

An aerial photograph of a lush green landscape. A large, dark, winding river or reservoir flows through the center of the image, surrounded by dense green vegetation. The terrain appears to be a mix of forested areas and open land, with some lighter green patches indicating different types of vegetation or possibly agricultural fields. The overall scene is a natural, undisturbed environment.

Monitoring 17 Million People Going on a Pollution Diet...How You and Your Organization Can Help!

Rich Batiuk

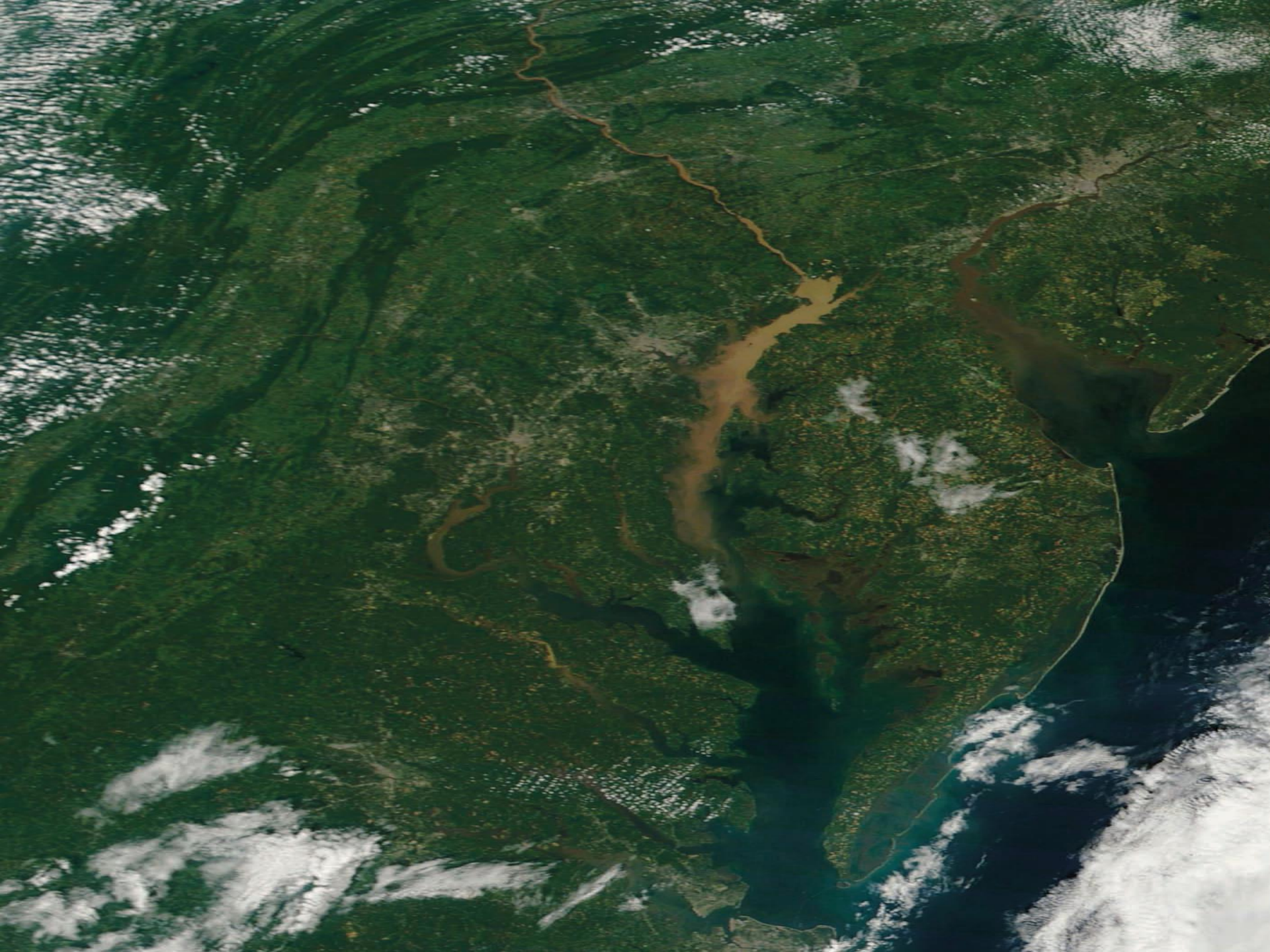
**Associate Director for Science
Chesapeake Bay Program**

