

Fish Forage Outcome: An introduction on testing methods to support work that will help fill data gaps

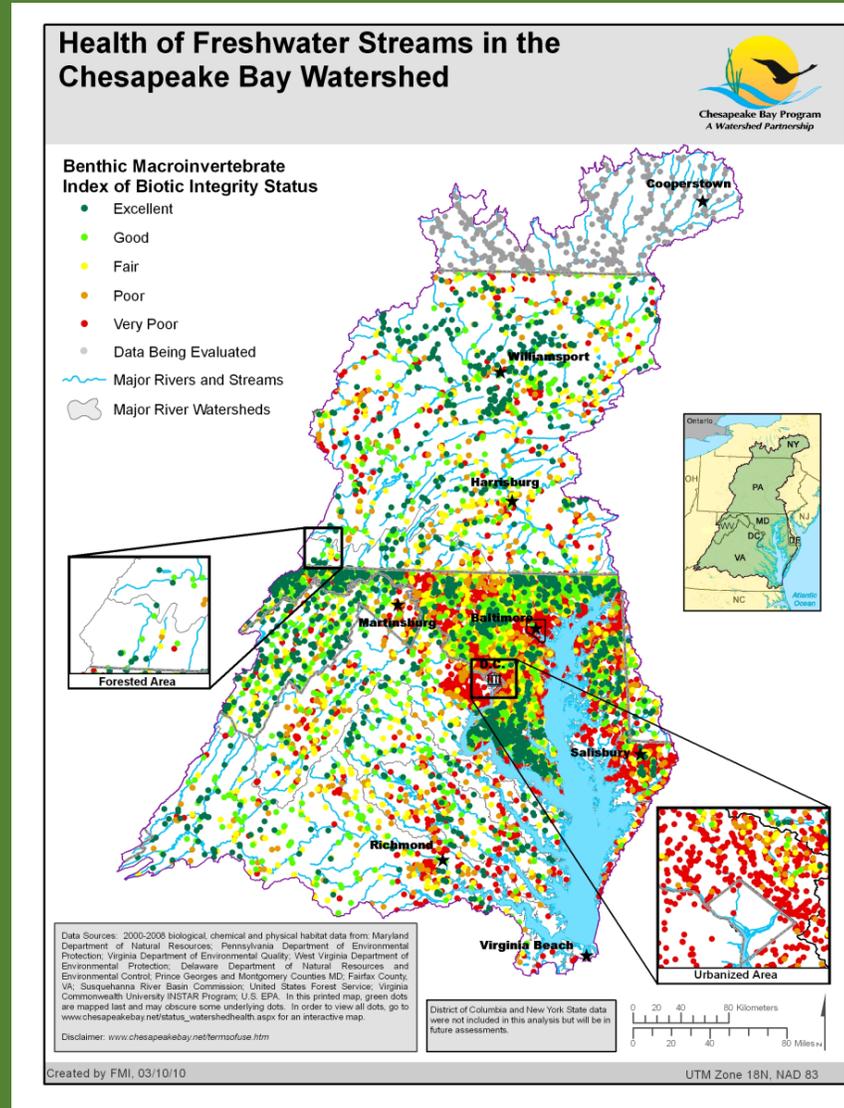
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