Scientific, Technical Assessment and Reporting (STAR) Meeting
Theme: Shallow Waters

Thursday, January 26, 2022
10:00 AM – 12:00 PM
Meeting Materials: Link
This meeting was recorded for internal use only to assure the accuracy of meeting notes.

ACTIONS:

- ✓ The Forest Buffers Outcome will consider asking the Management Board at their next audience with them to help with Forest Buffers science needs by identifying agricultural landowners who have the greatest amount of bufferable acreage to target for buffer outreach or asking their staff to work on that.
- ✓ The Forest Buffers Outcome will work with the Strategic Engagement Team, Breck Sullivan (USGS) and Amy Handen (EPA) on the science need "Develop tailored buffer outreach materials for farmers and non-farmers, reflecting different motivations and benefits that can be derived from buffer".
- ✓ Scott Phillips (USGS) will put Katie Brownson (USFS) in touch with Dean Hively (USGS) to assist with the science need "Develop low-cost methods for verifying buffer acres".
- ✓ Renee Thompson (USGS) and Katie Brownson (USFS) will have a conversation about the definitions of forest, tree canopy and natural areas in the Chesapeake healthy watershed assessment so these definitions can be consistent across metrics and tools. They will also consider using something like the storymap templates shared in this meeting to demonstrate connections between healthy watersheds, cold streams, brook trout, resiliency and trees.
- ✓ STAR and the enhancing CBP monitoring review team will highlight the Forest Buffers science needs using high resolution data when expressing the value of the Land Use Land Change monitoring in order to obtain funding for continuation and enhancement of this monitoring.
- ✓ The CESR team will consider the Jamboard comments and discussion comments made during this meeting providing feedback on the criteria for shallow water monitoring site selection and other aspects of the CESR report.
- ✓ STAR/CESR team consider the help of the Chesapeake Monitoring Cooperative and citizen science groups to monitor shallow water areas.

MINUTES:

10:00 AM **Welcome, Introductions & Announcements – Bill Dennison** (UMCES) and **Scott Phillips** (USGS)-STAR co-chairs, **Breck Sullivan** (USGS) STAR Coordinator, **Peter Tango** (USGS) CBP Monitoring Coordinator

Announcements

Strategic Engagement Team (SET) Update - **Marisa Baldine (CRC)**

Marisa gave an overview of the webinar Science in Action: 3 Tools Used in Chesapeake Bay Restoration that SET hosted on January 24th, 2023. Marisa added that CBP leadership said they might want to see this kind of webinar be put on with other tools. SET also posted a blog on the Targeted Outreach for Green Infrastructure (TOGI) project from the Habitat team. SET is working on tracking social science, engagement and communications needs of the teams from the meetings SET had with them recently. Marisa thanked Breck for helping with that effort. Marisa added this year is the 40th anniversary of the CBP signing the agreement so there will be some things coming out about that and other webinars coming up.

Renee Thompson (USGS) commented in the chat that the SET webinar was great, thanks! She added she thinks the upcoming Strategy Review System (SRS) Local Action cohort will want to work with the SET for some of their needs too. Kristin Saunders (UMCES) said in the chat she encourages folks to consider using the recorded webinars to continue to push information out to their audiences. For instance, Kristin and Jeremy Hanson (CRC) plan to use the decision support tools webinar as part of pre-work for another Scientific and Technical Advisory Committee (STAC) workshop.

Funding Opportunity: Eastern Brook Trout Joint Venture RFP - Deadline January 30th, 2023

STAR Accessibility Survey: Link to the Survey - Deadline February 9th, 2023

Looking for a STAR Co-Chair

Scott Phillips (USGS) went over the announcement details. Here is the link to the STAR co-chair position description. Bill Dennison (UMCES) added that they're trying to instill science into all the activities of the Bay Program, and they'd like to bring as much academic and agency science as they can muster. STAR's role is of science advocates, and it's important to stay relevant and current as well.

Re-cap of Monitoring Kick-Off Meeting - Breck Sullivan (USGS)

Breck said this meeting had great representation from states, DC and others, and that the group will continue having these gatherings two more times this year. This one focused on tidal, nontidal and submerged aquatic vegetation monitoring needs, but future ones will focus on other monitoring needs. The monitoring team learned who is interested in working on which recommendations, an will be following up with Outcome leads on this.

