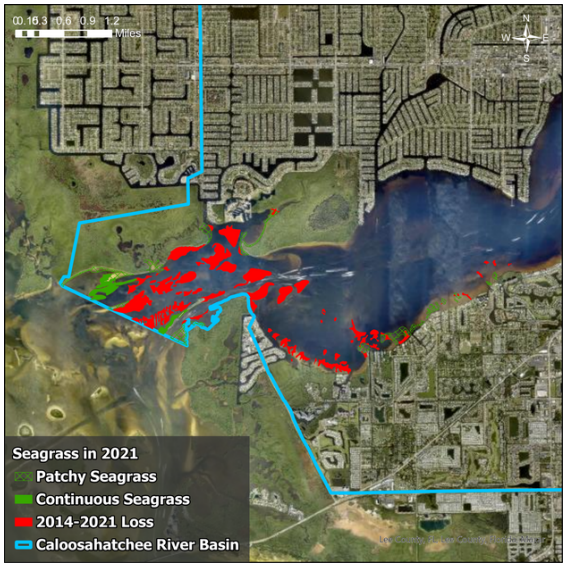
Seagrass in Tidal Caloosahatchee River

Fish, Wildlife, & Habitat Protection

Summary

The Caloosahatchee River watershed spans Lake Okeechobee to San Carlos Bay. The historically shallow and meandering river has been deepened, straightened, and widened into a highly managed and regulated waterway. The river and estuary's ecosystems are significantly altered, as watershed runoff and discharges from Lake Okeechobee have impacted the water quality and salinity regimes.



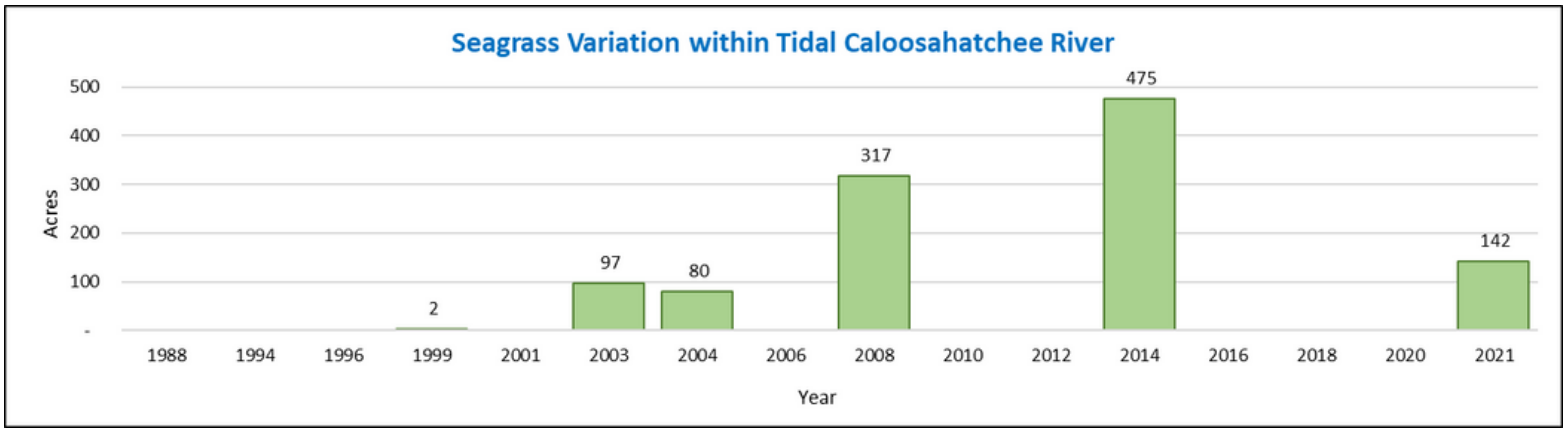
Seagrass Measures Water Quality & Improves Estuary Health

Seagrass beds provide many benefits. It is nursery habitat for fish and shellfish and it contributes to better water quality by trapping sediments, storing carbon, and filtering nutrients from stormwater runoff. Seagrass requires clean water and ample sunlight to grow, and therefore it is used by agencies and local governments as a way to measure water quality. This is documented in two ways:

- Mapping changes in seagrass acreage and location over time with aerial photography (spatial coverage). This is valuable for estimating seagrass locations, acres and broad changes over time.
- On-the-ground monitoring of changes in species composition, estimation of bottom cover in a seagrass bed (abundance), and maximum depth in which seagrass can grow due to light availability and water clarity (deep edge). This monitoring works to characterize the density, complexity, and stability of those seagrass meadows.

