

Estimated Achievement of Water Quality Standards in Tidal Waters and Relation to Nutrient Loads

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WQGIT meeting preview
August 2016

STAR: Measure and Explain Water-Quality Change

Measure progress

- Watershed
- Tidal waters

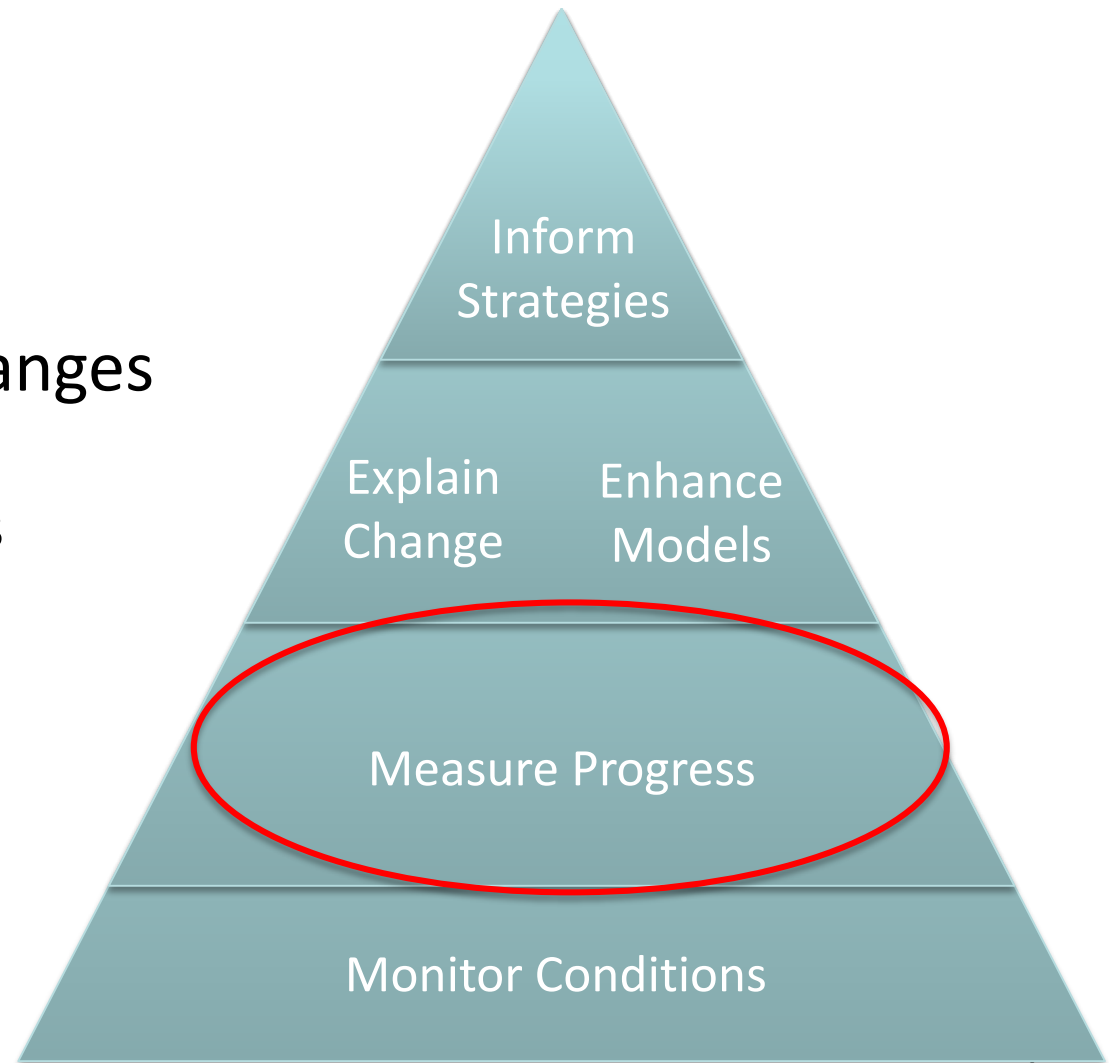
