



Reducing Nitrogen, Phosphorus and Sediment Pollution

Progress Update

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Reducing Pollution “Briefing Package”

Overview

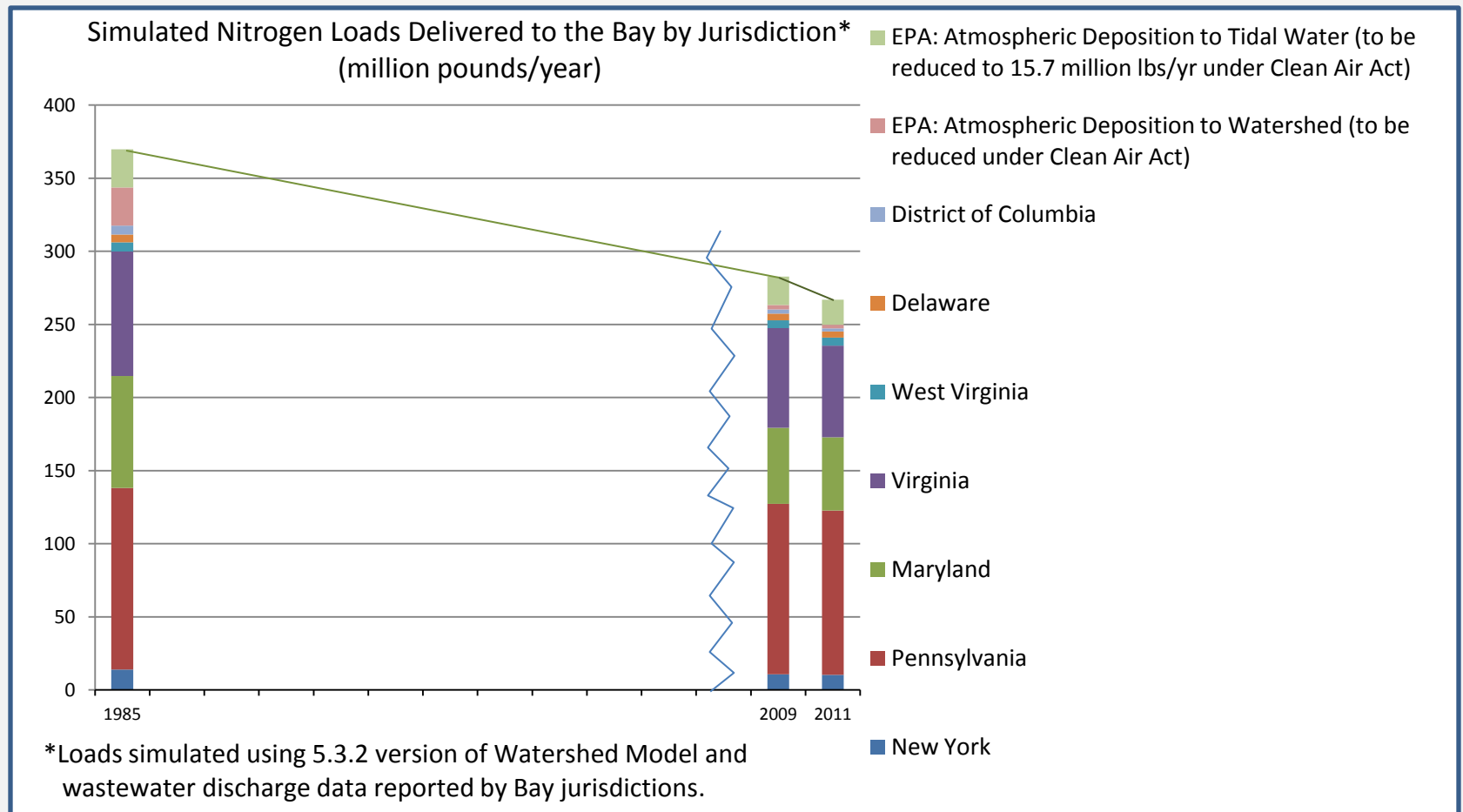
1. 2009-11 Milestones
2. 2011 Progress in Reducing Pollution
3. 2012-13 Milestones
4. Actions Being Implemented
5. Monitoring Results

