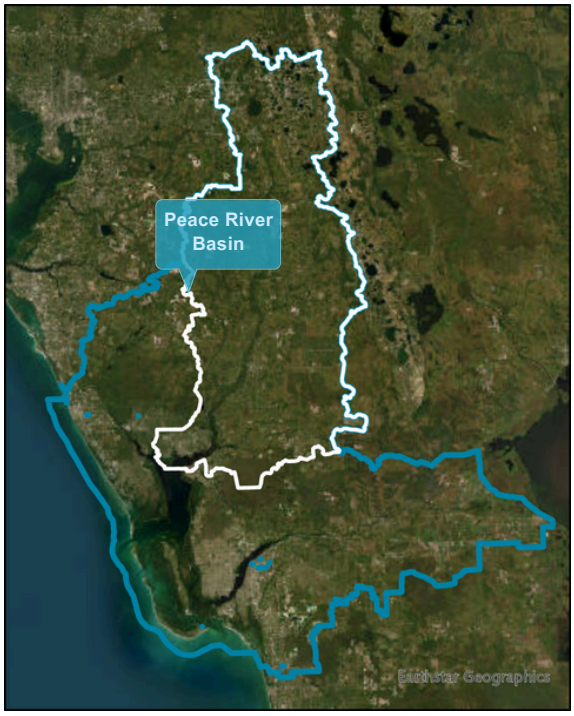
Peace River Basin Water Quality Status Report

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.

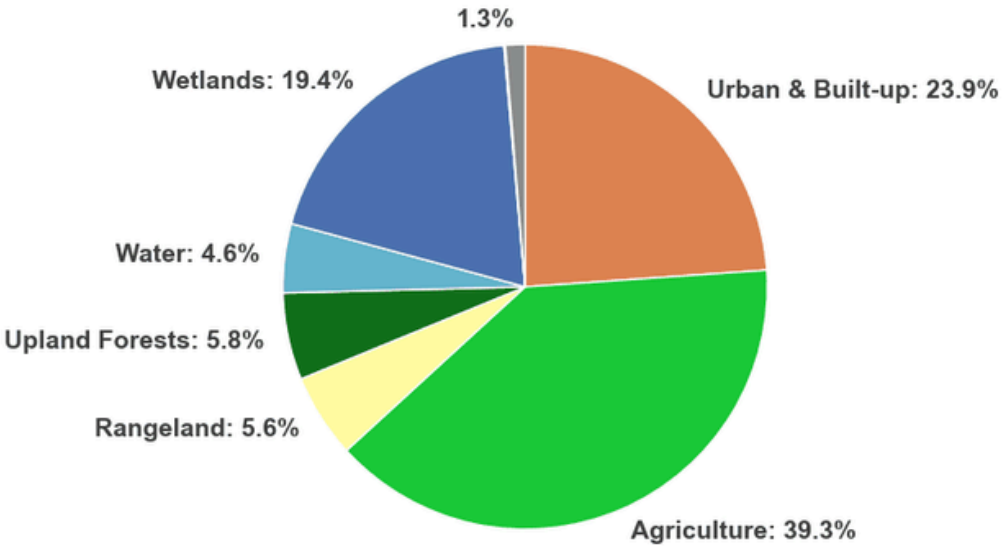
The Peace River is the largest freshwater contributor to Charlotte Harbor. It is also a source of drinking water for over 90,000 people in Charlotte, DeSoto and Sarasota counties. With the effects of reduced rainfall, combined with mining, agriculture and municipal water uses, freshwater flows have declined,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

Peace River Basin, 2020



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.