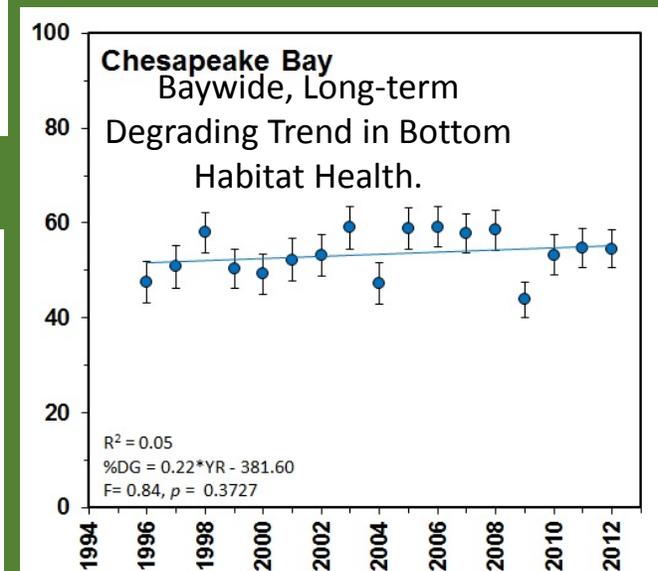
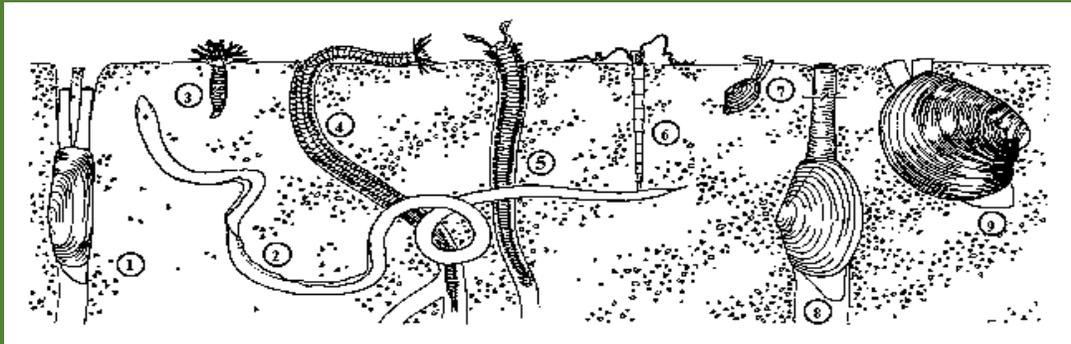
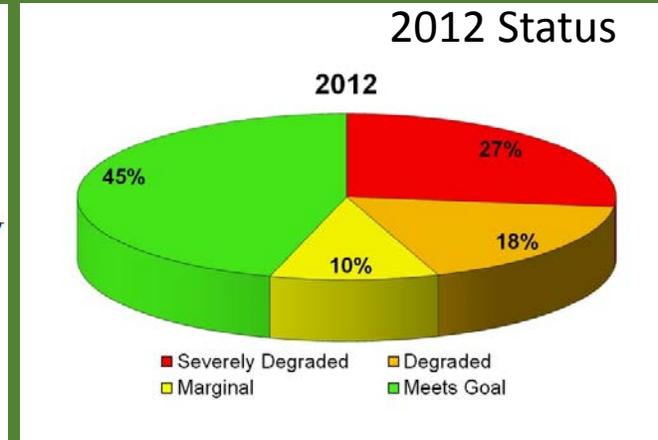
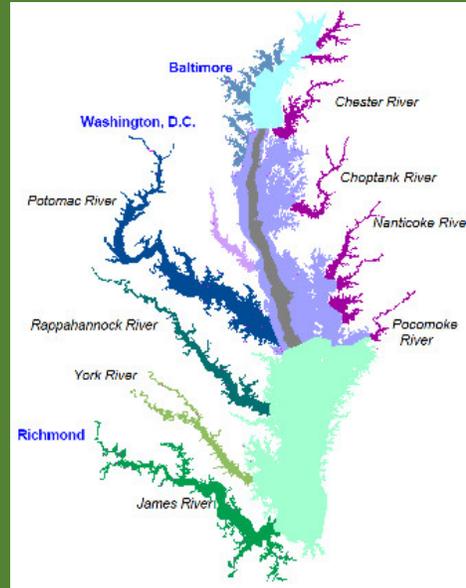
May 17, 2017