History of CBP Water Quality Goal Setting

- 1987 – long term goal – 40% Reduction by 2000
- Tributary Strategies – 1993 EC Directive
- C2K – take tidal waters off impaired list by 2010
- Focus on short term targets – EC 2008
- Established 2009-2011 Milestones – EC 2009
- TMDL in place Dec 2010 – includes long term goals and short term targets in accountability framework

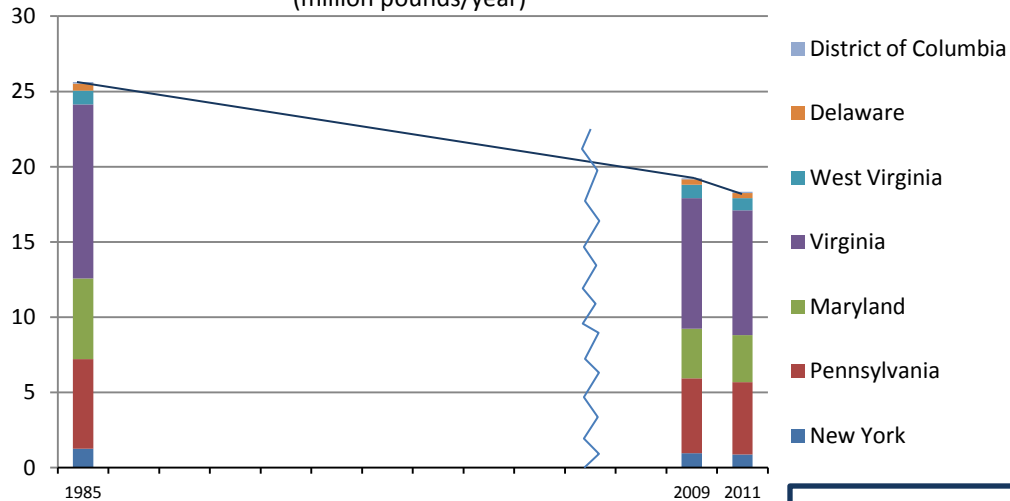
What does it mean for Pollution Reduction?

- Progress made between 1985 and 2009
- Accelerated progress due to 2009-11 Milestones



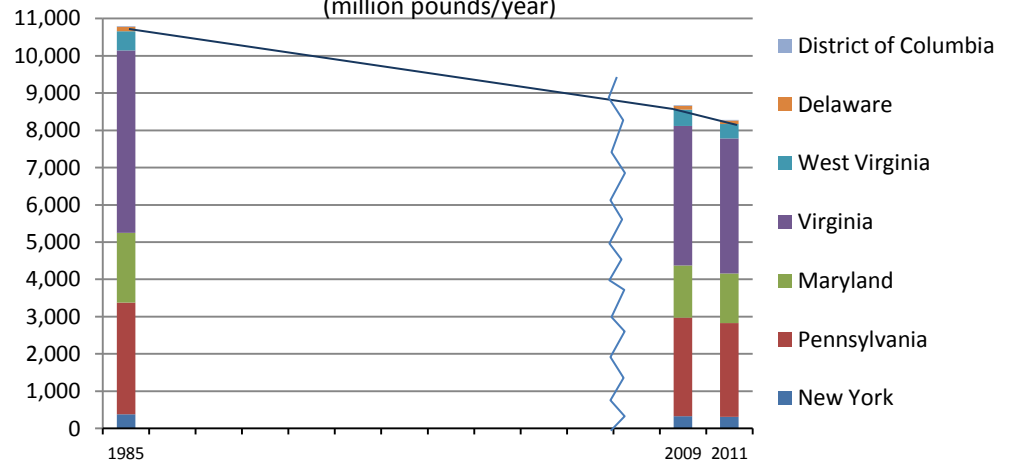
Similar trends for Phosphorus and Sediment

Simulated Phosphorus Loads Delivered to the Bay by Jurisdiction*
(million pounds/year)



