

# Summary: Enhancing Monitoring to Address the CBP Toxic Contaminant Outcomes

Updated Dec 20, 2021

To address the PSC request for information on enhanced monitoring, the CBP Toxic Contaminant Workgroup (TCW) reviewed the two outcomes in the Chesapeake Bay Agreement for the Toxic Contaminant Goal. The Policy and Prevention outcome addresses PCB reductions, while the Research outcome is focused on increasing our understanding of the impacts and mitigation options for toxic contaminants. This document is a summary of a discussion paper on enhanced monitoring that was developed by the TCW: [Toxic Contaminants Workgroup | Chesapeake Bay Program](#)

## Need for Enhanced Monitoring

The TCW identified four monitoring needs associated with the two outcomes:

- Changes in PCBs levels as total maximum daily loads (TMDLs) and associated management actions are implemented.
- Changes in mercury as TMDLs and associated management actions are implemented.
- Assessing contaminants of widespread concern (such as pesticides).
- Assessing contaminants of emerging concern (such as per and polyfluoroalkyl substances [PFAS] and microplastics).

The TCW decided the two highest monitoring priorities were (1) PCBs and (2) emerging contaminants (specifically, PFAS and microplastics), the lower priorities were (3) contaminants of widespread concern (pesticides), and (4) mercury.

## Monitoring Objectives

The TCW developed monitoring objectives for all four needs (as summarized in the discussion paper) but decided to focus efforts for the PSC request on PCBs since it was one of highest priorities. The other high priority need, emerging contaminants, is being addressed within the CBP Partnership by (1) a CBP plastic pollution action team (monitoring for microplastics), and (2) an upcoming PFAS STAC workshop with a focus on monitoring.

The PCB objective has a multi-pronged approach with several inter-related components (Figure 1): *“Enhance PCB monitoring to (1) assess current conditions and identify impairments, (2) better define sources to focus mitigation efforts, (3) characterize PCB response to mitigation actions and (4) evaluate fish conditions in relation to consumption thresholds.*

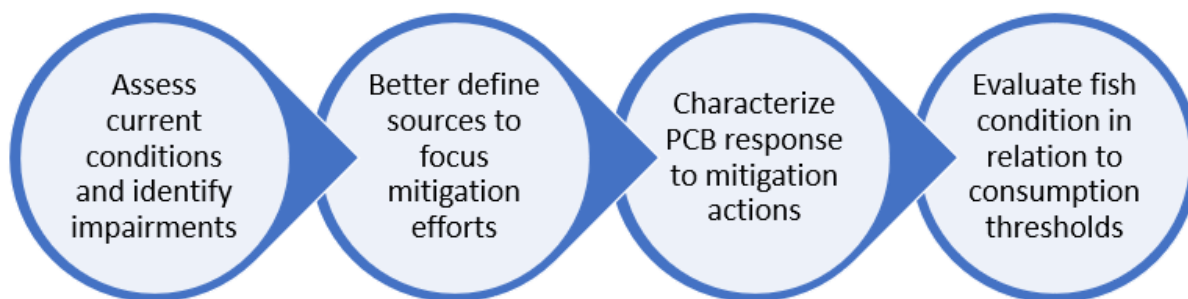


Figure 1: Components of the PCB monitoring objective.

## Existing Monitoring that Supports the PCB Objective

A data inventory for PCBs was conducted by USGS and additional information was requested from each jurisdiction and federal partner related to the components of the monitoring objective (Fig. 1). The inventory revealed adequate monitoring for the components shown in Figure 1 except for the third component: PCB response to mitigation actions.

## Monitoring Design Considerations and Recommendations

The TCW endorsed an overall approach for enhanced monitoring to help jurisdictions assess the PCB response to mitigation actions in selected geographic areas. The primary recommendations are based on the components in figure 2:

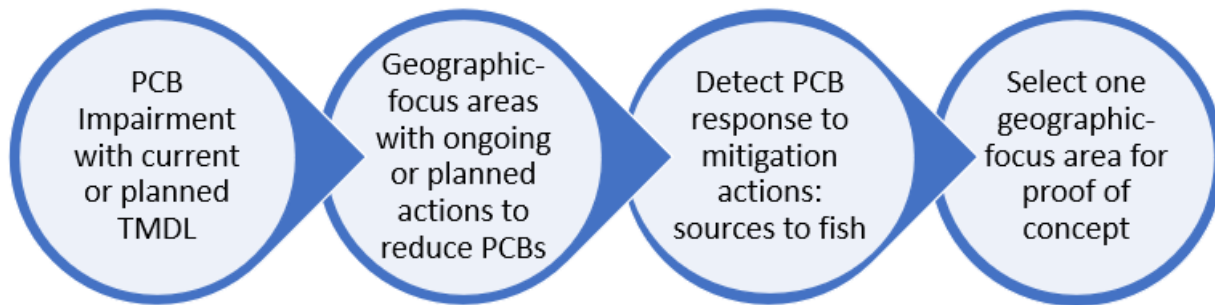


Figure 2. Selecting a geographic focus area and sampling approach

**Recommendation 1: Focus monitoring in geographic areas to help the jurisdictions assess PCB response where mitigation actions are being implemented or planned.** With enhanced monitoring, the jurisdictions working with the CBP, can tailor data collection in geographic focus-areas to help assess PCB response in places where mitigation actions are being implemented or planned for local TMDLs. Due to the variability in each area, jurisdictions suggested providing some flexibility to allow for the consideration of ongoing or historical monitoring and specific activities in their respective locations.

**Recommendation 2: Have a monitoring design so PCB reductions resulting from mitigation actions can be detected.** Within a geographic focus-area, there should be a design so the PCB response to management actions can be detected. The design would be “source to receptor” approach to detect if mitigation actions are reducing PCBs near the sources, along their transport pathways, and in fisheries (the primary receptors). The design could involve having several sample sites, with one site near the source-reduction activity, while the additional sites would be downstream but in close enough proximity to detect PCB changes. Either fish or surface water sampling would be conducted at the sites.

**Recommendation 3: Initiate monitoring in a single geographic-focus area.** The TCW proposes to start in one geographic-focus area as a proof-of-concept. The initial monitoring in one area will help better understand the amount of PCB reduction required to detect a response, timeframe to detect a response, proximity to collection actions to detect a response in surface water, fish, or other designated media. Lessons learned from this proof-of-concept could be translated to other geographic focus-areas. The initial areas to consider for a proof-of-concept include:

Jurisdiction	Geographic-focus Areas Suggested by the Jurisdictions
DC	Anacostia River
MD	Patapsco River, tributaries of Anacostia
VA	Potomac River tributaries (at head of tide)
DE	Nanticoke River

**Estimated Costs:** For one geographic-focus area (with a minimum of three new sites) the estimated annual cost (in 2021 dollars) would range from approximately \$66,000 for fish sampling to \$210,000 for surface-water sampling.