

Seagrass in Dona & Roberts Bays

Fish, Wildlife, & Habitat Protection

Summary

Dona and Roberts Bays connect to the Gulf of Mexico via the Venice Inlet. Freshwater tributaries include Shakett, Fox, Curry and Salt Creeks, and Cowpen Slough. Fresh water flows were dramatically altered in the by the construction of drainage canals in Cowpen Slough in the 1960s as well as the Intracoastal Waterway and Blackburn Canal. These increases in freshwater that have changed the estuary ecosystems and even been known to prevent tides from entering the Venice Inlet during summer rainy season. These bays are protected as Outstanding Florida Waters.

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:

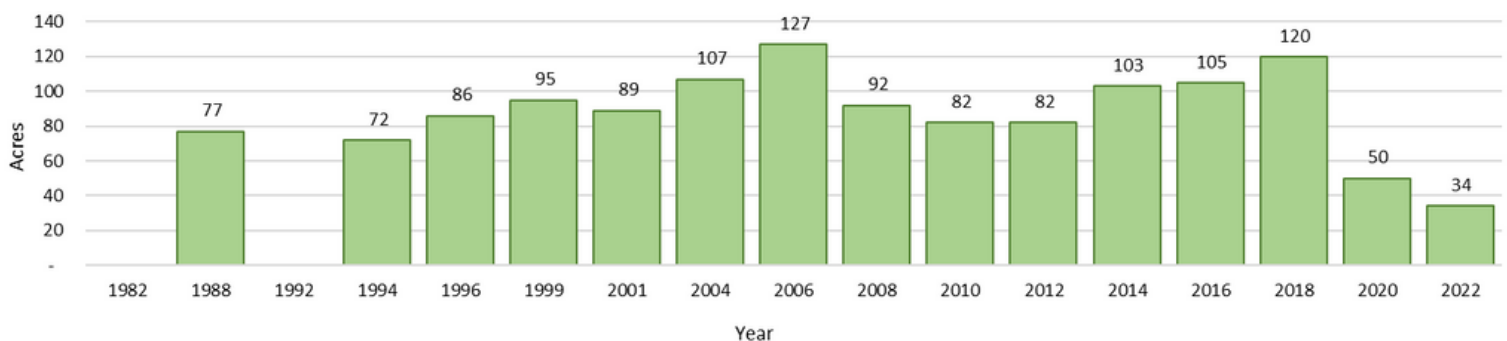
- Mapping changes in seagrass acreage and location over time with aerial photography (spatial coverage). This is valuable for estimating seagrass locations, acres and broad changes over time.
- On-the-ground monitoring of changes in species composition, estimation of bottom cover in a seagrass bed (abundance), 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 Dona and Roberts Bays from 1988–2022. Seagrass acreage in the Dona and Roberts Bay basin had been steadily increasing since 2010. In 2018, seagrass reached 120 acres, passing the target 112 acres for Dona and Roberts Bay. However, between 2018 and 2022, 86 acres of seagrass were lost, representing a 72% loss of total acreage and reaching an all-time historic low. The cause of this decline is complex and involves several likely factors including increasing nutrient pollution loads, red tide, hurricanes, rainfall pattern and others. The CHNEP continues to work with our partners to investigate causes. Learn more about what the Partnership is doing protect and improve water quality in Dona & Roberts Bays (CHNEP.org).

Seagrass Acreage Variation within Dona and Roberts Bays



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

Monitoring Sites

The table to the right shows the Sarasota County 2021 Seagrass Monitoring Scorecard which identifies bays with problem trends for seagrass and algae characteristics. Desirable conditions are dense seagrass coverage, tall seagrass, few epiphytes growing on the seagrass, and less drift algae in the seagrass habitat. In Charlotte Harbor and surrounding estuaries, anecdotal data points to a shift from seagrass to algae. Based on Sarasota County field monitoring data, Dona & Roberts Bay saw declines in overall seagrass density and blade height, combined with increased epiphyte and green algae (*Caulerpa*) abundance.



Seagrass Diversity and Health

The bar graphs below depict the changes in presence of different species of seagrass found at monitored locations in Dona and Roberts Bay Basin.

In Dona & Roberts Bay, persistent seagrass species include Shoal grass (*Halodule wrightii*), Turtle grass (*Thalassia testudinum*), and Manatee grass (*Syringodium filiforme*) for the years 2010–2021. Ephemeral species such as Tape grass (*Halophila decipiens*) and Widgeon grass (*Ruppia maritima*) are reported less frequently and their abundance is more variable from year to year. The graphs demonstrate that seagrass and Manatee grass saw drastic declines in abundance at multiple monitoring locations starting back in 2017. Turtle grass experienced drastic declines starting back in 2018 and Shoal grass also began to decline in 2020. Overall seagrass abundance has continued to decline in recent years, although data collected in 2021 demonstrate large gains (though not full recovery) for Turtle grass throughout the region. The reason for this decline is complex and likely involves several factors. This includes impacts from recent storm events such as additional nutrient polluted runoff from land, Hurricane Irma, increased temperatures and rainfall, 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.

