



## Integrated Trends Analysis Team (ITAT) Meeting

Wednesday, September 28, 2022  
10:00 AM – 11:30 AM

Meeting Materials: [Link](#)

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

### ACTION ITEMS

- Breck Sullivan will distribute the WQSAM science needs to ITAT to review, as well as the new logic and action plan once it has been started.
- Alex Gunnerson will reach out to John Wolf and Angie Wei about the tributary layer for the Data Dashboard. Alex will send John Wolf his data layer for the tributary segment sheds for inclusion in the watershed data dashboard.
  - o Alex will work with USGS and the CAST Team to get the links fixed on this USGS Page: [Chesapeake Science Partners Produce Tributary Summaries | U.S. Geological Survey \(usgs.gov\)](#).
- Breck, Alex, Kaylyn Gootman will discuss how to get started with the one tributary summary to update and reach back out to the team with a suggestion for which one to update. – Meeting Scheduled
  - o Breck and Alex will work out the tributary summary Microsoft Teams site to serve as a consolidated source for the team to use. – IN PROGRESS
  - o Breck and Alex will compile the other input received from STAC, MTM, and other groups on the tributary summaries.
- Alex Soroka and Chris Mason will re-run the PRISM results from 1930-present. Breck will stay in contact with them about a data release, when appropriate.
- Kaylyn, Breck, or Alex will reach out to Ruth Cassilly about who the Data Dashboard team has already spoken with so ITAT can speak with them about the tributary summaries.
- Kaylyn, Breck, or Alex will work with the Data Dashboard team to develop the pop-up bubble capability for the tributary summaries and include research questions in these pop-ups.
- Kaylyn, Breck, or Alex will work with the Data Dashboard team to make the color scheme for the tributary summaries more accessible.
- Breck will ask for support/guidance from the Science, Analysis, and Implementation Branch on helping to prioritize science needs and finding partners to address limits to capacity needs.
- ITAT members who are part of the tributary summary update process should email Breck, Kaylyn, and Alex with any availability concerns about updating their part of the tributary summary in the next few months.

## Meeting Minutes

**10:00 – 10:20 Welcome – Vanessa Van Note (EPA) and Breck Sullivan (USGS)**

### Announcements –

- Conferences of potential interest
  - [Atlantic Estuarine Research Society \(AERS\): "Community and collaboration: the importance of shared research in a post-covid world"](#) – October 13-15, 2022, Washington College, Chestertown, Maryland. [Abstracts can be submitted here](#) (no due date provided) and [registration can be completed here](#) (no due date provided).
  - [11th U.S. Symposium on Harmful Algae](#) – October 23-28, 2022, Albany, NY. [Abstracts/posters were due July 15](#) and [registration closes September 16](#).
  - [Chesapeake Watershed Forum](#) – November 4-6, 2022, Shepherdstown, WV. [Registration closed September 23, 2022](#).
  - [A Community on Ecosystem Services](#) – December 12-15, 2022, Washington, DC. [Abstracts](#) were due July 15, 2022.
  - [National Water Quality Monitoring Council's 13th National Monitoring Conference](#) – April 24-28, 2023. Location TBD. [Session proposals](#) were due June 24, 2022.
  - [CERF 2023 Conference: Resilience & Recovery](#) – November 12-16, 2023, Portland, Oregon. [Session and workshop proposals](#) due September 19, 2022. [Abstracts](#) due May 10, 2023.
- Update on the Parameter-elevation Relationships on Independent Slopes Model (PRISM) precipitation data – Alex Soroka (USGS)
  - Breck shared that Alex Soroka and Chris Mason with USGS have been gathering the PRISM data that ITAT is interested in using for the climate change section of the tributary summaries, specifically precipitation volume and intensity beyond from 2014-2021 since that period is missing from the modeling team's dataset. Alex Soroka commented that when the USGS team working on this tried to tack on 7 years for results after 2014, they got different historical results compared to the modeling team. This discrepancy is because the PRISM network is not static and new stations have come online since 2014. Additionally, the USGS team does not have access to the legacy code, so they do not know from a spatial perspective which way to average it. Because of this, Alex Soroka thinks they should re-run the results from 1930-present, which is not a hard lift computationally because they already have the scripts. Alex Soroka said they are trying to add this to their workplan for next year.
  - Breck asked if there were any objections. No objections were made. Breck thanked Chris Mason and Alex Soroka for their work on this. Breck will get into contact with both of them regarding the data release, when it is ready.

