Narrative Analysis – Healthy Watersheds

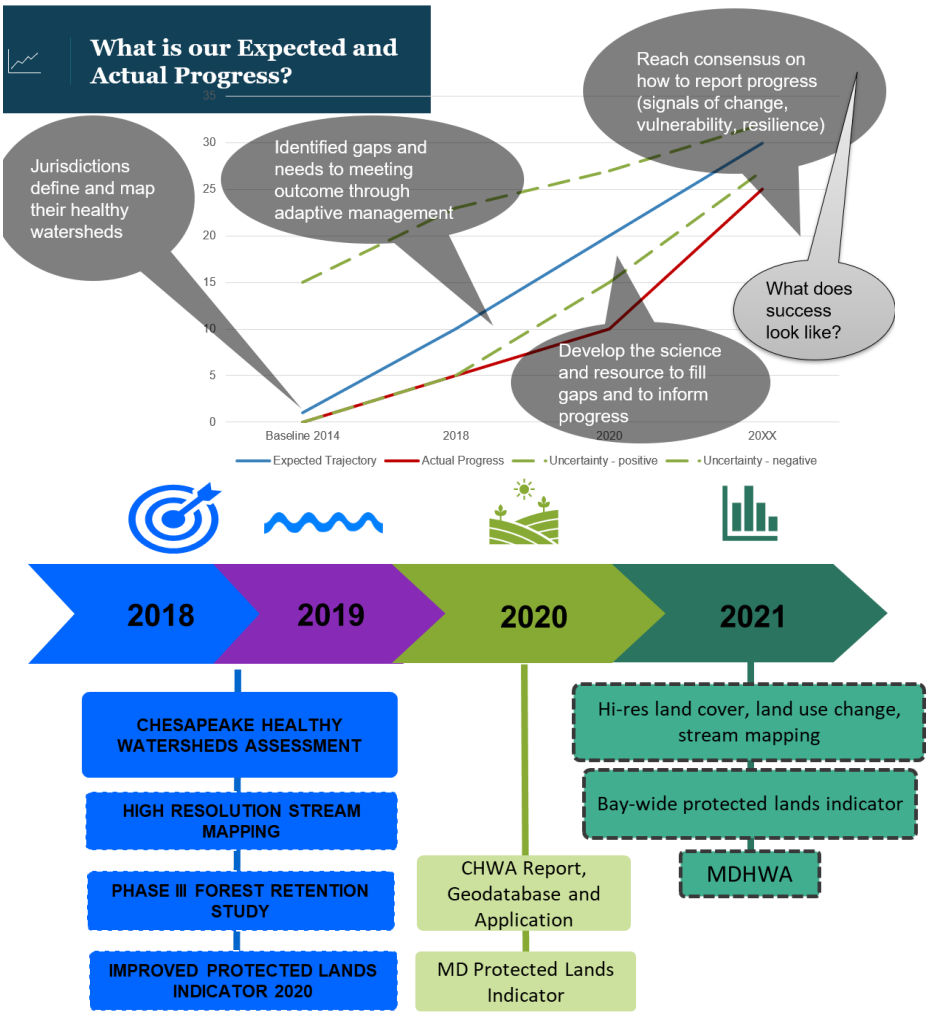
one-hundred percent of state-identified healthy waters and watersheds remain healthy

HEALTHY WATERSHEDS AUGUST 12, 2021 QUARTERLY PROGRESS MEETING

ABSTRACT: The healthy watersheds outcome is working toward a comprehensive understanding of the best current knowledge of the scientific data and information to inform a spectrum of watershed health across the entire region at the catchment scale. Leveraging existing partnerships and programs, focusing on cross-outcome needs and co-benefits has led to combined messaging to stakeholders and spurred new ideas for future collaboration. In addition, emerging issues and gaps related to translation and communication of resources for targeted audiences, improved watershed metrics, stakeholder engagement and incorporation of user needs and research including DEIJ needs into decision support tools. Progress has been made to characterize vulnerability and resilience to aid for conservation and restoration decisions as well as inform progress toward our outcome. Interim assessment of outcome progress will investigate the level of protection and vulnerability to development to communicate unprotected watersheds that may be subject to land conversion. Continued investment, refinement and cooperation within the Chesapeake Healthy Watersheds Assessment framework will allow the team to move to communicating progress toward this outcome. As we shift from information gathering to integration and distillation, there is a need to investigate how the CHWA can be utilized to inform progress toward this outcome.

