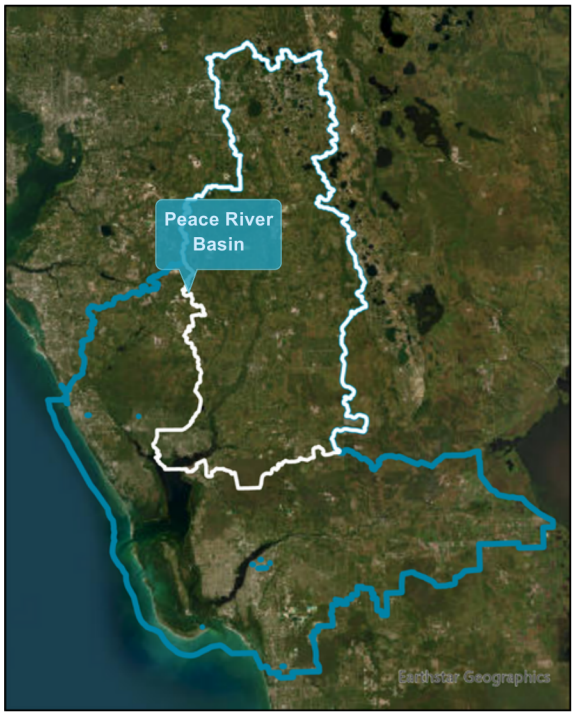
Peace River Basin Water Quality Status Report

WATER QUALITY IMPROVEMENT

Summary

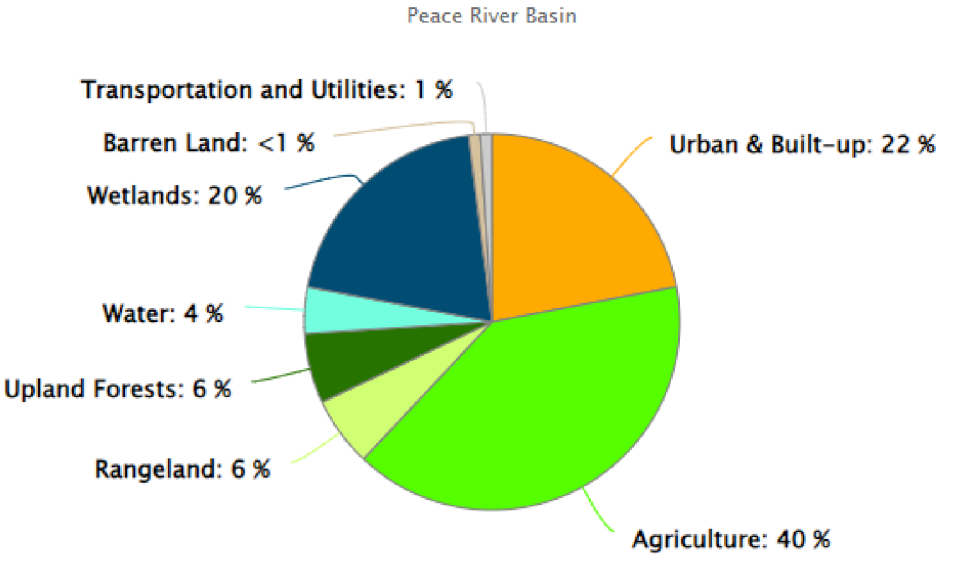
The Peace River Basin is the largest and most diverse in the CHNEP area spanning 2,335 square miles. The river originates in central Polk County, draining a series of wetlands and lakes with the rate of flow proportional to groundwater levels. Underground and overland flows follow natural and altered paths through canals, flood control structures, former and active phosphate mines, wetlands and Lake Hancock. South of Lake Hancock, canals and tributaries combine to define the main channel of the Peace River that eventually flows more than 100 miles southwest to Charlotte Harbor.

The Peace River is the largest freshwater contributor to Charlotte Harbor. It is also a source of drinking water for over 90,000 people in Charlotte, DeSoto and Sarasota counties. With the effects of reduced rainfall, combined with mining, agriculture and municipal water uses, freshwater flows have declined, threatening the ecology of the river system and Charlotte Harbor.



The Coastal & Heartland National Estuary Partnership (CHNEP) and its partners conduct water quality monitoring in this area, which is available on the CHNEP Water Atlas (www.chnep.wateratlas.usf.edu). This report describes waterbodies that are not currently meeting water quality standards pursuant to the Impaired Waters Rule (IWR 62-303 F.A.C.).

