Scope of Work for Agriculture Wetlands Expert Panel

The Habitat GIT is in the process of convening Chesapeake Bay partners to achieve the 30,000 acres of wetland restoration goal in the Executive Order. However, many practitioners mentioned that a major obstacle to wetland restoration was not being able to get adequate or any credit for wetland restoration and enhancement, or to understand the process or criteria necessary to receive credit. These issues began to be addressed in a 2007 STAC workshop (STAC, 2008), which evaluated the nutrient and sediment processing efficiencies of wetlands, but there was not enough data and scientific literature available at the time to make any substantive changes; that may have changed and new research since this time should be evaluated. Another issue at the time of the 2007 STAC workshop was restoration versus *phragmites* work that is deemed enhancement. The purpose of the Wetland Expert Panel is to review and make recommendations, as needed, to revise the existing wetland BMP definitions and load reductions for agricultural land uses represented in the Chesapeake Bay Watershed Model (CBWM) and available for credit as part of Watershed Implementation Plans (WIPs). The expert panel would also review the available science not addressed in the STAC reports and make recommendations to define wetlands as a separate land use classification as part of the CBWM Phase 6.0 update, applicable to all land uses.

Wetland restoration is an important BMP within the state WIPs, which call for approximately 83,000 acres of implementation in agricultural sectors within the Bay watershed. An important wetland restoration opportunity is returning hydrology to ditched areas that are currently forested. Under these practices denitrification will very likely be increased once these soils become saturated. Since these projects often restore hydrology and possibly the wetland footprint, they are often given the name wetland rehabilitation and occasionally given credit. However, there continues to be confusion among agencies and partners over practices and appropriate crediting. The Chesapeake Bay Program currently defines the agricultural wetland restoration best management practice (BMP) as:

> *Reestablishment (restore)—Manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former wetland. Results in a gain in wetland acres.*
>
> *Establishment (create)—Manipulation of the physical, chemical, or biological characteristics present to develop a wetland that did not previously exists on an upland or deepwater site. Results in a gain in wetland acres.*
>
> *The literature search for this practice focuses only the water quality benefits that wetlands provide and literature on the wildlife, mitigation wetlands, and natural wetlands are not considered.*

A more broad-based definition is provided by the CBPO when wetland area or drainage area is unreported:

> *Agricultural wetland restoration activities reestablish the natural hydraulic condition in a field that existed before the installation of subsurface or surface drainage. Projects can include restoration, creation and enhancement acreage. Restored wetlands can be any wetland classification including forested, scrub-shrub or emergent marsh.*

There are also other issues related to landuse/landcover in the Bay and watershed models that complicate credit for wetlands. For instance, many continue to suggest that wetlands with their

saturated soils and enhanced denitrification potential compared to forested land uses, should get credit above the credit given to forest land use. Furthermore, recommendations from the STAC workshop held in March 2012 by the CBPO's Maintaining Healthy Watershed GIT (4) included identification and mapping of new land use classes, one of which is "other wetlands" (STAC, 2012). This recommendation in the workshop report also states, "The potential value of identifying additional new land use classes that also demonstrate a greater functional capacity for retaining nutrients and sediments should be evaluated." A second recommendation from this workshop indicated that loading rates associated with the new land use classes should be estimated based on spatially explicit landscape attributes that include directional connectivity, multi-direction flow fields, and flow path analysis (STAC, 2012).

Given these needs in addressing improved modeling of wetland areas and crediting of wetland restoration projects, the Habitat Goal Implementation Team's (GIT's) Wetlands Workgroup recommends the following Scope of Work for a wetlands expert panel:

- **Wetland Restoration BMP:** The expert panel will review the current wetland restoration BMP definition and efficiencies in the model and evaluate recent research on nitrogen, phosphorus, and sediment retention rates of wetlands to determine how they may be improved and/or refined. For example, the expert panel will review all new science and research regarding wetland enhancement and rehabilitation that has been performed since the 2007 STAC wetlands workshop. The panel will determine whether the science supports development of wetland enhancement/rehabilitation BMP efficiencies for nitrogen, phosphorus, and sediment retention; if so, the panel will provide recommendations for the appropriate efficiencies for wetland enhancement/rehabilitation as a BMP.
- Review the current CBWM assumptions to simulate the impact of wetland restoration BMPs to agricultural land uses and recommend how practice(s) should be represented in the CBWM version 5.3.2 and make recommendations for Phase 6.
- Provide a definition, describe the geographic boundary, and determine any qualifying conditions needed prior to receiving nutrient and/or sediment pollutant load reductions.
- Define the proper units that local governments will report practice implementation to the State to incorporate into the CBWM.
- Recommend procedures for reporting, tracking and verifying any recommended wetland upgrade credits over time.
- Critically analyze any unintended consequence associated with the credit and any potential for double or over-counting of the credit

In addition to review of the wetland BMP, the expert panel will evaluate and make recommendations for including wetlands as a land use classification in the Phase 6 CBWM update. This assessment is limited to determine: 1) if there is sufficient evidence to support a wetland land use different from the forested land use based on loading rates in the CBWM and 2) what categories for wetland land uses could be supported by the literature (e.g., floodplain, emergent, high marsh, low marsh, tidal, etc.). Currently, the loading rate for wetlands is similar to forestry land use in the CBWM. The panel will seek

guidance from the Land Use Workgroup, Watershed Technical Workgroup, Agricultural Workgroup, and other Chesapeake Bay partners, as needed, in its assessment of the data. The panel will provide these recommendations to the CBPO's Water Quality GIT for inclusion in the 2017 midpoint assessment of the model.

The recommendations of the expert panel will be submitted for review by the Habitat GIT and/or Wetland Workgroup prior to, or in collaboration with the WQGIT protocol.

While conducting its review, the panel shall follow the procedures and process outlined in the WQGIT BMP review protocol (WQGIT 2010).

References

Chesapeake Bay Program Water Quality GIT (March, 15 2010). Protocol for the Development, Review, and Approval of Loading and Effectiveness Estimates for Nutrient and Sediment Controls in the Chesapeake Bay Watershed Model. http://www.chesapeakebay.net/channel_files/19491/nutrient-sediment_control_review_protocol_with_addendums_05092013.pdf

STAC (Chesapeake Bay Program Scientific and Technical Advisory Committee) (2012). The role of natural landscape features in the fate and transport of nutrients and sediment. STAC Rpt. 12-04, Edgewater, MD. http://www.chesapeake.org/pubs/293_2012.pdf

STAC (Chesapeake Bay Program Scientific and Technical Advisory Committee) (November 2008). Quantifying the role of wetlands in achieving nutrient and sediment reductions in Chesapeake Bay. STAC Rpt. 08-006, Edgewater, MD. http://www.chesapeake.org/pubs/238_2008.pdf