WATER RICH & WATER WISE

A Dedicated Clean Water Fund For Pennsylvania

CHESAPEAKE BAY COMMISSION · JANUARY 2017

Pennsylvania is a water-rich state, blessed with an abundance of both surface and groundwater. More than 86,000 miles of waterways define the natural, historic and esthetic values of the Commonwealth's environment. These waters express the very core of Pennsylvania's richness, and also its vulnerability.

Almost one-quarter – over 20,000 – of the state's river and stream miles are "impaired" (see Figure 1).[1] That is, they are not safe for either drinking, fishing, swimming, aquatic life, or a combination of those uses. The number of impaired waters in Pennsylvania exceeds all other states in the nation, and is more than twice the number of the state with the second longest list – Michigan.[2] In sum, Pennsylvania's abundance of water has been taken for granted.

The impact of dirty water is felt locally and downstream. Most notably, 80 percent of Pennsylvanians get their drinking water from public systems[3] which must treat water to a healthy standard before distributing it to customers. The dirtier the source water, the higher the treatment cost.

- **Almost one-quarter of the state's river and stream miles are not safe for either drinking, fishing, swimming, aquatic life, or a combination of those uses.**
- **The number of impaired waters in Pennsylvania exceeds all other states in the nation, and is more than twice the number of the state with the second longest list — Michigan.**
- **58% of the surface water sources that supply public systems are small local streams that are directly impacted by nearby land use.**
- **For every dollar spent on water quality improvement, two dollars of benefit are realized.**

Most of the surface water sources these public systems rely on – 58 percent – are small local streams that are directly impacted by nearby land use.[4] Sources of pollution such as plowed fields or urban streets will negatively impact surface water, but natural features such as forests can improve it. For every 10 percent increase in a watershed's forest area, treatment costs decline by 20 percent.[5]

In areas where forests are not practical, such as high quality farmland or urban areas, practices such as cover crops, riparian buffers, street trees and permeable pavement are helpful. Known as "green infrastructure," these practices are often more cost effective than traditional "gray infrastructure" at reducing pollution.

Nevertheless, the majority of funding available for pollution reduction has gone for traditional "built" infrastructure, such as wastewater treatment system upgrades. While these investments have improved water quality, they have only addressed a small portion of the pollution load. The vast majority of local water impairments are due to "non-point" sources – those that do not come from a pipe – such as agriculture, abandoned mines and urban stormwater. Unlike "point" sources, non-point sources are diffuse across the landscape. Their remediation requires one-on-one communication with many individual landowners and site-specific management plans.

Much of this work begins with a county conservation district, a locally-led agency with expertise in the planning and implementation of non-point source pollution. Unfortunately, the demand for

their services is outpacing the available staff. In particular, agriculture erosion and sedimentation control plans and manure management plans, required by state law for decades, are in place on only 30-50 percent of Pennsylvania farms. Compliance is hindered by a multi-year waiting list in some counties due to staffing limitations.

Pennsylvania also lacks a robust source of funds for the implementation of water quality practices. The largest single source of non-point source funding in Pennsylvania is the USDA's Natural Resources Conservation Service (NRCS). In FY16, approximately $100 million in requests for conservation support came to NRCS from Pennsylvania farmers. Only $20 million was available, leaving a backlog of $80 million, a 4:1 ratio of unmet need.

