

Maryland Coastal Bays Program  
Science and Technical Advisory Committee  
January 21, 2015

Welcome and Introductions

Attendees:

+ Roman Jesien	<a href="mailto:rjesien@mdcoastalbays.org">rjesien@mdcoastalbays.org</a>
+ Jen Rafter	<a href="mailto:jrafter@mdcoastalbays.org">jrafter@mdcoastalbays.org</a>
+ Amanda Poskaitis	<a href="mailto:amandap@mdcoastalbays.org">amandap@mdcoastalbays.org</a>
+ Darlene Wells	phoned in
+ Cathy Wazniak	<a href="mailto:catherine.wazniak@maryland.gov">catherine.wazniak@maryland.gov</a>
+ Carol McCollough	<a href="mailto:carol.mccollough@maryland.gov">carol.mccollough@maryland.gov</a>
+ Pat Glibert	<a href="mailto:glibert@umces.edu">glibert@umces.edu</a>
+ Mary Phipps-Dickerson	<a href="mailto:Mary.Phipps-Dickerson@maryland.gov">Mary.Phipps-Dickerson@maryland.gov</a>
+ Laura Shively	<a href="mailto:laura.shively@usace.army.mil">laura.shively@usace.army.mil</a>
+ Bhaskaram Subramanian	<a href="mailto:bhaskar.subramanian@maryland.gov">bhaskar.subramanian@maryland.gov</a>
+ Judy O'Neil	<a href="mailto:joneil@umces.edu">joneil@umces.edu</a>
+ Bob Shedlock	<a href="mailto:rjshedlo@usgs.gov">rjshedlo@usgs.gov</a>
+ Mitch Tarnowski	<a href="mailto:mitch.Tarnowski@maryland.gov">mitch.Tarnowski@maryland.gov</a>
+ Bill Dennison	<a href="mailto:dennison@umces.edu">dennison@umces.edu</a>
+ Steve Doctor	

9:20 A.M.

*Neil Ganju (USGS) – USGS Sandy Supplemental studies in the Delmarva region*

An overview of USGS Hurricane Sandy – Supplemental Studies along the Delmarva Peninsula

Three projects

1. Wetland Physical Change  
Looks at shoreline changes of estuarine and wetland shorelines. Focus on statistical models of change. Chincoteague Bay, Barnegat Bay, & Jamaica Bay (NY).
2. Light attenuation models
3. Geomorphic Changes

Comments & Questions:

- Cathy Wazniak states that she has CDOM measurements if Neil needs them and asks about how sand particles affect the seagrasses. Neil responds that they are seeing mostly muddy sediments. Cathy is seeing improvements in WQ and Secchi measurements, but the seagrasses are still declining.
- Bill Dennison comments that he has seen a potential breach point in Chincoteague Bay, and the bay could use a breach to improve water quality. Neil says that a resonance time calculation is okay, but the better thing would be to have seagrass and macroalgae running through breach models to determine how effective this would be to improve water quality.

- Neil responds to Darlene Wells that they use altimeter data because it is better than LIDAR for seeing smaller changes caused by storms (5-10 cm). LIDAR would only catch changes on the order of 15 cm or above. Darlene asks if Neil looked at fetch. Neil affirms.
- Bhaskar asked how far pre and post hurricane Sandy do they have data. Pre was November 2009, post was November 2012. Neil states they have really nice images of the barrier island change during and after the event, but Bathymeter changes were not as clear.
- Bob Shedlock and Bill Dennison clarify what kind of storms will be big enough for these stations to record data: storms like Irene and Sandy, also nor'easters.
- The Swath project has data points all along the Atlantic coast. Google USGS swath – the first link is a PDF that shows the map of all the sites.
- Bob Shedlock states that they are using more capable models around Assateague to determine effects of SLR.
- Bill Dennison suggests that we meet with Neil in future STAC meetings to keep up with the results of his studies.

10:05 A.M.

*Mark Brush (VIMS) – Delmarva water quality model update – remote location*

Forecasting watershed loading and lagoon response along the Delmarva Peninsula due to changing land use and climate

- A project developing a series of linked models in the coastal bays all along Virginia, Maryland, and Delaware. Hoping these will be available to you soon.
- Trying to develop alternative approaches to multiple models with reduced complexity models. Trying to generate models that are online and available for stakeholder use.
- In the final phases of calibrating models.
- These simple models can be run through the VIMS website.