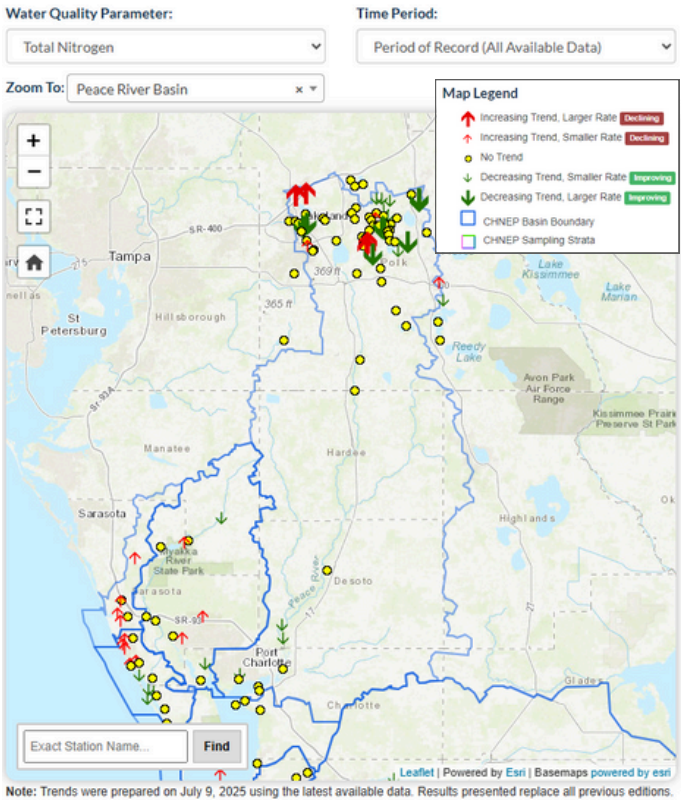
Below are some examples of sources of nutrients:

- 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

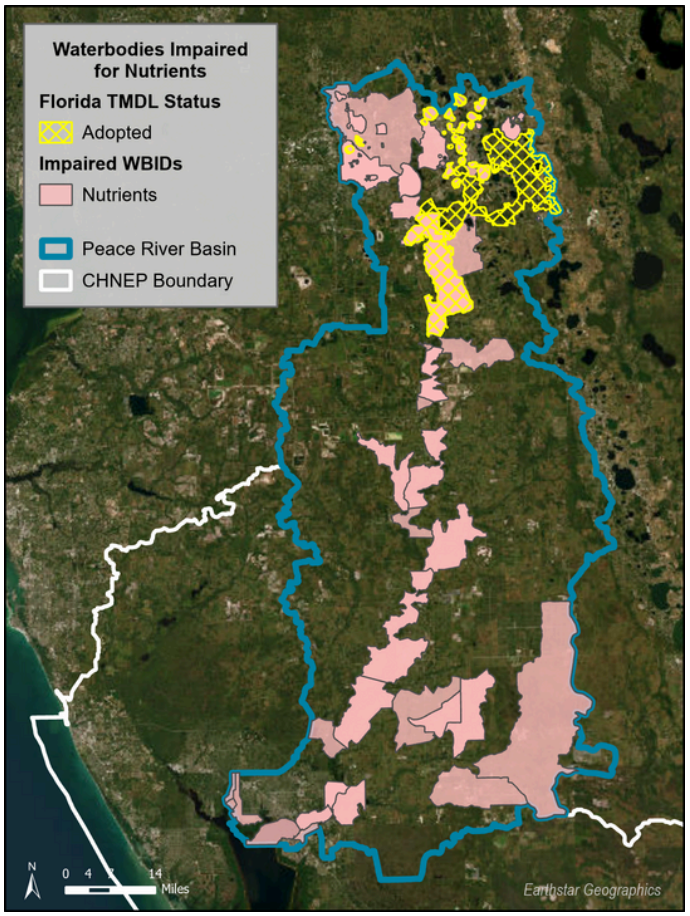
The Florida Department of Environmental Protection (FDEP) uses water quality data that meets its quality control standards to identify waterbodies and water segments "WBIDs" that are not meeting the applicable water quality standards and designated uses based on the IWR 62-303 and 62-302, F.A.C. Once 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 impaired for nutrients:

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



Note: Trends were prepared on July 9, 2025 using the latest available data. Results presented replace all previous editions.



