



2016

Blueprint Progress: PENNSYLVANIA

Since 2010, the six Bay states and the District of Columbia have been working in earnest to implement the Chesapeake Clean Water Blueprint—

the science-based limits for nitrogen, phosphorus, and sediment needed to restore the Chesapeake Bay and its rivers, along with the state-specific clean-up plans to achieve those limits. The Bay jurisdictions agreed to full implementation by 2025 and set a goal of being 60 percent of the way there by 2017.

Across the region, the Blueprint is driving a range of actions from sewage treatment plant upgrades to wetland restoration. These efforts are starting to pay off. In the last 10 years, nitrogen pollution has significantly decreased at 54 percent of the region-wide monitoring stations, including 18 of 23 in the Susquehanna watershed.¹ In 2016, the acreage of underwater grasses was the highest on record.² The female crab population is up this year.³ And, recent analysis suggests the summer dead zone, the area of the Bay with low or no oxygen, has decreased by roughly 60 percent since the mid-80s.⁴ Like a patient in critical condition, the Bay is not out of the woods yet, but the vital signs are moving in the right direction. Now more than ever, the Environmental Protection Agency (EPA) and the Bay jurisdictions need to continue their efforts to reduce pollution.

Last year, the Pennsylvania Department of Environmental Protection (DEP) announced its “Strategy to Enhance Pennsylvania’s Chesapeake Bay Restoration Effort” (also known as “the Reboot Strategy”), pledging renewed commitment to nitrogen, phosphorus, and sediment reductions. While progress has been made in Pennsylvania, as noted inside, there is more work to be done.



Save the Bay

CELEBRATING
50 YEARS

Brook trout are hallmarks of Pennsylvania's rivers and streams. They are great indicators of healthy water, but their dwindling population is troubling.

The Wild Center

Pennsylvania's plan for clean water: Is it on-track?

The Chesapeake Bay Foundation analyzed the most recently available information (for 2016) to evaluate pollution-reduction progress. First, we compared 2016 progress⁵ to expected pollutant reduction targets to assess whether state-wide and source sector pollution reductions are on track to achieve the 60 percent by 2017 goal. This assessment is summarized in the table below.

Second, we looked at programmatic commitments the Bay jurisdictions made in their two-year milestones. The milestones describe the practices and programs that Bay jurisdictions commit to achieving every two years. They are a critical component of restoration efforts because they provide a method to gauge short-term progress toward long-term pollution-reduction goals.⁶ Programmatic milestones include the policies, programs, and funding that will lead to the implementation of pollution-reduction practices in the wastewater, agricultural, and urban/suburban stormwater sectors.



AGRICULTURE

**Program Milestone: Develop and implement an agricultural compliance and enforcement strategy.**

Because agriculture dominates much of the landscape of the Chesapeake watershed in Pennsylvania, it contributes a significant portion of the nitrogen, phosphorus, and sediment pollution. The Blueprint relies on ensuring that all farms develop and follow plans, required since the 1970s, to keep nitrogen, phosphorus, and soil on the land.

To that end, DEP pledged to work with County Conservation Districts over the next 10 years to verify that farms in the Bay watershed have the required plans. With funding provided by the Chesapeake Bay Program and other sources, staff visited 1,125 farms from October 2016 through March 2017, an inspection rate below what is needed to achieve the annual goal of visiting 10 percent of farms. However, the pace of inspections has quickened now that the process is more established. Most of the farms visited had not previously worked with Conservation Districts, so they were more likely to have lower planning rates than the general farm population. Of farms required to have plans, 70 percent had manure management plans, and 68 percent had erosion and sediment control plans. These inspections, however, only assess whether the required plans exist, not whether they address water-quality concerns, are fully implemented, or help farms meet production goals—a major shortfall of state efforts to date.

**Program Milestone: Implement a methodology to count, report, and verify best management practices that are installed voluntarily.**

Historically, progress on Blueprint implementation was based on reported data regarding conservation practices established with assistance from public agencies. Many farmers, however, adopt practices on their farms independent of public financing. A recent Penn State survey documented a high volume of previously uncounted conservation practices, including several hundred thousand acres under nutrient management, and nearly 6,000 acres of forested streamside buffers that were previously undocumented. Also, the U.S. Department of Agriculture's remote sensing analysis estimated 370 waste storage facilities, 295 heavy-use area protections, and many other conservation practices in the Potomac River watershed in Pennsylvania. These data are critical to assessing true progress; however, because these surveys provided confidentiality to farmers, future tracking efforts may have difficulty avoiding double counting practices.

