I. Short duration Dissolved Oxygen Criteria Attainment Assessments

II. Interim BIBI Rules

III. Monitoring Budget

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Presentation Outline

- Present an overview of the WQ Criteria Technical Addendum Chapter 1 draft on Short duration DO criteria assessment.
  - Review Recommendations on filling short duration assessment gaps
  - ACTION 1. Request time for exploration of what more can be done on the Deep Water Designated use to complete Chapter 1.
- Present recommendations for interim BIBI calculation rules.
  - Action II. Request July review and August 2013 approval interim BIBI rules application.
- Review Monitoring Budget issues of funding shortfall and the path of meetings and decision points ahead.
  - Action IIIa. Request August 2013 presentation and approval of near-term recommendations for working with the 2013 funding shortfalls.
  - Action IIIb. Request your support going forward with STAC coordination toward a long-term funding plan for sustaining the water quality monitoring networks.

I. Chapter 1: Short Duration Dissolved Oxygen Criteria Assessment

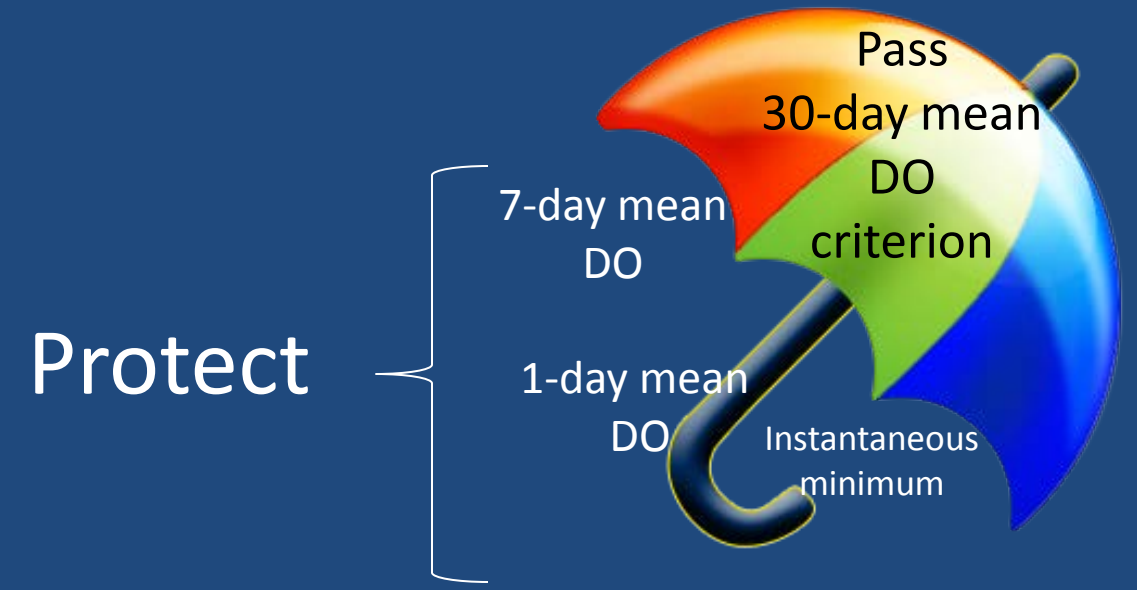
- Background: Criteria Assessment History, Gaps, prior recommendations, Umbrella Criteria Assessment.

- Methods: Approaches explored to support short duration assessment gaps
  - See Appendices for details

Umbrella Criteria Concept

- Measure one criterion.
- By protecting one criterion, other criteria are also protected.

Umbrella Criteria Concept



- Conceptual application for Bay criteria assessment.

  In principle we want to:
  - Measure the 30-day mean for dissolved oxygen.
  - If the 30-day mean DO level passes the 30-day criterion then shorter duration criteria are also in compliance.

RESULTS 1.

- An Umbrella Protection Effect exists for protecting multiple criteria using a single scale of measurement.

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  1. The size of the Umbrella Effect varies depend on the density of measurements used to assess the criterion.
  2. Levels of protection are different depending on what criteria you choose to protect.

1. The Umbrella Effect depends on the density of measurements for assessing the criterion.

Monthly Mean DO	Risk of Nonattainment in Protecting the 7-day mean	
	Realtime data 30-day mean	2 samples per month 30-day mean
5.0	16%	27-30%
5.3	10%	21-25%
5.6	6%	16-20%
5.9	3%	12-16%
6.2	1%	9-13%
6.5	<1%	6-10%

2. Levels of protection are different depending on the criteria you choose to protect.

Monthly Mean DO (using realtime data)	Risk of Nonattainment	
	7-day mean DO criterion	Instantaneous minimum >10%
5.0	18%	45%
5.7	6%	34 %
6.3	2%	25 %
7.0	2%	17%

Risk of Nonattainment was rounded to the nearest whole %

To implement the Umbrella Criteria Approach for assessing short-duration criteria, an acceptable risk of nonattainment for the unmeasured criteria needs to be defined.

