

# Seagrass in Charlotte Harbor

## Fish, Wildlife, & Habitat Protection

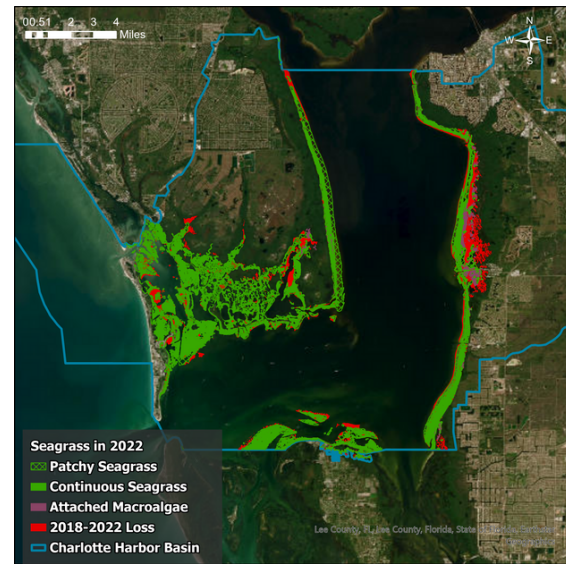
### Summary

Charlotte Harbor is the largest of the estuaries in this region. In the Harbor, fresh water from the Peace and Myakka Rivers and numerous small tidal creeks mixes with salt water coming through Boca Grande Pass from the Gulf of Mexico. Southern areas closer to the Pass receive substantial tidal flushing. Further north, near the mouths of the rivers, the Harbor is significantly affected by the seasonal changes in river discharges.

### 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:

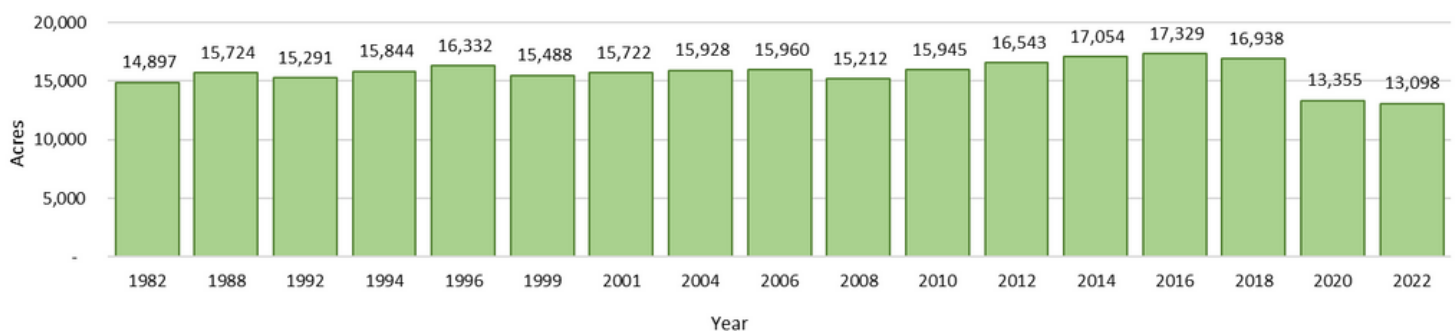
- Mapping changes in seagrass acreage and location over time with aerial photography (spatial coverage). This is valuable for estimating seagrass locations, acres and broad changes over time.
- On-the-ground monitoring of changes in species composition, estimation of bottom cover in a seagrass bed (abundance), 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, done once every two years, in Charlotte Harbor from 1982-2022. Seagrass in this area has remained relatively stable over time since monitoring began, but acreage declined significantly in Charlotte Harbor between 2018 and 2020 when the region lost 3,648 acres of seagrass, representing a 21% loss overall. The reason for recent declines is complex and likely involves several factors, including 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. Minimal losses were seen in 2022 and numbers remained relatively stable with some seagrass beds even showing modest recovery. This demonstrates that the system has the potential to move toward recovery naturally given time and continued work to improve water quality conditions and flows. Note this data was collected in early 2022 and does not include any potential changes that may have occurred following Hurricane Ian. Learn more about what the Partnership is doing protect and improve water quality in Charlotte Harbor ([CHNEP.org](http://CHNEP.org)).

