



Integrated Trends Analysis Team (ITAT) Meeting

Friday, November 19, 2021
1:00 PM – 2:00 PM

Meeting Materials: [Link](#)

This meeting was recorded for internal use to assure the accuracy of meeting notes.

Action Items

- ✓ Alex Gunnerson will send notes with recommendations from Modeling team regarding the tributary summaries to membership.
 - Discussion on these considerations will continue at the next ITAT meeting.
- ✓ Alex Gunnerson will reach out to the Modeling team to determine which datasets they have available for ITAT to use in the tributary summaries, especially datasets related to climate change.
- ✓ ITAT members and interested parties will provide feedback and comments on Mike Lane's updated [draft version of the Rappahannock Tributary Summary](#) by mid-December to early January. (List detailing the [updates here](#).)
 - Alex Gunnerson will send out the word document version with the updates to ITAT members.
- ✓ Explore if a simple comparison is feasible this year for the Rappahannock, between the 2020 Tidal trends results and the RIM (River Input Monitoring) results. This could be especially relevant considering Doug Moyer and Chris Mason's upcoming work this year.

AGENDA

1:00 – 1:05 Welcome – Vanessa Van Note (EPA) and Breck Sullivan (USGS)

Announcements -

- Chesapeake Community Research Symposium - June 6-8, 2022, Annapolis, MD. (Hybrid: virtual and in-person. [Subscribe here for updates](#).) Session proposals due December 1, 2021.

Summary

Breck Sullivan announced that session proposals for the Chesapeake Community Research Symposium are due December 1, 2021. Vanessa Van Note announced that the ITAT coordinators met with the Ad Hoc Modeling Team earlier in the week to discuss the tributary summaries and gather feedback about what the Modeling Team wanted to see most in these documents.

1:05 – 1:35 [2020 Tidal Trends – Rebecca Murphy](#)

Rebecca will provide a summary on the 2020 Tidal Trends in the Chesapeake Bay with some examples of differences from last year and impacts/lack of impacts from COVID-related sampling gaps.

Summary

Rebecca Murphy began the presentation by providing a brief overview of what the 2020 tidal trends entail. Rebecca then briefly walked through the methods used for the Generalized Additive Models

(GAM) in determining tidal trends. Rebecca then talked about sampling losses in the data due to COVID-19, which occurred mostly in Spring 2020. Rebecca explained that based on the long monitoring record of data at these stations, the 2020 trend results varied only slightly compared to the record and the most affected results (total nitrogen and spring chlorophyll) were still about 80% similar to the previous results. Rebecca also mentioned that total monitored flow into tidal waters was normal for 2020. Rebecca then went through each parameter measured in the tidal trends results (total nitrogen, total phosphorus, secchi depth, spring and summer surface Chlorophyll a, and bottom summer dissolved oxygen) and reviewed the long-term, short-term, and summary results. In general, the patterns are consistent with what has been observed over the last few years including -- long-term nutrient improvements have leveled-out in recent years, and some short-term improvements in bottom DO and surface chlorophyll-a. Rebecca ended with where to access them in addition to other related materials.

In the chat, Elgin Perry, Claire Buchanan, Qian Zhang, and Vanessa Van Note expressed that the presentation was well done and were happy the results were publicly available.

Jimmy Webber asked if there was a simple comparison to be done this year, perhaps with the Rappahannock, between the 2020 Tidal trends results and the RIM (River Input Monitoring) results, especially considering Doug Moyer and Chris Mason's upcoming work this year. Rebecca said yes, that's definitely worth looking into to see if it is feasible. Renee Karrh added that she is working on comparing the non-tidal network data being put through Baytrends to the WRTDS output, and her results might be of use here. Renee has reached out to her colleague Joe, and he is exploring the possibility of getting concentrations to establish a one-to-one comparison. Renee said she is also looking at converting the trends she has been looking at from a calendar year to a water year to assist with a comparison. Rebecca agreed and said she would like to see Renee's results. Elgin Perry commented on how this might relate to the mystery of the results in relation to the Rappahannock, explaining that the results are not consistent through the watershed. Rebecca agreed that the Rappahannock is a mystery. Elgin's conjecture is that the source of the phosphorus is the bottom of the water column and low dissolved oxygen is causing phosphorus releases. Tish Robertson commented further on the Rappahannock trends, agreeing that it is inconsistent and saying that while secchi results have been getting worse, they are seeing improvements in Submerged Aquatic Vegetation (SAV) results. Mike Lane responded saying that it was meeting its SAV goals in the tidal freshwater section, but it is not anymore as of 2020. It is also not consistent across different sections of the watershed. Mike stated that he does not have definitive answers as to why the lower portion of the Rappahannock is degraded, but his updates might be helpful. Mike then transitioned into his presentation (see below).