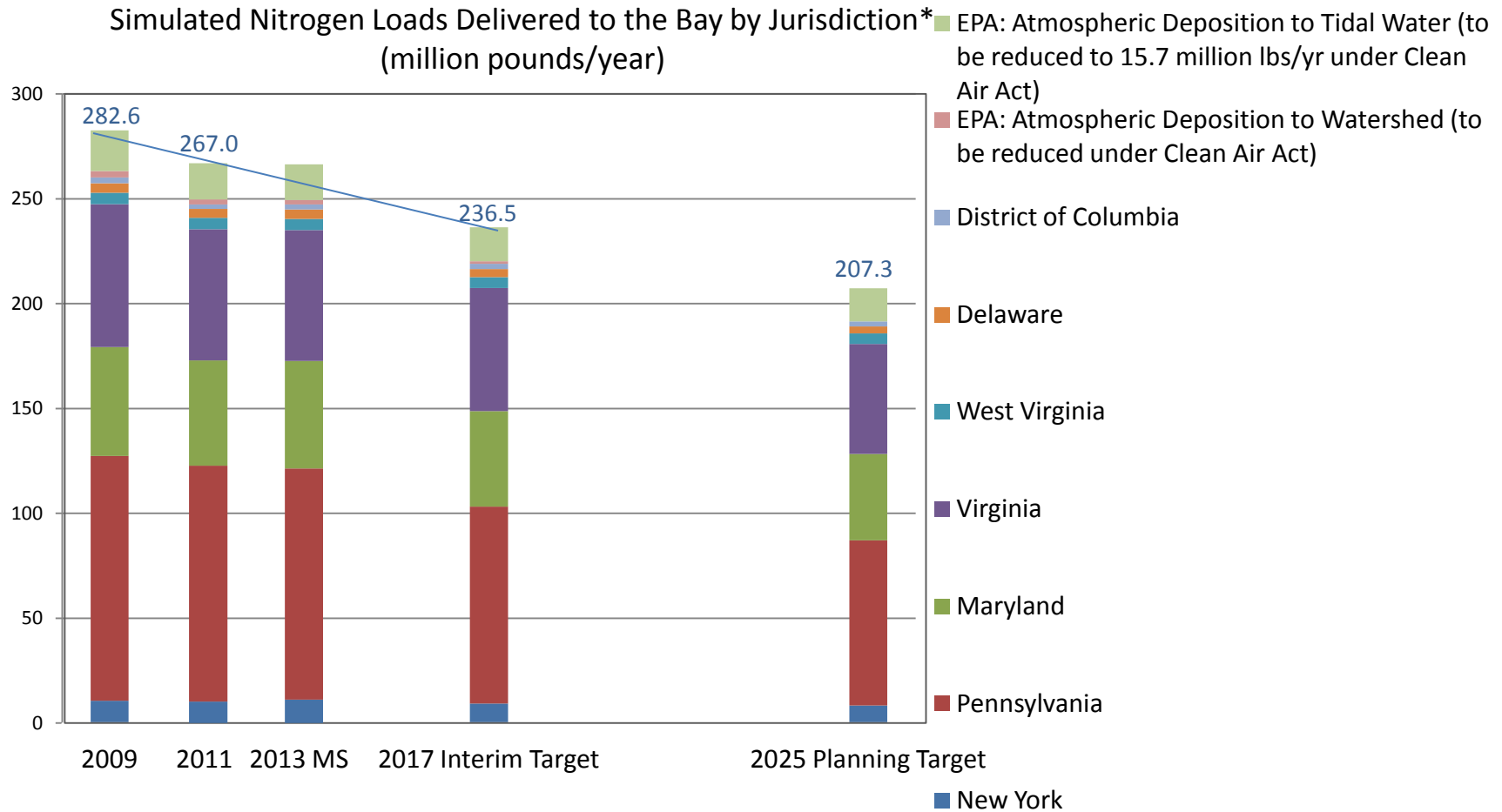
*Loads simulated using 5.3.2 version of Watershed Model and wastewater discharge data reported by Bay jurisdictions.

