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 in the Peace River primarily consist of Shoalgrass (*Halodule wrightii*) followed by a small percentage of Widgeongrass (*Ruppia maritima*). 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 and 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 1996-2018. Seagrass acreage has increased since 2012, but is still down from historical numbers since monitoring began.
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 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 1998-2019. They demonstrate that overall density of seagrass, Shoalgrass (*Halodule wrightii*), and Widgeongrass (*Ruppia maritima*) all appear relatively stable with slight declines over the past few years. Note that a stable meadow with diverse seagrass species composition is an important indicator of a healthy seagrass meadow and serves as more complex habitat for fish and shellfish.

2Southwest Florida Water Management District (2008, 2016) and South Florida Water Management District (2008, 2014)