

Seagrass in Tidal Peace River

FISH, WILDLIFE, & HABITAT PROTECTION

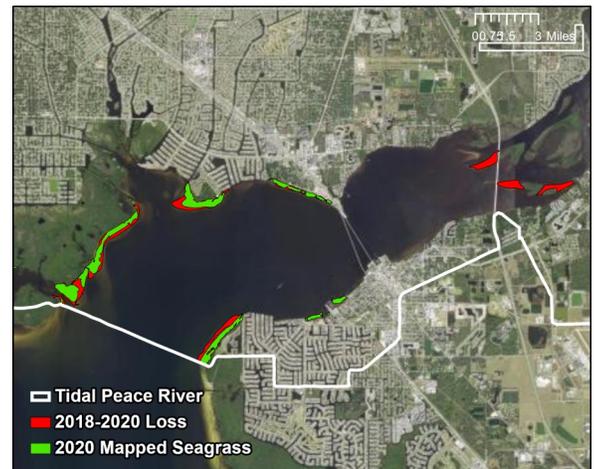
Summary

The Peace River Basin spans 105 miles from Green Swamp to Charlotte Harbor. From its headwaters in Polk County, the Peace River meanders through swamps, pine flatwoods, hardwood hammocks and marshes before it fans out into the Charlotte Harbor estuary. The watershed is low and flat, peppered with shallow lakes and wetlands and is impacted by development, agriculture, and mining. Seagrasses present within the Tidal Peace River primarily consist of Shoalgrass (*Halodule wrightii*) and a small percentage of Widgeongrass (*Ruppia maritima*)¹. Note that Tidal Peace River seagrass meadows comprise a small portion of the total acreage for Charlotte Harbor area and are mainly influenced by freshwater flows from the river.

Seagrass as a Way to Track Water Quality & Estuary Health

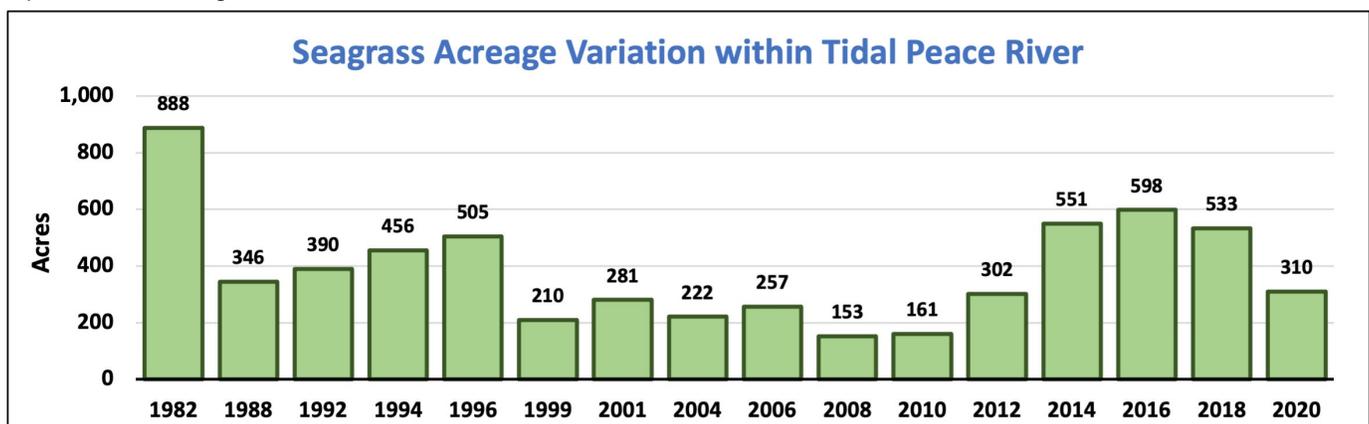
Over 2.2 million acres of seagrass have been mapped in estuarine and nearshore Florida waters. Many economically important fish and shellfish species depend on seagrass beds during critical stages of their life. Seagrass beds also contribute to better water quality by trapping sediments, storing carbon, 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 the tidal portion of the Peace River from 1982-2020². Although seagrass acreage was increasing from 2010-2016, it began to decline in 2018 and demonstrated more losses from 2018 and 2020. In fact, between 2018 and 2020, the Tidal Peace River lost 223 acres of seagrass, representing a 42% loss overall. The reason for this decline is complex and likely involves several factors; such as recent storm events, 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 investigate causes.



