



Status and Trends Workgroup Meeting

Friday, November 12, 2021

1:00 PM – 3:00 PM

Meeting Materials: [Link](#)

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

Action Items

- ✓ **Katheryn Barnhart works with Renee Thompson and Julie Reichert-Nguyen to discuss and incorporate the final changes to the workplan.**
 - **Alex Gunnerson sends out the finalized workplan and posts it on the Status and Trends Workgroup (STWG) website.**
- ✓ **Katheryn Barnhart sends out Peter Tango's presentation to GIT representatives.**
- ✓ **Katheryn Barnhart follows up with Sarah McDonald and Peter Claggett (CC Katilyn May) about determining next steps and what is feasible for utilizing this data in an indicators framework.**
- ✓ **Alex Gunnerson sends out the updated calendar invite (December 15th from 2-4pm, to avoid conflicting with the Executive Council Meeting).**
 - **For most months will be 2nd Wednesday from 1-3pm, but when it conflicts with GIT 6 it will switch to the 3rd Wednesday from 1-3pm.**

AGENDA

1:00 Opening and Roll Call - Katheryn Barnhart, Coordinator

1:05 Update on Workplan Approval – Caroline Donovan, Chair

Summary

Caroline Donovan briefly recapped updates made to the workplan and asked if there was any other feedback or questions about the workplan. Kristin Saunders commented that she would like to see a stronger linkage to the Healthy Watersheds Assessment and the indicator information it might provide, particularly in relation to factors influencing and/or helping goal teams develop interim indicators. Katheryn Barnhart agreed and said she would reach out to Renee Thompson about the potential for utilizing the Healthy Watersheds Assessment. Julie Reichert-Nguyen commented that she would like to add some more detail to the workplan about which indicators are being pursued and their progress for the Climate Adaptation and Climate Resiliency Monitoring and Assessment actions. Katheryn and Caroline agreed, and Julie said she can share some language that was sent to Rachel Felver that might be of use in adding details to these actions in the workplan.

1:15 [Establishing Metrics for Qualitative Outcomes – Peter Tango and Katheryn Barnhart](#)

A summary of elements of the indicators framework, including how to develop an indicator and the role of indicators in the adaptive management process. The presentation also touched on the specific role

and benefits of ChesapeakeProgress. The presentation used Water Quality Standards and Attainment and other examples as a case study for how indicators that partially inform us on progress towards the outcome can still aid in adaptive management.

Summary

Peter Tango began the presentation with a summary of the common qualities that make a good indicator and provided a few examples of strong indicators. Peter also emphasized the importance of having a conceptual model to underpin an indicator and that not everywhere needs to be sampled. Peter then used the Chesapeake Bay Water Quality Standards Attainment Indicator as an example of how the Chesapeake Bay Program has made up for a lack of data with indicator usage. Peter concluded that indicators are resource sensitive yet powerful information tools and that the aim should be balance, so the perfect shouldn't become the enemy of the good.

