Chesapeake Bay Program's (CBP)
Scientific and Technical Advisory Committee (STAC)

Day 2: Rising Watershed and Bay Water Temperatures: Ecological Implications and Management Responses

March 15, 2022

Zoom Main Room/Watershed subgroup:
Zoom Tidal subgroup:

Day 2 Objectives

1. Verify what we understand: major findings on the drivers and ecological impacts of rising water temperatures from the Day 1 workshop.
2. Identify what we can do about it: develop recommendations on how to mitigate the impacts or increase resilience for habitats and fishery resources under changing conditions.
3. Identify our uncertainties: Where are we less certain and what additional information do we need to build the certainty that is needed for future actions.

Questions

1. How could current management or policy actions be adapted to address rising water temperatures? Are there entirely new management options that should be considered?
2. What additional science and/or information would you need to allow for the refinement or implementation of these adapted or new management or policy actions?

8:30 am **Welcome and Opening Remarks—***Bill Dennison (UMCES), Sherry Witt (Facilitator)*
Introduction of Day 2 objectives and the role of participants in today's workshop

8:45 am **Day 1 Findings and Day 2 Focus** — *Julie Reichert-Nguyen (NOAA), Katie Brownson (USFS)*
Review of major takeaways from Workshop Day 1 and preview of today's discussion subjects

9:15 am **Moving from Findings to Future Actions**
Break into Discussion Subgroups: Watershed or Tidal
- Watershed Subgroup (Remain in main meeting zoom)
- Tidal Subgroup (Exit main meeting zoom, connect to tidal zoom)
- Discussion subjects in the Tidal and Watershed Briefing Reports

Breaks and lunch will be reflected in subgroup agendas

2:40 pm **All return to main meeting zoom: Subgroup Report-outs**
The tidal and watershed subgroups will each have 15 minutes to report major conclusions from their breakout discussions, focusing on Day 2 objectives and questions.

3:30 pm **Policy and Management Perspectives on Integrating Rising Water Temperatures into Bay and Watershed Restoration Policies and Programs**
A panel of policy, management, and science practitioners will share their perspectives on how to best integrate consideration of rising water temperatures into state and federal policy, state agency programs and regulations, state and regional fisheries management, the Chesapeake Bay Program partnership's shared decision making, and priority research and assessment needs being addressed by the scientific and technical communities.

Facilitators: Sherry Witt and Kristin Saunders

Panel Members:
Ann Swanson, Chesapeake Bay Commission
Ed Dunne, District of Columbia Department of Energy and Environment
Lynn Fegley, MD Department of Natural Resources
Carin Bisland, EPA Chesapeake Bay Program Office
Bill Dennison, UMCES

4:15 pm **Next-steps and Thank you!** —*Rebecca Hanmer*

4:30 pm **Workshop Anthem and Adjournment**

Attachments:

1. **Watershed Subgroup Briefing Paper**
2. **Tidal Subgroup Briefing Paper**

Resources:

1. **Workshop webpage:** Includes materials from Day 1 Workshop and Synthesis Papers

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Day 2: Tidal Agenda

March 15, 2022

Zoom Main Room/Watershed subgroup: https://umces-edu.zoom.us/j/93307649581 (Call-in: +1 301 715 8592; ID: 933 0764 9581)
Zoom Tidal subgroup: https://us02web.zoom.us/j/81162423599 (Call-in: +1 301 715 8592; ID: 811 6242 3599)

Breakout Room Discussion Goals

- Identify management/policy recommendations
- Identify research, monitoring, or analyses needed to support management

Questions for Breakout Rooms to Help Achieve Goals

1. How could current management or policy actions be adapted to address rising water temperatures? Are there entirely new management options that should be considered?
2. What additional science and/or information would you need to implement the management recommendations?

Tidal Breakout Room Subjects

- Ecosystem-Based Management
- Nearshore Habitats
- Multiple Stressors
- New Temperature Regime

Identified management implications from the participants of the January workshop for submerged aquatic vegetation (SAV), oysters, blue crabs, forage, and striped bass can be found in the tidal briefing paper in addition to suggested research, monitoring, and analyses. It is recommended to read at least pages 2 and 3 of the tidal briefing paper before the workshop. The suggested science needs can be found in the species-specific sections of the paper.

9:15 am **Developing Management Recommendations and Identifying Science Needs**
Go over breakout room instructions

9:25 am **Session 1: Breakout Room Discussions for Ecosystem-Based Management**
Considerations related to seasonal shifts, prey availability, & habitat change and suitability.

10:15 am **BREAK**

10:25 am **Session 2: Breakout Room Discussions for Nearshore Habitats**
Considerations related to strategically co-locating certain restoration efforts or watershed best management practices (BMPs) to maximize resilience of nearshore habitats.