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

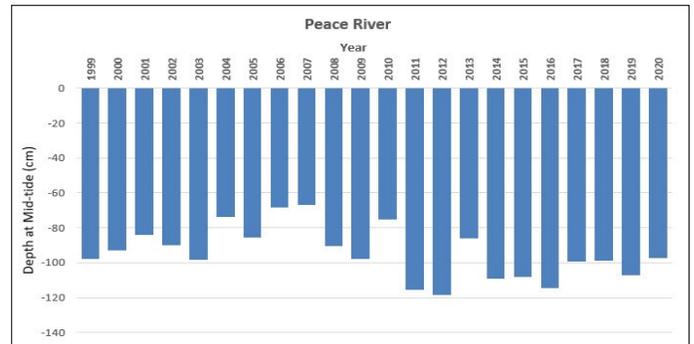
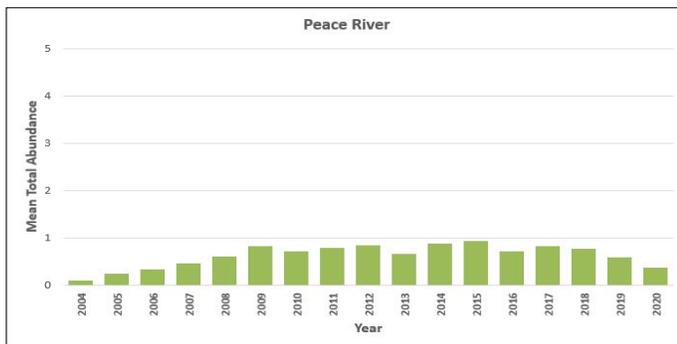
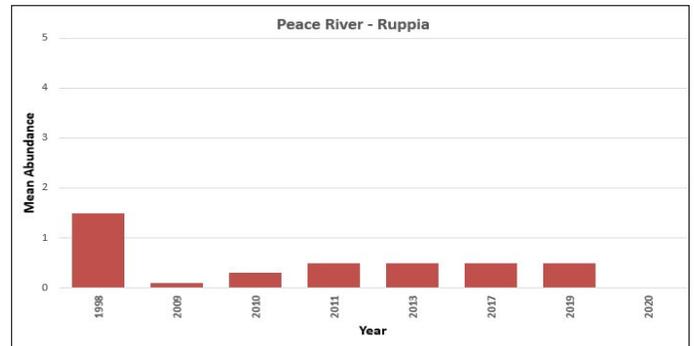
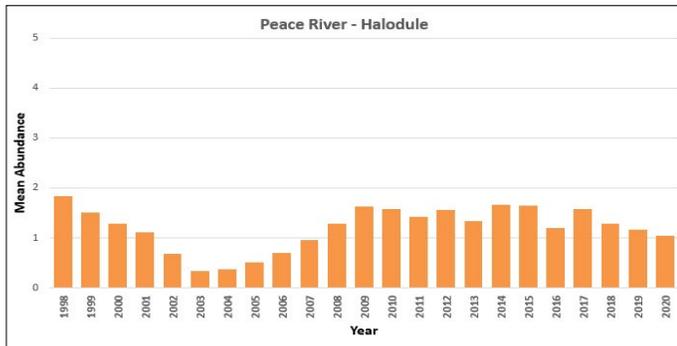
Monitoring Sites

Monitoring is the repeated observation of a system to detect localized changes in a specific seagrass meadow over time in response to environmental conditions and light availability as well as measure overall health. The map to the right shows locations of monitoring sites (highlighted in pink) in selected meadows in Tidal Peace 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 below show the total abundance for two seagrass species Shoalgrass (*Halodule wrightii*) and Widgeongrass (*Ruppia maritima*), total amount of grass, and depth at which the grass was growing at selected monitoring locations in Tidal Peace area for the years 1998-2020³. They demonstrate that overall density of seagrass, Shoalgrass (*Halodule wrightii*), and Widgeongrass (*Ruppia maritima*) have seen declines in abundance at multiple monitoring locations starting as far back as 2017, preceding the decline in overall acreage observed between 2018 and 2020. 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.



¹Yarbro, 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.

²Southwest Florida Water Management District (1982, 1988, 1992, 1994, 1996, 1999, 2001, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018, 2020)

³Charlotte Harbor Aquatic Preserves: Seagrass Transect Monitoring Program 1998-2020. Florida Department of Environmental Protection.

CONTACT INFORMATION

326 W. Marion Ave.
 Punta Gorda, FL 33950-4417
 (941) 575-5090
CHNEP.org



Uniting Central and Southwest Florida to protect water and wildlife