



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Office of Water Management

# THE CHESAPEAKE BAY

Restoring Waters of Pennsylvania and the  
Chesapeake Bay  
July 2012

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## **BRIEF BACKGROUND**

# Chesapeake Bay TMDL

- Total Maximum Daily Load (TMDL)
  - Some call it a 'pollution diet'
  - Sets maximum amount of pollutants that can be delivered to a waterbody
- Three Phases : 2010; 2012; and 2017
- Goal: All practices on the ground, and all permitting activities completed, by 2025

# Effects of Excess Nutrients

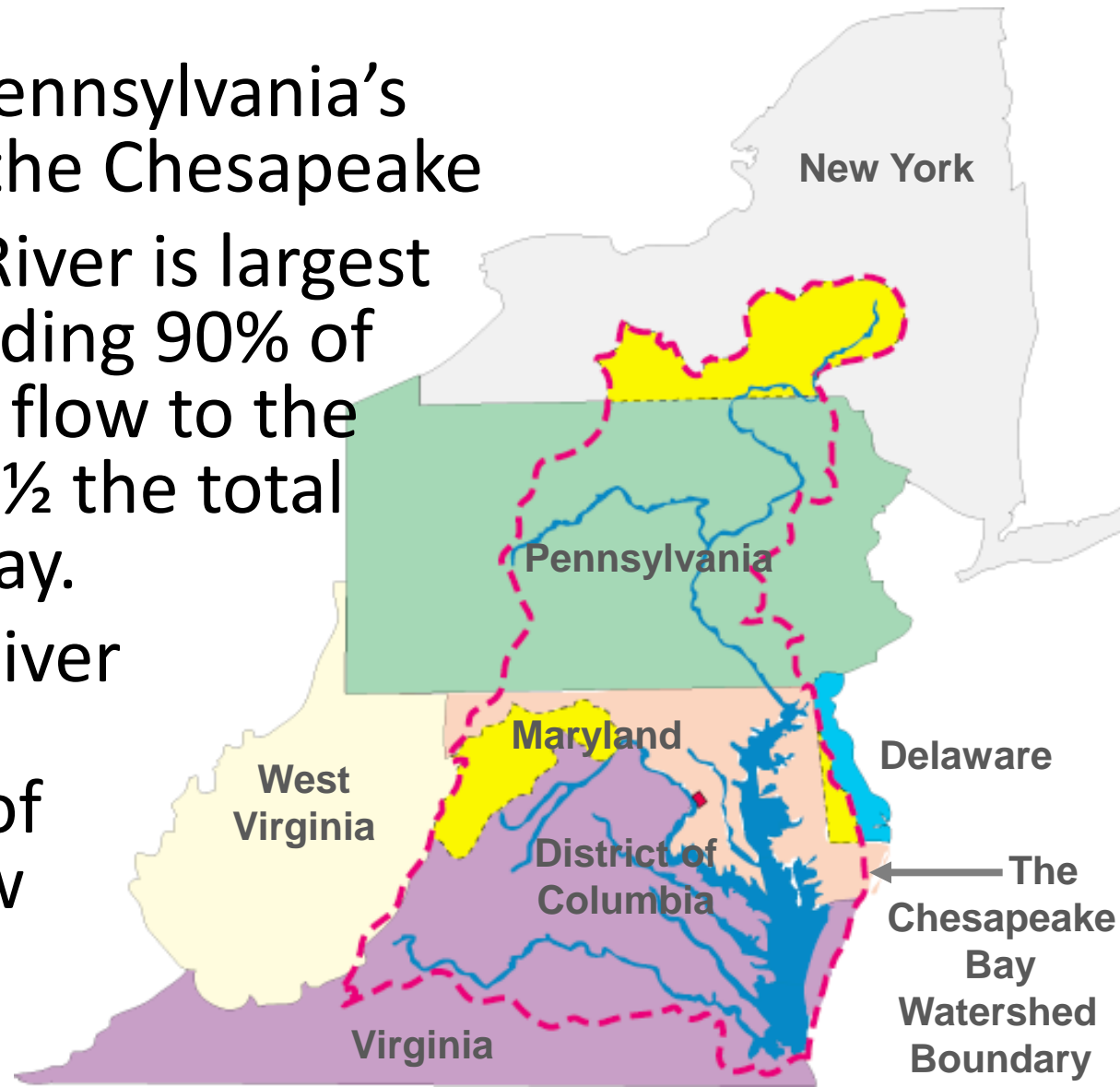
- Eutrophication
- Excessive nitrogen, phosphorous and sediment leading to algae growth and:
  - Low Dissolved Oxygen
  - Reduced Water Clarity
  - Chlorophyll A



