

Climate Resiliency Workgroup (CRWG)

Thursday, December 19th, 2024

1:30 – 3:30 PM

Meeting Materials: [Link](#)

This meeting was for internal use only to assure the accuracy of meeting notes.

Participants

Adrienne Kotula, Amanda Small (MD DNR), Amy Freitag (NOAA), Arianna Johns (VA DEQ), Ashley Kelly, August Goldfischer (CRC), Breck Sullivan (USGS), Cassie Davis (NYS DEC), Cindy Osorto (MDE), Debbie Herr Cornwell, Dede Lawal (CRC), Elizabeth Andrews, Gabriel Duran, George Doumit, Joel Carr (USGS), Joe Rieger, Julia Fucci, Julie Reichert-Nguyen (NOAA), Julissa Murrieta, Katie Brownson (USFS), Kayle, Keith Bollt (EPA CBPO), Kelly Maloney (USGS), Ken Hyer (USGS), Kevin Schabow (NOAA), Kevin Du Bois (DOD), Kristin Saunders (MD DNR), Lisa Ochsenhirt, Mark Bennett (USGS), Michael C Maddox (University of Maryland), Molly Mitchell (VIMS), Nadya Chehab (MDA), Neil Ganju (USGS), Nick Staten (CRC), Nicole Carlozo (MD DNR), Peter Tango (USGS), Taylor Woods (USGS), Timothy Canty, Vamsi Sridharan (Tetra Tech), Zachary Lansing, Pam Mason (VIMS)

Action items

- **Submit the integrating climate across outcomes for Beyond 2025 outcome assessment as a priority for the January 3, 2025 deadline for the Management Board to consider (Keith and Breck are drafting).**
- **Consider submitting the marsh adaptation priority later in the process along with measuring resilience (STAR/CRWG Leadership).**
- **Look into whether STAC has minutes from the carbon stewardship panel discussion (Kristin Saunders) – help inform new considerations in watershed agreement for climate mitigation needs.**
- **Locate ClimateSmart Framework GIT-funded project report to help inform a set of questions to help with climate considerations during outcome assessments and discuss needed updates (Julie, Mark, Breck, and Katie).**
- **STAR/CRWG leadership discuss ideas shared by meeting participants on adaptation outcome assessment and draft 1-pager (front and back) to share before January CRWG meeting.**

Minutes

1:30 – 1:35 PM Welcome – Mark Bennett, Chair (USGS) and Julie Reichert-Nguyen, Coordinator (NOAA)

Announcements:

- CRWG-supported proposals submitted:
 - Marsh Adaptation proposal to the University of Michigan SEAS Master Student Program, in collaboration with the CBP Wetlands Workgroup (Point of Contact: Julie Reichert-Nguyen)
 - Julie and Mark provided a letter of support from CRWG leadership for Old Dominion University and Tetra Tech's proposal submitted to the STAC Science Synthesis funding opportunity. Their proposal addresses one of the CRWG's top science needs in working towards quantifying the resilience effectiveness of nature-based solutions.
- Elizabeth Andrews from the University of Virginia shared the newly released [website](#) for Proactive Planning for Resilience—Protocols for Community-Led Climate Adaptation in Virginia. CRWG supported this effort by providing feedback during our meetings.
- Michael Maddox from the University of Maryland Climate Resilience Network shared that there are spots still available for the 2025 Scientists Serving Communities Workshop, January 8-9 at the Samuel Riggs IV Alumni Center on the University of Maryland, College Park campus. Event [page](#) and [RSVP link](#). RSVP cut off is December 31, 2024.

Julie introduced herself and Mark, and Gabriel and August introduced themselves. Julie announced that the new CRWG staffer will be starting in mid-January.

1:35 – 2:05 PM Beyond 2025 Priority Action Assignment

Presenter(s): Julie Reichert-Nguyen and Mark Bennett

Description: Julie and Mark will provide an overview and describe identified urgent actions to avoid missed opportunities that are connected with recommendations from the Beyond 2025 Phase 1 report related to the Climate Resiliency goal. These are tentatively due January 3, 2025 to the CBP, with additional opportunities in the future to submit other actions that are less time-sensitive. Mark and Julie will be looking for feedback from the workgroup before submitting these. Given the current deadline from the CBP, we will need any feedback by December 23, 2024.

