ITAT Jurisdiction team conference call

Date: October 14, 2016
Time: 10 AM – 12 PM
Location: CBPO Room 303
Conference Line: Phone: 1-866-299-3188, Code: 267-985-6222
Adobe Connect: https://epawebconferencing.acms.com/explainingtrends

Purpose:

1) Familiarize everyone with the goals and approach for Jurisdiction team
2) Get feedback on planned materials for WQ GIT face-to-face discussion.
3) Establish a schedule and priorities for information exchange.

10:00 Welcome and Introductions—Joel Blomquist
10:10 Introduction to ITAT Jurisdictional team— Scott Phillips
10:20 Walk through GIT planned presentation.
-Overview (Blomquist)
-Nontidal Trends Activities (Blomquist)
-Tidal Trends Activities (Keisman
-Visualization (Wolf)

11:00 Feedback and discussion

-Nontidal Trends Activities (Blomquist)
Which topics are most important to WIP planning?
What are your Jurisdictions priorities for topical content?
How can your Jurisdiction support this analysis and reporting?

-Tidal Trends Activities (Keisman)
Which topics are most important to WIP planning?
What are your Jurisdictions priorities for topical content?
How can your Jurisdiction support this analysis and reporting?

-Visualization (Wolf)
What are your priorities for visualization of currently available results?
-WRTDS for Nontidal trends
-GAMS for tidal trends
-Load / Yield from Nontidal stations
-SPARROW yield maps
-Attainment maps in estuary

11:45 Jurisdictions—open comment and feedback

12:00 Break, and thank you

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Using Monitoring Data To Measure Progress and Explain Change

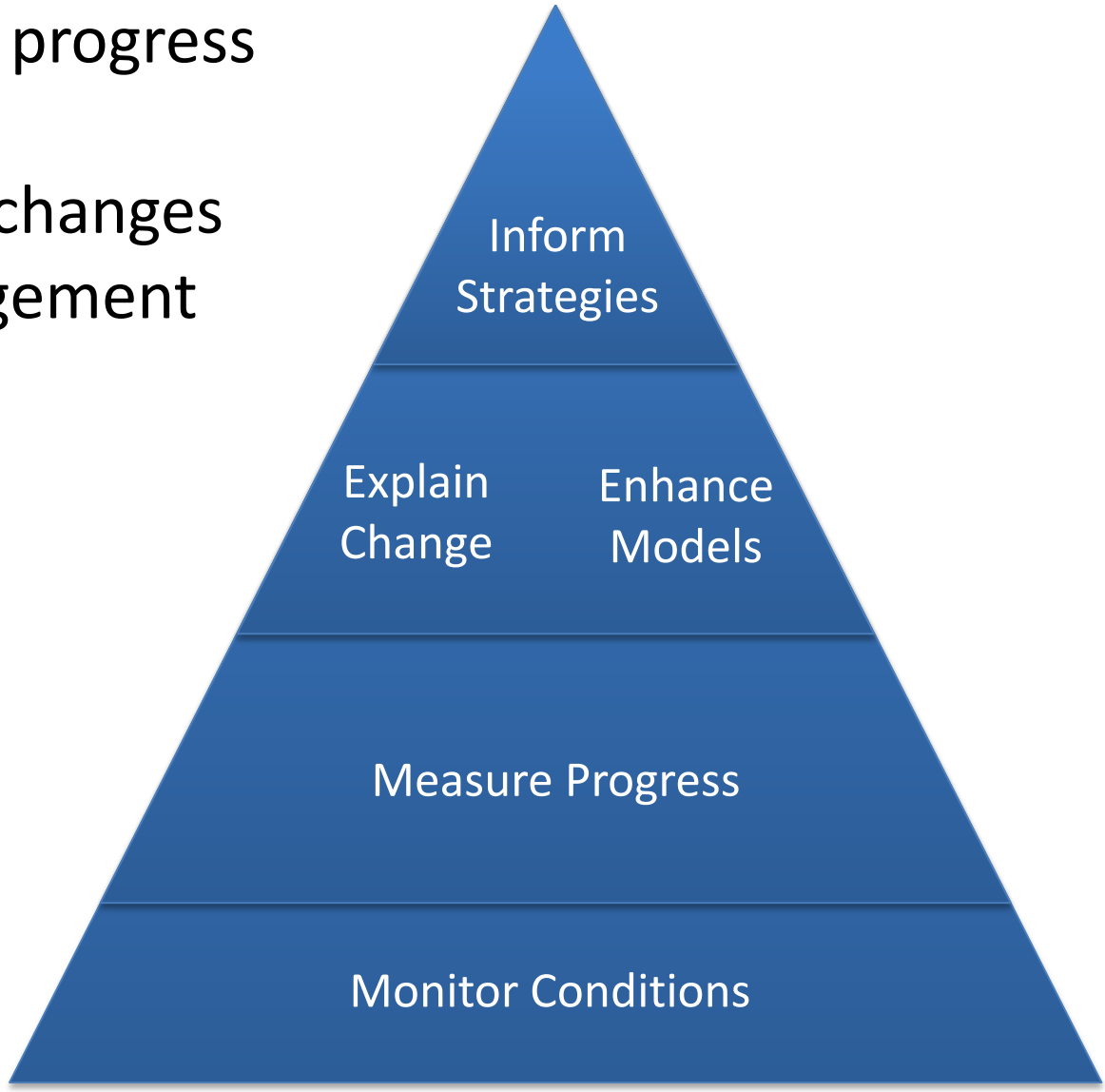
Overview: STAR Work Plan Elements for MPA of TMDL