Photo Source: Chesapeake Bay Program

# The Chesapeake Bay Basin

- Over 50 % of Pennsylvania's land drains to the Chesapeake
- Susquehanna River is largest tributary, providing 90% of the freshwater flow to the upper bay and ½ the total flow into the Bay.
- The Potomac River provides an additional 2% of freshwater flow



# PA's Portion of the Watershed

- Approximately:
  - 40,000 farms
  - 270 Municipal Separate Storm Sewer Systems (MS4s)
  - 220 major (“significant”) point sources
  - 900 minor (“non-significant”) point sources
  - 43 counties
  - 1,200 municipalities



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# Chesapeake Bay TMDL

- Dec 29, 2010: The Environmental Protection Agency (EPA) published the TMDL
  - Reductions of nitrogen, phosphorus and total suspended solids from Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia
- States and D.C. wrote Watershed Implementation Plans (WIPs)
  - Phase 1: 2010
  - Phase 2: 2012

# Why are WIPs Critical?

- Restoration & Protection of Chesapeake Bay
- Clarification of States' Roles
- EPA “consequences” (Dec 29, 2009 letter) if WIPs not submitted or not acceptable:
  - Expansion of NPDES permitting to sources currently not required to obtain one
  - Objection to permits issued by Pennsylvania
  - Conditioning or redirecting of federal grants
  - Increase in EPA enforcement
  - And others



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## **KEY TOPICS**

# TMDL: Key Topics

- TMDL
  - Reduce Nitrogen, Phosphorous and Sediment
  - Work with partners
  - Work on EPA's evaluation of the Watershed Implementation Plan (WIP)
  - Work with EPA and the Chesapeake Bay Watershed Model
- Milestones
  - Programmatic Milestones
  - Best Management Practices (BMPs) and other activities

# EPA's Most Recent WIP Evaluation

- May 30, 2012 Letter from EPA regarding PA's Phase 2 WIP:
  - Local Engagement
    - Positive Comments
  - Agriculture
    - Enhanced Oversight (same as Phase 1)
  - Stormwater
    - Backstop Allocation/Adjustment (same as Phase 1)

