

Scientific, Technical Assessment and Reporting (STAR) <u>Experimental Working Meeting</u> Theme: Unpacking Science Needs from the Comprehensive Evaluation of System Response (CESR) Report

Thursday, August 24, 2023 10:00 AM – 12:00 PM Meeting Materials: <u>Link</u> This meeting was recorded for internal use only to assure the accuracy of meeting notes.

ACTION ITEMS

- Breck Sullivan and August Goldfischer will share the <u>Jamboard link</u> after the meeting, and will make sure the living resource outcome representatives have an opportunity to respond to the prompts since many were unable to attend the STAR meeting.
- STAR will identify science needs currently in the database that are related to CESR. STAR will then begin conversations with relevant parties to identify the specific actions that need to be taken to begin addressing the critical uncertainties.
- STAR will contact the Local Leadership Workgroup about hosting a meeting to respond to the CBC's request to identify criteria for a reimagined most effective basins with a focus on shallow water transition zones. STAR will ask about the feasibility of including comment from the Local Government Advisory Committee and Stakeholder Advisory Committee.
- STAR will consider future collaboration with STAC to develop and design sandbox experiments or pilots based on key CESR findings.

Meeting Materials

10:00 AM Welcome, Introductions & Announcements – Bill Dennison (UMCES), Ken Hyer (USGS) and Kimberly Van Meter (Penn State) - STAR co-chairs and vice chair, Breck Sullivan (USGS) STAR Coordinator, Peter Tango (USGS) CBP Monitoring Coordinator

Announcements

Beyond 2025 Steering Committee Update – *Ken Hyer (USGS) and Peter Tango (USGS)*

<u>Summary</u>

Ken said the Beyond 2025 Steering Committee will be meeting immediately following the STAR meeting today and will discuss developing or refining ERG's first draft of the assessment questions of the program. There will be two parallel tracks for Beyond 2025:

- 1. ERG will work through the assessment questions to generate an unbiased report of what is working and what is not. Improved understanding of what is not working will allow the program to respond appropriately going forward.
- 2. Beyond 2025 committee will deal with a similar set of questions and challenges, and produce their own report.

Eight or ten months from now, ERG and Beyond 2025 Steering Committee will produce reports, but ultimately the Beyond 2025 Steering Committee report will move forward to the Management Board. Since the next Beyond 2025 Steering Committee meeting will be a week before the September STAR meeting, Ken will provide an update then on what came out of the previous two meetings.

STAR Accessibility Survey

Bill shared a blog written on the recent 2023 C-StREAM Symposium: https://ian.umces.edu/blog/attending-the-2023-c-stream-symposium/.

Upcoming Conferences, Meetings, Workshops and Webinars

- <u>University of Maryland Symposium on Environmental Justice and Health</u> <u>Disparities</u> – September 11-12 (<u>virtual</u>) and September 14-16 (<u>in person</u>), University of Maryland, Stamp Student Union.
- <u>Chesapeake Studies Conference</u> September 15-16, 2023, Salisbury University, Salisbury, MD.
- <u>Potomac Conference</u> September 21, 2023, Lorton, VA.
- <u>Virginia Water Monitoring Conference</u> September 26, 2023, Henrico, VA.
- <u>Chesapeake Watershed Forum</u> November 3-5, 2023, Shepherdstown, VA.
- <u>CERF 2023 Conference: Resilience & Recovery</u> November 12-16, 2023, Portland, Oregon.
- <u>National Conference on Ecosystem Restoration</u> April 14-19, 2024, Albuquerque, New Mexico. <u>Abstracts</u> are due September 1, 2023.
- Chesapeake Community Research Symposium June 10-12, 2024, Annapolis, Maryland. Special session proposals due October 2, 2023 – email <u>allison@greenfinstudio.com</u>
- **10:10 AM** Brief Reminder of CESR's Key Findings and Implications Denice Wardrop (CRC), Kurt Stephenson (Virginia Tech)

To inform the main discussions in the meeting, Denice and Kurt quickly reviewed the key findings and implications from CESR. More detailed information can be found in the <u>report</u> and in the various presentations on CESR compiled <u>here</u>.