U.S. Environmental Protection Agency

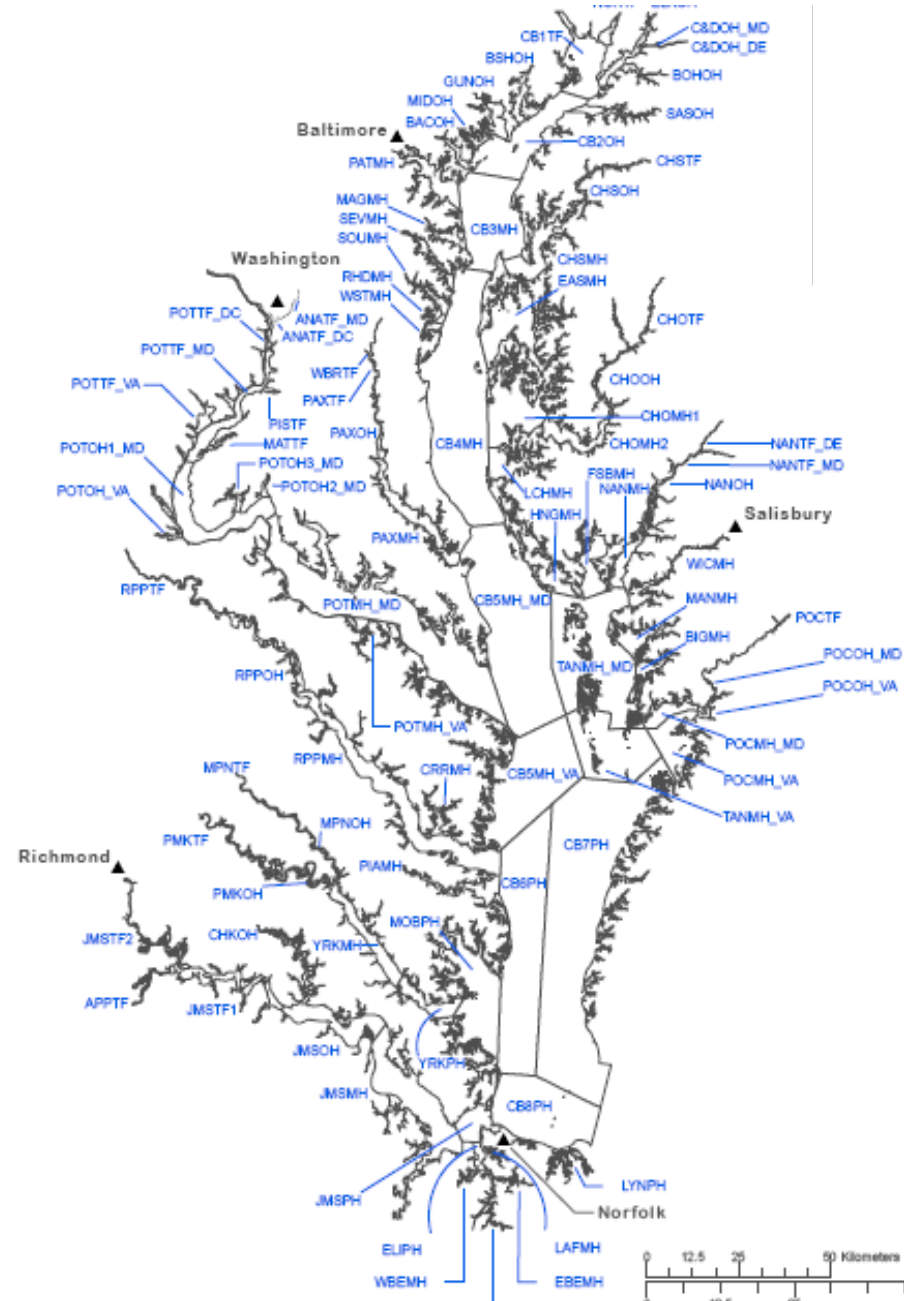
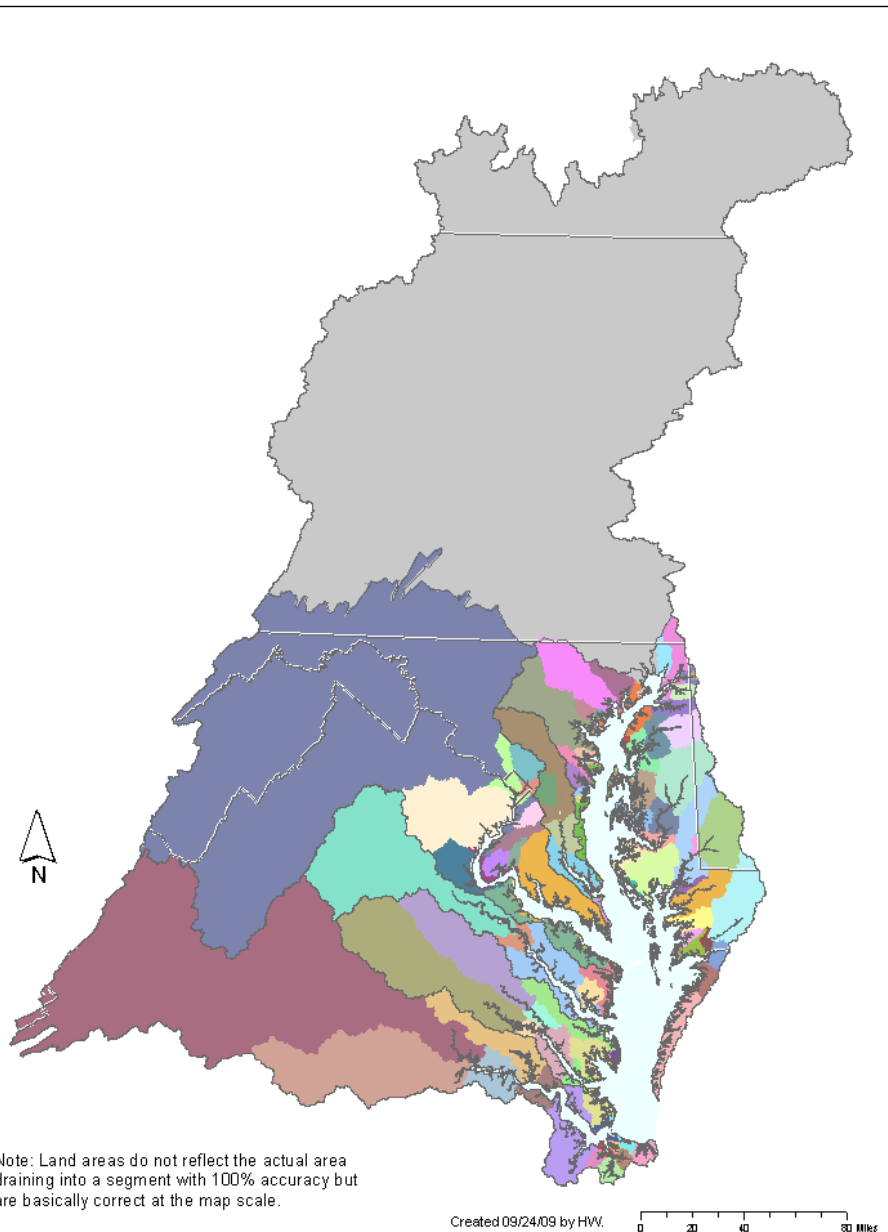
August 9, 2013