Land Use / Land Cover Categories as a Percentage of Basin Area



Source(s): Southwest Florida Water Management District

CHNEP WATER ATLAS

PEACE RIVER BASIN PAGE

Nutrients

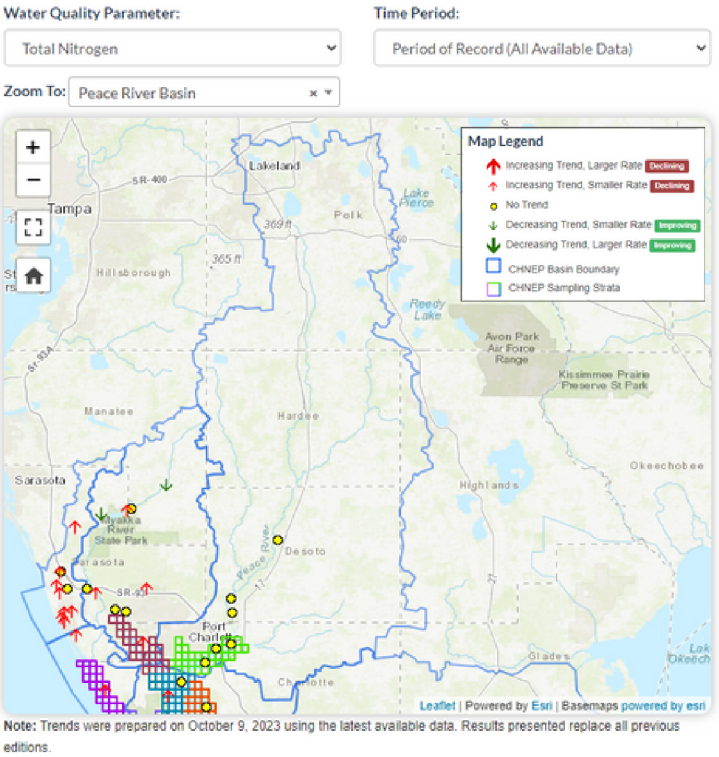
Nutrient pollution in waterbodies is one of the most widespread water quality problems, caused by excess nitrogen and phosphorus. Too much nitrogen and phosphorus in the water can cause algae to grow excessively, degrading aquatic habitat and decreasing the dissolved oxygen that fish and other aquatic life need to survive.

Below are some examples of sources of nutrients:

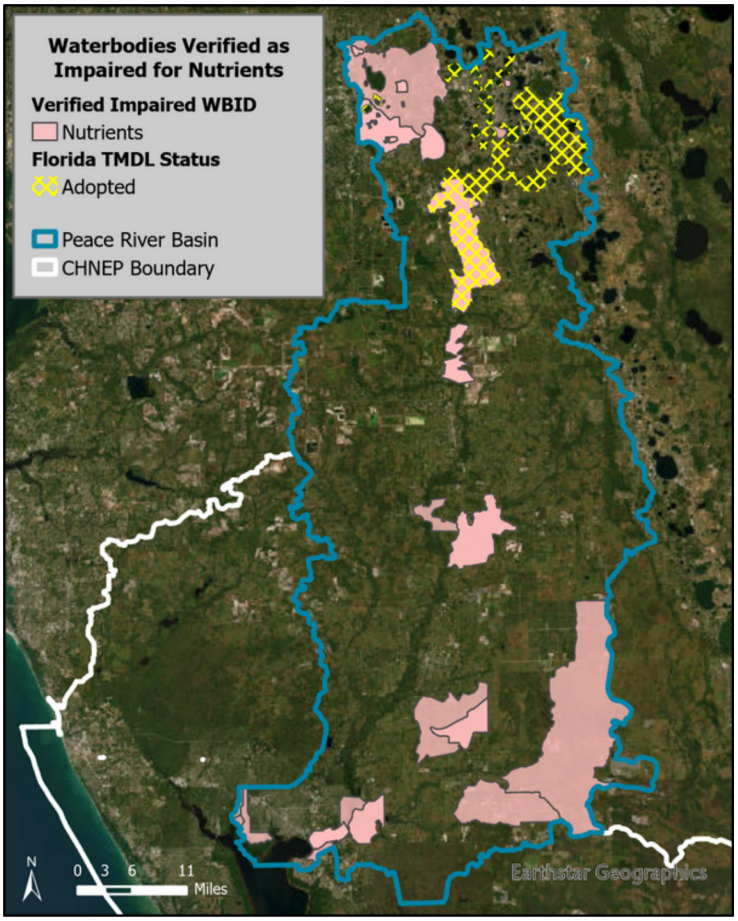
- Sewage treatment plants/domestic point sources
- Industrial/mining sources
- Atmospheric deposition of air pollutants
- Septic systems improperly placed or maintained
- Groundwater pollution
- Fertilizers in residential and agricultural runoff

