

# MY COMMUNITY, OUR EARTH

## MIAMI

# Friends of the Environment: Salt Marsh

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**Problem Statement:** What remains of the salt marshes and what threats does this ecosystem face?

This project was to create the “Friends of the Environment” group, students ranging from 5 to 18 years old and adults, and to teach them about the natural habitats that exist around us, in South Florida. Also, by learning about these environments, this would encourage each person to be advocates for these habitats and become environmental stewards in general. The students visited a variety of local parks and sites around South Florida to learn about each of the local habitats.

### Community Characteristics

<b>Soil:</b>	fine-grain clay mixed with humus
<b>Hydrology:</b>	flooded by seawater daily
<b>Current Area:</b>	4 million acres (420,000 acres in Florida)
<b>Major areas:</b>	Alaska, Northern Florida, Indian River Lagoon
<b>Elevation:</b>	very low
<b>Dominate plants:</b>	Spartina, Juncus, Distichlis and Batis
<b>Common fauna:</b>	clapper rails, grass shrimp, marsh rabbit, diamondback terrapin
<b>Invasive:</b>	Blackchin tilapia, Brazilian pepper, Australian pine, Cattle egret
<b>Threats:</b>	changes in hydrology, pollution, coastal development, and invasive species.



## Salt marsh



## Background

Salt marshes are communities of emerged vegetation that are covered by water and drained by the tidal action each day. The term salt marsh refers to the salt water which covers it periodically throughout the day. Within Florida, the largest area of salt marshes, over 70% of the total, are found in North Florida, with the remaining 30% scattered along the coast in central and South Florida. In total, there are approximately 4.1 million acres of salt marshes found throughout the United States. Each region of Florida salt marshes differ in temperature, tidal range and power, wave frequency and local topography.

## Ecology

Salt marshes are formed in sheltered coastal areas where sediments begin to accumulate and allow growth of plants that make up the foundation of the ecosystem. Salt marshes begin to develop in between terrestrial and marine environments that result in diverse communities adapted to harsh environmental conditions. Such conditions many include flooding, extreme temperature, and salinity changes. Marshes are a home to a wide variety of organisms. Fast growth of marsh vegetation and the supply of nutrients, make salt marshes highly productive systems. Aside from providing habitat and food sources for many organisms, the salt marshes also benefit humans and ecosystems by not permitting erosion and also filtering nutrients and sediments from the water. Salt marsh environments exists in very low elevations.

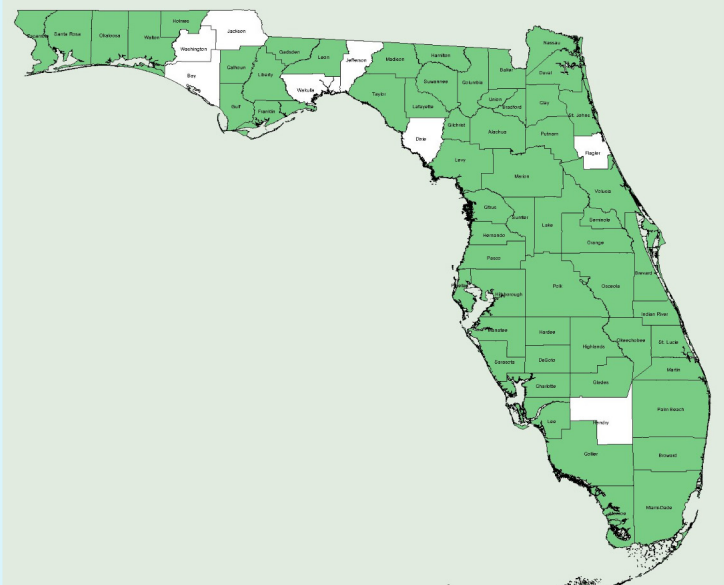
## Threats

Major threats to salt marshes include being drained, filled, and dredged to provide usable land or deep channels for boats, changes in hydrology, pollution and invasive species. As the level of the oceans increase, this also poses a threat as the salt marsh will become part of the ocean. As the human population has increased, we look for more and more usable land. In many instance, salt marshes are drained and filled to create livable space. In Florida alone, the result of dredging and filling salt marshes has resulted in at least 60,000 acres being lost already. Salt marshes that are left behind can be affected by the run-off from nearby towns which often contains pollutants. In addition, salt marshes contain invasive species that can lead to a decline or elimination of native species.

