Criteria Assessment Protocol (CAP) Workgroup Meeting
Minutes
December 17, 2012 10AM-12PM
Chesapeake Bay Program Office Room 305A
Annapolis, MD
http://www.chesapeakebay.net/calendar/event/19059/

Participants:

Peter Tango (Chair)-USGS	Liza Hernandez (Coordinator)-UMCES	Lea Rubin (Staff)-CRC	Amanda Pruzinsky (Staff)-CRC
Jackie Johnson-ICPRB	Richard Tian-UMCES	Claire Buchanan-ICPRB	Mark Trice-MD DNR
Tish Robertson-VADEQ	Tom Parham-MD DNR	William Hunley-HRSD	David Parrish-VIMS
Howard Weinberg-UMCES	Matt Stover-MD DNR		

Next Criteria Assessment Protocol Workgroup Meeting

February 4th, 2013 10:00a-12:00p
Chesapeake Bay Program Office Conference Room 305A
Annapolis, MD
Conference line: (866) 299-3188 Line code: 4102675731
http://www.chesapeakebay.net/calendar/event/19113/

MINUTES

Resulting Action Items

- Final revisions of the new E.O. Water Quality Tracking Indicator will be presented to the WQGIT on Jan. 14th, 2013. L. Hernandez anticipates presenting the Indicator to the Management Board for adoption into the CBP reporting framework in February or March 2013 (L. Hernandez)
- Review and determination of an operational definition and sampling protocol for "an instant" for use in the Instantaneous minimum dissolved oxygen criterion evaluation method. (T. Robertson & Group)
- Write up on new monitoring decisions-including new rule for categorizing a third, indeterminate group for site characterization. (T. Robertson and M. Stover)
- Evaluate MD monitoring program to incorporate more benthic IBI sampling of fresh, tidal and oligohaline sites in order to improve spatial support of listing decisions.
- A TMAW adhoc team is gathering on Jan. 7th, 2013 to work on finalizing a recommendation for options to assess the Summer, Open-Water 7-day mean DO criterion. (Rm. 303)

- Schedule the instantaneous minimum meeting for April 2013 (P. Tango, L. Hernandez, L. Rubin)

Welcome, Announcements (Peter Tango USGS/CBPO, Chair)

- **ACTION:** Lay out a workplan for CAP WG

E.O. Water Quality Indicator update (Liza Hernandez, UMCES/CBPO)

- Presented a draft document to the Water Quality GIT.
    - Comments on the draft document from the WQGIT were mainly suggesting more policy friendly language. A list of recommendations can be viewed on page 10 of draft attached below.
- **ACTION:** Final revisions of the E.O. Indicator and supporting language will be reviewed for approval by CBP's FHTE group and the Senior Bay Managers prior to the 1/14/2013 WQGIT meeting.
- **ACTION:** Present the new indicator to the Management Board for adoption into the CBP framework in February or March of 2013.

  To view the draft document:
  http://www.chesapeakebay.net/channel_files/19059/draft_cb_wq_indicator_wqgit_2012.11.05.pdf

  Discussion and Questions

  - **ACTION:** Members are to review the document and contact L. Hernandez with any comments.
      - Feedback would be appreciated for a way to show incremental progress in achieving water quality standards.

Challenges to evaluating an instantaneous minimum criterion in open-water and deep-water with the existing framework (Tish Robertson, VADEQ)

- Tish Robertson explained the present method of assessing the instantaneous minimum (IM) dissolved oxygen criterion. The IM allows each data point to represent an instance rather than the 30-day mean which asses a composite of the snapshots.
    - The instantaneous minimum will change depending on the sample size
    - Representation will be more conservative by presenting every sample collected as opposed to the average for the month
- Problems discovered with the application of the data:
    - Using the current interpolator
    - Easy to fail water quality standard; outliers are evaluated as representative snapshots
    - The existing approach can cause 100% violation in sample segment represented by a single data point
- Direct evaluation approach of continuous sampling data currently used by CBP

- Good for 30-day mean evaluation
- Not appropriate for instantaneous minimum

To view this presentation:
http://www.chesapeakebay.net/channel_files/19059/instantaneous.pdf

Discussion and Questions

- Given the limitations of the data available in the spatial sense can we concede that the data is station specific instead of representing the whole segment?
    - A "10%" rule: can properly represent the stations that make up the whole segment.
    - IM can be used to characterize the diversity within one segment
- What is the segment size represented by each data point? Could a monitoring station be moved to a location that is more representative of the segment?
    - The interpolator produces fairly accurate results for the segment in which the monitoring station is located.
    - To better characterize the represented area, it is possible to use a previous data set in the model to produce more representative IM calculations.

- Will you be interpolating the continuous monitoring (CONMON) data?
    - All fifteen minute samples will be input as an instantaneous data point.
    - Need to define "instance" for the interpolator.

- **SUGESTION:** A minimal sample size is needed both spatially and temporally.