The Florida Department of Environmental Protection (FDEP) uses water quality data that meets its quality control standards to identify waterbodies and water segments "WBIDs" that are not meeting the applicable water quality standards and designated uses based on the IWR 62-303 and 62-302, F.A.C. Once a WBID is verified impaired, it is to be placed on a schedule for TMDL development. TMDLs are waterbody-specific pollutant limits aimed at restoring attainment of water quality standards. The following WBIDs are currently not meeting water quality standards for nutrients:

- Banana Lake
- Banana Lake Canal
- Charlie Creek above Peace River
- Cow Slough
- Direct Runoff to Stream
- Engle Lake
- Flopbuck Creek
- Fort Meade Lakes
- Hawthorne Creek
- Hog Bay
- Huckaby Creek
- Lake Bentley
- Lake Crago
- Lake Deeson
- Lake Effie
- Lake Gibson
- Lake Hancock
- Lake Horney
- Lake Idyl
- Lake John
- Lake Lulu Run
- Lake Smart
- Lake Somerset
- Lake Stahl
- Little Banana Lake
- Manchester Way
- Middle Peace River Estuary (Middle Segment)
- Myrtle Slough
- Peace River above Bowlegs Creek
- Peace River above Oak Creek
- Peace River above Payne Creek
- Peace River Estuary (Upper Segment South)
- Saddle Creek
- Saddle Creek Lakes
- Shell Creek below Hendrickson Dam



Note: Trends were prepared on October 9, 2023 using the latest available data. Results presented replace all previous editions.



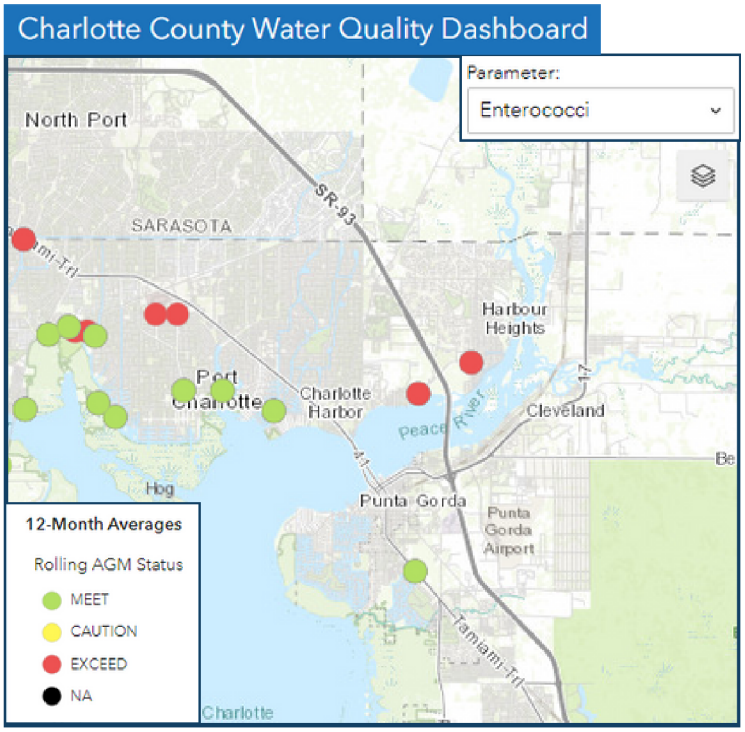
Top graphic shows Nitrogen trends for long-term monitoring stations. Map on the right, pink areas are verified impaired for nutrients and yellow striped areas designate areas under TMDL or TMDL development.

Bacteria

Bacteria in the water affect our ability to use the water for drinking, swimming, and shellfishing. The state water standards establish bacteria limits for different types of uses. The most stringent standards are for shellfishing areas, followed by drinking water and water used for recreation such as swimming and fishing.