Summary

Denice began with an emphasis that adaptive management is based on two principles: being willing to ask hard questions, and then implementing actual changes based on these lessons. CESR only does the first part of asking hard questions. It is up to the Chesapeake Bay Program (CBP) to implement changes.

Bill said the CESR report transformed STAC because it required recruiting more estuary experts. Denice said that it also required recruiting living resource experts. This led to much cross pollination and interdisciplinary collaboration.

Denice emphasized that CESR is not an indictment of the CBP to date, but instead comments that despite the headwinds facing the Bay, progress is still being made. CESR is focused on the question of how the CBP should adapt. The overarching finding of CESR is that this is a complex problem with tradeoffs, uncertain outcomes, and no single answer. The corresponding implication is the need to experiment, learn, and adapt. CESR concludes that full attainment may not be necessary to improve and support living resource goals. The conversation should be: "Where are we on the steepest part of the living resource response curve, and how do we get the maximum living resource improvement for every dollar we spend in the context of water quality."

10:15 AM Science to Address Key Findings and Implications in CESR – All

Based on the key findings and implications in CESR, STAR began the discussion on structuring science recommendations to pursue and identify what work is currently being done to address those recommendations and what science needs still need to be addressed. This exercise focused on identifying the critical uncertainties for the CBP, assessing what tools and resources are available or needed, and start implementing the learnings in CESR. <u>Jamboard</u> was used to record and categorize responses.

- What are the critical uncertainties (Those uncertainties which, if resolved, may potentially alter the course of action.)?
- Where do GITs see their work aligning with science needs from CESR?
 - Is there work currently going on to address it?
 - Is there a new effort you would like to lead to address a science need?

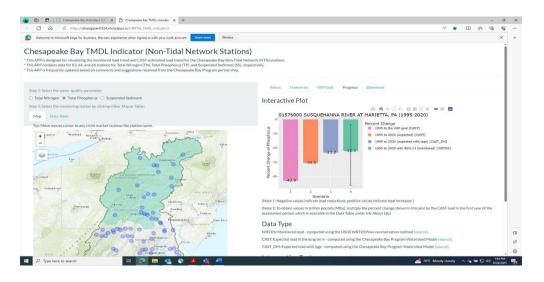
Summary of Discussion

Note: Not all comments necessarily refer to all portions of the Chesapeake Bay watershed. There are success stories in the Chesapeake Bay watershed, but some areas within the watershed are experiencing the challenges raised by the CESR report.

Ken said many think of CESR as a water quality document, but the focus is really on increasing living resource benefits. Denice said CESR is a water quality conversation in the overall context of living resources because that is the end target of the causal chain. The goal is to get a maximum living resource response for each water quality investment. CESR never suggests reducing pollutant load reduction. Kurt said the focus of CESR is outcomes, not counting Best Management Practices (BMPs): we need to measure the actual living resource outcomes, not rely solely on the intermediary steps as representations of progress. This means advocating for habitat investments in nearshore environments that in the context of load reduction alone may not be as lucrative but are very critical to the success of the overall outcome of improved living resource response.

Denice said some science questions from CESR include "How should the CBP change our management actions to increase the effectiveness of load reductions?" One under-reported and enduring topic from CESR is the phosphorus response gap. It has been difficult to get decisionmakers' attention for the phosphorus issue because the modeled results show we are improving, but the monitoring results show degrading trends. There seems to be some denial from high-level decisionmakers since the focus is on the accounting framework (Chesapeake Assessment Scenario Tool, CAST), and less so on the actual ambient monitoring data for phosphorus.

