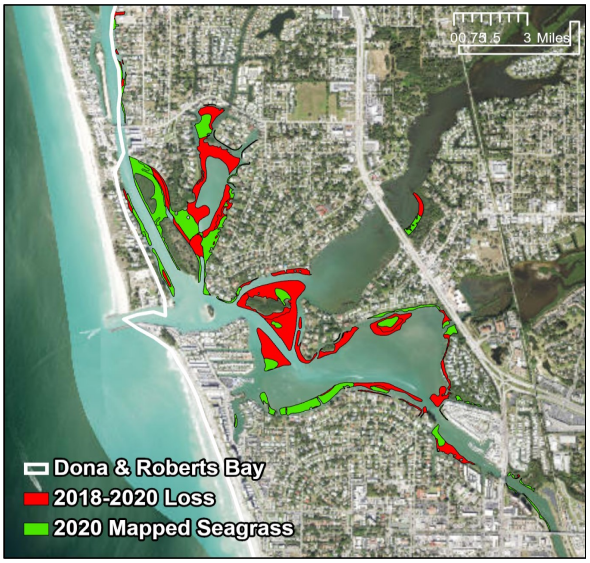
Dona & Roberts Bays

FISH, WILDLIFE, & HABITAT PROTECTION

Summary

The Dona and Roberts Bays connects one of the five major watersheds in Sarasota County to the Gulf of Mexico via the Venice Inlet. Significant modifications have been made to the drainage basins, principally to the main tributaries. Many of the creeks have been dammed in order to inhibit upstream flow of salt water. They are also deepened or lengthened to allow better drainage. These have resulted in a complex sedimentation and erosion pattern with substantial anthropogenic influences. Seagrasses present within Dona and Roberts Bay include Shoalgrass (*Halodule wrightii*), Turtlegrass (*Thalassia testudinum*), and Manateegrass (*Syringodium filiforme*)[1]. In 2018, seagrass monitoring detected declining trends throughout most of the county, including major losses in Dona and Roberts Bay.



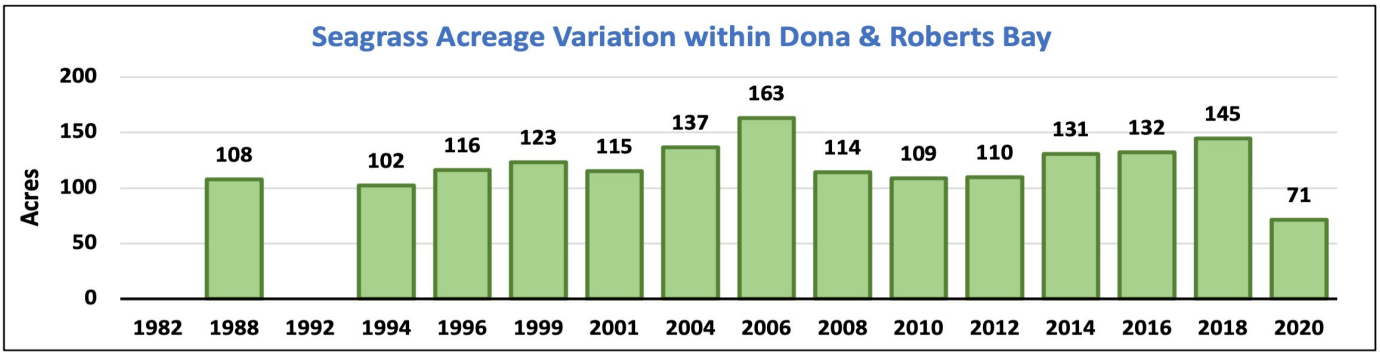
Seagrass Measures Water Quality & Improves Estuary Health

Over 2.2 million acres of seagrass have been mapped in estuarine and nearshore Florida waters. Many economically important fish and shellfish species depend on seagrass beds during critical stages of their life. Seagrass beds also contribute to better water quality by trapping sediments, storing carbon, and filtering nutrients from stormwater runoff. Florida had historical declines in seagrass acreage during the 20th century. Seagrass requires clean water and ample sunlight to grow. Because seagrass thrives in clean and clear water - it is used by agencies and local governments as a way to measure water quality. This is done 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 below graphic depicts results from seagrass mapping in Dona & Roberts Bay from 1988-2020[2]. Seagrass acreage in the Dona & Roberts Bay basin had been steadily increasing since 2010. In 2018, seagrass reached 145 acres, passing the target 112 acres for Dona & Roberts Bay. However, between 2018-2020, 73 acres of seagrass were lost, representing a 51% loss of total acreage. The cause of this decline is complex and involves several likely factors including red tide, increasing nutrient loads, hurricanes, rainfall pattern and others. The CHNEP continues to work with our partners to investigate causes.



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

Seagrass Trends

The table to the right shows the Sarasota County 2021 Seagrass Monitoring Scorecard which identifies bays with problem trends for seagrass and algae characteristics[3]. Red symbolizes undesirable conditions, green is good, and yellow is intermediate. Desirable conditions are dense seagrass coverage, tall seagrass, few epiphytes growing on the seagrass, and less drift algae in the seagrass habitat. The highest scoring bay is deemed to have seagrass in the worst health condition.