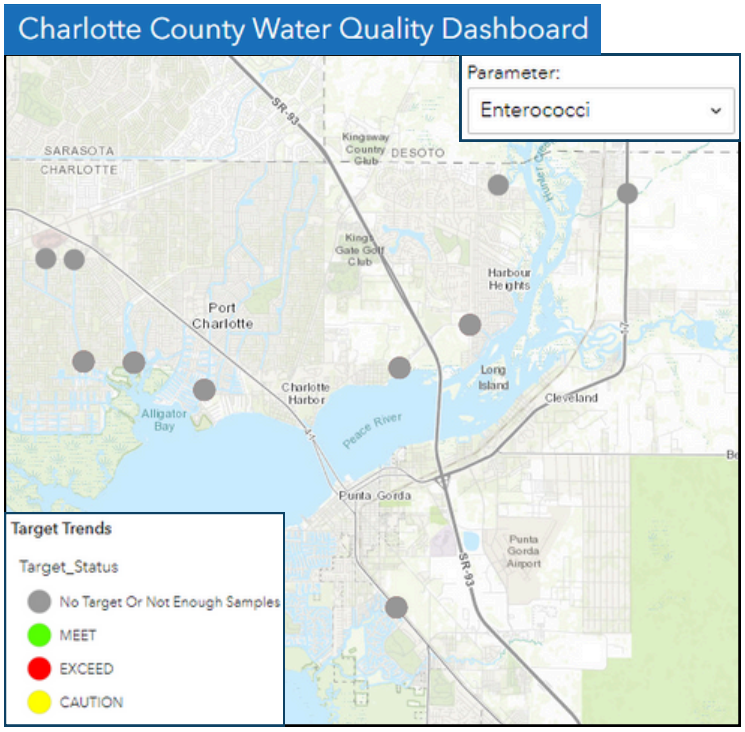
Top graphic shows Nitrogen trends for long-term monitoring stations. Map on the right, pink areas are verified impaired for nutrients and yellow striped areas designate areas under TMDL or TMDL development.

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:

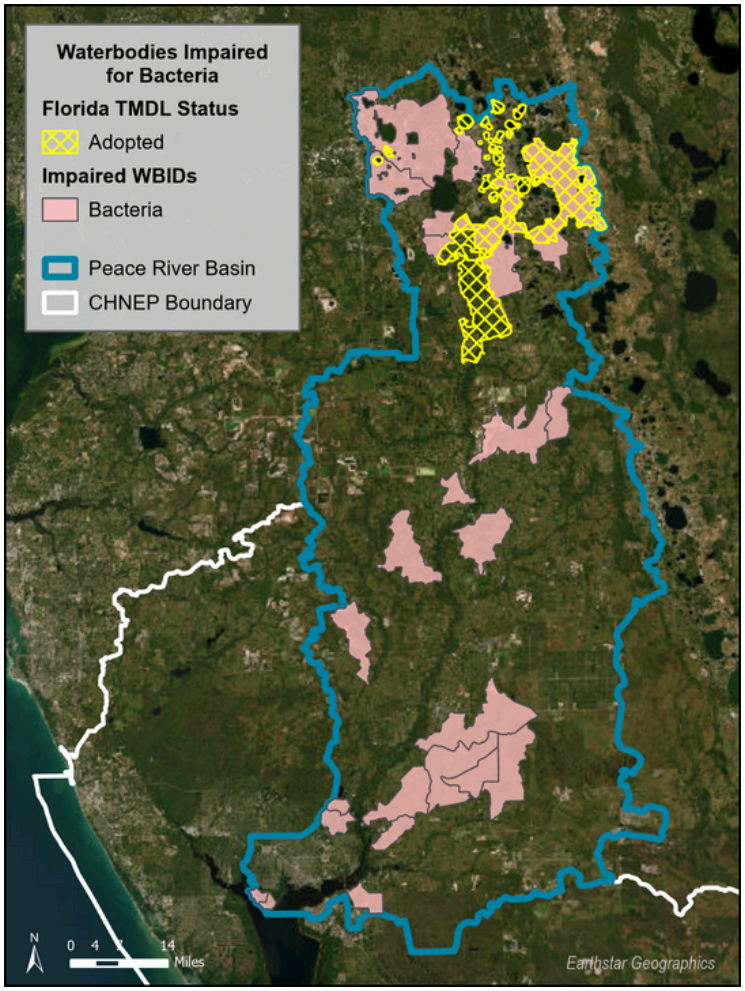
- Malfunctioning septic systems
- Leaking sanitary sewers
- Confined animal feedlots / overgrazing
- Wastewater plant overflows
- Urban pet waste
- Stormwater



The top map 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
- Joshua Creek above Peace River
- 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
- Bobcat Creek
- Wahneta Farms Drainage Canal



Pink areas are impaired for bacteria on the bottom map.