## Results & Conclusion

The *Friends of the Environment* group visited Biscayne National Park, Everglades National Park-main campus and Everglades National Park-Shark Valley, where we learned about salt marshes. We talked about how many people live in Florida and how much space and resources we each need. We discussed how

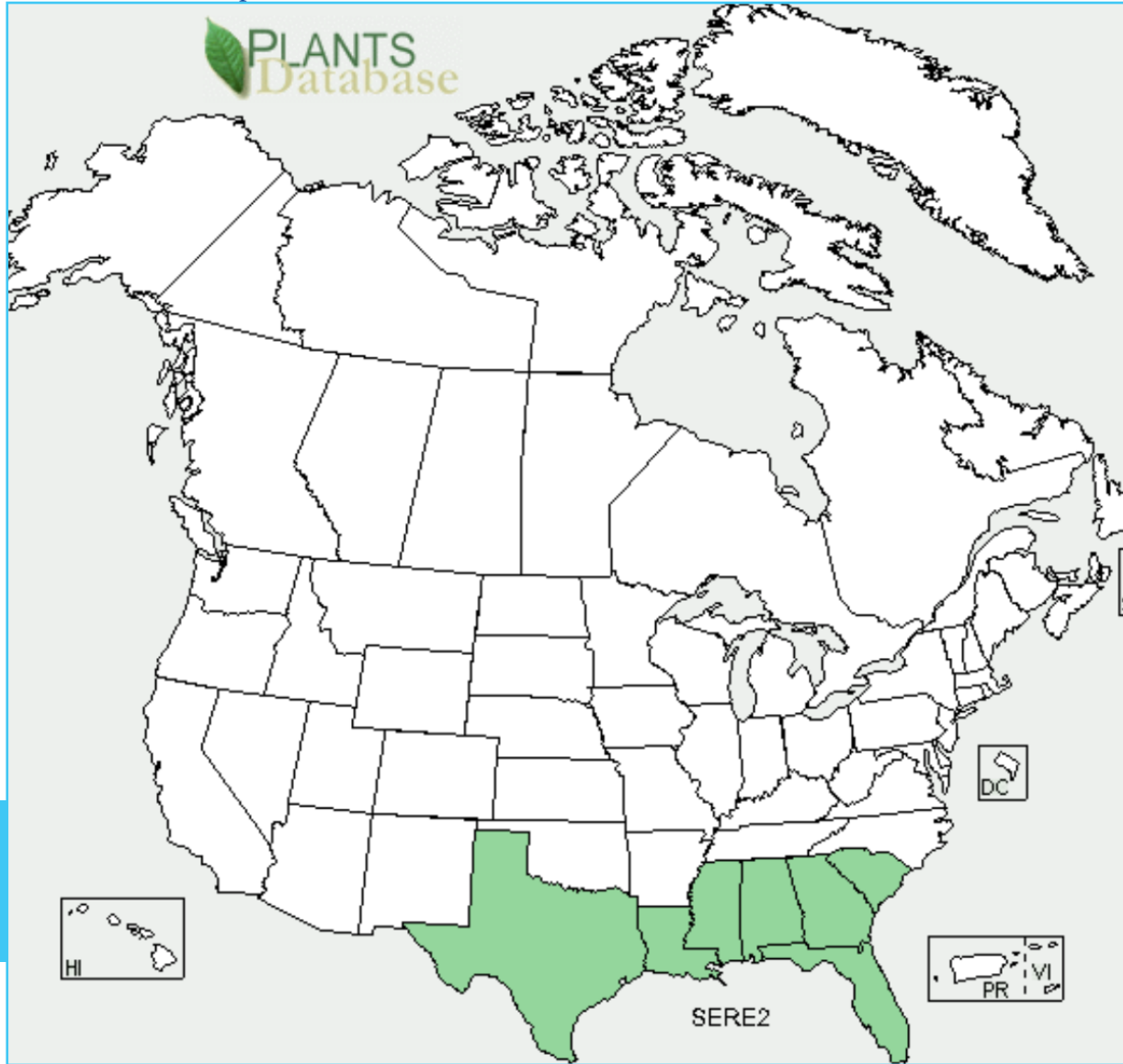
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Florida distribution of *Spartina alterniflora*, dominant macrophyte in Florida saltmarshes.

as the populations continues to grow, we need to find more and more land to use and live on and how we often drain areas around Florida to make them inhabitable. We talked about ways to avoid this and other solution and also ways to protect the irreplaceable natural environment we have left.

### US distribution of *Spartina alterniflora*



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