1. Monitor and measure progress

2. Explain water-quality changes
   - Response to management practices

3. Enhance CBP models
   1. WSM
   2. SPARROW

4. Inform management
   - WIPs
   - Milestones

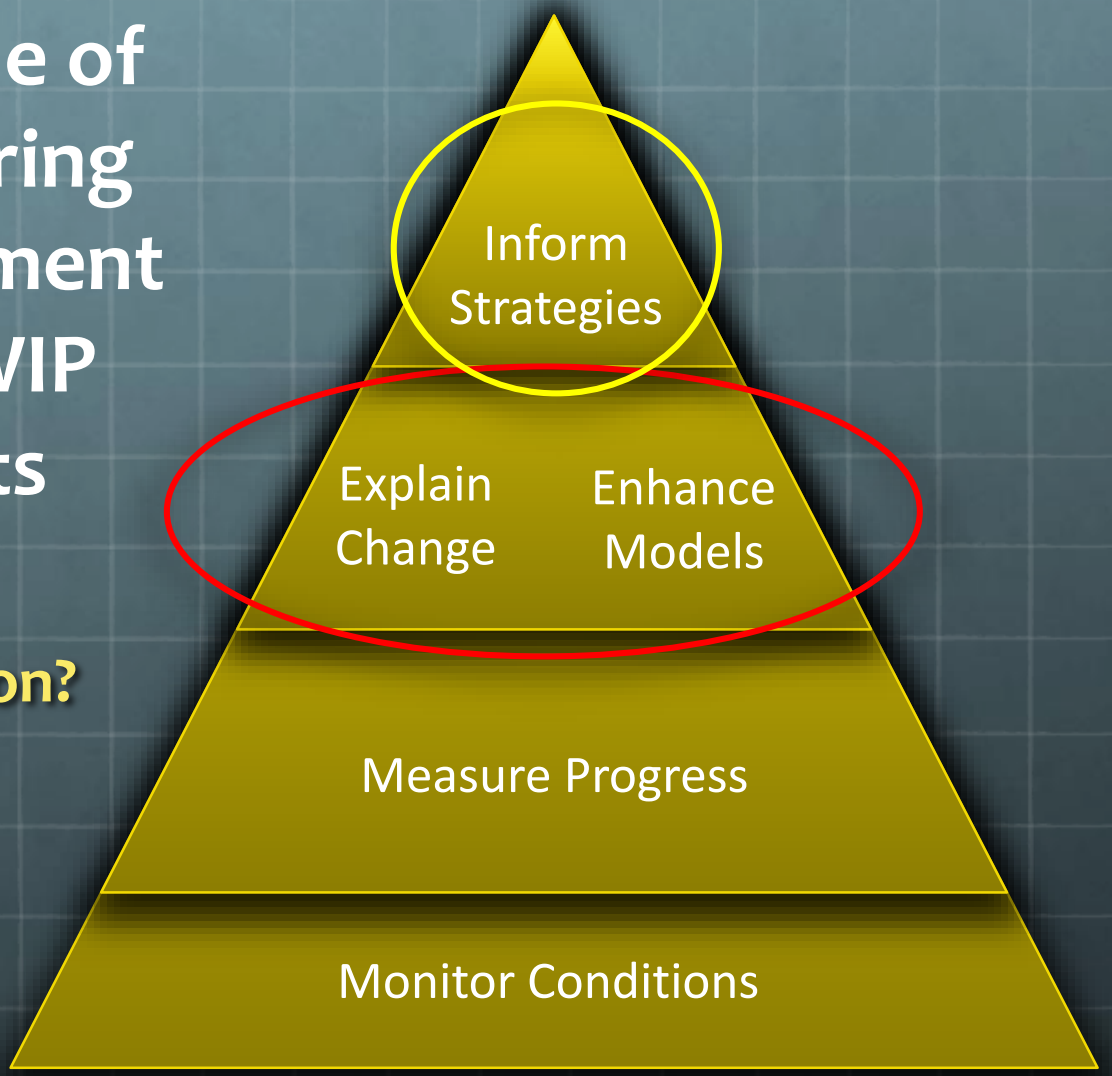


ITAT-Jurisdictional Team

- Why:
  - Share and discuss technical results for use in water-quality decision making
- What:
  - Watershed and tidal trends
  - Explaining factors affecting trends, including practices
  - Inform Phase III WIPs and implementing practices,
  - Ways to assess progress
- Who: Lead investigators and jurisdictional reps.
- When: Quarterly calls; bring selected items to GIT

Expanding the Role of Observed Monitoring Trends in Development of the Phase III WIP Planning Targets

Fire hose, funnel, or spoon?



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- This session will preview available monitoring results and planned products that are being prepared to support WIP planning. We will discuss
  - 1) strategies for bringing these results to jurisdictional representatives
  - 2) priorities for explanation of monitoring trends, including timing and format.
  - 3) how to visualize long term monitoring trends and supporting data in order to better inform the development of the Phase III WIP Planning Targets.

- <u>Materials:</u> Briefing paper outlining proposed updates of the explanation of watershed and tidal waters observed monitoring trends in 6-month increments with a supporting presentation.

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Decisions:

- 1) Agreement on the proposed process for incremental sharing of explanation of observed watershed and tidal water monitoring trends at 6-month intervals.
- 2) Agreement on how to better support the priorities of the partners for tidal and nontidal monitoring trend explanation.
- 3) Agreement on plans and schedule for better visualizing trends and the supporting data in a way that can better meet topics outlined in WIP Expectations document.

