



## Scientific, Technical Assessment and Reporting (STAR) Meeting

Thursday, September 26, 2019

10:00 AM –12:30 PM

Conference Line: 929-205-6099 Meeting ID: 984-334-403

Webinar\*: <https://zoom.us/j/984334403>

Meeting Materials:

[https://www.chesapeakebay.net/what/event/scientific technical assessment and reporting star team meeting september 2](https://www.chesapeakebay.net/what/event/scientific_technical_assessment_and_reporting_star_team_meeting_september_2)

Location: Fish Shack

\*If you are joining by webinar, please open the webinar first, then dial in.

### AGENDA

Action items for STAR throughout the minutes are indicated by the symbol \*.

**10:00 Welcome, Introductions & Announcements – Bill Dennison (UMCES) and Scott Phillips (USGS)- STAR Co-Chairs, Peter Tango (USGS) and Emily Trentacoste (EPA), STAR Co- Coordinators**

#### Upcoming Conferences, Meetings, Workshops, & Webinars-

- [Coastal and Estuarine Research Federation Conference](#) (CERF), November 3 – 7, 2019. Mobile, Alabama.
- [Annual Water Resources Conference](#) (AWRA), November 3 – 7, 2019. Salt Lake, Utah.
- [Turning a New Leaf Conference](#), December 6, 2019. Harrisburg, PA
- [Ocean Sciences Meeting](#), February 16 – 21, 2020. San Diego, CA.
- Chesapeake Research Symposium (ChesR20), June 8 – 10, 2020.
- [The National Conference on Ecosystem Restoration](#) (NCER), August 2 – 6, 2020. Portland, Oregon.
- [World Seagrass Conference & International Seagrass Biology Workshop](#), August 9 – 14, 2020. Annapolis, MD. Session and Workshop abstracts due December 1, 2019.
- [A Community on Ecosystem Services](#) (ACES), December 14-17, 2020. Bonita Springs, FL.
- The 2019 VIMs aerial surveys for SAV are completed. The good news is the low salinity grasses are thriving. The bad news is the high salinity eel grasses are not thriving because of higher temperatures. They are burning off which is bad because they do not have seed banks. The germinated seeds do not last two years.

- The Chesapeake Community Research Symposium is being held in Annapolis at the Crown Plaza Hotel from June 8<sup>th</sup> – 10<sup>th</sup>. A call for special session proposals has been sent out. The deadline is November 29, 2019, and proposals may be submitted to [shirley@greenfinstudio.com](mailto:shirley@greenfinstudio.com). Please keep proposal length to 1000 words or less. Bill Ball asked if STAR would be interested in submitting a proposal focused on the science needs initiative.
- Bruce Vogt stated STAR meetings are normally heavy on coordinators and staffers and thinks STAR should try to get the broader science field involved. Scott agrees and mentioned that when the new Chief of Science, Analysis and Implementation is hired, they will make sure that person is involved in STAR.
- The [Annual Maryland Water Monitoring Council](#) is being held on December 6, 2019 at the Maritime Conference Center in Linthicum, MD. Abstract submissions are due October 25<sup>th</sup> for a presentation or poster.
- The November STAR meeting will be joined with the Coordinator and Staffer meeting on Thursday, November 21<sup>st</sup> from 10 – 11:30. The December STAR meeting will be held on Tuesday December 17<sup>th</sup> from 9:30 – 12.

**10:10**

**Communication Team Update– Rebecca Chillrud (CRC)**

Caitlyn Johnstone is writing a soil series and the first part is [The dirt on soil](#).

The Communications Workgroup is working on two GIT Funded projects. The first one is the Behavior Change Training on October 31<sup>st</sup>. Coordinators and Staffer please keep a look out for an email from Rachel Felver for feedback on workgroup members that should attend the training. It will be capped at 50 participants.

The other GIT Funded project is behavior change for living shorelines. They have just completed the expert interviews and are putting together a report on impacts for each behavior they looked into, so their next step is to talk with property owners. They hope to put together a strategy so more people in the watershed adopt living shorelines.

Scott stated the annual flow of the bay computation will be done in early October so it would nice for the Communication Workgroup to write a summary on high flows, the drought, and how it relates to Bay condition.

**10:20**

**Update on Science Needs – Emily Trentacoste (EPA) & Healthy Watersheds Cohort**

STAR will discuss the updated science needs of the Healthy Watersheds cohort, planned actions moving forward, and potential opportunities to address needs.

In the following minutes, “Science Need” refers to a need already captured in the documented master list while other needs in the minutes are recently constructed and will be added to the master list.

