



Microplastics in the Chesapeake Bay and its Watershed

A Scientific and Technical Advisory Committee (STAC) Workshop



Dates: [April 24-25, 2019](#)

Location: [Potomac Science Center, George Mason University](#)

650 Mason Ferry Avenue, Woodbridge, VA 22191

[Workshop Webpage](#)

The Chesapeake Bay Program's Scientific and Technical Advisory Committee (STAC) is sponsoring this two-day workshop to determine the state of the research, data needs, field and laboratory research methodologies, and associated policy and management needs in regard to microplastics. The prevalence of microplastics in the Chesapeake Bay, its watershed, and their potential effects on the entire ecosystem make this a highly urgent issue. While the extent of plastic pollution and its ecological consequences have not been comprehensively assessed by the Bay Program Partnership, research to date suggests microplastics pose an acute ecological risk. This workshop will provide a forum to discuss ongoing research and pose new questions to foster collaboration and advance understanding of this issue.

The goals of this workshop are to:

- Assess the state of the knowledge on microplastic pollution in the Chesapeake Bay and its tributaries
- Assess possible effects of microplastics on various habitats and associated living resources
- Identify existing policy and management tools being used to address plastic pollution in the watershed and beyond, and their effectiveness
- Identify research gaps moving forward, and develop recommendations for further studies or new tools

To accomplish these goals, the workshop will seek to answer the following key questions:

1. What are the sources of microplastics to the bay and its tributaries?
2. How common are microplastics in the Chesapeake Bay and its tributaries?
3. What additional information do we need to gauge the ubiquity of microplastics in the bay and its tributaries?
4. What are the possible effects of microplastics on the habitats in the bay and watershed (e.g., SAV beds, wetlands) and living resources (e.g., oysters, fish)? Are there any studies specific to the Chesapeake to confirm that microplastics are impacting these resources? What are the data gaps?
5. Are there any policy and management tools being used to address plastic pollution in the bay (e.g., Anacostia River Trash TMDL)? How effective have they been? Could these tools be emulated elsewhere? Are there additional tools we can recommend?
6. Can we recommend pursuing further studies or new management and policy tools at this time? Can we recommend that funding be made more available for this research?

Wednesday, April 24

- 9:30 am** **Check-In, Coffee and Continental Breakfast (provided)**
- 10:00 am** **Welcome and Introductions – Bob Murphy, Tetra Tech, and Chris Jones, George Mason University**
Workshop Co-Chair Bob Murphy will provide background on the workshop and outline goals of the next two days.

Morning Introductory Talks

Moderator: Bob Murphy, Tetra Tech

- 10:15 am** **Introduction on Ecological Risk Frameworks – Jerry Diamond, Tetra Tech**
- 10:35 am** **Summary of the 2016 STAC Review on Microplastics in the Chesapeake Bay – Denice Wardrop, Penn State**
- 10:55 am** **An Introduction to Microplastics, an Emerging Global Issue – Fred Dobbs, Old Dominion University**
- Q&A (10 mins)**
- 11:25 am** **Break (15 min)**

Session I

Key Questions:

1. What are the sources of microplastics to the bay and its tributaries?

- 11:40 am** **Sources of Microplastics to the Chesapeake Bay and Watershed**
Moderator: Matt Robinson, DC Department of Energy & Environment (DOEE)
- Chris Burbage, Hampton Roads Sanitation District - Microplastics and Wastewater Treatment
 - Phong Trieu, Metropolitan Washington Council of Governments - Litter surveys in the Anacostia and Potomac River watersheds
- Q&A (10-15 min)
- 12:35 pm** **Working Lunch (Provided)**
Facilitated Discussion on Session I – Brooke Landry (MD Department of Natural Resources)

Session II

Key Questions:

2. How common are microplastics in the Chesapeake Bay and the watershed (including habitat)?
3. What additional information do we need to gauge the ubiquity of microplastics in the bay and tributaries?

2:15 pm Presence of Microplastics in Chesapeake Bay and the Watershed

Moderator: Matt Robinson, DOEE

- Lance Yonkos, University of Maryland - Survey of Microplastics in Chesapeake Bay Tidal Tributaries
- Shawn Fisher, USGS – Microplastics in Freshwater Systems

Q&A (10 min)

3:05 pm Break (25 mins)

3:30 pm Facilitated Discussion on Session II – Kelly Somers (EPA) & Matt Robinson (DOEE)

5:00 pm Adjourn Day 1

Thursday, April 25

8:30 am Coffee and Continental Breakfast (provided)

9:00 am Introduce Day 2; Reflections from Day 1 – Matt Robinson, DOEE and Bob Murphy, Tetra Tech

Session III

Key Questions:

4. What are the possible effects of microplastics on living resources in the bay and watershed (e.g., oysters, fish, freshwater mussels)? Are there any studies specific to the Chesapeake to confirm that microplastics are impacting these resources? What are the data gaps?

9:30 am Effects of microplastics on living resources in the Bay and its watershed

Moderator: Bob Murphy, Tetra Tech

- Susanne Brander – Oregon State University (Remote) – Consumption of microplastics in black sea bass *Centropristis striata*
- Christine Knauss, University of Maryland – Effects of microplastics on oysters

Q&A (10 -15 min)

10:20 am Break (15 mins)

10:35 am Facilitated Discussion on Session III – Jason Rolfe, NOAA Marine Debris Program

- 11:30 pm** **Lunchtime presentations on policy and management tools (Lunch provided. Participants will have 30 min to get food)**
Moderator: Matt Robinson, DOEE
- Katie Register, Clean Virginia Waterways - Virginia Marine Debris Plan
 - Matt Robinson, DC Department of Energy & Environment - Anacostia River Trash Total Maximum Daily Load

Session IV

Key Questions:

5. What are the major data gaps?
6. Can we recommend pursuing further studies or new management and policy tools at this time?
Can we recommend that funding be made more available for this research?

1:00 pm **Facilitated Discussion on Session IV – Denice Wardrop (PSU/STAC)**

2:00 pm **Final discussion on recommendations concerning management, policy tools, and recommendations for funding – Bob Murphy, Tetra Tech**

2:30 pm **Adjourn**