Bruce Vogt (NOAA) announced the NOAA fall 2022 seasonal summary and said they're working on an annual wrap up for 2022, which Bruce will send around when it is done. It is being included in the NOAA Mid Atlantic State of the Ecosystem report.

Upcoming Conferences, Meetings, Workshops and Webinars

- National Water Quality Monitoring Council's 13th National Monitoring Conference - April 24-28, 2023, Virginia Beach, VA.

- Species on the Move – May 15-19, 2023, Everglades National Park, FL.
- Interagency Conference on Research in the Watersheds (ICRW8) – June 5-8, 2023, Corvallis, Oregon.
- Citizen Science Association conference, C*Sci 2023 - May 22-26, 2023, Arizona State University campus in Tempe/Phoenix, Arizona.
- CERF 2023 Conference: Resilience & Recovery – November 12-16, 2023, Portland, Oregon. Abstracts due May 10, 2023.

Bill announced that there was a significant leadership change at University of Maryland Center for Environmental Science (UMCES). In 2 years, it will be the 100th anniversary of UMCES and in that time they've only had 6 people as presidents. Peter Goodwin has been the president for the last 6 years and he announced his retirement, so they will be looking for a new president.

10:10 AM **Diving Deeper in the Implications of the STAC Comprehensive Evaluation of System Response (CESR) Report**

Over the next few STAR meetings, lead authors from the CESR report will present different sections. STAR will continue the conversation started at the November 30th Goal Implementation Team (GIT) Chairs Leadership meeting on how to put the implications from the CESR report into practice.

Today's Topic: Estuaries component of the CESR Report – Jeremy Testa (UMCES) **and Bill Dennison** (UMCES)

Jeremy and Bill will present on the estuaries component of the CESR report. Following the presentation, STAR will brainstorm criteria for the top five important areas for shallow water habitat, as requested of the CESR team by the Chesapeake Bay Commission (CBC) at their November meeting.

Denice Wardrop (CRC) explained there are 3 sections of the CESR report: what is the impact of management actions on loads; what is the relationship between the loads and the response of water quality criteria in estuaries; and what is the response of living resources to water quality criteria. Something surprising that came out of CESR is the intransigence of the deep channel in response of water quality criteria to efforts. It also showed the opportunities to look at the shallows. When STAC presented the CESR report to the Chesapeake Bay Commission (CBC), they were interested in the opportunities in the shallows. An example of that is the resources directed to most effective basins; those most effective basins are identified based on impact to deep channel dissolved oxygen (DO). What if the most effective basins were delineated around shallow water habitat? Shallow water habitat is of great importance to living resources, features active cycling at the land water interface, and presents unique opportunity to engage stakeholders. Most people interact with and care about shallow waters. The chair of the CBC requested in the next year we give them 5 most effective basins in shallow water each in PA,

MD and VA. They want 3 nontidal and 2 tidal basins, except in PA where all 5 would bel nontidal. It's an opportunity to do a unique type of targeting. Denice also added that the full CESR report is expected to be available in a month.

Bill added that when they started CESR, they broke into estuaries, watershed and fisheries. Historically, STAR was very estuaries focused; however, nobody was interested in the estuaries component when they started CESR.

Jeremy said there's an executive summary of CESR being worked on, and an executive report that synthesizes things into a smaller document. Each chapter of CESR (estuaries, watershed and fisheries) also has its own individual resource document. The full report has to go through USGS review, and they're expecting it will be approved within the next few weeks. Denice said CESR took so long because it's the first time STAC prepared a true consensus report which required many stages of review. Jeremy said the report asked, is there a gap between expected water quality response and observations? They didn't spend a ton of time digging into data on how water quality criteria responded. They did point out that as 2025 approaches, there are clear examples of where loads have been reduced, primarily from wastewater treatment, and where chlorophyll has gone down. In the mainstem there has been some oxygen improvements, or at the minimum, stability, in the face of climate change. Some criteria are going in the right direction. There is an improvement; however, it's well below where it is expected to be. And, in some places, criteria are going in the wrong direction.

