



# Water Quality GIT: Status of the 2015 Ambient WQ Criteria Technical Addendum

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Bottom line – It's review time! Pushing to the finish line for publishing.

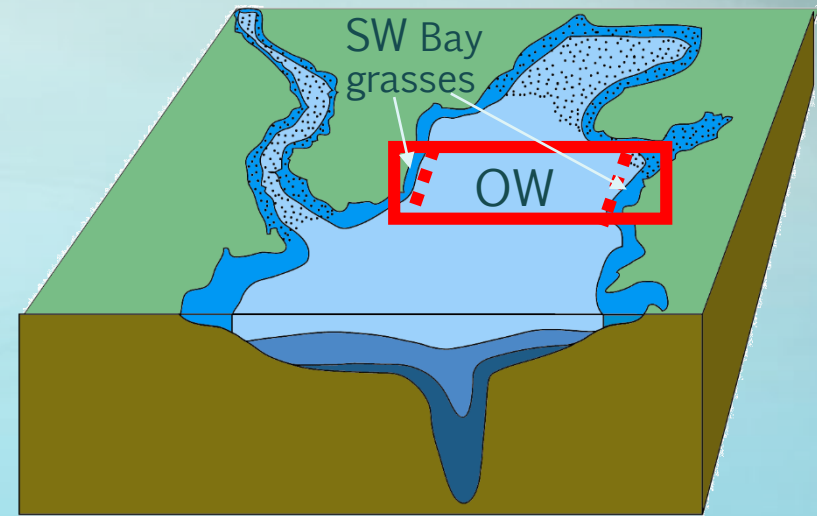
- CBP-STAC, EPA and CAP WG have received the updated Technical Addendum. (July 31, 2015)
  - CAP WG members have provided comments.
  - EPA-Philadelphia provided a review this summer. They may have some additional comments once the present notes are addressed.
  - CBP-STAC is organizing its review panel per discussions with Bill Ball. The schedule is

# Technical Addendum content summary

- Chapter 1: Introduction
- Chapters 3-7: Old news to everyone here but updated language for your review regarding
  - Missing segment volumes resolved
  - Multi-metric water quality standards indicator demystified
  - Underwater grasses water quality standards-based acreage goal updated
  - Interim rules on decision-support for the BIBI results in Chesapeake Bay
  - Protocol for nontraditional partners contributions to support dissolved oxygen assessments.
- And then there is **Chapter 2: Short duration D.O. criteria assessment.**
  - This is where we need your focused attention.

# Focus on Chapter 2. II. Assessing Dissolved Oxygen Criteria Attainment: Short-Duration Criteria Attainment Assessments

- Multiple CAP WG issues that had separate chapters were rolled into a single story for Chapter 2:
  - Basis for sub-segmenting bay segments
    - Links to all the work done by the community regarding whether or not to separate shallow water out as its own designated use from the Open Water Designated Use.



U.S. Environmental Protection Agency. 2003. 305b guidance.  
[http://water.epa.gov/type/watersheds/monitoring/upload/2003\\_07\\_03\\_monitoring\\_305bguide\\_v2ch2.pdf](http://water.epa.gov/type/watersheds/monitoring/upload/2003_07_03_monitoring_305bguide_v2ch2.pdf)

# Focus on Chapter 2. II. Assessing Dissolved Oxygen Criteria Attainment: Short-Duration Criteria Attainment Assessments

- Multiple CAP WG issues that had separate chapters were rolled into a single story for Chapter 2:
  - Three Zone recommendation option when choosing to sub-segment
    - Links to the Open Water designated use work, the latest work by Boynton et al on D.O. behavior in shallow water, and existing EPA-supported basis for sub-segmenting habitats already used by Virginia in other assessments.



Graphic by H. Weinberg..CBPO

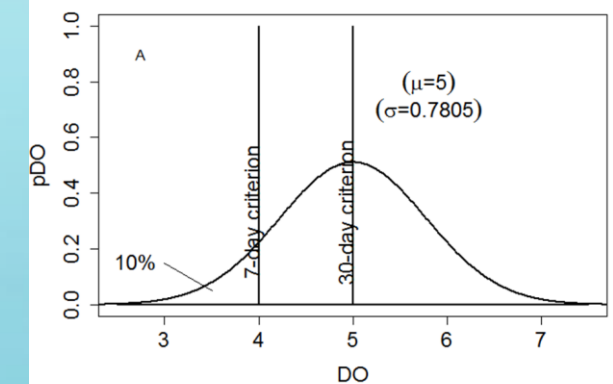


# Focus on Chapter 2. II. Assessing Dissolved Oxygen Criteria Attainment: Short-Duration Criteria Attainment Assessments

- Multiple CAP WG issues that had separate chapters were rolled into a single story for Chapter 2:
  - “Conditional Attainment”
    - This is the updated label for “Umbrella Criterion” and all the associated work that went into providing a potential basis for making assessments from one scale of measurement, including uncertainty associated with sampling frequency. .



