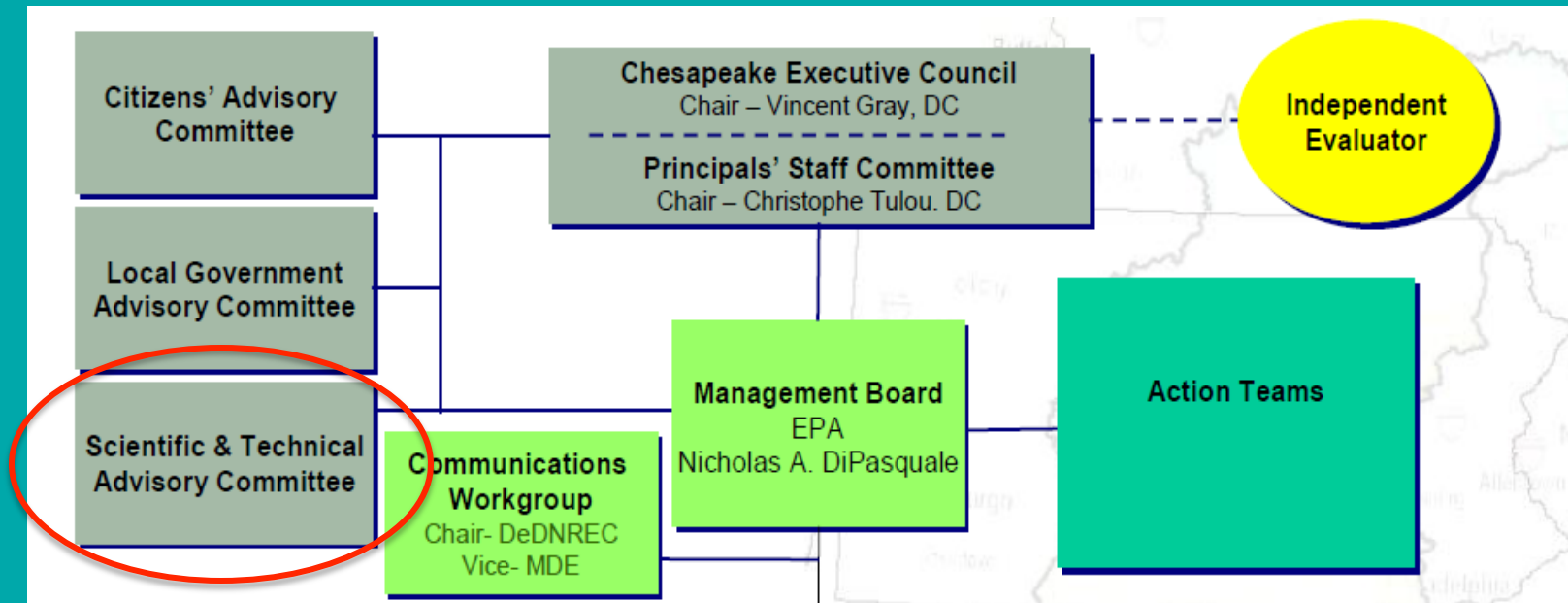


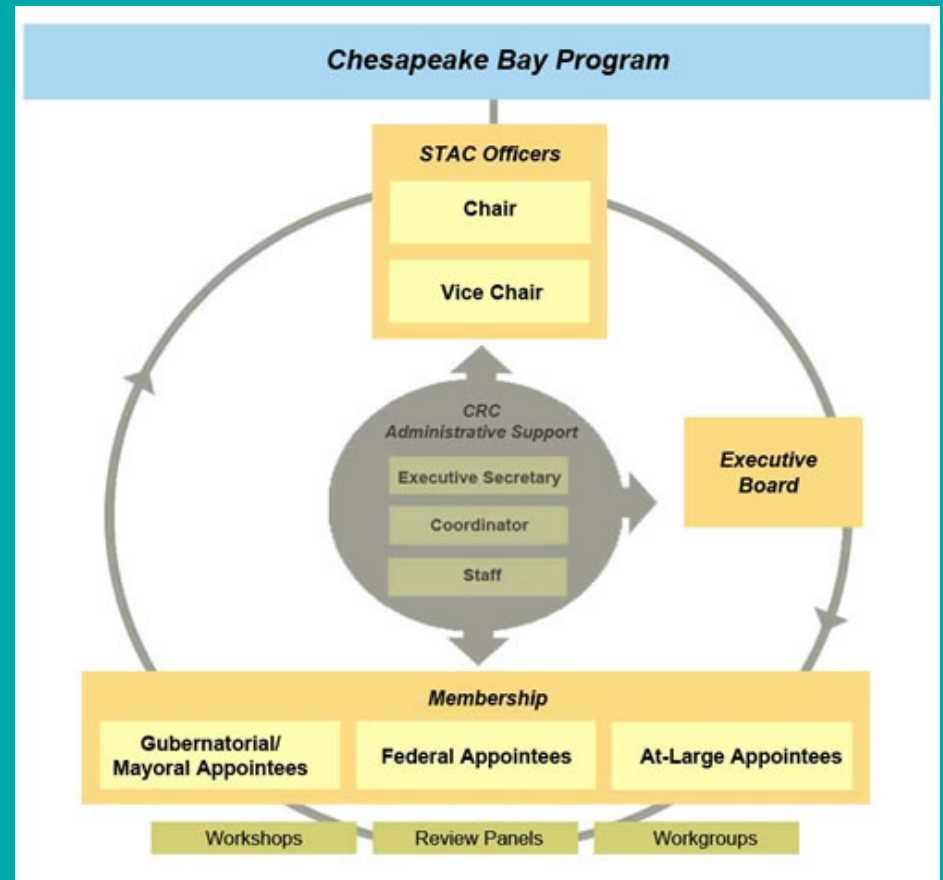
Academia's Role in Bay Governance





Role of STAC

- Membership: Leading scientists from various universities and agencies
- Convenes workshops
- Develops technical reports and papers
- Reviews projects and programs