Comments & Questions:

- Bill Dennison asks if you could include cover crops in these models. Mark responds it would be relatively straightforward to add. Bill Dennison asks how they deal with lag times. Mark answers to do something with a lag you'd have to trick the model by getting a past estimate, present estimate, run both of those models and calculate the difference.
- Roman Jesien asks if the NLM model is live now. Mark responds the NLM and LEM are live. They are doing updates and it will be ready next month.
- Bob Shedlock asks if the model is calculating groundwater inputs and does it account for nitrogen attenuation. Mark replies attenuation and groundwater inputs are accounted for. They don't have instream attenuation, but we will add this if appropriate. It does not seem to be necessary to add attenuation for tidal marshes because the groundwater flows below the rhizomes.
- The Beta version of the online tool is up right now. The lagoon model is not well calibrated, but will be finalized by the end of May.

- Cathy Wazniak questions the benthic microalgae graph on the 'example nutrient loading scenarios' slide. The graphs came from earlier models. The benthic microalgae graph is subject to change as it all gets formulated.
- Bill Dennison confirms that if there is a breach, they could change the user controls on their models.

Break at 10:50 A.M.

11:10 A.M.

*Carol McCollough (DNR) – Environmental Assessment – update on water quality*

- They have a lot of data to incorporate. MCBP volunteer data is now included for status and linear trends.
- Cathy Wazniak states that they are talking about changing how they monitor DO. The current analysis may make the results look worse than they are. The 98<sup>th</sup> percentile=the minimum, there has to be a better way. Bill Dennison states they could use a fixed time. Wazniak wants to come up with something other than the minimum. For some of the sites, the DO data looks worse than what the benthic communities suggest.
- Carol asks the attendees if it is legitimate to truncate this data. Roman Jesien responds that this is the recent set of data, that was the past ten years.
- Cathy Wazniak states that 2006-2007 is mostly where the data started to show a decrease in total nitrogen (TN), graphically in an upsidedown U shape. Total phosphorous (TP) is going up.
- Pat Glibert asks if they have looked at flow data. They will take a look at this because it should be aligned with these results. It is a good index of freshwater input.
- Steve Doctor feels the inflection points mirror the economic decline.
- Bill Dennison thinks it may be due to BMPs.
- Carol McCollough says many things could contribute to this end result.
- Bill Dennison states Chincoteague Bay is improving, Chincoteague Island is degrading.
- Bill Dennison displays the Baystat website that shows cover crop increases jumped up around 2010. He reminds us that it takes 3 years to see the impact.

11:45 A.M.

*Kathy Wazniak (DNR) – Environmental Assessment – phytoplankton/HAB chapter*

- Pat Glibert states that TN decreases could be due to ammonium inhibition. Cathy Wazniak says we could plot that out. Pat says it would explain an increase in picoplankton. This could be an example of how TN improvements can be a fake out.
- Pat Gilbert says the better threshold to use would be the nitrate to ammonium ratio. A good threshold number would be 2-4 micromoles of ammonium. Those ratios are in a paper she published last year.

- In regard to the new “Shifting Sands”, Cathy Wazniak states that they are behind, but are getting there. They need somebody to work on the living resources section on invasive species. There were 35 chapters proposed and 18 are in a draft form. 6 or 7 of them won’t be done in time. Call for reviewers.
- Pat Glibert states they should look at the pico composition. Packaging differences may be involved, for example diatoms versus picoplankton.
- Picoplankton increases starting in 2006 correlate well with Pat’s paper.

Lunch break at 12:30 P.M.

12:38 P.M.

*Rick Kutz (MD Pesticides Advisory Committee) – 2015 Maryland Pesticide Use Survey*

- The Department of Agriculture will establish a public portal online for the 2015 pesticide use survey. They want to increase their electronic reporting.
- The new survey will be similar in nature to the last survey.
- The top three pesticides are used for wood treatments: chromic acid, arsenic pentoxide, and copper (II) oxide.

1:00 P.M.

*Roman Jesien (MCBP) – Bishopville dam construction summary*