Nontidal Network Workgroup Bi-Monthly meeting

Wednesday, December 20th, 2023
1:00PM – 2:30PM

Meeting Materials: **Link**
This meeting was recorded for internal use to assure the accuracy of meeting notes.

ACTION ITEMS

- ✓ The NTN WG will discuss contingency plans for short- and long-term emergency situations (such as fires, etc.) at a workgroup meeting in 2024.
- ✓ NTN WG leadership will discuss STAC workshop proposals at the January 2024 NTN leadership meeting, then share proposals with the full NTN workgroup (perhaps over email since there is no January full group meeting).
- ✓ Workgroup members should let August (agoldfischer@chesapeakebay.net) know if they have ideas for STAC workshop proposals.
- ✓ Workgroup members will check in with their laboratories that process NTN samples and make sure that they can meet a March 2024 deadline for compiling data for the NTN loads and trends analysis, and let James Webber (jwebber@usgs.gov) know if there will be any issues with this expectation.
- ✓ Peter Tango (USGS) will share the following questions with the Beyond 2025 Clean Water small group: Should we re-evaluate the timeline for NTN loads and trends analysis? Is the milestone review of NTN is still good or is a more frequent analysis needed?
    - This discussion will continue both the NTN WG and the Beyond 2025 group.

MINUTES

1:00 PM Welcome and announcements

Upcoming Conferences, Meetings, Workshops and Webinars

- National Conference on Ecosystem Restoration – April 14-19, 2024, Albuquerque, New Mexico. Abstracts are due September 1, 2023.
- Choose Clean Water Conference – May 20-22, 2024, Ellicott City, Maryland. Proposals for presentations, workshops and field trips due January 12.
- Chesapeake Community Research Symposium – June 10-12, 2024, Annapolis, Maryland.

1:15 PM Intoductions and Updates

Two new workgroup participants introduced themselves: Dawn Hintz of SRBC and Tyler Trostle of PA DEP.

Peter Tango (USGS) opened the workgroup meeting by reminding the group of how the Principals' Staff Committee Monitoring Review had $5 million of monitoring recommendations, and that most have been filled. Since the review was completed, the program has sustained existing monitoring, and grown additional monitoring programs. Inflation was a challenge but monitoring programs have still grown despite that.

Peter also talked about the recent fire at the PA DEP lab and thanked everyone for rising to the occasion to help cover the samples that needed emergency coverage. Jamie Shallenberger (SRBC) expressed gratitude for everyone's willingness to step in and help out. Thankfully, the fire at the PA DEP lab didn't result in any injuries and everyone is ok and safe. Peter said that it may be good to discuss contingency plans for these kinds of situations. For short term contingency this emergency demonstrated that there is enough capacity to fill in shortfalls.

Peter mentioned the Coastal and Estuarine Research Federation (CERF) conference that occurred in November and the outstanding work there that was showcased, including CBP's loads and trends. Chesapeake Community Research Symposium abstracts are due February 1st, 2024. STAC workshop proposals are due February 8th, 2024. There is a smaller funding pot available than in the past. There will be a two-phase approach for STAC proposals - they are splitting it in two rather than having one big event. Peter said that if NTN WG collectively needs a topic addressed through something like a STAC workshop that should be on the agenda to look at in the new year. Since January is a leadership meeting and February is a full group meeting, the leadership will make sure to give some thought to the STAC workshop proposal question and get back to the full group in January about that. He said the workgroup members should let the leadership know about key issues they need workshop support for in order to submit in the new year as a STAC workshop proposal.

