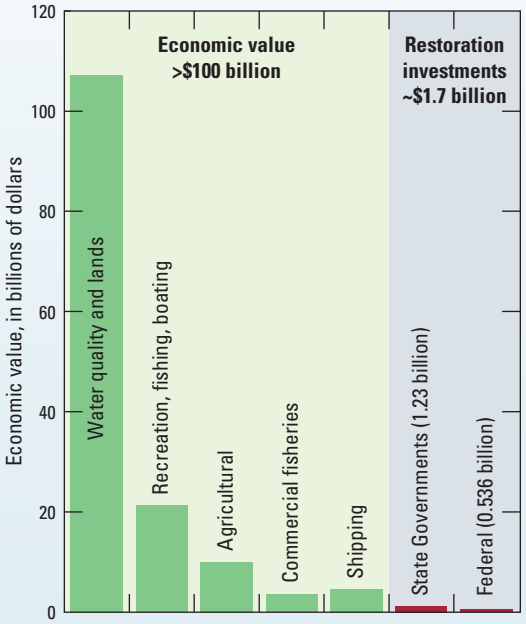
USGS
science for a changing world

U.S. Geological Survey Science—Improving the Value of the Chesapeake Bay Watershed

Congress directed the Federal Government to work with States to restore the Nation's largest estuary.

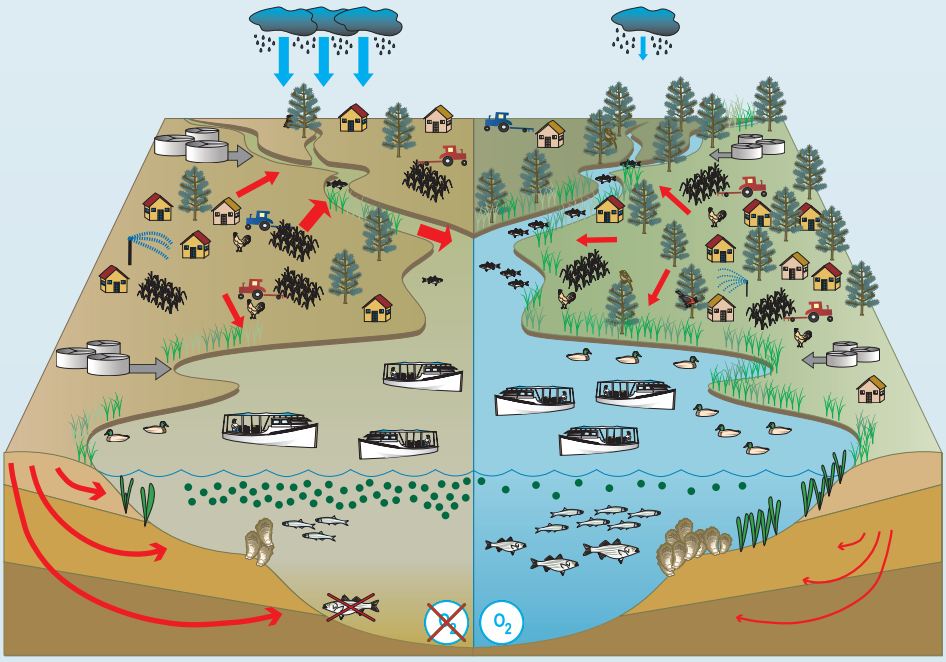
Chesapeake Bay restoration provides important economic and ecological benefits:

- 18 million people live and work in the Bay watershed and enjoy its benefits.
- 3,600 types of fish, wildlife, and plants underpin the economic value of the Bay ecosystem.
- Poor water quality and habitat loss threaten restoration and negatively impact the economy.
- 10 Goals to meet by 2025 through the Chesapeake Bay Program, a voluntary partnership.



Annual economic value and restoration investments.
Sources: Phillips and McGee, 2014; U.S. Army Corps of Engineers, 2015; and Office of Management and Budget, 2016.

