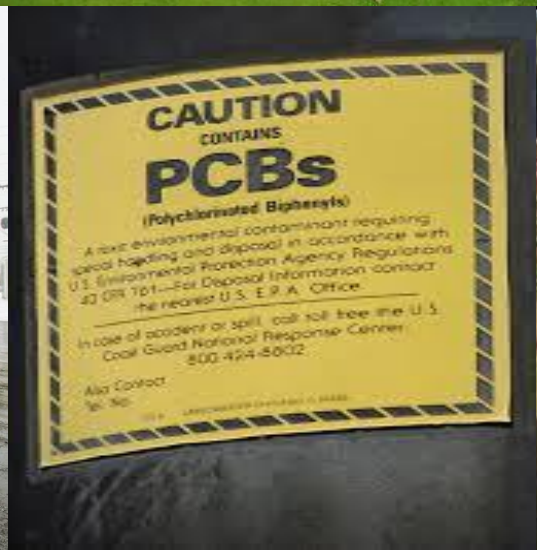
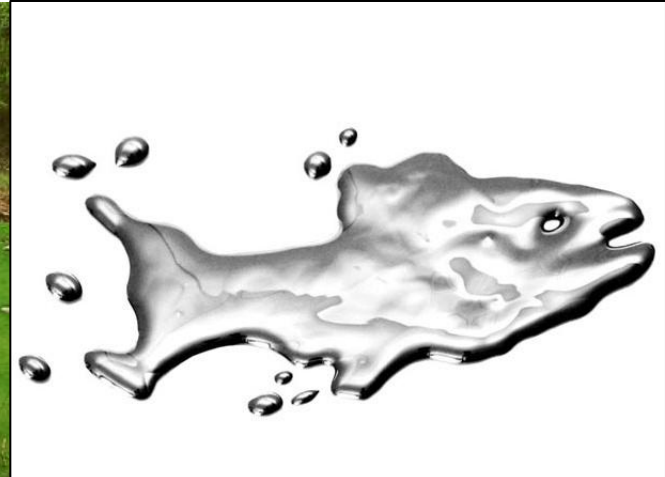




Maryland's Priority Listings

Monday, January 9th, 2017
6:00 PM
Montgomery Park

2016 – 2022



EPA National Approach for CWA § 303(d) Program

- **National approach (EPA's "New Vision")** seeks to establish future pace for addressing impaired waters and facilitate more quantifiable improvement in water quality
- **Elements or Goals**
 - **2014: Engagement**
 - **2016: Prioritization**
 - **2016: Protection**
 - **2016: Integration**
 - **2018: Alternatives**
 - **2020: Assessment**





How do we determine what to prioritize?

- Everything is important, but what are our priorities for 2016 – 2022?
 - PRIORITY: Addressing nutrient and sediment impairments to the **Chesapeake Bay** and its tidal tributaries
 - Nutrients have long been a statewide priority
 - Nutrient pollution limits are in place for >95% of State
 - PRIORITY: Addressing impairments that affect **Public Health**
 - PRIORITY: Addressing impairments that affect **Aquatic Life**



Maryland's Focus for 2016-2022

- Chesapeake Bay: Continue to support overall Bay TMDL effort
 - Large amount of program effort in support of WIP and Phase 6 model development
 - Partnering with federal and sister State agencies
- Public Health:
 - Bacteriological impairments, Polychlorinated Biphenyls (PCBs), Mercury, Toxics
- Aquatic Life:
 - Chlorides and sediments



Bacteriological Impairments: Rationale for Prioritization

- Direct risk to public health
 - Highest priority: Shellfish harvesting areas and beaches
 - Highest risk to human health
 - Economic as well as water quality benefits
 - Lower priority: Recreational uses
- TMDL development efforts directly useful in implementation measures
 - Source assessment, shoreline surveys, etc.
 - Coordination with MDE's Shellfish Program