Doug Moyer (USGS) provided updates on the reconstruction of the historic and current data sets. James Colgin, Nieko Santoro, Jimmy Webber, Alex Soroka, Tammy Zimmerman and Doug Moyer (all USGS) are continuing to work on the database. James and Nieko are on the final stages of reviewing the data files. They're asking if they can reproduce the number of datapoints and identify any sources of discrepancies. Once they look through the numbers of observations, they'll look through the quality, particularly in the historical records, since after 2010 everything has gone through the Data Upload and Evaluation Tool (DUET). The team also met with the Data Integrity Workgroup (DIWG) to discuss the decision tree for Total Nitrogen (TN) and Total Phosphorous (TP) to decide what constituents inform TN and TP and got their input for consideration. They are on the final stages of database reconstruction which will allow them after the new year to start the analysis for both the River Input Monitoring (RIM) loads and trends, and the NTN loads and trends. They'll be able to start those loads and trends hopefully for the March timeframe for the NTN.

Peter said that in the PSC monitoring review, one recommendation was the buildout of RIM stations. This was funded to get continuous monitors for fundamental parameters. There is also

an effort to get nitrate monitoring, but it was a challenge. Peter asked if someone could comment on the final status of this year of the RIM stations.

Alex Soroka said that the Choptank RIM station is up and running. See how a Choptank responded to the recent storm here. In terms of the other stations, for the Patuxent River they have equipment built to lower and raise the sond. They had to run the agreements through USGS legal team, and they are awaiting final decisions there, hopefully soon.

Peter asked if the location moved downstream, and Alex responded that yes, it is moving a little bit downstream, and once they figure out one or two legal questions, they'll be ready for install.

Doug Moyer said for the Virginia sites, they have instruments installed at Mattaponi and Appomattox. Chris Mason confirmed that was true and that in the past few weeks they added a SUNA to the Rappahannock site which already had a sond deployed, so now they have sonds and SUNAs at all 5 of their RIM sites.

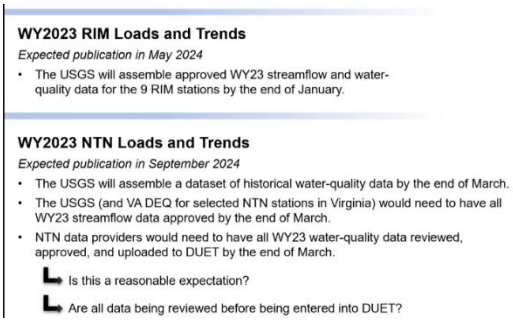
Doug Moyer added that the Rappahannock site was the only RIM station that was not planned to have a SUNA unit from the EPA funding, but the USGS WV-VA center decided they wanted one and were able to purchase a SUNA unit in order to have continuous nitrate at that station.

Doug Moyer said regarding the analysis of continuing monitoring data and integrating continuous and discrete data, they're trying to have a single statistic approach that can be fed both discrete and continuous. They're in the approach development stage now. Jeff Chanat (USGS WV-VA office) and Gretchen Oelsner (USGS Headquarters) are working together on the approach. Then they will identify staff that will work with that team to determine how to bring in those two types of data. Phase one is identifying WRTDS's sensitivity of the results to different frequencies of data. It is great to have the national USGS team involved as well and they'll be looking at this approach outside of the Chesapeake Bay Watershed with national trends as well. EPA and USGS are funding this work. There will be a method interrogation and sensitivity analysis this year and Doug will provide updates.

Peter shared an update that there was record low hypoxia this year, perhaps connected to low amounts of rain early in the year.

Kaylyn Gootman (EPA) shared she will be working on the "NTN Spaghetti" or the funding of the NTN network starting in the new year. Kaylyn and Mark Nardi (USGS) will be working on collating the finalized dataset and hope to finish this work by the end of summer. Doug Moyer asked if Kaylyn was still waiting on information from the VA portion of the NTN, and if she planned to meet with VA DEQ and/or the USGS VA-WV office? Kaylyn said yes, she will need to speak with VA DEQ and the USGS VA-WV office and will follow up with both parties. She has already spoken with Doug Chambers (WV DEP) and Mark Brickner (PA DEP).

