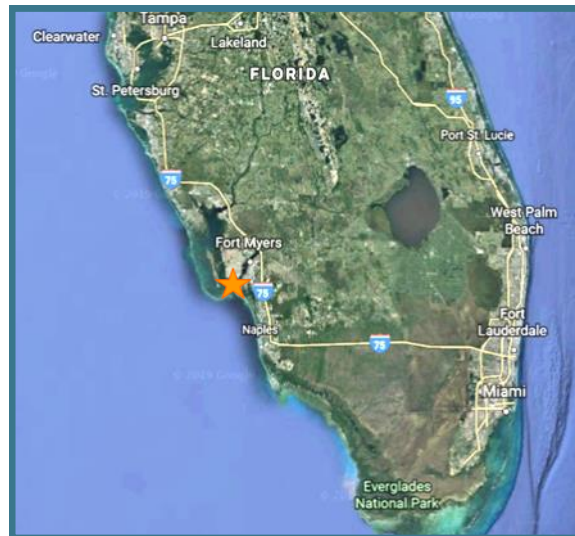


# Quantification of Submerged Aquatic Vegetation Restoration Benefits

## WATER QUALITY IMPROVEMENT



### Summary

The Caloosahatchee River Estuary is an economically and ecologically important coastal feature at the center of the CHNEP area. This ecosystem has been heavily impacted by man-made hydrologic alterations causing reduced freshwater flows coupled with rapid growth and development in the watershed. Dredging has caused this habitat to lose the majority of its historic oyster reefs and seagrass beds also known as submerged aquatic vegetation (SAV). High nutrient levels (Nitrogen and Phosphorus) in the water due to runoff have caused Harmful Algal Blooms (HABs).

Seagrass improves water quality in multiple ways including nutrient filtration. The filtration of nutrients helps to control and prevent future harmful algal blooms. The planting of seagrasses and installation of oyster reefs can help return impacted or degraded habitats to levels that are self-sustaining and positively impact the surrounding water quality. To encourage funding for further restoration efforts, it is critical to quantify the benefits provided by such projects.

CHNEP will provide the funding for this project to quantify the nutrient removal capacity of seagrass. It will focus on tape grass (*Vallisneria americana*) which is native to the area and historically abundant in freshwater and low-salinity estuaries.

**Location:** Lee County, FL

**Partners:** Florida Gulf Coast

University, Angler Action Foundation, Sea and Shoreline LLC, and Johnson Engineering, Inc.

**Implemented:** 2019

**Status:** Completed

**CHNEP Cost:** \$45,000

**Funding Source:** Environmental Protection Agency

**2019 CHNEP Plan Activity:**



Water Quality Improvement 2.1: Encourage review, development, and implementation of additional water quality criteria and targets, pollutant limits, and cleanup plans that correct impairment, protect aquatic life, and prevent degradation of all surface waters.

# COASTAL & HEARTLAND NATIONAL ESTUARY PARTNERSHIP



## Anticipated Results and Benefits

### Reduced Harmful Algal Blooms:

The results from this study will increase interest and funding for seagrass restoration projects in the future. The planting of seagrasses will help to deplete excess nutrients in the water that are necessary for algae blooms to thrive. These recurring algal blooms pose a grave threat to the local economy as well as the physical health of the areas residents and visitors.

### Increased Public Knowledge:

The results from this study will be promoted throughout the CHNEP area to raise awareness on one way to prevent algal blooms. The project also seeks to increase public interest in seagrass restoration and conservation efforts, particularly in waterways and along shorelines of developed areas. This project has direct applications for evaluating the effectiveness of seagrass for nutrient removal in storm water treatment systems, canals, and natural water bodies. It also has implications for the National Pollutant Discharge Elimination Systems (NPDES) permit compliance, Basin Management Action Plans (BMAPs), and wet detention pond design Best Management Practices (BMPs).

## CONTACT INFORMATION

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*Snook and Gamefish Foundation*



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