



Adapting to Changing Environmental Conditions Outcome

Office Hour

Monday, July 28, 2025

12:00pm – 1:00 PM

Meeting Materials: [Link](#)

Actions:

- **Submit any feedback you have for the draft Watershed Agreement [here](#)**

AGENDA

12:00 – 12:05 PM Introductions—Mark Bennett (USGS) and Julie Reichert-Nguyen (NOAA)

Meeting Focus:

Provide a recap of the updated adaptation outcome, Adapting to Changing Environmental Conditions, and its place within the revised Chesapeake Bay Watershed Agreement followed by an open Q&A.

12:05 – 12:30 PM Presentation on Updated Adaptation Outcome

Presenter: Julie Reichert-Nguyen (NOAA)

Description: Briefly recap what was covered in the Healthy Landscapes Webinar on July 24th.

Materials:

- [Presentation](#)
- [Webinar slides](#)

Discussion Summary:

- Julie presents on the revised four goal structure and where the Adapting to Changing Environmental Conditions Outcome fits in- see the presentation on our [meeting page](#) or linked in the materials section above

12:30 – 1:00 Open Q&A

Facilitator: Julie Reichert-Nguyen (NOAA)

Description: The group will be able to ask questions related to the Adapting to Changing Environmental Conditions Outcome

Materials:

- None

Discussion Summary:

- Vamsi Sridharan discusses the impact of nature based solutions, and how they affect areas outside of their implementation area. He suggests that we measure key performance measures within a larger radius.
- Kristin Saunders asks how the workgroup is going to target areas with gaps in capacity, and if we want to fill those gaps or amplify work that is already happening. Her and Julie discuss how it could potentially be a mix of both, and how ultimately the workgroup wants to target areas with resources that are also in need of capacity.
- Taryn Sudol asks what the geographic scope for non-tidal will be, to which Julie replies that the workgroup is going to have to consult some experts, and that the scale will vary depending on which areas we choose and the projects we wish to implement.
- Stephanie Schollaert Uz asks how the group thinks about AI data centers, and if we have thought about their role in heating waters. Julie replies that we have not thought about that yet, but it is something we can be strategic about. Julie and Stephanie discuss how data centers impact indigenous land as well, and Julie recommends that Stephanie submit feedback to the revised agreement during the open comment period.
- Vamsi Sridharan brings up funding, specifically grants that will be able to cover the amorphous boundaries of projects that span jurisdictions and cross into different political domains, and asks about guidance on how funding works when jurisdictions collaborate, or universities and private enterprises collaborate. Julie replies that it is not yet something the workgroup has encountered, but it is something that representatives from jurisdictions can help answer. Should the current watershed agreement revisions go through, this is something we could build into a work plan.
- Vamsi Sridharan then shares thoughts on Stephanie's question regarding data centers. He says that for AWS computing, you are able to select which region you want to compute your data in, and if there is some analysis showing high water stressed areas vs. non stressed, you can select the non-stressed area.
- George Onyullo asked if changing conditions also means changing how we do monitoring, and it means new ways of collecting data how we would develop a budget to support changes. Julie replies that once we develop the management strategy and work plan next year we will know more about this, but generally as we select areas we will have to rely on existing data and methods at least at the start.
- Mark asks if, when we select areas, should we start with the 'who' or the 'what?' What issues will partners want to weigh in on? Julie and Mark discuss this as something to iron out in the methodology. If for example we pick flooding, there are multiple jurisdictions impacted by this, so it is circular.
- Julie ends by thanking the attendees, encouraging submission of feedback to the [revised agreement](#) during the feedback period and appreciates the ideas and topics to explore for the updated outcome that have been highlighted by these great questions.

Full Discussion:

- **Vamsi Sridharan (chat):** A very key concept to keep track of as this area footprint of NbS expands, is that KPIs may become disconnected from the actual place where the NbS is implemented. For example, riparian river shading may provide a benefit to cold water pools somewhere else. Where exactly, will be given by a balance between atmospheric heat influx, and flow advection
- **Julie Reichert-Nguyen:** Would you like to unmute and expand on your comment?
- **Vams Sridharan:** I was thinking about work we had been doing in Sacramento before I came over to the east coast. When you are talking about things like riparian shading, you can have situations where you are shading a part of the river for management purposes, but the actual benefits might be further downstream depending on the interaction between atmospheric heat exchange, and heat dispersal within the system itself. So, the conventional practice of measuring key performance indicators within the landscape of your nature based solution I think has to be expanded a little but to include the entire watershed.
- **Julie Reichert-Nguyen:** Great point. These are the types of things we will have to sort out as we develop our management strategy for this outcome as we go forward too.
- **Kristin Saunders:** I am trying to think back to the statement you made about including the jurisdictions in the selection of the areas you are going to target. I am wondering what you think that process is going to look like? I know you probably haven't had time to plan it all out, but I am curious if you have a sense of how you'd want to go about working with the states to figure out where in the geography would make the most sense to focus and hone this work.
- **Julie Reichert-Nguyen:** We are still thinking through it. We had a lot of success with our marsh adaptation work which was place based, and I am thinking we can follow a similar model of combined engagement with the practitioners, so this would be engagement with the state agencies that are working on nature based solutions and resilience type work. We used a lot of data sets generated by a lot of state agencies and federal as well, and we looked at that to see where the adaptation need was. There is a lot of great work that's happened in the jurisdictions already around resilience, like Maryland has their adaptation areas they have been identifying, Virginia has something similar. Because we have been coastal focused in the past, we have more connections with state agencies within Maryland and Virginia, so we do have to make an effort to recruit expertise across other jurisdictions. Julia has been working on identifying people in the state agencies that are working on adaptation type work, whether its sustainability or resilience or nature based solutions, to support future recruitment efforts as we build on the success of our previous work. I am envisioning a combination of engagement and offering opportunities to coordinate closely with identified representatives that could help us in the selection of these areas from the state agencies, but also building data sets that we can look at to see where adaptation is needed. We don't want to pick areas where they don't have any capacity-building needs. We want to make sure the work we are doing can help with that capacity building piece. We will have to create some metrics we will

follow in selecting areas but be informed by this engagement. A combination of data and engagement.

- **Kristin Saunders:** Thanks. My head immediately goes to, for instance in Maryland, the whole watershed target areas that have been identified. There is a lot of work going into those places, so that might be a good place. But like you said about gaps in capacity, we will have to scan for those and that might take you to an entirely different geographic area then the ones we are already working on. As long as we are all clear on what it is we are trying to achieve with these target areas, whether we are trying to round out information where capacity does not exist or amplify what is going on. That is what I would be thinking about when selecting areas.
- **Julie Reichert-Nguyen:** That's a great point. I feel like it will be a balance between the two, because we are not going to have a lot of resources provided, so we do have to leverage the resources that are out there as well and identify where we can add value. One of the gaps we have identified is understanding the performance of nature based solutions, and we have ongoing research for this for coastal nature based solutions; Vamsi is one of the PIs for that project. In my mind it has to be a balance. We want to target where there are resources yet there are gaps in capacity.
- **Taryn Sudol (chat):** Could you clarify what the geographic scope for non-tidal is? That sounds sort of all inclusive, but assume it doesn't in fact mean everything
- **Julie Reichert-Nguyen:** Since our workgroup focused mainly on coastal, the non-tidal is going to be a new area for us to be thinking about, and we're going to have to pull in some experts. So I actually don't have the answer yet to what this would look like. There have been some conversations even within the geographic scale of these subwatersheds, they could be different depending on what area you're focusing on, so we're definitely going to bring in folks for that conversation. It can't be all inclusive because we don't have the resources for that, but we want to pick areas where we can see adaptation efforts in the landward zone would benefit the waterward zone and vice versa, and build resilience for communities nearby. We have all these puzzle pieces, and we need to try to figure out how to put it together in identifying areas. One of the first tasks in the work plan and management strategy is identifying the methodology for this, hone in on what is the scale and where do we feel we can add value.
- **Stephanie Schollaert Uz:** I am at NASA Goddard, we have a lot of data to enhance and fill gaps. For example we have space based data and we also have a number of field campaigns and then we have a coastal zone digital twin that's being developed in this region. So my interest is in paying attention to what the group decides. I have a question about data centers, because at the same time that we're creating data, we're using data, we're also looking at AI and I'm just very aware of the issue of data centers and how they're in some cases heating the water even more, and I just wonder if this group has thought about it, if that's the kind of thing that could be mentioned in planning for 2025 and beyond. What is the thinking on data centers?
- **Julie Reichert-Nguyen:** Great question. I have to say our group has not thought about that. I've heard a lot with AI and the data centers allowing for AI is causing warming of waters but also increasing emissions. This would be a new thing for our group to have to think through. I'm not sure, with the nature based solutions focus, how much we could

do in that space, but it is something that maybe as we are thinking about what data we're using being a little bit strategic too and recognizing that using AI methodologies could also create issues and maybe there's a way to offset that too. So there's some thinking that has to happen around that.

