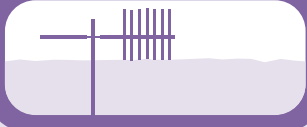


Finding Solutions: Marsh Elevation and Sea Level



Project Partners

National Oceanic and Atmospheric Association (NOAA) National Estuarine Research Reserve System
Florida International University

Funding

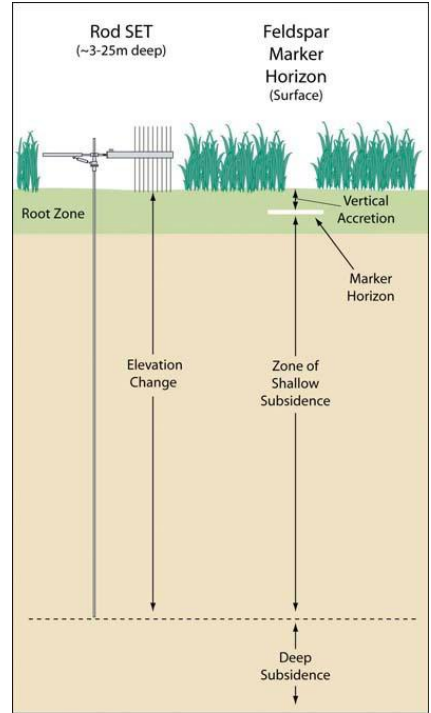
Inflation Reduction Act
Department of Environmental Protection (DEP)
National Oceanic and Atmospheric Association (NOAA)

Project Dates

Winter 2019 – Present

Geologic records of the past millions of years show signs that sea level has been rising and falling for as long as oceans have been on the planet. Now that humans are here, what stands between the ocean and many of the coastal communities that have yet to experience such sea level rise? In many cases, the answer is wetlands.

Wetlands have long played a significant role in safe-guarding coastal communities from the risks of seaside living, and some of them might be rising to meet the challenge of sea level rise. Are the wetlands expanding fast enough to keep up, or if they are vulnerable to being submerged?



The Solution

Surface Elevation Tables (or SETs) are a tool for measuring the height of a wetland relative to the hard substrate or bedrock that it sits on. A rod is driven into the ground until refusal, a device is coupled to the exposed end, and an arm extends with pins. The pins are lowered until they touch ground surface, and their heights can be measured in the same positions over time.

Rookery Bay has installed their own SET sites and monitors them in accordance with the guidelines that all National Estuarine Research Reserves

follow, which allows anyone to compare how our Collier County marshes and mangrove wetlands are stacking up – not only to sea level rise, but to other wetlands around the nation.

Wetland surface elevation can change vertically in two ways:

1. Sediment and vegetation can pile up or be removed from the top layer, or
2. Substrate below the surface can expand, compress, or subside through various means (compaction, root growth, decomposition)

Rookery Bay’s SETs can help measure these vertical changes in elevation down to the millimeter scale in multiple types of habitats.

This data, together with measured changes in sea level, can tell us if our wetlands are growing faster or slower than the changes in sea level.

MORE ‘FINDING SOLUTIONS’ CAN BE FOUND ONLINE



Rookery Bay, located in southwest Florida, is recognized as one of the few remaining pristine, mangrove-forested estuaries in the U.S. As part of the National Estuarine Research Reserve System, it serves as an outdoor classroom and laboratory for students and scientists. For more information, visit www.rookerybay.org.

