PhD Dissertation
Department of Environmental Science and Policy
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Title: The Presence of Denitrifiers in Bacterial Communities of Urban Stormwater Best Management Practices (BMPs)

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ABSTRACT

Stormwater best management practices (BMPs) are engineered structures that attempt to mitigate negative impacts of stormwater, which can include excess nitrogen from the surrounding drainage area. The goal of this study was to assess bacterial communities in different types of BMPs in Clarksburg, MD to establish if they could be capable of denitrification under appropriate conditions. Bacterial communities were identified using DNA and RNA extractions, and dentrifiers were identified using denitrification genes. High bacterial diversity was evident in all BMP types sampled, including an abundance of denitrifiers, suggesting BMPs could provide the service of water quality improvement through denitrification.