Scientific, Technical Assessment and Reporting (STAR) Meeting

Thursday, May 28, 2020
10:00 AM – 12:30 PM

Conference Line: +1 (408) 650-3123 Access Code: 802-408-741
Password: Please see calendar notice/email
Webinar*: https://global.gotomeeting.com/join/802408741
Meeting Materials:
https://www.chesapeakebay.net/what/event/scientific_technical_assessment_and_reporting_star_team_meeting_may_2020

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

AGENDA

Action Items

- ✓ Members interested in collaborating with EnviroAtlas to incorporate additional data in the tool can contact them with this email: enviroatlas@epa.gov.
- ✓ STAR will gather specific interests on EnviroAtlas and follow up with a meeting to discuss potential ideas of incorporating EnviroAtlas data into projects.

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

Upcoming Conferences, Meetings, Workshops, & Webinars-

- Chesapeake Research Symposium (ChesR20), June 8 – 10, 2020. Annapolis, MD. Virtual Conference. Free registration.
- Fishable Swimmable Summit, September 23, 2020. Baltimore, Md.
- Chesapeake Watershed Forum, October 30 - November 1, 2020. Shepherdstown, WV
- CitiesAlive Conference, November 15-18, 2020. Virtual Conference.
- Behavior, Energy and Climate Change Conference, December 6-9, 2020, Washington, D.C.
- A Community on Ecosystem Services (ACES), December 14-17, 2020. Abstracts due June 22, 2020. Bonita Springs, FL.
- More seminars at OneNOAA Science Seminars: Link

10:05 **Social Science and the Chesapeake Bay Program – Amy Handen** (EPA)
Amy will provide an overview of the history of social science within the partnership, accomplishments of incorporating social science into our work to date, and next steps for developing a broader social science strategy.

Environmental problems are people problems. People do not always act on their best interest or on sound advice. Therefore, the Chesapeake Bay Program (CBP) needs to address the complexity of human behavior to reach solutions for these environmental problems. Amy went into the inclusion of social science in the history of the CBP. A successful example includes the Stewardship Behavior Change Assessment to help practitioners from local government and watershed groups to design effective behavior change campaigns which is a key social science strategy. This effort gathered behavior adoption rate information from over 5,200 residents on 19 stewardship behaviors. A successful behavior campaign includes multiple steps such as choosing the right behavior, identifying barriers and benefits, developing the strategy, pilot testing, and implementing the campaign broadly and evaluating. They are currently working on creating a website to display this information to allow users to access the data and provide resources on how to build a successful campaign.

There have also been several GIT funded projects focused on behavioral change strategies. The Communications Workgroup hosted a behavior change training on Community-Based Social Marketing. A summary overview and presentations on the training are available on the Communication Workgroup's webpage. The Communications Workgroup along with the Stewardship Workgroup received funding to research strategies and produce materials to help shoreline property owners protect submerged aquatic vegetation (SAV) by reducing behaviors that impact the health of SAV. There was also a GIT Funding project to create strategies for increasing the implementation of responsible shoreline management practices. Most recently UMCES included a social index in their Chesapeake Bay Report Card.

There has been a lot of progress in the last few years to advance social science throughout the partnership and moving forward Amy and others in the partnership would like to develop a holistic social science strategy. Three social science strategy concepts for the CBP include:

- Model social science within the partnership – training, increased social science participation, outcome evaluation
- Function as a catalyst for social science frameworks – theories can explain behavior and suggest strategies

- Building capacity for social science integration – technical assistance, included in grant programs

Scott asked what the general timeframe was for the strategy. Amy said within the next 6 months she should have a solid outline.
Emily asked when looking at the next steps are some of those other branches in social science something the partnership is considering as well? Amy said yes, the second element of the strategy focuses on doing an evaluation of all the outcomes in the Chesapeake Bay Watershed Agreement to see which strategy would work best for it. Using a behavior change strategy may not be best utilized for all outcomes. There are other frameworks and strategies available, so she is hoping to align the different strategies with each outcome.