Chesapeake Bay: A Case Study

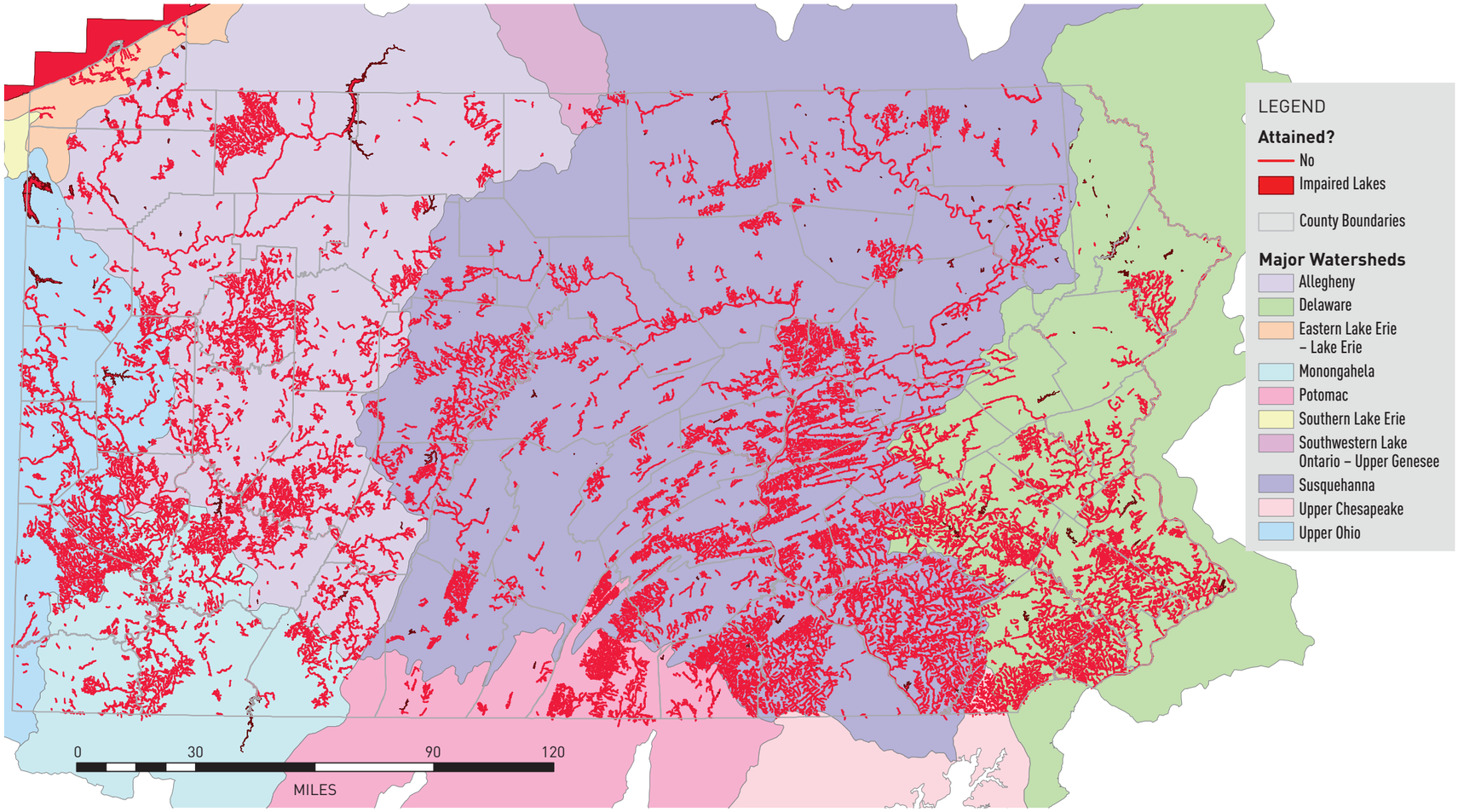
A large funding shortfall hinders Pennsylvania's Chesapeake Bay restoration efforts. A recent study by the Environmental Finance Center estimates the cost of the commonwealth's Chesapeake Bay Watershed Implementation Plan at $674 million annually for agricultural and urban practices combined. Current funding levels are approximately $140 million annually, leaving a total funding gap of $5.34 billion over the next ten years.[6]

As a result, Pennsylvania is not on track with its Chesapeake Bay efforts and is facing "backstop" actions from the U.S. Environmental Protection Agency (EPA). In 2015, EPA withheld federal funds from Pennsylvania until the commonwealth revised its Chesapeake Bay effort.

One part of the "reboot" was to re-purpose some conservation district staff from planning to compliance efforts. Others included a restructure of Bay-related staff at the Department of Environmental Protection (DEP) and a better accounting of non-cost-shared practices that farmers have already implemented. Future potential backstop actions could include an expansion of the type of farms required to have a federal permit as a Concentrated Animal Feeding Operation (CAFO) or a further reduction in permit limits for wastewater treatment facilities.