Jeremy said one reason to restore shallow water is that in the terrestrial-estuarine transition zone (where the land and water are ambiguous and what is called shallow water) have a lot of intense transformation of things coming off the land and getting into the water. The processes that are important to maintain and restore them should be a point of emphasis in the program. Shallow waters provide a place to emphasize habitat as well as the Total Maximum Daily Loads (TMDL). Bill added these can be tough places to work in due to difficulty of access, though. They can be too wet for car access and too dry for boat access. These areas can be a place to think about using citizen science contribution. For example, local landowners with access to these areas could help us cover that gap.

Jeremy showed a picture of the Corsica River estuary as an example of the shallow water area. There are wetlands that are known to suck up a lot of nutrients, and it is a polluted place nutrient-wise. Jeremy asked, how could restoration be emphasized in a place like this in order to have an outcome for the Bay overall? This is a place where the oxygen gets really low, which is only known for a few places in the Bay and what that means for living resources. If biogeochemical processes and restoration happens at these places, there should be more nutrient retention, and therefore, they're having a benefit for the deep part of the Bay too. Jeremy then shared recommendations and conclusions:

- Emphasize shallow waters
    - The shallow-water/T-Zone filter could supercharge restoration.

    - Will help with shallow attainment, which is helpful, and will also limit flux of nutrients downstream.
    - Tipping points could be jumpstarted with targeted reductions.
- Emphasize augmentation of the TMDL
    - Living Shorelines, Biological Communities, Biogeochemical Processes.
    - This will help living resources directly.

Bill said that shallow waters and nearshore environments are places with ecological tipping points. Examples of that include resurgence of SAV and DO reductions in diel cycle. These tipping points can be important in restoration; if you get a little more light to the bottom, you can have not just SAV, but benthic diatoms that prevent sediment and nutrients from merging back into the water column. These tipping points have been observed, but not predicted where/when they can occur. This is a science need: how to better predict and understand these tipping points in the shallow water environments.

Julie Reichert-Nguyen (NOAA) commented it was interesting that the transitional zones are also vulnerable to sea level rise impacts. That's a challenge that the wetland workgroup is looking at through their efforts with the wetland outcome attainability, and the Climate Resiliency Workgroup (CRWG) is looking at through marsh migration corridors. Incorporating sea level rise and marsh migration criteria is important. Looking at resilience metrics in targeting marsh restoration efforts is important and should be considered in these shallow water efforts.

Denice said that the estuary resource document discussed the importance of the triblets and transitional zones. The chapter in the report said those represent an opportunity for enhanced living resource response to load reductions. In terms of climate change, the CESR report estuary chapter draws on research that says one reason response to load reduction is dampened is due to climate change. Denice pointed out that goals for restoration can't reach the historic Bay due to climate change, and expectations need to be in light of that. CESR suggests looking at resilience-based metrics as a way to manage restoration. Denice added the living resources document focuses more on estuarine response.

Kristin Saunders (UMCES) asked if the creation of the most effective basins designation is an EPA designation or a partnership designation? John Wolf (USGS) said it's an EPA designation. Kristin said for exploring different or expanded definitions of most effective basins, EPA leadership would need to be involved. She added that there have been efforts to align the National Fish and Wildlife Foundation (NFWF) funding, Infrastructure, Investment and Jobs Act (IIJA) funding, and grant guidance along the most effective basin designation for shallow waters. This would result in a shift of where that money gets focused, if adopted by partnership.

Jeremy responded his understanding is if nutrient reduction is obtained, it would have a numeric effect in the model. This can be done because the tools are at the scale appropriate to do that. However, this probably can't be done for shallow waters because the modeling

infrastructure is still being developed but not yet in place. That's not necessarily preventing progress on identifying these basins, though, but different metrics may be needed. Maybe that could be an expanded scope of metrics that include social science and habitat needs, not just nutrients and oxygen.

Lew Linker (EPA) said within CBP history, science and management in the Bay advance together. What's happening now is a new understanding of shallow water processes. At the same time, next generation models are being developed that have the resolution and scale, for the first time, to look at these areas in addition to deep channel waters and all the water quality standards. And the modeling tools for the first time, can look CB segment by CB segment.