	AGRICULTURE	URBAN & SUBURBAN POLLUTED RUNOFF	WASTEWATER & CSO	SEPTIC	ALL SOURCES	
NITROGEN						Off-track by more than 10 percent
PHOSPHORUS				N/A		Off-track by less than 10 percent
SEDIMENT				N/A		On-track

RUNOFF



Program Milestone: Reduce nitrogen, phosphorus, and sediment coming from urban and suburban runoff.

The urban and suburban stormwater runoff sector has remained under backstop actions and enhanced oversight for being off-target since EPA began evaluating progress towards the 2025 goals. It is the only sector to be off-track by more than 10 percent for all three water-quality pollutants—nitrogen, phosphorus, and sediment. In its watershed implementation plan, Pennsylvania committed to stormwater reductions of 41 percent in nitrogen, 45 percent in phosphorus, and 50 percent in sediment; however, progress as of 2016 indicates reductions of only 1 percent, 8 percent, and 5 percent, respectively.



Program Milestone: Improve municipal stormwater permits.

To jumpstart reductions, DEP has recently added specific pollution-reduction goals in the new permit for the 206 small Municipal Separate Storm Sewer Systems (MS4) in the watershed. Starting in 2018, MS4s will be required to reduce loads of nitrogen by 3 percent, phosphorus by 5 percent, and sediment by 10 percent to meet their Chesapeake Bay Pollutant Reduction Plan goals. The addition of the numeric reduction requirement gives municipalities a target to achieve over a five-year period to reduce the pollutants that degrade local waters and the Chesapeake Bay. In past MS4 permits, DEP did not require the municipalities to make specific numeric reductions. MS4s only had to demonstrate that they were making incremental progress toward reducing nitrogen, phosphorus, and sediment.

WASTEWATER



Program Milestone: Implement permit limits for wastewater discharge.

Pennsylvania's real success story in meeting Blueprint goals lies in the wastewater sector. Wastewater treatment plants have installed technologies or purchased credits that reduce their contribution to nitrogen, phosphorus, and sediment pollution. By 2015, this sector had already exceeded its 2017 goals. Wastewater treatment plants have exceeded goals to the extent that phosphorus reduction across all sectors combined is considered only slightly off-track.

Lack of progress in the agricultural and stormwater sectors, however, may mean more reductions from wastewater will be required. In past reviews of the Commonwealth's progress, EPA has indicated further reducing allowable amounts of nitrogen and phosphorus in discharge permits is an option. We encourage the Commonwealth to avoid this outcome by accelerating its efforts to reduce pollution from agricultural and urban sources.

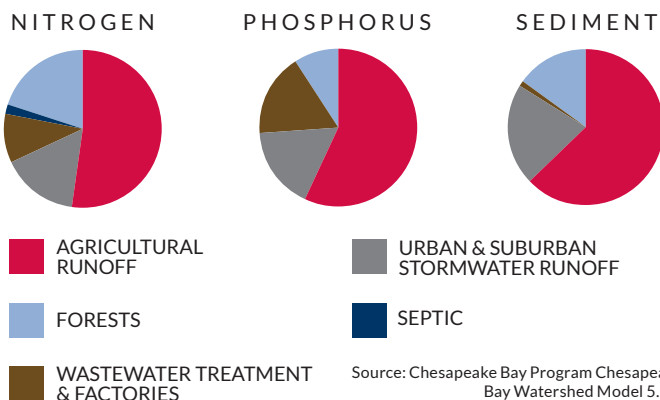
What's next?

A key component of Pennsylvania's Reboot Strategy is the commitment, led by the Department of Conservation and Natural Resources, to plant 95,000 acres of streamside forested buffers.

With agricultural and stormwater sectors not meeting Pennsylvania's pollution-reduction targets, accelerating the implementation of streamside buffers is crucial. Streamside buffers—trees and shrubs planted along streams—are one of the most cost-effective practices for reducing nitrogen, phosphorus, and sediment pollution in both rural and urban landscapes. A renewed focus on installing new buffers and preserving existing ones is more important than ever. Otherwise, EPA may require additional measures, such as comparatively more costly upgrades to wastewater treatment plants.

Recently, DEP put out their "Game Plan for Success" to develop Pennsylvania's Phase III Watershed Implementation Plan (WIP), that describes actions to be taken from 2019 to 2025. We are encouraged by many elements of the game plan, especially the inclusion of funding and local area planning in the process. To get Pennsylvania on track, continuous, collaborative, and meaningful input and buy-in from vested stakeholders, such as key agricultural leaders, local governments, and conservation organizations, will be critical. Leadership from Pennsylvania's elected officials, including those in the Governor's office, as well as strong federal support from the Chesapeake Bay Program to coordinate agencies and stakeholders is crucial.

