

Seagrass in San Carlos Bay

Fish, Wildlife, & Habitat Protection

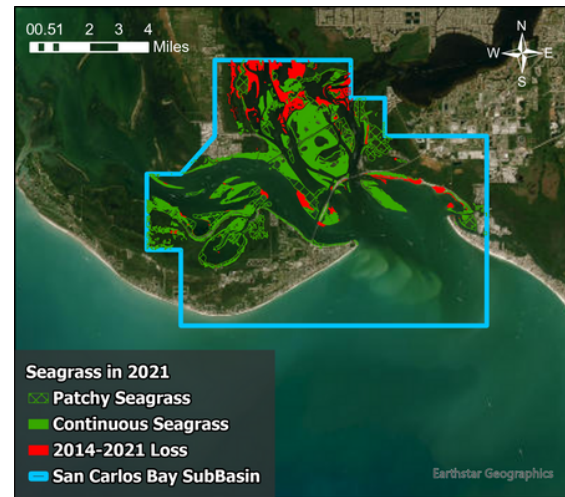
Summary

San Carlos Bay is located southwest of Fort Myers, at the mouth of the Caloosahatchee River. It connects to Pine Island Sound to the west and to Matlacha Pass to the north. Seagrass present within San Carlos Bay include mostly Shoalgrass (*Halodule wrightii*), followed by Turtlegrass (*Thalassia testudinum*), Manateegrass (*Syringodium filiforme*), as well as Paddle grass and Star grass (*Halophila* spp.).

Seagrass Measures Water Quality & Improves Estuary Health

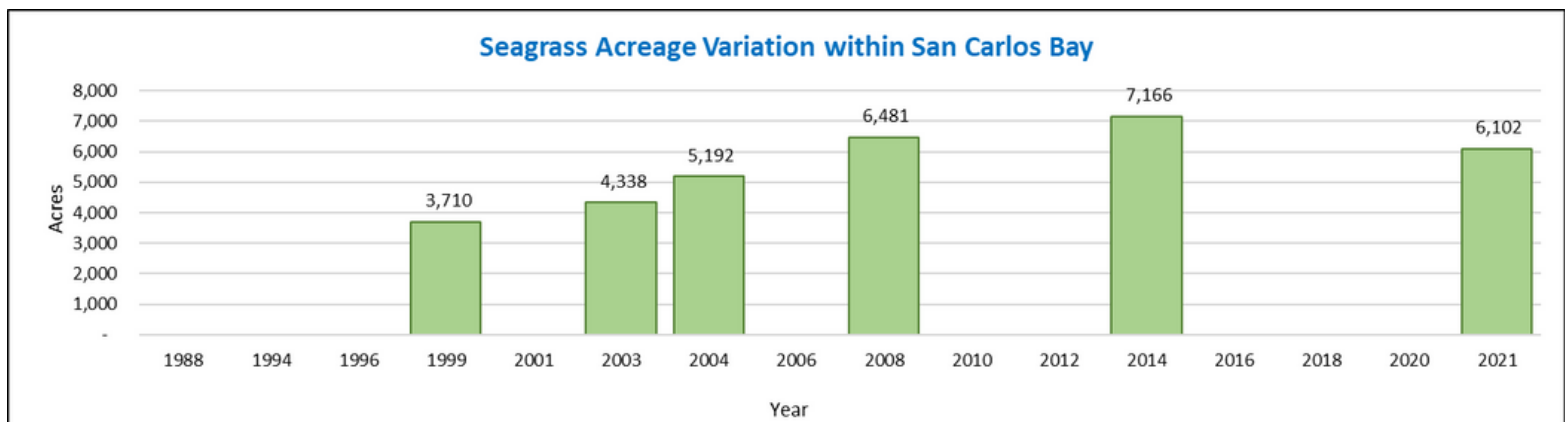
Seagrass beds provide many benefits. It is nursery habitat for fish and shellfish and it contributes to better water quality by trapping sediments, storing carbon, and filtering nutrients from stormwater runoff. Seagrass requires clean water and ample sunlight to grow, and therefore it is used by agencies 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 San Carlos Bay from 1999–2021. Seagrass in this area has remained relatively stable and appears to have increased over time since monitoring began. 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, San Carlos Bay lost 1,064 acres of seagrass, representing a 15% 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 San Carlos Bay (CHNEP.org).