Materials:

Identified Beyond 2025 Priorities

- Integrating climate resilience across outcomes
- Advancing collaborative marsh adaptation

- *Measuring resilience progress*

Summary:

The purpose is to identify actions needed now to advance the beyond 2025 Executive Council (EC) charge in the long term.

These actions must:

- Relate to Beyond 2025 Phase 1 Recommendations, including B25 Steering Committee Report, Small Groups, Charting a Course to 2025, ERG
- Be urgent and additional (minimize missed opportunities)
- Be cross-outcome
- Initial actions due Jan. 3, but iterative and dynamic process with other opportunities to submit other priorities
- Management Board endorsed
- No additional resources

The leadership team with STAR and CRWG has met trying to identify some priority actions, looking at key overarching recommendations in Beyond 2025 relevant to climate resiliency outcomes. These included:

- Integrate climate change projections to better understand changes across multiple indicators and inform strategic planning at the local and state level.
- Improving access to information and cooperation among organizations to share data.
- Prioritizing climate science and research on land use and anticipated changes related to how conservation practices may respond.
- Support system-scale conservation and restoration planning of nearshore habitats and communities.
- Better target and prioritize resources to adaptively manage and provide technical assistance and communication of outcomes.

Climate small group recommendations ranged in scope with the larger scope ones underlined:

- Improve modeling of ecosystem response
- maximize use of nature based solutions
- integrate climate adaptation decision framework
- promote carbon stewardship through conservation
- promote regenerative agriculture

These all centered around rising water temperatures, sea level rise and population growth, and revolved around ecosystem health, social science, nearshore habitat resilience, carbon storage and future landscape

Through all these materials CRWG leadership identified priority actions to submit by January 3rd to be discussed during January 16th MB meeting:

- Advancing Marsh Adaptation
- Integrating climate resilience across outcomes and governance, per the 2021 EC Climate Change Directive

Consider submitting by May 2025:

- Measuring resilience progress (more discussion and time needed)

Keith Bolt introduced himself and his new role supporting actions out of the EC Climate Change Directive.

Advancing marsh adaptation - continuing work identified during GIT-funded project.

The GIT funded project wrapped up back in September. Through that project we identified a lot of areas of need for marsh adaptation. We had a joint workshop with Wicomico River/Deal Island, MD and Middle Peninsula, VA partners. Middle Peninsula, VA partners have received funding. Audubon is supporting continuing marsh restoration and resilience planning at Deal Island. CRWG also partnered with JBO and organized a workshop with Envision the Choptank partners.

Rationale for putting this forward as priority action:

- Existing support: CRWG in collaboration with Wetlands Workgroup, CBP GIS Team, and partners are already actively assisting three focus areas. • Filling a need: Continuation of technical assistance is allowing for partners to be more strategic in incorporating marsh adaptation considerations. • Timely: Partners have received BIL/IRA funding for implementation and are interested in marsh adaptation design elements; other partners need assistance in developing coastal wetland resilience plans for their areas. • Resources: University of Michigan Master SEAS Program – four Master students and two professors will assist with product development needs from January 2025-April 2026; EPA Region 3 Wetlands Branch interested in discussing effort • Alignment: Helps address several recommendations in the Beyond 2025 Phase 1 report

Discussion:

- Kevin DuBois in chat: We are doing a scientific literature review and tech analysis on the impact of land use/land change on carbon pools and sequestration rates. We will distribute it through the Partnership when completed early in CY2025.
- Keith in chat: Climate crediting and mitigation- or at least exploring the universe of what's possible, shows up in 2021 EC climate directive. Sounds like an interesting project, Kevin
- Julie: Carbon stewardship was a higher level recommendation that came out of the climate small group recommendations that would change how the CBP partnership does business. Not sure where in the process of BY25 we'll talk about it but that study would be helpful in supporting that conversation.
- Vamsi: Is SAV considered as part of these marsh adaptation strategies?
- Julie: The GIT-funded project focused mostly on marsh migration. However, some of the groups we worked with, SAV has come up during the workshops and follow-up meetings related to where they're implementing their tidal marsh restoration efforts in relation to location of SAV beds. We could look into considering SAV considerations as part of the project scoping the SEAS students.