Carin Bisland (EPA) said regarding most effective basins, this is a category that the CBP gets annual appropriations and congressional interest in. It's put in the annual grant guidance, but they leave the discretion up to the CBP. She said the question is how to have predictability year to year so methodology for choosing most effective basins isn't changing every year. She said she's not saying EPA is ready to do anything different, but most effective basins are an annual congressional interest and appropriations that may or may not happen year to year. It's not in a rule or regulation that it has to be done a certain way. Scott asked is there a written definition? Carin said this year it's being written still but she can link to last year's grant guidance and its addendum.

John Wolf (USGS) provided the link to an overview of Most Effective Basins. Renee Thompson (USGS) provided a link to the most recent Most Effective Basins dataset that John created.

Larry Sanford (UMCES) commented for selecting tidal shallow water basins, there are two things to think about. What happens in PA doesn't affect the Corsica River at a measurable level. What does matter is what goes on locally around the Corsica River itself. The other thing to consider is in general, as water becomes shallower, variability becomes much greater. There isn't a big Bay to integrate all these influences together, every basin is different. Selecting representative basins in shallow water to give insight into models that actually work will be critical. How to bring all these disparate criteria together to get representative shallow water basins, is the question.

Scott Heidel (PA DEP) put a link in the chat with information on targeted restoration work in priority watersheds in PA. Fishing Creek, Lancaster County and Hammer Creek, Lebanon County would be ideal candidates

Scott Phillips (USGS) said that while the discussion is on most effective basins in shallow waters, not all most effective basins will be in shallow waters. Larry commented that the ability to utilize modeling in an area could be one component of selecting most effective basins, and Scott Phillips agreed.

Denice clarified that the request from CBC wasn't an assignment, it was just a way to keep the conversation going, and that it shouldn't be taken as constraints.

Jeremy Testa commented in the chat that the main highlights of the estuary report were:

- Shift the management and science focus from one of slowing and preventing ecosystem degradation to one of accelerating ecosystem restoration and recovery.
- Promote collaborative research integration approaches, thus improving capacity to forecast system responses to management actions and climate change and to identify fundamental uncertainties.
- Focus research efforts on spatial and temporal scales relevant to stakeholders and decision makers; for example, understanding the dynamics of ecosystems at the land-sea interface (triblets) in Bay restoration.
- Investigate the impact of tipping points (ecological thresholds) in estuarine restoration dynamics.
- Account for climate change in Bay restoration and expectations of recovery.
- Use shallow water habitats as a testbed for integrating the land-sea interface, tipping points, and climate change using monitoring, modeling, and research approaches.
- Develop a future vision of Chesapeake Bay management that better embraces and addresses decision making in the face of uncertainty by incorporating adaptive management and potential major interventions.

Sean Corson (NOAA) said something that surprised him in the CESR Report was that STAC was surprised to see a disconnect between TMDL implementation and attainment. There are significant lag times for nonpoint source pollution. Conversations around the Choptank River tend to go to the topic of groundwater quickly, and how long in-field Best Management Practices (BMPs) can be expected to show up in an oyster bed. A big part of this program is bringing the public along, and so it is important to think about how to engage different areas including disenfranchised communities. Also, areas chosen for the CBC with won't do much for NY or WV. Sean said he appreciates thinking about the shallow water emphasis as key components to set new goals and outcomes for where the program goes, but say Chester is picked, it gets into these tricky questions. Any tipping point now, there were probably several over the past 100 years. He emphasized asking what are the conservation and restoration endpoints that the CBP wants to achieve, and working back from those, as well as understanding limitations. When decreasing water quality is observed and good results in living resources in the Choptank as a result of nonpoint source work, but there is a huge push in BMP, can something really be said from the TMDL results about shallow water living resources? He said he doesn't know the answer but wanted to put that out there.

Kristin commented in the chat that it would be good to take advantage of the upcoming Biennial Meeting to socialize this idea and advance it with feedback from the partnership. She also added that Jeremy, Alex and herself had a good list of criteria they used to help inform and identify the selection of the tributaries for the multiple tributaries model work, and they might want to look at that list in light of the suggestions on the Jamboard.