Menti Question: What are the areas of your work that could benefit from utilizing social science concepts or studies?
Answers can be found on the event webpage.

10:20 **RESES: Ecosystem Services Project – Emily Trentacoste** (EPA)**, Susan Yee** (EPA), **Ryann Rossi** (EPA)
This will provide an overview of a current project underway with EPA Office of Research & Development on identifying and quantifying the ecosystem services provided to communities by different Best Management Practices (BMPs). The project focuses on BMPs that relate to habitat, benefit headwater communities, and are lagging in progress towards their Watershed Agreement goals. The project will develop Ecosystem Services Gradients, which describe how the production of ecosystem services changes over the restoration spectrum.

The title of this project is, "Identifying and Defining Levels of Meaningful Change in Ecosystem Services of the Chesapeake Bay and its Watershed," and it will hopefully address some of the needs to enhance stakeholder implementation of practices, to better communicate benefits associated with these practices, and to quantitatively describe the benefits. The objectives and goals of this project are to:

- Develop methodologies CBP can use to identify priority ecosystem services associated with restoration practices
- Quantify how ecosystem services change over levels of restoration practice implementation
- Communicate potential benefits and tradeoffs of restoration practices to stakeholders

- Communicate levels of restoration needed to achieve different desired levels of ecosystem services

Some of the deliverables at the end of this project are to provide data lookup tables, fact sheets, maps, or other communication materials. They plan to work with other CBP workgroups to identify end-users and materials and hopefully align some of the products with what is already available on Chesapeake Assessment Scenario Tool (CAST).

The project hopes to provide a narrative and quantitative framework of how final ecosystem goods and services change along a gradient of changing conditions as BMPs are implemented. They are focusing on final ecosystem goods and services (FEGS), which is the components of nature, directly enjoyed, consumed, or used to yield human wellbeing, because it helps clarify the benefit for each stakeholder. They plan to use the ecosystem services gradient framework to reach what management actions need to be implemented to reach their ecosystem services goals.

The project team members are at the first step of identifying the BMPs, FEGs, and beneficiaries, and they are working with CBP members and partners to do this step. Some of the BMP examples are agricultural cover crops, agricultural forest buffers, forest conservation, and wetland creation. They are using ecosystem tools to identify FEGS and beneficiaries such as FEGS-CS and NESCS+, and they are also using previous products already completed by the CBP. These FEGS and beneficiaries are then associated with a chosen set of BMPs. Once this list is comprised, they are looking to identify relevant FEGS metrics, data and models to quantify the benefits.

Julie commented that the acronym FEGS is not really meaningful especially when working with beneficiaries so she was wondering if the team could put more thought in how to communicate FEGS.

Kristin Saunders commented that this work on identifying beneficiaries will also be useful for folks trying to work through a finance strategy for their outcomes. The first step in doing a finance strategy is figuring out who the beneficiaries are for the group.
Bill Jenkins stated as a follow up to Kristin's point about "insurance." He is hopeful that looking at forest conservation will help them to get at insurance. Conservation is generally cheaper than restoration, and it can be looked at as an "insurance policy" to protect investments in restoration. It

would be great to have information to help justify and sell those points and the benefits of protection.

Communications Workgroup has done some work putting together a toolkit on communicating about non-environmental benefits of restoration practices. https://www.chesapeakebay.net/who/group/watershed_implementation_plan_wip_engagement_action_team

Jeremy asked how long the RESES timeline is for the project. The project still has another year. It started in January 2020.

Bruce asked how they are quantifying the benefits of BMPs and restoration projects especially when there are significant gaps in data. Susan responded that it is a hybrid of where they have data to calculate it directly, and when there is not data, they use models, literature, or expert opinion.

