Dona & Roberts Bays Basin Water Quality Status Report

WATER QUALITY IMPROVEMENT

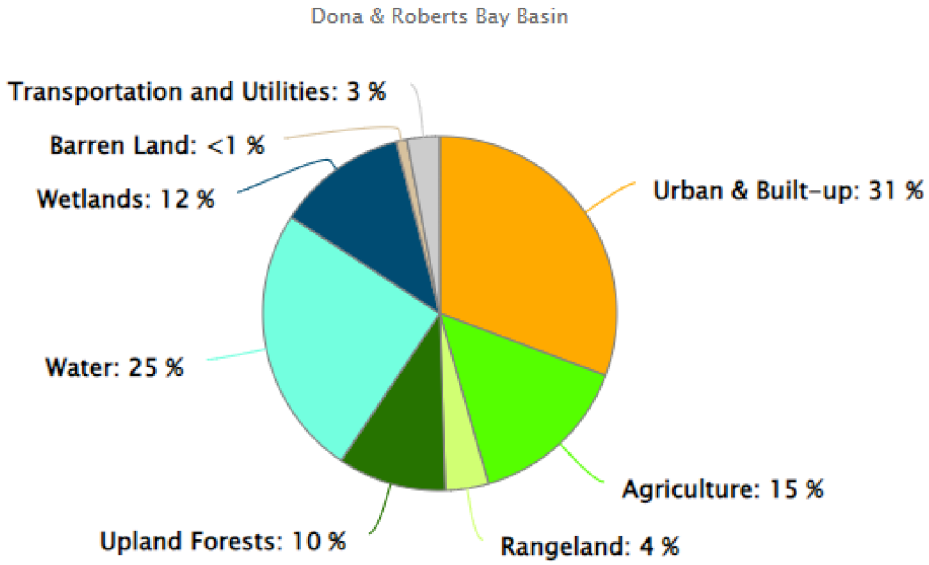
Summary

Dona and Roberts Bays are surrounded by beaches, barrier islands, and mangroves. The basin spans 145.6 square miles. The barrier islands separate the intracoastal waterway running from Venice Inlet through Lemon Bay from the open waters of the Gulf of Mexico and Charlotte Harbor. This part of the CHNEP area has some important resource management challenges including:

- Alteration of historic basin boundaries and resulting freshwater flows to estuaries.
- Effect of boat traffic and dredging on the Intracoastal Waterway and other channels.
- Loss of mangrove areas and seagrass.
- Large areas of undeveloped platted lots.
- Water quality effects of septic systems and stormwater runoff from development.
- Nuisance exotic vegetation.

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

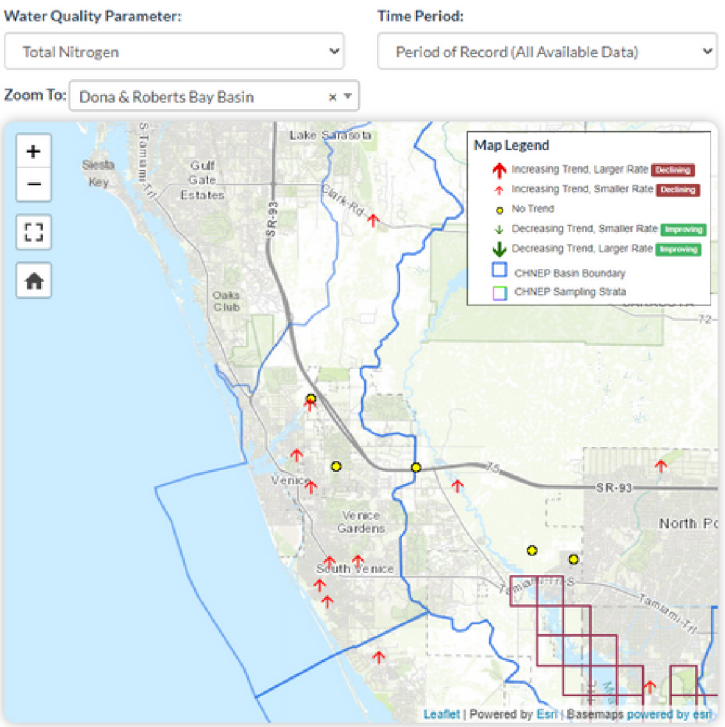
DONA & ROBERTS BAYS BASIN PAGE

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
- Atmospheric deposition of air pollutants
- Septic systems improperly placed or not properly functioning
- Groundwater pollution
- Fertilizers in residential and agricultural runoff



