

Mussels as Natural Filters Committee
February 28, 2023

A recording of the meeting can be found at:

<https://nfwf.sharefile.com/d-sae982f46dbee40f280883e6fb97c45be>

Introduction and background:

- In April of 2022, the National Fish and Wildlife Foundation and the state of Maryland hosted a regional workshop to connect entities that are working with freshwater mussels within the Chesapeake Bay Watershed.
 - Two primary goals for mussel restoration were identified: biodiversity conservation and water quality improvement. Although there are many commonalities among these two paths, the issues, strategies, and partners are decidedly unique. This understanding has led to the development of two parallel committees: Mussel Biodiversity Conservation and Mussels as Natural Filters.
 - It is envisioned that this group will be an evolution of the Chesapeake Mussel Group.

Structure, function, and capacity of committee:

- Mission
 - Discussed where the group currently is on the collaboration spectrum and what the appropriate level is moving forward.
 - The Delmarva Wetlands group could be used as a model for how to operate within the Collaborate/Integrate end of the spectrum.

Compete	Co-Exist	Communicate	Cooperate	Coordinate	Collaborate	Integrate
Competition for clients, resources, partners, public attention.	No systematic connection between agencies.	Inter-agency information sharing (e.g. networking).	As needed, often informal, interaction, on discrete activities or projects.	Organizations systematically adjust and align work with each other for greater outcomes.	Longer term interaction based on shared mission, goals; shared decision-makers and resources.	Fully integrated programs, planning, funding.

Source: Tamarack Institute - July 2017

- Goals
 - Identify science gaps related to the amount of pollutants (nitrogen, phosphorus, and sediment) removed/transformed by mussels.
 - Establish framework for the recognition of mussels as a water quality BMP.
 - Connect subject experts and practitioners.
 - Increase public awareness of water quality benefits of freshwater mussels.
- Leadership
 - Jamie Shallenberger and colleagues at the Susquehanna River Basin Commission have volunteered to help lead both committees.

- Time commitment of participants
 - A survey will be conducted to gauge the preference and availability of members for future meetings.
- Reporting and updates
 - There has been expressed interest in returning to an annual or biennial symposium to share information with the larger Chesapeake Bay freshwater mussel community.
 - There needs to be a mechanism for coordination with the Mussel Biodiversity Committee.

Committee priorities:

- Closing Science Gaps
 - Quantify ecosystem services
 - Current survey data is needed to establish a baseline for the ecosystem services (nutrient reduction) provided by existing mussel populations.
 - Identify benefits and concerns of stocking mussels in non-traditional/engineered habitats (e.g., stormwater ponds)
 - There are different paradigms for mussel restoration and it is important to understand that different approaches will work for different situations.
 - It is crucial to address biosecurity concerns and adhere to policies for moving animals even when working in engineered habitats.
 - Identify the water quality parameters and sampling protocols needed for standard reporting of mussel-derived ecosystem services
 - Mussel tissue and shell nutrient content
 - Denitrification and removal of other pollutants (e.g., sediment and bacteria)
- Identify watersheds for protection or restoration
 - Develop best management practices for conservation (e.g., buffer planting, barrier removal, land conservation) to benefit mussels
 - Identify site selection metrics for mussel augmentation or reintroduction
- Promote the protection and mitigation of mussel populations and their habitat with existing regulatory mechanisms.
 - Mussels can be used to bring awareness to water quality concerns within our watershed
 - Lower ends of large rivers are often not surveyed for mussels. These habitats may contain large populations; closing this science gap could promote the benefits that mussels are already providing.
 - We should be mindful of undisturbed communities and prioritize their protection.

Funding:

- National Fish and Wildlife Foundation - [Chesapeake Bay Stewardship Fund](#); request for proposals is open through April 20th
 - Small Watershed Grants (SWG) Program
 - Chesapeake Watershed Investments for Landscape Defense Grants (WILD) Program
- Chesapeake Bay Trust - [Pooled Monitoring Initiative's Restoration Research Award Program](#)

Takeaways and next steps:

- Follow-up with a survey to better define the structure, function, and capacity of the committee.
- Share committee member directory to foster communication and cooperation.
- Develop a conceptual framework for mussel work that outlines various approaches to mussel stocking or restoration. This framework could include: guidance and decision-making processing on how and where to do the work (needs and opportunities); anticipated challenges, risks, and concerns; current knowledge; and how to optimize goals.