1. Are we, as a partnership, making progress at a rate that is necessary to achieve this outcome? Use a graph or chart to illustrate where feasible (replace example provided with your illustration).

The HWGIT has developed two graphics which mark progress through completed actions and closing gaps identified through the adaptive management process. Such milestones are illustrated below. The publication of The Chesapeake Healthy Watersheds Assessment report in May 2020 and subsequent products (framework, metrics, and geodatabase, application) provide information on the current condition and potentially vulnerable or resilient watershed catchments, assisting jurisdictions in detecting signals of change in the state-identified healthy watersheds and beyond. The information is aimed at supporting strategies and efforts to protect and maintain watershed health. Refining the CHWA framework for use in MD, currently underway connecting in-stream measures with landscape characteristic measures using a stepwise regression analysis and Maryland Biological Stream Survey (MBSS) data. Metrics such as impervious surface, protected lands and habitat suitability are under investigation to use as interim measures until the improved refinement of a Healthy Watersheds Assessment tool in 2022-2023.



2. Looking back over the last two or more years, describe any scientific (including the impacts of climate change), fiscal, and policy-related developments that impacted your progress or may influence your work over the next two years. Have these resulted in revised needs (e.g. less, more) to achieve the outcome?

*To the extent feasible, describe your needs using the SPURR thought model, i.e., **S**pecific, **P**rogrammatic partner, **U**rgency of the needed action, **R**isk of not acting, **R**esources required.*

Scientific:

- The output of the Land Use Methods and Metrics data and the hi-res land use and land change data- allow us to confidently map at a locally relevant scale. This work will be completed by the CBP land data team and partners end of '21 and early 2022. Without this information it is very difficult to accurately track the rate of land use change and understand the relationship of changing landscape conditions on watershed health. Continued support and funding of high-resolution land use land change data consistently into the future will be needed.
- Integration of user experience needs and user research to refine how we communicate and share resources and information. With guidance and leadership from the social science coordinator at CBP, Amy Handen and Rachel Felver on the Communications team the GIT has a better

understanding of the importance of the incorporation of user needs, research surveys, workshop synthesis reports and other resources to prepare, package and communicate data to partners and stakeholders. Communication of goal and outcome progress is only part of the work, resources also need to be assessable and understandable to be effective.

- Further development of metrics and indicators through the Climate Resiliency Workgroup will be evaluated for the CHWA. This will require guidance and expertise from the GIS team, the Climate Resiliency Workgroup and potentially contractor support. Geographic data related to resiliency to flooding, wetland migration, temperature change and other related data can help inform and further characterize local areas that may be in danger of natural area loss, infrastructure damage, or flooding and can help conservation and restoration opportunities when integrated into CHW assessment. Providing data that stakeholders need to meet their priorities is a co-benefit. Continued support of climate metric development and standardization for use across platforms is needed.
- STAC workshop recommendations, (stream temp, wetland migration and habitats/state of the science) - programmatic CBP recommendations for adapting management in a changing climate, could result in more focus (money, resources, research) towards conserving working, natural lands. Continued cooperation across disciplines will reduce duplication of efforts and lead to more informed management actions. Continued support and access to subject matter experts as well as commitment to implement report recommendations will be needed.
- Ongoing USGS research related to benthic/macroinvertebrate modeling and mapping, stream temperature, conductivity, sediment flux and dynamics, stream health stressors, and stream bank stability will all help inform improved metrics and utilizing cutting edge science for the CHWA. Sound science is the basis for good decision making. There is a need to not only understand, compile, ingest and utilize the best available data and science but to serve it up to stakeholders and partners in a way that shows value for informed decision making.

Fiscal

- MDHWA funding shortfall that may lead to stalled work. Data analysis, the scientific method, and iteration do not always translate to the correct number of contractor hours. There is a need to improve the way in which decision support science and projects are in line with the CBP process. The results of the MDHWA and the lessons learned will be directly applicable to the watershed wide CHWA. Without this foundational work, the CHWA and future refinement, ultimately our ability to report progress on this outcome will be stalled.