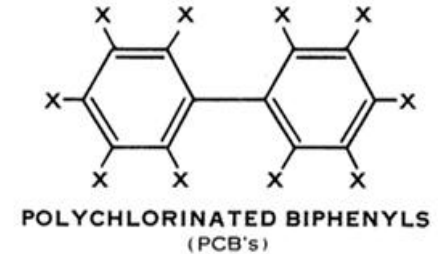


Bacteriological Impairments: Listings to be Addressed

- Listed during 2012 IR or earlier
- Consistent evidence of impairment
- Shellfish:
 - Nine currently planned;
 - Specific listings and approach to be determined in consultation with MDE Shellfish Program
- Non-Shellfish: Port Tobacco (4 listings) and Baltimore Harbor

Polychlorinated Biphenyls (PCBs): Rationale

- Direct human health concern (fish tissue)
- TMDL development process helps identify source/transport
- Meshes with Chesapeake Bay Toxic Contaminants Goal (part of 2014 new CB agreement)
- Targeted: All listings in MS4 counties
 - Higher population = greater potential exposure





Mercury in Fish Tissue: Rationale

- Methylmercury in fish tissue a direct human health hazard
- TMDL development a useful public education vehicle
- Increasing regional interest and economy of scale (NOAA Chesapeake Bay modeling)
- Indirect linkage to implementation, but in aggregate helps drive policy (federal, State, regional)
 - Maryland's Healthy Air Act
 - Integration with CAA



Other Toxic Contaminants

- Heptachlor Epoxide in Anacostia (two listings)
 - Human health
 - Inter-jurisdictional effort (EPA, DC DOE)
- Lead, Zinc in Baltimore Harbor
 - Aquatic life; longstanding listings warrant attention
 - Building upon existing work since 2002



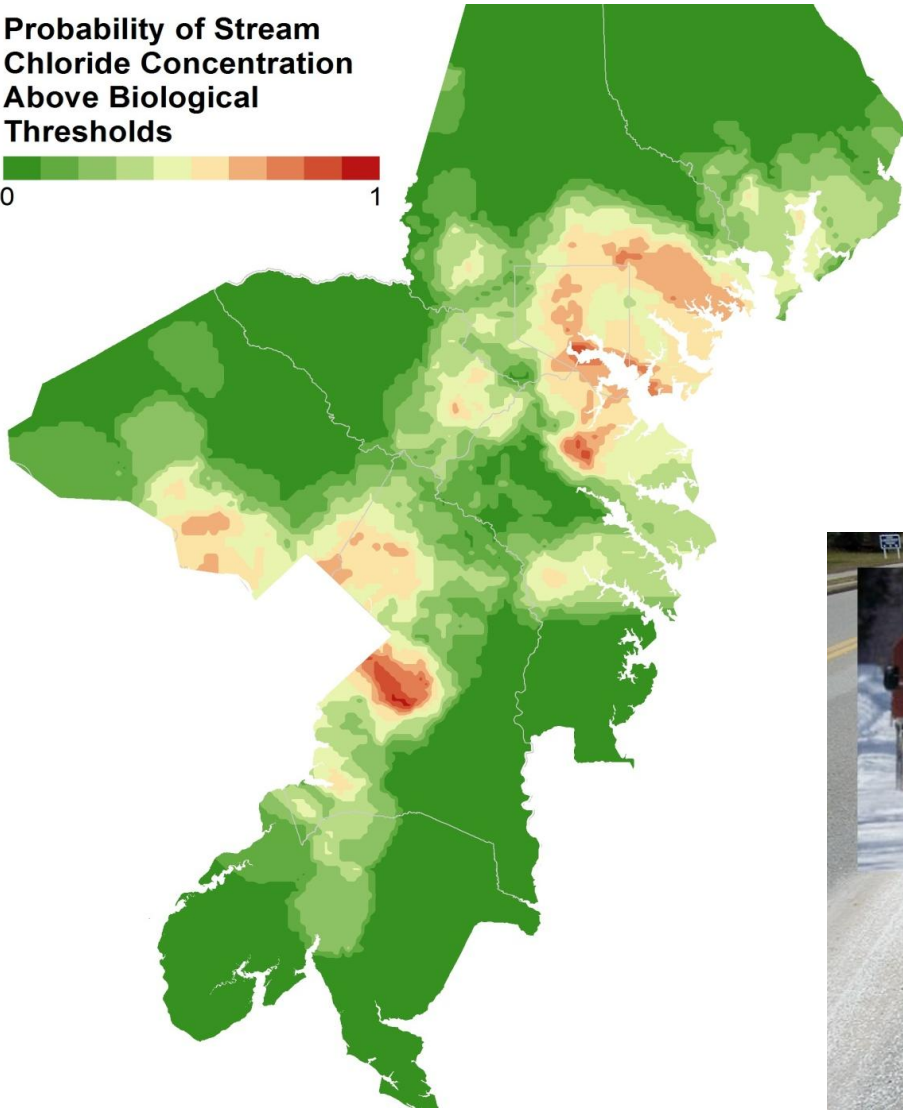
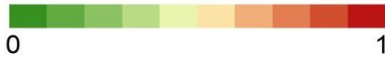
Chlorides: Rationale for Prioritizing