Simulated Sediment Loads Delivered to the Bay by Jurisdiction*
(million pounds/year)



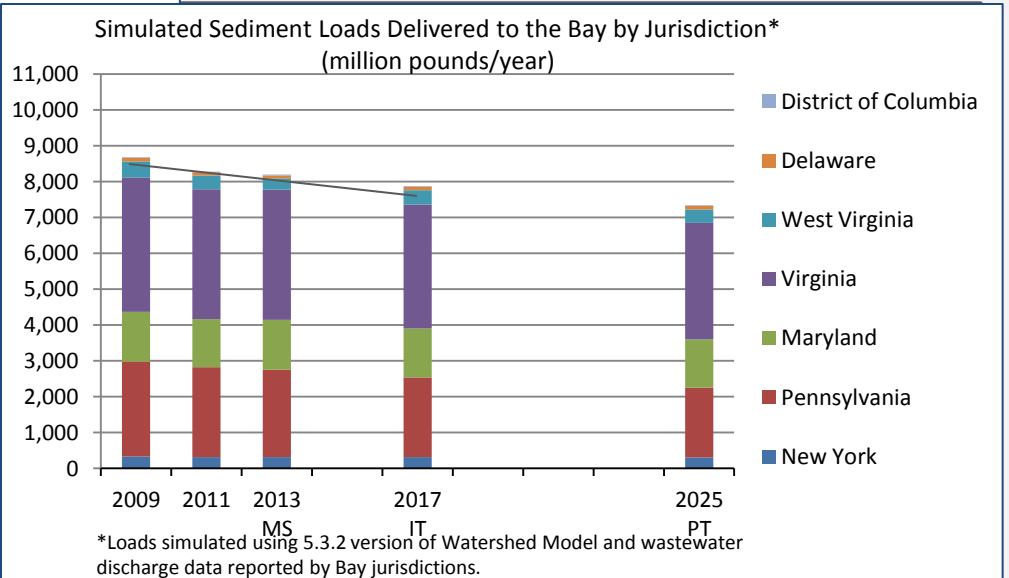
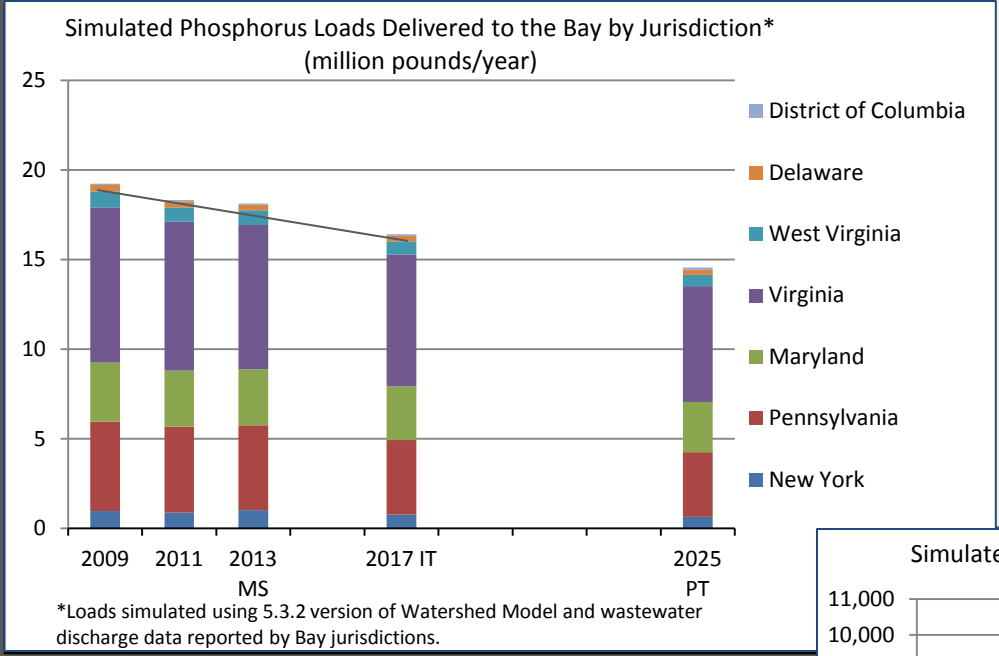
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Progress and Targets - Nitrogen