Bacteria come from a variety of sources, but those of most human health concern come from fecal waste of animals and people. Sources of fecal bacteria include:

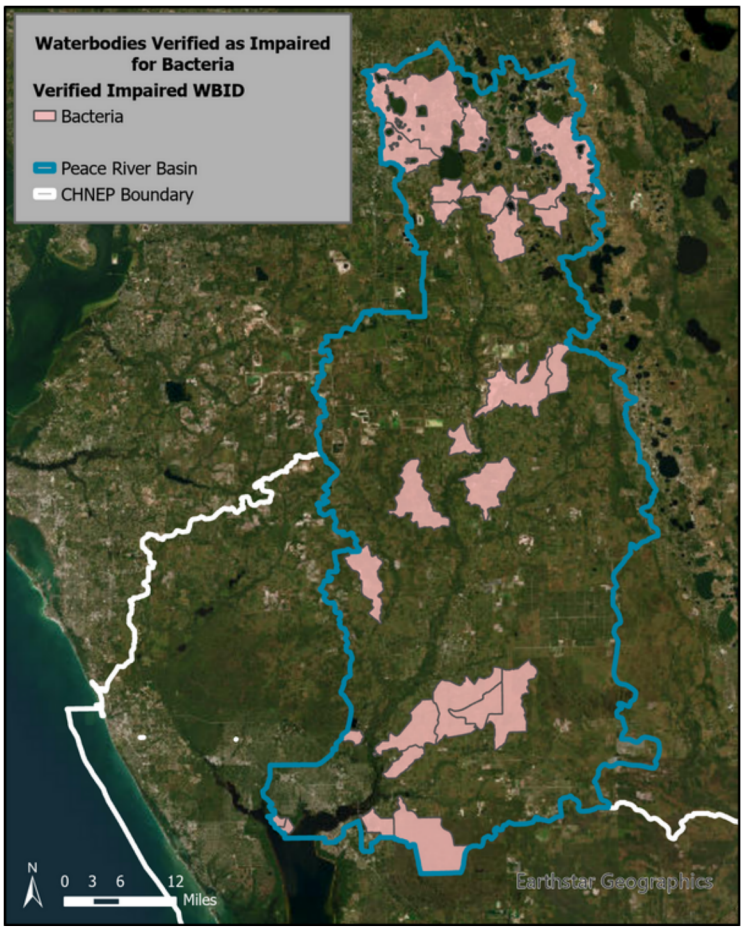
- Malfunctioning septic systems
- Leaking sanitary sewers
- Confined animal feedlots / overgrazing
- Wastewater plant overflows
- Urban pet waste
- Stormwater



The map above shows trends for Bacteria (Enterococci) at monitoring stations spread throughout the Peace River Basin.

Bacteria impairment is determined by FDEP using the same processes as nutrients. In addition, TMDLs are developed for impaired waters to identify the waterbody-specific pollutant target needed for attaining applicable water quality standards. The following WBIDs are currently not meeting water quality standards for bacteria:

- Alligator Branch
- Banana Lake Canal
- Bear Branch
- Boggy Branch
- Brandy Branch
- Charlie Creek above Old Town Creek
- Cleveland Cemetery Ditch
- Hawthorne Creek
- Hog Bay
- Lake Lena Run
- Lake Lulu Run
- Lee Branch
- Little Charlie Creek
- Myakka Cutoff (Western Portion)
- Myakka Cutoff (Eastern Portion)
- Myrtle Slough
- Oak Creek
- Peace Creek Drainage Canal
- Runoff to Peace River
- Saddle Creek
- Saddle Creek Below Lake Hancock
- Thompson Branch
- Thornton Branch
- West Wales Drainage Canal



Pink areas are verified impaired for bacteria on the map above.