- Adrienne: This is fascinating work. Did you say you don't need any additional resources to continue it?
- Julie: To clarify, we've been told by CBPO there are no additional resources available for these actions we submit. We have some resources, but would need additional resources to fully support the work. We have heard from EPA R3 wetlands branch that they are interested in hearing more about the work to see if they may have some resources to help support it.
- Adrienne: Thank you.
- Pam Mason in chat: SAV WG will also be developing a response to the Big Question.
- Kristin: The STAC meeting held recently there was a group of CB restoration veterans, Bob P, Rich Batiuk and Don Bosch. The 3 of them made the case that the partnership should do more specific weaving in of carbon sequestration and GHG emissions and make the case that climate change will make it harder to meet our goals. I wonder if there's anything in the case they made that might help beef this up. The impetus for these priority projects is to capture the recommendations that came out of the phase 1 Beyond 25 and reaching 25 process and keep them alive so those ideas don't get lost. Because of all the other work going on the rolling submission for Jan deadline is for things that are time sensitive. In addition to bringing awareness to this issue, if there is a time sensitive element to this such as we have projects in play and off and running and with more resources we can do more, or we have to get this done to capture the carbon sequestration work and start it now.
- Julie: The CRWG has been supporting the marsh adaptation work and the immediate need for that work is aligning the incorporation of climate resilience decisions for projects that have been funded through BIL and IRA in these focus areas. Funded projects are putting design plans together now. Kristen's comment on carbon sequestration relates to the next priority action.
- Breck in chat: Thanks Krisitn for reminding us all on the climate discussion from the STAC meeting. I agree that it would help elevate the marsh priority because it shows that, on the broad topic of climate, the projects would support those actions.
- Kristin: Also, I want to encourage this workgroup to find a way to connect to the land conservation efforts because having protected lands combined with restoration helps protect investments and leaves migration space potentially for marshes as they move.
 - Adrienne: This is just one example of why Integrating Climate with the Outcomes is absolutely critical!
- Nick Staten: What is the timeline of the marsh adaptation priority? As I work through Habitat GIT stuff some of the priority projects are supposed to be the next 6 months. I know this is going to be way more than 6 months, hopefully.
- Julie: The focus areas are all at different phases in considering marsh adaptation. For Envision the Choptank partners, marsh adaptation is a new issue for them to think about, so more shared learning, identifying projects and pursuing proposals is needed. For the Middle Peninsula, they've received funding to implement projects. They're interested in including marsh adaptation considerations and continuing conservation on design elements, which relates back to the immediate need (designs are happening now; could be a missed opportunity). Short term within 6 months, develop a coastal

wetland resilience plan for the Choptank River with Envision the Choptank partners. Develop a public-facing webpage for the marsh adaptation mapper. We didn't have the funding to make that publicly available but we have had requests to do so. Will be working with John Wolf to get it up on Chesapeake Data. Looking for students from SEAS to help.

- Nick: is there any stewardship stuff happening in these priority areas?
- Julie: Part of SEAS proposal is to develop communication materials.

Integrating Climate into phase 2 charge (outcome & structure reviews) - Keith

- Why we have to consider it:
 - 2021 EC Directive directs climate to be in outcomes & structure
 - This is in both parts of Beyond 2025 Phase 2
 - Principle of 2014 Agreement (p. 2)
 - "Anticipate changing conditions, including long-term trends in sea level, temperature, precipitation, land use and other variables."
- Why we should be considering it:
 - Beyond 2025 Phase 1 Report: Climate small group recommendations
 - SMART
 - Outcome can't be "achievable" or "relevant" without climate
 - In other words, each outcome logic model "theory of change" is much less plausible without climate
- Therefore recommend 2 immediate actions:
 - EPA and STAR work with Management Board to set up process to assist GITs/workgroups to incorporate climate science & policy into their outcome reviews occurring now
 - EPA and STAR work with Management Board to set up process to include climate in the Phase 2 governance and structure review

Discussion:

- Julie: Right now it's not really built into the Beyond 2025 process to integrate climate change considerations with the outcome assessments. We want to put this forth as a priority action, so it is not forgotten.
- Keith: Informally I've tried to be a champion of 2021 EC climate charge but it's not formalized.
- Mark: This has been one of the primary focuses of the climate resiliency workgroup early on. When the workgroup was initially formed and we looked at the monitoring and assessment outcome, the way we interpreted that outcome was not monitoring in terms of data collection, but monitoring in terms of making sure climate was adopted into the other outcomes because how could you make progress without including climate projections. This was a big part of what the CRWG has done in the past.
- Keith: I think it's important to point out that climate has not come out as an official consideration. The Management Board (MB) has a lot of things on their plate. This priority action is trying to make sure it's explicitly called out on.

- Mark: I agree and maybe part of that is revising the wording in the monitoring and assessment outcome because it's currently unclear.
- Kevin Schabow: I think this is absolutely critical. This particular priority makes a lot of sense to me. I think it will fall on more than the CRWG. I hope that by getting the charge from the MB on this activity it would fall also on other workgroups to tackle this in partnership with us.
- Amy Freitag in chat: that was a really helpful clarification of monitoring, thanks
- Ken: this was an effort to send a strong signal and begin the process. It was not meant to exclude the fact that there's still an opportunity to address the existing climate resiliency outcomes.
- Katie B: Agree with what Ken and Kevin said. This is absolutely the sort of thing we need to be thinking about now in order to address the charge from the EC effectively. In the climate small group we talked about having a framework for each outcome to go through a process of strategically evaluating how each outcome considers climate to target their work to climate resiliency benefits or tailor their outcome to be more realistic in face of climate change. For some, they don't need to make changes to outcome itself but better integrate climate in management strategy. A common framework/set of questions for evaluating climate would be helpful so we're not all differently interpreting what addressing climate change means. Another reflection: just anticipate potential pushback from the MB on the marsh adaptation work as a priority through this request. My understanding on how they're trying to narrow the scope of this effort is to zero in on efforts we need to get started in the next 6 mos to meet the EC charge. I think there's a much broader suite of projects we need to consider but due to the timeframe may get pushback.
- Julie: Maybe we don't submit it on Jan 3, maybe we wait. It's supposed to be an iterative process. Before I started my position with the CRWG, there was a GIT-funded project developing these climate resilience questions for outcomes to work through. We may have a starting point, but it would likely need to be updated.
- Mark: That's right. Early on almost all of the work we did was around that. However, we never created a list of metrics for outcomes. Going back to that framework and making sure the outcomes do that ties into what we're talking about.
- Keith: do you think the train has left the station? Outcome reviews are starting to happen now.
- Katie: No.
- Nick in chat: Happy to invite folks to my workgroup's outcome review meetings and/or weekly workgroup chair check-ins to talk climate. For Fish Passage, Brook Trout, and Stream Health Workgroups
 - Kevin: Nick, I'd like to attend any upcoming outcome review meetings for fish passage if my schedule allows, please share details when you're able. Thanks
 - Vamsi in chat: We should invite Lydia Olander and Todd Jones-Farrand from Duke and USFWS on their SECASC project. Very similar in scope to this priority area.

- Nicole in chat: Example of MD report card that was developed out of a discussion about the need for resilience metrics: <https://www.umces.edu/news/maryland-releases-first-of-its-kind-coastal-adaptation-report-card>
- Amy in chat: If you're collecting resources on resilience metrics, I definitely have thoughts, some summarized here: <https://repository.library.noaa.gov/view/noaa/61797>
- Kevin in chat: We have carbon sequestration rates for a variety of natural and nature-based BMPs

Measuring resilience enhancement:

- Feasibility assessment with existing data/information – project-level resilience metrics to regional level indicators
- Metric identification and indicator methodology
- Monitoring and assessment plan to fill knowledge gaps
- Data science and approaches to scale - observational, remote sensing, modeling, AI/deep learning
- Potential Resources: STAC Science Synthesis Funding Opportunity
- Urgent Element: missed opportunity to align research with funded project implementation through BIL/IRA funding

Given being behind in the agenda, the group did not discuss this one in depth and will plan to discuss at a future meeting; we weren't planning to submit this one during the January 3 deadline.