Jeremy clarified that STAC was not necessarily surprised to see a disconnect between TMDL implementation and attainment but rather wanted to acknowledge it. He added another piece is how to describe whether or not restoration is proceeding as expected. There are the criteria. Then there are places where the question is how things are coming back like SAV or places where the water got clearer. What does everyone want the Bay to look like? What would success look like? Everyone has their own version of that. Figuring out how to get all that input into the decisions making is important - maybe minding the efforts already being done to do that. There's a part of the summary document in CESR that speaks to adaptive management. Where can that process help prioritize what is being restored and where? Scott Phillips said one vision is trying to see where the goals and outcomes in the watershed agreement coalesce as much as possible.

Denice said in summary that the CESR report says there is a wealth of monitoring data, expertise and analysis that can be applied to learnings from the past 25 years, and there are rich opportunities for improving program effectiveness going forward.

Jamboard discussion:

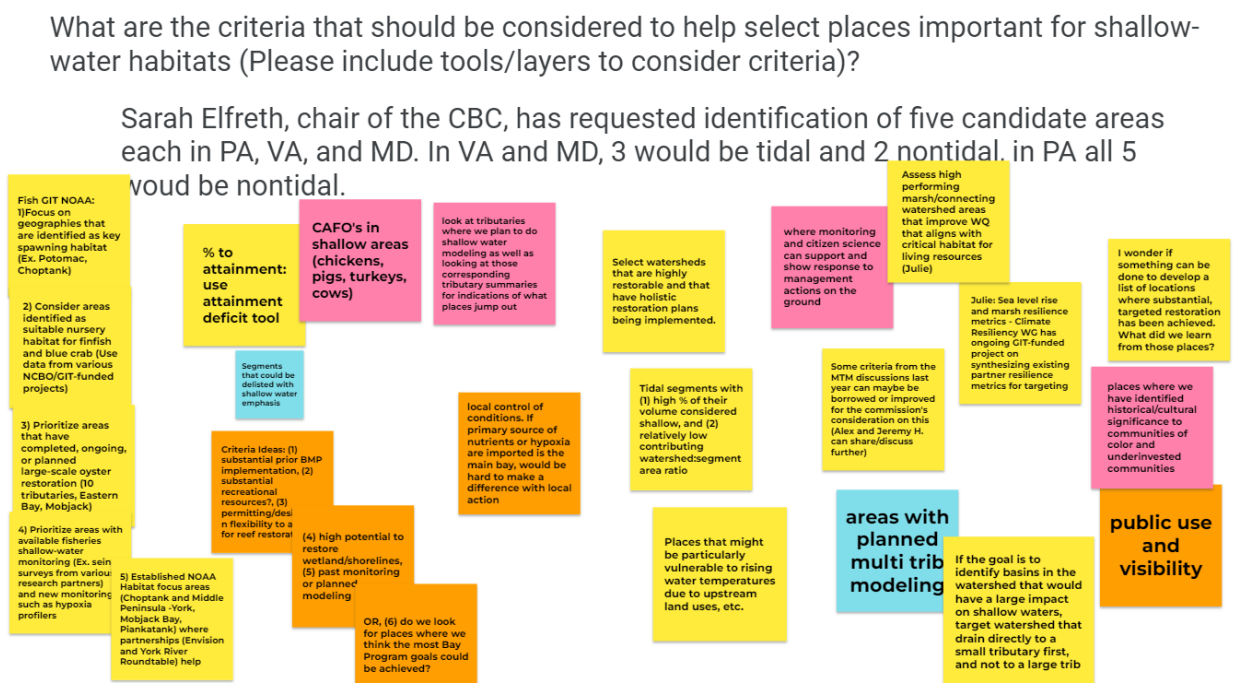

Image description:

A Jamboard with a lot of sticky notes in different colors. The top of the Jamboard states: Sarah Elfreth, chair of the CBC, has requested identification of five candidate areas each in PA, VA, and MD. In VA and MD, 3 would be tidal and 2 nontidal. In PA all 5 would be nontidal.