Policy

- America the Beautiful and the President's Biden's 30X30 initiative commits to the goal of conserving at least 30 percent of our lands and oceans by 2030 and launches a process for stakeholder engagement from agricultural and forest landowners, fishermen, Tribes, States, Territories, local officials, and others to identify strategies that will result in broad participation. The CBP with the extensive work on Protected Lands is in a good position to leverage existing work to also inform this effort. HWGIT staff is committed to working with the Stewardship GIT and the Chesapeake Conservation Partnership to meet the emerging needs for vital land and habitat protection. Land conservation is a key component of sustaining watershed health. The land conservation outcome as well as the land use methods and metrics and land use options evaluation outcomes are all complementary to maintaining watershed health. Land use change and the reduction of the loss of farm, forest, and wetland change remain key factors in watershed health. It remains unclear how the new policies will be translated at the regional level. The work related to land conservation tracking and indicator development as well as high resolution habitat mapping capabilities could be important models for the rest of the nation.
- DEIJ action plan implementation (see number 5).

3. Based on the red/yellow/green analysis of the actions described in your logic and action plan, summarize what you have learned over the past two years of implementation.

Summarize overall (not per action) what you have learned about what worked and what didn't work. For example, have you identified additional factors to consider or filled an information gap?

The extensive investment of time and resources into the Chesapeake Healthy Watersheds Assessment (CHWA) framework, metrics and geodatabase has resulted in the ability to address information gaps related to watershed condition and vulnerabilities, as well as provide resources to communicate and share assessment results. The team has spent extensive time coordinating with other complementary teams through attending workgroup meetings, serving on action teams and assistance with virtual workshops and listening sessions with CBP partners learning about different needs and priorities in local governments, the land conservation community and other watershed practitioners.

There is a need to outline more effectively the how to use the CHWA and other decision support tools and resources to meet local and cross outcome needs. Like the Land Use Options Evaluation and the Land Use Methods and Metrics outcomes the data and science synthesis results need to be provided to the appropriate audience at the right time and delivered through trusted pathways for effective integration in local policies.

The previous 2 years of work has focused on research and synthesis related to data and factors influencing watershed health as well as the development of vulnerability metrics and overlays for geospatial visualization. As we shift from information gathering to integration and distillation, there is a need to investigate how the CHWA can be utilized to inform progress toward this outcome: Are we sustaining 100% of the state-identified healthy watersheds? How can the CHWA help us to communicate and inform on the spectrum of watershed health and vulnerability?

Most of the work over the past two year have relied on Contractor, USGS and CBP staff efforts. It will be important to better involve key GIT membership and stakeholders up front to improve understanding, confidence, cooperation and meet end user needs. There is a substantial need for renewed engagement at the HWGIT level to provide guidance and make decisions on emerging indicators, signals of change (e.g., specific landscape metric thresholds related to forest loss or level of protection) and how to communicate results though excising trusted sources, and pathways to decision makers through jurisdictional networks.

Analysis of the individual actions within the HW Management Strategy revealed that good progress was made related to actions that were able to be completed at the CBP staff coordination level. Actions that required broader engagement of new partners (e.g., other federal agency coordination NRCS, FERC, NOAA) were not completed. While progress was made on filling data and understanding gaps there is a delay in land change data that prevented progress on refining vulnerability metrics related to land use change. Data and assessment delays have also put us behind in determining how exactly the CHWA can be harnessed to report and communicate progress toward this outcome.

Project delays due to budget, time, and technical data constraints have resulted in a postponed progress on the protected lands data set, the healthy watershed literature review and an underfunded GIT funding project related to MD specific HWA and waiting for key metrics associated with the Land Use Methods and Metrics outcome have slowed our development of more refined vulnerability information (Action 1.2). For the MD pilot project, the identification, investigation, processing, and collecting and ingesting data was a longer than anticipated process, with no known additional resources.

4. Based on what you have learned through this process and any new developments or considerations described in response to question #2, how will your work change over the next two years? If we need to accelerate progress towards achieving our outcome, what steps are needed and, in particular, what specific actions or needs are beyond the ability of your group to meet and, therefore, you need the assistance of the Management Board to achieve?

Describe any adaptations that may be necessary to more efficiently achieve your outcome and explain how these changes might lead you to adjust your management strategy (if significant) or the actions described in column four of your logic and action plan. What new science, fiscal, and policy-related information, could be recommended or pursued over the next two years to maintain or, if needed, accelerate progress? Use the SPURR model described in question #2, to provide detail to the needed steps and actions.