Pollution Diet for Each Tidal Water Segment

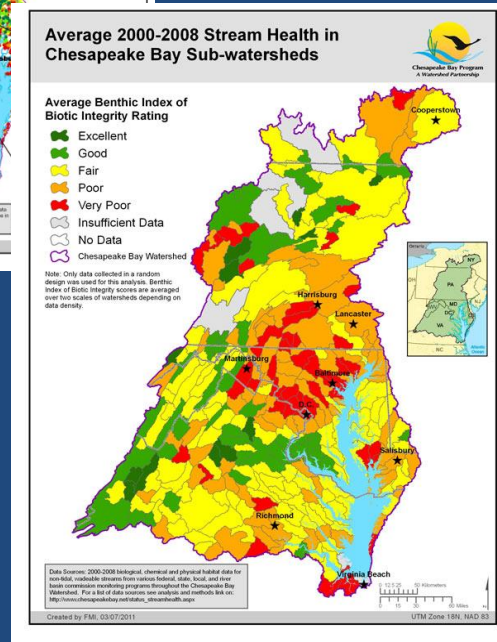
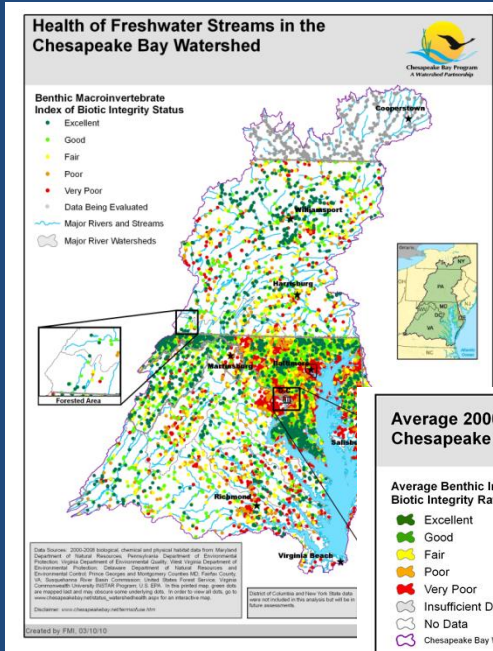