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ITAT Jurisdiction Team

Name	Jurisdiction	Agency	Name	Jurisdiction	Agency
Diane Davis	DC	DOEE	James Davis-Martin	VA	DEQ
George Onyullo	DC	DOEE	Roger Stewart	VA	DEQ
John Schneider	DE	DNREC	David Montali	WV	DEP
Bruce Michael	MD	DNR	Karl Berger	Regional	MWCOG
Jason Keppler	MD	MDA	Mukhtar Ibrahim	Regional	MWCOG
Jim George	MD	MDE	Tanya Spano	Regional	MWCOG
Lee Currey	MD	MDE	Jennifer Keisman	FED	USGS
Jason Dubow	MD	MDP	Joel Blomquist	FED	USGS
Sara Latessa	NY	DEC	Scott Phillips	FED	USGS
Amy Williams	PA	DEP	John Wolf	FED	USGS
Veronica Kasi	PA	DEP	Doug Moyer	FED	USGS
Kristen Wolf	PA	DEP			

Role of Monitoring Data

- **Targeting** of more pollutant load reduction effective practices in higher loading watersheds
- **Inform implementation** of practices at the local level
- Consider changes **loading targets**.
  - state-basins, Bay segment watershed, and source sector
- Enhanced understanding and the ability to **better simulate lag times** and delivery factors of nutrients and sediments
- Decisions on how to **address the infill of Conowingo Dam** and its reservoir.
- Decisions on how to account for the ongoing and projected effects of **climate change** on Bay watershed pollutant loads and Bay water quality
- **Programmatic and policy implications of the explanations of observed long term trends** in watershed and tidal water quality and biological resource monitoring data
- **Demonstrate** where monitoring data is showing **positive trends** in response to management actions taken as well as areas where there is little improvement or **degrading trends** in local and regional water quality.

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Proposed Approach:

- Establish ITAT jurisdictional technical team to discuss and communicate results
- Develop “evolving” topical synthesis products for Nontidal trends
- Continue to analyze and report tidal trends
- Foster tidal trend explanation products
- Provide access to data and visualization through CBP tools

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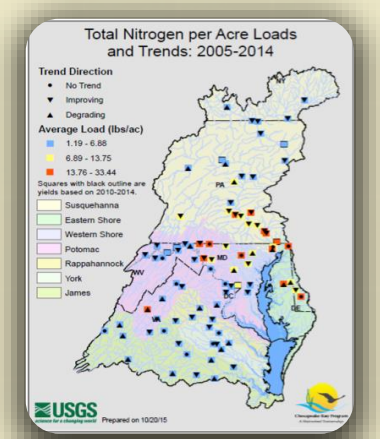
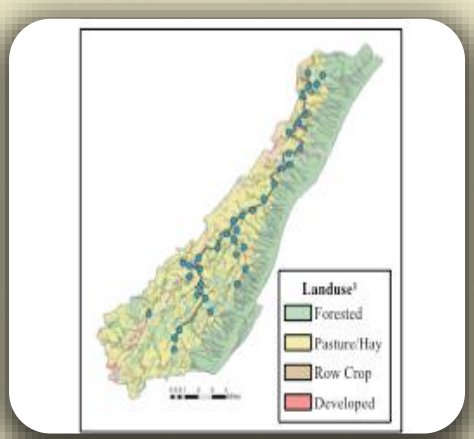
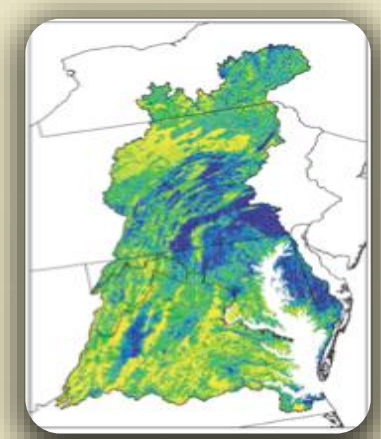
Building Blocks for Trend Explanation