Chesapeake Bay Watershed Water Pollution in Pennsylvania by Type and Source



- 1 cbrim.er.usgs.gov/pdf_maps/ST_Trend/00600_Bars_v3.pdf
- 2 chesapeakebay.net/indicators/indicator/bay_grass_abundance_baywide
- 3 chesapeakebay.net/indicators/indicator/blue_crab_abundance_adults
- 4 Testa et al., 2017
- 5 2016 progress are model estimates of pollution loads assuming reported practices are implemented
- 6 epa.gov/chesapeake-bay-tmdl/chesapeake-bay-milestones
- 7 files.dep.state.pa.us/Water/ChesapeakeBayOffice/Farm%20Survey%20Report%20Final%20121516.pdf
- 8 chesapeakebay.net/channel_files/24633/assessment_of_pilot_remote_sensing_12-13-2016.pdf

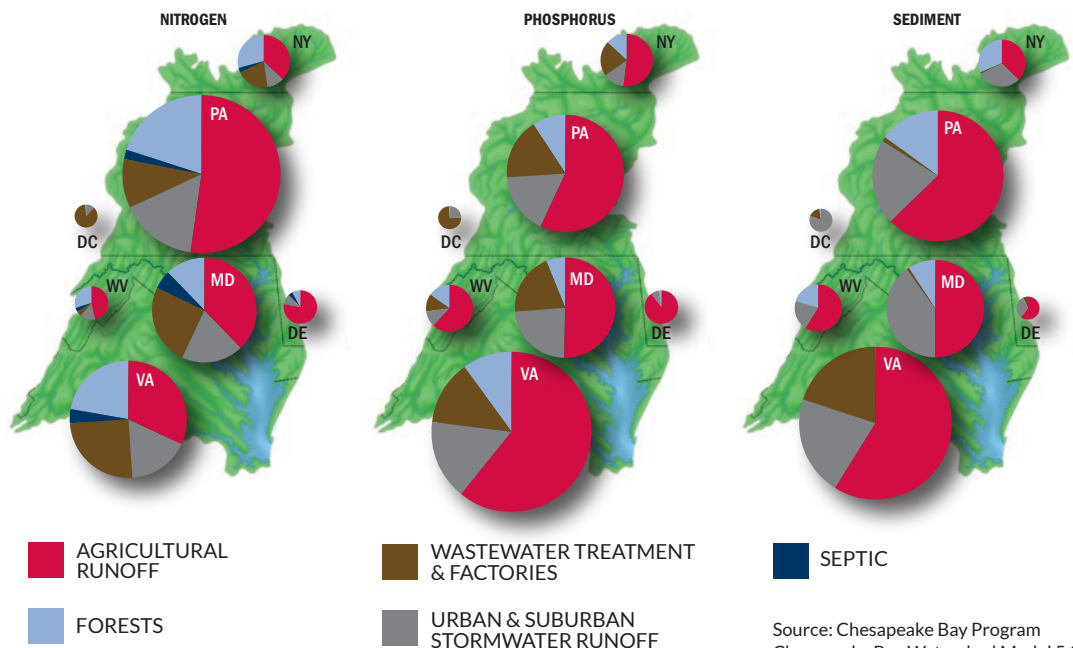
CHESAPEAKE BAY WATERSHED MILESTONES AT-A-GLANCE:

Are we
on-track
to achieve
the 2017
pollution-
reduction
goals?

- Off-track by more than 10 percent
- Off-track by less than 10 percent
- On-track

		AGRICULTURE	URBAN & SUBURBAN POLLUTED RUNOFF	WASTEWATER & CSO	SEPTIC	ALL SOURCES
DE DELAWARE	NITROGEN					
	PHOSPHORUS				N/A	
	SEDIMENT				N/A	
DC DISTRICT OF COLUMBIA	NITROGEN	N/A			N/A	
	PHOSPHORUS	N/A			N/A	
	SEDIMENT	N/A			N/A	
MD MARYLAND	NITROGEN					
	PHOSPHORUS				N/A	
	SEDIMENT				N/A	
NY NEW YORK	NITROGEN					
	PHOSPHORUS				N/A	
	SEDIMENT				N/A	
PA PENNSYLVANIA	NITROGEN					
	PHOSPHORUS				N/A	
	SEDIMENT				N/A	
VA VIRGINIA	NITROGEN					
	PHOSPHORUS				N/A	
	SEDIMENT				N/A	
WV WEST VIRGINIA	NITROGEN					
	PHOSPHORUS				N/A	
	SEDIMENT				N/A	

Chesapeake Bay Watershed Water Pollution by Type, State, and Source



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50 YEARS

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