

**Chesapeake Bay Program  
Toxic Contaminants Workgroup**

**Meeting Minutes**

**Date:** Wednesday, April 10<sup>th</sup>, 2024

**Time:** 1:00 – 3:00 PM

**Location:** Conference Call (remote only)

**Calendar Page:** [April Meeting Materials](#)



**Chesapeake Bay Program**  
A Watershed Partnership

Agenda Item	Time	Background Docs, Notes, and Action Items
<p><b>1. Introductions and Announcements</b> – Emily Majcher, USGS</p> <ul style="list-style-type: none"> <li>PFAS Quarterly welcome, 2024 dates, June, September, December</li> <li>EPA Release of PFAS Drinking Water Standards</li> <li>Meeting Objectives and Recap of May 2023 quarterly meeting relevant information</li> </ul>	1:00	<ul style="list-style-type: none"> <li><a href="#">Per- and Polyfluoroalkyl Substances (PFAS)   US EPA</a></li> <li>May 2023 Quarterly resources <a href="#">Toxic Contaminants Workgroup Meeting, May 2023 (chesapeakebay.net)</a></li> <li>Intro <a href="#">Slides</a></li> <li>Emily presented intro slides that covered the objectives of quarterly PFAS meetings, science needs related to ecological effects of PFAS, and a recap of previous updates on PFAS and aquatic life.</li> </ul>
<p><b>2. Technical Presentations – Ecological Effects of PFAS Across Trophic Levels: Research Updates and Considerations for the Chesapeake Bay</b></p> <ul style="list-style-type: none"> <li>Dr. Chris Salice, Towson University, PFAS Associated with AFFF sites: What we have learned with respect to exposure, ecotoxicity, and bioaccumulation.</li> <li>Dr. Vicki Blazer, USGS EESC Leetown, Spatial Temporal Assessment and Tissue Distribution of PFAS in Smallmouth Bass in the mid-Atlantic</li> <li>Dr. Natalie Karouna, USGS EESC Patuxent, PFAS Accumulation and Association with Immune Parameters in Juvenile Osprey (<i>Pandion haliaetus</i>)</li> </ul>	1:15	<ul style="list-style-type: none"> <li>Dr. Chris Salice <a href="#">Slides</a>, Dr. Vicki Blazer <a href="#">Slides</a></li> <li>Dr. Chris Salice presented on his work regarding a study on PFAS at AFFF (Aqueous Film Forming Foam – firefighting foam) sites. His research findings included that PFAS effects are complicated and vary across spatial and temporal scales, that environment and physiology can be important contributors to bioaccumulation, that existing bioaccumulation models work well although research is warranted on MD specific models/patterns. The presentation was followed by discussion covering topics including whether the timing of agricultural applications affected PFAS levels in fish, the species and ages of fish sampled.</li> <li>Dr. Vicki Blazer presented on her work on Smallmouth Bass tissue and plasma samples across the Chesapeake Bay Watershed. The conclusions of Dr. Blazer’s study included that all samples had four of the 13 types of PFAS analyzed, and that PFOS had the highest concentrations, that there was significant spatial variation tied to developed and agricultural land cover, and the three sites with the highest concentrations were near military installations and/or airports, that the temporal variation present was not significant, and that tissue detection patterns were varied which may indicate differences in exposure routes, habitat, etc across sites. The presentation was followed by discussion and questions. Questions included those on the sampling protocol and the reasons for certain sites having such high concentrations, which might be because of the proximity of airports or development, whether there were observed molecular/cellular response or biomarkers to PFAS, which there were not, although they have seen some genes that are up/down regulated, and whether there was an observed correlation between PFAS and pesticide applications, which Dr. Blazer was unsure about due to lack of pesticide data.</li> <li>Dr. Natalie Karouna presented on her work studying the accumulation of PFAS in juvenile osprey via plasma samples. In addition to PFAS levels, immune function and thyroid indicators were analyzed. Dr.</li> </ul>

		<p>Karouna’s preliminary conclusions included that there was spatial variation in PFAS concentrations driven by proximity to development and industry, that there were weak links between PFAS concentrations and immune function and thyroid indicators (plasma biochemistry), and that there will be future work analyzing those biomarkers and synergistic effects with other contaminants. Dr. Karouna mentioned that there will be forthcoming studies on other bird species like Pelicans and Bald Eagles and Terrapins. The post presentation discussion and questions included those on whether the specific composition of osprey diet had links to exposure variability.</p>
<p><b>3. Work Session – Understanding the ecological effects of PFAS in the Chesapeake Bay</b></p> <ul style="list-style-type: none"> <li>• EPA Updates: Aquatic Life Criteria for PFOS and PFOA, Method Updates: 1633 and others</li> <li>• Does what we are learning about occurrence and ecotoxicity influence strategic priorities such as the design of monitoring and assessment, source identification, and/or management actions? <ul style="list-style-type: none"> <li>- What do these studies suggest about the need for co-located sampling of different media? Can we leverage ongoing efforts to fill gaps?</li> </ul> </li> </ul>	2:30	<ul style="list-style-type: none"> <li>• The slides used were the same set as the <a href="#">introduction</a>.</li> <li>• <a href="#">Aquatic Life Criteria - Perfluorooctane Sulfonate (PFOS)   US EPA</a>, <a href="#">Aquatic Life Criteria - Perfluorooctanoic Acid (PFOA)   US EPA</a></li> <li>• <a href="#">Method 1633 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS (epa.gov)</a></li> <li>• Emily covered updates on EPA regulations including the finalization of EPA Method 1633 and a summary of extant EPA methods (i.e. 537.1, 533, 8327). She then presented discussion questions to the group regarding ecotoxicity/effects, which were followed by discussion among members.</li> </ul>
<b>Wrap Up and Adjourn</b>	3:00	<b>Next meeting: Wednesday, May 8<sup>th</sup>, 2024</b>