Outstanding Florida Waters

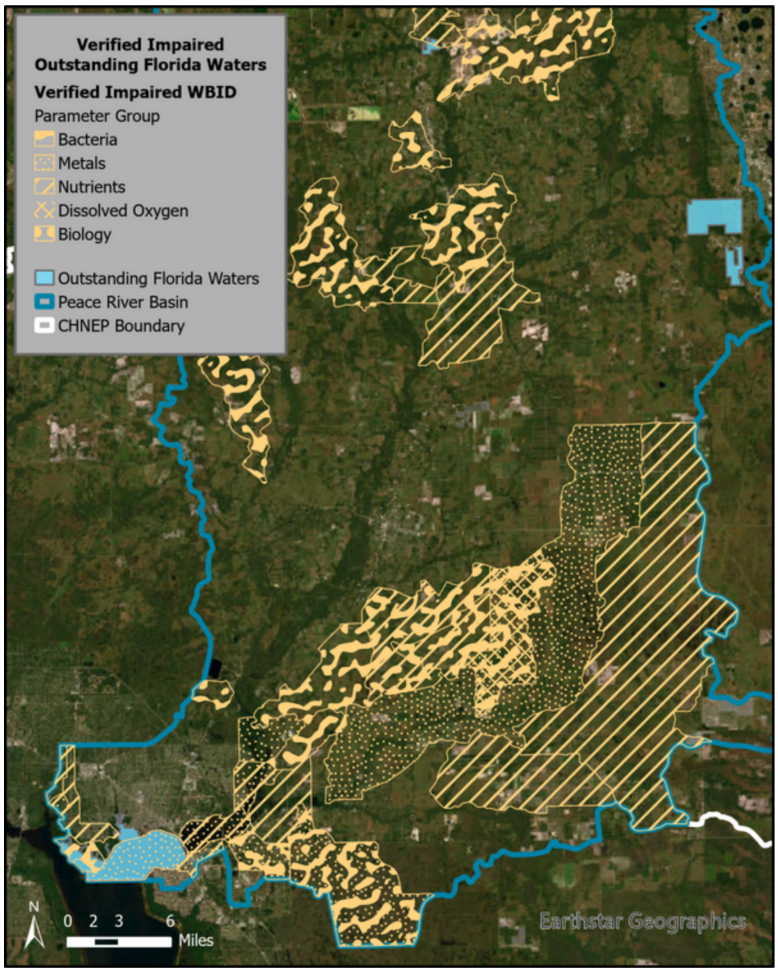
An Outstanding Florida Water (OFW) is a water designated worthy of special protection because of its natural attributes. This special designation is applied to certain waters and is intended to protect existing good water quality.

Most OFWs are areas managed by the state or federal government as parks, refuges, or preserves.

Generally, the waters within these managed areas are OFWs because the managing agency has requested this special protection. However, many of these OFWs are currently impaired (as indicated by light blue with peach fill pattern on the map to the right).

The following OFW is currently not meeting water quality standards:

- Gasparilla Sound-Charlotte Harbor Aquatic Preserve
- Payne Creek State Historic Site