# EPA's Evaluation (continued)

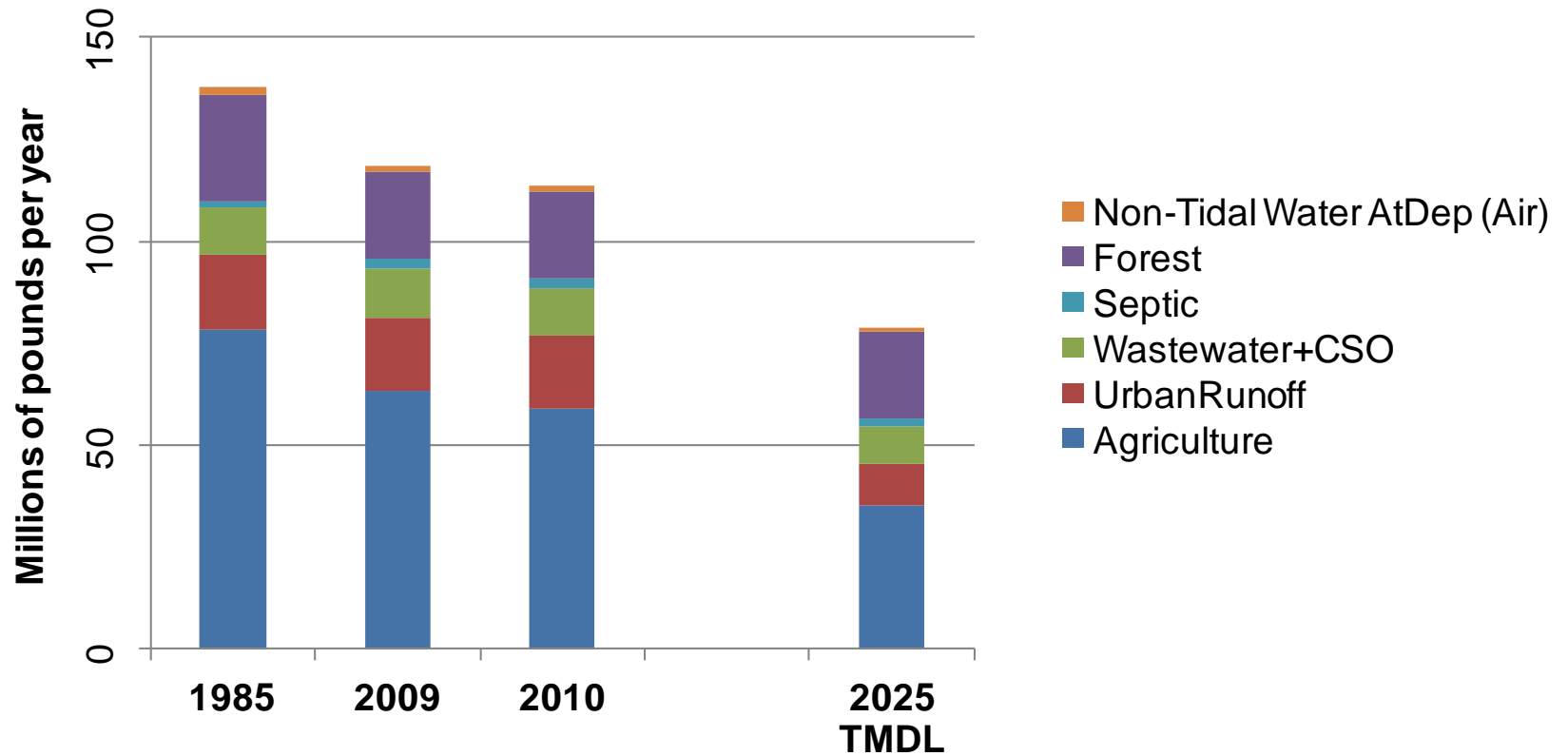
- May 30, 2012 Letter from EPA:
  - Wastewater
    - Generally positive comments
    - Shifted to on-going oversight (reduced from enhanced oversight in Phase 1 decision)
  - Offsets and Trading
    - Enhanced Oversight
  - Federal Facilities
    - Generally positive comments

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## **QUANTIFYING THE STATUS**

# Progress

## Pennsylvania Delivered Nitrogen by Sector



# Progress

- November 2011 Study released by John Hopkins
  - Analyzed 60 years of Water Quality Data
  - Available at  
<http://releases.jhu.edu/2011/11/03/a-decline-in-dead-zones-study-shows-efforts-to-heal-chesapeake-bay-are-working/>

# PA Reduction Targets

Quantifying the TMDL goals:

<b>DRAFT</b>	<b>Total Nitrogen (Million Pounds Per Year)</b>	<b>Total Phosphorous (Million Pounds Per Year)</b>	<b>Sediment (Million Pounds Per Year)</b>
<b>2011</b>	112.48	4.8	2,513
<b>Planning Targets (Year 2025)</b>	78.83	3.6	1,945
<b>Remaining Reductions</b>	33.65	1.2	568



