

## Impacts of sea level rise mitigation efforts on the diversity of the benthic foraminifera of Narragansett Bay

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Salt marshes are important habitats that provide ecosystem services that are, in part, mediated by their microbial communities. However, salt marshes are currently areas at risk due to the impacts of global climate change, particularly sea level rise. If climate change continues as currently projected, the salt marshes of the Narragansett Bay may be completely underwater within the next 100 years. To mitigate the impacts of sea level rise, certain marshes are being targeted for restoration using techniques that increase drainage in the marsh, such as runnels, and elevate the marsh out of the water, such as thin layer sediment placement. However, the impacts of these restoration efforts on marsh ecosystems are only beginning to be investigated. An important constituent of salt marsh microbiota are benthic micro-eukaryotes called foraminifera, which are broadly implicated in the biogeochemical cycling of carbon and nitrogen and have been used as a bioindicator metric for the health of other ecosystems. Here, we present preliminary analysis of the abundance and diversity of benthic foraminifera in a Narragansett Bay salt marsh that has been the target of restoration efforts. Through sampling coupled to scanning electron microscopy and 18S rRNA sequencing, four dominant species of foraminifera have been identified. Preliminary results quantifying diversity and abundance from these sampling efforts suggest that existing strategies of salt marsh restoration may increase in the diversity of benthic foraminifera. We thank Zachary Shepard and Dr. Irene Andreau from the Rhode Island Consortium for Nanoscience and Nanotechnology for their support in microscopic imaging.

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