



Integrated Trends Analysis Team (ITAT) Meeting

Wednesday, September 29 2021
10:00 AM – 12:00 PM

Meeting Materials:

https://www.chesapeakebay.net/what/event/itac_meeting_september_2021

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

Action Items

- ✓ Highlight the Estuary Trends through 2019 PDF more prominently on the CAST website and add to ITAT website. Share the PDF with the Chesapeake Bay Program's communication team and consider how it can best be disseminated.
- ✓ Engage with citizen monitoring groups regarding the CAST website and its capabilities at and ahead of the Chesapeake Watershed Forum.
- ✓ Develop a plan for breakout groups, including facilitating a conversation about what should they look like, where should they happen with stakeholders, and how they connect with partner work. Improve transparency regarding capacity for projects and their prioritization.
- ✓ Work further with Virginia and Maryland about using the flow adjusted GAMs data for status along with the trends.
- ✓ Begin preparing for ITAT's presentation at the December STAC meeting.

AGENDA

10:00 – 10:05 Welcome - Rebecca Murphy (UMCES) and Jeni Keisman (USGS)

Announcements -

- New ITAT Co-Coordinators - Breck Sullivan and Vanessa Van Note
- New ITAT Staffer - Alex Gunnerson

10:05 – 10:30 Transition discussion and introductions

- Alex, Breck, and Vanessa introduced themselves.
- Jeni announced her departure for a new job effective October 1st.
- Jeni briefly reviewed the major organizations represented in the meeting.
- Jeni shared potential major priorities for the upcoming fiscal year:
 - Document the procedures for updating the relevant elements of the tributaries summaries for efficient recordkeeping every two years.
 - Finalize Rappahannock "Insights On Change" and "Summary" sections of Rappahannock Tributary Summary.
 - Document and formalize annual updating and communication cycle of the tidal water quality trends results.

- Gather input on prioritizing the remaining tributary summaries from relevant stakeholders, form breakout groups, and establish expectations for scope of insights.
- Communicate tributary summary information to relevant stakeholders and work with other interested parties on translation to provide useful findings to a broader audience.
- Explore adopting baytrends for VADEQ analysis of nontidal trends in Virginia.
- Discussion:
 - Rebecca Murphy said ITAT's future work should also include a focus on synthesis and understanding trends.
 - Jeni Keisman I agree because we are generating a lot of information but don't have the bandwidth to fully analyze or synthesis these data. This should be a focus of breakout groups and ITAT should seek to partner with STAC, Qian, and other researchers to address this capacity need.

10:30 – 11:30 Western Tributary - Cluster analysis of GAM2 results (Jon Harcum, Tetra Tech; Elgin Perry)

- Presentation
 - Jon Harcum introduced the analysis and gave an overview of the purpose and methodology.
 - Elgin Perry described in detail the analysis and results, specifically focusing on Dissolved Oxygen and Total Nitrogen. Elgin also reviewed potential improvements to the analysis going forward and then showcased his aggregation table in excel and asked for input.
- Discussion
 - Jeni Keisman mentioned the importance of this work and how grouping tributaries spatially might inform understandings of what is driving trends.
 - Jeni Keisman also stated that this analysis moves the discussion towards understanding factors.
 - Jeni Keisman asked for the Maryland state perspective in relation to these indicators for the Potomac and Patuxent and asked Tom Parham about stakeholder involvement related to these projects.
 - Rikke Jepsen said from her perspective more implementation in the Potomac would seem to help reduce nitrogen.
 - Renee Karrh said it is difficult to answer because they have not been using the GAM2, nonflow corrected, in this way when communicating with management. They use GAM4 or GAM5. They have flow adjusted the ones Elgin has grouped to see what flow impact is there. She liked this method to show more of a status so there is not a disconnect between what they are already using for management with the GAMs to show trends. For the status, she is using nonflow adjusted data. However, flow adjusted data for status could be nice going forward so that it could connect with the flow adjusted trends. She also said the temporal scale of this project is very useful as it stretches for the length of the time series.

- Rebecca Murphy said ITAT should work further with Virginia and Maryland about using the flow adjusted GAMs data for a status along with the trends.
- Rikke Jepsen suggested relating land use data to tributary clustering.
- Qian Zhang agrees that work to explain why we see these clusters and understand differences is the next logical step. There should also be comparisons across different parameters, which could relate to his nutrient limitation work.
- Jeni Keisman stated the importance of moving towards explaining trends and what is driving them in the landscape. She also asked the following two questions:
 - Does a data driven approach illustrate that tributaries are similar to the mainstem?
 - Is there a communication opportunity or need to look at local properties of tributaries in relation to the mainstem?
 - Renee Karrh said that the most salient factor here is asking what data was collected under shallow water, what is the frequency of the data being collected?
- Discussion of Elgin's aggregation table in excel.
 - Jeni Keisman said this work would benefit from collaboration and synthesis moving forward to discover the trends and narratives in the data. Given the large amount of information, future investigations might be best organized around a question of interest.
 - Carol Caine said in the chat that she likes this format, as it is concise and discernable for decision makers and stakeholders.
 - Qian Zhang said in chat that he likes Elgin's table for the Susquehanna very much. For the tidal stations, it would be interesting to have a similar table but with two new columns for DIN/DIP and TN/TP. Together with the individual parameters, this can tie quite well to our work on patterns and changes in nutrient limitation. (Although the latter is limited to a few stations where there were bioassays.)
 - Jeni Keisman asked if James Webber would like to comment on processes for synthesizing work going forward.
 - James Webber said that he supports Elgin's approach towards aggregating cluster data like this because it allows for more informed decision making in areas not monitored. Further synthesis should be informed by stakeholder questions and interest, in addition to understanding differences between tidal and non-tidal areas. James, along with colleagues, sees their role as bridging the tidal, non-tidal areas and leading synthesis there.
 - Peter Tango said in the chat that for smaller tributaries, some patterns here seem related to salinity in the big picture. It seems there are some tributaries like South River where publications highlight sills are in place and the water quality behavior with higher