Outstanding Florida Waters

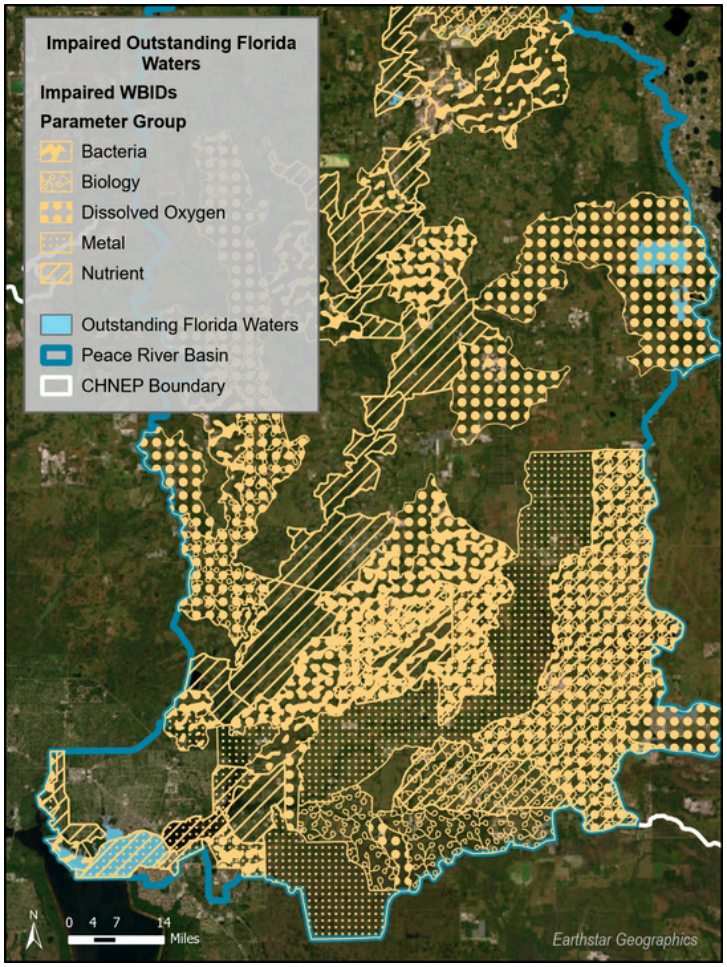
An Outstanding Florida Water (OFW) is a water designated worthy of special protection because of its natural attributes. This special designation is applied to certain waters and is intended to protect existing good water quality.

