

# Review of the Instantaneous Minimum Workshop Findings: A Joint Meeting of the CAP WG and TMAW

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# Today's presentation

- Provide an update on the issue of assessing short-duration D.O. criteria in Chesapeake Bay.
- Share Findings and Action Items from the December 2013 Instantaneous Minimum D.O. Criteria Workshop.

# The IM Workshop: December 2, 2013

- 5 presentations provided by Bay experts on the IM criteria and its assessment
  - (Batiuk, Shenk, Breitburg, Perry, Robertson).
- Afternoon discussion period

## Our charge:

To develop science-based recommendations for consideration by the Chesapeake Bay Program partnership that may include:

1. alternative interpretations of the instantaneous minimum (IM) criterion definition,
2. alternative short-duration criteria, and
3. coincident options for their procedures supporting their assessment.

# Our charge:

To develop science-based recommendations for consideration by the Chesapeake Bay Program partnership that may include:

1. alternative interpretations of the instantaneous minimum criterion definition,

**Discussions focused on IM in the context of criterion assessment needs.**

IM refers to 1 or a few hours of exposure to D.O. criteria threshold levels, not the singular instant in time.

**ACTION – Clarify this IM interpretation.**

# Our charge:

To develop science-based recommendations for consideration by the Chesapeake Bay Program partnership that may include:

## 2. alternative short-duration criteria,

Discussions provided consensus that the published criteria thresholds remain supported by the science .

**No ACTION:** There are no suggestions to change the criteria thresholds.

## Our charge:

To develop science-based recommendations for consideration by the Chesapeake Bay Program partnership that may include:

3. coincident options for their procedures supporting their assessment.

This is where the focus of the group centered for most of the discussions. Work remains on this topic.

# The IM Workshop assessment options discussions showed:

- Sampling frequency is linked with risk of nonattainment when trying to apply the Umbrella Criterion approach (Elgin Perry).
  - Small numbers of samples produce high but quantifiable uncertainty in judging attainment with this method.
  - Use of the historical data set to inform our estimate of the mean each month may be able to reduce this uncertainty.
    - **ACTION**: An ad hoc team of analysts plans to follow up with this idea and pursue this approach this winter.



# The IM Workshop assessment options discussions showed:

- The summation of nearshore (high frequency data evaluation) and offshore (low frequency fixed sites) habitat assessments may provide an acceptable hybrid assessment approach (Tish Robertson, VADEQ)
  - **ACTION**: Tish will summarize this work for further consideration supporting listing/delisting decision needs
    - There are assumptions that need to be defined and agreed upon regarding minimum numbers of sites, days of sampling etc.
  - **ACTION**: A comparison of this suggestion and assessments made with the CFD will be pursued.

# The IM Workshop assessment options discussions showed:

- There are complex mortality curve exposure assessments being used to assess IM criteria (e.g. Rhode Island)
  - Conceptually desirable among participants but we are very time limited to attempt to rapidly and effectively transfer this work into the Chesapeake Bay context.

# The IM Workshop assessment options discussions showed:

- Final thoughts: Don't forget to give consideration for separating physics from anthropogenic effects in the assessment process (D. Breitburg SERC).
  - A general thought that will benefit from further discussion.

# In closing today:

- The CAP WG will return to the WQGIT in 2014 following up on finalizing decisions from the IM Workshop action items.
  - Clarify the interpretation of an Instantaneous Minimum criterion for assessments.
    - Address the issue of duration.
  - Summarize the Hybrid IM assessment approach.
    - Compare the Hybrid versus CFD for performance . Can we get comparable decision-making power from a different assessment method?
  - Pursue the use of historical data in supporting the Umbrella Criterion assessment approach of IM's.
    - Provide greater certainty in the monthly mean and translating that to a greater certainty regarding the risk of IM nonattainment.
  - Provide considerations for physics effects in the assessments.
    - Can the assessment better inform separation of physical and anthropogenic effects on this Bay health measure.