1:30 PM FY24 Timeline for NTN and RIM Load and Trend Publications - James Webber, James Colgin, Alex Soroka, Doug Moyer (USGS)



Presentation Summary: The typical schedule is that NTN loads and trends are updated every other year, and RIM loads and trends are updated every year. NTN loads and trends through Water Year 2020 were released in January 2023, and RIM loads and trends through Water Year 2022 were released in June 2023. Currently, the team that typically works on the loads and trends analyses are working on the reconstruction of historical water quality results to provide a consistent, reproducible and verifiable dataset of all the water quality inputs that are fed into the models to generate the load and trend work. This new dataset will be used to compute all future NTN updates, and will be described by a new USGS report, and is expected to be available for use by March 2024.

Due to this work causing a delay in loads and trends analysis, the next NTN loads and trend analysis will include both Water Year 2022 data, and Water Year 2023 data. WY23 RIM loads and trends will be computed starting in the winter and published in May 2024, and NTN loads and trends for WY22 and WY23 will be computed starting in the spring and published around September 2024. The RIM work does not need to wait for the historical database reconstruction to be completed in order to move forward.

Feedback was requested from the group on whether they would be able to provide NTN data by the end of March 2024 in order to meet this proposed timeline.

Discussion:

Jamie Shallenberger said that SRBC tended to adhere to the schedule described for their data submissions, with a few lags out of the output that comes out of the Kentucky sediment lab. Dawn Hintz (SRBC) agreed with Jamie, saying they'd never had an issue with the March deadline and the only lags have been sediment but typically only the last couple of months of sediment data, so it's not usually an issue.

Jimmy said maybe that's something they could work together on, and maybe the Kentucky lab can move these up to the front of the line. Tammy Zimmerman offered to help with the Kentucky lab if needed.

Doug Moyer asked if SRBC is responsible for New York and a portion of the PA Susquehanna that PA USGS does not cover. Jamie responded that SRBC does have 5 stations in New York state, and a bunch of the ones in the PA portion of the Susquehanna. They actually do one that's at Octoraro creek in MD and then Tammy's group does the rest. Dawn added that SRBC submits all the data out of PA, even the data that USGS collects, SRBC submit that down to DUET out of PA.

Alex Soroka said that for MD and VA for this year USGS already got all of their sediment data yet. They did have a little delay with nutrient data from some labs, so they may end up in middle of February for data is compiled and complete for the RIM loads and trends analysis. For the March deadline for the NTN loads and trends, they shouldn't have an issue.

Doug Moyer asked for MD DNR's perspective, but they were not present at the call.

Lori Brown (DE DNREC) said for Delaware, Lori would check with the lab to see what's reasonable and what's not as far as deadlines. Lori said they've always able to reach the normal timelines.

For DC, Alex Soroka said that USGS handles the DC sites that they sample, and they should be on time for the NTN loads and trends with a March deadline.

For Virginia, Cindy Johnson (VA DEQ) said she expects to have July data submitted, and she'll be working on submitting August and September data after the holidays.

Jimmy Webber wrapped up by asking folks to share any other thoughts they had about the timeline with him.

2:00 PM **Susquehanna River Basin Coalition (SRBC) Susquehanna River Loads and Trends** – Jamie Shallenberger (SRBC)

Presentation Summary:

SRBC has been involved in the Nontidal Network since the beginning of the network and generated some kind of deliverable report since the beginning. Their reporting has been a direct consequence of the revenue streams Kaylyn mentioned. SRBC's deliverable currently comes out of the Implementation and Monitoring Grant section 117e of the Chesapeake Bay Agreement, through PA DEP and then to SRBC. SRBC serves as PA DEP's intermediary in the coordination and management of the project. SRBC generates an annual report of loads and trends in the Susquehanna based on the stations they monitor. SRBC has been exchanging stations with USGS over the last couple years as different programs have come online. Every year SRBC gives a technical report to PA DEP and CBP, as well as providing this information through their website where data is available through WY22. The program is called Sediment and Nutrient Assessment Program or SNAP.