WBID	Waterbody Name	Impairment(s)	Status	WBID	Waterbody Name	Impairment(s)	Status	WBID	Waterbody Name	Impairment(s)	Status
1871	Alligator Branch	Bacteria	Impaired	1549C	Lake Bentley	Nutrients	Impaired	1995	Myrtle Slough	Bacteria	Impaired
1871	**Alligator Branch**	**Dissolved Oxygen**	**Study List**	**1497D1**	**Lake Crago**	**Nutrients**	**Impaired**	**1995**	**Myrtle Slough**	**Metals**	**Impaired**
1549B	Banana Lake	Nutrients	Impaired	1449A	Lake Deeson	Nutrients	Impaired	1995	Myrtle Slough	Nutrients	Study List
1549B	**Banana Lake**	**Biology**	**Impaired**	**1617A**	**Lake Effie**	**Nutrients**	**Impaired**	**2040**	**Myrtle Slough**	**Nutrients**	**Impaired**
1549A	Banana Lake Canal	Nutrients	Impaired	1497D	Lake Gibson	Nutrients	Impaired	2040	Myrtle Slough	Biology	Study List
1549A	**Banana Lake Canal**	**Bacteria**	**Impaired**	**1623L**	**Lake Hancock**	**Nutrients**	**Impaired**	**1873**	**Oak Creek**	**Bacteria**	**Impaired**
1631	Bear Branch	Bacteria	Impaired	1623L	Lake Hancock	Biology	Study List	1539	Peace Creek Drainage Canal	Bacteria	Impaired
1622D	**Boggy Branch**	**Bacteria**	**Impaired**	**1623L**	**Lake Hancock**	**Dissolved Oxygen**	**Study List**	**1539**	**Peace Creek Drainage Canal**	**Biology**	**Study List**
1939	Brandy Branch	Bacteria	Impaired	1549D	Lake Horney	Nutrients	Impaired	1623J	Peace River above Bowlegs Creek	Nutrients	Impaired
1763D	**Charlie Creek above Old Town Creek**	**Bacteria**	**Impaired**	**1488R**	**Lake Idyl**	**Nutrients**	**Impaired**	**1623J**	**Peace River above Bowlegs Creek**	**Fish Tissue**	**TMDL Complete**
1763A	Charlie Creek above Peace River	Nutrients	Impaired	1549E	Lake John	Nutrients	Impaired	1623E	Peace River above Oak Creek	Nutrients	Impaired
1763B	**Charlie Creek above Oak Creek**	**Dissolved Oxygen**	**Study List**	**1501A**	**Lake Lena Run**	**Bacteria**	**Impaired**	**1623E**	**Peace River above Oak Creek**	**Fish Tissue**	**TMDL Complete**
2059	Cleveland Cemetery Ditch	Metals	Impaired	1501A	Lake Lena Run	Nutrients	Study List	1623H	Peace River above Payne Creek	Nutrients	Impaired
2059	**Cleveland Cemetery Ditch**	**Bacteria**	**Impaired**	**1521C**	**Lake Lulu Run**	**Nutrients**	**Impaired**	**1623H**	**Peace River above Payne Creek**	**Fish Tissue**	**TMDL Complete**
2059	Cleveland Cemetery Ditch	Dissolved Oxygen	Study List	1521C	Lake Lulu Run	Bacteria	Impaired	2056A	Peace River Estuary (Lower Segment	Metals	Impaired
2059	**Cleveland Cemetery Ditch**	**Fish Tissue**	**TMDL Complete**	**1521C**	**Lake Lulu Run**	**Dissolved Oxygen**	**Impaired**	**2056A**	**Peace River Estuary (Lower Segment**	**Fish Tissue**	**TMDL Complete**
1964	Cow Slough	Nutrients	Impaired	1488A	Lake Smart	Nutrients	Impaired	2056C1	Peace River Estuary (Upper Segment	Metals	Impaired
1964	**Cow Slough**	**Biology**	**Study List**	**1549F**	**Lake Somerset**	**Nutrients**	**Impaired**	**2056C1**	**Peace River Estuary (Upper Segment**	**Fish Tissue**	**TMDL Complete**
1964	Cow Slough	Dissolved Oxygen	Study List	1549B1	Lake Stahl	Biology	Impaired	2056C2	Peace River Estuary (Upper Segment	Metals	Impaired
2061	**Direct Runoff to Stream**	**Nutrients**	**Impaired**	**1549B1**	**Lake Stahl**	**Nutrients**	**Impaired**	**2056C2**	**Peace River Estuary (Upper Segment**	**Nutrients**	**Impaired**
2061	Direct Runoff to Stream	Fish Tissue	TMDL Complete	2035	Lee Branch	Bacteria	Impaired	2056C2	Peace River Estuary (Upper Segment	Fish Tissue	TMDL Complete
2061	**Direct Runoff to Stream**	**Metals**	**Impaired**	**1549B2**	**Little Banana Lake**	**Nutrients**	**Impaired**	**1962**	**Prairie Creek**	**Metals**	**Impaired**
1623T	Engle Lake	Nutrients	Impaired	1774	Little Charlie Creek	Bacteria	Impaired	2028	Runoff to Peace River	Bacteria	Impaired
2048C	**Flopbuck Creek**	**Metals**	**Impaired**	**2047**	**Manchester Way**	**Nutrients**	**Impaired**	**2028**	**Runoff to Peace River**	**Dissolved Oxygen**	**Study List**
2048C	Flopbuck Creek	Nutrients	Impaired	2047	Manchester Way	Fish Tissue	TMDL Complete	1497	Saddle Creek	Bacteria	Impaired
1623Z	**Fort Meade Lakes**	**Nutrients**	**Impaired**	**2056B**	**Middle Peace River Estuary (Middle Segment)**	**Nutrients**	**Impaired**	**1497**	**Saddle Creek**	**Nutrients**	**Impaired**
1997	Hawthorne Creek	Bacteria	Impaired	2056B	Middle Peace River Estuary (Middle Segment)	Metals	Impaired	1623K	Saddle Creek below Lake Hancock	Bacteria	Impaired
1997	**Hawthorne Creek**	**Nutrients**	**Impaired**	**2056B**	**Middle Peace River Estuary (Middle Segment)**	**Fish Tissue**	**TMDL Complete**	**1497J**	**Saddle Creek Lakes**	**Nutrients**	**Impaired**
1997	Hawthorne Creek	Biology	Study List	2060A2	Myakka Cutoff (Eastern Portion)	Bacteria	Impaired	2041A	Shell Creek below Hendrickson Dam	Nutrients	Impaired
1997	**Hawthorne Creek**	**Dissolved Oxygen**	**Study List**	**2060A2**	**Myakka Cutoff (Eastern Portion)**	**Fish Tissue**	**TMDL Complete**	**2041A**	**Shell Creek below Hendrickson Dam**	**Fish Tissue**	**TMDL Complete**
2001	Hog Bay	Nutrients	Impaired	2060A1	Myakka Cutoff (Western Portion)	Bacteria	Impaired	1844	Thompson Branch	Bacteria	Impaired
2001	**Hog Bay**	**Bacteria**	**Impaired**	**2060A1**	**Myakka Cutoff (Western Portion)**	**Fish Tissue**	**TMDL Complete**	**2008**	**Thornton Branch**	**Bacteria**	**Impaired**
2048B	Huckaby Creek	Nutrients	Impaired	2054	Myrtle Slough	Bacteria	Impaired	2008	Thornton Branch	Dissolved Oxygen	Study List
2048B	**Huckaby Creek**	**Dissolved Oxygen**	**Study List**	**2054**	**Myrtle Slough**	**Metals**	**Impaired**	**1626**	**West Wales Drainage Canal**	**Bacteria**	**Impaired**
2048B	Huckaby Creek	Fish Tissue	TMDL Complete	1995	Myrtle Slough	Dissolved Oxygen	Impaired	1626	West Wales Drainage Canal	Dissolved Oxygen	Delist (Study List)