**Brook Trout:** Stephen Faulkner

- Science Need: Cross-GIT collaboration on monitoring efforts (e.g. eDNA, stream health, fish passage, GIT project funding)
  - The workgroup needs more opportunity and guidance on how to work with other workgroups.
  - Bill mentioned eDNA will cross a lot of workgroups. It will have the most generic application.
  - Scott mentioned we should organize all the providers working on it.
  - Emily spoke with the EPA regional labs, and the Wheeling Lab was interested on collaborating with the Chesapeake Bay Program to help them with eDNA because they have the people and technology to take on this effort.
  - Bill suggested bringing eDNA people together through a STAR session.\*
  - STAC was really interested in the eDNA component so hopefully STAR could facilitate a connection between those STAC members and the Brook Trout Workgroup.\*
  - The workgroup is considering submitting a STAC workshop proposal during the next round, and they could use some help on it.
  - Scott said STAR’s first step will be to organize an eDNA session and then the STAC workshop can be a follow up.
- Science Need: Funding for brook trout monitoring
  - This was part of their MB ask, and during the MB meeting, there was a lot of good questions on what does monitoring mean and what are those needs. Therefore, the workgroup is in the process of evaluating those answers.
- Science Need: Expand spatial-temporal groundwater model to rest of Chesapeake Bay Watershed to predict groundwater influence on headwater streams
  - Parameter most important to brook trout is water temperature. This is a component of the USGS science plan, and stakeholders have identified that groundwater is an important factor for them.
- Another need for the Brook Trout Workgroup is the ability to track restoration efforts across partners especially non-profit partners. In the short term, this is the Brook Trout’s most important need. The first component is the focus from the outcome of increasing occupancy by 8% by 2025 has pushed for restoration. Therefore, partners are focused on conservation. These efforts are a priority for state agencies because they do not want to lose any high-quality brook trout habitat. The second component is the need for a mechanism to collate the information from the current members and

state agencies along with local practitioners. There is a lot of work going on outside of the workgroup's monitoring efforts, and they need something to capture all the components.

- Kristin mentioned that the work of the Healthy Watershed Assessment meets some needs for the Stream Health Workgroup so maybe it can help the Brook Trout Workgroup. Steve responded that there is an issue when using a watershed scale compared to a more local scale. For example, at the watershed scale, there could be a loss of 50% of brook trout, but at a subset within a watershed there is a loss of 85% of brook trout. The workgroup is trying to work to a finer resolution that works with practitioners. Kristin suggested for the Brook Trout Workgroup to still put the connection with the Healthy Watershed Assessment in their workplan because in the future people could sit down to see how the data could help.

**Fish Passage:** Julianna Greenberg

- Science Need: eDNA analysis for prioritizing culverts
  - The workgroup would like to continue the development of an eDNA technology to detect shad going through culverts. The goal of this is to decide which culverts are most in need of retrofits.
  - There are some basic research components that match with the Brook Trout Workgroup.
  - The workgroup is interested in other species but are starting with shad.

**Healthy Watershed:** Renee Thompson

- Current work: Finalizing Healthy Watershed Assessment project (closing Fall 2019); implementation of CHWA in MD Tier II watershed, need to customize the assessment to help identify state healthy watersheds (Starting spring 2020)
- The workgroup has a need for more information for the vulnerability assessment. They have some metrics for the vulnerability assessment in the CHWA, but there is room to improve with climate variability and land use change. Working with the Climate Resiliency Workgroup and Peter Claggett on this effort.
- Emily stated that STAC was interested in the Healthy Watershed Workgroup presenting the CHWA once it was completed.
- Bruce commented that the Fish Habitat Workgroup needs to write in their workplan how the Fish Habitat Assessment works with the Healthy Watershed Assessment and vice versa.
- Future work: The workgroup needs help from STAR on how to create an indicator. \*
  - To track the health of state-designed healthy watersheds there are several analytical options: 1) develop and track change in

state-specific statistical models of watershed health and vulnerability using data from the CHWA and USGS science related to healthy watershed diagnostic measures and risk factors 2) develop and track changes in universal statistical models of watershed health and vulnerability using data from the CHWA USGS science related to healthy watershed diagnostic measures and risk factors 3) track changes in CHWA metrics and indices (current plan)

- The workgroup needs help from STAR with gathering the expertise, time and effort from people. STAR's role is to identify people that can be involved outside of the Healthy Watershed Workgroup. \*
- Scott suggested there might be an overlap of metrics with the Conservation Atlas to help with the indicator.
- Kristin suggested looking at other outcomes of the agreement and what metrics out of the HWA connect with it. Emily stated this could be an effort already being done by the Conservancy with their cross – GIT mapping project.
- Bill mentioned they are beginning to broaden the report card to the entire watershed which could be a piece to clarify what indicators they could use.
- Another need is to focus on marginally healthy watersheds. The workgroup doesn't have anyone focused on these areas. It is identified as a gap for the workgroup. The CHWA may help, but it is cheaper to protect than to restore.
- Another need is the communication and coordination of technical products between GITs, workgroups, and states. The Workgroup plans to utilize the local engagement strategy to communicate technical resources as well as the policies, incentives and planning tools. With this strategy, they have a way to move forward so not a STAR need now.
- The workgroup is still deciding on how to display and visualize the CHWA. The initial plan is to push it online with the open data. John and Angie are going to help. Renee personally likes the visual display of the Watershed Data Dashboard.
- Emily has been talking with John about a short-term platform, and she will connect Renee with the EPA ORD employees that created the National Assessment because they might be able to provide lessons learned from when they launched it. \*

