Discussion on CAP WG Homework #1: Tidal benthic monitoring program questions. Spring assessment? Sustaining summer assessment status?

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Tidal Benthic Monitoring Program

- The Long-Term Benthic Monitoring and Assessment Program contributes information to the Chesapeake Bay Health and Restoration Reports, and
- to the water quality characterization and list of impaired waters under the Clean Water Act. (i.e., evaluation of the Aquatic Life Designated Use)

Most Recent Results – 1995-2019 Summer IBI (July 15-Sept 15)

- The tidal area with degraded benthos in Chesapeake Bay increased from 42% in 2018 to 59% in 2019, the largest percent area degraded estimate since benthic monitoring began (1995-present).

- A statistically significant decreasing (i.e., improving) trend in percent area degraded over the 1995-2019 time series disappeared with the addition of the 2019 data.

Local area patterns – examples

- The Patuxent and Potomac rivers were in poorest condition, with over 80% of their tidal areas failing the restoration goals.

- The Upper Bay Mainstem was in best condition

History – Dan Dauer wisdom on spring benthic assessment

- In both the Maryland and Virginia program we used the spring data benthic data to assess
  - (1) levels of benthic recruitment and
  - (2) effects of summer hypoxia/anoxia.

- Levels of spring benthic recruitment integrate eutrophication effects not affected by low dissolved oxygen (hypertrophic effects).
- Differences in benthic community metrics, particularly density, biomass and secondary productivity are effective tools to assess summer hypoxic/anoxic effects.

Question 1 – Historically, there was a spring assessment. Is there a need to return to a spring benthic assessment?

- Do we need a recommendation to the PSC for restoring a Spring season tidal macrobenthic invertebrate assessment?
  - E.g. Black duck outcome interests focus on winter season. They are not using spring food resources in their work at this time.
  - Fish forage outcome interests have been reviewing the summer IBI results.
  - USGS Story boarding connections from the watershed to the bay are working to integrate summer BIBI results from the Versar long-term monitoring program reporting product.

Question 2 – Generally speaking at this point – how are we doing with the 5-year outlook for sustaining summer IBI programming?

- Is there a definitive, discrete resource need for sustaining the program in the 5 year planning horizon?

- Exploring SAV satellite-based assessment – recent workshop findings to consider in the future of bay assessments. What considerations are needed for updating the protocol for using SAV cover in an assessment of our water quality standards if a method change occurred in the future?
- o Sampling design to support DO criteria assessment – sampling design considerations to support the 4-D water quality estimator. Open discussion after a short presentation from Peter Tango
- o Tentative Tidal Monitoring Gaps – Breck Sullivan will provide a short overview of monitoring gaps captured in the CBP Science Needs Database to help address question #4 of the 8 questions in the PSC review.