Umbrella Species Concept gave rise to “umbrella criterion”



E. Perry. Statistics Consultant  
“Umbrella criterion” is rebranded  
“Conditional Attainment”

# Focus on Chapter 2. II. Assessing Dissolved Oxygen Criteria Attainment: Short-Duration Criteria Attainment Assessments

- Multiple CAP WG issues that had separate chapters were rolled into a single story for Chapter 2:
  - Instantaneous minimum rule for compliance
    - Links to our analyses and discussions on challenges for assessing IM, offering multiple methods applied in appropriate habitats per sampling techniques that are available.

Segment	Year	Rule 1	Rule 2	Rule 2 (Alt)*	
JMSMH	2006	Pass	Fail	Pass	<b>Rule 1.</b> No more than 10% of days during a single season with an exceedance. (12 days can have a single exceedance). About 30 minutes x 12 or 5 hrs total per season, 2880 hrs in a season or 0.17%).
	2007	Pass	Pass	Pass	
	2008	Pass	Fail	Fail	
	2006-2008	Pass	Fail	Fail	
JMSMH	2012	Pass	Pass	Pass	<b>Rule 2.</b> No more than 1 day with 10% time (>2.5 hrs) exceedance during a single season (0.1% of season).
	2013	Pass	Pass	Pass	
	2014	Pass	Pass	Pass	
	2012-2014	Pass	Pass	Pass	
JMSPH	2006	Pass	Fail	Pass	<b>Rule 2 Alt.</b> If there are more than two consecutive days in a single season were the DO concentration violated the criterion more than 10% of the time. (0.2% of season)
	2007	Pass	Pass	Pass	
	2008	Pass	Pass	Pass	
	2006-2008	Pass	Fail	Pass	
LAFMH	2012	Fail	Fail	Fail	<b>Summary: Annual</b> 11 cases all three rules agree 2 cases where Rule 1 and 2A agree 1 case where Rule 2 and 2A agree
	2013	Pass	Pass	Pass	
	2014	Pass	Pass	Pass	
	2012-2014	Fail	Fail	Fail	
LAFMH	2012	Fail	Fail	Fail	<b>Summary: 3-yr assessment</b> 2 of 5 cases are affected by rule choice No bias.
	2013	Fail	Fail	Fail	
	2011-2013	Fail	Fail	Fail	

Graphic developed from T. Robertson, VADEQ and Will Hunley, HRSD.

# Focus on Chapter 2. II. Assessing Dissolved Oxygen Criteria Attainment: Short-Duration Criteria Attainment Assessments

- Multiple CAP WG issues that were rolled into this chapter:
  - **Basis for sub-segmenting bay segments**
    - Links to all the work done by the community regarding whether or not to separate shallow water out as its own designated use from the Open Water Designated Use.
  - **Three Zone recommendation option when choosing to sub-segment**
    - Links to the Open Water designated use work, the latest work by Boynton et al on D.O. behavior in shallow water, and existing EPA-supported basis for sub-segmenting habitats already used by Virginia in other assessments.
  - **“Conditional Attainment”**
    - This is the updated label for “Umbrella Criterion” and all the associated work that went into providing a potential basis for making assessments from one scale of measurement, including uncertainty associated with sampling frequency. .
  - **Instantaneous minimum rule for compliance**
    - Links to our analyses and discussions on challenges for assessing IM, offering multiple methods applied in appropriate habitats per sampling techniques that are available.



# Focus on Chapter 2. II. Assessing Dissolved Oxygen Criteria Attainment: Short-Duration Criteria Attainment Assessments.

(See road map to assessment, the how-to, where-to and when-to summary guide, which is Table II-5. Recommended approaches to assess short duration criteria.)



- Recommended Approaches for Assessing Short-duration Dissolved Oxygen Criteria Attainment .....28
  - Enhanced Monitoring Approach..... 28
  - Continuous Monitoring Approach ..... 28
  - Conditional Criterion Attainment Approach ..... 28
    - Method 1..... 29
    - Method 2..... 29
  - Discrete Sampling Approach..... 29

## SUMMARY:

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  - EPA-Philadelphia provided a review this summer. They may have some additional comments once the present notes are addressed.
  - CBP-STAC is organizing its review panel per discussions with Bill Ball. The schedule is
- CAP WG will have a meeting to review all comments after the STAC review.
- EPA-Philadelphia approval .
- Publishing thereafter.



