

Tidal Monitoring and Analysis Workgroup

March 1, 2012 10am-2pm

Meeting Minutes

<http://www.chesapeakebay.net/calendar/event/17853/>

Attendees:

Walter Boynton-UMCES	Liza Hernandez-UMCES	Peter Tango-USGS	Ashlee Harvey-CRC
Tish Robertson-VADEQ	Rick Hoffman-VADEQ	Will Hunley-HRSD	Mark Trice-MDDNR
Renee Karrh-MDDNR	Cathy Wazniak-MDDNR	Bill Romano-MDDNR	Brian Smith-MDDNR
Elgin Perry-Stats Consultant	Ben Cole-MDDNR	Tom Parham-MDDNR	Simon Costanzo-UMCES
Mike Lane-ODU	Jackie Johnson-ICPRB	Rich McEntee-USGS	Peter Bergstrom-NOAA
Bruce Michael-MDDNR			

Action Items:

- **Send out revised version of what will be the executive summary to the synthesis team for final review** (L. Hernandez and K. Foreman)
- **Provide updates on the Lessons Learned Report at subsequent meetings** (L. Hernandez and K. Foreman)
- **Follow up on the issue of throwing out data, QA procedures (possibly codes) within the CBP** (Status and Trends Ad Hoc members)
- **Complete action items discussed (listed below) for the Status and Trends analysis** (Status and Trends Ad Hoc members, R. Hoffman, P. Tango, L. Hernandez, M. Lane, M. Trice)
- **Personally contact G. Waldbusser noting concerns about the Waldbusser et al. paper** (M. Trice)
- **Research and follow up on the items discussed in reference to the Umbrella Criteria Report implications** (All)
- **Find and access Jeni Keisman's findings related to DO assessment at 15-mins, 1-hr, etc. intervals for the various DUs.** (P.Tango)
- **Provide information regarding the Storm Response meeting in April to interested parties** (P. Tango)

Announcements and Introductions (W. Boynton)

- W. Boynton gave an overview of the agenda and requested announcements.

- M. Trice stated that there will be changes to the monitoring locations within the Nanticoke and Pocomoke rivers. The changes are due to the beginning of a new 3-year cycle.
- R. Hoffman noted that none of the Virginia monitoring sites will be changed as this year is the 3rd year of the cycle.
- W. Boynton suggested that the June TMAW meeting be rescheduled for the 14th.

Lessons Learned Report Update (L. Hernandez)

- L. Hernandez provided an update on the progress of the Lessons Learned report since the last meeting.
 - A draft of the report was presented to the Water Quality GIT; they are happy with the progress that has been made.
 - K. Foreman composed a document summarizing the overarching lessons learned as discussed at the Lessons Learned Synthesis Workshop. She is in the process of cleaning up the document; it will be out for review next week. The document will ultimately become the executive summary for the report.
 - Another draft will be presented to the Water Quality GIT in April; project completion is anticipated sometime this summer.
 - Planning for a storyboarding session is in process.
 - Report updates will follow in upcoming TMAW meetings.
- Q: Will there be 2 products from this report?
 A: Yes, one document will be more technical, the other will be shorter and more management friendly.

Status and Trends (E. Perry)

- E. Perry discussed the past, present, and future methods for analyzing status and trends at the CBP.
 - In 2008, a data analysis framework was formulated to identify water quality data issues and to develop a strategy to implement methods that address the issues within the framework.
 - The framework proposed at the 2008 meeting and again in 2012, emphasized the need to streamline the routine analysis to facilitate better exploratory analysis.
- E. Perry stressed the importance of considering flow (and/or potential surrogate measurements for flow) as well as other influencing factors (i.e., PAR).
- The current nonlinear trend test by least squares can lead to misleading results
 - Measuring with pass/fail methods (percent compliance) can produce misleading results and does not provide a sense of progress
 - Trends were reanalyzed using GAMs which lead to a fairer interpretations of the data

- There is a cost to switching to GAM as it will only give you a p-value, nothing else
- E. Perry suggested moving toward a status indicator that grades on a curve. This would preserve the continuity of the data and would be able to show progress
- E. Perry identified several water quality data issues, including the censoring of data (you can flag data, but shouldn't censor it).
- Thoughts and suggestions going forward include:
 - Keep the Seasonal Kendall test as a simple trend test
 - Cut down on trends variations
 - Update trends analysis to use GAMs for nonlinear trends, while maintaining parabolic approach
 - Re-introduce adjustment for flow and other variables
 - Implement an absolute status indicator and a relative status indicator
 - Identify linkage issues to address and give higher priority than routine status and trends
 - Feedback loop from linkage analyses to routine analyses
- W. Boynton mentioned the importance of considering inter-annual variability related to weather.

Q: At the state level aren't some of the trend analyses required by grants (contracts)?