Scott Heidel commented after the meeting via email that the Pennsylvania Department of Environmental Protection (PA DEP) believes that total phosphorus (TP) is trending downward in Pennsylvania based on the reduction in TP at the Marietta Super Gage Station, which accounts for nearly the entire portion of the Bay watershed within Pennsylvania, as reported by the <u>new TMDL</u> <u>indicator</u> (see below).



Scott Heidel added clarifying information about agricultural BMP effectiveness after the meeting via email. Scott said watershed restoration in PA has evolved over the years and is now focusing on small watersheds that are less than 25 square miles that also have motivated conservation groups with productive relationships with land owners and farmers. These watersheds are manageable in size and when saturated with agricultural BMPs, they are restored to the point of attainment of water quality standards to include chemical, physical and habitat standards. Thus, agricultural BMPs do in fact work when implemented in a targeted manner. Scott provided Hungry Run, Turtle Creek, Headwaters of Conowingo Creek, Pierceville Run, etc. as examples of watersheds that have been impaired by agriculture and then restored by ag BMP implementation and the list is growing. Restoration involves federal, state, and county partners as well as conservation groups such as Trout Unlimited and land owners. State and federal grant funds pay for BMP implementation while compliance with agricultural baseline regulations is ensured by DEP and the Conservation Districts. This is a challenging but rewarding process but it only works if you have respect for all the partners involved, especially the local conservation groups and land owners. Scott emphasized the importance of being cautious when characterizing the effectiveness of agricultural BMPs. Pennsylvania has made great strides and have plenty of case studies to demonstrate how well the BMPs work - Scott would be very happy to provide tours to showcase these successes. Scott believes there is confusion associated with scale and subsequent restorability as well as the time it will take to restore a gigantic watershed like the Chesapeake Bay. Scott's impression from today's meeting is that this confusion is clouding our perception of BMP effectiveness. Scott wants to be sure that we keep a balanced perspective when making statements that have a high potential to effect change, especially when we are seeing a very different and positive picture of restoration in Pennsylvania.

Kim Van Meter stressed the importance of using the living resource response curve to inform targeting resources. Kim asked how the living resource response curve was developed. Denice said the curve is conceptual since the CBP does not have an explicit expected living response curve. Denice said we know a lot about how to improve living resource response in shallow waters (install living shorelines, conserve wetlands), and we know how to do it, but enhanced efforts to model living resources is an important science need.

Bill said he has been working with Governor Moore's administration and the Secretary of Agriculture in Maryland, and they are all in on the CESR report. Bill said they are leading the management actions, so STAR needs to focus on the science component, since that is our strength. Bill said the disconnect between the modeling and monitoring for phosphorus is an ideal topic for STAR to focus on using its scientific resources.

Kristin Saunders said her big question is, what does the CBP need to do differently? We can change science and programmatic elements for the CBP, but how? Kristin has seen some different corners of the program shut down when faced with CESR conversations because change suggests their programs or accounting frameworks are not correct. Kristin said we need to consider how to use social science to shape attitudes and decisions within the partnership to increase the willingness to be adaptable. These might include considerations of reworking incentives, as mentioned in CESR, to widen the focus beyond just load reduction. Denice said one response to this challenge is sandboxing/pilot projects, since they are opportunities to explore policymakers' questions and reduce the risk of changed induced instability and disruption, opening the door to broader change. Denice said a role for STAC and STAR can be designing these sandbox experiments. Kurt emphasized the CBP needs to buy into the idea that there is a fundamental issue in the program, otherwise there will not be interest in sandboxing. Kurt said it is important to keep focusing on the phosphorus issue lest attention is lost, or it gets swept under the rug because it is uncomfortable. Kurt emphasized the need to increase the profile of the phosphorus issue, and mentioned how the Lake Erie community had a similar problem and learned from their investigation.

Greg Barranco said but these conversations need to happen now as we are doing the developmental work for Beyond 2025. Denice said absolutely, but it needs a group of people consistently reminding them of the inconvenient points and it needs to feed into the Beyond 2025 process or it will be ignored until it's too late to change the committee's course.