2:05 – 2:25 PM Outcome Assessment Assignment from Management Board

Presenter(s): Breck Sullivan (U.S. Geological Survey, USGS/ STAR Coordinator)

Description: Breck Sullivan will provide an overview on the outcome assessment assignment for the Goal Implementation Teams (GITs), including next steps for the climate resiliency outcomes under STAR/CRWG (Climate Monitoring and Assessment and Climate Adaptation). Timeline and description of the assignment can be found [here](#). The Climate Monitoring and Assessment and Climate Adaptation outcome assessments will be presented during the February 13, 2025 Management Board meeting. Materials will be due on January 30, 2025.

Summary:

Phase 1 covered the breadth of what should be undertaken. Now we're in phase 2 which is more of executing the plan. Out of phase 2 what came out of tasks for GITs and Outcome leads was the immediate priorities list and Outcome Assessment for Beyond 2025. This has a rolling due date; outcomes will sign up for when they are presenting to the MB. It will be an iterative process; and final decisions will be made around April. For the two climate outcomes the due date is January for a 2 page write up answering the "big question", and we are having a discussion at the MB on February 13th. We wanted to go first in front of the MB because of recognizing we need to incorporate climate in all the outcomes.

Why are we doing an outcome assessment? It came from the EC charge stating we are to make revisions to watershed agreement. The PSC will be working on the vision and goals while the GITs will be working on the outcomes. We are to complete this task by the end of the calendar year 2025. When walking through this outcome assessment it's important for us to reflect what's in the EC charge, including providing a greater emphasis on engaging all watershed residents, address water quality and living resources, within our understanding of how we get the work done to ensure it is measurable and time bound, and consider elevating conservation throughout our revisions.

The MB has 2 weeks to review the 2 pager we provide. At the MB meeting, we'll do an elevator pitch but it will be mostly discussion. More outcomes will then go at subsequent MB meetings going through the end of March. When you go to the MB it is not the final say. There are more opportunities to make changes. Ultimately the MB is trying to have final outcome language and decisions in April.

How do we conduct an outcome assessment? Ensure we are considering EC charge considerations. Answering the "big question" - 2 pagers we need to fill out. What advice do you have for the MB on how to consolidate, reduce, update, remove, replace or add new outcomes within your GIT? To help answer that question there are considerations to step through and answer.

Guidelines when doing the Outcome Assessment:

1. In reviewing your outcome, provide advice to the MB on whether "to consolidate, reduce, update, remove, replace or add new outcomes". a. Don't need to provide updated Outcome language at this point in the process. b. If consolidation is recommended, which outcome(s) do you advise combining with? c. Should the outcome be moved or restructured?
2. Consider if the Outcome is SMART, and specifically, whether the current outcome meets the definition of an outcome, as described in the 2014 Chesapeake Bay Watershed Agreement ("Agreement"), or if that outcome is an output or indicator. a. Review ERG's Beyond 2025 Report for existing assessment of Specific, Measurement, and Timebound. b. Consider the Secret Sauce
3. Consider the challenges to and opportunities for achieving the outcome. You are encouraged to leverage past documentation and learnings from the Strategy Review System process, as well as Charting a Course to 2025 report and Beyond 2025 Small Group recommendations as they pertain to the outcome.
4. Consider how the outcome relates or could relate to the Bay Agreement mission, vision, and themes/pillars Big Question: What advice do you have for the MB on how to consolidate, reduce, update, remove, replace or add new outcomes within your GIT?

5. Consider the timescale for completing the outcome (5, 10, 15 years). Determine if achieving the outcome is an incremental step or is it a final outcome.
6. Consider resource needs and availability (high, medium, low).
7. Consider the risk or unintended consequences of removing the Outcome.
8. What value is added by having the Chesapeake Bay Program work on the outcome? [The MB will also be answering this question]
9. Consider how the Outcome, as written, benefits the public. Does the outcome reflect public input already received and have the potential to galvanize public support/engagement?
10. We will provide links to the supplemental information, including: a. 2014 Chesapeake Bay Watershed Agreement b. Secret Sauce c. Beyond 2025 Recommendations d. Charting a Course to 2025 report

