



# 2011 NT Indicators Overview

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NTWG Conference Call  
April 11, 2012



# NTWG Indicators

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- River flow to the Bay
- Total Load Indicator – N, P, SS
- Stream Health Indicator (B-IBI)
- Flow Adjusted N, P, SS  
Concentration Indicators
- Short-term Trend-Yield N, P, SS  
Indicators

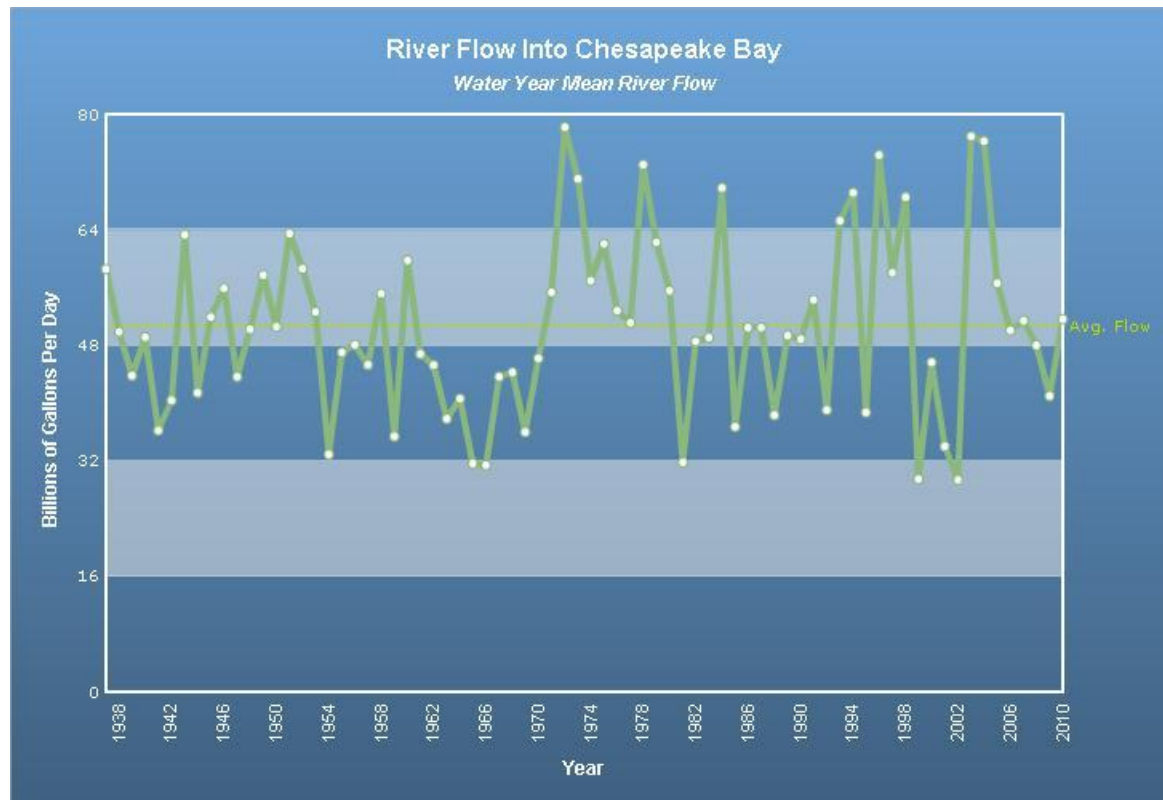
# Release Schedule

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<b>Indicator</b>	<b>Present at the June EC mtg?</b>	<b>Release date</b>	<b>Revisions needed?</b>	<b>Expected completion date</b>
River flow to the Bay	Yes, 2011 data	EC mtg	No	April/May
Total Load (N, P, and SS)	Yes, 2011 data	EC mtg	No	April/May
Stream Health	No	September 2012, 2000-2010 data	No	April/May
Flow Adjusted N, P, SS Concentration	Yes, 2010 data	2011 data in June 2012	No	April/May, June
Short-term Trend-Yield N, P, SS	No	June 2012	Yes	June