Chris Guy said the first step to changing the program starts with sandboxing. Chris said he was shocked to learn that knowledge has been lost about where wetlands are located over time. Chris emphasized the need to improve living resource modeling for wetlands. Chris noted work is being done to develop a new indicator, but that assumes a baseline where no wetlands were lost, which was a flawed assumption. Chris said sandboxing falls apart at the workgroup level because the practitioners are concerned with their project, not necessarily how it fits into the bigger picture to explain the living resource curve for wetlands. Bill said these are specific science needs we should capture. Denice added that warming is so important because what it means for living resources is a mammoth issue. Denice is curious to see how the warming trickles down to the science needs of the various outcomes.

Julie Reichert-Nguyen said climate needs to play a central role in developing more strategic and effective management strategies across outcomes. Warming will have a huge impact on living resource response curves. Climate change should play a central role in identifying science needs. Some examples include understanding how shifts in community structure from climate and adapting management strategies will result in varying living resource conditions. One example of a need is understanding the impact of saltwater intrusion in coastal farms on the release of phosphorus in landscape transitions. Landscape transitions induced by climate change are important to monitor and understand.

Kristin said some key living resource people are not here today so we might want to make the <u>Jamboard link</u> available to them after the meeting for additional thoughts. Breck Sullivan and August Goldfischer will share the <u>Jamboard link</u> after the meeting and will make sure the living resource outcome representatives have an opportunity to respond to the prompts since many were unable to attend the STAR meeting.

Larry Sanford said from a physical oceanographer's perspective, water quality is only one of many conditions that living resources higher on the food chain respond to. For example, submerged aquatic vegetation (SAV), phytoplankton, and oysters respond fairly quickly to water quality in shallow waters, so that is a helpful place to draw direct linkages to a living resource response curve. However, trying to support striped bass with water quality alone is going to be much more difficult to draw a direct linkage, since disease, fishing pressure, and changes in lower trophic levels are going to play large roles. Larry stressed this is a matter of emphasis rather than brand new science and can guide the public and partnership in a productive way. Setting expectations with the right question is important. Bill agreed, but noted we should think of transition zones (i.e., too wet for a car, too shallow for a boat) instead of just shallow waters.

Bill said if the modeling we are doing for living resources (shrimp, blue catfish, and the demise of other species that are temperature sensitive) are suggesting there are other influencing factors than water quality, then the CBP needs to change what models they are using. This means factoring in models with more

parameterization for climate, like different sea level rise scenarios, temperature regimes, and flow patterns.

Bill said the values and perceived threats to the Bay from the general public are not what the CBP focuses on. Bill stressed the need to respond to what people care about, like recreation, access, and development. Julie said people respond to what they can see and feel and the direct impacts to them. Such as flooding and heat waves (air temperatures). Bill said we should focus on explaining and discussing those topics.

Breck asked how the water quality criteria (WQC) for living resources were developed and which species they were based on. Denice said at its time, the development of the water quality criteria was a huge scientific achievement. It just was done at a time when widespread concern for climate change was nascent. Kristin said she is reminded of some comments from Rebecca Hanmer about how we would benefit from including temperature criteria as well, given all the findings of the STAC Rising Water Temperature workshop. Does anyone know what process the partnership would need to follow to explore and potentially adjust the water quality standards criteria to include temperature considerations and also explore a tiered focus to first concentrate on shallow areas? Not to leave the deep trench behind but to perhaps aim in the transition zone first? Denice said a phased approach to achieving WQC is possible under the Clean Water Act process. Breck said the Criteria Assessment Protocol Workgroup is forming a small group to discuss including temperature in criteria. There are more questions than answers now, but it something the workgroup will discuss. August added that this group will: 1) interrogate past monitoring data to understand the impact of temperature driven effects and 2) test how criteria changes would affect attainment of different segments.