resolution data (South River Cit Sci data has around 20 sites versus 1 for the CBP data). Exploring data sets with higher spatial resolution then may help refine our understanding and storytelling. Shallow water zones are another area of discussion that might be more meaningful to engage with given their locality.

- Jeni Keisman agreed saying that this is important for connecting with people and could be a topic for breakout groups. Stakeholders could guide the research around shallow water going forward.
- Peter Tango asked are GAMs used for segment level SAV assessments?
 - Jeni Keisman said no, but we have begun collaborating with SAV folks and talking about potential future alignment. Could also utilize benthic folks to connect with living resources.
 - Peter Tango asked if the dissected segments are going to be updated for the fact sheets.
 - Jeni Keisman said that there are not plans to update the fact sheets at the time, but that group is collaborating so it might be possible if highly desired.
 - Dave Parrish said in chat that GAMS are not used in the water clarity assessments that are conducted by Bay Segment, but some GAMs work have been used in linking SAV and water quality in thinking about trends. One example is a paper published in 2017 by Jonathan Lefcheck, JJ, Rebecca Murphy and others.
<https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.13623>. Sorry for the delayed response - I had trouble tracking down the link:
<https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.13623>

11:30 – 11:55 CAST Estuary Trends Webpage and Annual Update Process for Tributary Summaries (Jeni Keisman, Olivia Devereux, all)

- Presentation
 - Olivia walked through the CAST estuary trends page to inform workgroup members of the site's capabilities.
 - Potential areas of interest include:
 - Trends over time – may be of interest to the most people. This includes estuary and tributary summaries, the TMDL, and loads in graph and table forms. This is the source of information for most non-technical users. More technical users can upload their own files.
 - Olivia recommends moving the change map to the front page.
 - Chesapeake Progress – updates on work towards meeting the TMDL.
- Discussion
 - Rebecca Murphy said that this is a great resource for tidal information.
 - Rebecca Murphy and Jeni Keisman stated the importance of making the website more user friendly, understanding the audience, and making it accessible to the entire partnership because of the use it could provide.

- Rebecca Murphy talked about how the Estuary Trends through 2019 PDF is useful because it presents a concentrated summary of trends information at a glance.
 - Jeni Keisman and Rebecca Murphy suggest making the link to more information on the PDF more accessible by displaying it independent of a hyperlink. They also agreed that the PDF on the website should be featured more prominently.
 - Breck Sullivan suggested sharing this PDF with the Chesapeake Bay Program communications team as they could use it in the Bay Brief.
 - Peter Tango agreed and said it might be useful in the CMC monthly newsletters as well. He will follow up with Caroline Donovan about how this information can connect with citizen's monitoring.
 - Jeni Keisman said that the CAST website could be useful for the Riverkeepers Alliance if there is time set aside to get them familiar with it.
 - Mike Lane asked if it could be linked on the ITAT webpage (<https://cast.chesapeakebay.net/TrendsOverTime>) and Rebecca Murphy agreed.
- Peter Tango suggested highlighting the CAST website and its information at the Watershed forum in the context of citizen monitoring to reach a broad audience.
 - Olivia Devereux offered to help bridge connections.
 - Peter Tango said he will follow up with the CMC on John Dawes work, Executive Director of The Commons.

11:55 – 12:00 Wrap up

- General wrap up discussion:
 - Jeni Keisman asked for volunteers in implementing breakout groups for the Tributary Summaries and noted that Carl Friedrichs, Marjy Friedrichs, and Jeremy Testa had expressed interest.
 - Carl Friedrichs said that he appreciates the focus on extending Elgin's analysis and also the interest in packaging analysis for communication.
 - Peter Tango said this group can be helpful in engaging with stakeholders in the context of decisions made at the Water Quality Goal Implementation Team series of meetings this October.
 - Jeni Keisman said yes, that could help with prioritizing projects and what resources are available regarding capacity. This should also be brought up at the December STAC meeting.
 - Workgroup members said goodbye and thank you to Jeni Keisman for her work.

Next Meeting – October 27th, 2021

Participants – Andrew Keppel, Jeni Keisman, Breck Sullivan, Alex Gunnerson, Qian Zhang, James Webber, Amanda Shaver, Amy Goldfischer, Carl Friedrichs, Carol Caine, Cindy Johnson, Dave Parrish,

Elgin Perry, Erik Leppo, Jessie Turner, Jon Tt, Lee McDonnell, Mike Lane, Olivia Devereux, Peter Tango, Rebecca Murphy, Renee Karrh, Rikke Jepsen, Tish Robertson, Tom Parham, Roger Stewart, Vanessa Van Note, John Clune