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
1449A	Lake Deeson	Nutrients (Chlorophyll-a)	Impaired	1549B1	Lake Stahl	Nutrients (Total Nitrogen)	Impaired	2033	Bobcat Creek	Escherichia coli	Impaired
1449A	Lake Deeson	Nutrients (Total Nitrogen)	Impaired	2059	Cleveland Cemetery Ditch	Enterococci	Impaired	1549B	Banana Lake	Nutrients (Total Nitrogen)	Impaired
2054	Myrtle Slough	Iron	Impaired	1549B1	Lake Stahl	Nutrients (Total Phosphorus)	Impaired	1623T	Engle Lake	Nutrients (Total Phosphorus)	Impaired
1449A	Lake Deeson	Nutrients (Total Phosphorus)	Impaired	1549B1	Lake Stahl	Nutrients (Chlorophyll-a)	Impaired	1623X	Reclaimed Mine Cut Lake	Nutrients (Total Nitrogen)	Impaired
1622D	Boggy Branch	Escherichia coli	Impaired	1549B2	Little Banana Lake	Nutrients (Chlorophyll-a)	Impaired	1623X	Reclaimed Mine Cut Lake	Nutrients (Chlorophyll-a)	Impaired
2035	Lee Branch	Escherichia coli	Impaired	1631	Bear Branch	Escherichia coli	Impaired	1623X	Reclaimed Mine Cut Lake	Nutrients (Total Phosphorus)	Impaired
1488R	Lake Idyl	Nutrients (Chlorophyll-a)	Impaired	1549B2	Little Banana Lake	Nutrients (Total Phosphorus)	Impaired	2001	Hog Bay	Escherichia coli	Impaired
1488R	Lake Idyl	Nutrients (Total Nitrogen)	Impaired	1549B2	Little Banana Lake	Nutrients (Total Nitrogen)	Impaired	2028	Runoff to Peace River	Escherichia coli	Impaired
1488R	Lake Idyl	Nutrients (Total Phosphorus)	Impaired	1549C	Lake Bentley	Nutrients (Chlorophyll-a)	Impaired	1623Z	Fort Meade Lakes	Nutrients (Chlorophyll-a)	Impaired
1950A	Joshua Creek above Peace River	Escherichia coli	Impaired	1549D	Lake Horney	Nutrients (Chlorophyll-a)	Impaired	1623Z	Fort Meade Lakes	Nutrients (Total Nitrogen)	Impaired
1497	Saddle Creek	Nutrients (Macrophytes)	Impaired	1549D	Lake Horney	Nutrients (Total Phosphorus)	Impaired	1623Z	Fort Meade Lakes	Nutrients (Total Phosphorus)	Impaired
1549B1	Lake Stahl	Biology	Impaired	1549D	Lake Horney	Nutrients (Total Nitrogen)	Impaired	2056C2	Peace River Estuary(Upper Segment South)	Iron	Impaired
1871	Alligator Branch	Fecal Coliform	Impaired	1549E	Lake John	Nutrients (Total Phosphorus)	Impaired	1763A	Charlie Creek above Peace River	Nutrients (Macrophytes)	Impaired
1521C	Lake Lulu Run	Dissolved Oxygen (Percent Saturation)	Impaired	1549E	Lake John	Nutrients (Chlorophyll-a)	Impaired	2060A1	Myakka Cutoff (Western Portion)	Fecal Coliform (SEAS Classification)	Impaired
2048C	Flopbuck Creek	Iron	Impaired	1549E	Lake John	Nutrients (Total Nitrogen)	Impaired	1763A	Charlie Creek above Peace River	Nutrients (Total Phosphorus)	Impaired
1497D1	Lake Crago	Nutrients (Total Phosphorus)	Impaired	1549F	Lake Somerset	Nutrients (Total Phosphorus)	Impaired	1497	Saddle Creek	Fecal Coliform	Impaired
1497D1	Lake Crago	Nutrients (Total Nitrogen)	Impaired	2056A	Peace River Estuary (Lower Segment)	Iron	Impaired	1964	Cow Slough	Nutrients (Macrophytes)	Impaired
1497D1	Lake Crago	Nutrients (Chlorophyll-a)	Impaired	1580	Wahneta Farms Drainage Canal	Escherichia coli	Impaired	1995	Myrtle Slough	Dissolved Oxygen (Percent Saturation)	Impaired
1995	Myrtle Slough	Dissolved Oxygen (Percent Saturation)	Impaired	1549F	Lake Somerset	Nutrients (Total Nitrogen)	Impaired	1549B	Banana Lake	Biology	Impaired
1995	Myrtle Slough	Escherichia coli	Impaired	2033	Bobcat Creek	Iron	Impaired	2056C1	Peace River Estuary (Upper Segment North)	Iron	Impaired
1497J	Saddle Creek Lakes	Nutrients (Total Nitrogen)	Impaired	1549F	Lake Somerset	Nutrients (Chlorophyll-a)	Impaired	1997	Hawthorne Creek	Nutrients (Macrophytes)	Impaired
