Evaluating a Systems Approach to BMP Crediting

Proposal for a STAC Programmatic Workshop | Submitted by: Wetland Workgroup

Steering Committee Members:

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Background:

In addition to TMDL requirements, which are intended to improve water quality and support aquatic habitat through sediment and nutrient reduction, the Chesapeake Bay Agreement (CBA) has numerous other direct goals for improving habitat and living resources. Best Management Practices (BMPs) implemented to meet the TMDL, if not appropriately designed for specific site and landscape conditions and consideration of other CBA goals, may result in unnecessary resource tradeoffs and unintended consequences, and unintentionally slow progress toward meeting other goals. Wetland ecosystems are an illustrative and useful example for considering a more holistic perspective on BMP placement in the landscape and impacts on habitat.

Two specific confounding issues arise in efforts to achieve the Bay wetlands goal: 1) the idea that restoration is driven, and incentivized and accounted for, in order to meet the TMDL's WQ benefits, leaving habitat benefits undervalued; and 2) there is often tension between competing restoration priorities and financial resources among different BMP types that include wetlands, such as wetland restoration/creation/rehabilitation, stream restoration, and creating or restoring forest buffers. The ecosystem services of wetlands cannot be fully defined or described by any single specific function, such as N/P/sediment load reduction, or a specific species habitat. The complement of various elements in an ecological landscape provide "value added" habitat services at a systems scale. In other words, wetlands within floodplains, and channelward of forested buffers, potentially provide additional water quality, habitat, and resilience benefits greater than any of those individual settings or as a sum of those settings. The reason is that habitat quality and spatial targeting to high pollutant loading areas both benefit from landscape clustering of restoration activities. For example, little green herons are a niche species reliant on tidal marsh and proximal riparian loblolly pines. A restoration project that combines these two habitats will provide suitable habitats that each alone would not.

Current accounting processes driven by the TMDL, and water quality BMPs, do not adequately account for wetland restoration, creation, and rehabilitation efforts. In addition, with the TMDL as a programmatic and financial driver for wetland projects, as well as other projects such as riparian forest restoration, stream restoration, and flood plain re connection, there is potential unintended "competition" between project types, Chesapeake Bay Agreement goals, and project proponents. BMPs that may include wetland restoration as part of the project but not as the primary focus include riparian buffer, stream restoration, and living shorelines. The TMDL nutrient and sediment reductions for these BMPs are typically reported to the Bay Program as pounds reduced without any

habitat acreage information. While the TMDL nutrient and sediment reductions are counted, the acres of wetlands created/restored in association with buffer, floodplains, and tidal wetlands projects are not, so we've lost the data that is necessary for tracking progress towards the Wetlands Outcome. This reduces the perceived importance of work done to improve wetland habitat, or, when there are unintended consequences, reduces the ability to meet other living resource commitments.

Workshop Objectives

To address these issues, we propose a workshop to be held in winter or early Spring 2022 to evaluate: 1) opportunities to incentivize habitat benefits in relation to TMDL and water quality outcomes, and that are part of Chesapeake Bay Agreement commitments; and 2) the efficacy of a more holistic "systems approach" to BMP accounting, specifically how wetlands are considered in multiple BMPs and multiple workgroups and GITs, and how wetland BMP functions are influenced by other BMP types in the connected landscape. Recommendations from this workshop would include suggestions for how to approach restoration projects at a systems level (e.g. creek, shoreline reach, watershed) in order to maximize synergies for multiple ecological outcomes and accurately calculate pollutant reductions along with habitat value to restoration projects that include multiple habitats, as well as recommend policies to incentivize habitat benefits and outcomes in addition to nitrogen, phosphorus, and sediment reduction goals.

Management Relevancy

Chesapeake Bay restoration is driven by the TMDL. However, the Chesapeake Bay Agreement includes multiple goals and outcomes related to improvements in habitat (wetlands, riparian forest buffers, stream health, SAV, etc.) that are separate from reductions in N, P, and sediment. Many of these habitat outcomes are far behind in their progress and
will not reach their goal by the 2025 deadline. As 2025 quickly approaches, we must make sure that all Outcomes, especially habitat-based ones that are far behind, are making sufficient progress toward their goal. In order to address this issue, it is crucial to understand how the current system, focused on BMP load reductions, may undervalue habitat benefits, how restoration projects often compete for resources and credits, how some restoration designs may not support other habitat goals, and what alternatives or improvements there are for the current crediting system. Recommendations from this workshop can help ensure that: 1) wetlands, stream restoration, forest buffers, and other projects are not competing but are rather working at a systems level to maximize habitat benefits, 2) these restoration projects are credited accurately for acres restored, not just area treated and pounds of N/P/sediment reduced, 3) restoration projects are being designed and constructed so that biological function is not negatively impacted while managing for water quality improvements, 4) all restoration projects are being sufficiently credited and counted towards their respective Outcome, and 5) to support planned future advancements to the CBP watershed modeling system to account for finer spatial scales of BMP and natural ecosystem's landscape positions and functions.