Data

- Load Change
- Land Use
- Ag Sources
- BMP
- Wastewater
- Deposition

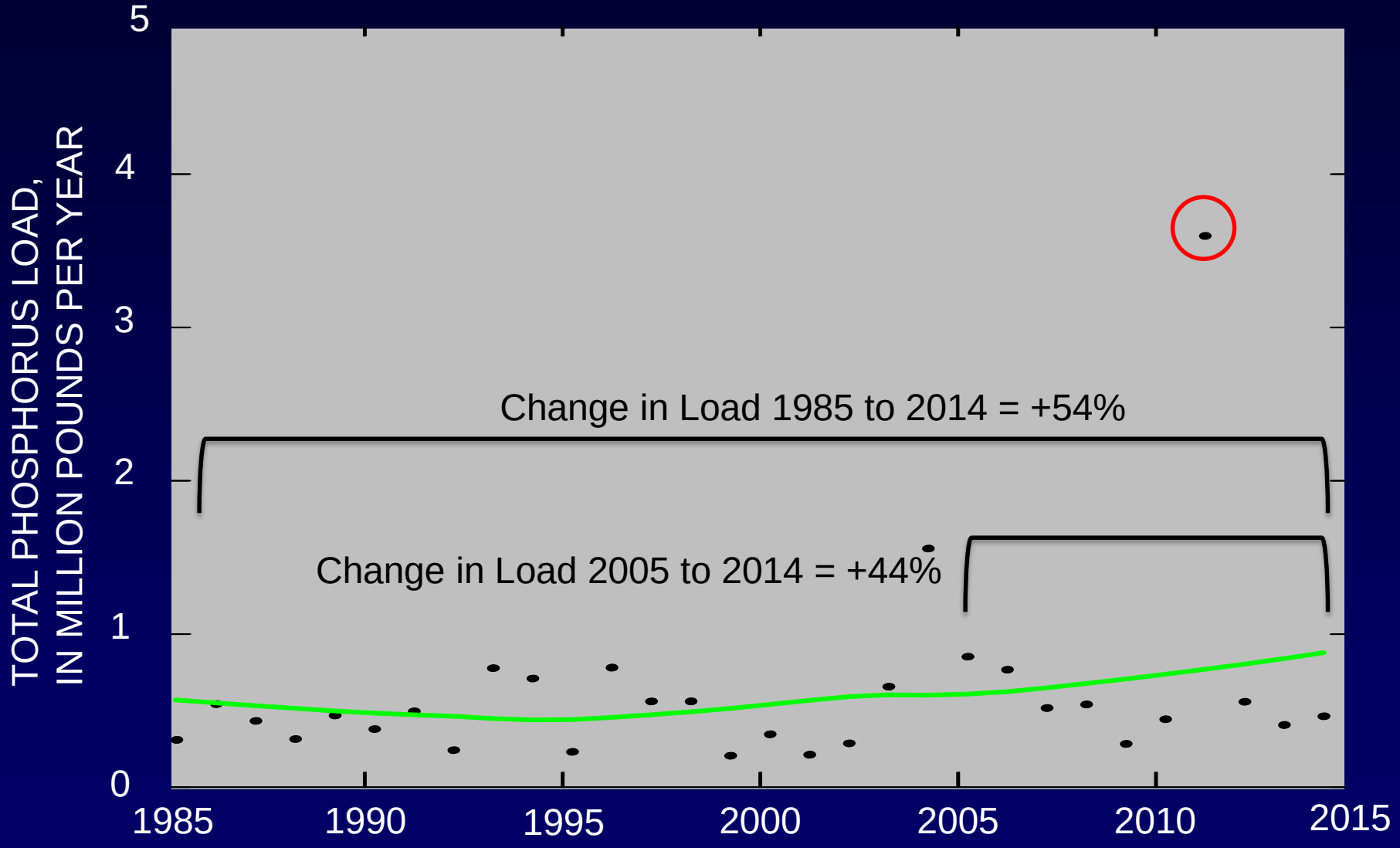
Processes

- Hydrology
- GW models
- Small Watershed
- Source Characterization
- Reservoir Studies
- Sediment Budgets
- Sediment lags
- Phosphorus Studies
- BMP studies

Integration

- Cluster and Correlation
- SPARROW models
  - Decadal
  - BMP
  - Delta
  - Nitrogen Dynamic
  - Phosphorus Dynamic
- SEM Models
- CB WSM

Susquehanna River at Conowingo
Total Phosphorus



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Total Phosphorus per Acre Loads and Trends: 2005-2014

Loads per acre

- Above average in PA
- Eastern part of basin

Bay Watershed trends:

- Improving Trends : 68%
- Degrading Trends : 20%
- No Trend : 12%

PA trends: Majority improving

- Improving: 14
- Degrading: 3
- No change: 1

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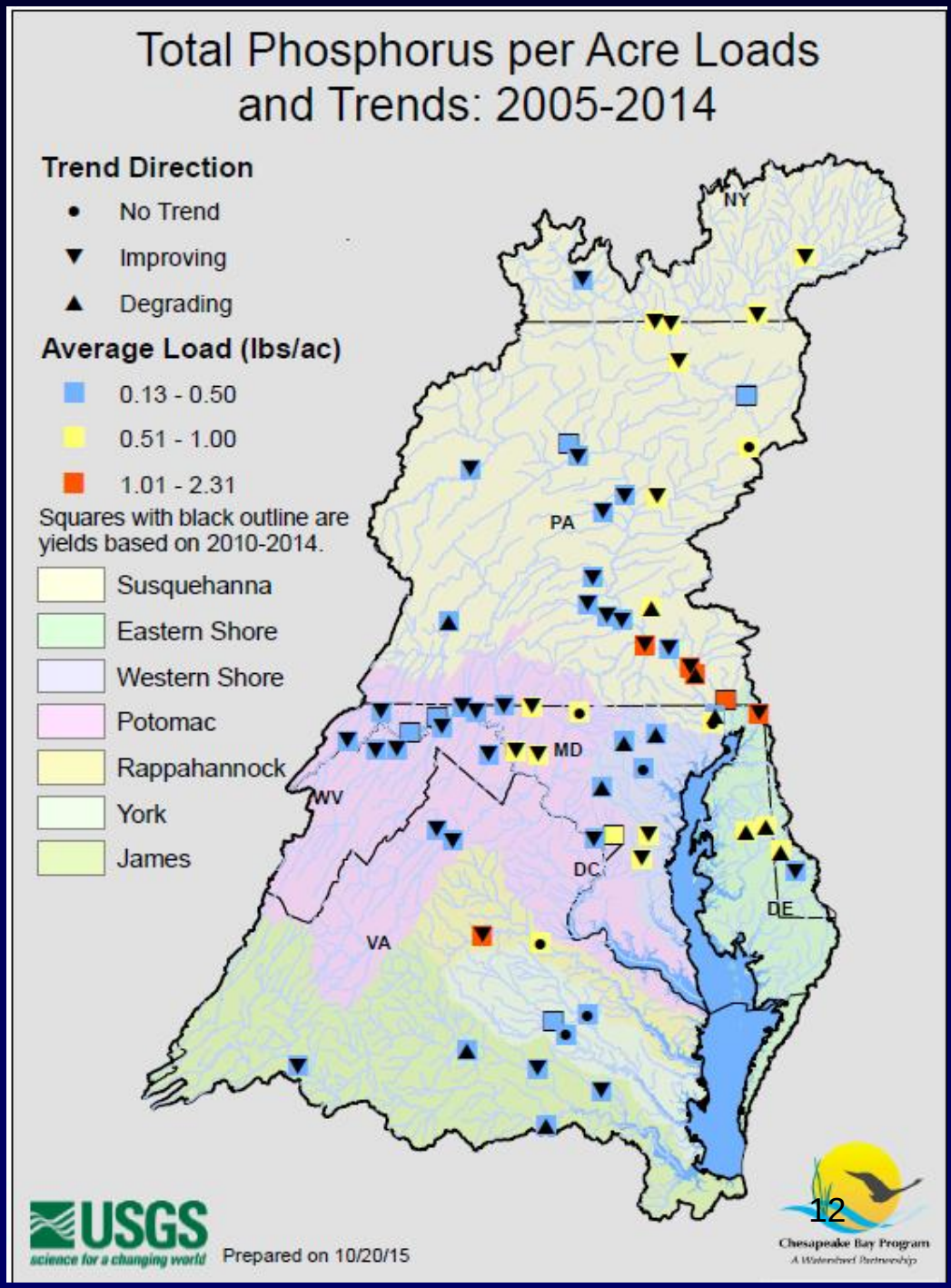
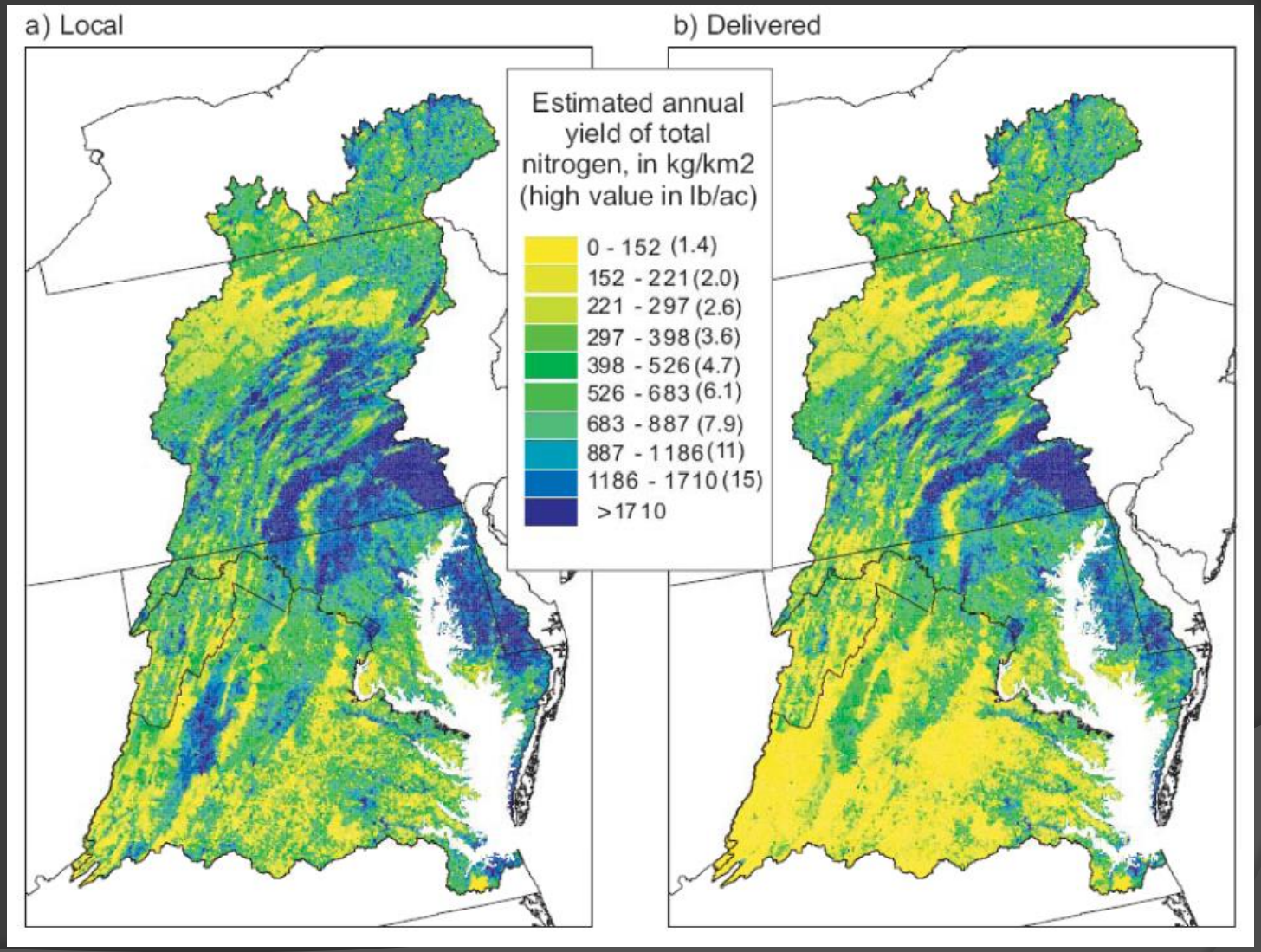
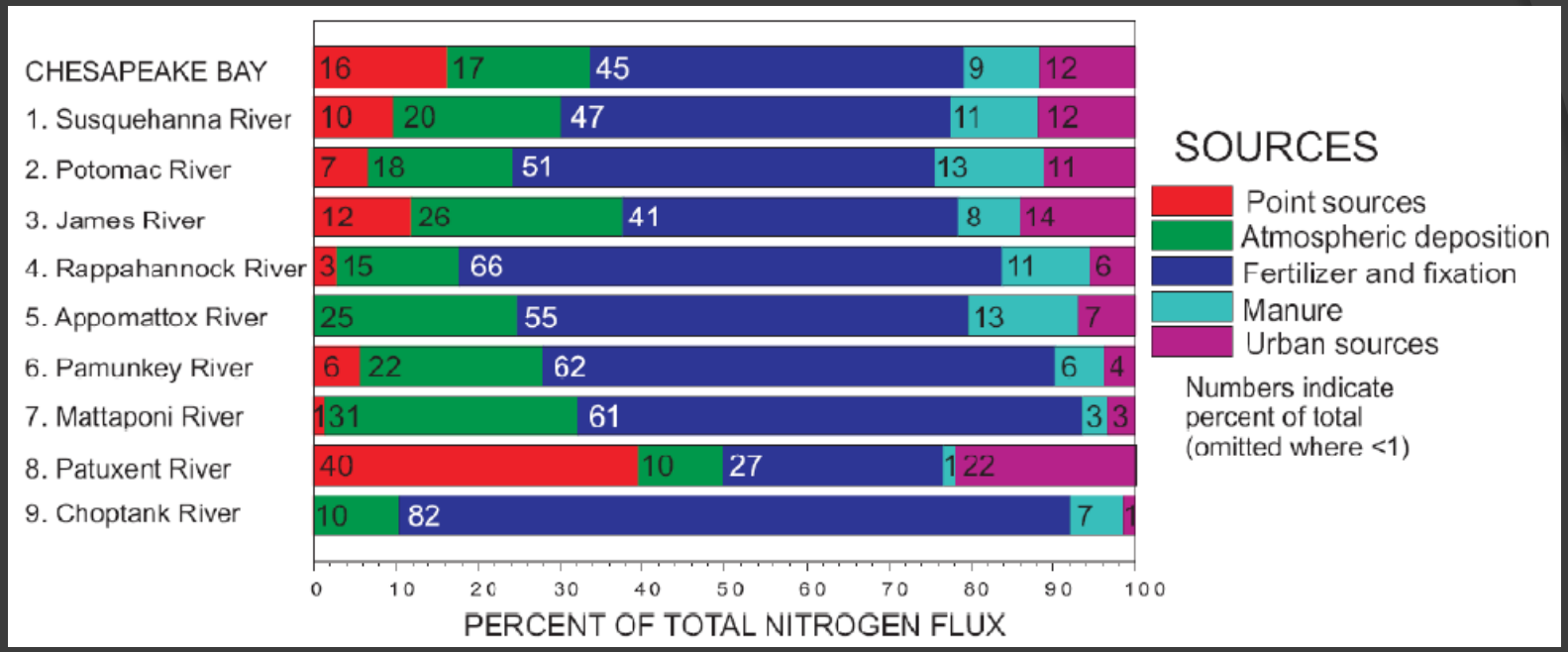