# River Flow to the Bay

- Graph of river flow to the Bay – 2010 example:



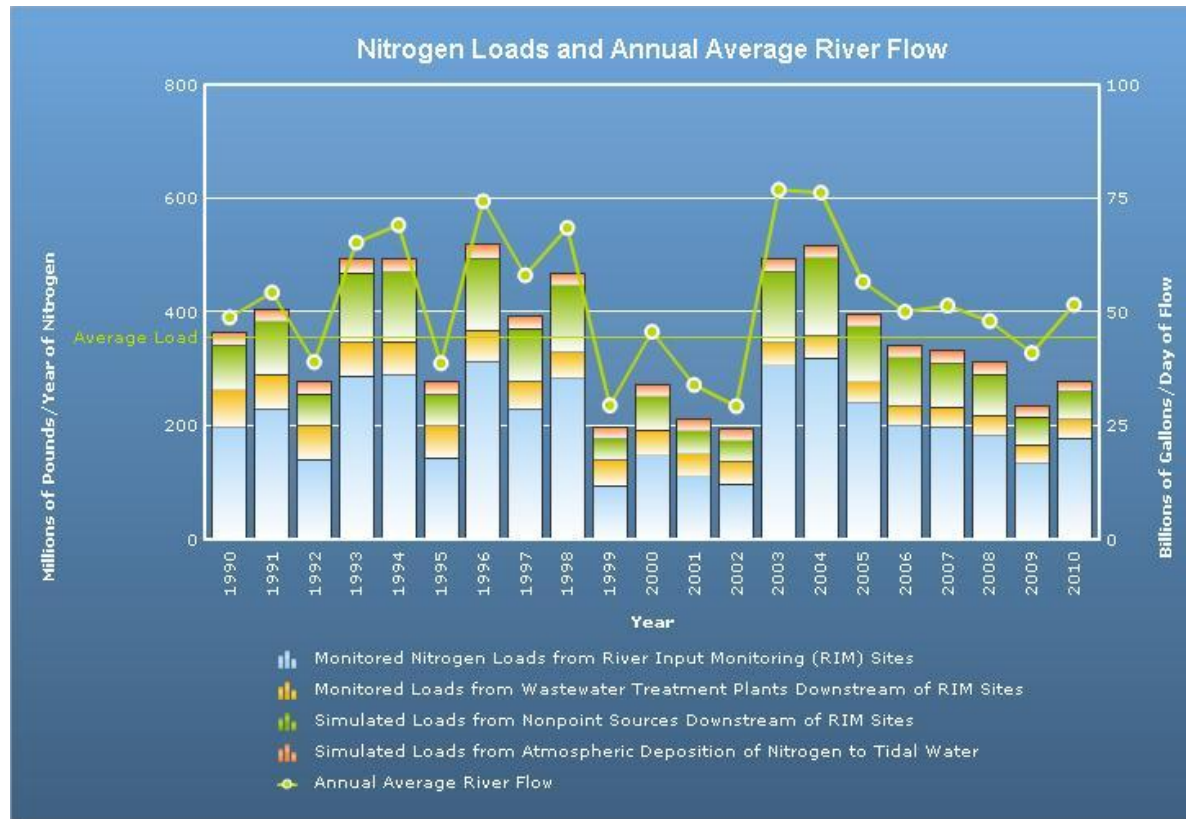


# 2011 Total Loads to the Bay

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- Graphs of nitrogen and phosphorus loads to the Bay and total discharge to the Bay
- Description of total suspended sediment to the Bay
- Graphs of nitrogen and phosphorus loads to the Bay broken out by source (RIM, atmospheric deposition to tidal waters, downstream of RIM wastewater, downstream of RIM nonpoint source) (online)

# Nitrogen – Example from 2010



Approximately 278 million pounds of nitrogen reached the Bay during the 2010 water year

- Below the average load for 1990-2010 of 356 million pounds.



