

QUARTERLY PROGRESS MEETING – August 2020
Chesapeake Bay Program



Toxic Contaminant Research Outcome

*Presented by Emily Majcher
and Scott Phillips, USGS*

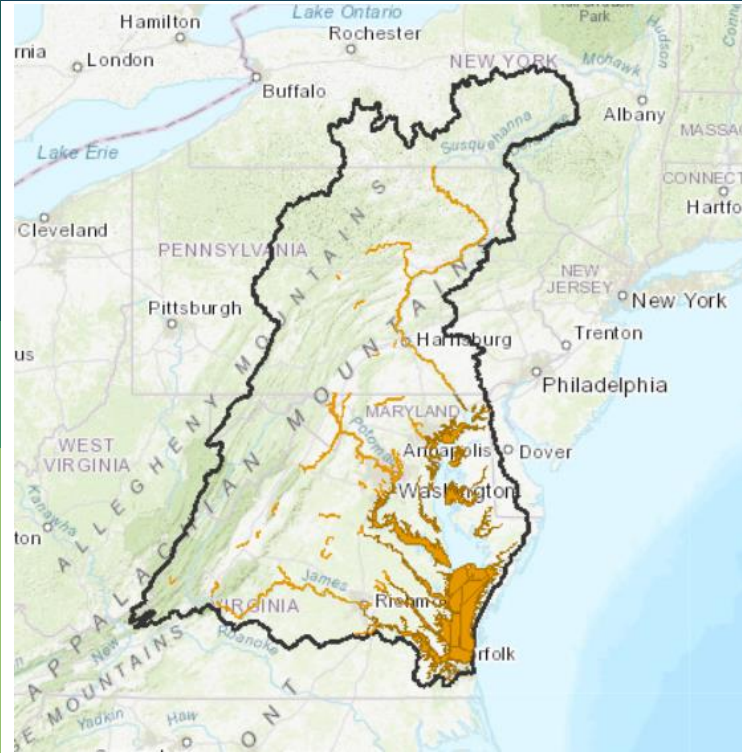
Through the Chesapeake Bay Watershed Agreement, the Chesapeake Bay Program has committed to...

Outcome:

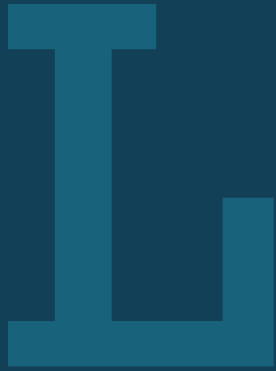
- **CONTINUALLY INCREASE OUR UNDERSTANDING OF THE IMPACTS AND MITIGATION OPTIONS FOR TOXIC CONTAMINANTS.**
- **DEVELOP A RESEARCH AGENDA AND FURTHER CHARACTERIZE THE OCCURRENCE, CONCENTRATIONS, SOURCES AND EFFECTS OF MERCURY, POLYCHLORINATED BIPHENYLS (PCBS) AND OTHER CONTAMINANTS OF EMERGING AND WIDESPREAD 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.**



How You Can Help



- Making Good to Fair progress
- Need MB to help:
 - Next steps for mercury
 - Coordinated plans for PFAS
 - Enhanced consideration of toxic contaminants in 2-year milestones
 - Approve CBP response to STAC workshop report



Learn

What have we learned in the last two years?

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

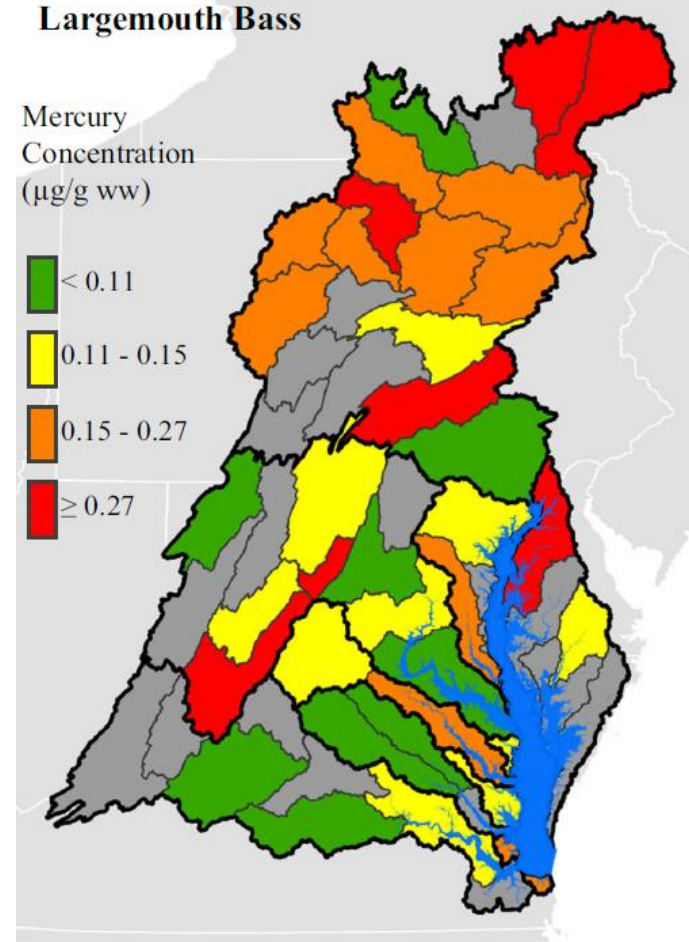
MA4: Science to help prioritize options for mitigation to inform policy and prevention