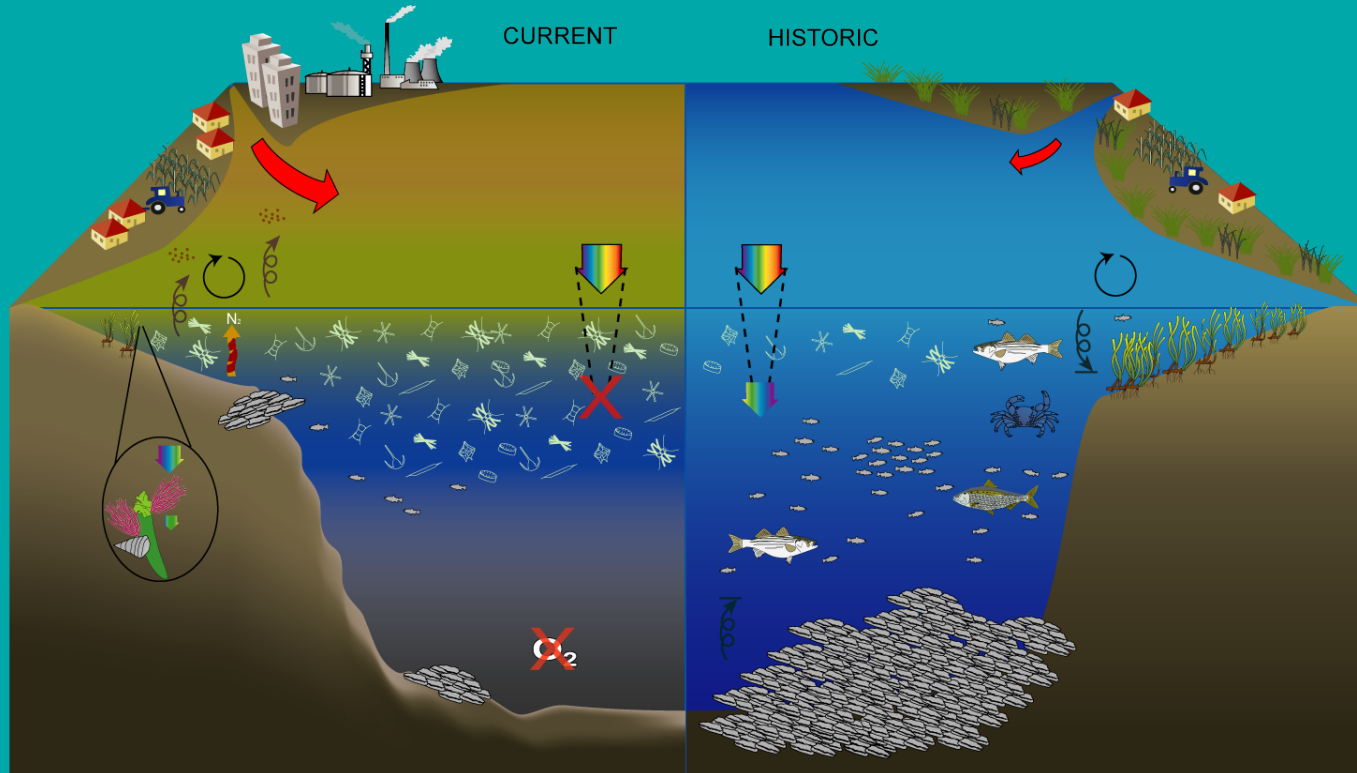
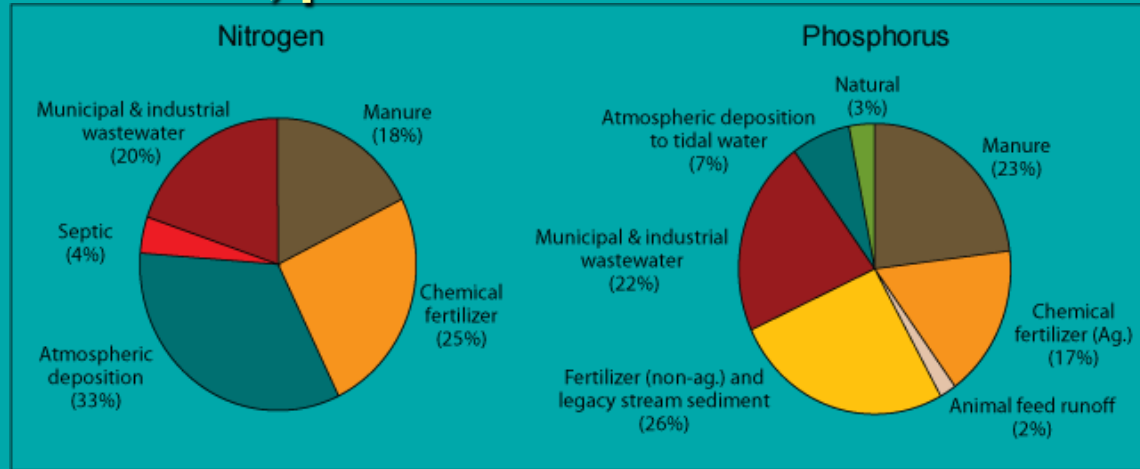


Academia's Role in Bay Restoration

- Formal Role: Science and Technical Advisory Committee
- Focus on the Big Challenges
- Apply adaptive management principles
 - Analyze and assess Bay health
 - Identify new problems and challenges
 - Provide advice to the management community
- Remain engaged with restoration programs for the long-term
- Provide advice to emerging challenges in a timely manner

Big Challenge: Nutrient Over-enrichment

Causes fundamental, pervasive alteration of the ecosystem



Big Challenge: Decline of Key Habitats

- Seagrass beds have declined 8-10 fold
 - Decline caused by eutrophication and warming temperatures

Seagrass beds are important

- Fishery nursery grounds
- Reduce resuspension
- Increase water clarity
- Act as nutrient filter
- Limit shoreline erosion
- Currently rebounding in some areas