**Satellite Image of
the eastern United
States the day EPA
published the
Chesapeake Bay
TMDL**

December 29, 2010

Bay Watershed Health Indicators

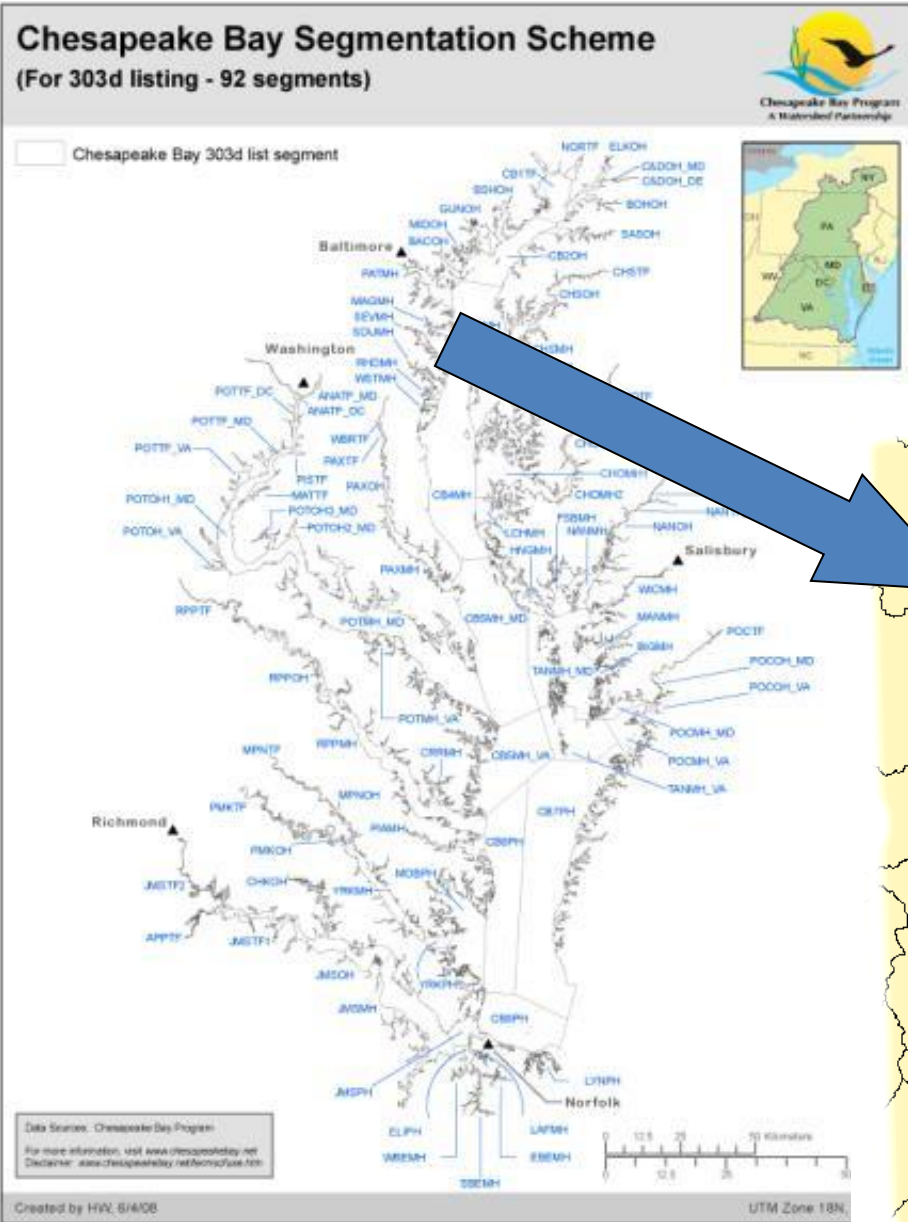


Data providers :