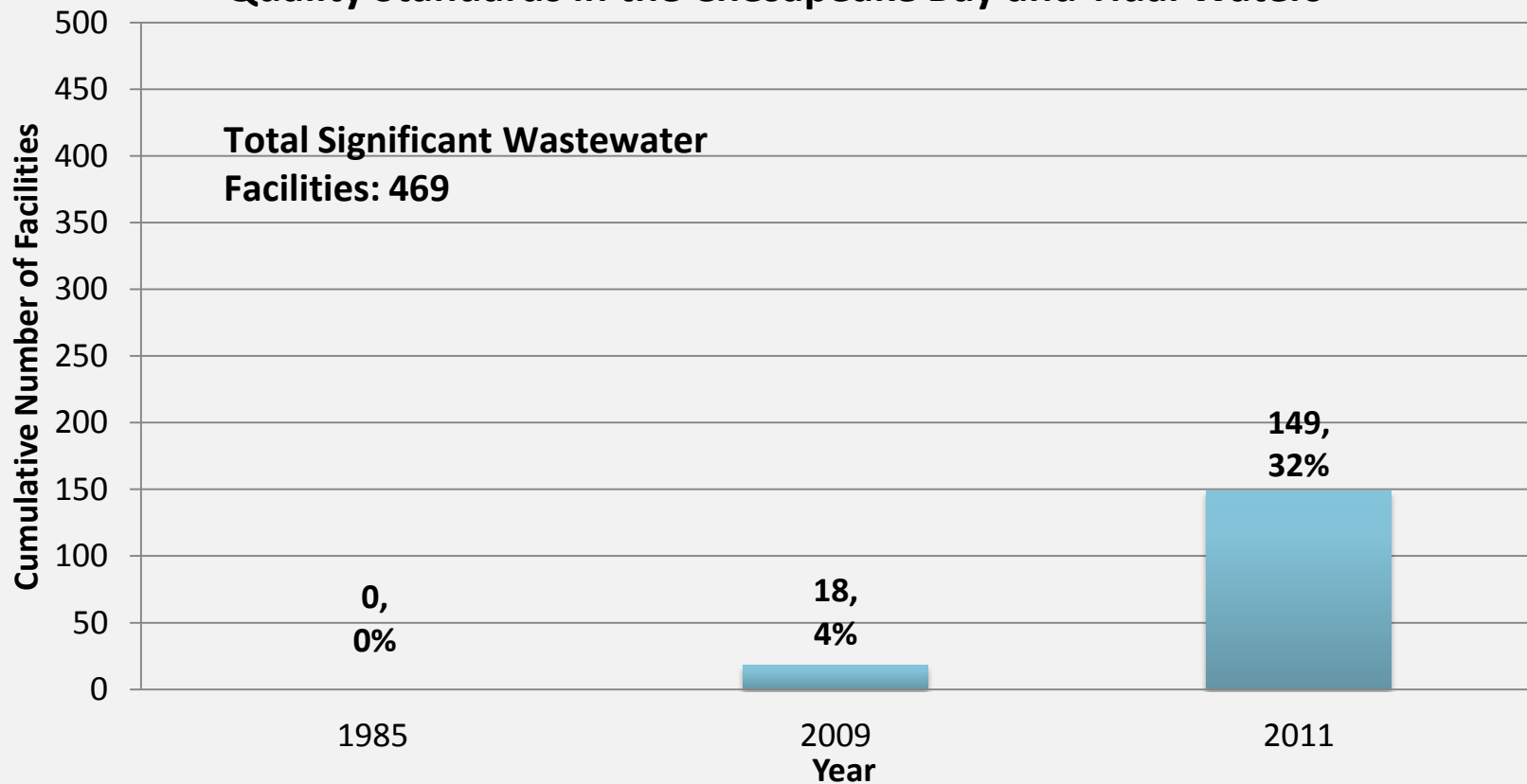
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Progress and Targets – Phosphorus and Sediment



Supplemental Indicator – Wastewater

Significant Wastewater Facilities That Meet Applicable Water Quality Standards in the Chesapeake Bay and Tidal Waters



Note: Based on date that a permit containing an effluent limit that meets dissolved oxygen and SAV/clarity standards becomes effective. Does not include assessment of chlorophyll-a standards, pending the staged implementation approach for wastewater treatment facilities in the James River Basin discussed in Appendix X of the Chesapeake Bay TMDL established in 2010.