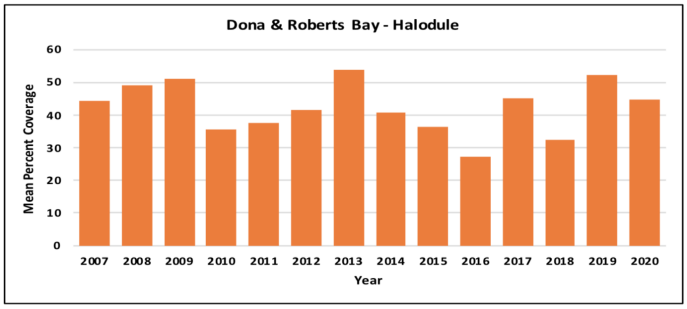
In Charlotte Harbor and surrounding estuaries, anecdotal data points to a shift from seagrass to algae. Based on Sarasota County field monitoring data, Dona & Roberts Bay saw declines in overall seagrass density and blade height, combined with increased epiphyte and green algae (Caulerpa) abundance.

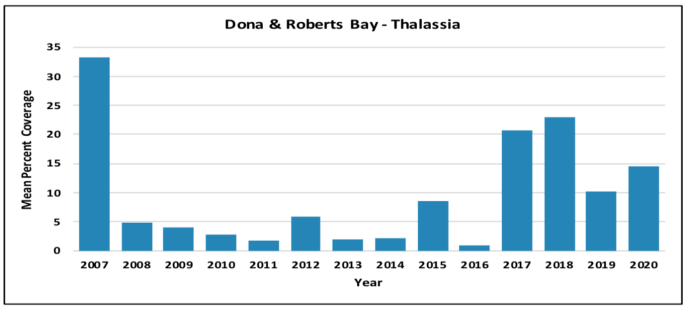
Sarasota County Seagrass Monitoring Scorecard 2021

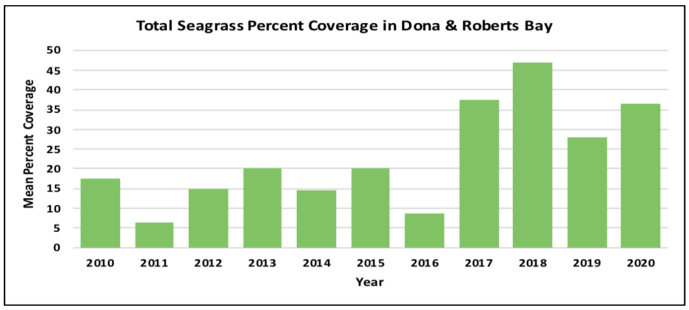
Seagrass Health Characteristics	Sarasota Bay	Roberts Bay	Little Sarasota Bay	Blackburn Bay	Dona Roberts Bays	Lemon Bay
Seagrass Density Trend	-	-	-	↓	↓	↓
Thalassia Abundance Trend	-	-	-	↓	-	-
Syringodium Abundance Trend	-	-	-	-	-	-
Halodule Abundance Trend	↓	-	-	-	-	-
Thalassia Blade Height Trend	-	-	-	↓	-	↓
Syringodium Blade Height Trend	↓	↓	-	↓	↓	-
Halodule Blade Height Trend	↓	↓	↓	↓	↓	↓
Drift Algae Trend	-	-	-	-	-	-
Epiphyte Trend	↑	↑	↑	↑	↑	↑
Caulerpa Trend	↑	↑	↑	↑	↑	↑
Score	5	4	3	7	5	5

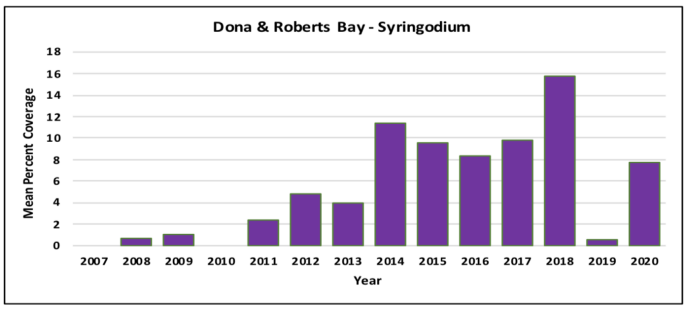
Seagrass Diversity and Health

The bar graphs below show the total abundance for three seagrass species Shoalgrass (*Halodule wrightii*), Turtlegrass (*Thalassia testudinum*) and Manateegrass (*Syringodium filiforme*), as well as the total percent coverage of seagrass at different monitoring locations in Dona and Roberts Bay for the years 2007-2020. They demonstrate that seagrass, Turtlegrass and Manateegrass saw declines in abundance at multiple monitoring locations in 2019. However, data collected in 2020 demonstrates modest gains (though not full recovery) for both species throughout the region. Note that a diverse seagrass species composition is an important indicator of a healthy seagrass meadow and serves as more complex habitat for fish and shellfish.









[1]Yarbro, L. A., and P. R. Carlson, Jr., eds. 2016. Seagrass Integrated Mapping and Monitoring Program: Mapping and Monitoring Report No. 2. Fish and Wildlife Research Institute Technical Report TR-17 version 2. vi + 281 p.
[2]Southwest Florida Water Management District (1982, 1988, 1992, 1994, 1996, 1999, 2001, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018, 2020)
[3]Sarasota County NPDES MS4 2020 Annual Report Monitoring Data Summary: Biological Monitoring — Seagrass.

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