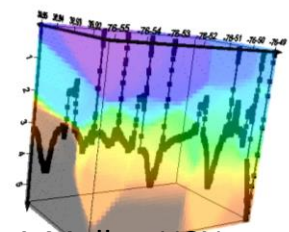
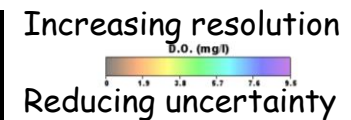
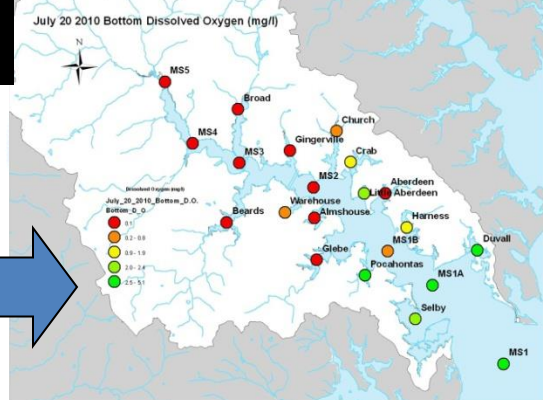
DE Biological Monitoring Program
Fairfax Co. (VA) Stream Quality Assessment Program
Frederick Co. (MD)
Howard Co. (MD) Bio-Monitoring and Assessment Program,
Loudoun Co. (VA) Stream Quality Assessment Program,
Montgomery Co. (MD) Stream Protection Program,
MD Biological Stream Survey,
NY Routine Statewide Monitoring Program,
PA Surface Water Monitoring Programs,
Prince Georges Co (MD) Biological Assessment and Monitoring Program,
SRBC Watershed Assessment Program,
EPA EMAP Wadeable Stream Assessment,
EPA Mid-Atlantic Highlands Assessment,
National Forest Service Stream Assessment,
USGS National Water Quality Assessment Program,
Virginia DEQ Benthic Monitoring Program,
VCUs Interactive Stream Assessment Resource Program,
WV Watershed Monitoring Program.

CBP Partnership is already creating management Products with diverse data sources

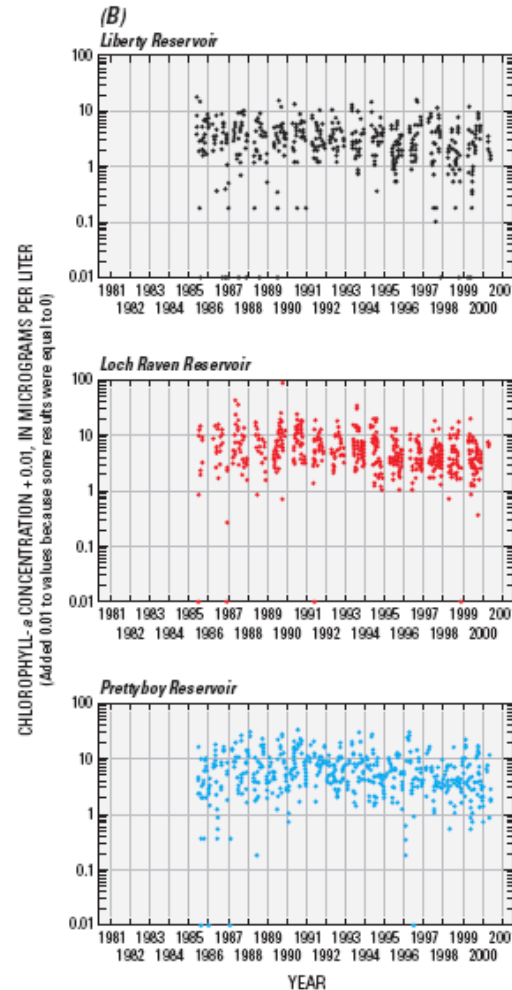
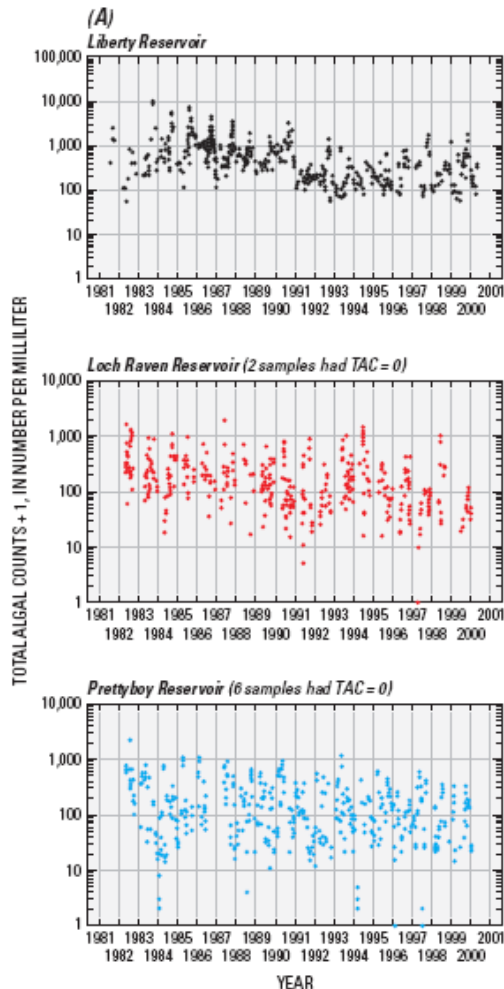
Maryland is piloting work for Regulatory Assessments: South River Federation



South River Federation



Uncovering Stories and Data Right Under our Noses...



