QUARTERLY PROGRESS MEETING – August 2020
Chesapeake Bay Program

Toxic Contaminant Research Outcome

Presented by Emily Majcher and Scott Phillips, USGS

Through the Chesapeake Bay Watershed Agreement*, the Chesapeake Bay Program has committed to…*

Outcome:

- CONTINUALLY **INCREASE OUR UNDERSTANDING** OF THE IMPACTS AND MITIGATION OPTIONS FOR TOXIC CONTAMINANTS.

- DEVELOP A RESEARCH AGENDA AND FURTHER CHARACTERIZE THE **OCCURRENCE, CONCENTRATIONS, SOURCES AND EFFECTS OF MERCURY, POLYCHLORINATED BIPHENYLS (PCBS) AND OTHER CONTAMINANTS** OF EMERGING AND WIDESPREAD CONCERN.

- IN ADDITION, IDENTIFY WHICH **BEST MANAGEMENT PRACTICES MIGHT PROVIDE MULTIPLE BENEFITS OF REDUCING NUTRIENT AND SEDIMENT POLLUTION AS WELL AS TOXIC CONTAMINANTS IN WATERWAYS**.

MANAGEMENT APPROACHES FOR RESEARCH OUTCOME

MA1: Supply information to make fish and shellfish safe for human consumption

MA2: Understanding the influence of contaminants in degrading the health, and contributing to mortality, of fish and wildlife

MA3: Document the occurrence, concentrations, and sources of contaminants in different landscape settings

MA4: Science to help prioritize options for mitigation to inform policy and prevention

MA5: Gather information on issues of emerging concern

What is our Expected and Actual Progress?

- Further characterize the occurrence, concentrations, sources and effects of mercury, PCBs and other contaminants– **Good**
- Identify which BMPs might provide multiple benefits of reducing nutrient and sediment pollution as well as toxic contaminants **– Fair**

On the Horizon

- **Science:**
  - Existing studies to reduce PCBs
  - Mercury and EDC findings
  - PFAS and microplastics toxicity

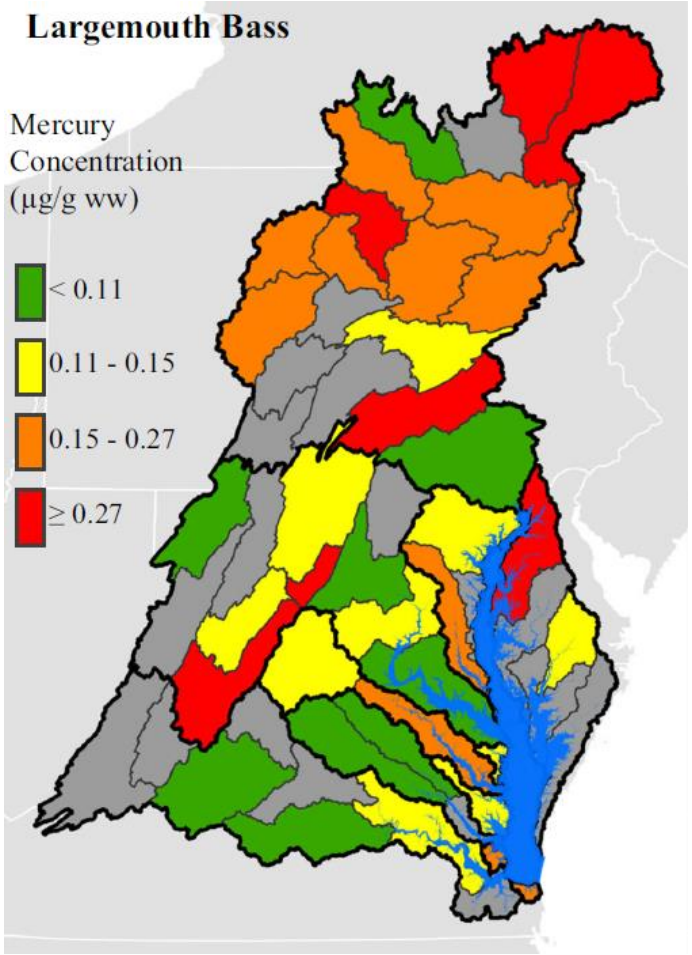
- **Policy:** Mercury Emissions, PFAS thresholds, Microplastics regulations