Explain water-quality changes

- Sources, land change
- Management practices

Enhance CBP models

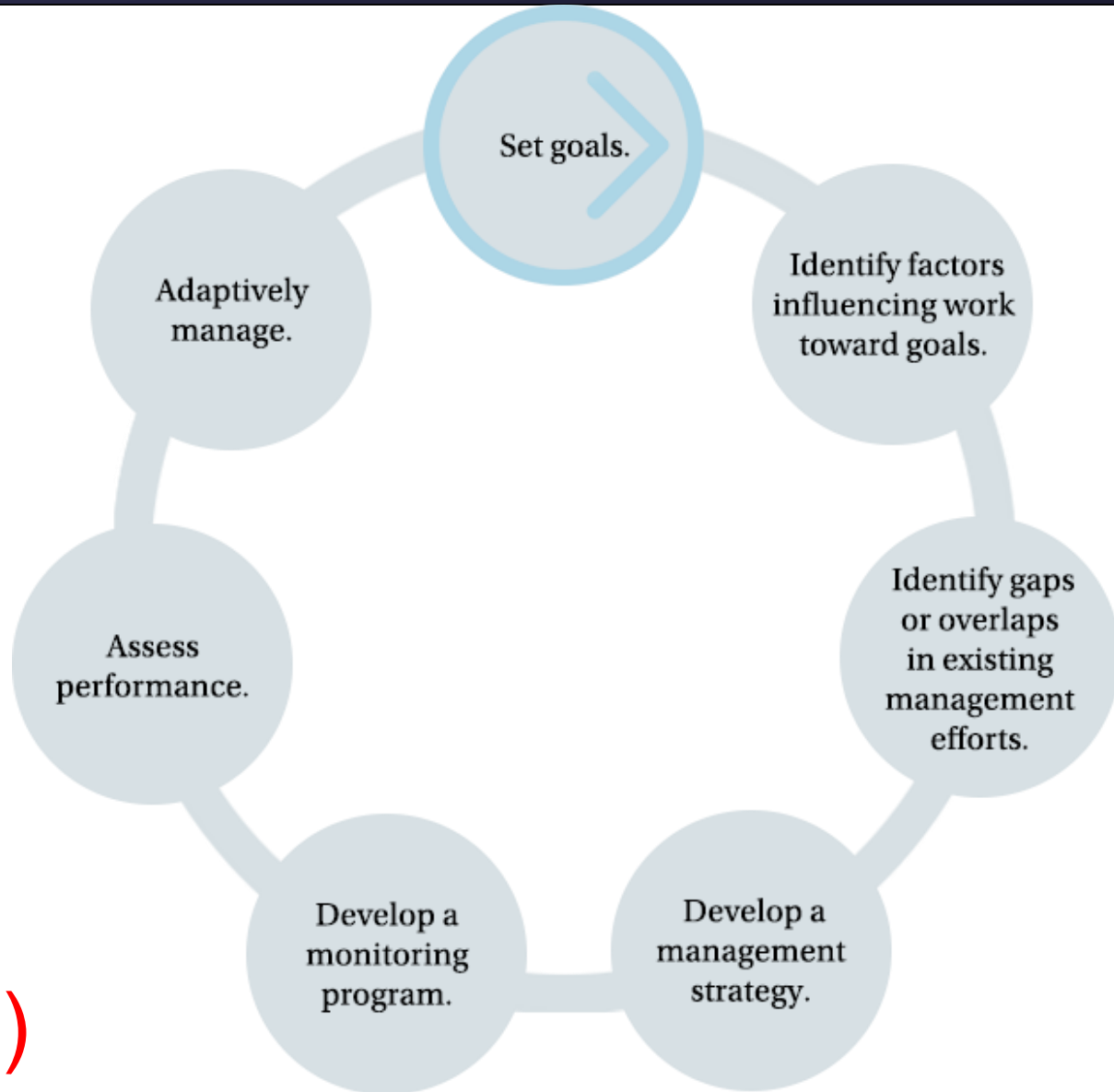
Inform management

- WIPs
- Implementation
- Meeting outcomes



Decision framework

- Goals
- Factors
- Existing efforts/gaps
- Strategy
- **Monitor**
- **Assess**
- **Adapt (WIPs)**