Source(s): Florida Department of Environmental Protection

CONTACT INFORMATION

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Seagrass in Peace River Basin

FISH, WILDLIFE & HABITAT PROTECTION

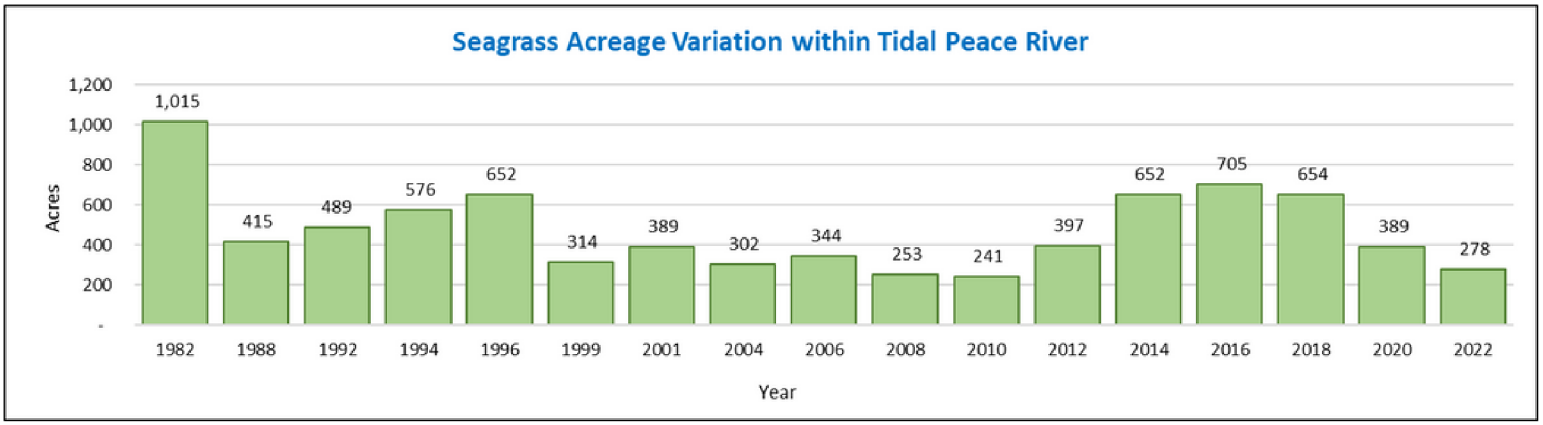
Seagrass Measures Water Quality & Improves Estuary Health

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

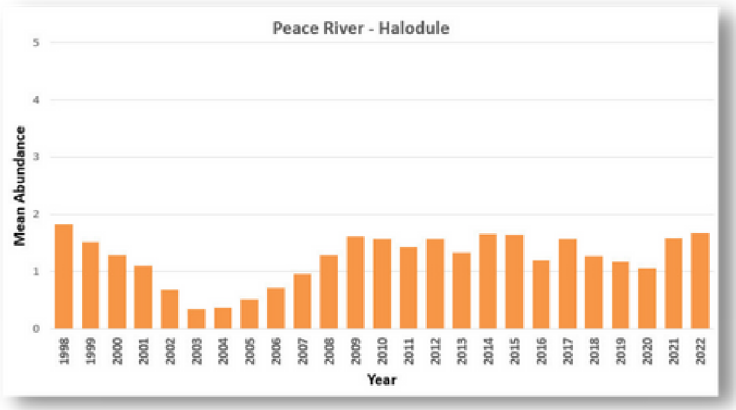
The graph below depicts results from seagrass mapping, done once every two years, in the tidal portion of the Peace River from 1982–2022. Seagrass acreage began to decline between 2016 and 2018 and demonstrated more losses from 2018 to 2022. Between 2018 and 2022, the Tidal Peace River lost 376 acres of seagrass, representing a 57% loss overall. The reason for this decline is complex and likely involves several factors. This includes impacts from recent 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.