New data are obtained through two full time SRBC staff who lead NTN sample collection, and additional staff during storm event collections. Additional staff manage data resources, data analysis, QAP and progress report, website maintenance and project management. Currently SRBC monitors 27 stations and it will be 28 station when Hammer Creek comes online. Samples are analyzed through multiple facilities. The bulk of samples go to the PA DEP laboratory, and other facilities utilized include ALS Global Rochester, NY for the NY samples; USGS Kentucky for sediment samples; and some in-house analysis is done for suspended sediment concentration for a select number of NTN stations. The source of data used to compute loads and trends is

SRBC's internal database; Dawn processes and pulls data from SRBC's internal database into DUET (as opposed to going through CEDR). Briana Hutchinson does SRBC's analytics, using R-code packages available through EGRET that are representative of the WRTDS as well as the common model process to compute concentrations, loads and calculate trends, including flow normalized aspects.

Discussion:

- How can we best coordinate SRBC released and USGS released loads and trends, including coordinating methodology for computing loads and trends, timing of the loads and trends data releases, and communication with the Nontidal Network Workgroup?

Peter Tango asked in the chat: Jamie - Loads and Trends of N, P and S, or does PA monitor and report beyond that? E.g., any salt, microplastics, emerging contaminants (e.g. PFAS, etc.)?

Alex Soroka commented in the chat: We will have 3 other stations coming online with identical methods to the two new stations Jamie mentioned. VA will get one, as will DE and MD. While they are small watersheds (<15 sq miles) we could consider their inclusion.

Peter Tango commented in the chat: We have similar separation on the tidal side - indicator is an annual output, States report to EPA on biennial time steps.

Doug Moyer asked if the two new stations will be added to the NTN network to bring the network to 125? Jamie said those stations (Hammer Creek near Schafferstown, PA and Little Conewago Creek at Upper Lawn, PA) are very small agricultural dominated watersheds that are getting NTN sample treatment plus continuous in stream monitoring units. Jamie said he's not the final arbiter of what to call them and who's going to end up with the data.

Alex Soroka commented in the chat: We will have 3 other stations coming online with identical methods to the two new stations Jamie mentioned [the small agricultural watershed monitoring stations]. VA will get one, as will DE and MD. While they are small watersheds (<15 sq miles) we could consider their inclusion [in the NTN].

Doug asked if the Penn State station is doing a fixed frequency and targeting storms using an isokinetic technology? Jamie responded that's the approach developed there. USGS is working out the sampling plan. SRBC's crew will cover storms until Penn State has the capacity to do storms there. Doug said, Jamie mentioned SRBC at five locations run SSC. Is SRBC in any of the round robin QA for labs doing sediment? Is that being evaluated? Jamie said he's not sure but he'll find out.

Tyler Shenk (SRBC) said it's been over a decade since SRBC has done QA so they're overdue for some. If there's a round robin, they would be interested in that. Doug said that can be brought up in the DIWG - there's a round robin of several labs.

Doug then asked, for WRTDS that goes through SRBC's internal database; how are they handling historical data and analysis of that data at sites where SRBC and USGS swapped stations? Jamie responded that they are just processing the data for stations where SRBC has been historically involved. Most of the station swaps with USGS have been in the last year or two. Dawn confirmed saying that the few stations they have switched, that data is not coming out to run trends because it is so recent. While Dawn has access to the last ten years, she wouldn't have further back than that. They have not been running trends at sites SRBC hasn't had for the entire sampling period.

Doug asked if any historical sites that USGS had are now SRBC sites? Tammy Zimmerman shared that USGS gave SRBC the Little Juniata and Frankstown Branch Juniata stations; SRBC runs those now, as well as Yellow Breeches Creek Station. Jamie and Dawn confirmed that was correct, and in turn they gave USGS the Marietta and West Conewago stations.

Tammy said that at any of those sites the total dissolved solids per sediment is what's run at the PA DEP lab, and the SSC or sand fine at the Kentucky lab, that would have continued. The labs wouldn't have changed even if stations changed hands. At those 5 longer term sites (used to be 6 for SRBC) that would be yet another lab sample that SRBC ran but not to preclude the traditional sampling that happens for NTN as well. Jamie said that's current and those 6 long term stations that was SRBC was processing sediment samples for was in addition to all the other regular analytics that go for the regular NTN stations.