1497J	Saddle Creek Lakes	Nutrients (Chlorophyll-a)	Impaired	1844	Thompson Branch	Fecal Coliform	Impaired	1501A	Lake Lena Run	Escherichia coli	Impaired
1497J	Saddle Creek Lakes	Nutrients (Total Phosphorus)	Impaired	1617A	Lake Effie	Nutrients (Total Phosphorus)	Impaired	2001	Hog Bay	Nutrients (Macrophytes)	Impaired
2056B	Middle Peace River Estuary (Middle Segment)	Iron	Impaired	1617A	Lake Effie	Nutrients (Chlorophyll-a)	Impaired	2001	Hog Bay	Nutrients (Total Nitrogen)	Impaired
1501V	Spirit Lake	Nutrients (Total Nitrogen)	Impaired	1617A	Lake Effie	Nutrients (Total Nitrogen)	Impaired	2040	Myrtle Slough	Nutrients (Macrophytes)	Impaired
1501X	Lake Thomas	Nutrients (Chlorophyll-a)	Impaired	2059	Cleveland Cemetery Ditch	Iron	Impaired	2041A	Shell Creek below Hendrickson Dam	Nutrients (Total Phosphorus)	Impaired
1962	Prairie Creek	Iron	Impaired	2008	Thornton Branch	Fecal Coliform	Impaired	2041A	Shell Creek below Hendrickson Dam	Nutrients (Total Nitrogen)	Impaired
1501X	Lake Thomas	Nutrients (Total Nitrogen)	Impaired	1774	Little Charlie Creek	Fecal Coliform	Impaired	2047	Manchester Way	Nutrients (Chlorophyll-a)	Impaired
1521C	Lake Lulu Run	Nutrients (Chlorophyll-a)	Impaired	1623K	Saddle Creek below Lake Hancock	Fecal Coliform	Impaired	2048B	Huckaby Creek	Nutrients (Chlorophyll-a)	Impaired
1549A	Banana Lake Canal	Fecal Coliform	Impaired	1623E	Peace River above Oak Creek	Nutrients (Macrophytes)	Impaired	1626	West Wales Drainage Canal	Fecal Coliform	Impaired
1939	Brandy Branch	Escherichia coli	Impaired	1623L	Lake Hancock	Biology	Impaired	2048C	Flopbuck Creek	Nutrients (Chlorophyll-a)	Impaired
1997	Hawthorne Creek	Escherichia coli	Impaired	1623J	Peace River above Bowlegs Creek	Nutrients (Total Nitrogen)	Impaired	2056A	Peace River Estuary (Lower Segment)	Nutrients (Total Nitrogen)	Impaired
1521C	Lake Lulu Run	Fecal Coliform	Impaired	1623J	Peace River above Bowlegs Creek	Nutrients (Total Phosphorus)	Impaired	2056B	Middle Peace River Estuary (Middle Segment)	Nutrients (Chlorophyll-a)	Impaired
1539H	Lake Venus	Nutrients (Total Nitrogen)	Impaired	1623J	Peace River above Bowlegs Creek	Nutrients (Macrophytes)	Impaired	2056B	Middle Peace River Estuary (Middle Segment)	Nutrients (Total Nitrogen)	Impaired
1549A	Banana Lake Canal	Nutrients (Total Nitrogen)	Impaired	1617A	Lake Effie	Biology	Impaired	1873	Oak Creek	Fecal Coliform	Impaired
1549A	Banana Lake Canal	Nutrients (Total Phosphorus)	Impaired	1623L	Lake Hancock	Nutrients (Total Phosphorus)	Impaired	2056C2	Peace River Estuary(Upper Segment South)	Nutrients (Chlorophyll-a)	Impaired
1995	Myrtle Slough	Iron	Impaired	1623L	Lake Hancock	Nutrients (Chlorophyll-a)	Impaired	2056C2	Peace River Estuary(Upper Segment South)	Nutrients (Total Nitrogen)	Impaired
1549A	Banana Lake Canal	Nutrients (Chlorophyll-a)	Impaired	1623L	Lake Hancock	Nutrients (Total Nitrogen)	Impaired	2060A2	Myakka Cutoff (Eastern Portion)	Fecal Coliform (SEAS Classification)	Impaired
2061	Direct Runoff to Stream	Iron	Impaired	1763D	Charlie Creek above Old Town Creek	Fecal Coliform	Impaired	2056C2	Peace River Estuary(Upper Segment South)	Nutrients (Total Phosphorus)	Impaired
1549B	Banana Lake	Nutrients (Chlorophyll-a)	Impaired	1623T	Engle Lake	Nutrients (Total Nitrogen)	Impaired	1539	Peace Creek Drainage Canal	Escherichia coli	Impaired
1549B	Banana Lake	Nutrients (Total Phosphorus)	Impaired	1623T	Engle Lake	Nutrients (Chlorophyll-a)	Impaired	2061	Direct Runoff to Stream	Nutrients (Chlorophyll-a)	Impaired