# Stream Health Indicator

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- Map averaging B-IBI score by sub-watershed (2000-2010)
- Pie chart with results
- All B-IBI score at all sites (online interactive map)
- Supplementary map -all dots used for averaging (online)

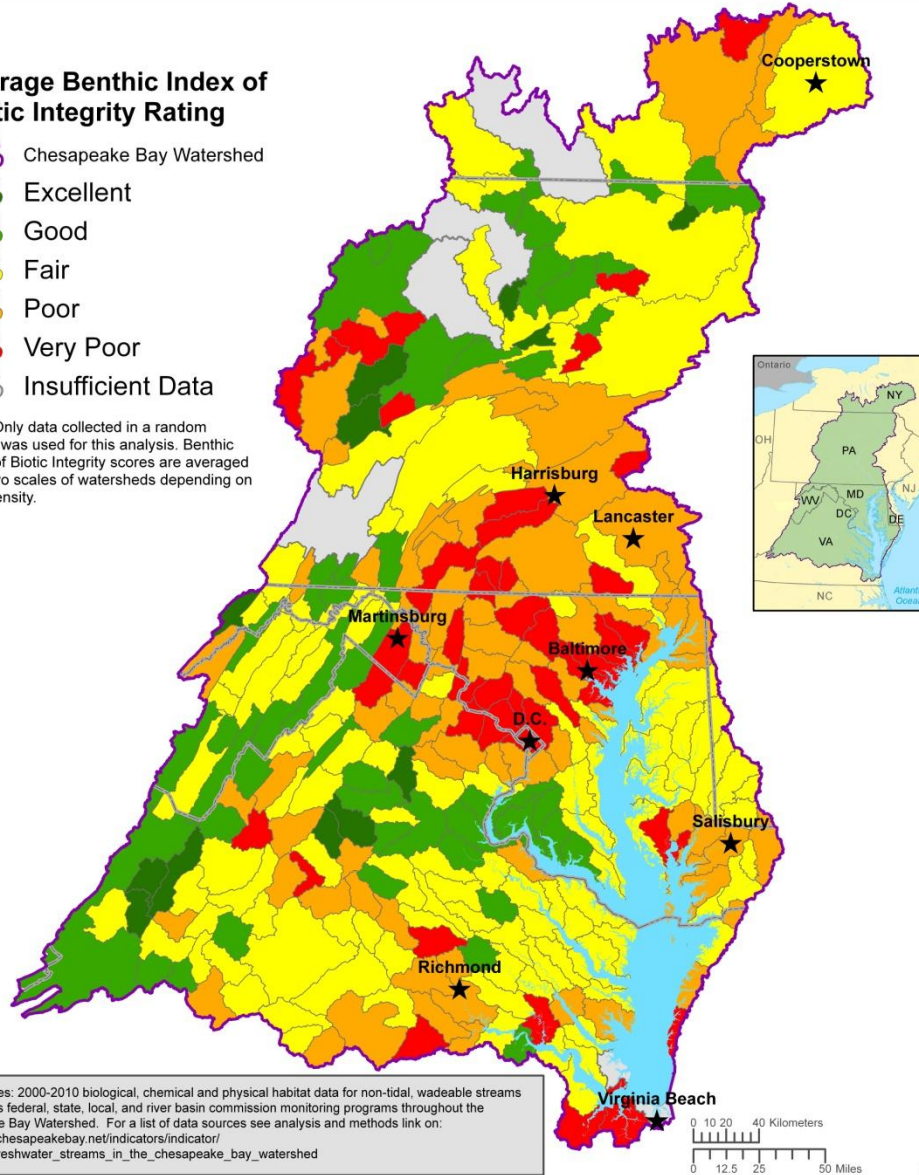
# Average 2000-2010 Stream Health in Chesapeake Bay Sub-watersheds



## Average Benthic Index of Biotic Integrity Rating

-  Chesapeake Bay Watershed
-  Excellent
-  Good
-  Fair
-  Poor
-  Very Poor
-  Insufficient Data

Note: Only data collected in a random design was used for this analysis. Benthic Index of Biotic Integrity scores are averaged over two scales of watersheds depending on data density.