Chris said in conversations with Carin Bisland, he learned the CBP started with focusing on everything in the Bay, then they evolved to indicator species and what people care about. Charismatic megafauna used to be a derogatory term in conservation programs, but they realized people care about them so one can leverage this interest to affect change. One could say this is a component of integrating social science into the CBP.

Chris talked about the need for Structured Decision Making (SDM) and the Habitat GIT's attempt to have a workshop funded by GIT Funding in the past. The CBP is already taking sides in the invariable tradeoffs with restoration and management in a changing climate, but oftentimes we sleepwalk into the decision because these conversations are not held explicitly. Denice agreed, and said an obvious tradeoff is directing resources towards water quality that might be better focused on living resources. Tradeoffs exist at every scale – we need to document them and be intentional in how we approach them. Denice said we need to improve our decision science in the CBP. Kristin agreed that raising Decision Science is an overarching need for this program. Denice said there is a huge need for decision science tools to evaluate, articulate, and value tradeoffs. These decisions will be getting more critical as we proceed. The CBP would benefit from arming our Beyond 2025 steering committee with decision science principles because they don't necessarily have an effective way to evaluate the tradeoffs they may be called to make as they try to craft recommendations for the Executive Council. There will be tradeoffs that will inherently surface in their work even just talking about tweaks to the agreement, and they may benefit from having some of that decision science grounding.

Bill commented on the dendritic nature of the Chesapeake Bay, and its extensive coastline compared to ecosystems on the West Coast. Bill emphasized these human-nature coastal connections are heightened by sea level rise, climate change, and human actions, so they should be a focus of the CBP's work.

Bill said the CBP and STAR need to support effective monitoring, modeling, and research to answer science needs raised by CESR. Examples of technology used for these efforts include the hypoxia vertical profilers and satellite assessment of SAV. Breck shared a Peter Tango anecdote that the CBP has the corvette of criteria but the Volkswagen when monitoring for it.

Bo Williams asked if the science needs that link to CESR are indicated in the database. Breck said they are not since this is our first attempt at identifying them, but it is a good point to make a comparison and see which ones are already in the database. This will allow us to prioritize science needs and support adaptive management. Ken suggested perhaps this is the first point where STAR can engage, reaching out to start a conversation around the science need to distill the actual steps to resolve the critical uncertainty.

Responses on <u>Jamboard</u> as of August 28th, 2023 were the following in response to this discussion:

Achieving the TMDL

	Key Finding	Implication	Recommendations	Science Needs		We have lots and lots of tools to help	
Achieving TMDL	Nonpoint source programs are not generating the scale of reductions needed to achieve TMDL	Substantial improvement in nonpoint source outcomes will require new programs and approaches	Address regional nutrient mass imbalances Utilize spatial targeting at farm scale Investigate outcome- based incentive programs	What analysis is needed to better	What social science strategies do we need to use to change behavior on what is currently done?	track pollutant reduction progress. However, a large issue with these tools is that they ar not reaching the target audiences.	
			Assess and communicate model uncertainties	understand why dissolved phosphorous is		How can we better communicate or change how we share information to	
How may climate change minimize efficiency of		use structured elicitation to fill data gaps and estimate how climate-affected mechanisms may impact BMP effectiveness. relative		increasing so much?	What incentives and program characteristics are most effective for	actually influence real change on the ground at the level where the work	
				How is climate change impacting it?	getting land managers to implement effective BMPs for living	happens?	
BMPs?			ctors (land		resources?	Small watershed restoration plans w in ag watersheds. With this, all BMPs	
star.chesapeak	I/NeedD	P for as m watershe possible (knowledg potentiall informati quantify l	ds as filling a ge gap), and ly use that	Apply the new TMDL load indicator to the NTN watersheds to better categorize (1) response, (2) lack of response due to lags, and (3) lack of response due to lack of implementations	Utilize monitoring data at the appropriate spatial/temporal scales to assess implementation/mana gement actions with real quantified results to assess progress	needed are implemented at or to fijr he water quality. It's about scale, CB is huge	