# 2011 (By Sector)

DRAFT

	2011 Progress Run Results in Pounds (4/17/12)		
	<u>Nitrogen</u>	<u>Phosphorus</u>	<u>Sediment</u>
<b>Agriculture</b>	59,281,017	2,611,189	1,559,246,443
<b>Urban Runoff</b>	17,467,177	756,503	546,482,769
<b>Waste Water &amp; Comb. Sewer Overflow</b>	11,483,413	997,916	21,355,580
<b>Septic</b>	2,141,702	-	-
<b>Forest</b>	21,067,076	393,689	385,909,945
<b>Air Deposition</b>	1,042,439	37,246	-

**Total Pounds:**      112,482,824                      4,796,543                      2,512,994,737

# 2025 Goals (By Sector)

DRAFT

	2025 Goals in Pounds (4/17/12)		
	<u>Nitrogen</u>	<u>Phosphorus</u>	<u>Sediment</u>
<b>Agriculture</b>	35,313,572	1,832,756	1,190,126,458
<b>Urban Runoff</b>	10,235,505	428,232	313,479,999
<b>Waste Water &amp; Comb. Sewer Overflow</b>	9,080,860	903,949	12,653,777
<b>Septic</b>	1,742,464	-	-
<b>Forest</b>	21,417,135	397,140	428,739,765
<b>Air Deposition</b>	1,042,439	37,246	-

**Total Pounds:**      78,831,975      3,599,322      1,945,000,000

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## **MILESTONES**

# Chesapeake Bay TMDL

- Programmatic Milestones
  - January 1, 2012 to December 31, 2013
  - Agriculture
  - Stormwater
  - Wastewater
  - Trading and Offsets
- BMP Milestones
  - 2009 to 2011
  - 2012 to 2013 Projections

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**LOOKING FORWARD**

# Local Partner Participation

- County Initiatives (Examples):
  - Lancaster County Clean Water Consortium
  - Lycoming County
  - York County
  - Conewago Creek Conservation Initiative
  - Susquehanna Greenway Partnership
  - Other initiatives
- Revised county targets

# EPA and the TMDL

- EPA will:
  - Regularly oversee each of the jurisdictions' programs to make sure they implement the pollution control plans;
  - Monitor that states remain on schedule for meeting water quality goals; and
  - Monitor that states establish and achieve two-year milestones.
  
- Phase 3 (2017)

# EPA and the TMDL

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## Our Progress : Water Quality : TMDL Tracking

Fisheries Habitats **Water Quality** Watersheds Stewardship

Overview Wastewater **TMDL Tracking**

### Chesapeake Bay TMDL Tracking and Accounting System (BayTAS)

The Chesapeake Bay TMDL Tracking and Accounting System (BayTAS) was developed to inform EPA, the Bay Jurisdictions, and the public on progress in implementing the [Bay TMDL](#). Future versions will include reporting of Best Management Practice (BMP) implementation and verification. [Learn more about BayTAS.](#)

View by: States Basins Segments Facilities  
Go to: All States

Streets Imagery

Click on a map feature or select from the options below to view TMDL information by State

All States

Nitrogen Phosphorus Sediment

Total Allocation for Nitrogen:  
**201,631,405 lbs/year**

Total Allocation by Sector:

- Agriculture
- Non-Tidal Water Deposition
- Onsite
- Forest

Download Data

Internet

<http://stat.chesapeakebay.net/BayTAS>



# ▶ Watershed Implementation Plan (WIP)



Boake Run, a tributary of Sterling Run, Centre County

[http://water.epa.gov/polwaste/nps/success319/upload/2009\\_12\\_10\\_NPS\\_Success319\\_state\\_pa\\_sterling.pdf](http://water.epa.gov/polwaste/nps/success319/upload/2009_12_10_NPS_Success319_state_pa_sterling.pdf)



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**[www.epa.gov/chesapeakebaytmdl](http://www.epa.gov/chesapeakebaytmdl)**

**[www.dep.state.pa.us](http://www.dep.state.pa.us)**

**“DEP Programs A-Z” click Chesapeake Bay**

**[ra-chesapeakebayprogram@pa.gov](mailto:ra-chesapeakebayprogram@pa.gov)**