Data Sources: 2000-2010 biological, chemical and physical habitat data for non-tidal, wadeable streams from various federal, state, local, and river basin commission monitoring programs throughout the Chesapeake Bay Watershed. For a list of data sources see analysis and methods link on: [http://www.chesapeakebay.net/indicators/indicator/health\\_of\\_freshwater\\_streams\\_in\\_the\\_chesapeake\\_bay\\_watershed](http://www.chesapeakebay.net/indicators/indicator/health_of_freshwater_streams_in_the_chesapeake_bay_watershed)

Created by KLF&FMI, 03/30/2012

UTM Zone 18N, NAD 83

# 2000-2010

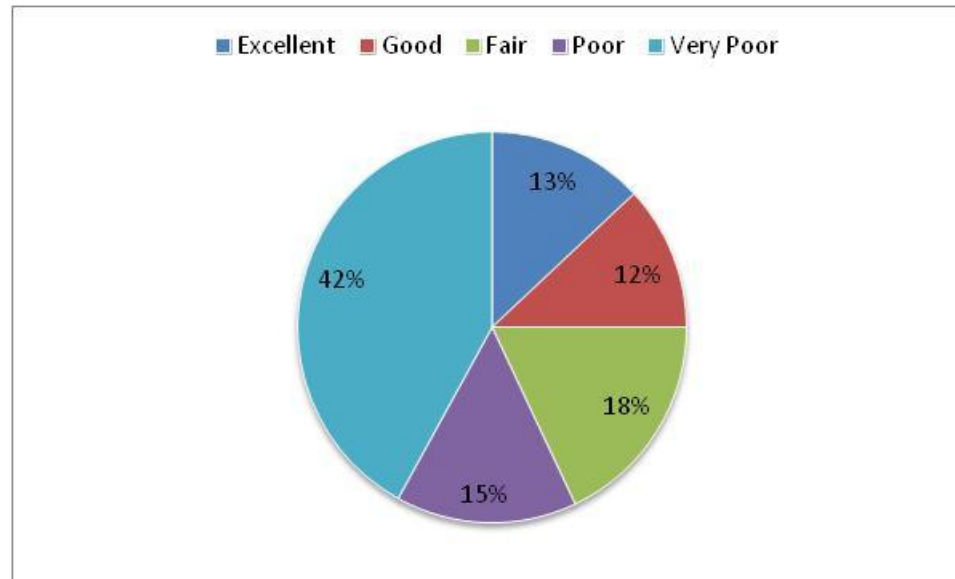
○ Only random sites averaged

Ranking	Count of Sites	%
Excellent	1,138	13
Good	1,105	12
Fair	1,584	18
Poor	1,357	15
Very Poor	3,687	42
Total	8,871	



# Summary items

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43% meet EO goal of fair, good, or excellent



# Flow-Adjusted Concentration Indicators

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- Map for each: Nitrogen, Phosphorus, and Suspended Sediment (online)
  - Long-term trends (1985-2010) – EC mtg
  - Long-term trends (1985-2011) – June release