Achieving Water Quality Standards

	Key Finding	Implication	Recommendations	Science Need	ds 🔵	What are the	e		
Achieving Water Quality Standards	Bay water quality is improving, but the magnitude of the improvement appears to be lagging behind expectations	Water quality criteria may be unattainable in some regions of the bay under existing technologies	Improve modelling capability in shallow waters Consider shifting the focus of the TMDL to shallow water areas of bay taking into consideration the costs and tradeoffs of addressing multiple outcomes Explore linkages between DUs in terms of WQS improvements Vision future Bay			What are the connections the impacts improvemen various habi example, hov achieving W shallows cas the deeper v Water quality standards are met within th watershed at level but not	between of WQ its in tats? For w would 'QS in the cade to vaters? / e being te being the local being		What are the sizes of unaccounted oads, such as those contributed during (ing tides (Margie Mulholland's work)? Where are locations where the opportunity to take advantage of
			conditions and impacts on effectiveness of load reductions Quantify loads currently unaccounted for (e.g., King tide)			explore and c this in locally small waters	quantify restored heds.		tipping points in a restoration context is highest? Better utilize Tier I and Tier
a level rise pacts on osphorus	Prot	eria Assessment cocol WG ning small group	help vision w potential livi	w Is to h that are sl	Modeling WG is working towards higher resolution for shallow waters. What information		Utilize monitoring data at the appropriate spatial/temporal scales to assess implementation/mana		II data at the appropriate places across the CBP
namics relat ndscape ansitions and Itwater intru coastal farm	sion asse	iscuss perature in er quality essment	resource conditions in the future? And need to align these tools with local/community		can we share with them to best inform it? i.e. Trib Summaries		gement actions with real quantified results to assess progress		When do improvements at a small spatial scale accumulate to see a Bay-wide signal?

Living Resource Response

	Key Findin		Implication			Science Needs			
Living Resource Response The impact of WQ improvements on WQ improvements depends on where WQ improvements occur and antecedent conditions; impact varies across species Clir sce species Clir sce tom climate change - see dentified in Rising Water Temperature		FWQ Potential to increase the living resource response ves resource response where to our WQ and ments restoration investments.		Changes to TMDL implementation targeting that could help prioritize water quality investments that have greater and more immediate impacts on living resources. Assess boost to LR response posed by additional management actions such as living shorelines, wetland		Create Living Resource curve for Streams based on Chesie BIBI for all streams		General need for all living resources is to create standardize models that we can measure against much like CAST Does for Water Quality.	
		scen living ident point temp com			protection, etc. Studies that look at how best to use multiple habitat types (oysters, marshes, SAV) together to maximize resilience		Wetland delineation Wetlands identification/not delineation. this is problematic	delineation tlands ntification/not neation. this is	Understanding where historic Brook Trout Streams that can not be restored due to permanent changes in climate is important to understanding the BrookTtrout IR curve
Habitat vulnerabili	T	Stra Ma sha cor pro	ategic decision king (SDM) allow water oflicts that ohibit living ources		climate con		bec US (ause of water of definition ough Sackett vs	How do the small projects across the watershed make a different to the bigger picture of the response curve for living resources?

Alignment of Goal Implementation Teams' Efforts and CESR Science Needs

What are the critical uncertainties?	 Where do GITs see their work aligning with science needs from CESR? Is there work currently going on to address it? Is there a new effort you would like to lead to address a science need? 	
	map highly restorable watersheds that are protected by anti-degradation regulations and restore them. This increases healthy watersheds and improves WQ at once	

11:15 AM Responding to the Chesapeake Bay Commission's (CBC) Homework Request for CESR – All

On of the big themes that came out of CESR was the idea of reimagining Most Effective Basins (MEB), i.e., targeting resources to a series of places that are important relative to a challenge. The current version of MEBs is the EPA targeting resources to watersheds based on their Phase III WIP agricultural nitrogen commitments through 2025

(https://storymaps.arcgis.com/stories/6770277260a2416085f37f7fe026f1bf).