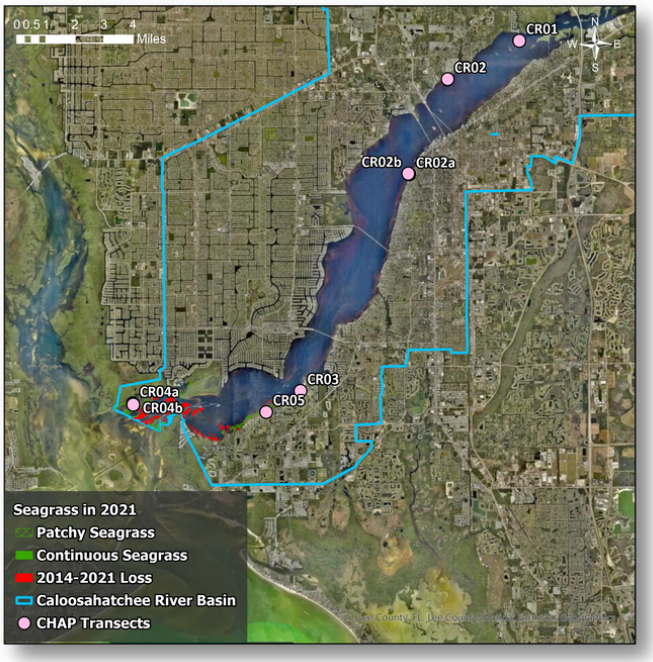
Seagrass Acreage

The graph below depicts results from seagrass mapping in the tidal portion of the Caloosahatchee River from 1999–2021. From 2006 to 2014, seagrass acreage in the Tidal Caloosahatchee River appears to have increased. However, it is important to note, consistent mapping of acreage and locations with aerial photography is needed at least every 3–4 years in order to evaluate trends in seagrass acreage. Between 2014 and 2021, the Tidal Caloosahatchee River lost 333 acres of seagrass, representing a 70% loss overall. The reason for this decline is complex and likely involves several factors. This includes impacts from recent storm events such as Hurricane Irma, increased temperatures and rainfall, additional nutrient runoff from land, as well as prolonged red tide and algae blooms in the region. The CHNEP continues to work with our partners to better understand causes and investigate solutions. Learn more about what the Partnership is doing protect and improve water quality in the Caloosahatchee River (CHNEP.org).



