The Mid-Atlantic Coastal Wetland Assessment (MACWA): Introduction and Progress

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Introduction: Extensive and diverse tidal wetlands exist in the mid-Atlantic. For example, in the Delaware Estuary, tidal wetlands form a marshy fringe surrounding most of the system (Figure 4), ranging from expansive salt marshes around Delaware Bay to nationally rare freshwater tidal marshes in the upper Delaware. Together, these wetlands represent perhaps the most critically important habitat in this watershed for both ecosystem and human health.

Unfortunately, many tidal wetlands in the region appear to be losing acreage, and in areas where marshes remain, they appear to be declining in health. This decline makes them more vulnerable to sea-level rise and reduces the natural services they provide; they produce fewer sport fish and shellfish, provide less habitat for migratory waterfowl and nesting birds, filter water, sequeser less carbon, and provide less flood protection.

Despite their importance to the region, there has been a need for a coordinated and consistent assessment of the status and trends in the health of coastal wetlands across the Delaware Estuary or the region. The National Wetland Inventory and land use datasets have helped us track acreage changes, but these datasets are either too infrequent or poor in resolution.

In 2008, the Partnership for the Delaware Estuary (PDE) worked with state partners and academics to design an integrated Delaware Estuary Wetland Monitoring and Assessment Program (DEWMAP) with start-up funding from the U.S. Environmental Protection Agency. DEWMAP will use information gathered from new fixed monitoring stations, remote sensing, and rapid assessments of wetland areas to determine and report on condition, structure, and function among these wetlands.

Goals:

- Establish a network of fixed monitoring stations and begin to contrast condition, structure, and function among these sites. The sites will include reference sites for baseline conditions, representative sites for prevailing conditions, and indicator sites for stressor conditions. Sites will be stratified by salinity, watershed, and state (Figure 5). Best possible sampling designs will be used in intensive monitoring, including geomorphic, biotic, and water quality data collection.
- Develop and test rapid assessment methods (RAM) to assess condition of tidal wetlands across the region based on the DNREC Mid-Atlantic Tidal Wetland Rapid Assessment Method (MidTRAM). The RAM will retain full MidTRAM metrics as “core” measurements, augmented with “supplemental” metrics needed for specific marsh types (e.g., freshwater tidal marshes) and/or to capture seaward edge erosion.
- Develop and application of this RAM should be consistent with core principles.

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