When the CESR team presented to CBC, they asked them to identify five areas across PA, MD, and VA for targeting resources to improve shallow water transition zones, where three of the areas for MD and VA must be tidal.

If we were to move forward in implementing the learnings of CESR, a way to "reimagine" MEBs would be to direct them to answer one or multiple critical uncertainties complied in the previous discussion.

- How would you reimage MEBs?
 - What criteria would you use?
 - How would you prioritize the criteria?
- How could the reimagined MEBs implement key findings and address science needs from CESR?

Summary of Discussion

Denice said many of the criteria on the <u>Jamboard (slide 7)</u> looked promising.

Bill said Walt Boynton found in the Corsica River that there was an ecological threshold at 10cm of light penetration which led to positive feedback loops if exceeded. A lighted bottom would lead to more SAV, thus stabilizing the sediment and preventing resuspension of nutrients.

Britt said considering criteria like where there are active stakeholder groups interested -- weren't programs like Envision the Choptank (and similar) set up to explore how pouring on actions in one smaller watershed would have a significant impact? Kristin said yes. Concentrating multi-disciplinary efforts into a geographic location led by locals and shored up by federal and state programs was Envision the Choptank starting point. Julie said NOAA has had huge success with oyster restoration in certain areas, like the Choptank. Maybe we look at successes to determine what has been a Most Effective Basin from a resource standpoint. Look at water quality successes to see which living resources have responded well there. We cannot prevent climate change, but we can take steps to minimize impact and build sustainable communities for living resources. Breck emphasized the Bay of the future will not be the Bay of the past. Larry introduced the phrase "Most Affected Outcomes," which would be loosely defined as: "If we make a change in the program, what will respond the most." This can be phrased as a science need, implying we need to understand living resource response with much more specifics. Bill said he does not know if that is the right wording, but he thinks this will help. Larry provided more detail saying this approach would focus on if the CBP makes a change in a particular way, which outcome would be most affected by that change. The CBP is asking where it expects to get the most results. It's a change in emphasis, that recognizes tradeoffs. This will allow us to better predict an expected living resource response curve since we cannot predict for a lot of outcomes what will achieve them.

Bill said one thing the CBP has really learned is the importance of feedback loops. We are seeing negative trajectories on the eastern shore, but do not know why. We are seeing improvements in other places, but do not know why. These are areas to focus our science on.

Kim said if we are focusing on learning when prioritizing science needs derived from CESR, then we first need to prioritize criteria. Bill added we need to focus on where the science can do the most good, since that is STAR's comparative advantage. Ken countered we need to pair science inquiry with the management applications, emphasizing a need to go forward in parallel to answer the CBC's question. Kristin noted STAR may find some inherent tension between "where can we learn the most" and "where can we achieve the most."

Bill said it is important to line up partners who are willing to participate in the sandbox before we begin designing it, so they are onboard and have bought into this on-ramp for change. Denice replied that at some point, the sandbox is incomplete without the jurisdictions because they will be key to scaling up practices and policies learned in the sandbox. A key question STAR and the CBP should keep in mind is "What do the jurisdictions need to be shown in the sandboxing to decide how to move forward with change?" Ken suggested there is a role for the Beyond 2025 Committee in integrating these conversations and discussing how to better integrate local governments and watershed groups into science and management.