2009-2011 Milestone Progress Highlights

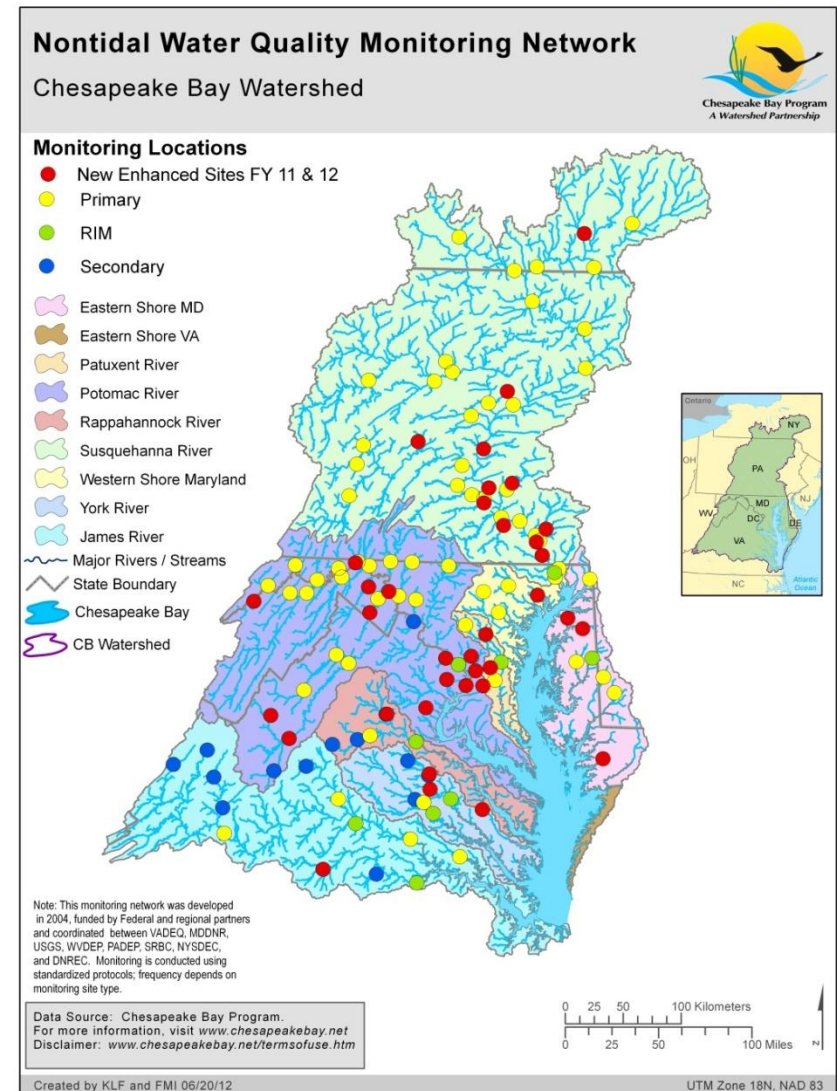
- **District of Columbia:** Adopted Stormwater Regulation and Fee
- **Delaware:** Planted over 50,000 acres cover crops and trees
- **Virginia:** Passed legislation on Lawn Fertilizer, Agriculture RMPs, Septic Systems
- **West Virginia:** New Funding Source for Sewage Treatment Plant Upgrade

2012-2013 Milestone Commitment Highlights

- **Maryland:** Passed new laws increasing Bay Restoration Fund fee to pay for wastewater plant upgrades; authorized stormwater utility fees; and restricted new septic systems to help limit sprawl and protect agricultural and forest lands.
- **New York:** Implement Tree Planting Program to Restore Stream Corridors
- **Pennsylvania:** Working with Conservation Districts to Help Farmers Comply with State Programs
- **EPA:** Committed to reducing nitrogen deposition to tidal waters by 2.5 million lbs. and to watershed by .9 million lbs. by 2013