Sticky note responses:

- Fish GIT NOAA: 1) Focus on geographies that are identified as key spawning habitat (Ex. Potomac, Choptank); 2) Consider areas identified as suitable nursery habitat for finfish and blue crab (Use data from various NCBO/GIT-funded projects); 3) Prioritize areas that have completed, ongoing, or planned large-scale oyster restoration (10 tributaries, Eastern Bay, Mobjack); 4) Prioritize areas with available fisheries shallow-water monitoring (Ex. seine surveys from various research partners) and new monitoring such as hypoxia profilers; 5) Established NOAA Habitat focus areas (Choptank and Middle Peninsula -York, Mobjack Bay, Piankatank) where partnerships (Envision and York River Roundtable) help.
- % to attainment: use attainment deficit tool
- Concentrated Animal Feeding Operations (CAFOs) in shallow areas (chickens, pigs, turkeys, cows)
- look at tributaries where we plan to do shallow water modeling as well as looking at those corresponding tributary summaries for indications of what places jump out
- Segments that could be delisted with shallow water emphasis
- Criteria Ideas: (1) substantial prior BMP implementation, (2) substantial recreational resources?, (3) permitting/designation flexibility to allow for reef restoration, (4) high potential to restore wetland/shorelines, (5) past monitoring or planned modeling, OR, (6) do we look for places where we think the most Bay Program goals could be achieved?
- local control of conditions. If primary source of nutrients or hypoxia are imported is the main bay, would be hard to make a difference with local action
- Select watersheds that are highly restorable and that have holistic restoration plans being implemented.
- Tidal segments with (1) high % of their volume considered shallow, and (2) relatively low contributing watershed:segment area ratio
- Places that might be particularly vulnerable to rising water temperatures due to upstream land uses, etc.
- where monitoring and citizen science can support and show response to management actions on the ground
- Assess high performing marsh/connecting watershed areas that improve WQ that aligns with critical habitat for living resources (Julie)
- Julie: Sea level rise and marsh resilience metrics - Climate Resiliency WG has ongoing GIT-funded project on synthesizing existing partner resilience metrics for targeting
- Some criteria from the MTM discussions last year can maybe be borrowed or improved for the commission's consideration on this (Alex and Jeremy H. can share/discuss further)
- areas with planned multi tributary modeling

- If the goal is to identify basins in the watershed that would have a large impact on shallow waters, target watershed that drain directly to a small tributary first, and not to a large tributary
- I wonder if something can be done to develop a list of locations where substantial, targeted restoration has been achieved. What did we learn from those places?
- places where we have identified historical/cultural significance to communities of color and underinvested communities
- public use and visibility

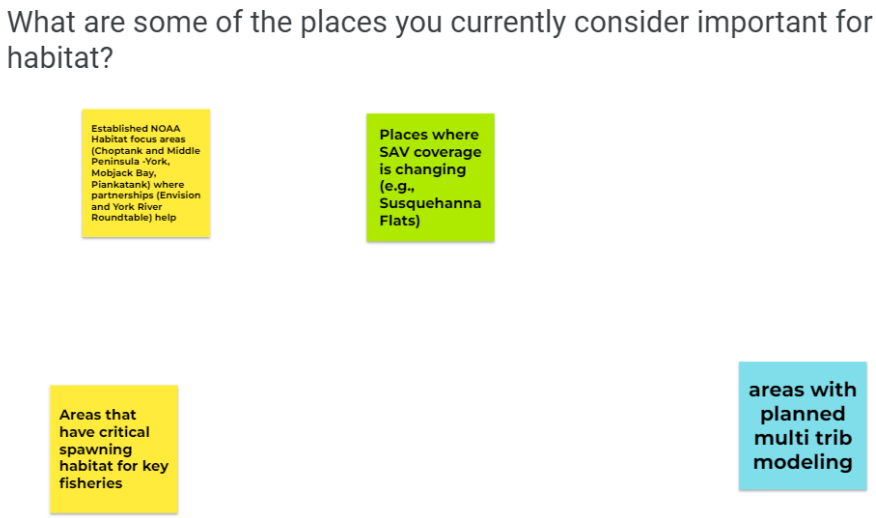

Image description:

A Jamboard with a lot of sticky notes in different colors. The top of the Jamboard states: What are some of the places you currently consider important for shallow-water habitat?

