

SETTLING BEHAVIORS OF STORMWATER MICROPLASTICS

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Microplastic modeling efforts, especially in the freshwater environment, are extremely limited. To better understand transport processes and improve the accuracy of current and future models, more information on microplastic settling behavior is needed. The goal of this study was to provide the first measurements of settling velocities of microplastics obtained from the environment. Plastics ranging from 300 μm to 12 mm were collected from stormwater pond sediments in Tampa, FL. These plastics were processed using a multipart density separation with sodium chloride and sodium iodide. Properties including density, size, surface area, and polymer type were determined for individual particles. Several shape descriptors including circularity, sphericity, and Corey Shape Factor, which have been found to greatly influence settling behavior, were also determined using the ImageJ software. Terminal settling velocity was measured and results were compared to several current drag models.

PRESENTER BIO: Jenna is a third-year civil engineering student at the University of South Florida. She has experience with both stormwater infrastructure and international development projects. Her long-term goal is to obtain a Ph.D. in environmental engineering.