Scott Heidel said Hammer Creek in PA flows from Lebanon County into Lancaster County. This watershed is being restored using multiple funding sources and partners. The watershed is agricultural and karst. Baseline monitoring has occurred. Ongoing monitoring is occurring as BMPs and floodplain restoration/wetland restoration/legacy sediment removal take place. Susquehanna River Basin Commission, Pennsylvania Department of Environmental Protection, and USGS are studying this and welcome involvement. Bill said additional criteria to include in reimagined most effective basins include the Infrastructure Investment and Jobs Act and environmental justice indicators. Ken said John Wolf at the CBP plays a critical role in visualizing those layers of interest and suggested this will be an important part of responding to the CBC's request. Kaylyn asked to what extent have local stakeholders and government been involved in this conversation to determine criteria for a reimagined most effective basins targeting perspective. Perhaps by gathering consensus on the most important criteria, we can foster more meaningful engagement. Breck suggested using the local leadership workgroup as a venue to bring forward this conversation on criteria. Bill agreed and suggested including the Local Government Advisory Committee and Stakeholder Advisory Committee as well.

Denice said many thanks for dedicating this meeting to this conversation, very helpful in bringing specificity to some next steps. A wonderful STAC/STAR partnership. Thanks to STAR for being such a strong and thoughtful partner and dedicating this session.

Denice said in the Beyond 2025 Committee, there is going to be denial about inconvenient truths and a tendency to bury them. This committee is an opportunity, so how do we commit to not let those inconvenient truths be submerged. Kristin said some initial strategies could include keeping close contact with members on the steering committee and using STAR and STAC reps to continue to voice the tenants that you feel strongly about. Also, very direct conversations with co-chairs Martha Shimkin and Anna Killius would be critical. Ken responded that from his perspective there are some voices within the Beyond 2025 Committee that are seemingly open to change, although the extent of that remains to be seen. Bo believes the Beyond 2025 group <u>plans</u> to create small groups to dive in on issues like CESR or certain aspects/conclusions of CESR. Speakers, experts, etc. will be invited to participate and help guide these groups.

Ken asked if there is a way to make more streamlined CESR communication materials since the report is so dense. Ken said something akin to the pamphlet produced by the Integrated Application Network (IAN) at UMCES for the STAC Rising Water Temperatures workshop would be very beneficial. Denice said the CESR team is working on communication products, such as video and a more graphical executive summary to complement the existing textual executive summary and the full report. Denice said there is only so much abstraction that can be done, so she is hesitant to do a one pager. Additionally, the best conversations are had when participants have read the report and digested its findings, so they are ready to engage at a more meaningful level. Ken replied he did not mean to criticize CESR, only that the Beyond 2025 Committee tends to engage at a less detailed level, so having more communication products can keep the report front and center at the committee. Denice said Leonard Shabman is helping to produce the report in brief. Bill said STAR will distribute the CESR video and report in brief when they are available.

Bill and Breck emphasized that the CESR conversation is ongoing, and today's discussion was only one step in the process of digesting and implementing the reports implications.

Responses on <u>Jamboard</u> as of August 28th, 2023 were the following in response to this discussion:



12:00 PM Adjourn

Participants: Alex Fries, Alex Gunnerson, Ann Foo, Ashley Hullinger, August Goldfischer, Bill Dennison, Bill Jenkins, Bo Williams, Breck Sullivan, Britt Slattery, Carl Friedrichs, Chris Guy, Chris Moore, Denice Wardrop, Efeturi Oghenekaro, Greg Allen, Greg Barranco, Jackie Pickford, Jamileh Soueidan, Jeremy Hanson, Julie Reichert-Nguyen, Kate Allcock, Katie Brownson, Kaylyn Gootman, Ken Hyer, Kim Van Meter, Kristen Wolf, Kristin Saunders, Kurt Stephenson, Larry Sanford, Laura Cattell Noll, Leah Palm-Forster, Leonard Shabman, Lorenzo Cinalli, Mark Nardi, Qian Zhang, Rebecca Murphy, Scott Heidel, Sophie Waterman, Tou Matthews, Wuill Urvina.

Next Meeting: Thursday, September 28, 2023