# Flow-Adjusted Concentration Trends for Sediment for 32 Sites in the Chesapeake Bay Watershed, 1985-2009

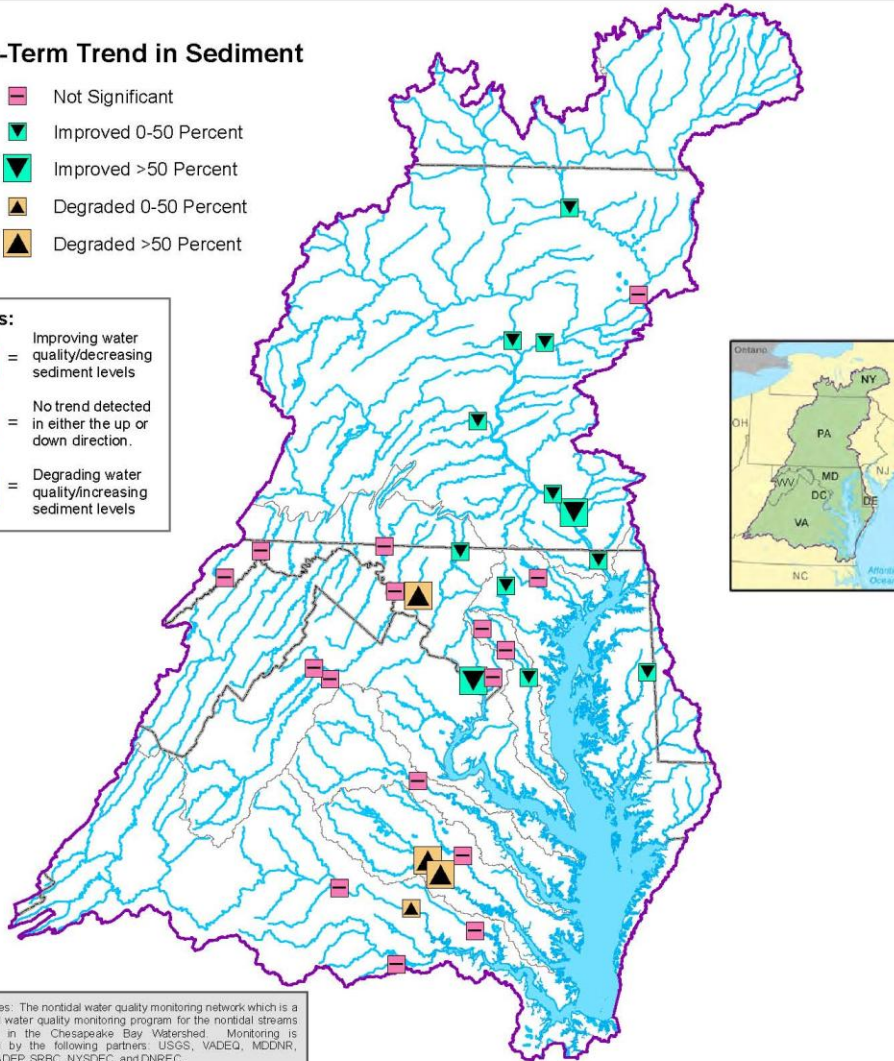


## Long-Term Trend in Sediment

- Not Significant
- Improved 0-50 Percent
- Improved >50 Percent
- Degraded 0-50 Percent
- Degraded >50 Percent

### Notes:

- Improving water quality/decreasing sediment levels
- No trend detected in either the up or down direction.
- Degrading water quality/increasing sediment levels



Data Sources: The nontidal water quality monitoring network which is a coordinated water quality monitoring program for the nontidal streams and rivers in the Chesapeake Bay Watershed. Monitoring is coordinated by the following partners: USGS, VADEQ, MDDNR, WVDEP, PADEP, SRBC, NYSDC, and DNREC.