The first discussion point centered on the question "Does this give you any ideas about your own indicator development?" Julie Reichert-Nguyen responded that for the Climate Adaptation outcome under the resiliency goal, the Climate Resiliency Workgroup (CRWG) has been trying to think of indicators from an ecological impact perspective. Julie said because resources are limited and the CRWG needs to be strategic, relying on physical indicators alone does not help deciding which project to pursue. The CRWG is collaborating with the Wetland Workgroup, Forestry Workgroup, and Tree Canopy team to identify ecological impact-based metrics so that way physical changes are understood in a context that relates to other goals. Julie provided the example of the rising temperature indicator and how that is more functionally connected with fish habitat. Caroline Donovan commented that there is almost a naming problem, where metrics and parameters need to be tied to indicators that put the ecological impacts up front. Caroline also added that metrics should be tied to ecological thresholds to emphasize the meaning behind the indicators. Peter agreed. Julie said other considerations for enhancing indicator meaning has included thresholds, temperature, habitat suitability, and the effect of the changes being measured. Julie added that by including these impacts, there may be greater usage of indicators, but caveated that to relate these indicators to ecological impacts more resources are required, particularly for addressing research gaps. Kathryn Barnhart commented this pairs well with an agenda item for the December STWG meeting which focuses on understanding factors influencing. Breck Sullivan responded in the chat that she really liked Caroline's point of framing the physical indicator to inform on more than just what it is measuring (i.e. water temperature.) Breck responded to Julie that she has discussed with the co-coordinator of ITAT, Vanessa Van Note, about the opportunity of utilizing the bay water temp trends that are annually updated to be used/support a physical indicator for the CRWG. There are already grants set up to produce this work annually so it is a form of capacity that would not need to be done within the CRWG. Breck said she would like to discuss how they could transition the maps already made to an indicator that would help the workgroup/other outcomes on Chesapeake Progress. Julie responded to Breck in the chat, saying that they should discuss more about the trend maps and indicator work. Julie said she knows NOAA is looking at incorporating satellite data to help the water temperature indicator to have more information that aligns with fisheries management decisions. Julie is also working with VIMS to look at Marine Heat Waves and how to consider changes in the frequency, duration, and intensity on water quality and fish habitat.

Peter then continued on to the second part of the presentation about translating qualitative statements into quantitative measures, saying that it is difficult to improve something you cannot measure. Peter provided an example of Water Quality Standards Attainment and Monitoring Outcome and the issue of capacity being treated as a binary indicator and the need for a more nuanced response to "are we meeting the outcome?" Peter provided examples of how one might develop an indicator for qualitative

outcomes like the Sustainable Schools Outcome, Student Understanding Outcome, and the Maintain Healthy Watersheds Outcome. Peter concluded with a summary and reminder of important indicator qualities.

The second discussion centered around the questions “Do these examples give you any ideas about the feasibility of translating your qualitative outcome language to target one or more quantitative measures of status and progress? Yes or no and why?” and “Can you envision a target measure and how you would collect data to address it, or how you could use an existing data collection to address it?” Julie commented that the Climate outcomes are qualitative and they have a ways to go, but they are planning on using the RAD framework (Resist, Accept, Drive change) to categorize habitat and then strategically invest resources in habitat that can be conserved instead of putting resources everywhere and seeing diminished returns. Julie said they hope to be able to get to that point of having most habitat categorized in the next three years, but that timeline is tentative. Caroline commented that she thought the examples were strong and this guidance is helpful in moving to more quantitative language.

2:00 [New Land Use Methods and Metrics Indicator – Sarah McDonald](#)

An update on progress towards a Land Use Methods and Metrics Indicator. Feedback is desired for how to best communicate the data related to this indicator, specifically focusing on visual representation and categorical breakdown of the data.

Summary

Sarah McDonald began the presentation with some context explaining that the 2013-2017 land use data is currently in the draft stage but is expected to be publicly released in February. She reviewed the data they are expected to provide and explained that the presentation here focused on the extent and rate of change of impervious surface coverage at different scales. Sarah then discussed how to quantify the potential impacts of land conversion to water quality, healthy watersheds and communities and then communicating Impervious Surfaces as a Land Use Methods and Metrics. Sarah concluded with some questions for the group, asking them to consider the following: how to relate this indicator to Water Quality and/or Healthy Watersheds; how can we best relate this to communities; how to group communities; what type of areal metric is most effective?

Rachel Felver asked who is the audience that the metric is aimed at communicating to. Sarah responded that part of the difficulty is they are trying to communicate to a broad range of people, including local governments, elected officials, stakeholders, and citizens. Peter Tango responded that this is similar to an issue the Hypoxia reporting group has faced and recommended giving people a sense of what the raw number of impervious surface is and percentage in relation to something connected to their lives so they can better understand the magnitude of the challenges. Peter also recommended that all the metrics are valuable because each one is meaningful to a different group. Rachel said that in communicating with local officials and communities, the term catchments should be avoided. Rachel added that she has been in communication with Peter Claggett and Renee Thompson about the best ways to communicate these metrics. Caroline Donovan added that rate of change is often an easier metric for general audiences to understand and separating the spatial unit into binary pass/fail can be helpful in certain circumstances. Katheryn Barnhart brought up a conversation she had with Peter Claggett and asked about the availability of forest data. Sarah responded that they are working on the draft data for forest canopy metrics and the data will be finalized in February. Katheryn said the question now is how to group the data and that she and Peter Claggett had discussed three layers: impervious cover change, comparing it to per capita, and communicating change between the 2013 baseline. Katheryn asked if there was a table that could communicate the meaning behind these three

