



TOXIC CONTAMINANTS RESEARCH

WATER QUALITY GOAL IMPLEMENTATION TEAM/TOXIC CONTAMINANTS WORKGROUP

2014 WATERSHED AGREEMENT: GOAL & OUTCOME LANGUAGE

Toxic Contaminants Goal: Ensure that the Bay and its rivers are free of effects of toxic contaminants on living resources and human health.

Toxic Contaminants Research 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, 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.

OUTCOME DISPOSITION ADVICE TO MANAGEMENT BOARD:

Update

Recommendation

The Toxic Contaminants Workgroup (TCW) and the Water Quality Goal Implementation Team (WQGIT) recommend that the Toxic Contaminants Research Outcome is **updated** to ensure that the Chesapeake Bay Program (CBP) maintains a science agenda to support partners in understanding emerging risks and best practices for risk mitigation related to known and issues of emerging concern.

The chartered mission of the CBP from the Clean Water Act section 117.1.c establishes a requirement for a coordinated toxic reduction strategy. The partnership's vision of a restored and protected Bay and watershed includes the critical component of protecting human health and living resources. Those front-end strategic commitments establish the need for toxic contaminant related goals and strategies. Research is the basis for prioritized and effective management actions to reduce pollutants; however, the current outcome language is qualitative in nature and could be more refined and targeted. The TCW recommends specifically naming per- and polyfluoroalkyl substances (PFAS) and microplastics in the revised outcome language.

How does the CBP add unique value to achieving the outcome?

The TCW has established itself as a primary source of information and scientific inquiry related to chemical contaminants that can threaten the value of Chesapeake Bay watershed resources and threaten human health. The TCW is a point of coordination for connecting high priority research needs to programs and resources that can help fill key gaps in the collective understanding of occurrence, sources, concentrations and effects of chemical contaminants. The TCW maintains a work plan that identifies high-priority knowledge gaps and the stakeholders that can participate in filling those gaps.

The quarterly TCW meetings that are focused on PFAS are very well attended by stakeholders. The TCW is engaging with both the Agriculture and the Local Leadership workgroups to serve their members on PFAS and polychlorinated biphenyls (PCBs). It is the intention of the TCW to continue to be a key source of regulatory updates and scientifically credible information and new research coordination in service to the agriculture, local leader and other communities.

What have we learned?

We have learned that the science needs are dynamic for issues of emerging concern such as PFAS and

6PPD-quinone as well as for known contaminants such as Mercury and PCBs. We have learned that there is a need for continued scientific investigation of:

- the sources of contamination leading to fish consumption advisories
- contaminant effects on the health and mortality of fish and wildlife
- data on the occurrence and trends of toxic contaminants
- practices to mitigate contaminant loading
- potential co-benefits with nutrients and sediment reductions
- emerging contaminant issues
- synthesis and communication of the key findings of newly published research.

High Impact Activities Underway and Anticipated in the Toxic Contaminants Research Outcome Work Plan

No other forum exists in the watershed to allow for important activities related to contaminants in the ecosystem. The TCW is and will conduct valuable work such as:

- Synthesize science information on mercury to determine whether further CBP strategies are needed to supplement national efforts to reduce its impact on fish and human health
- Synthesize science information on PCBs to improve understanding of fate and transport, improved source refinement methods and understanding to reduce concentrations of PCBs in fish tissue, which prompt many of the water quality standards impairments in the watershed Evaluate the level of consistency in approaches to PCB source tracking and mitigation among CB jurisdictions and develop criteria to assess the status and trends of PCB data at CB-relevant scales
- Assess the fish health effects of contaminants on fish and shellfish in the watershed
- Better define the sources and occurrence of emerging and legacy toxic contaminant groups in different landscape settings
- Gather and summarize further information about direct and co-benefits for mitigation of toxic contaminants, and nutrient and sediment co-reductions
- Monitor/survey efficiency of BMPs to remove toxic contaminants such as PCBs and other contaminants of concern for targeted, prioritized topics and science needs consistent with CBP STAC workshop recommendations
- Continue to investigate occurrence and impact for previously prioritized issues of emerging concern including microplastics and 6PPDQ
- Evaluation of consistent or disparate approaches being implemented by Bay jurisdictions for PFAS-related science needs such as fish consumption advisories for PFAS or cumulative risk including PFAS, background status of PFAS in different media and land-application of biosolids and status of PFAS in biosolid and methods for determining the need for fish consumption advisories

Summary

The CBP should continue to apply itself to the risks from toxic contaminants to fulfill its chartered mission and to achieve the partnership's vision of "an environmentally and economically sustainable Chesapeake Bay watershed with clean water" as well as partner agencies' duties to protect human health and the environment. The CBP's TCW is the centralizing forum in the watershed for sharing research, science and consideration of effects at the watershed scale.

In updated language, the partnership could expressly identify several issues of emerging concern that are generating high levels of interest among watershed stakeholders as well as many science questions, for example PFAS and microplastics.