- **Stephanie Schollaert Uz:** Okay. I also heard that there's an Indian tribe around the York River where some of these groups, I won't name any of the groups, but they buy land, and then they later reveal that they're gonna build a data center. So there's a tribe that reached out to NASA a while ago asking for help with data analysis, wanting to do an assessment of this. And I bring that up for the awareness of the group because on top of everything, there's also these specific use case challenges, but they relate to this bigger societal issue.
- **Julie Reichert-Nguyen:** That's a great point Stephanie. We're having some really great ideas here of things that we haven't thought about. I would encourage folks to go to that link we provided and submit public feedback on this outcome with these ideas and thoughts because that will help the program as a whole to consider them as we move forward with these outcomes.
- **Vamsi Sridharan:** I had a two part question and a couple of thoughts. So, with STAR and the climate resiliency work group: sometimes you can have these projects spanning multiple jurisdictions. Are there any gaps in terms of funding that fund these multiple jurisdiction projects that the group can potentially try to identify and maybe even identify funding sources that can cover those gaps? Because obviously a Maryland focused grant is going to be Maryland focused. A Virginia focused grant is gonna be Virginia focused. And then local municipalities might have their own jurisdictional boundaries, but as we've discussed, these nature based solutions and their impact footprints can be significantly larger than those jurisdictions. So has the group thought about finding which grants cater to these amorphous boundaries that exist more in terms of the physical domain rather than the political domain? And, just based on some recent experiences, it would be nice to have some guidance on how funding works when collaborations between jurisdictional governments, and universities and private enterprises and and these multiple different kinds of players happens as it pertains to office of management and budget, as it pertains to CFR, if there can be very clear guidance as to what constitutes budgeting in these kinds of conditions, and if there can be either a generic letter provided by this group or, some sort of guidance document that clearly specifies what the stipulations of this sort of funding landscape are. I think it would make things very clear to folks that are engaging in these types of collaborations. So I'm just curious if the group has thought about perhaps doing something in that area. Those are my two questions.
- **Julie Reichert-Nguyen:** So the first question is a multi-jurisdictional project, and we haven't encountered that yet in the workgroup itself. Again, this outcome would be transitioning into a new workgroup format around the adapting the changing environmental conditions where we are trying to engage more with the jurisdictions and identify representatives that would actually be helping this outcome. So having that jurisdictional representation, especially if a subwatershed area is selected that encompasses more than one jurisdiction, could help with guidance for

multi-jurisdictional projects. We will have to think through how to restructure/reformat the way we do business within the workgroup under this healthy landscapes goal. We could potentially have the right people, representatives from the jurisdictions, that can help sort answers to those questions, including funding guidance for multi-sector proposals. We have to see what comes out of the public feedback and the revisions to this watershed agreement, if we move forward with this adapting to changing environmental conditions outcome then I could envision that these items could be something to explore as a potential work plan items, and understanding if we have the right representatives and understanding that guidance piece. So no answers yet, but these are these great ideas. I encourage you all to submit these ideas in the public feedback to help inform how to make this outcome successful.