Sticky notes responses:

- Established NOAA Habitat focus areas (Choptank and Middle Peninsula -York, Mobjack Bay, Piankatank) where partnerships (Envision and York River Roundtable) help
- Places where SAV coverage is changing (e.g., Susquehanna Flats)
- Areas that have critical spawning habitat for key fisheries
- areas with planned multi trib modeling

11:05 AM [Instructional Story Maps for Targeting Tools: A Pilot Approach] **– Alex Gunnerson** (CRC) **and Garrett Stewart** (CRC)

The USGS and CBP GIS team, under leadership of John Wolf, have developed a targeting portal so users can access multiple tools for decision making. Alex and Garrett will present a template for instructional story maps designed to teach

potential users how to employ tools on the targeting portal. The goal of this template is to facilitate the rapid development of an instructional story map that is in demand by users of CBP generated web map viewers. The presentation will include a demonstration of the template's transferability to other tools. Please review the overview of the targeting effort and link to the portal prior to the STAR meeting: A Science-Based Approach for Targeting Resources to Achieve Multiple Chesapeake Outcomes | U.S. Geological Survey (usgs.gov).

Attendees will be asked to provide feedback and consider the following questions, among others:

- Do these story maps teach tool usage effectively?
- How can we improve the instructional function of these story maps?
- How can we better connect with the users of these tools?
- What additional functionality would you like to see added to this template? If you think you and stakeholders in your workgroups would benefit from an instructional story map following this template, please let us know which tool(s) are in demand.

Discussion:

Denice Wardrop (CRC) said this is a great resource and will greatly multiply the impact of the targeting tools. Julie Reichert-Nguyen (NOAA) said providing information on the underlying data of indices is needed. This will allow decision-makers to know what the information portrays. She added that including strengths and limitations of the tool in the in template would be helpful. Julie added this is helpful from a decision maker's standpoint. If someone is trying to use CBP's federal tools at the state or local level, Julie said she's heard them ask how these tools are developed. They lack metadata explaining how an index is developed which requires the user to go to the developer of the tools to get the information. This kind of story map development could help tool developers understand what their users need in terms of metadata and how to use the tool.

John Wolf (USGS) said they're doing some user testing with the web team internally. There are any number of ways these can be improved, and they hope to tackle that over the coming months.

Katie Brownson (USFS) said this kind of product could be helpful for other digital resources.

Garrett said it would be good for tool developers to think about creating packets that go with the tool, which have the tool, the metadata and tutorials all housed in one place.

Alex said the template would be internal. The replication of the template for the tool would be that audience that he and Garrett outlined at the start.

11:35 AM **Forest Buffer Science Needs** **– Katie Brownson** (USFS)

Katie Brownson will present the science needs of the Forest Buffers Outcome. A short discussion period will follow.

Breck Sullivan (USGS) thanked Katie for compiling more general science needs into more specific action items and said that others should keep this in mind to do when updating. Katie went over the science needs, starting with the one completed science need which was a more general need for studying water temperature increases in Bay tidal and non-tidal areas. Katie explained that due to extensive work such as the STAC Rising Water Temperatures workshop, this need can be archived but will be replaced by new, more specific science needs. Katie then went over the in-progress science needs by order of priority, and then new and emerging science needs by order of priority.

Breck commented for the science need "Identify agricultural landowners who have the greatest amount of bufferable acreage to target for buffer outreach", for which Katie gave an example of Delaware's identifying agricultural landowners with over one acre of bufferable space. Breck asked if Management Board members could help with this item by identifying people in their states or encouraging staff to incorporate it into their work. Katie said that was a good idea and they will be coming back to the Management Board with a report out of the buffer action strategy implementation so they could ask at that point.

Breck commented for the science need "Develop tailored buffer outreach materials for farmers and non-farmers, reflecting different motivations and benefits that can be derived from buffers" that it would be good to work with the Strategic Engagement Team (SET). Both Breck and Amy Handen (EPA) commented that they have some ideas for this science need, and Breck asked to join the SET meeting discussing this science need.