Source(s): Florida Department of Environmental Protection

CONTACT INFORMATION

1050 Loveland Blvd, Unit D, Port Charlotte, FL 33980
(941) 833-6580
CHNEP.org

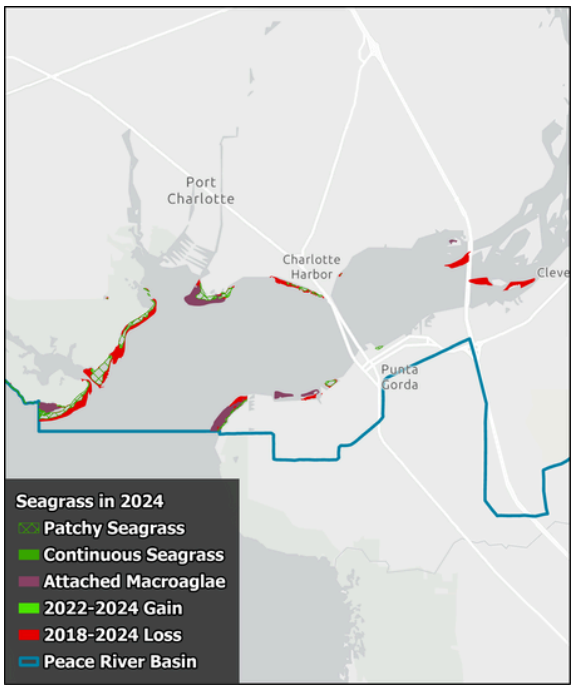
Seagrass in Peace River Basin

FISH, WILDLIFE & HABITAT PROTECTION

Seagrass Measures Water Quality & Improves Estuary Health

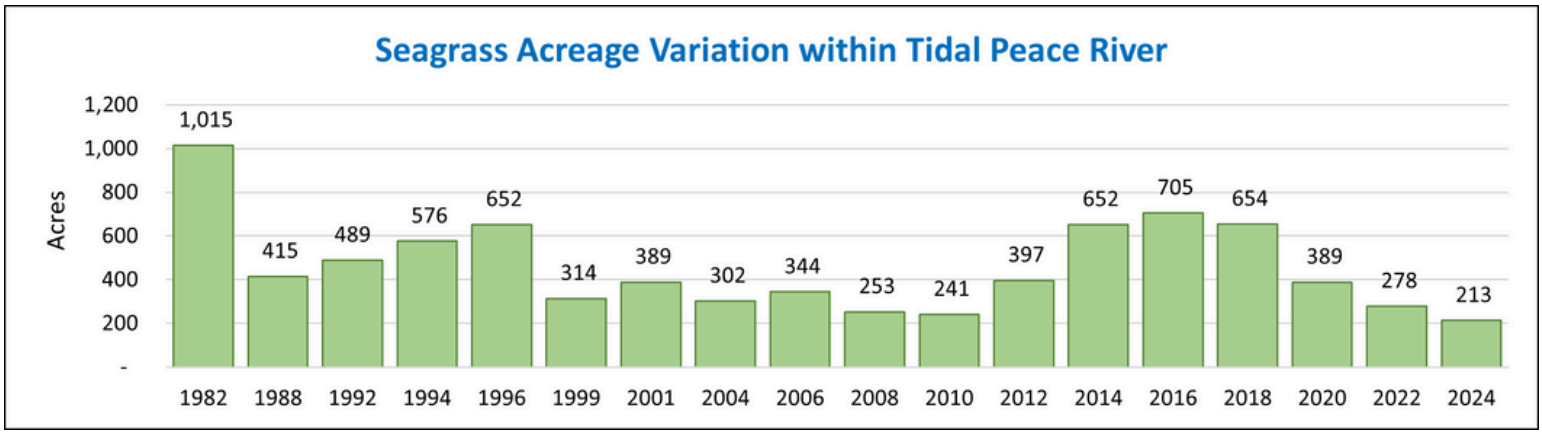
Seagrass beds provide many benefits. It is nursery habitat for fish and shellfish and it contributes to better water quality by trapping sediments, storing carbon, and filtering nutrients from stormwater runoff. Seagrass requires clean water and ample sunlight to grow, and therefore it is used by agencies 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

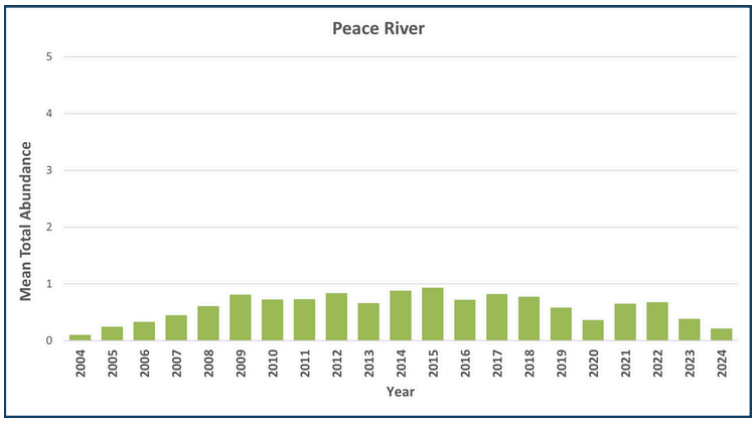
The graph below depicts results from seagrass mapping, done once every two years, in the tidal portion of the Peace River from 1982–2024. Seagrass acreage began to decline between 2016 and 2018 and demonstrated more losses from 2018 to 2024. Between 2018 and 2024, the Tidal Peace River lost 441 acres of seagrass, representing a 67% loss overall. The reason for this decline is complex and likely involves several factors. This includes impacts from recent storm events such as Hurricanes Irma and Ian, 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.