layers in a more digestible way and asked if scale had been finalized. Sarah said she did not believe scale had been finalized and that county and catchment levels had been presented on. Sarah also said she spoke with Peter Claggett about potentially comparing these layers with other metrics and being careful not to make overarching assumptions.

Peter Tango asked if catchments seemed to be improving or worsening with the new draft data surrounding impervious surfaces. Sarah responded that with the 1-meter data, they are detecting a lot more impervious surfaces and so the trend is usually upwards in terms of impervious growth.

In the chat, Breck Sullivan asked in terms of rate of change, are you able to see what was there before it changed to impervious surface? Maybe show the change of forest to impervious to agriculture to impervious. Breck said her thoughts about communities are changing from forest to impervious is not good but from hazardous waste site to impervious is good. Breck and Caroline both showed interest in knowing how the land cover changed and wanted to know if that information was possible. Sarah said from-to information will be available for some landcover classes, like tidal wetland and forest, but not for anything specific beyond impervious, road, or structure. Sarah said that to understand in greater specificity the impervious land cover types, another data layer would need to be added or overlaid. Breck said that the EPA has some data layers related to phenomena like toxic waste sites and that depending on the stakeholder, they may want to see different nuances.

Going back to the audience, Katheryn added that if this indicator is on ChesapeakeProgress it needs to have the considerations for a general audience. Katheryn asked Sarah if just providing previous cover change would still effectively communicate progress towards the outcome or if it would require additional knowledge of how it has changed. Sarah responded that the answer depends on who one is talking to, as a water quality perspective would say that any increase in impervious is probably a negative thing. Sarah emphasized the importance of knowing the to's and from's. Katheryn asked that if the limitations were included in the communications materials would it be helpful and Sarah said she suspects yes, but talking with Peter Claggett would probably be helpful here as well. Sarah also suggested creating collapsed land cover change classes which showcase all the different from – to changes that end in impervious surfaces.

Julie added that a potential collaborative effort in the future might include using an impervious surface indicator derived from this product. Julie made a linkage to brook trout, CRWG, and the healthy watershed outcome and the potential for connecting impervious surface with the six degree temperature increase indicator to better understand how habitat is impacted by these factors. Sarah said they would be happy to collaborate on this idea, and that the current efforts under the healthy watersheds to work with forested buffers can align with this idea.

In the chat, Peter Tango asked Sarah are you publishing a graph that would be watershed impervious acres before (X-axis), against watershed (catchment) impervious now with 1m resolution, with a 1:1 line on the graph? From your description, would this relationship line to sit above the 1:1 line consistently showing how watersheds have changed over the entire size spectrum of watersheds? Sarah responded that they have not produced that but it will be brought up with the team.

2:55 Next steps and Actions – Alex Gunnerson, Staffer

The workgroup decided that based on poll results and member input, meetings going forward will be on the 2nd Wednesday of the month from 1-3pm, but when it conflicts with the GIT 6 meeting it will switch to the 3rd Wednesday from 1-3pm. The next meeting will be on Wednesday, December 15th from 2-4pm to avoid conflicting with the Executive Council meeting. All other action items are at the top of the document.

Adjourn

Participants: Alex Gunnerson, Katheryn Barnhart, Kristin Saunders, Qian Zhang, Sarah McDonald, Amy Goldfischer, Amy Williams, Angie Wei, Breck Sullivan, Caroline Donovan, Caroline Johnson, Cindy Johnson, Emily Bialowas, Julie Reichert-Nguyen, Kaitlyn May, Peter Tango, Rachel Felver, Sophie Waterman