- Update on cluster analysis work and results for five tributaries (Potomac, James, York, Rappahannock, Patuxent) – Elgin Perry (Independent Statistical Consultant)
  - Breck shared that the Cluster Analysis Interpretation small group met earlier in September and discussed the results Elgin produced for the Potomac, James, York, Rappahannock, and Patuxent. Elgin debuted his new auto-labeling code which labels the clusters automatically, saving much time in producing these results. The end usages of the cluster analysis include the tributary summaries and the ITAT webpage, once the Web Team has completed updates to the Webpage Content Management System. Elgin commented that when looking at the cluster results, remember that this is new software. If something doesn't look right, let Elgin know ([eperry@chesapeake.net](mailto:eperry@chesapeake.net)). If anyone is not a part of the cluster analysis small group but wants to be involved or get access to the results, please contact Alex Gunnerson ([agunnerson@chesapeakebay.net](mailto:agunnerson@chesapeakebay.net)).
- Update on cluster analysis tool funding via TetraTech – Breck Sullivan
  - Breck announced Elgin has created a script to produce cluster analysis results so that TetraTech can develop a tool for others to reproduce cluster analysis results. The target audience is others internal to the CBP partnership. The target audience for this tool is a technical audience that is familiar with baytrends and would often be internal. By making these analyses reproducible, it will facilitate their inclusion in the tributary summaries. Breck has been in contact with the Science, Analysis, and Implementation Branch Chief, Lee McDonnell, to find funding to complete this task. While they have not yet identified funding, Lee is still very interested in and supportive of this work.
- Share if you submitted a session proposal for CERF 2023 – Everyone
  - Rebecca Murphy shared that she, Isabella Bertani, Qian Zhang, and Marcus Beck are leading a session on trends. Qian said the name of the session is "Developing new insights from environmental data through innovative analysis approaches". The call for abstracts will be open in January 2023 and more information can be [found here](#). Anyone interested in participating or who has questions should reach out to Rebecca and Qian.
- Vanessa Van Note announced that this will be her last meeting with ITAT and she will be moving to a new position within EPA that will focus on Superfund. Kaylyn Gootman will take Vanessa's place as co-coordinator for ITAT with Breck.

#### **10:20 – 10:40 Data Dashboard Text for Tributary Summaries – Vanessa Van Note**

Vanessa provided an overview of a new platform to showcase the Tributary Summaries – [CBP Watershed Data Dashboard](#). Vanessa previewed the language they drafted for the Tributary Summary section of the data dashboard. ITAT members were asked to weigh in with their feedback on the proposed language.

## Summary

Vanessa showcased the beta version of the [CBP Watershed Data Dashboard](#), which has the purpose of synthesizing data across the bay program into one visualization tool so it is accessible to guide management actions and decisions. Vanessa emphasized the data dashboard team is on the cusp of finishing their updates and is transitioning to outreach. The data dashboard team is interested in incorporating the tributary summaries into their tool and would like to get ITAT's thoughts on how to best do that. Vanessa said this is an opportunity to communicate the tributary summaries to a new audience, besides where they are [usually held on CAST](#). Additionally, this tool can build greater understanding of the tributary summaries.

On the data dashboard, the tributary summaries would be under the Tidal Waters tab and would be its own drop-down menu. Vanessa walked through the current interface, what would be added (pop-up with instructions and background), and then asked for feedback from ITAT members.

Qian Zhang said he likes the idea of the tributary summaries being on the data dashboard. To clarify, he asked if it is simply an access point to the data. Vanessa said yes, the main idea is to increase visibility and accessibility to the full reports, although some text could be added explaining the status of the tributary. Kaylyn suggested that in the future the information be more thoroughly displayed and visualized in the next evolution of the data dashboard. Kaylyn agreed with Vanessa, saying that this is a good start. Vanessa added that for the tidal trends and water quality standards attainment and deficit data, they are already in different tabs and show the data for each tributary. Qian replied that it would be nice to include more information, without overloading things in the watershed data dashboard. For example, Qian suggested labeling the segments and tributaries designations so a user knew the relevance of each station, regardless of their background. Qian suggested adding more detailed documentation in the readme file which can be linked to the data dashboard.