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

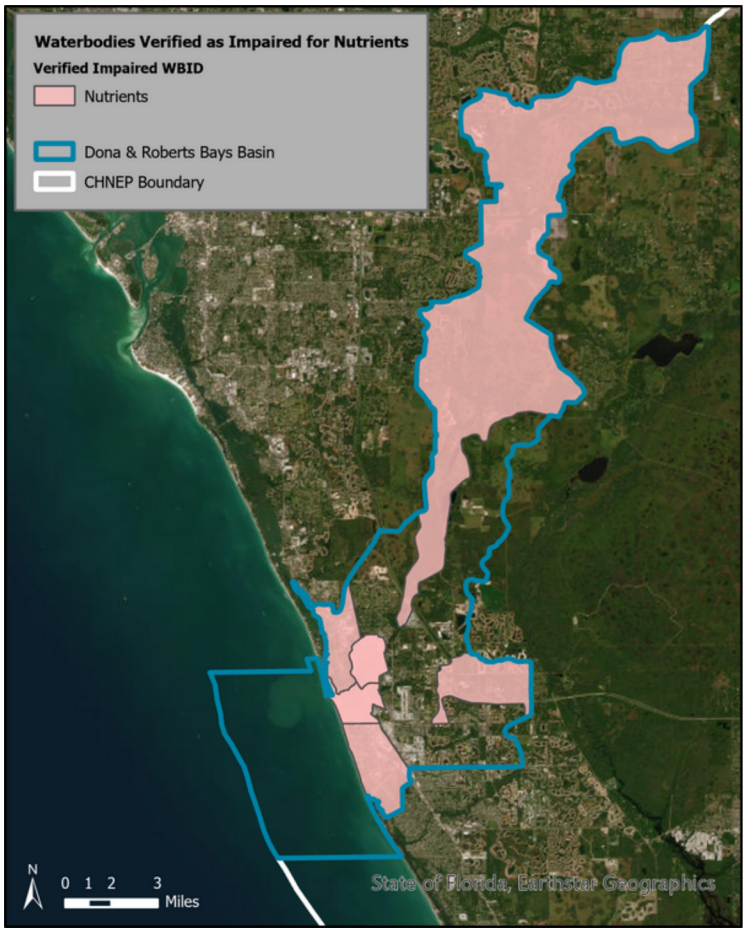
The graphic above shows the trend for Total Nitrogen at the long-term monitoring stations in the Basin.

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:

- Cow Pen Slough
- Curry Creek (Freshwater Portion)
- Dona Bay
- ICWW (Sarasota County Near Venice)
- Lyons Bay Canals
- Roberts Bay

Pink areas are verified impaired for nutrients on the map to the right. No TMDL development has yet occurred at the state level for nutrients within the Dona & Roberts Bays Basin.