#### **Fish Habitat:** Bruce Vogt

- Science Need: Regional Fish Habitat Assessment 1) compile habitat and environmental, stressor, biological dataset; 2) analyze biological response data for relevance; 3) pilot fish habitat assessment; 4) conduct watershed regional assessment; 5) ID/develop spatial tools useful to partners.
  - The workgroup is currently at the data gathering phase. This work is being done by TetraTech. The workgroup has been in contact with

Scott and USGS on what the end product might be for the Fish Habitat Assessment.

- It is still being decided on how the pilot studies will be chosen and conducted.
- Scott stated the STAC workshop identified four habitats: (cold water and warm water) stream, river, tidal, and estuary.
- Bruce also stated the pilots will depend on where they have stakeholder engagement and data.
- The workgroup is looking to tie in the tidal water quality monitoring. Emily suggested to tie this in through the interpolator (takes the individual water monitoring data and interpolates it across the entire tidal waters). Bruce is in contact with Jeni and has been discussing using their water quality trends. He will talk with John more about the work Angie is doing with the interpolator.
- Another need is that they know harden shoreline is not good, and they had a GIT funding project to look at how harden shorelines are impacting important species. This project found that if harden shorelines in an area exceed 10 – 30% (depending on the species), there is a loss of key species. The workgroup needs help communicating this and integrating it into the planning process. They want to take the data they already know about living shorelines and lay out where in the bay they are exceeding the threshold.
  - Jeni wondered if there would value in reaching out to the Critical Area Commission (MDE) who might want to use this in their planning.
  - Bruce will talk with John about gathering the shoreline data and doing some statistical analysis.
- Another need is to identify next steps for hypoxia and fish habitat.
  - There is work being done through a GIT funded project to design a vertical water column monitoring profile for hypoxia.
  - The November STAR meeting will be discussing this issue. \*
  - The workgroup needs to discuss a workplan action with more specific tasks for it to link the modeling work to living resources.

**Stream Health: Julianna Greenberg**

- Science Need: Support reporting progress for Chessie BI-BI
  - The workgroup is discussing the feasibility of updates and solidifying this timeline. They are considering two years and do not think they can do it more frequently.
  - They are looking to make the data more accurate because currently half of it is from modeling data.
  - Emily and Peter are talking with the Chesapeake Monitoring Cooperative because they are very interested in adding new locations and parameters. STAR is working on how to incorporate the work of the CMC into the workgroups more. Stream Health would be a great pilot on how to use the CMC data. \*

- Emily also stated that the EPA regional lab (Wheeling Lab) already has the capacity and workflow to accept citizen science samples and analyze it. \*
  - Emily suggested to have the Wheeling Lab present during a STAR meeting to talk about what they can do in their lab. \*
    - Kristin suggested that they could pick out some of the needs on the list that they already think they can tackle.
- Stream Health/Fish Habitat & Passage/Water Quality: Establish guidelines and relationship between stream corridor restoration activities and functional lift including biological lift. This information will support project selection, design, construction and monitoring to product better stream health outcomes – biological lift.
  - Emily suggested that the CHWA could help with this science need.
  - Renee agrees the Healthy Workgroup could integrate better with the Stream Health Workgroup, but she noted that each other's workplans are very different.
- Stream Health/Toxics/Habitat: The identification and extent to which water quality stressors and sources of impairments associated with TMDL may limit recovery of stream health.
  - The workgroup has been working with USGS on this science need, and the USGS is putting people towards it.
- Kristin noted Denise Wardrop highlighted the Rapid Assessment Tool for wetlands could be used for some of the indicators for the Stream Health Workgroup. STAR should follow up with her to build a connection between her and the workgroup. \*

**Protected Lands:** Jonathan Doherty

- The workgroup is focusing on mapping and analysis work. One example is Drinkshed mapping.
- Near future work that the workgroup needs help with are: \*
  - Review of forest definitions and related high-resolution forest mapping products
  - Conduct on opportunity assessment for forest-related carbon sequestration and co-benefits
  - Update important forests dataset
  - Update important farmlands dataset
- Emily asked if Jonathan had been in contact with EPA ORD that do the Enviroatlas. In the atlas, they quantify and value forests from different perspectives such as carbon sequestration. Emily will share that contact with Jonathan. \*
- Bruce mentioned that the Fish Habitat Workgroup put conservation in their workplan so in the future they should work together on how to pair together forest and fish conservation.