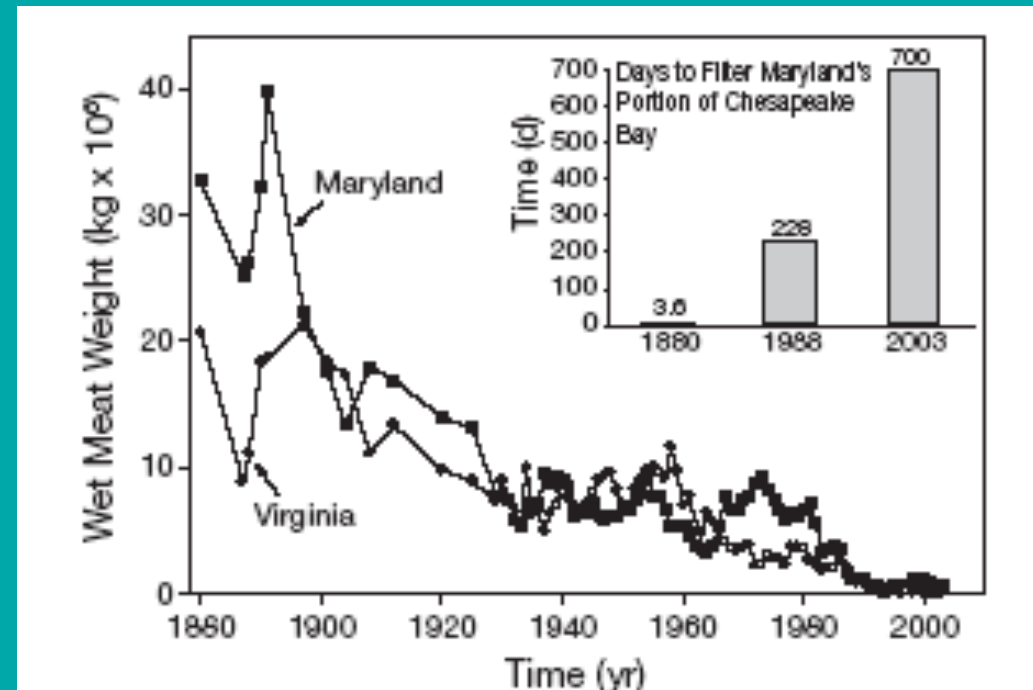


Big Challenge: Decline of Key Habitats

- Oysters are at 0.3% of historic populations

- Decline caused by overfishing and disease

- Oyster reefs are important
- Economic potential
- filtration of water
- Only natural hard substrate
- Increase biodiversity



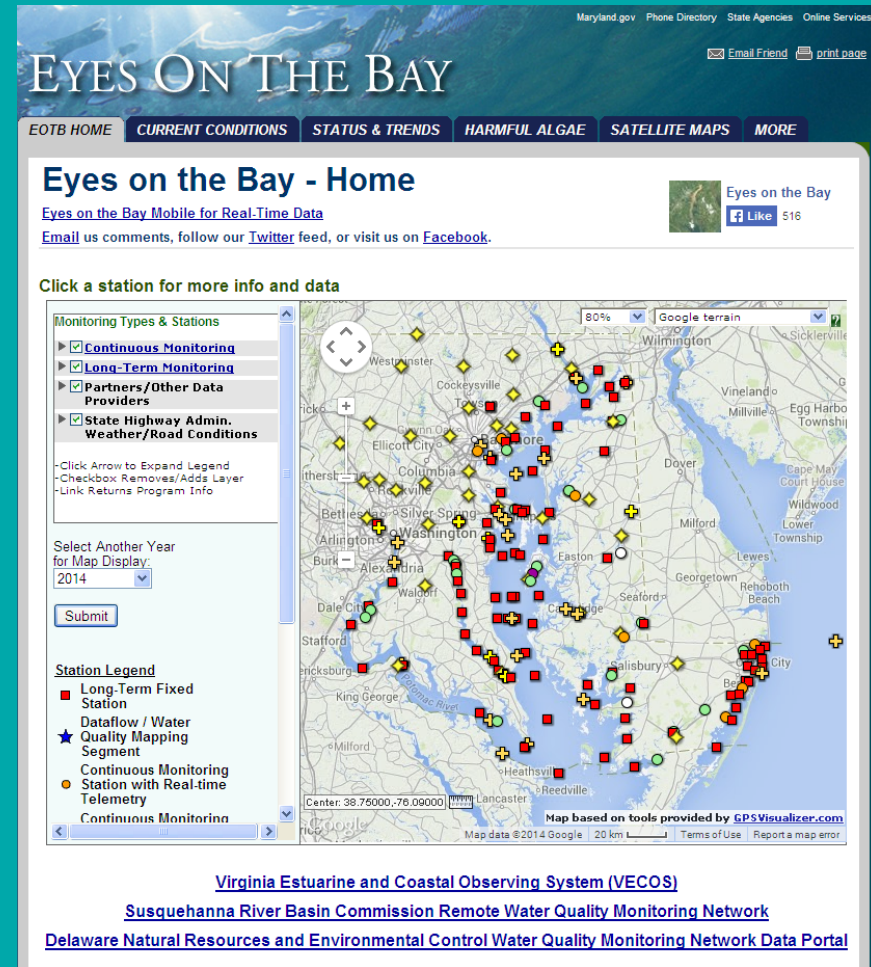
- Sanctuaries and targeted restoration programs
- Stable (but small) population to increasing