- Breck in chat: I forgot to mention that you don't have to answer all the "considerations" I went through in the 2-pager. We do need to answer if we update/consolidate etc. and then we can choose which consideration answers to include to 1) support that update/consolidate statement and 2) fit in a 2-pager.
- Kevin: What is the "secret sauce" that keeps getting referred to?
- Adrienne: It's from reaching 2025. [Link to report](#)
- Julie: includes items for success, such as having a champion for the work.
- Keith in chat: Table on p. 1-2 is 10 lessons learned and suggested adaptations, and list on p. 5-6 is the "secret sauce"- credit to Kristin Saunders for the secret sauce. Reflects the lessons learned as communicated at the outcome reviews between 2021-2022

2:25 – 3:25 PM Discussion – Mobilizing the CRWG for Initial Feedback on Outcome Assessments – Beyond 2025 Phase 2 Continuing Implementation

Facilitator: Julie Reichert-Nguyen

Description: Based on the the Reaching 2025 report, outcome attainment documents, and Strategy Review System, what is CRWG's initial input for the Climate Monitoring and Assessment and Climate Adaptation outcomes related to the Management Board's request to, "provide advice to the Management Board on whether to consolidate, reduce, update, remove, replace or add new outcomes."

Summary:

The adaptation outcome is coastal focused. It focuses on:

- Sea level rise—land/habitat loss; sunny day flooding
- Extreme storms—human health/safety

- Coastal flooding—infrastructure damage
- Coastal erosion—degraded shoreline, water quality and habitats
- All the above—ecosystem change
- Missing from Outcome: warming impacts, nontidal watershed

We have developed a climate adaptation portfolio that includes marsh adaptation, nature based solutions and community based solutions. We have to make recommendations on how we move forward on this outcome. CRWG/STAR Leadership thoughts: Update -> most likely the best course of action for climate adaptation outcome. Consolidate -> consider for climate monitoring and assessment - combining with adaptation outcome? Remove -> consider for climate monitoring and assessment outcome, becoming an output of other outcomes?

Other actions in the EC that could be final actions, but may not make sense at this stage...

- **“Replace”** – This language suggests that a novel Outcome replaces a current one. That could take place later during April/May when gaps become clearer, but probably not appropriate at this stage.
- Reducing – This language suggests that the total number of Outcomes are reduced, which is a culmination of multiple decisions. Unsure what “reducing” a single Outcome looks like, where this phase is trying to determine an action for each Outcome.
- Adding – This step is about reviewing the current features of the 2014 Agreement. Again, gaps may become clearer in April/May of what could be added as an Outcome, however, you could also think of that as “replacing” “removed” Outcomes.

Discussion:

Challenges:

- Defining resilience enhancement
- Qualitative language - need quantifiable language to track progress
- Current structure under STAR is science focused (lacking jurisdictional representation) - to be successful, need support from implementing organizations

Workgroup input:

- Nick: Is there a need for a Climate Advisory Committee?
- Julie: There have been conversations about a climate GIT.

- Nicole: This goal is really broad. Each jurisdiction is focusing on different things. We focus on wetlands for example and it's only pulling in a few jurisdictions. What's happening in MD and VA might be different from other states.
- Breck: While I agree with how states will be working on it differently and the goal is broad, the outcome is very coastal focused. One thing we heard in the Beyond 2025 climate small group is how do we make sure we incorporate the inland and watershed too? That's a challenge. It's a compounding challenge - is that something we address through potential overall framework of how we incorporate climate in the structure and governance or through updating this outcome?
- Katie in chat: Agree- outcomes are very narrow and don't cover the full scope of the goal
- Julie: Currently with how we're structured we would have to think about how we expand our capacity to tackle more. I know other outcomes are having conversations about how to integrate climate considerations through their outcome review; we don't want to be duplicative either. What makes this climate adaptation outcome stand on its own? How do you integrate more climate resilience considerations in the whole watershed including both tidal and nontidal portions? My understanding is they are not removing goals. Each Goal should have an outcome under it. I would argue we should not remove a climate goal. But I don't want us to have everyone's outcomes under the climate goal.
- Kristin in chat: I know that the outcome leads are providing analysis of the outcome, while the PSC will be tackling any changes to goals. I suggest that if you surface ideas that require changes to the goals, keep track of them so we can advance those to the PSC when the time comes.
- Ken: Building off that, the PSC is tracking some of the ideas not included yet. One of their questions in challenges was the idea of resources. A larger scope for climate adaptation or larger climate framework for the program would be in the right for more resources. It's the PSC responsibility for funding these things, not the workgroups.
- Taylor Woods in chat: Sorry all some tech difficulties with mic/camera but there's a lot of good research being done in inland related to stream warming & hydrologic extremes that could help the adaptation outcome, through an update to incorporate nontidal (update with more emphasis on nontidal areas & the humans that rely on them, including potential resiliency to stream warming & hydrologic extremes (floods, droughts) from climate & land-use change)
- Keith in chat: Good point Julie- every outcome should be a climate resilient outcome, but the CRWG has a role too- especially if it has more staff and resources from the federal and state partnership to make it successful.