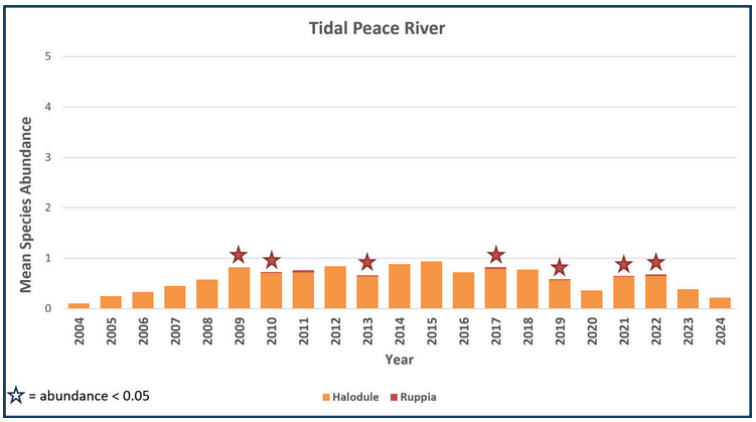


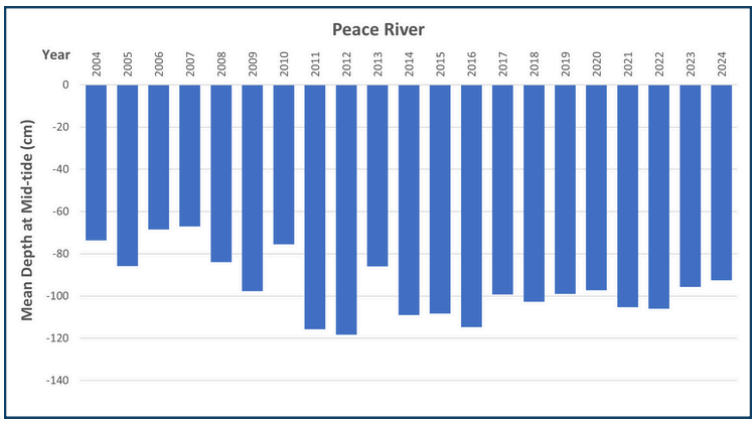
For more information, please visit the CHNEP Water Atlas at chnep.wateratlas.usf.edu.

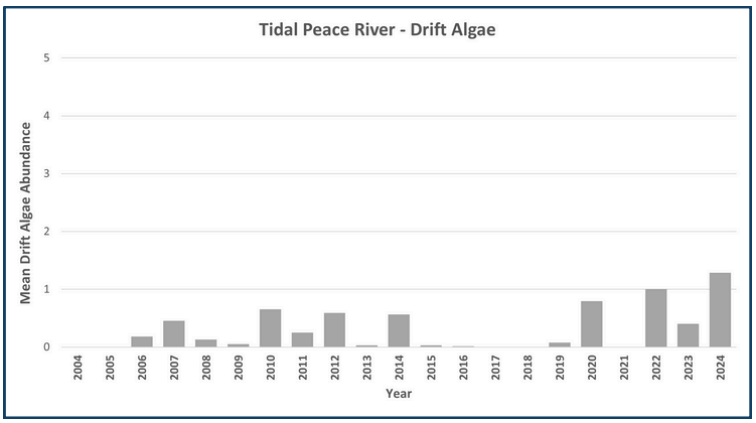
Seagrass Diversity and Health

The bar graphs here depict the changes in presence of different species of seagrass found at monitored locations in the region (measured on a scale of 0-5 using the Braun-Blanquet method). In the Tidal Peace River, this includes Shoal grass (*Halodule wrightii*) as well as Widgeon grass (*Ruppia maritima*) in areas that are less salty for the years 2004–2024. Overall, seagrass experienced declines starting as far back as 2016, preceding the loss in seagrass acreage seen between 2018 and 2020. Data collected in 2021 and 2022 showed modest gains (though not full recovery) in total seagrass abundance, however data collected in 2023 and 2024 demonstrated significant declines.









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