Liberty Reservoir

| Land use | % |
|------------|----|
| Urban | 21 |
| Ag | 29 |
| Forest | 50 |
| Impervious | 3 |

Untapped data resources:

Inland water bodies, e.g. Baltimore City Reservoirs
92 miles of streams, 27 square miles of watershed

Decades of Restoration Responses in Gunston Cove, Potomac River

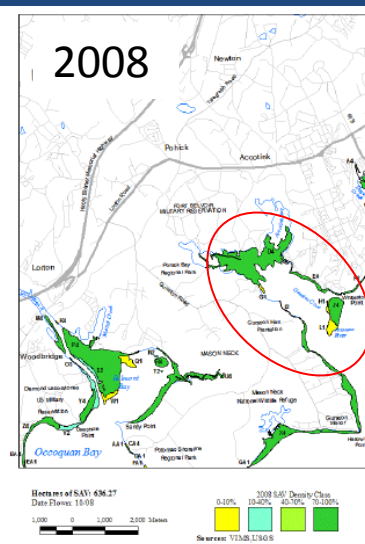
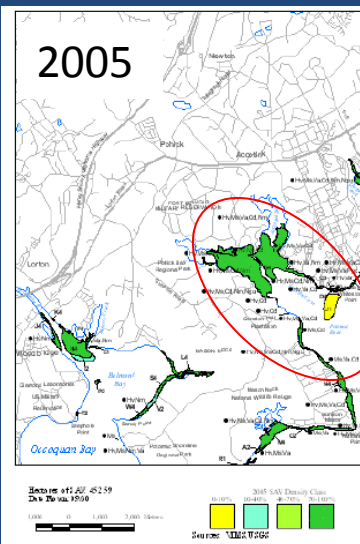
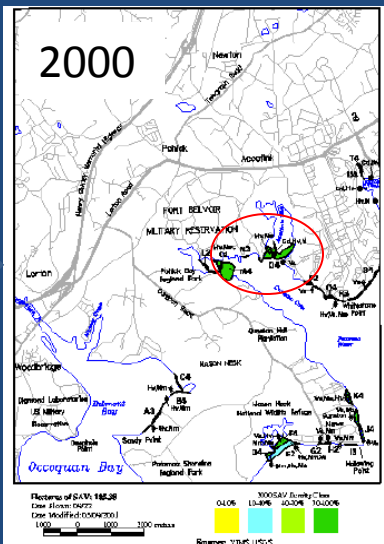
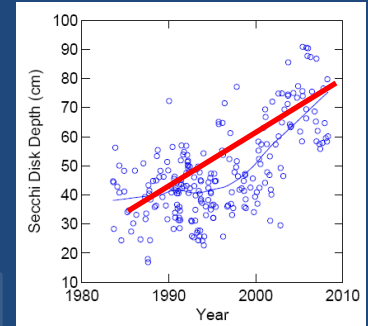
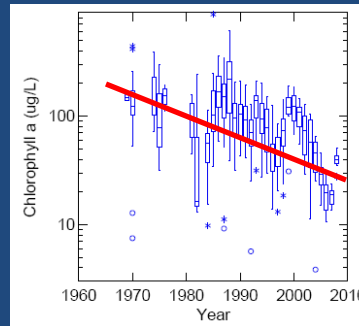
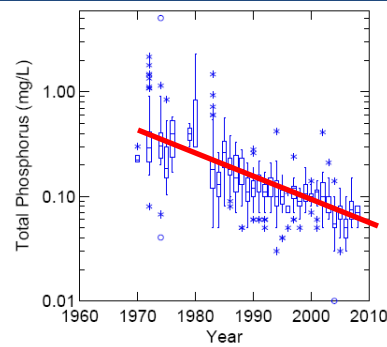
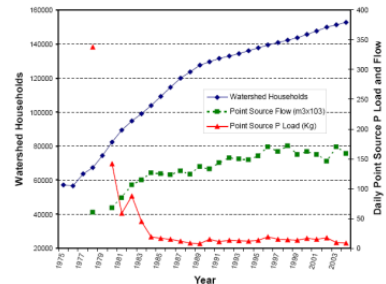
Wastewater
Treatment
upgrades