Bill Dennison commented that nonprofits use the language 'nature-based solutions' instead of ecosystem services. He emphasized that there is a need to think outside the CBP when communicating this information because not everyone understands the CBP language.

Sally Claggett said at the end of the day, organizations need the amount of support (or money) from these FEGS stakeholders. They need to find ways to fund it especially with 2025 so close.

Menti Question: Now that you know what a beneficiary is, which of the following beneficiaries do you see as relevant to your work?
Residential Property Owners, Anglers, and Boaters/Kayakers received the most votes.
Answers can be found on the event webpage.

10:45 **USGS Ecosystem Services Assessment – Emily Pindilli** (USGS)
The USGS is beginning a new ecosystem services assessment focused on the local stream benefits of water quality restoration practices in the watershed; initial analyses will likely focus on recreational fishing benefits integrating with ongoing physical science research. Emily will present a conceptual model of the analysis and looks forward to input from STAR.

There are multiple studies of ecosystem services provided by the Bay, but it is less known about ecosystem services in local streams and rivers. Therefore, the

USGS is studying this connection between ecosystem services and local streams and rivers to hopefully support management decisions.

They will base their study off an ecosystem services framework which starts with inputs to the system such as management decisions, climate change and other external factors that will impact the ecosystem. The outputs from the ecosystem include ecosystem services (i.e. regulating, cultural), economic goods and services (i.e. clean drinking water, hiking), and beneficiaries (i.e. watershed residents).

The study was initiated in fiscal year (FY) 2020. In phase 1, they hope to develop a conceptual model for local stream scale. They also want to complete a feasibility study of conducting an ecosystem service assessment. The outcome within this year is a detailed research plan for ecosystem services studies prioritized by feasibility and impact. The second phase will be during FY21 and later years. In this phase, they want to conduct pilot studies and then scale the pilot studies from single to multiple sites.

Emily provided an example of ecosystem services with the floodplains in Difficult Run, VA. The ecosystem service valuation was on nutrient retention and flood mitigation. The study calculated the annual value for sediment-bound N retention to be equivalent to $727,226 and the annual value of flood mitigation of $73,412.

Emily Trentacoste asked if USGS was looking at particular places in the watershed for pilot studies. Emily said nothing is narrowed down at this point. They are looking to see where researchers are already doing some studies.

Carin commented that it was great to bring all these related presenters to the meeting today. She asked how the CBP can make sure they coordinate these activities to get the most out of our resources. Scott said in the short-term STAR could serve as home for this information and help facilitate the discussion through our meetings. Carin also mentioned that Bo Williams (williams.james@epa.gov) was recently hired to work with Dana and Jim on ecosystems services so he should be linked in with this work.

Menti Question: Now that you've seen some examples of ecosystem services, what do you think are some ecosystem services relevant to your work? Answers can be found on the event webpage.

11:10 **EnviroAtlas: Capturing Nature's Benefits and Mapping a Sustainable Future – Jessica Daniel** (EPA) **& Anne Neale** (EPA)

EnviroAtlas is a data-rich, web-based decision support tool that combines maps, analysis tools, downloadable data, and informational resources to help inform policy and planning decisions that impact the places where we live, learn, work and play. EnviroAtlas contains two primary tools: An Interactive Map, which provides access to 450+ environment-related maps, and the Eco-Health Relationship Browser, which displays evidence from hundreds of scientific publications on the linkages between ecosystems, the services they provide, and human health. This presentation will provide an overview of EnviroAtlas tools and resources, including examples of how EnviroAtlas has been used by communities to advance local initiatives and a live demonstration of available tools.

