



Tidal Trends Analysis Team Meeting

January 31, 2018

10:00AM – 12:00PM

Chesapeake Bay Program Office: 305

Conference Line: 202-991-0477 Code: 9037008

Adobe Connect: <http://epawebconferencing.acms.com/ttat/> (enter as guest)

Event webpage:

https://www.chesapeakebay.net/what/event/tidal_trends_analysis_team_january_meeting

Minutes

10:00 **Welcome and Introductions-** *Rebecca Murphy and Jeni Keisman*

10:05 **Baytrends Status Update -** *Rebecca Murphy*

Rebecca gave an update on bay trend package to for the gam model from gam 0, 1, 2,3, 4, and 5.

Jon commented that It would be beneficial to point out the difference between blue dot and the red dot on the GAM 5 graphs.

Rebecca provided an overview of the documentation responsibility. The manuscript about GAM method is underway. Renee commented that it is unclear how to update the datasets each year. She also need the flexibility to understand how to do it and put in only the new dataset that she needed.

Jon described that the functionality from the USGS packages is now built into baytrends (related to qw format). This now requires the previously used datasets to be migrated into a new version. He asked how many datasets exist that will need to be changed

Mike like Renee only has one dataset.

Jon commented that if Mike and Renee can share their datasets to us, we would migrate into those datasets.

Mike: Do you plan to change the format

Jon: we are not changing the format.

Jeni and Rebecca agree with the method and Jon will put out a baytrend format.

Elgin: I have one of those datasets as well and Jon is happy to do it.

Rebecca: The documentation is underway on how to add 2017 water quality datasets. Also there will be documentation for adding salinity data

Jon: If we do the migration sooner, then water quality down the line will be much easier.

Action: Renee, Mike, and Elgin send their current datasets to Jon. He will migrate them, and put out a new baytrends version in the coming weeks.

Question: Will we talk about adjustments we would like to see in baytrend?

Rebecca: we will get into that now.

Rebecca reviewed possible items for discussion for flow and intervention testing including: using flow vs. salinity

Elgin mentioned a problem that regarding the size of the doc file.

Rebecca commented Renee also has similar problem.

Action: Jon asked Elgin to send the research Elgin has done on splitting the output doc file and Erik and Jon will search for solution.

10:15 **Progress and Discussion on Testing Both Intervention Analysis and Flow-Adjustment -** *Rebecca Murphy and Renee Karrh*

Rebecca compared the salinity vs. flow for a series of RIM stations by showing a map. Renee explained her methodology and what she had done so far.

The first page is the result of the basins, and next two pages are of Potomac and Patuxent

Jon: optimal flow is selected in baytrends by doing a spearman correlation between the water quality data and each of the possible flow sets using all different averaging periods. The selected flow averaging period is then used in the GAM.

Jeni asked for clarification the implication for flow and salinity adjustment

Renee: what we are doing is try and error: Same approach and different intervention. My next step is to tease out what is important and what is not. After that, make sure that choose one option on flow regime for one station. Not expecting go through this process every year.

Elgin agreed.

Renee: I would go back to one station if the data of it looks weird. I would not be comfortable go back to three or four of them.

Elgin commented it is interesting that TN and chl_a are consistent.

Rebecca noticed that nothing worked well in the graphs in TP.

Renee with tp, phosphorus is driven it.

Elgin: The dynamics with it are different from downstream to upstream.

Renee: the next steps are to 1) do this in tribs that have the TN/TP changes 2) test censored to below detect change, if the difference would be significant to be concerned with.

Rebecca asked if she is running all the GAM. Renee confirmed.

Jeni summarized the approach: first identify if the intervention is the issue when flow-adjustment is being used. The take the decisions made on interventions with flow-adjustment and use them as well for the non-flow-adjusted models.

Elgin agreed this approach of testing interventions with gams4 and 5 first, then applying those findings to non-flow model gam2 or 3 is the right approach.

Jeni asked the timeline of this task.

Mike: in terms of testing, we are still experimenting. He needed more time to think about it before start. What Renee has been doing will provide the road map of it.

Jeni asked if Renee will do flow testing based on 1999 result.

Renee: was not planning to do analyses starting just in 1999

Action: continue testing and decide soon what is feasible for trend products this summer

11:00 Group Discussion - Jeni Keisman

What support is still needed to generate 1985-2017 flow-adjusted trends (as well as actual) trends for the June 30th deliverable?

Issues are: How to properly select flow and salinity, testing interventions

Discussed: Prioritizing the parameters for 1985 runs (will circle back to this after more testing is done)

Elgin: when running these intervention models, some parameters only collected one side so the models stop working. Will Jon adjust the code and document this issue? What I did is just go back and identify all the parameters are not working.

Jon: the code will not track such issue but it will be relative easy to do such task.

Action: Jon and Elgin will continue to talk offline about this issue.

We will continue talk more once Renee and Mike/Monika have done more testing.

Renee: Long run times for some of the analyses have been a problem

Action: Renee send Jon an example of this and he will look into it.

11:15 Wrap up, future topics - Jeni Keisman

TTAT Meeting Logistics (next meeting date)

Future topics

Use James as our focal point for starting to explain why we are seeing the trends we are seeing. Cindy confirmed it is a priority, maybe with Rappahannock as #2.

Renee: For MD, it depends who you talk to -- Conowingo and upper bay, lower eastern shore, Back River
Bring in research scientists who work in James. Start some dialog about the trends based on the data we have.
Extension to living resources and making connection to what most stake holders are interested in, especially in benthic community.

Elgin: Long term trend of watershed stressors (DO), need a proxy for DO to show the relationship. Nothing has found so far. It is hard to find direct good relationship of the indicator. No good measures to reflect a good underlying relationship.

Peter asked if blue catfish can be used as an indicator. We can get more information on the time series. The figures of the expansion time of from the first introductory.

Peter and Elgin will find out when blue catfish was introduced.

Elgin: baytrend approach nontidal trends analysis using GAM.

Renee added that WRTDS isn't possible in some of the MD nontidal stations because all the needed inputs don't exist. That's one of the reasons for the GAMs work there.

11:30 Adjourn

Meeting Attendees:

Cuiyin Wu
Monika Arora
Jon Harcum
Lane, Michael
Elgin Perry
Peter Tango
Jeni Keisman
Rebecca Murphy
Johnson, Cynthia (DEQ)
Renee Karrh