- **Fiscal:** COVID-19 impacts

Learn and adapt: MA1

- Mercury widespread in freshwater fish
- Mercury concentrations in fish not consistent with air deposition
- Difficult to assess trends since no watershed-wide network

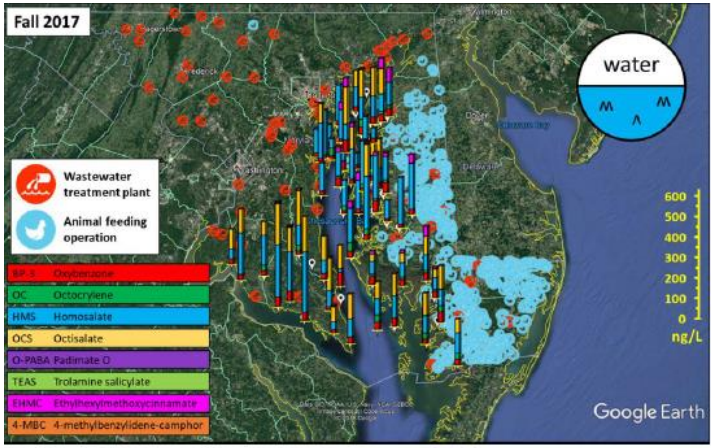
- Mercury – Opportunity for integrated monitoring
- Move PCB science from Policy and Prevention



Learn and adapt: Effects on fish and wildlife (MA2)

- Fish health issues in urban and ag areas.
- Still lack connection with state wildlife agencies

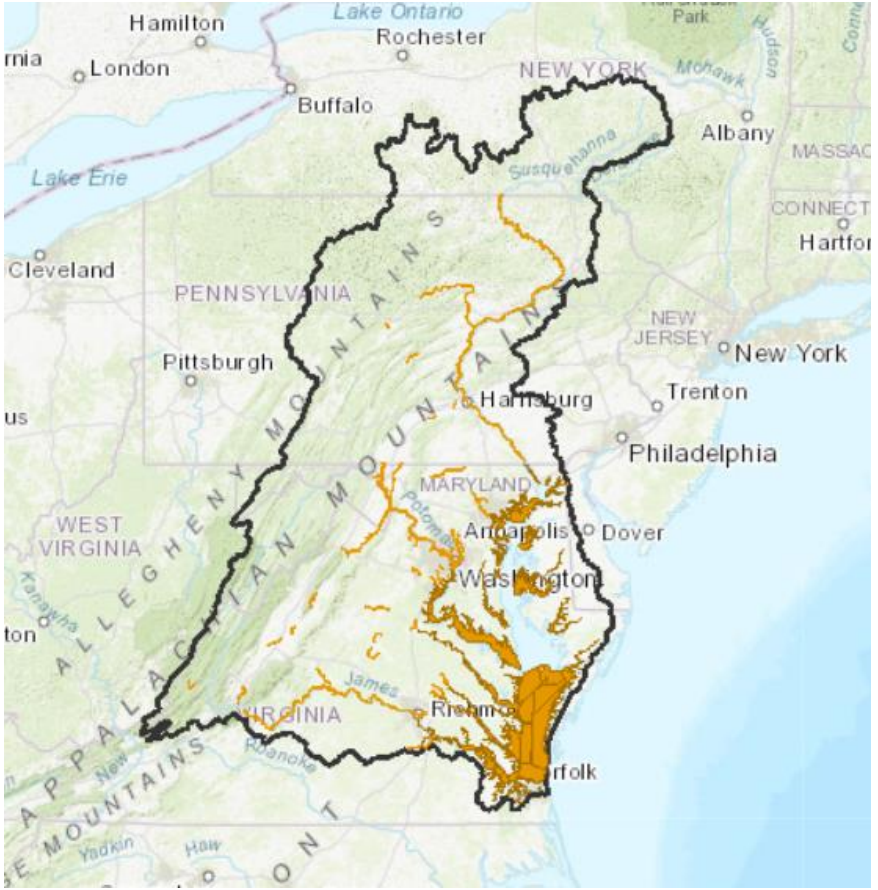
- Complete and communicate EDC studies
- PFAS- Occurrence and effects on fish and wildlife