Seagrass Acreage Variation within Charlotte Harbor

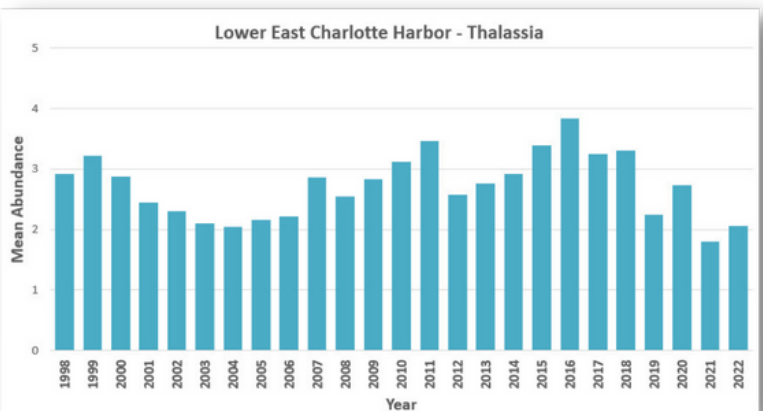
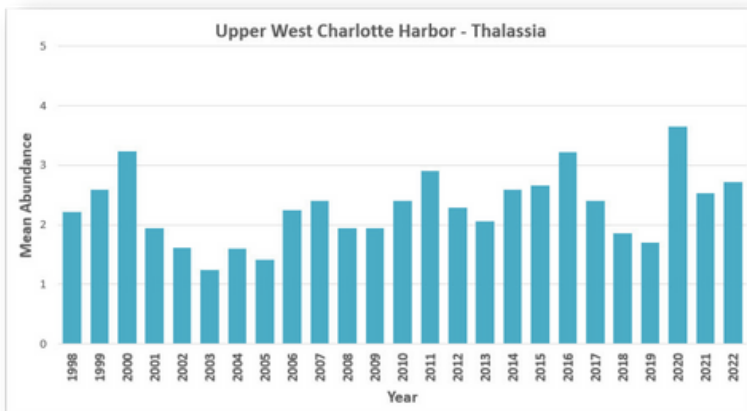
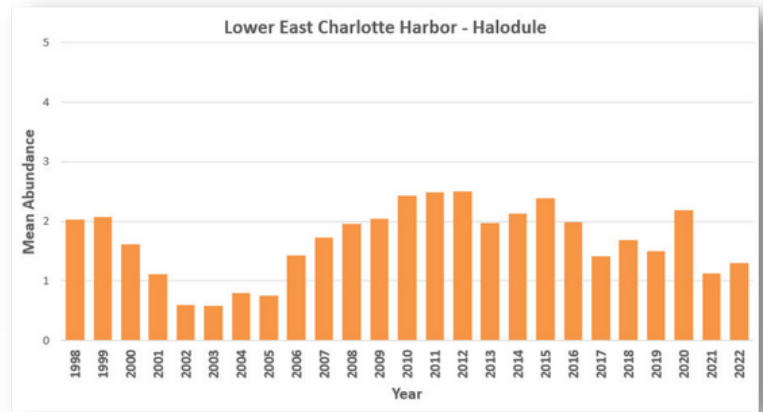
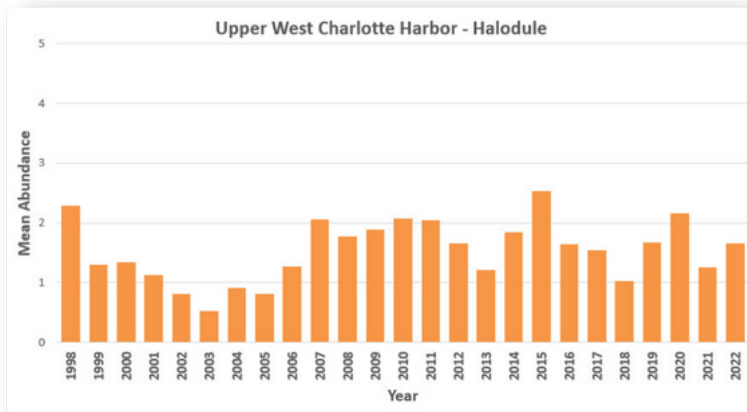
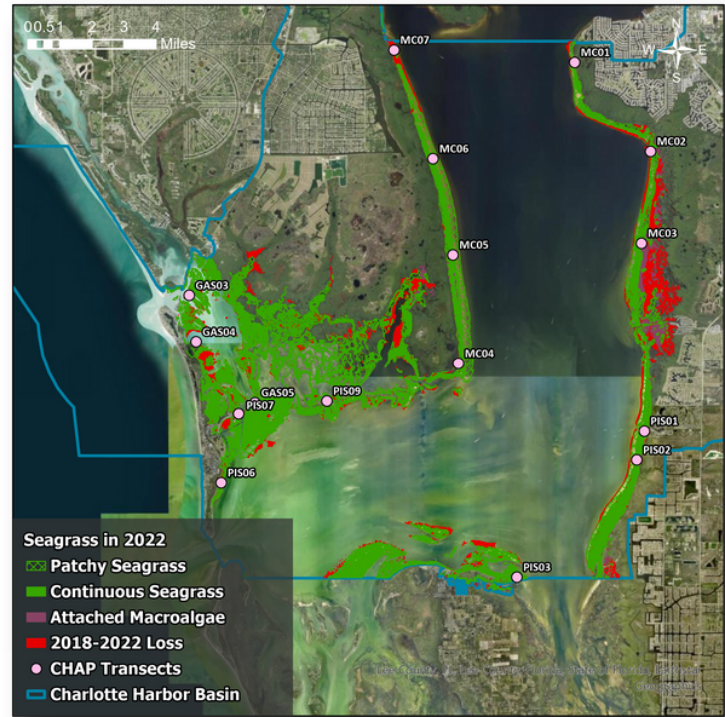


### Monitoring Sites

The map to the right shows locations of monitoring sites (highlighted in pink) in selected meadows in Charlotte Harbor 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

Shoal grass (*Halodule wrightii*) and Turtle grass (*Thalassia testudinum*) were monitored on both the Upper West and Lower East side of the Harbor from 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 2016–2017, preceding the decline in overall acreage observed between 2018 and 2020. Data collected in 2020 showed modest gains (though not full recovery) throughout the area, however, data collected in 2021 demonstrate large losses for both species and seagrass abundance overall.



For more information, please visit the CHNEP Water Atlas at [chnep.wateratlas.usf.edu](http://chnep.wateratlas.usf.edu).

