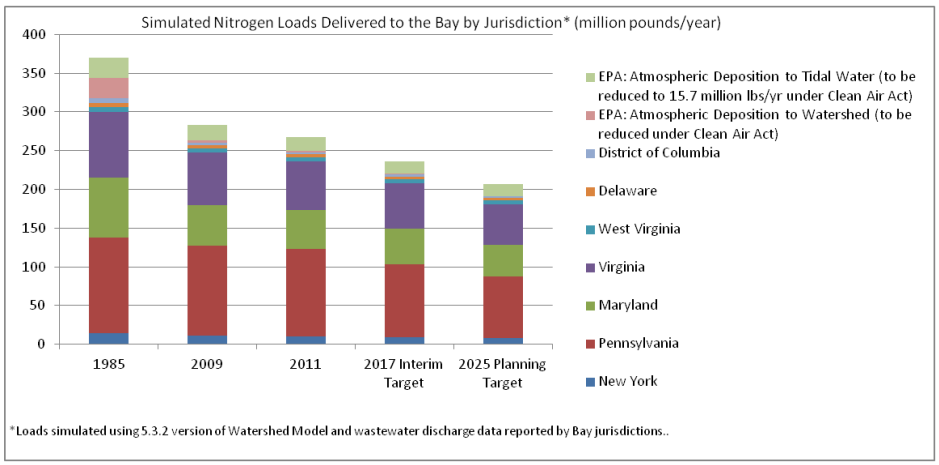
Progress toward Healthy Waters Part III: 2011 Progress in Reducing Nitrogen, Phosphorus and Sediment Pollution

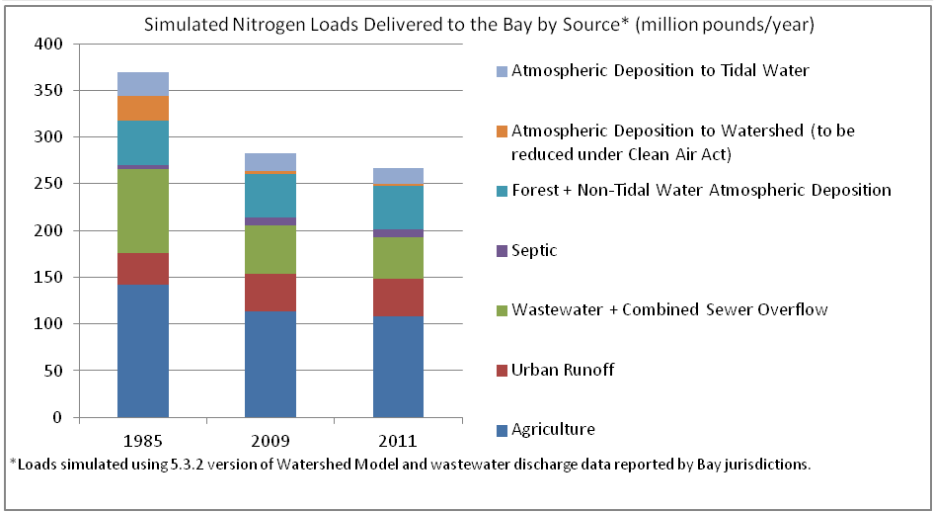
Importance: The Bay cannot be restored without water that is clean, clear and rich in oxygen. Currently, the Bay and its rivers receive too much nitrogen, phosphorus and sediment for the ecosystem to remain healthy. The primary sources of these pollutants are agricultural runoff and discharges, wastewater treatment plant discharges, urban and suburban runoff and septic tank discharges, and air deposition.

Goals:

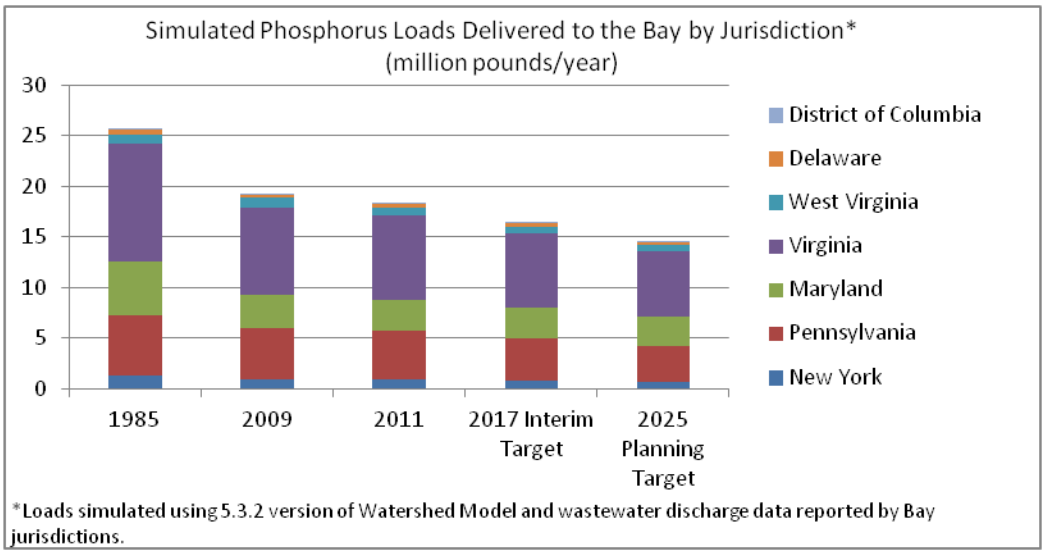
- Nitrogen: Reduce computer-simulated nitrogen loads to the Bay by 75.39 million pounds – from 282.66 million in 2009 to 207.27 million by 2025.
- Phosphorus: Reduce computer-simulated phosphorus loads by 4.68 million pounds – from 19.23 million in 2009 to 14.55 million by 2025.
- Sediment: Reduce computer-simulated sediment loads by 1,334 million pounds – from 8,675 million in 2009 to 7,341 million by 2025.*

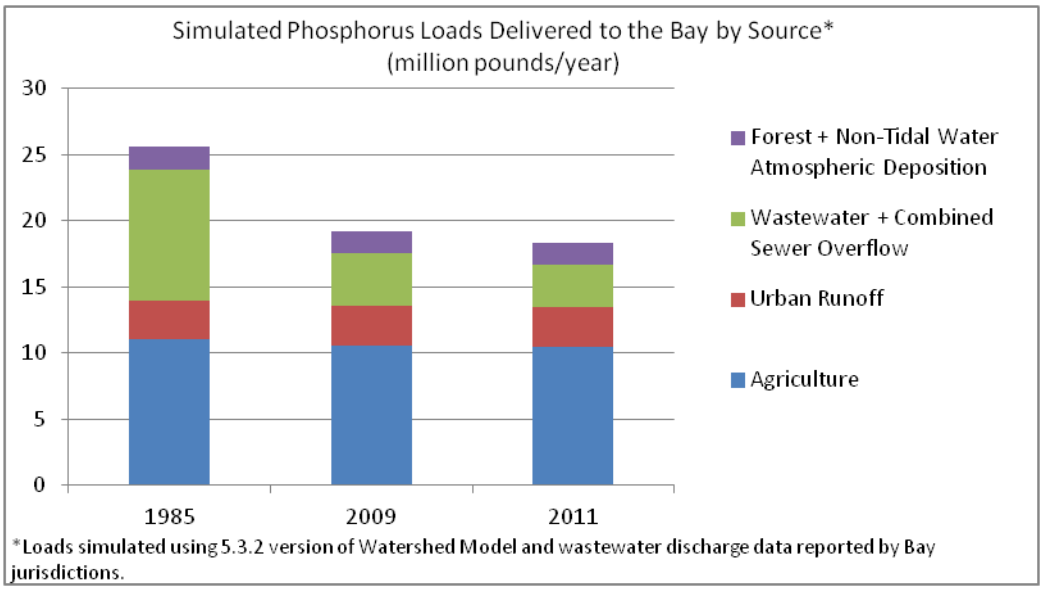
Nitrogen Status and Trends: Computer simulations of pollution controls implemented between July 2009 and June 2011, calibrated using monitoring data, indicate that nitrogen loads to the Bay would have decreased 15.67 million pounds to 267 million*. For additional information, go to http://www.chesapeakebay.net/indicators/indicator/reducing_nitrogen_pollution.