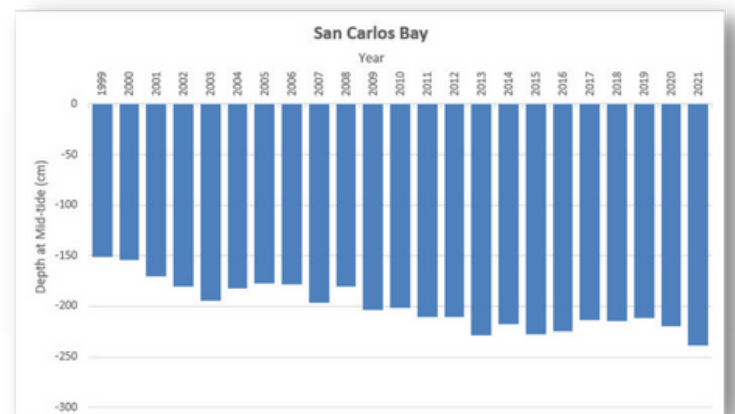
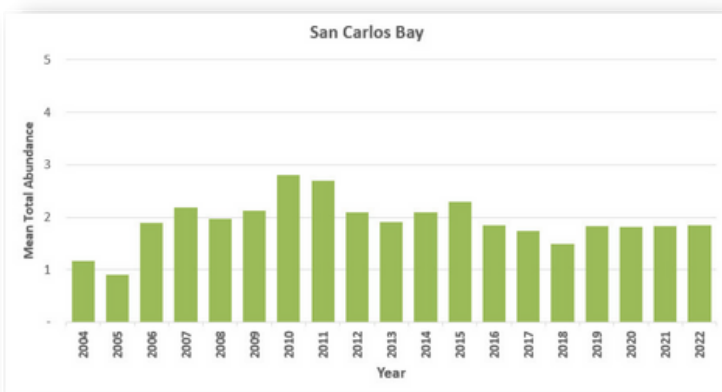
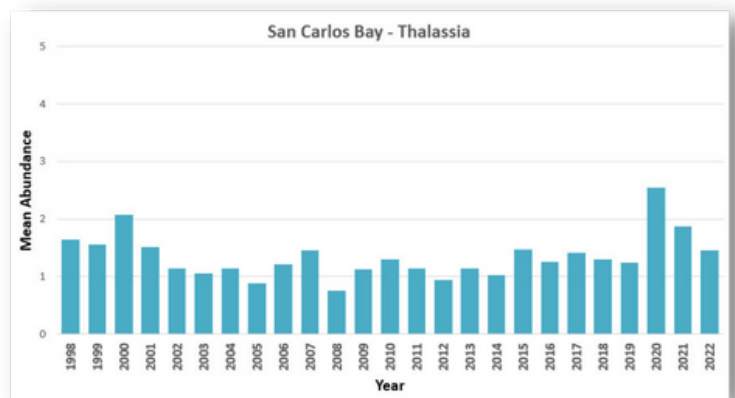
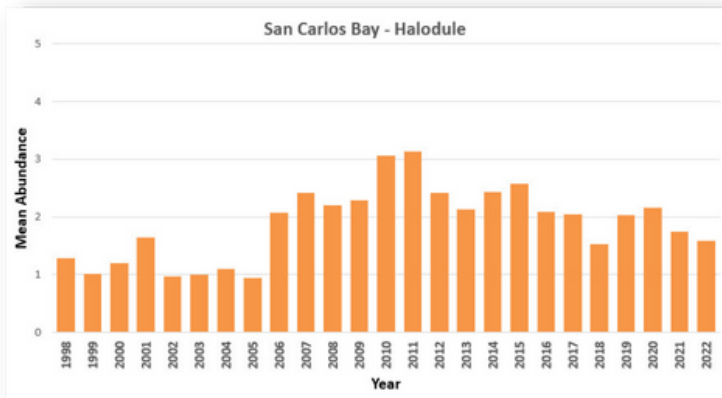
Monitoring Sites

The map to the right shows locations of monitoring sites (highlighted in pink) in selected meadows in San Carlos Bay 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. Data shared in the graphs below are focused primarily on two seagrass species Shoal grass (*Halodule wrightii*) and Turtle grass (*Thalassia testudinum*) for the years 1998–2021. 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 2016. However, Data collected in 2020 showed modest gains in both seagrass species (though not full recovery) throughout the area, however, data collected in 2021 demonstrate significant losses for both species and overall seagrass abundance.



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

