

MS Project Presentation
Department of Environmental Science and Policy
College of Science
George Mason University

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Presentation Date and Time: July 11, 2025, at 1:00pm

Presentation Location: Virtual

Title: Assessing the Impact of Environmental Variability and Watershed Characteristics on Submerged Aquatic Vegetation (SAV) in Potomac River Embayments

Project Director: Dr. T. Reid Nelson

Committee: Dr. Esther Peters, Dr. Matthew Rice

ABSTRACT

Submerged Aquatic Vegetation (SAV) plays a critical role in estuarine ecosystems by supporting biodiversity. This study examines SAV dynamics in three Potomac River embayments from 2012-2022, investigating relationships of SAV coverage with land use and land cover (LULC) patterns and precipitation variability. The embayments represent a development gradient from highly urbanized to predominantly forested watersheds. SAV data were compared with LULC and precipitation data. Results reveal contrasting responses to the 2018 extreme rainfall: Hunting Creek lost all SAV, Gunston Cove showed gradual decline, and Kanes Creek remained stable. These patterns suggest potential relationships between watershed development and SAV resilience that warrant further study.