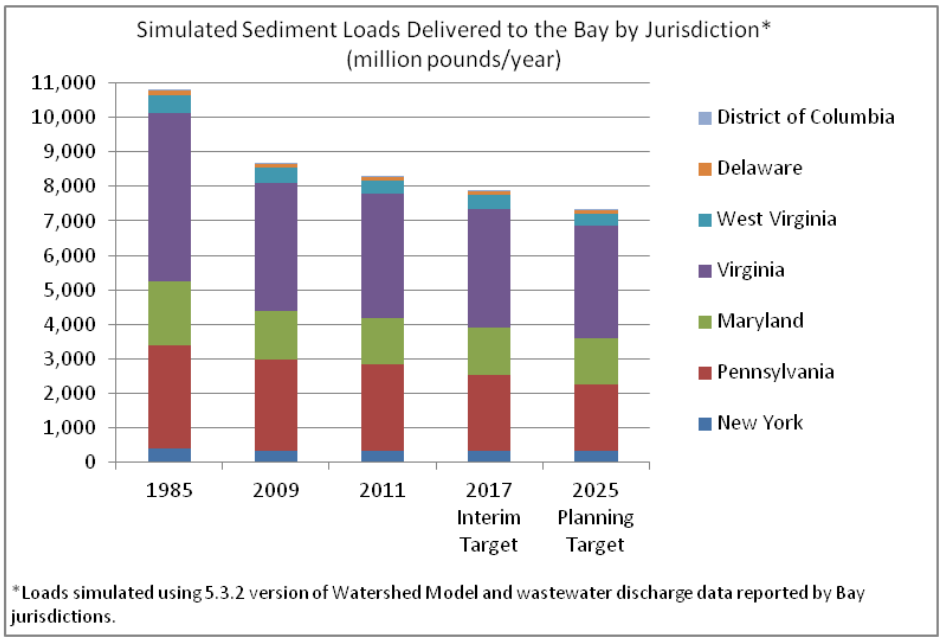


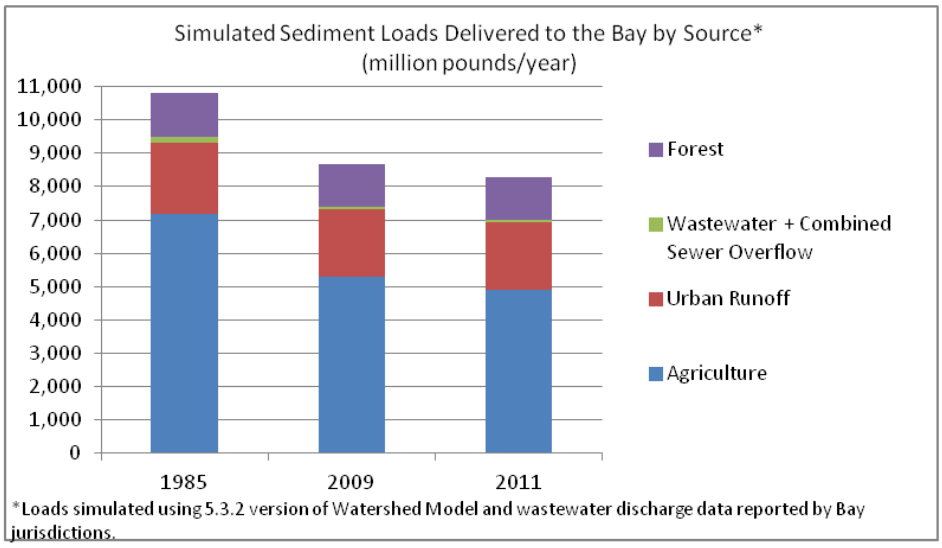
Phosphorus Status and Trends: Computer simulations of pollution controls implemented between July 2009 and June 2011, calibrated using monitoring data, indicate that phosphorus loads to the Bay would have decreased 0.9 million pounds to 18.33 million*. For additional information, go to http://www.chesapeakebay.net/indicators/indicator/reducing_phosphorus_pollution.





Sediment Status and Trends: Computer simulations of pollution controls implemented between July 2009 and June 2011, calibrated using monitoring data, indicate that sediment loads to the Bay would have decreased 396 million pounds to 8,279 million*. For additional information, go to http://www.chesapeakebay.net/indicators/indicator/reducing_sediment_pollution.