Regardless, even the most stringent of backstop actions would not achieve a third of the necessary reductions. Counting all existing practices might find an additional 4 million pounds of nitrogen. Taking all wastewater treatment plants to the limit of technology might reduce 5 million pounds of nitrogen. These efforts fall far short of the 34 million pounds of nitrogen that Pennsylvania must reduce from Chesapeake Bay by 2025.[7]

FIGURE 1 Impaired Waters of Pennsylvania



With only 11 million pounds reduced since the restoration began in 1985, achieving the 2025 goals will require a steep acceleration in effort and cost-effective prioritization.

Unlike Pennsylvania, Maryland and Virginia are two states that are on track to meet their water quality goals. These states have the advantage of large dedicated state funding programs for both wastewater treatment and non-point source practices. The sources of revenue for these programs vary from a sewer bill surcharge to rental car and real estate recordation fees.[8]

A Dedicated Statewide Water Fund

In Pennsylvania, a water use fee has been proposed.[9] It would support water protection programs across the Commonwealth, in every part of the state, including the Ohio, the Genesee, the Susquehanna, the Delaware, the Erie and the Potomac watersheds.

Currently, 5.9 billion gallons of the commonwealth's water are used each day, statewide, without compensation. By instead charging only one-hundredth of a cent per gallon for all withdrawals over 10,000 gallons per day, and one-tenth of a cent for all consumptive uses over 10,000 gallons per day, an estimated $245 million per year could be generated. This is even after municipal water systems and agricultural production are exempted and existing fees charged by the Susquehanna and Delaware River Basin Commissions are deducted.

The average individual uses only 100 gallons a day, so a 10,000 gallon threshold would include only large-scale commercial uses. At least 12 other states have some form of water fee, providing for both the oversight and protection of their water.[10]

Funding water quality is a good investment. Studies of the Chesapeake Bay, Great Lakes and Everglades have estimated at least a 2:1 benefit to cost ratio for water quality restoration.[11] In other words, for every dollar spent on water quality improvement, two dollars of benefit, such as economic activity, ecosystem services and increased property values are realized. The jobs created by restoration activity are often in the high-value STEM professions,[12] and the quality of life in healthy watersheds helps to attract employers and retain employees.

Pennsylvania is at a turning point. A robust investment in clean water today will help Pennsylvania comply with its current federal mandate for the Chesapeake Bay. It will also prepare the commonwealth for any future regional efforts such as Great Lakes or Gulf of Mexico restorations. Most importantly, it will help the commonwealth meet its own constitutional duty, as a trustee of natural resources for the benefit of all,[13] by investing in the prosperity of Pennsylvania citizens and communities.

Establishing a Pennsylvania Water Fund makes sense. It provides a logical approach to protecting local water quality while addressing regional concerns. It will help to make the Commonwealth both water rich and water wise.

NOTES

1. 2016 Pennsylvania Integrated Monitoring and Assessment Report, PA DEP
2. National Summary of State Information, Water Quality Assessment and TMDL Information, US EPA
3. PA DEP
4. Analysis of the Surface Drinking Water Provided by Intermittent, Ephemeral, and Headwater Streams in the U.S., US EPA
5. The Cost of Not Protecting Source Waters, The Trust for Public Land
6. Options for Financing Chesapeake Bay Restoration in Pennsylvania, Environmental Finance Center, University of Maryland, November 2016
7. Chesapeake Bay Program Office, US EPA
8. Md. ENVIRONMENT Code Ann. § 9-1605.2 (enacted 2004, amended 2012); Md. NATURAL RESOURCES Code Ann. § 8-2A-02 (enacted 2007 Special Session, with subsequent amendments); Code of Virginia § 10.1-2128 (enacted in 1997 with subsequent amendments); Code of Virginia § 10.1-2128.1 (enacted in 2008 with subsequent amendments); state budget language and Code of Virginia § 62.1-44.15:29.1 (enacted 2004 with subsequent amendments)
9. SB 1401 and HB 2114, 2015-2016 Pennsylvania Legislative Session
10. Joint Legislative Audit and Review Commission, Virginia
11. Kauffman, G.J., Economic Value of Nature and Ecosystems in the Delaware River Basin, Journal of Contemporary Water Research & Education, August 2016
12. Great Lakes Coalition
13 Pa. Constitution, Article I, Section 27

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