11:15 am **Session 3: Breakout Room Discussions for Multiple Stressors**
Considerations related to co-occurring stressors (high temperatures, low dissolved oxygen, salinity fluctuations, increased disease etc.) and extreme events (e.g., marine heat waves, increased precipitation).

12:05 pm **LUNCH**

12:50 pm **Session 4: Breakout Room Discussions for new Temperature Regime**
Considerations of the pros and cons of an ecosystem shift to a new temperature regime in Chesapeake Bay (e.g., changes in species distributions; new species moving in; new pathogens; BMP effectiveness).

1:40 pm **Report-out, Discussion, Rank Recommendations**
Share and discuss identified management/policy recommendations and associated science needs. Virtual 'dot' exercise to rank recommendations based on critical need to address sooner than later.

2:30 pm **BREAK**

2:40 pm **All return to main meeting zoom: Subgroup Report-outs**
Share high ranking tidal management/policy recommendations and science needs with watershed workshop participants to identify connections with watershed recommendations.

4:30 pm **Workshop Anthem and Adjournment**

Attachments:

1. **Watershed Subgroup Briefing Paper**
2. **Tidal Subgroup Briefing Paper**

Resources:

1. **Workshop webpage:** Includes materials from Day 1 Workshop and Synthesis Papers

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Day 2: Watershed Agenda

March 15, 2022

Zoom Main Room/Watershed subgroup: https://umces-edu.zoom.us/j/93307649581 (Call-in: +1 301 715 8592; ID: 933 0764 9581)

Breakout Room Discussion Goals

- Develop and refine recommendations on how to mitigate the impacts or increase resilience for habitats and fishery resources under changing conditions.
- Identify our uncertainties and science needs: Where are we less certain and what additional information is needed to improve understanding of rising temperatures, ecological implications, and management options.

Questions for Breakout Rooms to Help Achieve Goals

1. Do the proposed management actions need to be modified or adapted to address rising water temperatures? Are there entirely new options that should be considered?
2. How do we best implement these management actions? Could current management or policy be adapted to address rising water temperatures, or do we need an entirely new approach?
3. What additional science and/or information would you need to better understand the effects of rising stream temperatures and to consider new management or policy actions?

Watershed Breakout Room Subjects

- Coldwater Fisheries and Habitats
- Rural Waters and Habitats
- Urban Waters and Habitats
- State Temperature Water Quality Standards
- Monitoring and Modeling

Draft recommendations for potential management actions and science needs developed by the workshop project team and steering committee based on the Day 1 Workshop can be found in the Watershed Briefing Paper. Please review the briefing paper prior to the Day 2 Workshop.

9:15 am **Session 1: Coldwater Fisheries and Habitats –** *Lead: Frank Borsuk (EPA), Dan Goetz (MD DNR)*
Borsuk will begin with a 5-minute overview of logistics and housekeeping and then will provide the group with a session introduction. Goetz will highlight a case citing showcasing Maryland's efforts to integrate rising water temperatures into brook trout conservation and restoration, followed by 30-minute breakouts. Groups will report-out on priority recommendations for management/policy and science.

10:20 am **BREAK**

10:30 am **Session 2: Rural Waters and Habitats –** *Lead: Matt Ehrhart (Stroud)*
Ehrhart will lead the group with a session introduction, followed by 30-minute breakouts. Groups will report-out on priority recommendations for management/policy and science.

11:30 am **Session 3: Urban Waters and Habitats –** *Lead: Jeremy Hanson (CRC)*
Hanson will lead the group with a session introduction, followed by 30-minute breakouts. Groups will report-out on priority recommendations for management/policy and science.

12:30 pm **LUNCH**

1:15 pm **Session 4: Cross-watershed Topics –** *Rebecca Hanmer (Retired-EPA), Scott Phillips (USGS), Gary Shenk (USGS)*
For the first 30-minutes, Hanmer will present on State Temperature Water Quality Standards, Monitoring and Implementation. Phillips and Shenk will then speak on Monitoring and Modeling for the remainder of the session.

2:15 pm **Report-out, Discussion, Rank Recommendations**
Share and discuss identified management/policy recommendations and associated science needs. Virtual 'dot' exercise to rank recommendations based on critical need to address sooner than later.

2:30 pm **BREAK**

2:40 pm **All return to main meeting zoom: Subgroup Report-outs**
Share high ranking watershed management/policy recommendations and science needs with wtidal workshop participants to identify connections with tidal recommendations.

4:30 pm **Workshop Anthem and Adjournment**

Attachments:

1. **Watershed Subgroup Briefing Paper**
2. **Tidal Subgroup Briefing Paper**

Resources:

1. **Workshop webpage:** Includes materials from Day 1 Workshop and Synthesis Papers