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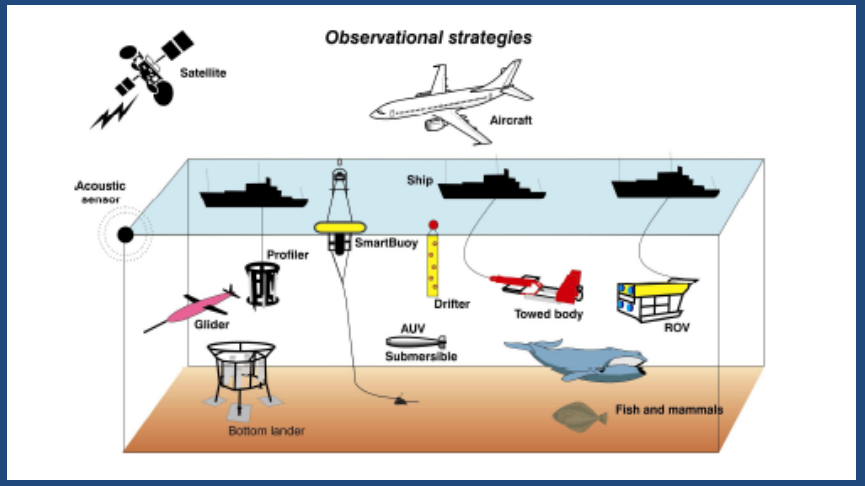
RESULTS 2.

- Statistically-derived (i.e., Spectral Casting) time series of dissolved oxygen concentrations are not a suitable substitute for high frequency observations in our criteria assessments.

Two Choices for Assessing Short Duration Criteria in Chesapeake Bay

1. Measure water quality at high temporal frequency.



2. Use the Umbrella Criterion Approach defining the acceptable risk of nonattainment for unmeasured criteria*

* Open water designated use

Gaps

- Deep water designated use assessment recommendations
  - Deep water high frequency data sets are extremely rare.
  - Very little effort has been directed at into the work on this designated use.
- ACTION I: We requesting your support for a brief exploration of what more could be done in the time remaining towards developing an Umbrella Approach understanding to the Deep Water designated use assessment.
  - Report back in Autumn 2013.

II. Chesapeake Bay BIBI Interim Assessment Rules in lieu of a complete BIBI recalibration

- “For segments where ‘Impaired = No’, identify those segments that have a breadth of confidence limits (Upper confidence Limit - Lower confidence Limit ≥ 0.5) of .5 or greater…

- …of that remaining subset of segments, those that have a Mean BIBI <2.7 would be classified as Category 3 (insufficient information) until more conclusive information is available."

Result of adding the rule to the BIBI assessment to account for variability in the data: Support 303d listings.

- This add-on rule causes 4 segments, CRRMHa (Corratoman River), SBEMHa (South Branch Elizabeth River), SASOH (Sassafras River), and YRKPHa (York River) to be listed in Category 3 (Insufficient information).

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-
- ACTION II: Request your review and approval of the add-on rules for BIBI assessments.

Future of BIBI Work

- The B-IBI was last validated for tidal freshwater and oligohaline habitats by Alden et al.(2002).
- The paucity of data available at that time made the index less robust in the tidal freshwater and oligohaline regions than in the more saline habitats of the Bay.
- Proposal to recalibrate the BIBI and address other issues through the effort.
    - $55K of funding is being considered for one time support from within the MD and VA 117e grants at this time.

III. Water Quality Monitoring Budgets: Funding Shortfalls in 2013

- All the partnerships' shared monitoring networks have reached a level of maturity, stability, and longevity where they are paying back on the long term financial investments made by the partners for years and decades.

- Investments have increased supporting shared management decision-making.

- the underlying funding base has been slowly eroding.

- Recently, the federal partners have had their budgets cut back in response to the economic downturn, the rising federal deficit, and the resultant sequestration which is expected to last for years.

- The Partnership is facing making decisions on competing Bay restoration priorities within a shrinking collective budget.

Challenges

Challenge to the Partnership

- Address the 2013 shortfalls in full funding of the existing monitoring networks and take on the longer term challenge for how to sustain these networks through the next major decision point—2025

Estimated 2013 Shortfalls

- Combined tidal and watershed water quality monitoring networks: $944,789
- Baywide SAV aerial survey: $163,000

Actions IIIa

Short-term (1 month)

- Develop a set of guiding principles to drive decision making on the options
- Work through STAR's tidal, non-tidal and SAV monitoring workgroups to flesh out a series of options
- Present options/recommendations to the Water Quality Goal Implementation Team for feedback and the Management Board for final decisions

Actions IIIb

Long-term (6-9 months)

- Work through STAR's tidal, non-tidal and SAV monitoring workgroups and STAC addressing the longer term challenge for how to sustain these networks under reduced funding through the next major decision point—2025

- Present options/recommendations to the Water Quality Goal Implementation Team for feedback and the Management Board for final decisions

Thank you.