EnviroAtlas started in 2014, and it is continually updated with new information. It is a public website with interactive tools that states, tribes and the public are using to help inform policy and planning decisions. The goal of EnviroAtlas is to provide tools, data, and information that people can use as a communication tool. An overview of the tools EnviroAtlas provides is an Eco-Health relationship browser, 400+ geospatial datasets, analytic and interpretive tools, GIS toolboxes, video tutorials, educational lesson plans, and interactive mapping application. Users can access Enviro Atlas through the interactive map, web services, and downloading data. Users can add their own data to their map for a session and can search for data from the internet and add to the map. A lot of the data in the atlas is developed in house but some is gathered from other organizations. The two primary extents are national data with 30 – meter land cover (consistent data for the conterminous U.S.) and community data with 1-meter land cover (1450 cities & towns). They are in discussion with getting this community-based data available for the Chesapeake Bay Watershed. Jessica went through some examples of the datasets they have available and then did a live demonstration of EnviroAtlas.

Julie Reichert-Nguyen asked if carbon sequestration data available on EniroAtlas include blue carbon (wetlands, SAV) as well as terrestrial carbon (trees)? Anne answered that currently it does not include blue carbon, but it is something they are interested in developing/collaborating on. The Climate Resiliency Workgroup is considering putting in a proposal for a literature search on blue carbon value to help develop financing strategies in the future. Julie will have a follow-up conversation with them once that project is completed.

Emily Trentacoste suggested the Compare My Area tool could be useful for GIT-funding projects if groups are trying to choose case study locations.

John Wolf asked if EnviroAtlas uses a single, standard stream file for any metrics involving streams/riparian areas (e.g. - NHD 1:100,000). Anne said yes, they use the NHDPlus V2 1:100,000. They also use the NHD high resolution streams data that are becoming more available.

Scott said he saw a forecasting capability for climate change in the presentation, so he asked if there is this capability for land use change. Jessica said there is not now, but the CBP has a lot of data available for this so they are interested in collaborating to add this feature. Scott mentioned there is land forecasting models for the Chesapeake and Delaware basins that they could team up on, but it is not available nationwide. Anne asked if it could be adjusted to be nationwide. Scott said he would need to talk with Renee Thompson and Peter Claggett.

Julie asked what the process is to choose which layers or data is included in EnviroAtlas and the funding sources to complete it. Anne said it varies but having interest from multiple groups helps support the work. There are no direct funds, but if someone is interested in collaborating with adding data layers to contact them. Their email is: enviroatlas@epa.gov.

Jeremy Hanson suggested now that STAR had this intro to EnviroAtlas, he thinks there needs to be an entire meeting dedicated to potential project ideas that could incorporate EnviroAtlas. Some staffers may find potential professional development projects, or workgroups/GITs could have ideas to build on previous GIT funding projects, or to prep for future GIT funding projects, STAC proposals, etc. Emily agrees that it would be good to gather specific interest and scope some follow-up actions.

Menti Question: Which EnviroAtlas tools would you be interested in learning more about in the future?
Interactive map and data layers received the most votes.
Answers can be found on the event webpage.

12:30 Adjourn

Next Meeting Dates: June 25, 2020

Participants: Emily Trentacoste, Scott Phillips, Cuiyin Wu, Breck Sullivan, Amy Handen, Jessica Daniel, Anne Neale, Emily Pindilli, Susan Yee, Ryan Rossi, Julie Reichert-Nguyen, Annabelle Harvey, Bill Dennison, Bill Jenkins, Brooke Goggins, Bruce Michael, Bruce Vogt, Carl Friedrichs, Caroline Donovan, Sally Claggett, Gary Shenk, Greg Barranco, Carin Bisland, Kenneth Hyer, Jeni Keisman, Jeremy Hanson, John Wolf, Julianna Greenberg, Katheryn Barnhart, Kristin Saunders, Laurel Abowd, Liz Chudoba, Mandy Bromilow, Matt Nicholson, Megan Ossmann, Rebecca

Chillrud, Renee Thompson, Ryann Rossi, Peter Tango, Tom Parham, Tuana Phillips, Vanessa Van Note, Yeonjeong Park, Bo Williams, Kelsey Heath, Liz Chudoba