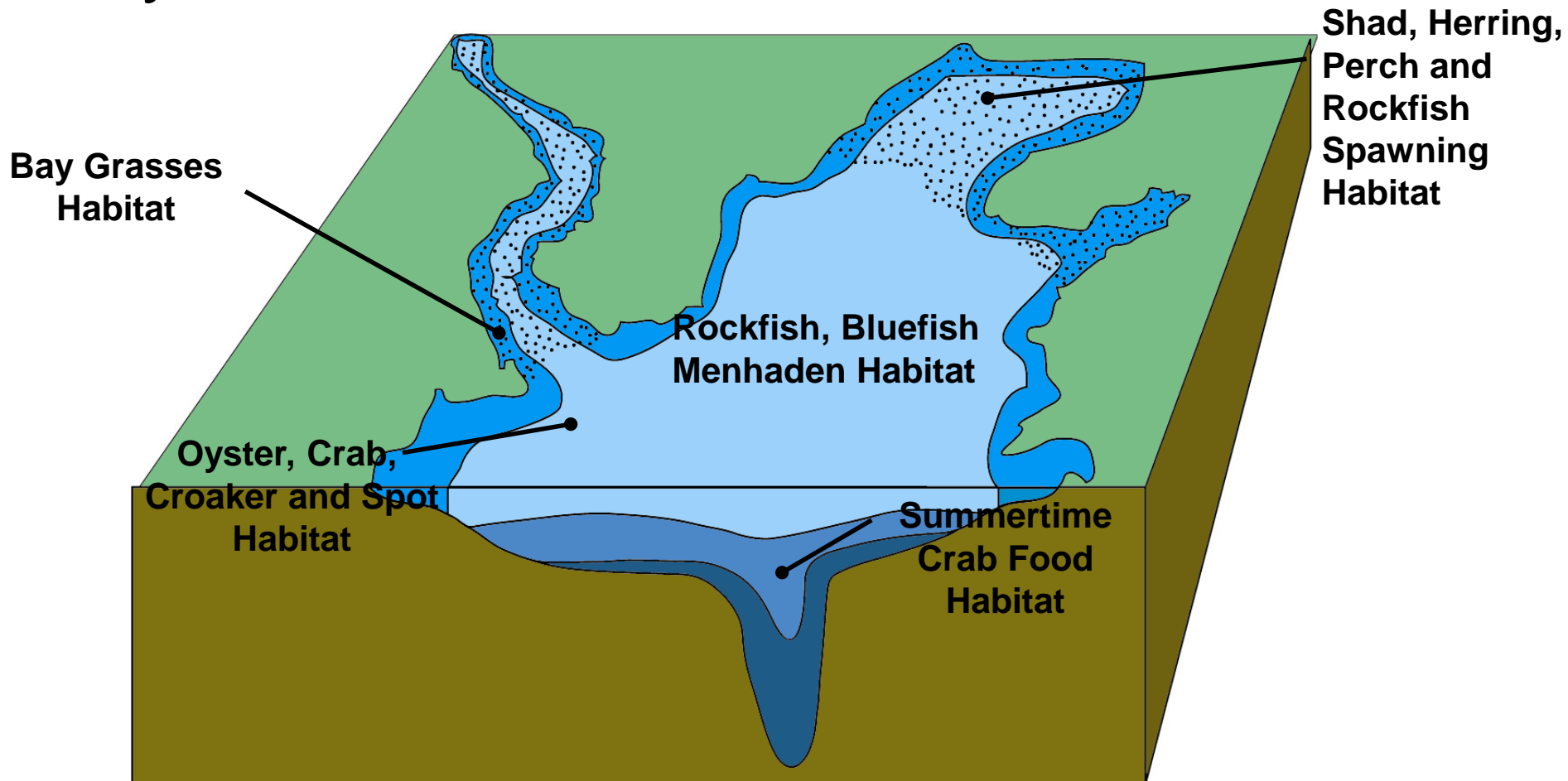
Assess Progress



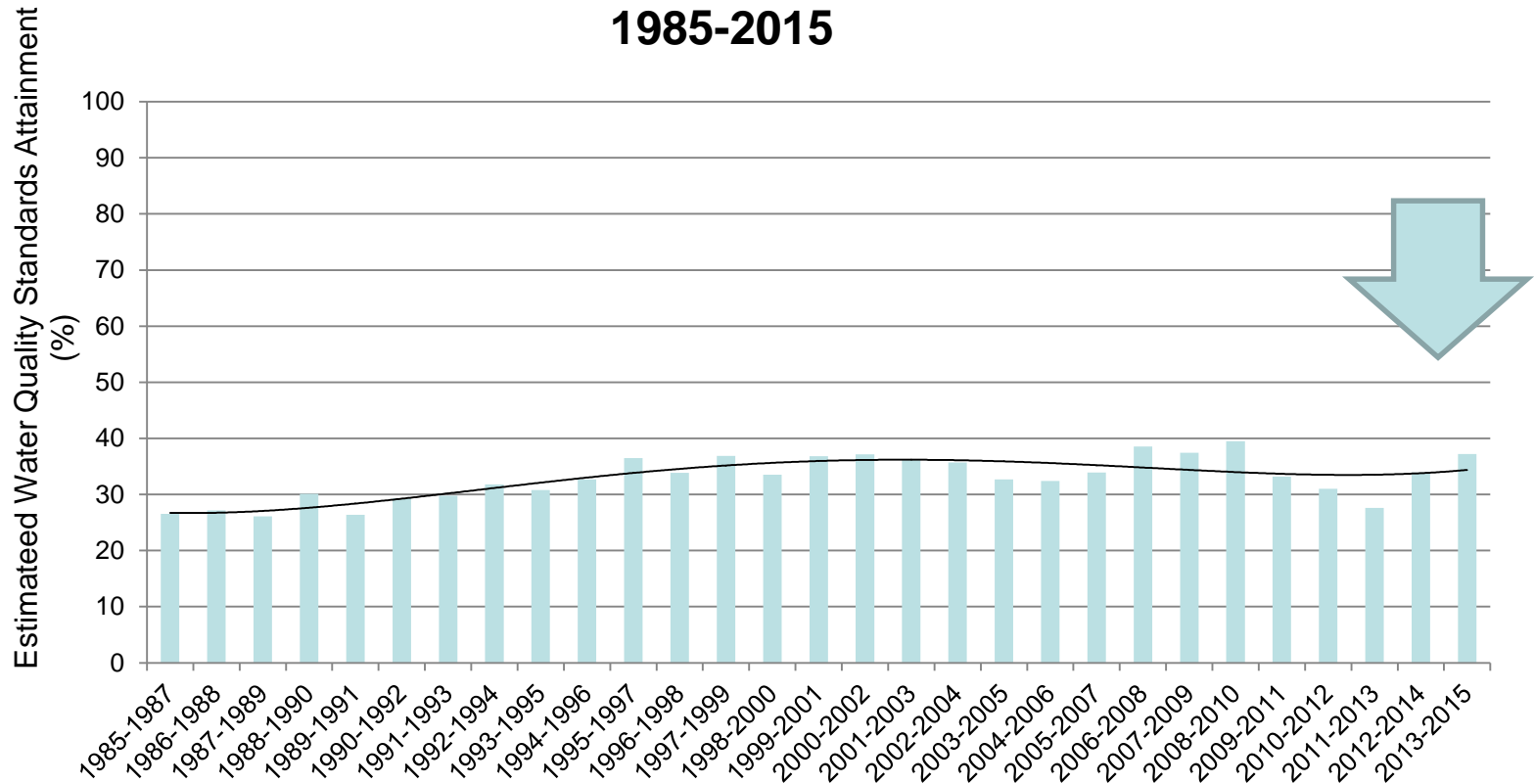
- Practices implemented
 - BMP reporting for TMDL (WSM)
- Watershed monitoring
 - Nutrient and sediment in watershed
 - Loads and trends to Bay
- Attaining standards
 - DO clarity/SAV, and Chl.

