

# Trap culture and spore isolation of arbuscular mycorrhizal fungi in salt marshes

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Salt marshes are known to harbor arbuscular mycorrhizal fungi (AMF), which are obligate biotrophs that contribute to plant health by enhancing nutrient assimilation, water uptake, and reducing exposure to soil-borne pathogens and phytotoxic heavy metals. AMF can be propagated and applied to future salt marsh restoration projects as a nature-based strategy.



Surettes Island salt marsh

Salt marshes are coastal wetlands that provide many ecosystem services such as:

- Flood and mitigation
- Carbon sequestration
- Water purification
- Habitat for many organisms

**Objective:** This project investigates the propagation, isolation, and identification of AMF in association with keystone salt marsh grass species: *Sporobolus alterniflorus* (Smooth Cordgrass), *Sporobolus michauxianus* (Prairie Cordgrass), and *Sporobolus pumilus* (Salt Marsh Hay).



Converse salt marsh

Trap cultures are used as an AMF propagation technique. This involves growing plants in sediment containing AMF spores to allow for an association to form and AMF to propagate.

This study will determine if these grass species serve as suitable host plants for AMF propagation which will assist in the development of coastal bioinoculants useful for salt marsh restoration projects.

Globally, salt marshes are declining at a rate of 0.28% per year. Threats to salt marshes include:

- Sea level rise
- Eutrophication
- Coastal development



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