Benthic macroinvertebrate data: Over 25,000 data points in the watershed including work from Citizen Scientists



Tidal Bay Benthic Assessment- Assessing the Aquatic Life Designated Uses

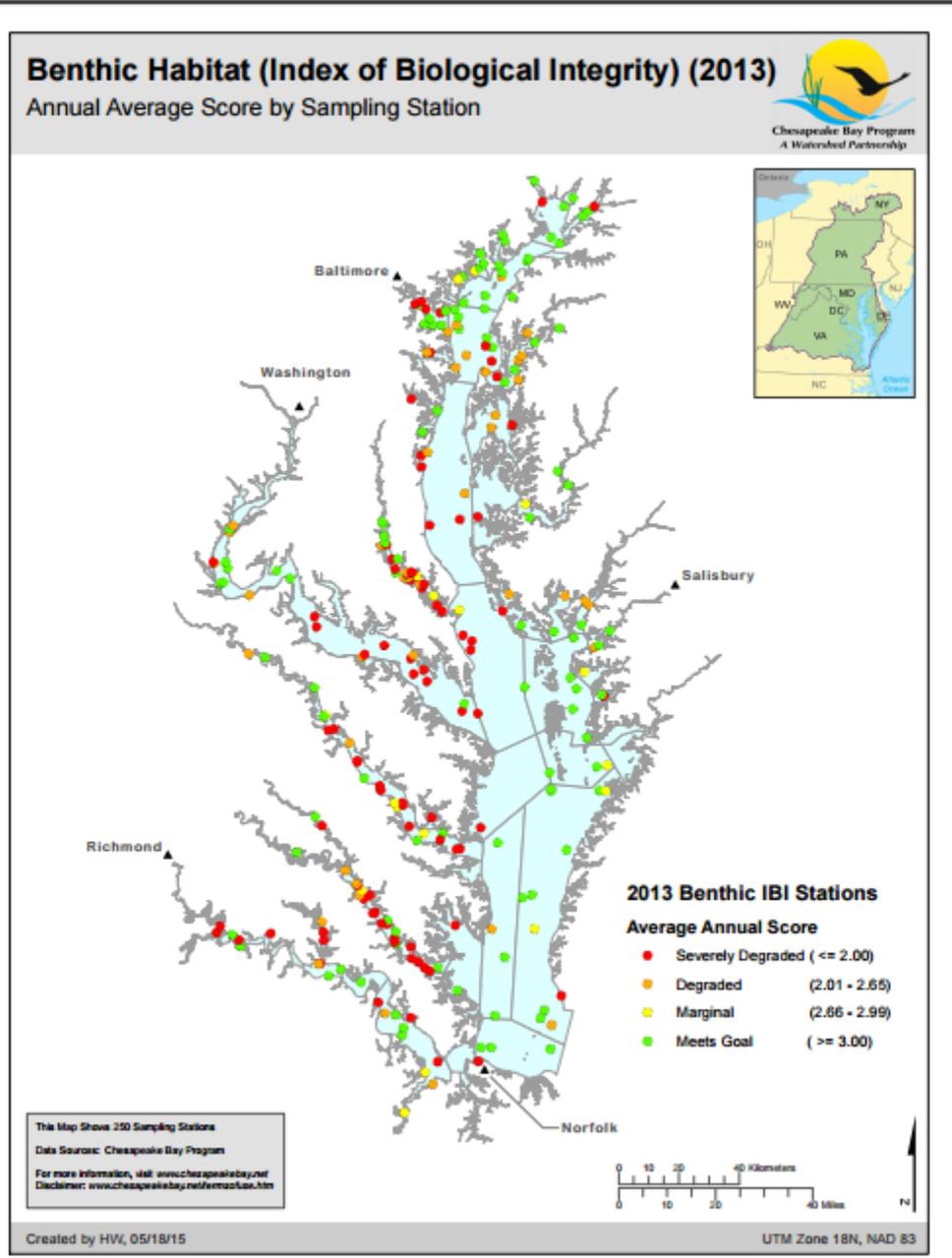
- Baywide Assessment
- Multimetric Index of Biotic Integrity (IBI) informing status and trends in Bay Health.
- Fixed and random-stratified networks.