1:35 – 2:00 [Updated Rappahannock Tributary Summary – Mike Lane](#)

Mike will share his progress on the Rappahannock Tributary Summary and will request feedback from members on the [revisions](#) he has made to the summary.

Summary

Mike Lane began the presentation by going through the overall updates he's made to the Rappahannock Tributary Summary document, such as re-reading and editing each section. He then went through the major specific updates, including CAST loads and tidal water quality trends. Mike requested that ITAT members add comments and let him know their thoughts on his first draft. Mike said he hopes to have the updates done by early January, so would like comments by mid-December.

Breck Sullivan asked who Mike wanted comments from and he said he has a group that he planned on sending his draft report to, but that any ITAT member was welcome as well to review it.

Breck also asked about the SAV section and what that update entailed. Mike said he added some updated graphs and citations from VIMS's website to reflect the new data from 2015 - 2020. Rebecca said this brings up an interesting question: do we want to update this to 2020 or just get this wrapped up? As more reports are updated, should we temporarily update them or maintain the end date in 2018. Mike responded that he's been using data and reports that are a mix in time frames. He said he's more than willing to update water quality metrics to 2020.

Tributary Summary Considerations from the Modeling Workgroup

Summary

Vanessa Van Note discussed recommendations from the Modeling Workgroup regarding the tributary summaries. The first recommendation was to account for climate change via the amount of precipitation, intensity of precipitation, and historical trends. Rebecca Murphy commented that these reports are based on monitoring data so predictions would be outside the scope of this work, but historical trends could be useful here. Mike Lane said that rainfall could be involved, so he thinks it is worth looking into. Mike then asked about whether hydrology was within the scope of work and how speculative aspects of the tributary summaries should be, to which he added that he was very conservative in the summary and did not include any speculation. Elgin responded that he thinks anything that could explain trends in the watershed is fair game, adding that solar radiation data/cloudy days would be interesting to see in relation to chlorophyll. Claire Buchanan and Rebecca agreed that using the data from the modeling team, precipitation and solar radiation/cloudy days would be very helpful if included in the tributary summaries. Roger Stewart added in the chat that he recently looked at long-term surface Photosynthetically Active Radiation (PAR) and sees a gradual increase in solar radiation.

Elgin Perry emphasized a chat message from Qian Zhang that recommended not only looking at RIM inputs, but also the loads from the watershed surrounding the tidal segments given that it can be made available fairly quickly. Qian added that Gopal Bhatt is currently working on extending the model runs from 1985-2014 to 2020 and that data could be eventually incorporated.

Due to time constraints, the next ITAT meeting will include discussion of the rest of the recommendations from the Ad Hoc Modeling Team.

2:00 Adjourn

Next Meeting: Wednesday, January 26, 2022

Please note the December meeting is canceled due to the holiday.

Participants: Alexander Gunnerson, Andrew Keppel, Breck Sullivan, Cindy Johnson, Elgin Perry, Jon Harcum, Marjy Friedrichs, Rebecca Murphy, Renee Karrh, Roger Stewart, Kyle Hinson, Carol Cain, Katheryn Barnhart, Qian Zhang, Jimmy Webber, Vanessa Van Note, Tish Robertson, Rikke Jepsen, Mike Lane, Carl Friedrichs, Claire Buchanan.