Spatial Distribution of TN



Ator and others, USGS SIR 2011-5167

Nitrogen Source Shares



- Agriculture is widespread, and a dominant sources of N to the Bay and most tributaries

Ator and others, USGS SIR 2011-5167.

Nontidal Synthesis Topics

(initial and final dates)

- Influence of Susquehanna reservoirs on loads and water quality in the Bay (Dec 2016, June 2017)
- Explaining trends at RIM sites (Dec 2016, June 2018)
- Explaining yields and trends at sites throughout the watershed (Dec 2016, June 2018)
- Influence of groundwater on surface-water trends (June 2017, June 2018)
- Sediment sources, transport, delivery (Dec 2016, June 2018)

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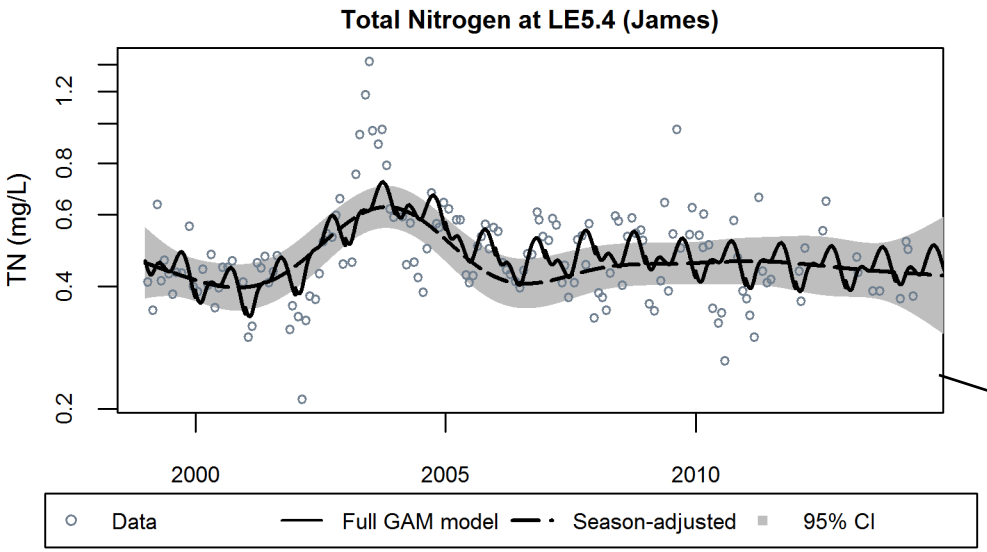
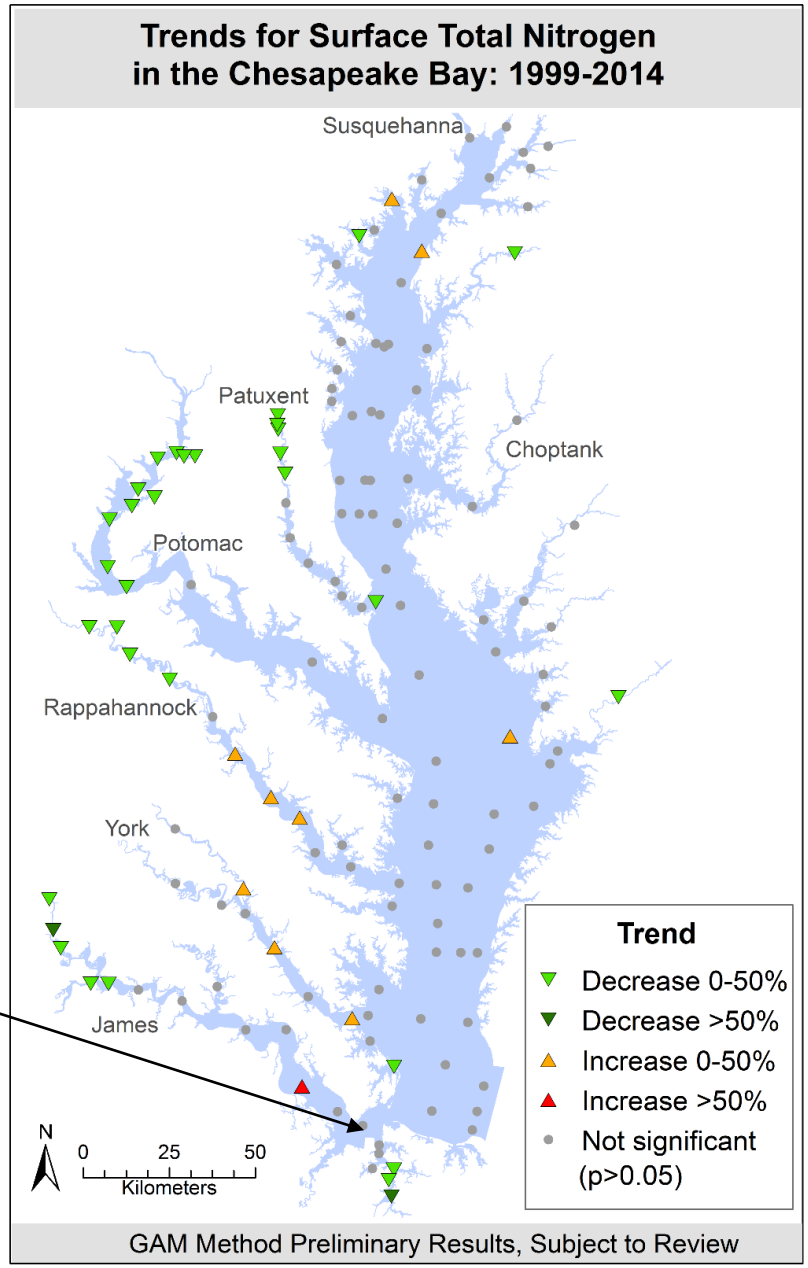
Trends in tidal water quality

Rebecca Murphy, UMCES-CBPO





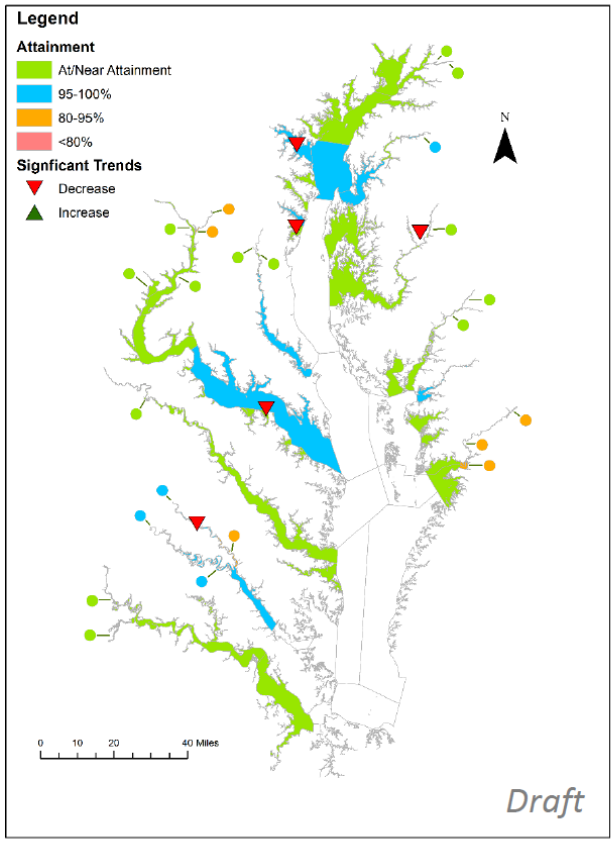
Watershed-Estuary Linkages

Trends in Chesapeake Bay WQS Attainment

Segment Level Analysis

Percent to attainment:

Migratory Fish, Spawning, and Nursery Use DO 1985-2013



Category	Count	Category	Count
At/Near Attainment	54	80-95%	6
95-100%	13	<80%	0

Trends	
Significant ↑	0
Significant ↓	5

Majority of segments are doing well.

The trends that exist are decreasing.