- Potent stressor to aquatic life
 - 1st- through 4th-order streams
- A growing concern of water supply managers
- Biological Stressor ID (BSID) analysis indicates widespread impact to biological communities, particularly in more urbanized watersheds
- Implementation likely to be source-focused; thus, may see rapid improvements in water quality



BSID Analysis Results: Chlorides

Probability of Stream Chloride Concentration Above Biological Thresholds



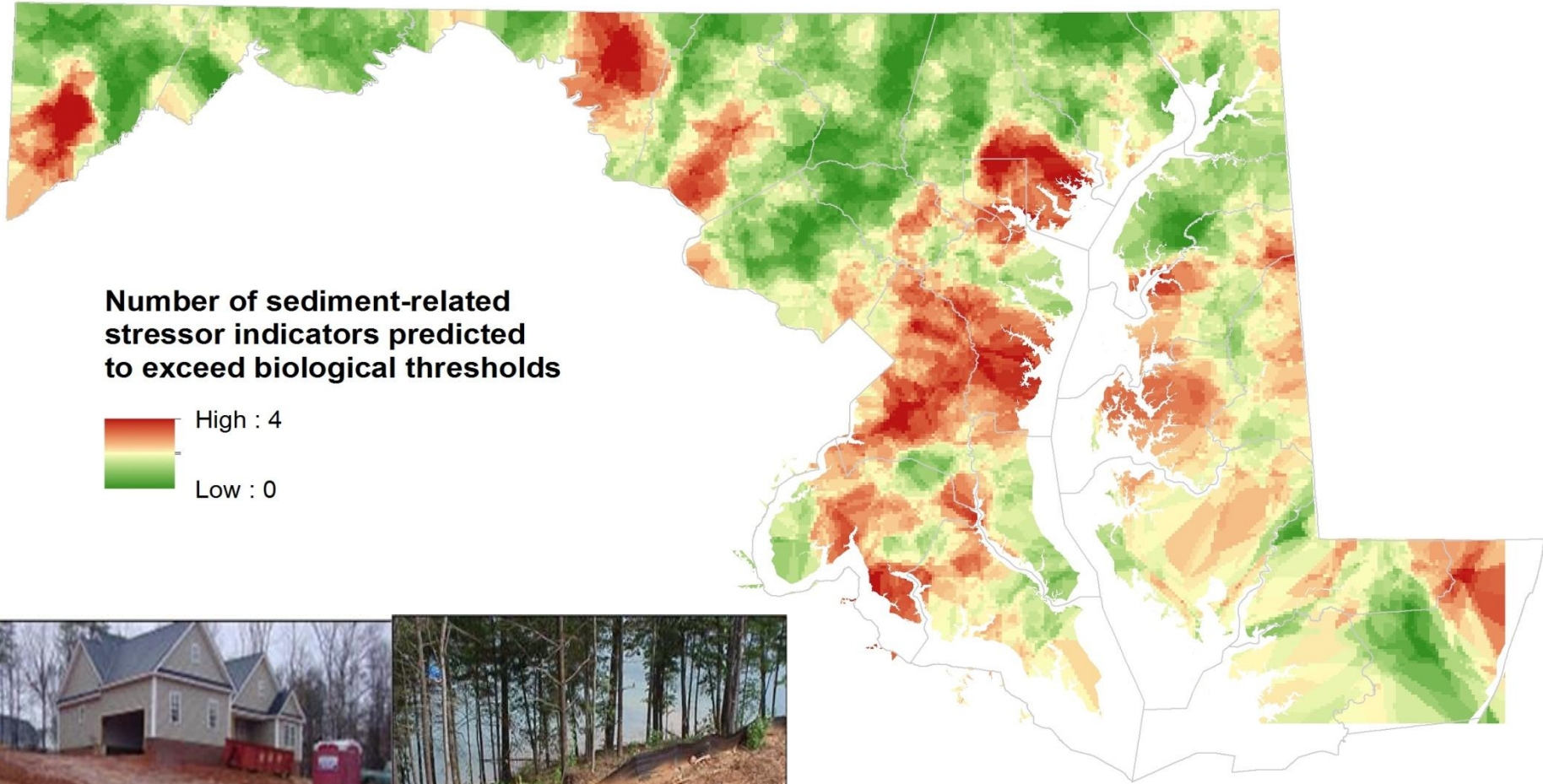
- Those in MS4 counties
- Attributable Risk (AR) in BSID analysis of 75% or greater for chlorides
 - Greater confidence that biology will be improved by removing stressor
- Watershed size $\leq 75\text{mi}^2$
 - Greater feasibility of implementation
 - Potentially more rapid response