Applying Adaptive Management Principles

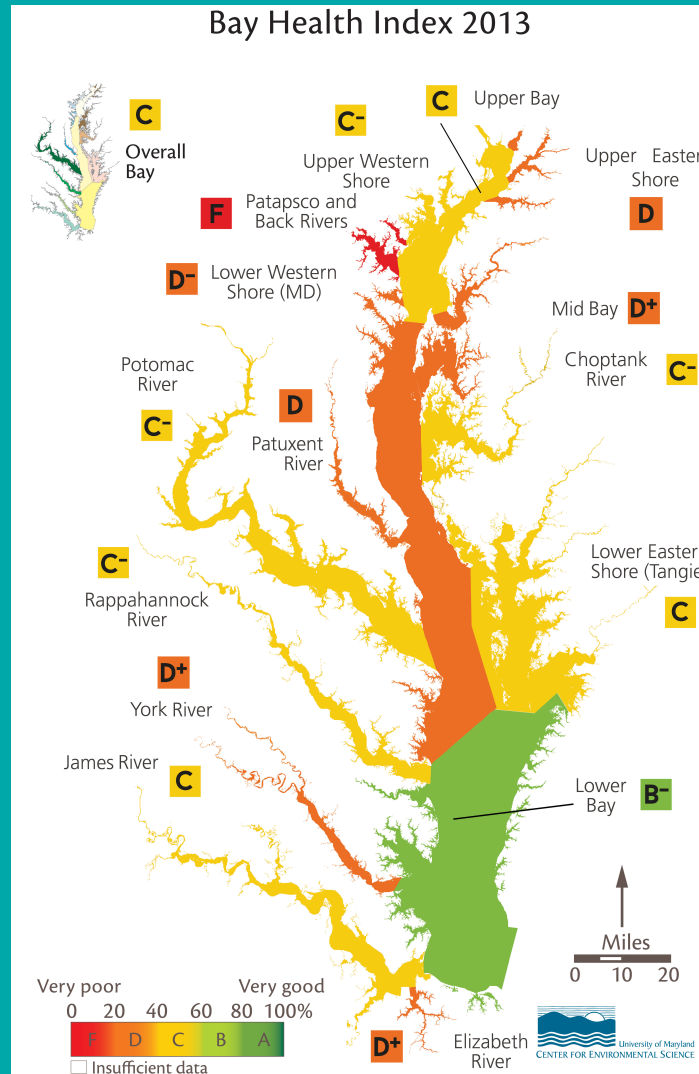


Adaptive Management: Monitor and Measure Bay Health

- Track changes over time to determine responsive to management actions
- Develop metrics that addresses both the habitat and biological response
- Communicate results to a broad audience
- Improve scientific understanding and impact of management actions



Adaptive Management: Analyzing and Integrating Monitoring Data



Adaptive Management: Improve Understanding

A sequence of events contributed to 2012 health

Tropical Storm Lee ☁

Rain from Tropical Storm Lee (September 7) brought tons of sediment 🏹 and fresh water 🌊 to the Upper Bay.