A: Yes, but they can be adjusted as directed by TMAW. At the state level there are other reasons to show certain analyses

- C. Wazniak discussed issues with chlorophyll censoring, censoring in general, and the problems associated with throwing out data that is considered below detection limits
- Follow up on the issue of throwing out data, QA procedures (possibly codes) within the CBP
 - R. Karrh mentioned data presentation issues with color-coding associated with the nonlinear trends
 - P. Tango mentioned using existing methods (relative status indicators) for baywide status map for 2013, while status and trends ad hoc group continue the development of new methods
 - E. Perry said that he thinks the current relative status indicator needs to be updated which will take a long time

- R. Karrh mentioned issues with ranking areas and ACTION: need to determine how this will be done.
- M. Lane and M. Trice have agreed to help with this, get them the datasets.
- W. Boynton noted that there needs to be a work plan.

Q: Do we have an operational plan of who does what?

A: E. Perry: There is a working example, but not sure why it stopped there?

- P. Tango stated that Rich Batiuk is good with whatever it is that we need to do; no additional “blessings” are needed.

Q: Wasn't there issues with the threshold levels?

A: E. Perry: Yes that was an issue. Thresholds are used to develop a reference distribution, including end points.

➤ **Resulting Actions for the Ad Hoc group in order of priority:**

- For 2012 analysis, maintain current trends (SK test) methods
- Cut down number of trend variations
 - Calendar year
 - Water year
 - Spring and summer
 - Time periods
 - Whole period of record
 - 85-97 to compare step trends
 - 99-current
 - etc.
- Work on GAMs
- Begin development of absolute status indicator

➤ **Resulting Individual Actions:**

- M. Lane and L. Hernandez for data merge
- M. Trice expand Maryland map with results

Discussion of Waldbusser et al. Findings: (M. Trice)

- M. Trice discussed highlights of the Waldbusser et al. paper; he noted that there are some concerns about the paper.
 - He noted the importance of proper use of CBP metadata manuscripts for bay wide synthesis and suggested implementing a method to help guide data users.
- He is concerned about whether or not there should be a response to the paper published in Estuaries and Coasts.
 - W. Boynton recommends writing a letter to the author noting concerns (including any pertinent files) and to request a response; ask the author if the concerns are shared. If there is no response, then consider responding directly to Estuaries and Coasts.

Umbrella Criteria Discussion (P. Tango)

- Final page of report is planned to be finished today and sent to STAC.
- P. Tango reviewed the new criteria addendum and asked if anyone had any questions or concerns.
 - He noted that the biggest challenge is sufficient documentation.
- Review of criteria next steps:
 - **Decision #1: Does the 30-day mean protect the 7-day mean?**
Outcome: Recommend 7-day mean criterion is removed OR 30-day mean is sufficient for the 7-day mean criterion (keep 7-day mean on the books, but not recommend it as a means for criteria assessment).
Note: TMAW is NOT responsible for making changes; TMAW is responsible for simply making recommendations and providing options
 - **Decision #2: Recommendation to update the 30-day mean assessment protocol**
Outcome: Suggestion to evaluate alternatives in the application of ConMon data to compute 30-day mean assessment.
Resulting Action: Further research is needed; revisit this topic
 - Not a spectral casting application
 - P. Tango suggested that the issue not be included in the document, therefore, make no recommendation in regards to this topic
 - E. Perry agrees and says that it should be included as a suggestion for future research in a footnote.
 - **Decision #3: Review and revise, if necessary, the definition of an instantaneous minimum**
Outcome: Recommend alternate assessment methodology to the existing methodology (e.g. 15-min, 1-hr, daily minimum application).

- Does the same method apply in all designated uses (DU's): OW (open water), DW (deep water), DC (deep channel).

Resulting Action: P. Tango will find and access Jeni Keisman's findings from her exploratory analyses.

➤ **Finding #4: Shallow water shows different DO behavior than offshore water**

Outcome: Concern in expanding DO assessment recognizing Shallow water as a separate designated use. This is a special needs assessment for further research.

- We really need to think about this according to discussions that have come out of the workshop
- Don't have appropriate methodology to do it – it's the 7-day mean issue again – no methodology in stone
- Concern in expanding DO assessment recognizing shallow water as a separate designated use
- Consider what the management implications for shallow water are
- M. Trice- suggests a graduated approach
- B. Michael- suggests laying out options and recommendations, if it is complicated for us, it'll be really bad for managers

Resulting Action: Within a month, the potential options need to be discussed and established.

➤ **Finding #5: Demonstrate and document the possible need to expand criteria assessment for event duration**

Outcome: Finding not necessarily a decision; requires additional evaluation.

- W. Boynton noted that preliminary criteria work has shown failure correlated with event duration.

Resulting Action: Evaluate further.

➤ **Decision #6 Develop an illustration and application of uncertainty in the attainment results**

Outcome: Finding not necessarily a decision; requires additional evaluation.

Demonstrate uncertainty by showing the difficulty in making decisions related to this issue.

Resulting Action: Evaluate further

Storm Response Update: (P. Tango)

- The meeting is scheduled for Thursday, April 19th at USGS in Baltimore.
- The meeting will be a precursor to a later synthesis meeting to be held in the Fall.
- Additional information regarding the meeting will be emailed to those who are interested.

Location of Spring TMAW meeting: (W. Boynton)

- The spring meeting will be held in Colonial Beach, VA at the Potomac River Fisheries Commission.