Nutrients decline

Algae decline

Clarity improves

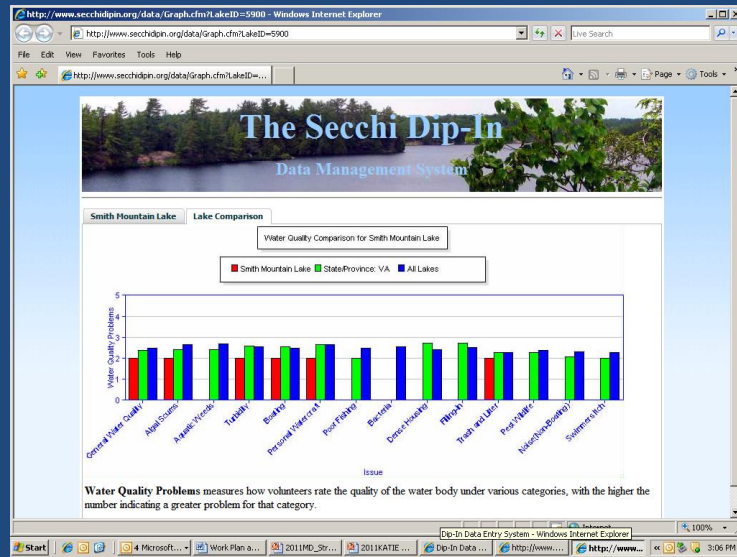
P Loading Factors - Gunston Cove Watershed



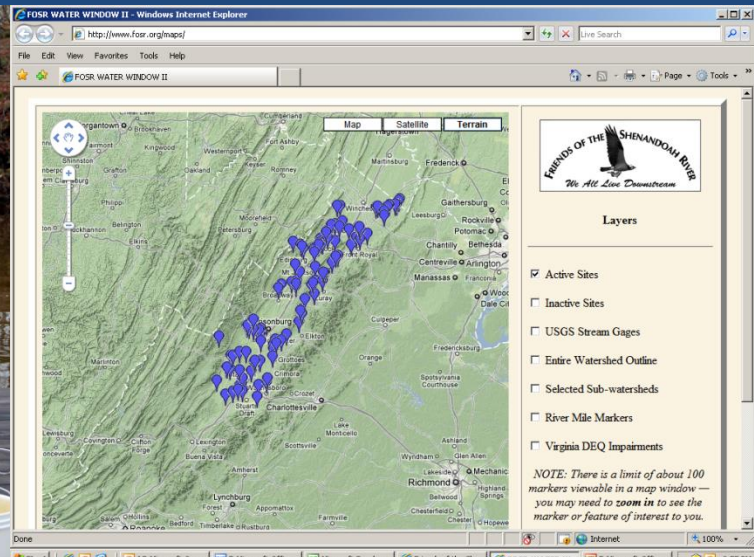
Underwater bay
grasses return!

R. Chris Jones GMU
Claire Buchanan ICPRB

Identified Hundreds of Potential Partners and Data Sources within the Chesapeake Bay Watershed

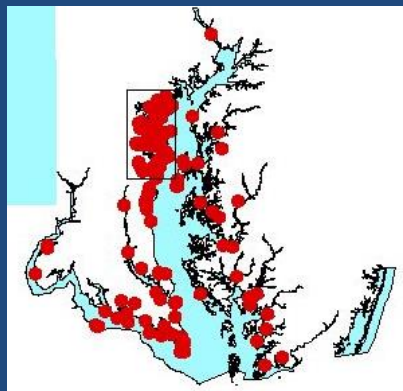


D. Muller photo



<http://www.secchidipin.org/>

<http://www.fosr.org/>



MDE Fish Kill Database



National Amphibian Database



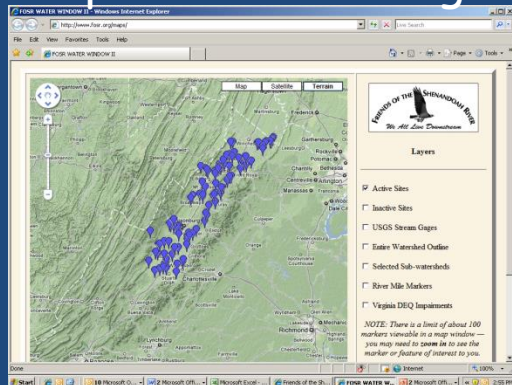
<http://mdw.srbcb.net/remotewaterquality/>



Nontraditional Partners Program

- Start with established nontraditional partners' monitoring programs
- Integrate with watershed-wide and bay-wide monitoring networks
- Use data to connect regional to local scale in support of management decision-making