Spring Rains ☁

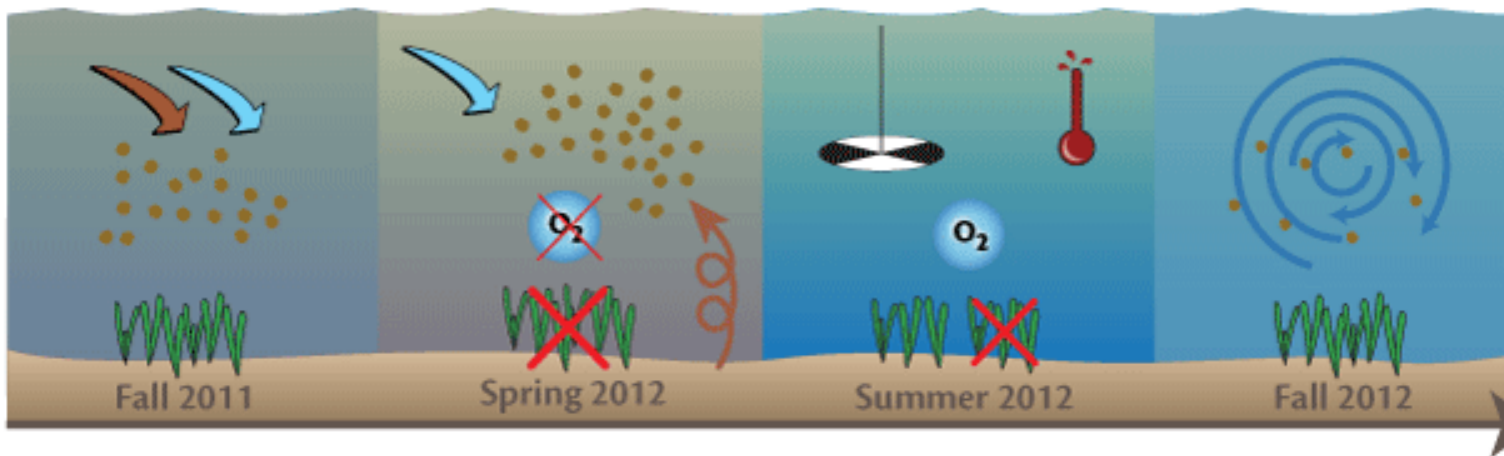
High flow in the spring was caused by large inputs of fresh water 🌊. This resuspended sediments 🏹, which decreased dissolved oxygen O_2 , and affected aquatic grasses ~~🌿~~.

Summer Drought ☀

The hot summer led to increases in dissolved oxygen O_2 and improved water clarity 🌊 due to low flow from lack of rainfall. Aquatic grasses ~~🌿~~ slightly declined.

Hurricane Sandy ☁

While Hurricane Sandy (October 22–31) did not bring as much sediment to the Bay as Tropical Storm Lee, its affects will not be seen until the 2013 Report Card.

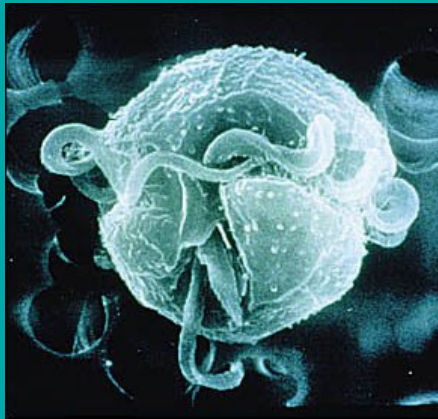


Provide Scientific Leadership to Emerging Challenges

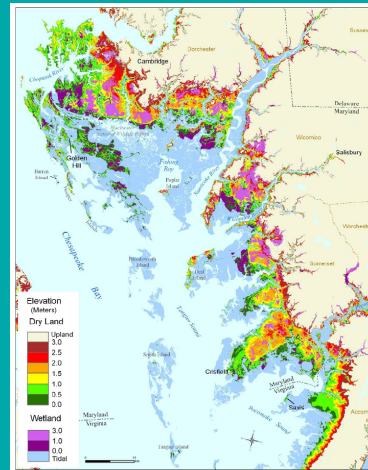
Organize scientific panels to provide consensus on causes and solutions

Engage the management community in the deliberations

Provide reports in a public friendly manner to communicate the problems and solutions to a broad audience



Harmful Algal Blooms



Sea Level Rise



Introduced Species

