

Utilizing Biogeochemical Approaches to Aid in Pilot-Scale Seagrass Plantings in a Shallow, Well-Mixed Estuary

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In Spring of 2023, the Brevard Zoo conducted seagrass plantings of *Halodule wrightii* at multiple locations in the Indian River Lagoon (IRL), located on the central east coast of Florida. These pilot-scale projects were intended to test planting methods including use of herbivory exclusion devices and to identify metrics driving site suitability. Monitoring of sediment and water quality identified metrics of interest including conductivity, dissolved oxygen, light and sediment composition. Additional data regarding microbial communities from the IRL and seagrass nurseries were evaluated to refine and improve outcomes with respect to increasing nursery output, survival of outplanted seagrass, and benefits to the ecosystem. These ecosystem services include expanded seagrass habitat and associated geochemical benefits including nutrient cycling and mitigation of sulfide toxicity. Results from these studies will be used to aid in site selection and nursery stock for future projects.