Learn and adapt: Sources and Occurrence (MA3)

- STAC workshop helped with occurrence in urban and ag settings
- GIT project on WWTP
- Difficult to do regional analysis

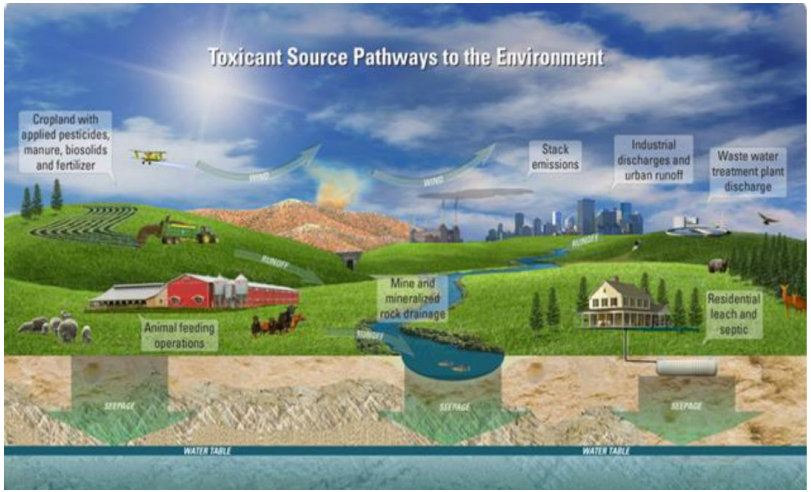
- Contaminants in targeted areas and co-occurrence with nutrients
  - Wastewater and urban areas
  - Select ag settings
  - PFAS: sources and occurrence



Learn and Adapt: Co-benefits of BMPs (MA4)

- STAC workshop and report
- Lack of removal efficiencies so limited applications for nutrient and sediment reduction in CBP tools

- GIT proposal: approaches for urban toxic contaminants into CB decision tools
- CBP responses to STAC report



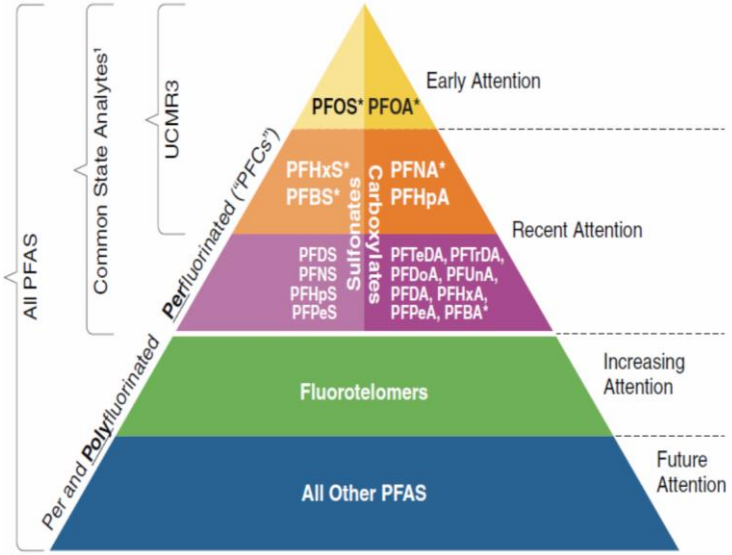
MA 4: STAC report

Proposed CBP responses:

- Enhance interaction with stakeholders for contaminant information
- Take advantage of Phase 3 implementation/2-year milestones
- Enhance communication materials to inform decisions
- Compile results and expand BMP studies of contaminant mitigation and relation to nutrients and sediment reductions.
- Include selected BMP results into CBP tools

Learn and Adapt: issues of emerging concern (MA5)

- Knowledge transfer – 6 emerging issues, PFAS prioritization
- Microplastics workshop planning and execution
- Too many emerging issues
- Support the microplastics action team, limit focus on other issues



Discussion

Contacts:

Emily Majcher emajcher@usgs.gov
Scott Phillips swphilli@usgs.gov