WATERSHED IMPLEMENTATION PLANS FOR AGRICULTURE IN THE CHESAPEAKE BAY WATERSHED, USA: OVERVIEW AND CRITICAL ANALYSES

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The Chesapeake Bay along the Mid-Atlantic coast of the United States is the nation's largest estuary. The Bay and its tributaries have elevated levels of nitrogen (N), phosphorus (P), and sediment (S) contributing to poor water clarity and low dissolved oxygen. The Clean Water Act requires pollution limits, called Total Maximum Daily Loads (TMLDs), be established for all impaired waters.

The TMDLs established by the US Environmental Protection Agency (EPA) in December 2010 require a 25% reduction in N, 24% reduction in P, and 20% reduction in S from all jurisdictions within the Chesapeake Bay Watershed (Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia, and the District of Columbia). All of the actions to achieve the TMDLs must be in place by 2025, with 60% implemented by 2017. States were required to develop a Watershed Implementation Plan (WIP) detailing how load allocations will be achieved and maintained. The WIP work is being done in three-phases. Phase I plans were drafted before the final TMDL and informed that work. Phase II plans were developed after the TMDL and provided greater detail at refined geographic and temporal scales. Phase III plans are due in 2017 and will reflect adaptive management decisions. Additionally, jurisdictions have to exhibit accountability by achieving 2-year milestone goals or risk EPA imposed consequences.

The Chesapeake Bay Watershed is largely rural. Approximately 69% of the watershed is wooded, 22% is agriculture, 7% is developed, and 2% is water. The agricultural sector includes 6.5 million acres of cropland and several major animal production regions. In 2011, about 44% of the N load, 57% of the P load, and 59% of the S load to the Bay came from agricultural lands with the remainder coming from urban and natural areas. As such, many jurisdictional WIPs emphasized current and potential future agricultural best management practices to curb loads from this sector. State strategies range from reliance on incentive-based implementation to increased regulatory measures and permitting of animal operations.

This poster provides an overview of the agricultural components of WIPs, the challenges to success, and the consequences of failing to achieve goals.

Editor's Note:
The data and commentary pertaining to this poster presentation are contained within the manuscript from 'Sims, J.T. and Volk, J.A.' which was a keynote presentation at this workshop.