Kaylyn commented that the data dashboard is undergoing an evolution in 2023 and will be moving fully over to ESRI and away from Tableau. This should allow for greater integration with R Shiny and other more interactive aspects that can be included in the tributary summaries tab. Kaylyn added that maybe the data dashboard can replace the StoryMap component of the tributary summaries going forward.

Elgin commented this is very exciting work, and he agreed we should start with the visualization at the whole tributary scale, then drill down into specific segments to understand what is driving trends. Vanessa agreed, saying the next step could be to visualize the segments once the tributary is selected.

Breck asked who the audience is for the data dashboard versus the audience for Chesapeake Assessment Scenario Tool (CAST). Vanessa replied, the audience for CAST is the state technical managers who submit data for tracking progress towards the goals and outcomes under the *2014 Chesapeake Bay Watershed Agreement*. These state technical teams then use the reports from CAST and communicate them to county and municipal managers. The audience for the Data Dashboard is larger and designed to be more accessible than just state managers. Kaylyn replied that the audience can be tiered in different levels but wanted to emphasize it is in the beta stage for the moment. Kaylyn said one audience is those who would use the data dashboard as a support tool

for users of CAST at different levels like local government and planning management agencies. Other audiences for the Data Dashboard include the general public and people working in the CBP partnership, specifically trying to address what they need and training and tutorial information. Kaylyn said they plan to track who uses the Data Dashboard to better understand who the users are. Vanessa added the Data Dashboard contains information that can be useful to many different users involved in restoration and conservation planning including local planners, state agencies, watershed groups, etc. The state leads in the WQGIT have trouble using CAST, so they could benefit from these materials. Kaylyn added the Data Dashboard is a great way to introduce users to the tributary summaries and build the audience for ITAT because they will be easier to access and presented more visually.

Vanessa asked how ITAT feels about the visual and emphasized the current visualization is just a start and there is room for expanding or tweaking the visuals. Vanessa said ITAT can be involved in hearing how the potential users respond to the tributary summary section.

Rebecca suggested one tweak to the visualization: changing the term Mainstem for Maryland and Virginia since all tributaries empty into the mainstem at some point. While the tributary summaries are grouped like that, it would be best to change the terminology for sake of clarity. Rebecca said she likes the current interface.

Kaylyn suggested showing the tributaries by segment, in addition to their watershed. Breck said she does not know if those layers currently exist. Alex Gunnerson shared that he created a layer for this use case during the Multiple Tributary Model work and he will work with John Wolf to get the layer approved. Qian Zhang suggested adding the capability to allow people to zoom into a specific part of the map to see which watershed it is in and which tidal segments are nearby, with segment names shown.

Breck asked where and who the Data Dashboard is presented to. Kaylyn replied they are speaking to a college class next week at Virginia State University but are open to presenting at whichever groups are interested in the future. Kaylyn added they are seeking to resume the work Emily Trentacoste did in communicating with state agencies. Vanessa said previously, Emily worked with users to determine what should be in the Data Dashboard and what its user interface should look like. After Emily left, Ruth Cassilly focused on getting the updated data into the dashboard and the team is now transitioning to outreach. Vanessa suggested speaking with Ruth to see who the Data Dashboard team has already spoken with so ITAT can speak with them about the tributary summaries. Kaylyn said this is an excellent idea.

Breck mentioned that previously, Rebecca suggested including pop up bubbles that include potential research questions. Breck said they have not yet been able to address this, but once it has been included, it could be a good way to connect with universities across the watershed when presenting the tributary summaries to them.

Vanessa said she, John, and Ruth, can get back to everyone on a more accessible color scheme and the tributary layer to be used.

**10:40 – 11:00 [Water Quality Standards Attainment and Monitoring \(WQSAM\) Outcome Update](#) – Breck Sullivan**

Breck provided an overview of some of the takeaways from the Water Quality Standards Attainment and Monitoring (WQSAM) Outcome discussion with the Management Board during the Strategy Review System (SRS) process. Breck outlined the role ITAT's products will play in supporting progress for the WQSAM outcome and utilization of monitoring data in the 2025 Watershed Implementation Plan (WIP) Outcome going forward.