Why a STAC Workshop

The issues discussed in this proposal are widespread, affecting several Workgroups and Goal Teams in the Bay Program. It cannot be solved through simple research or a GIT-funded project, rather, it requires a re-evaluation of the entire BMP assessment, simulation, and planning processes and suggestions for how to improve this process for wetland habitat based outcomes. A STAC workshop is the perfect opportunity for researchers, restoration practitioners, policymakers, BMP/watershed modelers, and CBP managers to share information and brainstorm solutions to these problems. The workshop outcomes

will include actionable recommendations in the report that can be evaluated and implemented by the Partnership. This workshop will also build upon previous workshops, such as “Chesapeake Bay Program Modeling in 2025 and Beyond: A Proactive Visioning Workshop” and “Revisiting Coastal Land-Water Interactions: The Triblet Connection”, by adding to the growing emphasis on finer spatial scale when considering BMPs, modeling, and habitat.

Workshop Preparation and Planning / Logistics

Since the workshop is intended to occur in winter or early spring 2022, the Steering Committee will commence planning in September 2021. They will start with at least one planning meeting per month for the first three months and hold more frequent meetings as necessary as the workshop date gets closer. The early planning discussions among the Steering Committee will cover the current TMDL accounting, BMPs, ecosystems, and a specific identification of the issues and gaps, leading to the development of specific workshop questions. At the same time, the Steering Committee will compile a list of desired workshop participants, consisting of GIT and Workgroup representatives, state and local personnel responsible for data tracking for water quality and/or habitat, researchers, and more. They will also identify and contact desired speakers with expertise in the TMDL accounting system, BMPs, habitat and living resources, co benefits and ecosystem services, and ecological system assessment and functions.

The workshop will consist of a 2 or 2 ½ day onsite meeting (virtual if necessary). The agenda will feature particular topics and questions, with opportunities for group discussion. The workshop will end with a facilitated working session among all attendees, intended to develop specific “SPURR” recommendations that will inform the final report. Prior to the workshop, the steering committee will develop specific questions to tease out recommendations from the participants during the working session. Within 90 days of the workshop, the steering committee will use the feedback and consensus on potential actions from the workshop participants to develop a set of recommendations in the “SPURR” format in the final workshop report.

Due to the technical nature of this topic, we would prefer to host this workshop in person to ease discussion and collaboration among workshop participants. Thus, we propose hosting this workshop in the winter or early spring of 2022. We would plan for the possibility of hosting this workshop virtually if necessary, using a meeting platform provided by STAC with break-out rooms for discussion

Expected Outcomes

This workshop will result in recommendations for specific management actions for improvements to the current National Environmental Information Exchange Network (NEIEN) system to better account for habitat-based data and co benefits, and for incorporation of landscape consideration and application of a systems approach to maximizing benefits from multi-habitat projects to improve restoration outcomes. We expect these recommendations to be most relevant to the CBP Watershed Model data scientists, but also to the Partnership’s Habitat, Water Quality, and Healthy Watershed Goal Implementation Teams and their workgroups, the Scientific, Technical Assessment and Reporting Team and its workgroups, the Scientific and Technical Advisory Committee, and the Management Board, Principals’ Staff Committee and the jurisdictions. The steering committee will present the recommendations to the appropriate groups for evaluation and will seek implementation by the Partnership through an established approval process.

Speaker Topics/ Questions to Address

We will convene experts from multiple disciplines, including regulators, policymakers, scientists, and practitioners to: • Discuss improvements or alternatives to the current BMP accounting system that would help incentivize and maximize habitat benefits and ensure accurate credit is provided to complex restoration projects, including describing and calculating co-benefits/ecosystem services.

- Identify where different types of restoration may lead to unintended ecological consequences and provide guidance for how to locate, design and build for specific site conditions and, at least retain if not increase natural system and processes where feasible.
- Discuss and identify possible synergies derived from a landscape perspective of connected ecosystems from uplands to stream valleys.
- Evaluate which existing or potential CBP BMP protocols include wetland ecosystems, compare reduction estimates of these wetlands among protocols, and identify suggestions for harmonizing the crediting of wetland systems among protocols to avoid selective BMP protocol implementation that (unrealistically) maximize only water quality benefits.
- How to collect acreage data on current restoration projects that specifically include wetlands throughout the Bay watershed. For example, how can we pull out the wetland areas from the stream restoration's floodplain reconnection and buffer models? How can we add areal extent to load reductions of urban wetland BMPs currently based on area treated?