**General Questions from all the presentations:**

- Angel asked if there was any formal process for the cross-GIT workplan coordination. She wants to know how to cross reference other workgroups in the workplan.
- Kristin stated that this question is an issue the small SRS team is working on to create a formal process and working it into the SRS process. She is also talking with the new facilitator to help with this topic.

**11:30**

**STAC Quarterly Meeting Recap – Annabelle Harvey (STAC)**

Annabelle will provide a summary of the discussions held at the STAC Quarterly Meeting on September 10 - 11<sup>th</sup>. STAC discussed some of the Healthy Watersheds science needs at the meeting. STAR will provide input on how to best engage with STAC on science needs during the SRS cycle.

There are multiple new representatives in the Chesapeake Research Consortium (CRC) and STAC. Denise Wardrop is the new CRC Executive Director. She will officially start in January 2020. Andrew Miller is the new STAC chair, and Kathy Boomer is the new STAC Vice Chair. Staffers should update these new contacts in their mailing list. In the last STAC Quarterly Meeting, there was a report out for the 2019 Triblet Workshop. There was also an update on the microplastics workshop. The report is still under review so it should be released next week. The 2019 STAC workshops are now scheduled and please contact Annabelle ([harveya@chesapeake.org](mailto:harveya@chesapeake.org)) if you are interested in presenting, attending the workshop, or learning about their findings. Annabelle then discussed the STAC Scientific Gap Analysis which is going to change names. It is an effort that will take 2 years, and they are currently half a year into the process. This internal STAC effort will occur mostly during the STAC Quarterly Meetings. STAC is broken up into three workgroups to tackle system limits and research needs to attain water quality standards by 2025. In the last meeting, they focused on ecosystem restoration efforts from around the world.

Also, during the quarterly meeting, Emily and Scott went over the Science Needs from the Healthy Watershed Cohort with STAC. Annabelle stated this went over very well with STAC and was a great way to get the members involved. Brian and Andie have ideas on how to engage in this effort between quarterly meetings. Annabelle asked to get the list of science needs before the quarterly meetings so she can send it out with the other meeting materials. STAC is going to give the Science Needs topic more time in the December meeting. Annabelle noted webinars are a good idea and surveys are not very effective with STAC. She also suggested to have STAC members included in the discussion previously held in this STAR meeting about the Science Needs.



Gary stated it is rare for STAC members to get involved in workgroups because they are volunteering their time and are mainly professors working to get grants and write papers. Gary suggested that workgroups should tell those interested STAC members to put the workgroup/CBP down as their stakeholder in your grant because every grant needs a stakeholder to be approved.

**12:00      3D Landscape Visualization as a Science Communication Tool – John Wolf (USGS)**

John Wolf will discuss the potential use of 3D landscape visualization to support various Chesapeake Watershed Agreement science communication objectives.

John is asking help from STAR to identify potential place-based case studies for landscape visualization that will complement science communication objectives associated with the Chesapeake Bay Watershed Agreement. Case studies should (1) align with Agreement Outcomes and (2) have a local stakeholder component. He is interested in identifying specific geographic settings/locations. The case studies can be used to (1) highlight current conditions, (2) illustrate landscape change, or (3) address another communication need.

STAR members may explore an example of a landscape visualization application prior to the meeting with the following link:

<https://gis.chesapeakebay.net/viz/wolfsville>

The user can investigate pre-set views by selecting the slide icon on the banner



at the bottom of the screen. Look for this icon

Jonathan Doherty will reach out to John Wolf offline to connect him with people to help him choose case study areas.

Jeni stated Arundel Rivers in the South River area is a very active stakeholder group and are doing some work to understand how recent management BMP restoration activity can improve water quality. She thinks this would be a good basin to do a case study.

**12:15      Adjourn**

**Next Meeting Dates:** October 24<sup>th</sup>, Dry Runs of Aquatic Life Cohort

**Participants:** Stephen Faulkner, Jeni Keisman, Katie Brownson, Bill Jenkins, Scott Phillips, Bill Dennison, Bruce Vogt, Mandy Bromilow, Morgan Corey, Jonathan Doherty, Cuiyin Wu, Renee Thompson, Laurel Abowd, Annabelle Harvey, Nora Jackson, Rebecca Chillrud, Kristin

**Saunders, Tom Parham, Megan Ossmann, Julianna Greenberg, Gary Shenk, Emily Trentacoste,  
Bill Ball, Breck Sullivan**