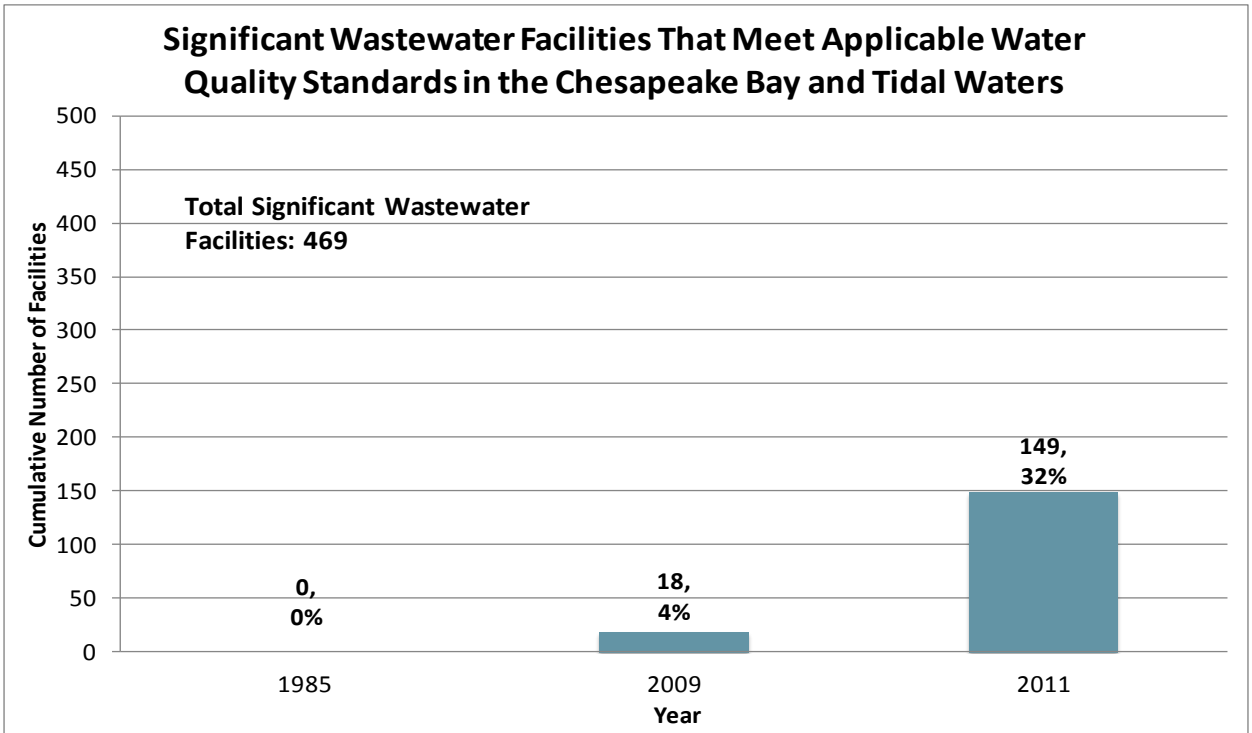
* Loads simulated using 5.3.2 version of Watershed Model and wastewater discharge data reported by the Bay jurisdictions. The Chesapeake Bay Program Watershed Model uses actual wastewater discharge data, which is influenced by annual weather conditions, to estimate wastewater pollution. The Model estimates pollution from other sources such as agriculture or urban runoff using average weather conditions. Loads include atmospheric deposition of nitrogen to tidal waters and the portion of atmospheric deposition to the watershed that is EPA's responsibility to reduce under the Clean Air Act. Planning targets, established in August 2011represent the actions, assumptions, and “level of effort” necessary to meet the TMDL.

Wastewater: Wastewater discharges are a major source of nitrogen and phosphorus delivered to the Chesapeake Bay. Permit limits drive efforts to reduce loads. This indicator shows how many wastewater facilities have permit limits in effect that will meet water quality standards for dissolved oxygen, submerged aquatic vegetation (SAV), and water clarity in the Chesapeake Bay and its tidal waters, according to the Chesapeake Bay TMDL. The indicator does not assess limits to meet water quality standards for chlorophyll-a pending the staged implementation approach for facilities and a study underway of chlorophyll-a in the James River, as described in Appendix X of the Bay TMDL.

Facilities are expected to meet permit limits when they take effect through facility upgrades or other means, such as purchasing credits through established exchanges or trading programs. Therefore, effective permit limits are a measure of on-the-ground efforts to restore water quality. This indicator does not track permit compliance. The indicator supplements annual wastewater discharge information in the Reducing Pollution indicators, which is affected by multiple factors including weather events.

Goal: To have wastewater limits in effect that meet applicable water quality standards at 469 significant wastewater facilities (100 percent of the significant wastewater facilities within the Chesapeake Bay Watershed) by 2025. Compared to 2009, this would represent an increase of 451 facilities (96 percent of significant facilities in the watershed).

Status and Trends: As of 2011, 149 facilities (32 percent of significant facilities in the watershed) have limits in effect that meet water quality standards for dissolved oxygen and SAV/clarity.



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.