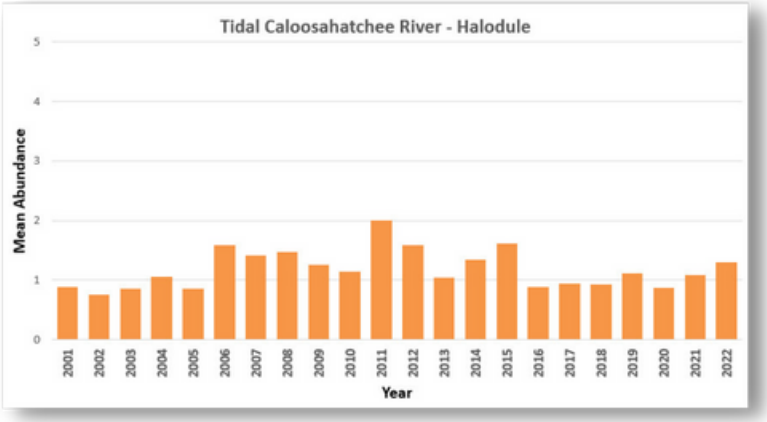
Monitoring Sites

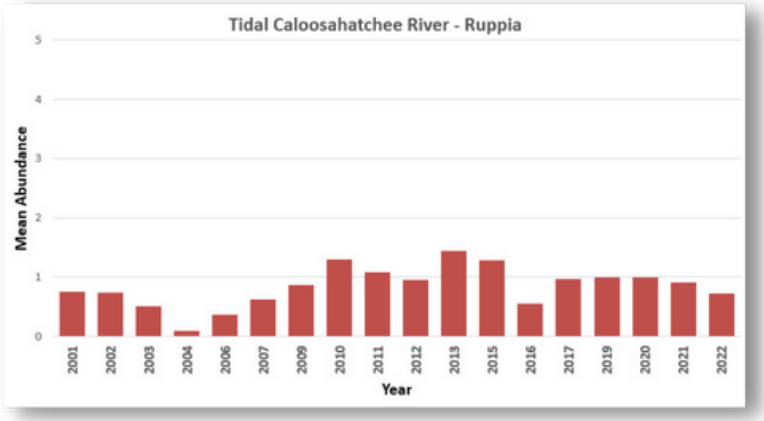
The map to the right shows locations of monitoring sites (highlighted in pink) in selected meadows in the Tidal Caloosahatchee River by the Florida Department of Environmental Protection Aquatic Preserve staff. Annual seagrass monitoring in the Harbor examines species types, density, distribution and how deep the grass will grow (this is dependent on light availability).

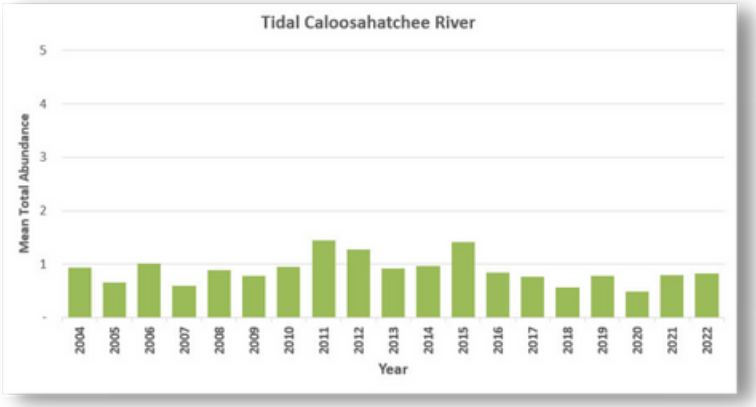


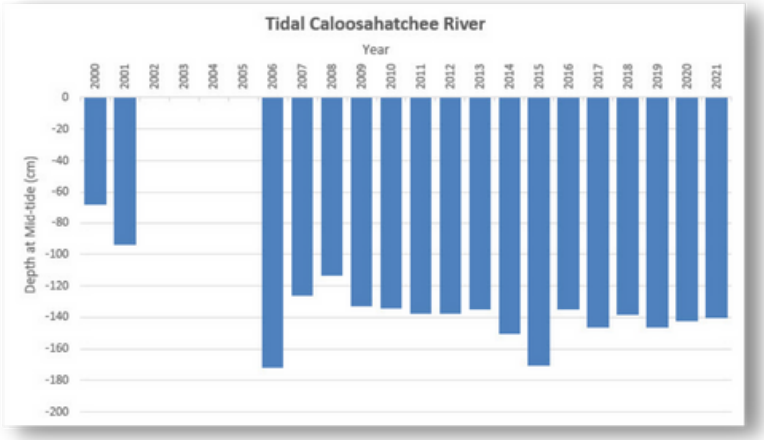
Seagrass Diversity and Health

The bar graphs here depict the changes in presence of different species of seagrass found at monitored locations in the region. The graphs below are focused primarily on two seagrass species Shoal grass (Halodule wrightii) and Widgeon grass (Ruppia maritima) for the years 2001–2021. Other types of seagrass are only found infrequently at these locations; there are not enough data to be graphed here. Both types of seagrass species experienced declines at multiple monitoring locations starting as far back as 2015-2016. Data collected in 2021 demonstrate slight gains (though not full recovery) in Shoal grass and overall seagrass abundance throughout the region.









For more information, please visit the CHNEP Water Atlas at chnep.wateratlas.usf.edu.