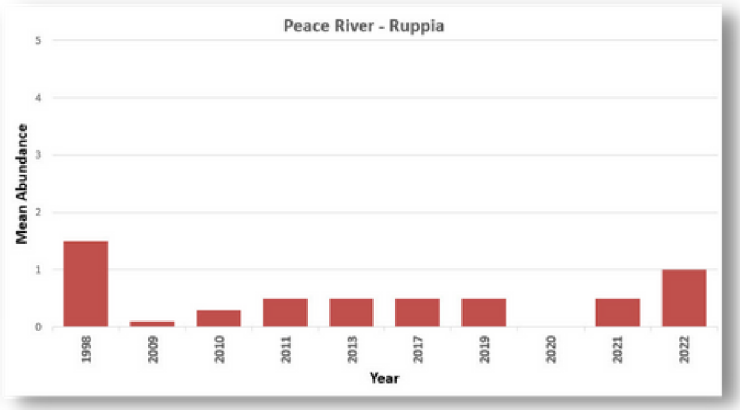


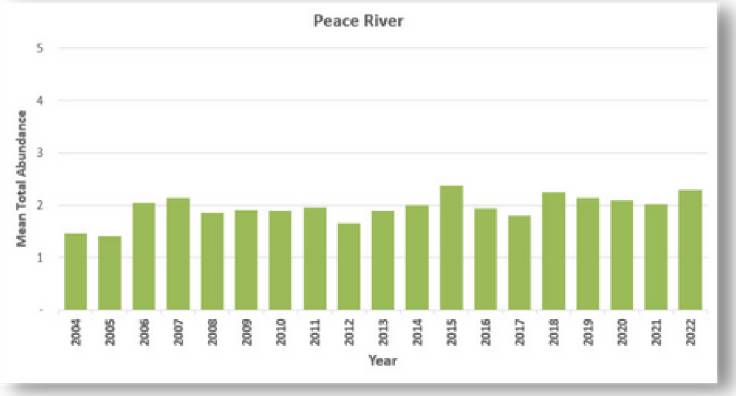
For more information, please visit the CHNEP Water Atlas at chnep.wateratlas.usf.edu.

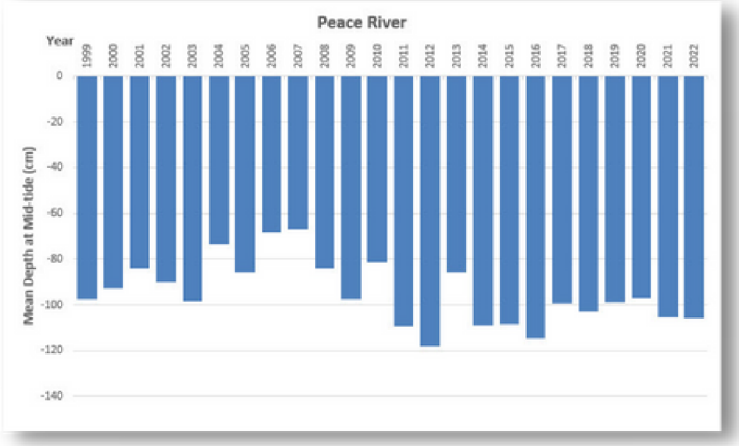
Seagrass Diversity and Health

The bar graphs here depict the changes in presence of different species of seagrass found at monitored locations in the region. In the Tidal Peace River, this includes Shoal grass (*Halodule wrightii*) and Widgeon grass (*Ruppia maritima*), which is found in areas that are less salty, for the years 1998–2021. Overall, seagrass experienced declines starting as far back as 2016, preceding the loss in seagrass acreage seen between 2018 and 2020. However, data collected in 2021 demonstrate modest gains (though not full recovery) in total seagrass abundance. Shoal grass has gained abundance overall since 2003, with declines in some years, and another recent gain in 2021. Widgeon grass was not found at monitoring sites in 2020, although reappeared in low abundance in 2021.









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