Summary

Breck provided the context on the WQSAM presentation to the Management Board. Breck highlighted the recent progress and long-term outlook for the outcome, the scientific, policy, and financial success and challenges, and the Management Board response. Breck highlighted ongoing efforts ITAT is involved in, such as the Tidal Trends, Cluster Analysis, Tributary Summaries, Water Quality Tools, Baytrendsmap, Baycluster, and Water Quality Standards Attainment. Breck identified some potential future ITAT efforts, such as connecting research on watershed loads and trends to water-quality responses in the estuary, sharing resources and tools with jurisdictions for monitoring-based decision making, sharing research at WQGIT meetings more regularly, and utilizing new data streams to enhance our understanding of spatial and temporal patterns in water quality.

Breck identified the next steps for the WQSAM outcome and asked:

- What is missing from our ongoing and/or future efforts?
- What science do we need better understanding to advance progress in our WQSAM Outcome?

Kaylyn asked if there is a target number of science needs from each outcome and how many they are allowed to submit. Breck replied there is no limit, but the needs have to be focused on how this will help progress their respective outcome(s). The science needs should be actionable and identify where resources (financial or staff) should be allocated. Kaylyn asked how the needs have been prioritized. Breck said the Goal Implementation Teams (GITs) indicate the priority themselves, but many are considered high. Vanessa has been working with the GITs to identify the highest of the high to get funding for them through EPA's ROAR program. Breck mentioned that in terms of science needs relevant to ITAT, all unaddressed monitoring needs from the PSC Monitoring Report will be added to the [science needs database](#).

Vanessa noted that at the last Management Board meeting, members agreed to participate in more discussion and collaboration. Vanessa asked if they have followed up yet. Breck said they have not heard back yet, and Breck will follow up with the Management Board. Breck added that the WQSAM Outcome will be working closely with the 2025 WIP Outcome and the WQGIT to align work and priorities. Vanessa expressed the working from the bottom up with the WQGIT might be a fruitful approach.

Breck added that she will be working with the monitoring team to clean up the current list of WQSAM science needs. Once they have been revised, the WQSAM science needs

will be sent to ITAT to give members a time to review or make comments. Breck will follow the same process for the WQSAM work plan.

Vanessa asked what the involvement of the branch chiefs has been. Breck said they have not been involved, and the WQSAM team will push for more attention on these science needs from the Science, Analysis, and Implementation Branch. Specifically, this will focus on helping to prioritize needs and finding partners to address limits to capacity.

#### **11:00 – 11:30 Tributary Summary Timeline Thoughts – Breck Sullivan and Vanessa Van Note**

Breck and Vanessa provided feedback from the WQGIT and USGS managers on the products developed from the work of the Tributary Summaries. To distribute data more easily and quickly, they proposed new products that may be updated annually for all tributaries in addition to the reports which may be updated every few years.

ITAT members were asked to consider if the new timeline is an appropriate next step for ITAT and which tributaries should be prioritized when updating.

##### Summary

Breck said that one of the issues with the tributary summaries is that USGS review for reports can be very lengthy. To ensure that the data is disseminated in a timely manner and communicated to managers, ITAT leadership has been considering a few options:

- Since the Potomac Tributary Summary has already gone through review and the other tributary summaries would be similar in voice, style, and substance, it is hoped that the review process would be faster going forward. However, given that ITAT plans on including additional aspects to the tributary summaries, like cluster analysis results and a climate change section, this would require going through a lengthy process again.
- Another option is to make it a Chesapeake Bay Program report, but that would require other partners to remove their names and affiliations, so it would not be citable as their work.
- A third option suggested was to complete USGS approved PowerPoints, which are still citable and can be approved much faster. These would focus on the automated aspects of the reports, such as the visuals and results, not much on the text. This would allow for more frequent communication with managers about annual trends, but would only require the full effort of a tributary summary update less frequently.