Emerging needs related to better understanding target audience needs and curating content and decision support resources to meet pressing priorities related to infrastructure, flooding, co-benefits, climate and DEIJ have been identified. The CHWA data can also support and be refined with these interests in mind. In addition, there are new reports and survey synthesis' from a variety of audiences utilizing input from recent projects here at CBP to better integrated user needs and research data.

State and jurisdiction participation remains a challenge and renewed engagement from signatory partners including locating a new GIT chair will be needed to continue making progress. For example, 2020-21 logic and action plan review notes the need "assessment to identify new state identified healthy watersheds"- states have demonstrated they have no capacity to identify new watersheds or monitor existing ones. GIT Staff, contractors and USGS Chesapeake scientists are providing data and analysis to support management decision-making, particularly for maintaining the health of watersheds that will allow us to assess current watershed condition, track condition over time, provide early warning signs – vulnerability to degradation, and identify resiliency – ability to sustain good watershed health despite stressors. The HW GIT needs to engage to determine how best to utilize this information to both inform progress toward our outcome but meet healthy waters and watershed assessment needs in their own jurisdiction.

How to address 2020 MDHWA GIT funding project shortfall remains a short term, immediate need. Failure to complete the MDHWA will result in a lack of ability to report progress on our outcome as it is a foundational project that not only refines the data for MD but will be utilized to improve and update the current CHWA.

Increase commitment to conservation goals and understanding of habitat value. Supporting land conservation and the underlying land protection outcome related to conservation, land use options and land use methods and metrics remain intimately linked to the success of the healthy watershed's outcome. Supporting the America, the Beautiful/30x30 national conservation goals and adapting our regional understanding to encompass national goals will benefit in shared understanding and hopefully increased support for conservation across our region. CBP needs to determine how best to support and inform these larger national efforts. The CB region has been working toward characterizing and tracking land conservation and habitat and has best practices and resources to bring to inform a national effort, but there is a lack of knowledge on how to engage.

5. What steps are you taking, or do you recommend, to ensure your actions and work will be equitably distributed and focused in geographic areas and communities that have been underserved in the past?

The Healthy Watershed GIT is committed to the statement in the CBP DEIJ EC resolution- "The impacts of discrimination and continuing environmental, economic and health disparities disproportionately burden underserved communities, including those of color, low-income status and indigenous populations. This limits access to clean water and air, fish, wildlife and outdoor recreation, and results in inequitable impacts on the human health and the surrounding environment for these communities. Disparities are only exacerbated by such environmental factors as climate change and pollution, and public health emergencies like the COVID -19 pandemic." HWGIT Staff sits on the DEIJ Action Team and is utilizing the CBP guidance and other resources as available to incorporate equity considerations in logic and action plan, use DEIJ data layers as overlays to inform watershed health, resiliency and vulnerability of underserved communities. General questions to consider: have benefits and improvements been distributed equitably? Have disproportionate adverse environmental impacts been reduced? How can we identify, track and reduce disproportionate impacts? Underrepresented communities need to be involved in work plan development and decisions making.

Through our extensive access to geographic mapping data and best available science the HWGIT can investigate the spectrum of watershed health within a DEIJ context. It is important to determine how best to incorporate DEIJ considerations into our CHWA framework. HW staff with guidance from the Diversity Workgroup and input from the GIT to determine the best path forward. With policy directives and responsibility there is an opportunity to utilize sound science and geographic data and platforms to build consensus across diverse stakeholders. Lack of action could result in the inequitable distribution of resources and a environmental justice as the spectrum of watershed health may disproportionately fall withing lower income or nonwhite communities. A chair with the ability to provide guidance and vision is needed to be successful. In addition, patience is needed as this process is iterative.

The GIT staff have developed some initial questions for consideration. For example, what is the distribution of healthy watershed across underserved communities or conversely what proportion of communities of color and/or low-income communities that are in unhealthy areas? It is the hope that by combining DEIJ related data and metrics as overlays with the CHWA information we can begin to say something about how certain communities may be bearing a heavy burden when it comes to vulnerable or unhealthy watersheds leading to more informed and equitable decision making.