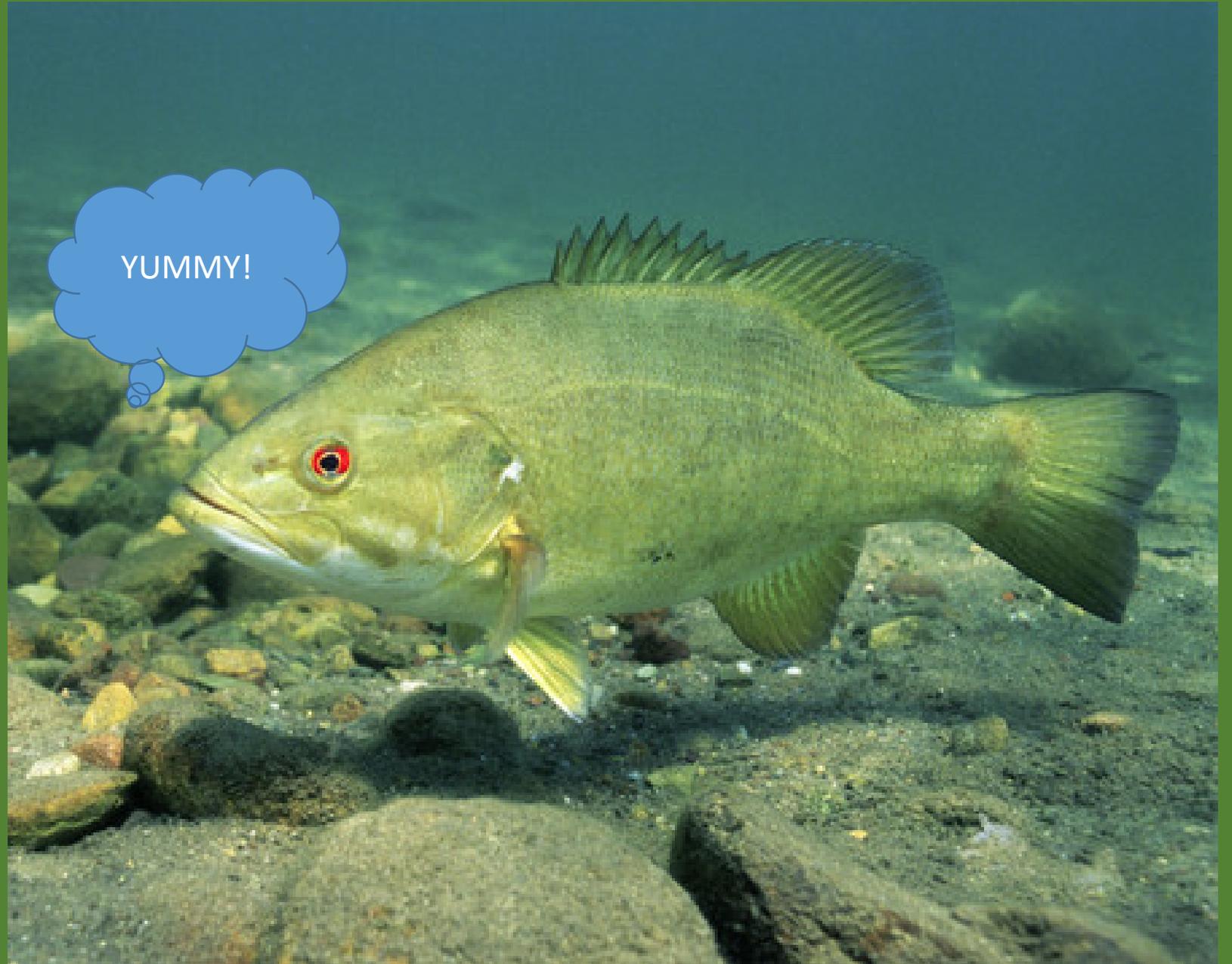
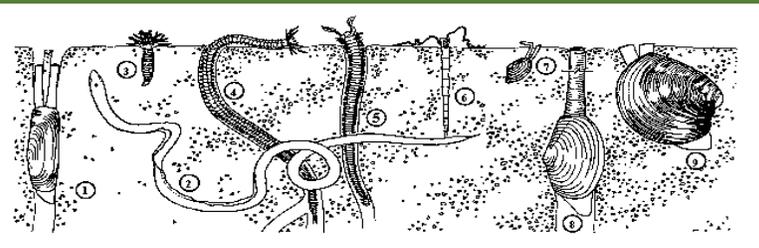
2013 Example of tidal benthic monitoring results.

Samples are collected primarily offshore.

There is a long history of benthic macroinvertebrate monitoring in the Bay, but very little information links to the nearshore zone and it's varied habitats.



There is an interest and need for better information on fish forage in the shallow waters of Chesapeake Bay.



2014 Bay Agreement Fish Forage Outcome

- Continually improve the Partnership's capacity to understand the role of **forage fish** populations in the **Chesapeake Bay**. By 2016, develop a strategy for assessing the **forage fish** base available as food for predatory species in the **Chesapeake Bay**.

2014 Bay Agreement: Forage Fish Outcome

- STAC Workshop Report 2014: Assessing the Chesapeake Bay Forage Base: Existing Data and Research Priorities
 - “Forage species play an integral role in the Chesapeake Bay food web by supporting higher-trophic level production. *“Forage” was interpreted broadly for this workshop and included invertebrate groups as well as vertebrates, in recognition of the importance of benthic invertebrates and plankton as forage in the Chesapeake ecosystem, and in response to needs outlined by the Sustainable Fisheries Goal Implementation Team (SFGIT) Executive Committee.*”
 - High priority research needs included 1) a coordinated analysis of currently available data to develop forage metrics; 2) the development of a suite of indicators useful for decision-making; and 3) *increased shallow water monitoring of forage and habitats to complement current surveys.*

Enter Jeremy Carton, St. Mary's College of Maryland. Senior Project was a pilot study of tidal shallow water benthic monitoring methods.

- Kara Skipper – CRC Staffer – In 2016, Kara coordinated a partnership with the CBP Fish Forage research needs and Dr. Robert Paul and Jeremy at St. Mary's College. Tom Ihde and Peter Tango joined the mentoring team.
 - Testing a method of shallow water macroinvertebrate sampling.
 - Assess method suitability for use by Citizen volunteers.
 - Compare results with results of traditional sampling gear.
 - Opportunity to move citizen science bug monitoring into a new frontier of tidal water macroinvertebrate sampling.



Photo by J. Carton

Take it away Jeremy!