- **Vamsi Sridharan:** I have a thought on Stephanie's question. If we are using cloud computing resources, I've only ever used AWS, but with AWS at least you do have the option of specifying which region you want you to put your data and your computing processes on. So maybe there could be some sort of high level analysis that shows which region is not necessarily water stressed compared to which regions are water stressed and force people who are working on projects funded by this initiative to use computation services in less stressed regions even if it means a slightly higher cost. For instance, if you were to put your cloud computer on US East versus US West or something, maybe you might have a smaller water footprint even if it means more expensive computing time. So something like that could potentially work. And then in terms of developing what is the definition of tidal versus non-tidal area, I think you had a good point Julie. It needs to be focused on something that has a direct impact on the water quality and on coastal communities' resilience. It can't just be something that's beyond the tidal influence of the flow itself. And then on the tidal influence of the flow, looking at it from a hydrodynamic perspective, there are two definitions that we could potentially adopt, so one either being a point where the flow stops reversing direction, or the point where the high pass filtered flow does not have a repeating component to it or a wavelength component to it. So depending on whatever definition gives more clarity to a wider group of scientific audiences, I would recommend we go with one or the other definition like that.
- **George Onyullo:** Just last week I was having an in house conversation with one of our people who is concerned with monitoring. And the reason why it is important is we are talking about adapting to changing environmental conditions. And her question was, would this mean changing how we do monitoring? Or are we going to keep relying on old ways of acquiring data and hoping that it will tell us something about changing conditions going forward? So what that means, and I think that was her take away message, we may want to involve many of our monitoring staff because they will be very helpful in charting the path. As to how we monitor, but also speaking directly to what Vamsi talked about, namely how we develop budgets that would support any new monitoring regimen that we may want to propose going forward.
- **Julie Reichert-Nguyen:** Yeah, great point George. I know as we select these subwatershed areas and begin identifying adaptation options we would have to use existing data and information. Monitoring NBSs that are put in place may look very

different to how we do monitoring now versus monitoring change and whether we're being successful in improving and responding to these changes. So yeah, that's a good point. It's something we'll have to explore as we begin to develop the management strategy and the work plan. That won't occur until either January through March next year once the revised agreement is finalized in December. Again, I encourage George and others to put that feedback into the CBP formal feedback process during the public feedback period. Especially that monitoring comment, it's very much cross-cutting that we would have to work across these different goal implementation teams with the ones who are working on clean water and the ones working on habitat.

- **Julie Reichert-Nguyen:** Mark, I don't know if you have any thoughts on what we've heard today.
- **Mark Bennett:** I think to me the biggest question, particularly with regard to the non-tidal, is gonna be what issues we are focused on. What issues do the partners want to focus on? We've heard about flooding. The move away from the coastal opens up the possibilities dramatically as to what the work group as a whole would focus on. And I think we're gonna need the partners to kind of weigh in on what the issues even are. That to me is gonna be one of the biggest issues with regard to non-tidal. What are the issues that the partners want the workgroup to weigh in on?
- **Julie Reichert-Nguyen:** Yeah, I think that's gonna be influenced by the areas that are selected and the partners within those areas. That's the question though, do you pick the issue?
- **Mark Bennett:** Do you pick who, or do you pick the area first? I think a lot of people would say you pick the issue first and then you pick the area.
- **Julie Reichert-Nguyen:** That's a good point. That's something we're gonna have to figure out in that methodology. I think of it as us expanding into non-tidal, not moving away from coastal. So we are also going to have to think about resources, and how we can accomplish working in both areas. And there could be some subwatersheds that also have both. I'm thinking of our communities that are near the coast, they could be in a non-tidal area, and they're affected by coastal flooding, but also they're affected by the increase in precipitation and flooding coming from the upper watershed as well. So these are things we're gonna have to scope out as we work through the methodology in selecting these areas. I just view it as one big puzzle because we have a bunch of puzzle pieces, we have to figure out how best to put them together and figure out where we can add value.
- **Julie Reichert-Nguyen:** Thank you all for coming. There's a lot of transitioning that will be happening, and change, but I also think it offers a lot of opportunities as well. There were some really great ideas here that I didn't think about. Thank you everyone for sharing. Again, I encourage folks to get those thoughts to the formal public feedback, because the more feedback that's received to the program as a whole, the better we can set up for success as we move forward with the updated outcome.

Attendance:

<i>Name</i>	<i>Affiliation</i>	<i>Name</i>	<i>Affiliation</i>
Kristin Saunders	MD DNR	Christina Garvey	CRC
Taryn Sudol	Maryland Sea Grant	Alison Santoro	MD DNR
Taylor Woods	USGS EESC	Kerry McClaughry	Maryland Sea Grant
Kevin Schabow	NOAA Chesapeake Bay	Michael Maddox	UMD College Park
Stephanie Schollaert Uz	NASA Goddard	Moriah Baybrick	Entrepreneur
Vamsi Sridharan	Tetra Tech	Julia Fucci	CRC
Angela Jones	DoD	Breck Sullivan	EPA Chesapeake Bay
Caitlin Bolton	Metropolitan Washington Council of Governments	Joel Carr	USGS
Kevin Du Bois	DoD	Mark Bennett	USGS
Julie Reichert-Nguyen	NOAA Chesapeake Bay	George Onyullo	DC-DOEE