Estimating Attainment

Combines DO, SAV/Clarity, Chl-a
Baywide



Estimated Achievement of Chesapeake Bay Water Quality Standards 1985-2015



- Score: 37.2 (2013-15)
- Almost 10% improvement

Total Loads to the Bay

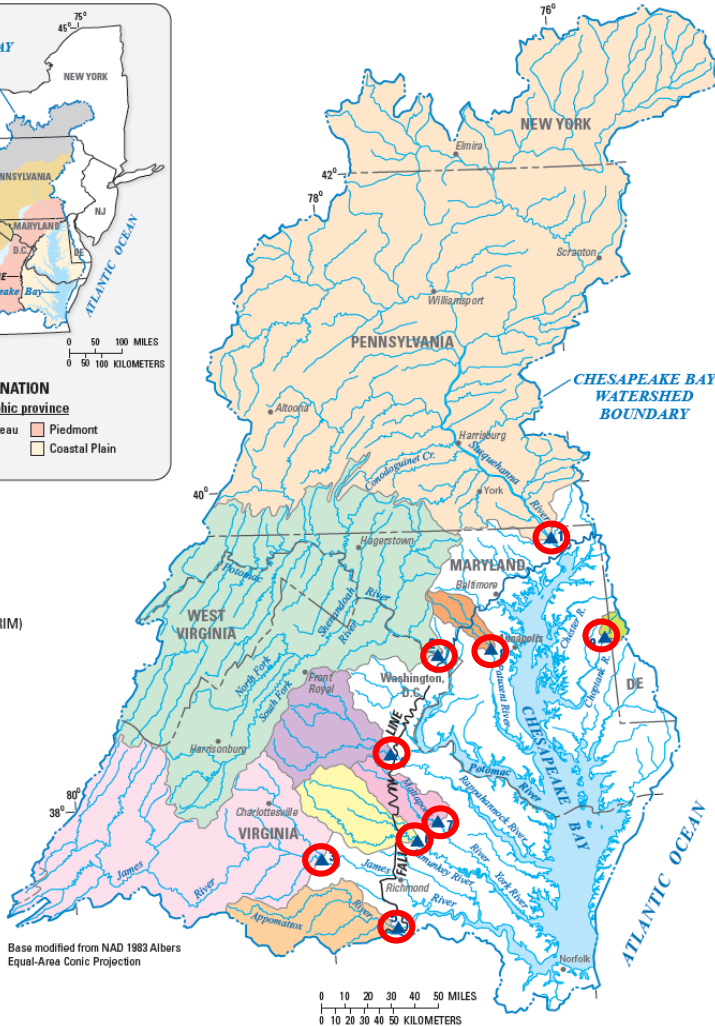
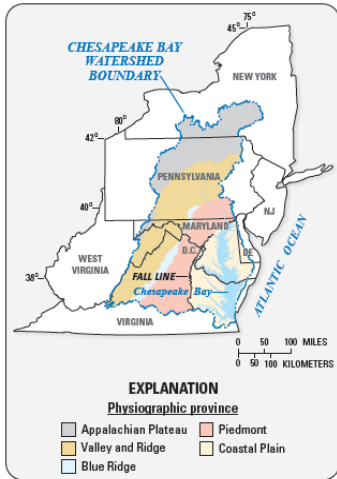
-RIM sites