SMART Outcome: Current language no

SMART ideas:

- Specific place-based areas to work in – e.g., within eight identified adaptation focus areas, plan and implement nature-based strategies that will enhance the longevity of habitat and ecosystem services beyond 2050.
- Measurable objectives – e.g., have 50% of project plans implemented by 2035, and 100% by 2045; establish monitoring and assessment to track resilience progress in focus areas.
- Achievable – incremental milestones.
- Realistic – 20 year timeframe; work with practitioners to evaluate feasibility of types and scale of projects
- Timebound – see above

Workgroup input:

- Kevin in the chat: Land Conservation is a necessary strategy for maintaining carbon sequestration and serves as the baseline for sequestration gains. I see overlap between SMART land conservation goals and SMART climate resilience goals.
- Amy F: I could see this having a spectrum of time bound goals over time. By 2025, 2050, 2100. The scale of the outcome should increase with the amount of time we have available. I see a lot in the short term, what do we do with this grant cycle, and a lot in 2100, but not a lot in between (between 2050-2075) and guidance would be helpful.
- Breck: Some insight from STAR meeting earlier - we had conversation around SMART outcomes and outputs vs outcomes. There was discussion of having the outcome language being directional - where you want to put the change you want to see in the ecosystem. Your outputs are your immediate deliverables or measurable aspects you can show to reach that outcome. I can see that in what Amy suggested; in the outputs you can supply more specific time bound strategies while your outcome language is more directional. it could also help support what Nicole mentioned in terms of how states are doing things differently; you could have multiple kinds of outputs to reach different things states are taking on while still helping achieve resiliency.
- Nick in chat: Having more granular modeling of climate scenarios could help with making "climate stewards" within communities. If people see a dam breach is going to wipe out neighbor's houses, maybe removing that dam would be more likely? Win for Fish Passage, win for community resiliency to changing hydrology and increased precipitation loads on streams/rivers.
- Amy in chat: wholly agree; important to have all data inputs at the scale of adaptation projects.
- Julie: MD DNR is looking at a whole watershed concept. Adaptation could be more comprehensive. We couldn't necessarily do the whole watershed; it still has to be tangible and achievable. That's where place based strategies come in; focus on some target areas.
- Kristin in chat: I really like the idea of being more inclusive of inland areas and the climate considerations there - we have as much inland flooding and warming water concerns and other factors that people care about in their local streams and rivers that are not coastal areas.

- Cassie Davis in chat: Flooding is a top concern in NY's portion of the watershed.
- Julie: Our climate adaptation outcome is the only outcome that mentions flooding.
- Kristin in chat: Yes, flooding is a major concern of local officials across the watershed.
- Nick in chat: I hate to say a "fear index" could be a measurable way to understand climate consideration visibility throughout the watershed, but it could be a barometer for outreach success and how seriously people are taking the possibility of changing climate affecting their lives.