No tidal data is present on this map. Tidal data can be found at: [http://www.chesapeakebay.net/status\\_waterquality.aspx](http://www.chesapeakebay.net/status_waterquality.aspx)

For more information, visit [www.chesapeakebay.net](http://www.chesapeakebay.net)  
Disclaimer: [www.chesapeakebay.net/termsuse.htm](http://www.chesapeakebay.net/termsuse.htm)

○ DRAFT example

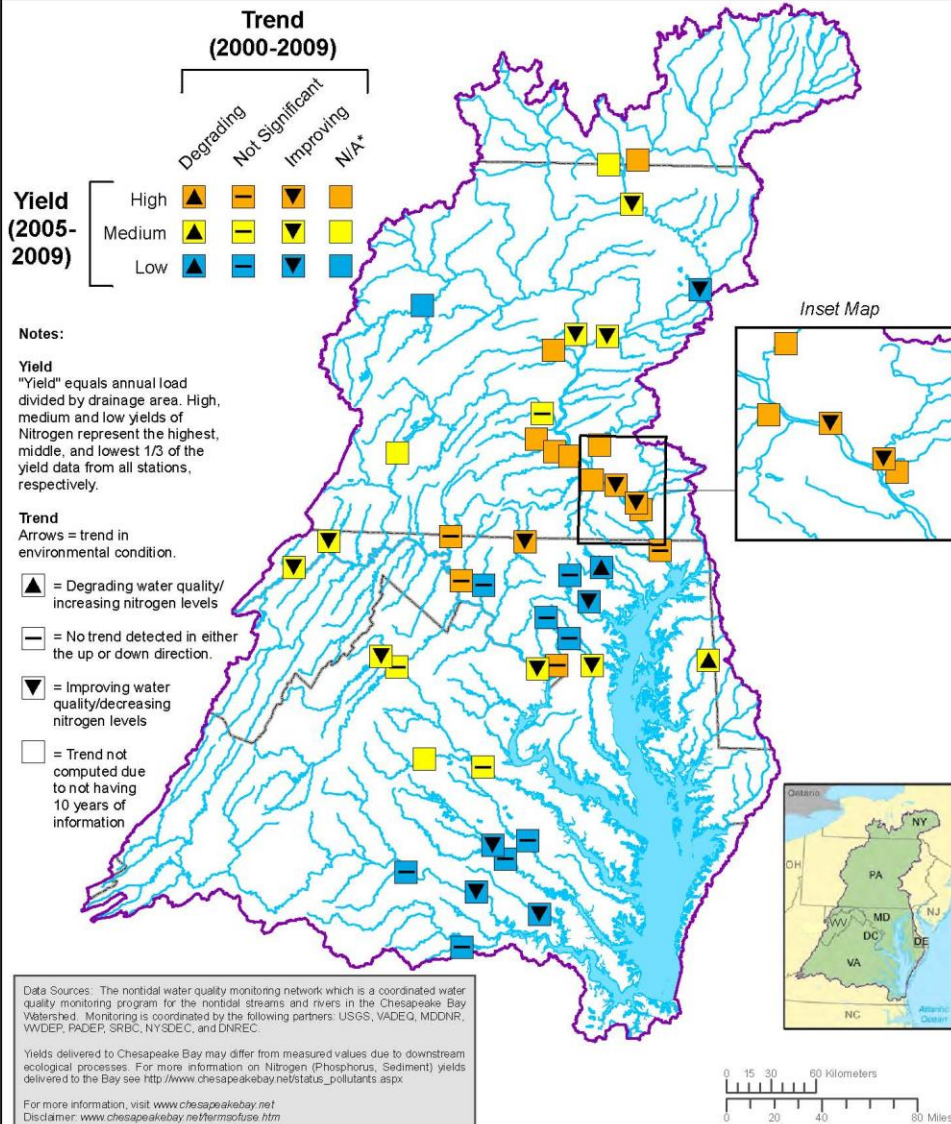


# Trend-Yield Indicators

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- Chesapeake Bay watershed 10 year flow-adjusted concentration trend and 5 year short-term yield indicators – maps and summary statements
  - Nitrogen, Phosphorus, and Suspended Sediment
- **Revisions needed to this indicator**

# Nitrogen Yields and Short-Term Trends Measured in Watershed Streams and Rivers



○ DRAFT example