Tidal trends products

Trends in water quality and water quality standards attainment

- December 2016: report on website; maps, presentation

Potomac River Basin Synthesis

- March 2017: presentation of findings

SAV Synthesis

- March 2017: presentation on new insights from the SAV Technical Synthesis III
- June 2017: presentation on factors affecting eelgrass abundance and distribution the southern bay
- Fall 2017: new findings on factors affecting trends in SAV abundance and distribution

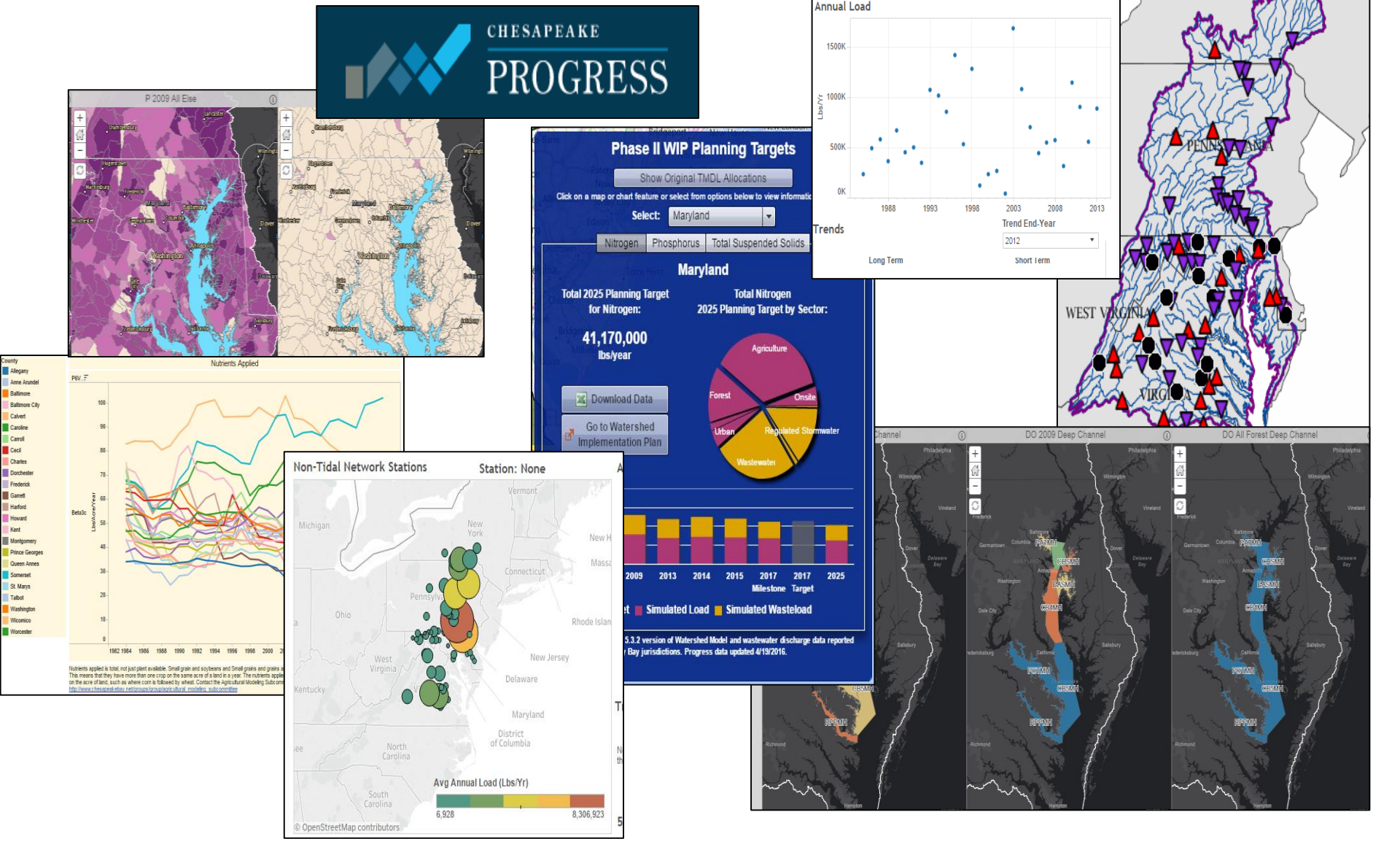
Tidal water quality synthesis

- March 2017: summary report on explaining long-term trends in tidal water quality

Tidal water clarity synthesis

- March 2017: presentation on current understanding of factors affecting trends in tidal water clarity

Data Visualization and the Midpoint Assessment



MPA Audience

- Primary: Watershed Jurisdictions, WQGIT, MB, PSC
- Secondary:
  - Regional Partners (MWCOG, SRBC, ICPRB)
  - State associations of local governments
  - Associations of Conservation Districts
  - Interested NGO's and Oversight groups (CBF, Choose Clean Water, Watershed Organizations)
  - Agribusiness association, State Farm Bureau
  - Conservation Districts
  - Homebuilder Associations
  - Counties, townships, municipalities
- Tertiary:
  - Interested public

Potential Visualization Products

- Data Exploration Tools
  - Exposing monitoring and modeling data
- Decision Support Tools
  - Interactive mapping
  - “What-if” tools (e.g. CAST)
- Data Driven Stories
  - Sector-based stories
  - Place-based stories
  - Topic-based stories (e.g. Conowingo)

Potential Visualization Products

Monitoring & Explanation of Trends

- Nontidal Trends – WRTDS
- Nontidal Loads and Yields
- Tidal Trends – GAMs
- SPARROW Yields
- WQ Standards Attainment by Designated Use

Other

- Land Use/Land Cover
- Basin Characteristics
- Ranging Scenarios from WSM
- WIP III Planning Targets
- WSM Inpouts from CAST
- CAST Model Outputs
- BMP Implementation Levels

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