Value added and benefits to public:

- Shoreline protection – erosion control, lessening of coastal flooding impacts
- Protecting ecosystem function of coastal habitats under changing climate conditions - supports local and regional economies (tourism, fishing, birding, hunting)
- Dedicated effort on filling knowledge gaps on quantifying resilience benefits of nature-based strategies in the nearshore environment

Workgroup input:

- Nicole in chat: Targeted shoreline stabilization is key - not every shoreline needs to be stabilized.
- Julie: Being under STAR helps with having measurable targets.
- Julie: Choose Clean Water is looking to support projects around community impacts of climate change.
- Taylor Woods in chat: Benefits to public in inland watershed: Identify where communities that rely on surface water in streams for drinking water, recreation, agriculture, fishing, energy production, etc. might be vulnerable to climate risks affecting these resources and identify strategies to increase the capacity of these communities to be resilient to these changes
- Keith in chat: I had a chance to talk with the climate coordinator with NOAA's National Marine Sanctuaries Program last week Zac Canizzo- the way that program is run is by dividing the workgroup into multiple subworkgroups including science, adaptation, communications/outreach (crossprogram coordination). Could be something that works in the Bay Program too- the Phase 2 structure and outcome reviews are linked.
- Kevin in chat: to the second bullet I would add recreation and quality of life.
- Julie: We also have to think about resources and how to make things manageable. To broaden the scope we'll have to be structured differently. There needs to be this cross outcome work. Overlap across outcomes with different nature based features we're trying to emphasize. How do we make sure we're organized in such a way that this outcome makes sense and we have an achievable and realistic language for it.
- Amy in chat: some sort of indicator-based approach might be needed - can't measure everything but one metric per ecosystem service realm or something seems doable
- Keith in chat: I heard an idea of the Bay Program organizing ourselves around partnership functions not outcome, like the way our individual offices are set up- then

when the outcome changes, the work pivots and continues. Ex. Modelling team maintains environmental modelling skills, and models what the MB asks it to model

Unintended consequences if removed:

- Communities focus on hardened shorelines for coastal resiliency
- Continuing knowledge gap on benefits of nature-based solutions to enhance coastal resiliency

Workgroup input:

- Kristin in chat: you also run the risk of losing partners, including federal agencies and NGOs/foundations who invest in and leverage this work if you delete this outcome.
- Adrienne in chat: It's also helped us drive legislative change at the state level.

Monitoring and Assessment Outcome:

We will have more in depth follow up conversation on this outcome during the January meeting, but here are some ideas to think about.

Indicators:

Much of the monitoring and assessment analysis has focused on indicators - refinement of some without data sources or outdated. Also to relate them more to our overall restoration objectives.

Framework: We have physical indicators that are signals of change and impact indicators trying to get to resiliency indicators.

Some big pictures considerations:

- Consolidate with a SMART place-based adaptation outcome – monitoring and assessment would focus on efforts in identified focus areas.
- Remove and integrate as output under relevant outcomes in watershed agreement.

Management Board meeting materials with more in depth description of Beyond 2025 Phase 2 tasks and process: <https://www.chesapeakebay.net/what/event/management-board-meeting-17>

Workgroup input/discussion:

- Mark: a couple thoughts with regard to monitoring outcome; I've always looked at the monitoring and assessment outcome as the planning piece, with the adaptation outcome as more of the implementation piece. The outcomes are both worded vaguely.

In particular the monitoring and assessment one. The outcome doesn't say anything about indicators; that was put upon the workgroup by the MB early on. Most outcomes' indicators are a reflection of the outcome themselves; how are you progressing on your outcome. And yet these are not; they don't have anything to do with how we are progressing on our outcome. I don't think these indicators should be the responsibility of our workgroup.

- Julie: Great points Mark. We haven't been able to make much progress on the indicators. There is interest in tracking though.
- Mark: When I look at the monitoring and assessment outcome, it's not collecting data, but looking at other outcomes and whether they are incorporating climate in their outcomes.
- Kevin Schabow in chat: Totally agree Mark.
- Mark: We don't have the mechanism or funding to collect data.

3:25 PM Any Additional Partner Announcements

Additional funding opportunity shared by Krista Romita Grocholski (RAND): [MARISA Small Grants Program for Climate Adaption Funding](#); Applications due January 27, 2025

3:30 PM Adjourn - HAPPY HOLIDAYS

Next Meeting: January 16, 2024 from 1:30-3:30 PM—meeting will focus on finalizing outcome assessment recommendations.