- Almost 80% of watershed

-WWTP

-Nonpoint source contributions

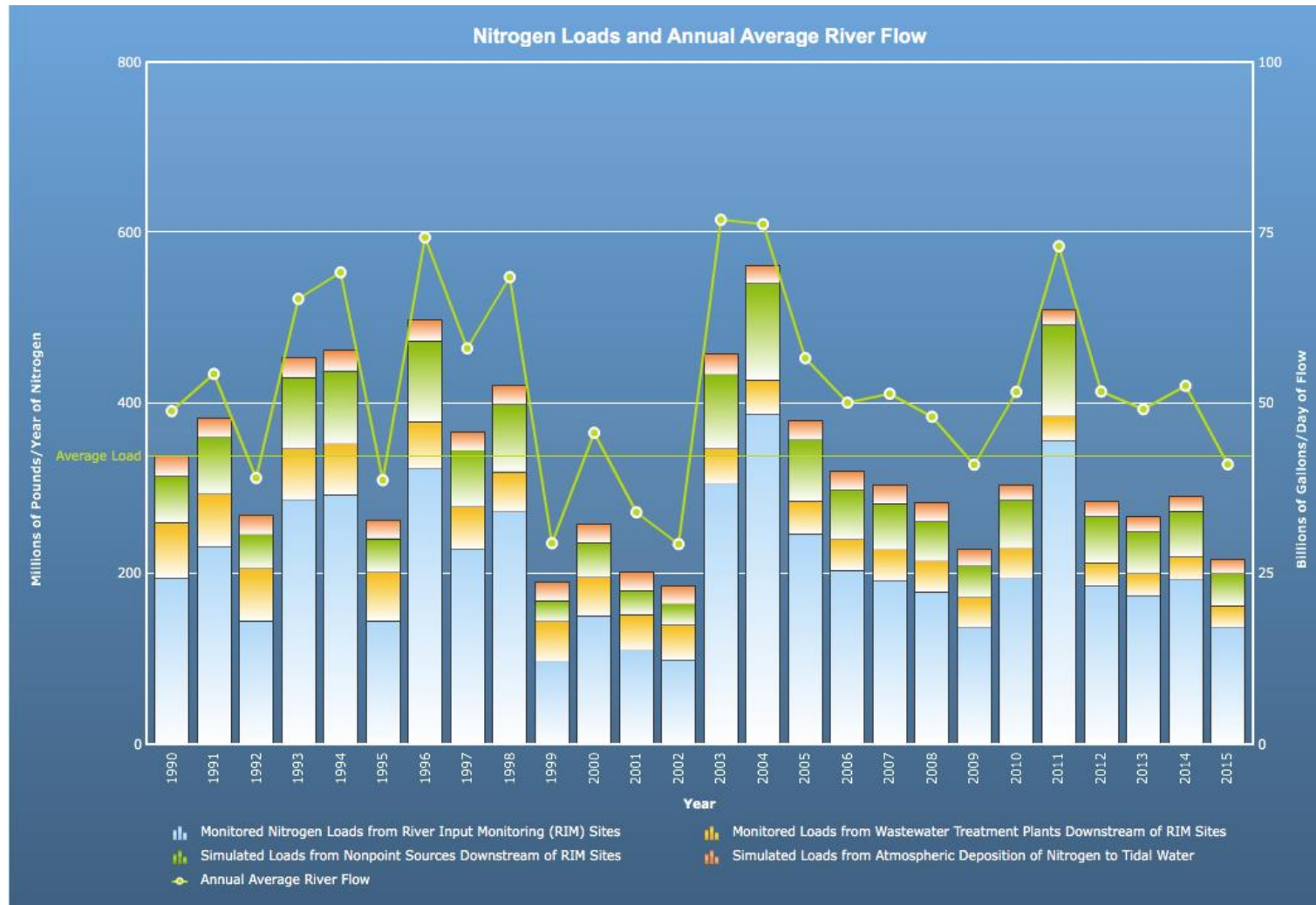
-Annual and trends



Base modified from NAD 1983 Albers Equal-Area Conic Projection

Lower Load and Flow