Sediments: Rationale for Prioritization

- Widespread impacts to Aquatic Life throughout State
 - 1st – 4th order streams
- Implementation facilitated via MS4 permitting
- Implementation activities typically have ancillary benefits:
 - Many pollutants bind to sediments (particularly phosphorus)
 - Vegetation establishment enhances habitat for both aquatic and terrestrial wildlife
- Established methodology facilitates cost-effective TMDL development

BSID Results: Sediments





To reiterate:

We are NOT ignoring nutrients

- Over 95% of the State has LAs and WLAs in place for established nutrient TMDLs
 - Chesapeake Bay TMDL;
 - Maryland Coastal Bays TMDLs
 - Deep Creek Lake WQA
- A large component of Program staff time is dedicated to Bay TMDL support
 - Partnerships with DNR, CBP, MDP
- Some revisions are necessary to early nutrient TMDLs in small impoundments...



Needed Revisions to Lake TMDLs

- Phosphorus TMDLs for small, recreational impoundments
- Among the oldest TMDLs in Maryland
 - Dated land use information and water quality data
 - Early lake TMDLs based on empirical relationships using CBP Phase 4 load basis
 - Some TMDL endpoints have changed
- Better science and improved methodologies available
- Currently collecting data and exploring options
- Need to be compatible with Chesapeake Bay TMDL to facilitate implementation



Closing Thoughts on Prioritization

- What it is:
 - MDE's good-faith commitment to develop new TMDLs from 2016 – 2022
 - Continued support of the ongoing Chesapeake Bay TMDL effort
- What it is not:
 - A retreat from our commitment to address all impairments in a timely manner

Questions?

Thank you!



Maryland Department of the Environment

TMDL Technical Development Program

Timothy C. Rule

tim.rule@maryland.gov

Dinorah K. Dalmasy

dinorah.dalmasy@maryland.gov