

Sea level rise caused by climate change will detrimentally impact saltmarsh habitats by increasing the elevation and rate of terrestrial salt water inundation, thereby reducing effective functionality of ecosystem services provided by saltmarshes. Facilitation is key to community structuring and function in habitats characterized by abiotic stress, such as salt marshes. Halophytic plants within salt marshes can benefit from symbiotic arbuscular mycorrhizal fungi (AMF) facilitations through increased inundation tolerance, greater nutrient availability and uptake, alleviation from drought stress and relief from saline stress.

Through this research, land managers developing sea-level rise mitigation plans will have data supporting which plants will be most resilient to future increases in inundation and limits to nutrient availability due to AMF association. Potential inoculation of host plants could protect estuaries from sea level rise and increased frequency and intensity of storm events in coastal regions. In identifying plants which host beneficial fungi, and thereby have greater inundation resilience and nutrient availability, fungal inoculation of plants in marshes could help plants grow further into lower marsh elevations, increasing sediment accretion and decreasing erosion and soil degradation.