Tammy said for the Hammer Creek and Little Conewago stations, John Clune had a conversation with Josh Lookinbill, and these stations are not part of the NTN program at this point. Maybe down the road they can be considered part of the network down the road with further conversations, but for now they are just run like NTN sites, and have that continuous monitoring as well. Hillary Dozier out of the USGS PA office is working with Katie Bartling from Penn State on how to collect the samples at these sites and will coordinate to include storm samples at the site.

Mark Brickner (PA DEP) said he agrees with Tammy. Josh Lookinbill has been the lead on that.

Kaylyn Gootman (EPA) mentioned how she met Katie when she visited the small ag watershed sites and thanked the SRBC team.

Doug said the group will probably need a continuation of this discussion. There have been identified that there could be some differences in the data used by the NTN vs what SRBC is using. So especially when recreating the historical dataset, they'll want to make sure the two groups sit down together. The concern is they'll get different results with different data, so how to resolve differences in load and trend results as a result of using different data? That's Doug's major concern with being on two parallel tracks.

Kaylyn added that she wanted to bring that up as well, that further conversations are needed, and offered her help with any coordination needed.

Doug said a major difference between two programs is that the NTN loads and trends are run every other year while SRBC loads and trends are run every year. So he sees a redundancy between them, and in days of funding shortfalls, is that reasonable?

Jamie responded that those are good points. Like Doug mentioned, this group has talked in the past about consistency of data. It's a useful exercise to develop the historic database and SRBC is interested in participating in whatever way they can in making sure the data are consistent. As far as annual reporting, there's a legacy of various funding streams, and also of technology. It's become apparent that folks are doing data analytics at different paces and have been for a while. SRBC has easier and more access to run the data. SRBC has benefited, and sister agency partners not part of the NTN group also benefit from having an annual evaluation of loads and trends because there is lots of involvement with stakeholder groups, especially in the Susquehanna region related to the Bay WIPs. Having insight from SRBC's stakeholders, and other agency programs they deal with regularly, they find value and others find value in having the annual data. Doug's point about availability of funding is certainly warranted, and SRBC is open to having further discussions on integrating more effectively. Jamie said he sees there are opportunities for inconsistency in the fact they're pulling from SRBC's internal database as opposed to others pulling from CEDR. He does see value in a regional look at the loads and trends. SRBC has only been focused on the stations they monitor, and their exchanges with USGS may be complicating their ability to look at stations they're monitoring only.

Peter commented in the chat: We have similar [temporal] separation on the tidal side – [tidal] indicator is an annual output, States report to EPA on biennial time steps.

Doug said that historically they ran the NTN loads and trends every year. Then they went to milestone years (every other year) which seemed to meet the need of the stakeholders. Doug said he is curious if there's any feedback from stakeholders outside of the Susquehanna on having more frequent loads and trends.

Peter said that is a good question to ask for the Beyond 2025 group - if the two-year milestone review of NTN is still good or is a more frequent analysis needed. Peter said he can take that question back to the Beyond 2025 group, and this discussion can continue in the NTN WG and the Beyond 2025 group.

2:30 PM Adjourn

Participants:

Alex Soroka (USGS), Ashley Hullinger (PA DEP), August Goldfischer (CRC), Chris Mason (USGS), Cindy Johnson (VA DEQ), Dawn Hintz (SRBC), Doug Moyer (USGS), Ellyn Campbell (SRBC), James Webber (USGS), Jamie Shallenberger (SRBC), Kaylyn Gootman (EPA), Lori Brown (DE DNREC), Lucretia Brown (DC DOEE), Mark Brickner (PA DEP), Meighan Wisswell (VA DEQ), Nick Murray (WV DEP), Peter Tango, (USGS), Scott Heidel (PA DEP), Tammy Zimmerman (USGS), Tyler Shenk (SRBC), Tyler Trostle (PA DEP)