CBP Monitoring Programs

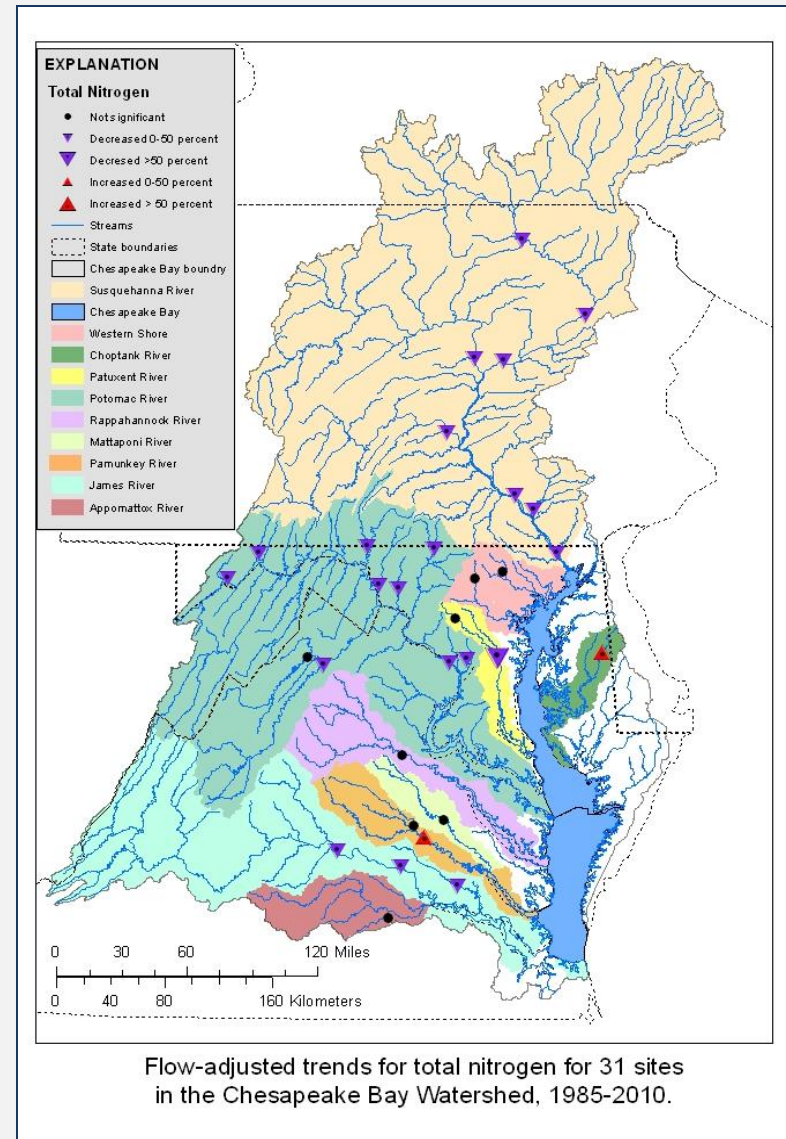
- Nontidal Rivers Network
 - Measures N, P, and Sed. loads
 - Long-term sites
 - Adding stations
- Trends in watershed
 - Long term and 10 year
 - N, P, Sed. Loads to the Bay
- Tidal waters
 - DO, Chlorophyll-a, and clarity



Watershed: Long-term Improvements

Watershed Trends –

- Long-term (1985-2010) – water quality improving in many areas as a result of pollution controls (e.g. enhanced controls at wastewater treatment plants, BMPs on farms and suburban lands)
- Short term (2001-11) – more sites show ‘no trend’; reinforces need for additional pollution reduction measures



Water Quality in the Bay

Challenges

Dissolved oxygen (DO) concentrations in 2011 fell to lowest level in last 4 years (34 percent of the waters met established standards for the summer months).

- 34% of tidal waters met DO standards for 2009-11 (4% decrease)

Signs of Sustainability and Hope

- Signs of resilience: healthy grass beds remained intact at Susquehanna Flats despite record stormwater levels; widgeon grass beds growth; new grass beds found in James River.
- Oyster survival rates highest since 1985; oyster biomass increased 44 percent and oyster disease at all time low.
- Johns Hopkins-UMCES study: 60 years of water quality data conclude that a decrease in the frequency and severity of dead zones in the Bay is the direct result of implementing measures to reduce nitrogen and phosphorus pollution