish and shellfish.
 - More erratic climate and weather conditions.
- STAC recommends that the Program factor climate change into current and future restoration efforts.
- Near term actions to restore the Bay can also help address the impacts of climate change.

THE YEAR AHEAD — Challenges and Opportunities

1. Population Growth and Development. The pressures of population growth and development are the greatest challenge to restoring and protecting the Chesapeake Bay and its watershed. Suburban and urban stormwater runoff is the only source of pollution that is increasing. From 1990 to 2000, the watershed population grew 8 percent, while impervious surface rose by 41 percent. Projections through 2030 show continued explosive growth and construction in the watershed. Addressing this obstacle to restoration will require working more closely with roughly 1,800 local governments, who have great control over zoning and development.



2. Invalidation of the Clean Air Interstate Rule (CAIR) could jeopardize the reduction of 8 million pounds of nitrogen to the Bay. On July 11, 2008, the DC Circuit Court of Appeals vacated EPA's CAIR rule, which would have required significant reductions of sulfur dioxide and nitrogen oxides (NOx) from power plants. The Bay jurisdictions were relying on the CAIR rule to reduce about 8 million pounds of nitrogen emissions by 2010. EPA is pursuing all of its options to preserve the benefits of the CAIR rule. EPA is working with the Court and Congress, while also considering potential regulatory approaches in an effort to secure CAIR's substantial environmental and public health protections.

3. Development of a Total Maximum Daily Load (TMDL) for the Bay to be completed by end of 2010. EPA is proceeding with development of a Federal TMDL for the Chesapeake Bay watershed because the water quality goals in *Chesapeake 2000* will not be met by 2010. The TMDL will also satisfy requirements of Virginia (1999) and DC (2000) consent decrees. Some brief features and milestones of the TMDL include:

- Although the TMDL is required to be completed by May 2011, EPA has agreed to accelerate the schedule and target completion of the TMDL by the end of 2010.
- The TMDL will rely on the latest science to set new nutrient and sediment allocations for each of the states.
- EPA will work with the states and DC to ensure that they develop the necessary and appropriate implementation plans and commitments to achieve the needed pollution controls. This could include revised and more explicit tributary strategies or other more specific implementation plans developed in tandem with the TMDL.
- Development of the TMDL requires extensive public input and review and comment through a Federal Register notice.

4. Chesapeake Bay Foundation (CBF) issues Notice of Intent to sue EPA for failure to restore the Chesapeake Bay. On October 28, 2008, the CBF filed a Notice of Intent to sue the U.S. Environmental Protection Agency for alleged "failure . . . to comply with terms of the Clean Water Act, the Administrative Procedure Act, and the Chesapeake Bay Agreements," leading to the "continued decline of water quality in the Chesapeake Bay."

In responding to press inquiries, Benjamin Grumbles, EPA's Assistant Administrator for Water said, "The restoration of the Chesapeake Bay requires action from everyone. EPA will continue to work with its partners for results and strategies involving all levels of government. To further progress, EPA will complete a pollution reduction budget for nutrients and sediments on the bay watershed by 2010 to expedite the restoration."

In interviews with the *Washington Post* and the *Baltimore Sun*, Mr. Grumbles was quoted as saying EPA's "focuses on cooperation, not confrontation," and that, "We think we can get more done in the watershed and in the communities than in courtrooms."

5. Continuing to expand the Chesapeake watershed partnership to harness the support, energy and tools of others. We recognize the importance of expanding the partnership and to bring others to the table. Many efforts are underway to collaborate with critical partners such as local governments, local watershed groups, private partners and the nearly 17 million residents of the watershed.

- At the recommendation of the Local Government Advisory Committee (LGAC), the Bay Program will support development of a pilot "circuit rider" program to help inform, educate, and empower local governments efforts to address water quality.
- EPA's Chesapeake Bay Program Office will spearhead development of explicit strategies to engage local governments and local watershed groups. These will be partnership driven strategies and will be informed by input from CAC and LGAC.
- The Program will build on highly successful collaborations, as with Ducks Unlimited, to restore and protect the watershed and the Bay.

MOVING FORWARD IN PARTNERSHIP

The Chesapeake watershed and Bay are our precious resources that have and will continue to define the culture and heritage of our communities. This unique watershed program and partnership provides the science, data, coordination and forum to address the impacts of 400 years of human activity and to restore our streams, rivers and the Bay. We stand ready to support the Executive Council in its deliberations on ways to strengthen our tools, programs and strategies that can promote actions by all partners and stakeholders. We have to continue to look to new, and at times, unconventional ways to address the myriad challenges facing us, for example:

- Protect critical habitats (e.g., wetlands, forests) and other lands.
- Support local community efforts to upgrade wastewater treatment plants.
- Engage and empower local governments to address water quality degradation from development and polluted runoff.
- Strengthen our ability to implement critical agricultural conservation practices (e.g., stream fencing and buffers, nutrient management, no-till, cover crops).
- Advance use of aquaculture and other means to reduce harvest pressures on fish and shellfish (e.g., menhaden, crabs, native oysters).
- Assess and respond to impacts from invasive (nonresident) species.
- Protect water quality as our region pursues existing and new sources of energy (e.g., clean coal, biofuels, Marcellus shale natural gas).
- Better understand the causes of intersex fish and fish kills in the Shenandoah and Potomac rivers and the role of endocrine disruptors and pharmaceuticals.
- Consider alternatives to century old septic systems.
- Assess the contribution and threat of nutrients and legacy sediments from historic dams (i.e., Conowingo Dam).
- Promote the next generation of “green” infrastructure (e.g., communities, schools, roads, highways).
- Advance strategies that save energy and reduce near term and long term impacts on the watershed and Bay.
- Inform and educate residents on the specific actions they can take to restore and protect the watershed and the Bay

This is a partnership in the truest sense of the word. It is only through our concerted efforts that we will succeed in contending with the forces of nature and man in reaching our goals. We look forward to the restoration benefits we will derive from the commitments made today and those previously pledged. We are moving ahead with management reforms that will help harness our collective energies and coordinate our accelerated progress.

This 25-year milestone for the Program offers an opportunity to reflect on strides taken and lessons learned. More importantly, it serves as a clarion call for the greater actions needed to protect and restore our treasured Chesapeake Bay.



Chesapeake Bay Program
A Watershed Partnership