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Microbial diversity and community structure in sediments associated with the Seagrass (*Thalassia testudinum*) in Apalachicola Bay, Florida

Rahma Ahmed

Thomas McElroy
Kennesaw State University

Troy Mutchler
Kennesaw State University

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Rahma Ahmed

Thomas McElroy

Troy Mutchler

Abstract

Seagrass is an angiosperm which provides many ecosystem services in coastal areas, such as providing food, shelter and nurseries for many species, and decreasing the impact of waves on shorelines. A global assessment reported that 29% of known seagrass meadows are in a state of decline due to the effects of human activity. Seagrass is commonly found in shallow marine waters where they form meadows containing a microbiome that plays an important role in providing nutrients for seagrass growth, though little is known about the microorganisms within the seagrass meadow sediments. Our project collected sediments from seagrass meadows and adjacent unvegetated areas around Apalachicola Bay, Florida. We sequenced the bacterial communities present and compared the communities, which provided data that indicated that the differences in bacterial communities were primarily between sites and that vegetated and unvegetated plots within the same collection site were similar.