MA5: Gather information on issues of emerging concern



What did we learn: Mercury (MA1)

- Mercury widespread in freshwater fish
- Concentrations pose risk to fish, birds, humans
 - Did not assess rockfish in tidal waters
- Mercury concentrations in fish not consistent with air deposition
 - Current management approach may not be adequate
- Difficult to assess trends since watershed-wide network





Effects on fish (MA2)

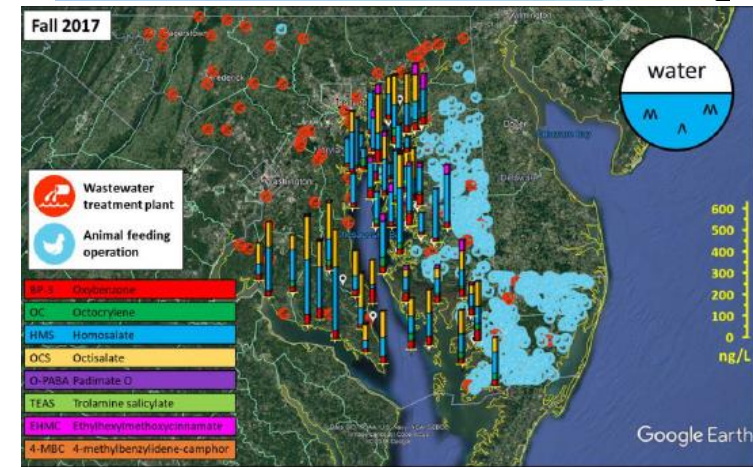
Fish in urban areas:

- Abnormal tissue growth
- reduced reproductive success

Ag areas:

- Fish kills
- Variety of fish-health issues

Connection with state wildlife agencies





What did we learn: BMPs (MA4)

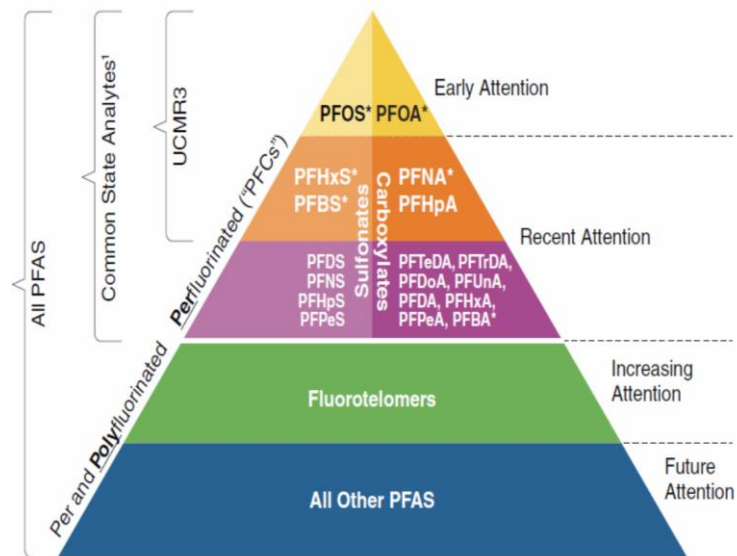
- STAC workshop and report
 - New urban BMPs considered in other places of US.
 - Sources known in ag areas but not effects of BMPs
- Lack of removal efficiencies so limited applications for nutrient and sediment reduction in CBP tools





What did we learn: issues of emerging concern (MA5)

- Knowledge transfer – 6 emerging issues,
 - PFAS prioritization
- Microplastics workshop planning and execution
- Too many emerging issues





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

A large, stylized, blue letter 'A' is centered on a dark blue background. The letter has a thick, blocky font with a slight shadow effect. The background is divided into horizontal bands of color: a dark blue band at the top, a medium blue band in the middle, and a light green band at the bottom.

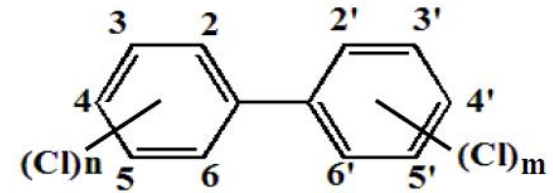
Adapt

How does all of this impact our work?



Based on what we learned, we plan to ...

- **MA1: Mercury and PCBs**
 - Mercury – Opportunity for integrated monitoring
 - PCB sources from existing studies
- **MA2: PFAS-** Nature and extent of in surface waters and impacts on fish
- **MA3: Contaminants in targeted areas**
 - Wastewater and urban areas
 - Select ag settings





Based on what we learned, we plan to ...

- MA4:
 - GIT funding proposal to explore approaches to including toxic contaminants in CB decision tools
 - CBP responses to STAC report

- MA5: Support the microplastics action team, limit focus on other issues





Help

*How can the Management Board
lead the Program to adapt?*



Help Needed: Science

- Coordinated monitoring network for mercury
 - Better assess if air reductions are working
 - Consider needs for other management actions.
 - Compare risk of mercury to fisheries and humans
- Coordinated science approach for PFAS
 - Focus on occurrence and ecosystem efforts
 - Takes advantage of existing and planned studies.



Help Needed: Policy

Policy: Encourage jurisdictions and federal agencies to consider toxic contaminants two-year milestones for in N, P, sediment management actions

- Approve and implement CBP responses to STAC CEC report



Help Needed: Policy

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



Discussion

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