Photograph credits: Top; A boat floating on Chesapeake Bay, by Jane Hawkey, IAN Image Library (www.ian.umces.edu/imagelibrary/).Middle; A family fishing, by U.S. Fish and Wildlife Service. Bottom; Unhealthy fish, by USGS.

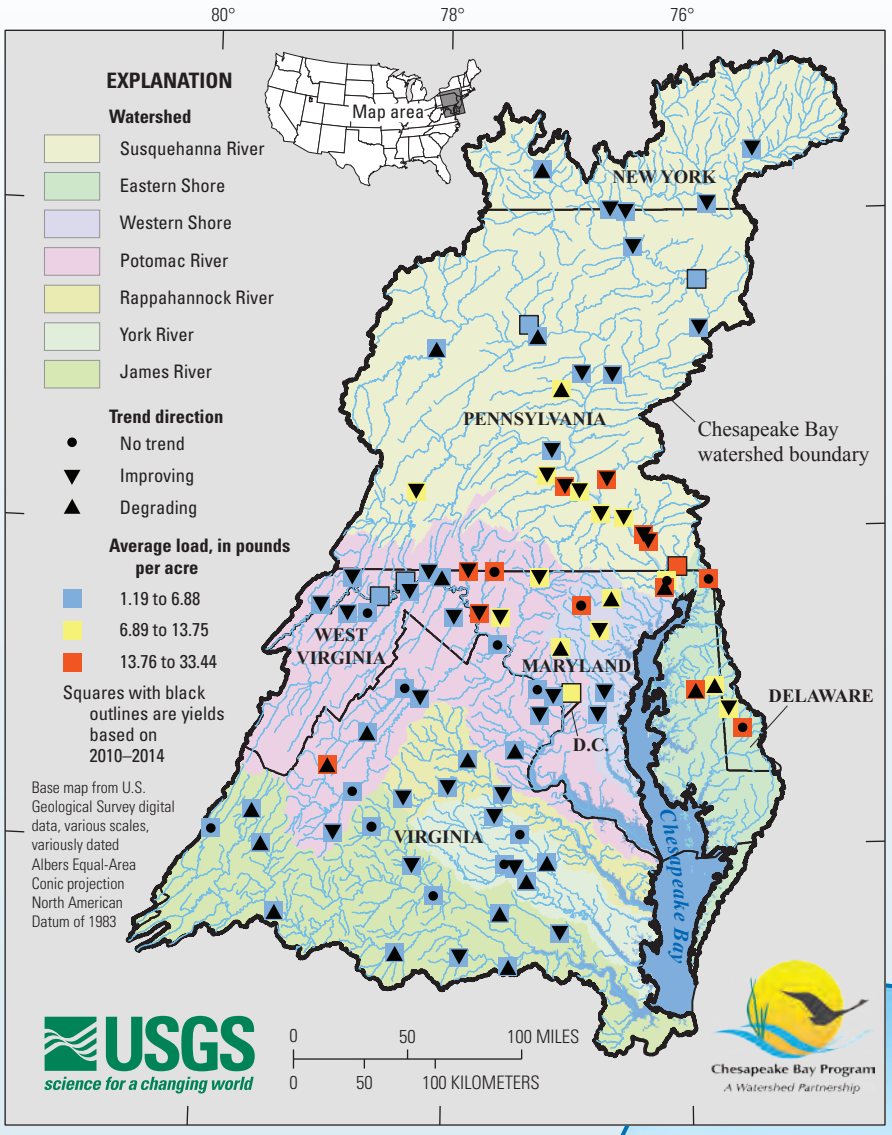


(Modified from Phillips, 2006)