- Lower N, P, and S loads
- River flow below avg in 2015
- BMPs

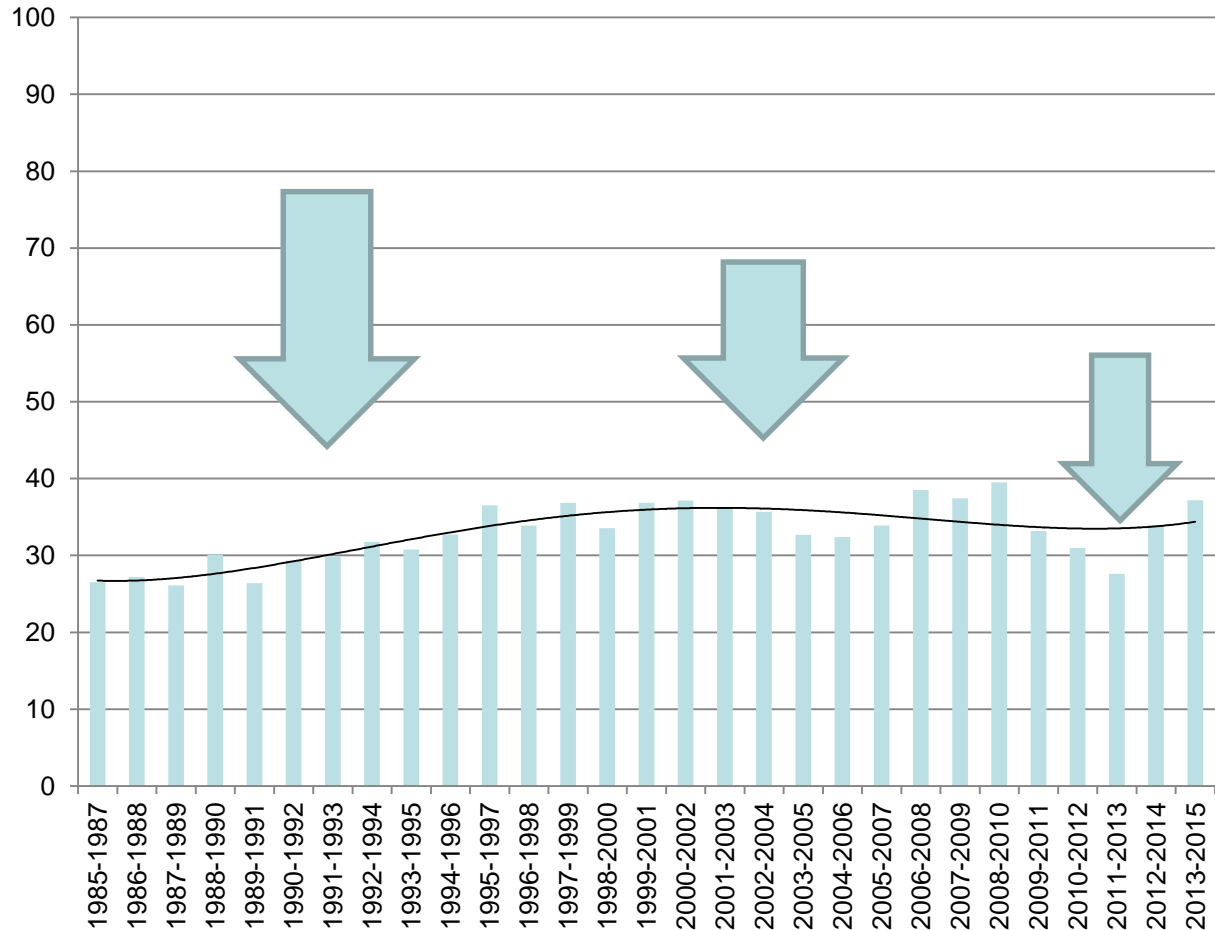


Source: Chesapeake Bay Program

http://www.chesapeakebay.net/indicators/indicator/nitrogen_loads_and_river_flow_to_the_bay1