Breck emphasized that there is no intention whatsoever to get rid of the tributary summaries, as they are a very valuable product and the work of the team to bring them together is tremendous. Breck also added that none of these options will go forward until at least one tributary summary is completed, because it is important to test the timeline as it currently stands. Depending on the results of this test, this may influence the decision to proceed with one option over another.

Vanessa commented that communicating updated data more frequently with managers can be very helpful for ensuring the information ITAT produces is utilized. Vanessa shared that on a previous project she participated in, they submitted both a paper and PowerPoint for USGS review. The PowerPoint was swiftly approved and then used to

brief the interested parties and get the information in front of decisionmakers to start the discussion. The paper is still currently under review.

Jimmy Webber commented that a new push within USGS means that many PowerPoints are increasingly becoming less easy to publish through and still have strict requirements. For example, requirements for 508 compliance and accessibility can require more time, and there are still very strong restrictions on what can be recommended. Jimmy said one alternative to speed up the process is to remove USGS authorship. Vanessa emphasized Jimmy's comment about recommendations requiring the most edits. However, Vanessa did note that the PowerPoint is still faster than publishing a report. Vanessa also asked what removing USGS authorship would mean for USGS employees, and if they could still contribute or get credit for the work.

Kaylyn asked about fact sheets (2-3 pages) and if that is faster than a full-blown report, since that could be a product that would also help with communication. Jimmy replied it does not really change that much since it would still require 508 compliance, there are USGS publishing groups that may want to change the messaging, and it would need to go through a graphics team at USGS. Jimmy recommended talking with Scott Phillips and Ken Hyer since they have moved many products through USGS review. Breck replied that the PowerPoint idea was from Scott and Ken.

Breck said she can get off authorship if that is needed since she has not contributed extensively to the report. Vanessa and Peter Tango said they would like to see USGS stay involved on authorship since it adds a layer of credibility to the report and USGS is very much connected to the success of the tributary summaries.

Qian commented the [Potomac publication](#) seemed to go well, but that it does not have a DOI. Qian asked if this route would be a viable option. Jimmy Webber said the nice thing about the Potomac report was that it was a cooperative authorship and citable, which allowed it to skip a few steps, but it does not always speed up the process. Another benefit of a cooperative authorship is that it is citable. PowerPoints are not citable in USGS and are not an official USGS product.

Kaylyn asked about USGS Chesapeake Bay Monitoring slides that Peter Tango shared with her and if that is a way around. Jimmy replied that had technical reviews, but since it is not a citable product it cannot be directly housed on a USGS website, which is why it is linked through the CBP website.

In the context of testing out a tributary summary timeline, Breck asked about the workload of team members for the next few months and that they email ITAT leadership about any potential roadblocks to them participating in the update process. Breck said the documents will be housed on a shared Microsoft Teams site so everyone can work collaboratively. Rebecca said organizing many authors is important for success and that last time Teams worked well.

Rebecca replied she is fine with updating the tidal trends graphs and maps in the coming months since it is mostly automated. Rebecca said most components are automated besides text, so as long as the formatting does not change, these updates are less of a lift. Jimmy Webber said he can help the team update the NTN load and trend data and that Chris Mason would also be a good point of contact. Qian said he can help with the loads and attainment sections. Qian commented that trends and attainment go to 2020, not 2021. Elgin commented if the cluster analysis results are used in the tributary



summaries reports, it would take about 2 weeks to rerun the results for 5 tributaries. Vanessa said that Olivia Devereux can very quickly update her sections.

Breck, Vanessa, Alex, and Kaylyn will meet to discuss which tributary summary should be updated first to test out this timeline. They will reach out to ITAT after meeting for confirmation of the tributary suggested for updates.

**11:30**

**Adjourn**

**Next Meeting: Wednesday, October 26, 2022**

**Participants:** Alex Gunnerson, Alex Soroka, Amanda Shaver, Amy Goldfischer, Andrew Keppel, Breck Sullivan, Carol Cain, Cindy Johnson, Efeturi Oghenekaro, Elgin Perry, George Onyullo, Gopal Bhatt, Helen Golimoski, James Webber, Kaylyn Gootman, Peter Tango, Qian Zhang, Rebecca Murphy, Renee Karrh, Tish Robertson, Tom Butler, Vanessa Van Note.