<http://www.fosr.org/>

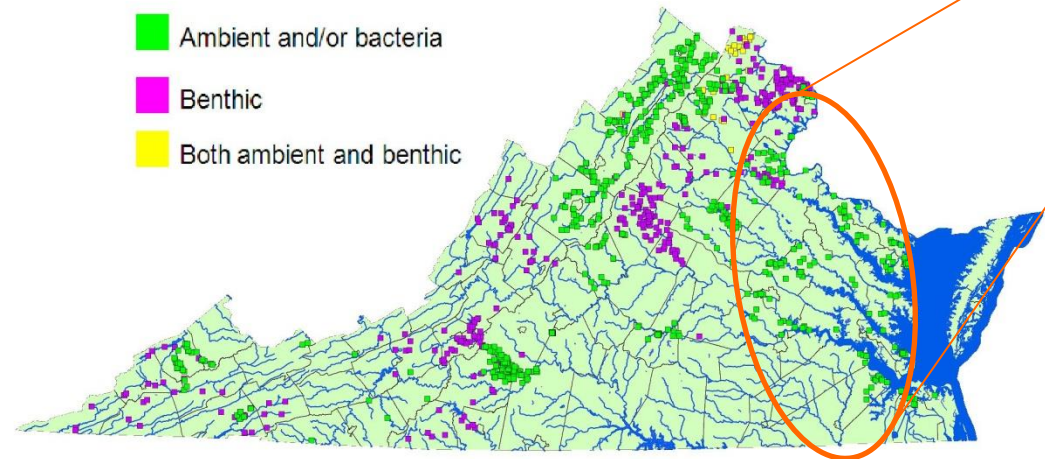


Levels of Citizen Water Quality Data in Virginia

In Virginia, the Department of Environmental Quality (DEQ) has developed three levels of data quality for citizen and other non-DEQ water quality monitoring data based upon both the level of data quality and the authorized uses of the data provided to the agency. In addition to agency needs, citizen-collected data may also be used to educate the community, to assist local governments in land use planning, to supplement data for university and professional studies, and to assist local soil and water conservation districts in prioritizing watershed work for best management practices.

| Level | Appropriate Data Uses | QA/QC Protocols |
|-------|---|--|
| III | <ul style="list-style-type: none"> List or delist waters on the 303(d) Impaired waters list Assesses waters for 305(b) Report Use with DEQ data for TMDL development All uses listed in Levels I and II | <ul style="list-style-type: none"> DEQ-approved Quality Assurance Project Plan (QAPP) and field or lab Standard Operating Procedures (SOP). Field and/or laboratory audit required. Group provides calibration and quality control associated information to DEQ when submitting data. This information must meet the specific criteria stated in the QAPP. |
| II | <ul style="list-style-type: none"> Identify waters for DEQ follow up monitoring Track performance of TMDL implementation All uses listed in Level I | <ul style="list-style-type: none"> DEQ-approved Quality Assurance Project Plan and approved field or lab SOPs. At this level, there may be deviation from an approved method if it can be demonstrated that the method collects data of similar quality to an approved method. |
| I | <ul style="list-style-type: none"> Education Baseline Notification of Possible Pollution Events Local Land Use Decisions Special Studies | <ul style="list-style-type: none"> No Quality Assurance Project Plan (QAPP) or SOP required by DEQ. Uniform methodology recommended. QAPP, SOPs and/or lab methods do not meet DEQ quality assurance/quality control requirements. There is no Virginia Water Quality Standard for parameter the method measures. |

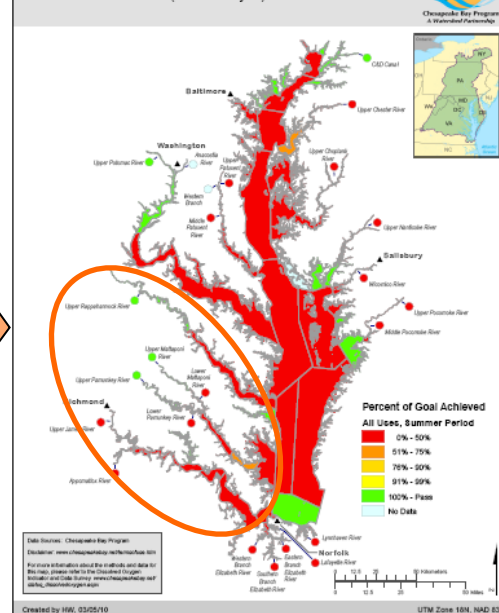
- Ambient and/or bacteria
- Benthic
- Both ambient and benthic



CitMon info and map courtesy of James Beckly VADEQ

A portion of the VA Citizen Monitoring sites meet regulatory monitoring standards and are used in impaired waters listing assessments.

Dissolved Oxygen (June - September, 2007 - 2009) Percent of Goal Achieved (3 Year Analysis)



Example: VADEQ

Appropriate Water Quality Data Uses from Nontraditional Partners

- Level “3” Clean Water Act 303d listing support
- Level “2” Targeting and tracking data
- Level “1” Educational level contribution

Next Steps

- Secure partnership agreement on long-term funding strategy for tidal, watershed networks
- Initiate watershed-wide dialogue on framing a 'non-traditional partners' program
- Seek commitments to funding institutional structures for sustaining diversified watershed and tidal monitoring networks



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and Implementation**

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