- **SUGESTION**: Define a specific bracket of what is represented by a monitoring station.

- How would the interpolator recognize the difference between CONMON data and fixed station data?
    - Use the interpolator for CONMON data to define a sphere of influence for the fixed stations.

- **SUGESTION:** In the past, when Elgin Perry in combination with Larry Harding looked at Chlorophyll, he took the equivalent of DATAFLOW when monitoring along a transect and sought variability over distance. This is a possible approach to define regions.
    - For more details contact Elgin Perry

- Is it possible to qualify segments without the "minimum" amount of data points with an uncertainty value?
    - Currently, the interpolator does not have that capability.
- Is it possible to do some sort of spatial correlation analysis?
- Summary:
    - Do we need to asses data solely on fixed station basis?
    - How do we deal with differing data sets (size, methods)?
    - What is the area that a specific data point represents and how do we define that?
    - A minimal sample size both in space and time should play into the determining of the definition of an instant.
    - Most pertinent is the determination of minimal sample size for an instant.

Benthic IBI updates (Matt Stover, MDE)

- There were errors in the documentation of salinity in different habitats in 2012 303(d) benthic assessment. IBI's have been corrected in CIMS, but incorrect values were published in the 2012 integrated report. Corrections will be incorporated into the 2014 Integrated Report.
- Figuring out the threshold to use to differentiate between a degraded site and unimpaired site.
    - It is important to classify samples properly; as degraded or unimpaired sites. Those samples in between the two thresholds cause type errors, which cause those samples to be labeled as impaired. This could trigger the TMDL processing, which is costly.
    - On page 166 of "Applications of the Benthic Index of Biotic Integrity to Environmental Monitoring in Chesapeake Bay" by *Llanso et al. 2003* (see link below), table 1. shows the actual thresholds used in the BIBI assessment.
    - Should a new rule be added to the methodology for the cases that are listed as unimpaired at an extremely low threshold?
        - An indeterminate category, for those samples with a wide confidence limit and with the low threshold (below a determined limit)?
    - Roberto's BIBI recalibration proposal would strengthen the IBI and could affect the threshold limits.
    - Redesign of monitoring program from solely stratified random to hit more tidal, fresh and oligohaline sites, is needed to reach the minimal sample size of 10, in order to classify the sites.

To view this presentation:
http://www.chesapeakebay.net/channel_files/19059/llanso_erf_2007.pdf

To view this document:
http://www.chesapeakebay.net/channel_files/19059/llanso_et_al_2003.pdf

Discussion and Questions

- Based on the nontidal IBI work, the greater the sample, the more consistent those thresholds become between bioregions.

- **ACTION:** T. Robertson and M. Stover will distribute in writing for CAP WG over the next couple months (ideally by July for J. Johnson's assessment) a summary containing:

    - New decisions on the methods including new rule (once settled)
    - the IBI and salinity corrections, and how they were addressed

- In Virginia, in addition to CBP's Benthic monitoring estuarine program, VA has a probabilistic monitoring program that targets segments with small sample sizes used since 2005 (excluding 2010). The data is used for the 303(d) delisting cycle assessments for VA.

    - No target assessment currently addressing MD's counterparts

To view VA probabilistic monitoring program:
http://www.chesapeakebay.net/channel_files/19059/vaprobmon.pdf

- **ACTION:** Determine how to increase samples collected in under sampled regions in MD monitoring program.

Early 2013 calendar of CAP WG issues (Peter Tango)

- Requested set of 10-12 key issues going into mid-point assessment for 2017.
    - TMAW was given several of those issues
    - A TMAW adhoc group (the Umbrella Criteria Assessment Team) is getting together on Jan. 7th, 2013 to work on finalizing a recommendation on assessing the 7-day mean summer DO criterion based on the umbrella criterion report (Rm. 303)
    - EO indicator work by L. Hernandez
    - **ACTION:** Schedule the instantaneous minimum meeting (April)

- Each issue is intended to become a chapter on its own in the upcoming ambient water quality criteria technical addendum that will be brought to the WQGIT and Management Board.

General calendar for CAP WG

TMAW: January 7th 2013 discussion toward finalizing a recommendation on assessing the 7-day mean open-water summer D.O. criterion (Room 303)

CAP WG Meeting: February 4th, 2013 10:00a-12:00p (Room 305A)

CAP WG 2nd quarter: Topical meeting – assessing alternative definitions of 'instantaneous minimum' and developing options for a new definition for use with this criterion assessment.

- Tech doc status updates

CAP WG 3rd quarter: Benthic Assessment Protocols updates on recalibration (J. Johnson)

- Options for illustrating uncertainty beyond the CFD
- Tech doc status updates

CAP WG 4th quarter: Protocols for incorporating nontraditional partner data into water quality criteria assessments (M. Mallonee, M.E. Ley, J. Johnson – write-up)

- Tech doc status updates