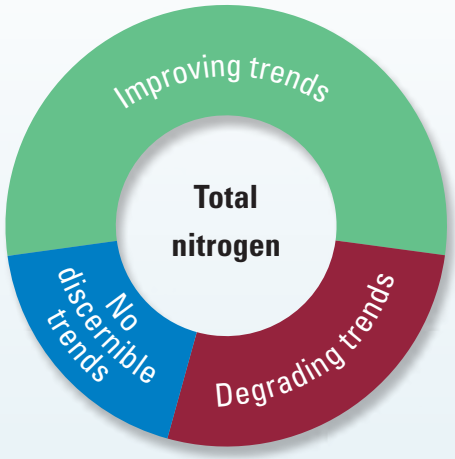
Present → Future

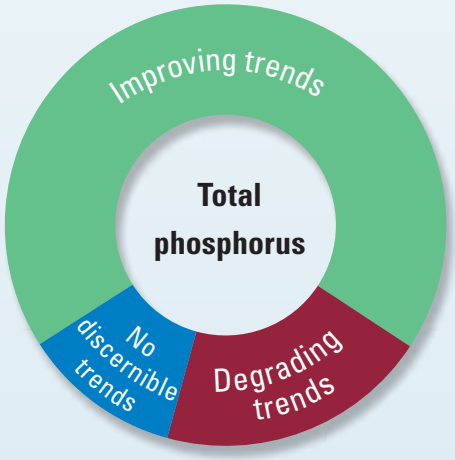
USGS science is the foundation to assess progress and focus resources where they are most effective.

- Partners use our science every day.
- We monitor and analyze:
  - Fish, wildlife, and habitat
  - Water quality
  - Land-use and environmental change
- USGS spends $12M on science activities, which is provided by multiple USGS programs.
- Our science helps improve the Chesapeake Bay watershed and informs other national efforts.



River monitoring of total nitrogen per acre loads and trends from 2005–2014.





Water-quality patterns from 2005–2014.
Map and graphs source: Moyer and Blomquist, 2016.

Photograph credits: Top; Baltimore, Md., area along Chesapeake Bay by Jane Thomas, IAN Image Library (www.ian.umces.edu/imagelibrary/). Bottom; Agricultural area, by USGS.

References Cited

Chesapeake Bay Comprehensive Plan, U.S. Army Corps of Engineers, Baltimore and Norfolk Districts Section 905 (b) Analysis, 2015, accessed April 17, 2017, at http://www.nab.usace.army.mil/Portals/63/docs/Civil%20Works/CBCP/Final_Chesapeake_Bay_905_b_%20Report_2015_Feb.pdf?ver=2016-08-10-093155-190.

Moyer, D.L., and Blomquist, J.D., 2016, Summary of nitrogen, phosphorus, and suspended-sediment loads and trends measured at the Chesapeake Bay nontidal network stations: Water year 2014 update, accessed February 3, 2016, at http://cbrim.er.usgs.gov/data/NTN%20Load%20and%20Trend%20Summary%202014.pdf.

Office of Management and Budget, Chesapeake Bay Restoration Spending Crosscut: Report to Congress, 2016, 30 p., accessed April 17, 2017, at http://www.chesapeakebay.net/channel_files/23874/cbara_chesapeake_bay_crosscut_report_final_(12.06.16).pdf.

Phillips, S.W., 2006, U.S. Geological Survey Chesapeake Bay studies: Scientific solutions for a healthy bay and watershed: U.S. Geological Survey Fact Sheet 2006–3046, 4 p., accessed April 17, 2017, at https://md.water.usgs.gov/publications/fs-2006-3046/fs-2006-3046.pdf.

Phillips, Spencer, and McGee, Beth, 2014, The economic benefits of cleaning up the Chesapeake: Chesapeake Bay Foundation, 56 p., accessed April 17, 2017, at http://www.cbf.org/document.doc?id=2258.

By Scott Phillips (swphilli@usgs.gov), Kenneth Hyer (kenhyer@usgs.gov), and Elizabeth Goldbaum (egoldbaum@usgs.gov)

For more information, visit the USGS Chesapeake Bay Activities website at https://chesapeake.usgs.gov/

ISSN 2327-6916 (print)
ISSN 2327-6932 (online)
https://doi.org/10.3133/fs20173031