Attainment over time

Estimated Achievement of Attainment



- Improvements in 80-90's
- More static during 2000s
- 2011 storms and rebound
- Trends in loads
- BMPs

Trend in river loads

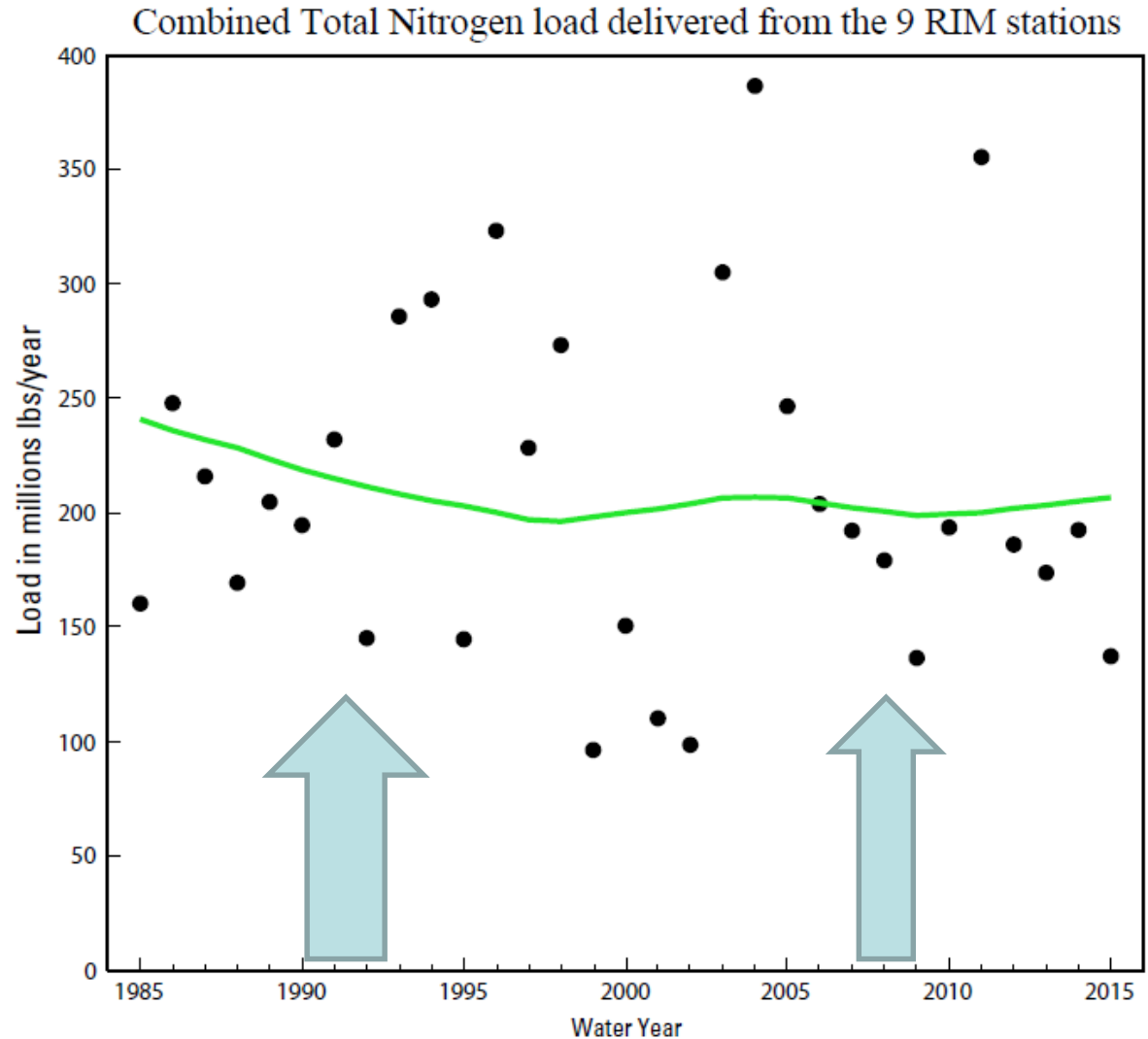
-RIM sites added together

-Flow-normalized trends

-Similar patterns to attainment

-WWTP reductions

-NPS practices



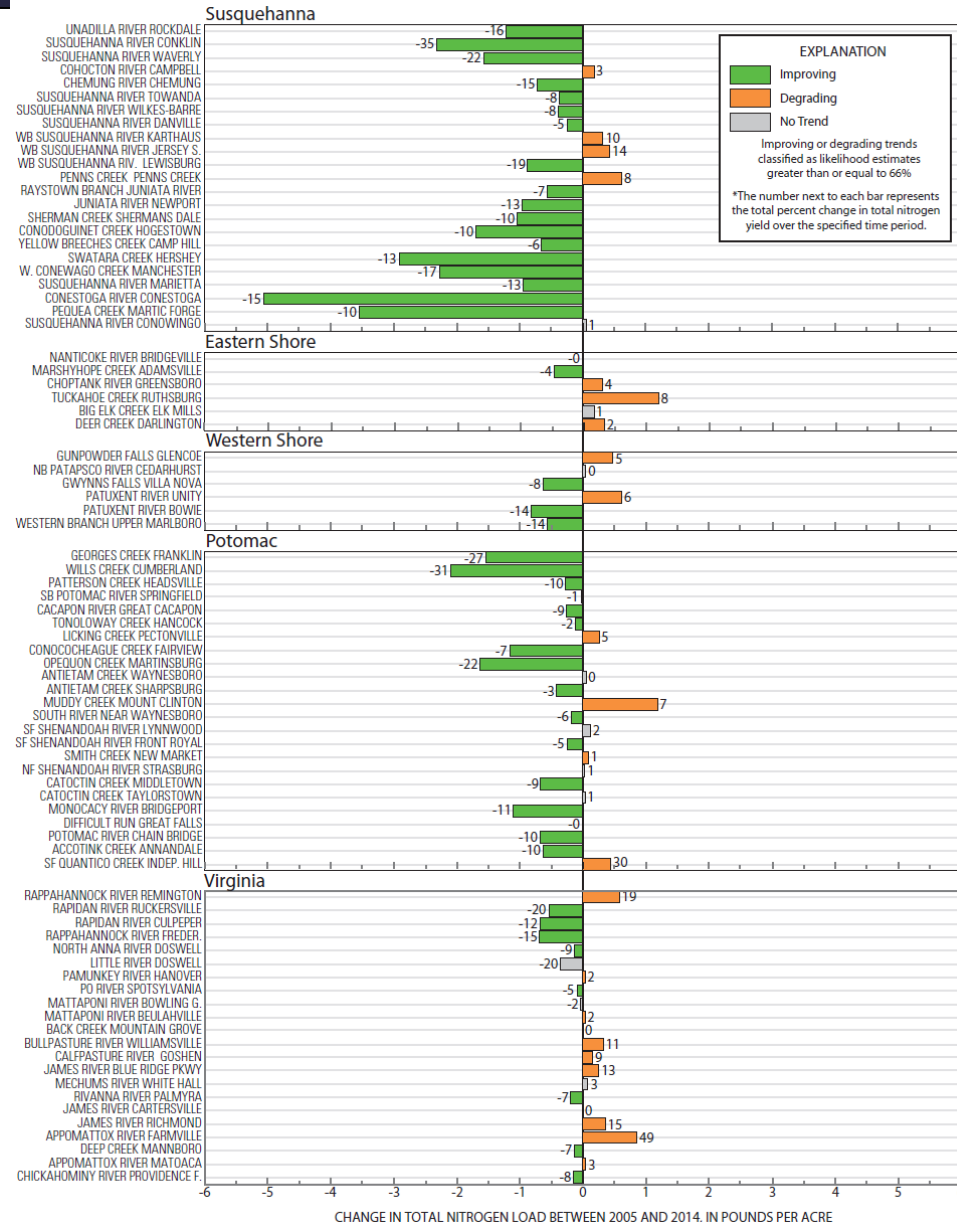
More Improvement in Watershed

Monitoring sites (TN)

- Improving conditions: 54%
- Degrading conditions: 27%
- No Trend: 19%

Factors:

- Practices
- Land-use change
- Lag times



Messages

- Bay water quality improved in 2015
 - 37% estimated attainment
 - Lower river flow/loads
- Long-term attainment
 - Improvement during 80-90s'
 - More static since 2000
- More improvement in the watershed
 - First place to see effects of BMPs
- Water-quality changes
 - BMPs, lag times and land-use changes



Next Steps

- Updated information on Chesapeake Progress
- Press release
 - Loads
 - Trends in loads for rivers to the Bay (RIM sites)
 - Estimated attainment
- Set up ITAT-Jurisdictional Team
 - Communicate and explain results
 - Inform WIPs
 - Have names from some partners
 - Rest by Sept 1

Questions and Discussion?

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