Regarding the science need "Evaluate potential for additional forest buffers to cool streams, especially in high-priority coldwater watersheds", Scott Heidel (PA DEP) commented that it is important to address legacy sediments before planting buffers to ensure they don't erode and get washed downstream, and that reconnecting ground water reduces water temperature.

For the science need "Identify better methods for quantifying co-benefits from forest buffers in a way that can be easily incorporated into decision-making" Katie said she there is a project on ecosystem services that addresses this need through the Regional Sustainability and Environmental Science (RESES) Program from EPA's Office of Research and Development to address it. Kristin Saunders (UMCES) said this project is currently undergoing peer review and almost ready to share. Kristin added that the authors are already working with her on inclusions of some of the ecosystem services work into the Chesapeake Assessment Scenario Tool (CAST) and will be part of the STAC ecosystem services workshop in March and April. Jeremy Hanson (CRC) also shared the article *Identifying and Aligning Ecosystem Services and Beneficiaries Associated with Best Management Practices in Chesapeake Bay Watershed*.

Scott Phillips (USGS) said that USGS can assist with the science need "Develop low-cost methods for verifying buffer acres" and he'll put Katie in contact with Dean Hively, the relevant

USGS contact. USGS has been doing remote sensing for cover crop assessment but that might be able to apply to buffers as well.

Renee Thompson (USGS) commented there's a lot of opportunity for synergy between land use methods and metrics use and the land change model itself. She said she wants to have a conversation about the definitions of forest, tree canopy and natural areas in the Chesapeake healthy watershed assessment so these definitions can be consistent across metrics and tools. It could be a great way to use the storymap templates shared earlier today to demonstrate connections between healthy watersheds, cold streams, brook trout, resiliency and trees.

Breck said it's great to see some science needs have been able to be completed through GIT funding and internships, and for those that have no resources, STAR will continue to look for other routes to get the work done. She also commented that the science needs using high resolution data are great ones to highlight when expressing the value of the Land Use Land Change monitoring continuing (for the enhancing monitoring efforts).

Scott Phillips (USGS) commented in the chat seems like Peter Claggett, GIS team and the Conservancy could help with high-res forest analysis, and asked, could census data be used for the landowner identification? Renee responded that the parcel data Peter Claggett and others have collected could potentially be used as well as the land conservation dataset, but she doesn't think census data includes owner information.

12:00 PM Adjourn

Next meeting: Thursday, February 23rd, 2023

Participants:

Alexander Gunnerson (CRC), Alexandra Fries (UMCES), Amy Goldfischer (CRC), Amy Handen (EPA), Bill Dennison (UMCES), Bill Jenkins (EPA), Breck Sullivan (USGS), Bruce Vogt (NOAA), Carin Bisland (EPA), Carl Friedrichs (VIMS/CBNERRVA), Caroline Johnson (CRC), Doug Austin (EPA), Denice Wardrop (CRC), Emily Heller (EPA), Garrett Stewart (CRC), Gary Shenk (USGS), Greg Allen (EPA), Greg Barranco (EPA), Jamileh Soueidan (CRC), Jennifer Starr (Alliance for the Chesapeake Bay), Jeremy Hanson (CRC), Jeremy Testa (UMCES), John Wolf (USGS), Julie Reichert-Nguyen (NOAA), Justin Shapiro (CRC), Karl Blankenship (Bay Journal), Katheryn Barnhart (EPA), Katie Brownson (USFS), Kristin Saunders (UMCES), Larry Sanford (UMCES), Lew Linker (EPA), Marisa Baldine (CRC), Mark Nardi (USGS), Matthew Kierce (IWLA), Meg Cole (CRC), Peter Tango (USGS), Qian Zhang (UMCES), Rebecca Murphy (UMCES), Renee Thompson (USGS), Scott Heidel (PA DEP), Scott Phillips (USGS), Sean Corson (NOAA), Sophie Waterman (CRC), Sushanth Gupta (MD DNR), Will Parson (Alliance for the Chesapeake Bay)