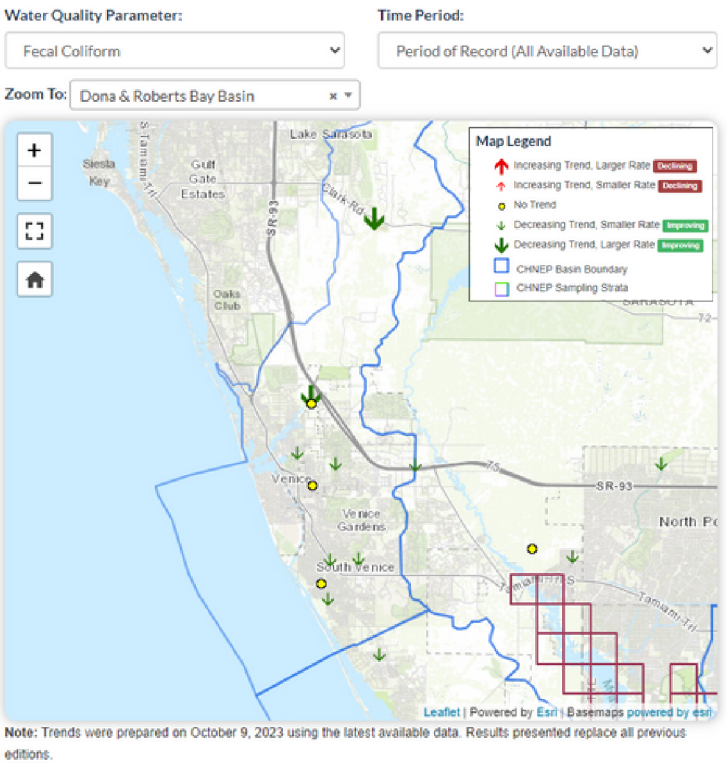


Bacteria

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



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

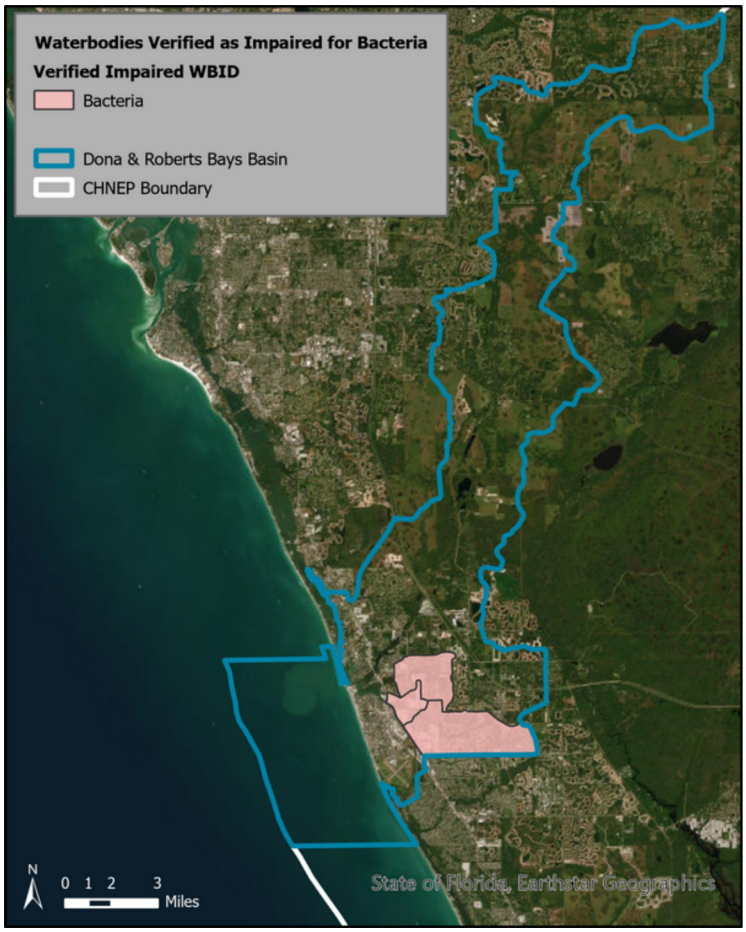
The map above shows the trend for Bacteria (Fecal Coliform) at the long-term monitoring stations spread throughout Dona & Roberts Bay Basin.

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:

- Curry Creek (Tidal Portion)
- Hatchett Creek
- Hatchett Creek (Tidal)

Pink areas are verified impaired for bacteria on the map to the right. No TMDL development has yet occurred at the state level for bacteria within the Dona & Roberts Bays Basin.



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, including wildlife refuges, preserves, marine sanctuaries, estuarine research reserves, certain waters within state or national forests, scenic and wild rivers, or aquatic preserves.

Generally, the waters within these managed areas are OFWs because the managing agency has requested this special protection.

However, some of these OFWs are now impaired *(as indicated by light blue with peach fill pattern on the map)*. The following OFWs are currently not meeting water quality standards:

- Sarasota Bay Estuarine System

WBID	Waterbody Name	Impairment(s)	Status
1924	Cow Pen Slough	Dissolved Oxygen (Percent Saturation)	Study List
1924	Cow Pen Slough	Nutrients (Macrophytes)	Impaired
2009C	Curry Creek (Freshwater Portion)	Nutrients (Macrophytes)	Impaired
2002	Dona Bay	Mercury (in fish tissue)	TMDL Complete
2002	Dona Bay	Nutrients (Chlorophyll-a)	Impaired
2002	Dona Bay	Nutrients (Total Nitrogen)	Impaired
2018B	ICWW (Sarasota County Near Venice)	Mercury (in fish tissue)	TMDL Complete
2018B	ICWW (Sarasota County Near Venice)	Nutrients (Chlorophyll-a)	Impaired
2002A	Lyons Bay Canals	Mercury (in fish tissue)	TMDL Complete
2002A	Lyons Bay Canals	Nutrients (Chlorophyll-a)	Impaired
2018A	Roberts Bay	Mercury (in fish tissue)	TMDL Complete
2018A	Roberts Bay	Nutrients (Chlorophyll-a)	Impaired
2018A	Roberts Bay	Nutrients (Total Nitrogen)	Impaired

Source(s): Florida Department of Environmental Protection

CONTACT INFORMATION

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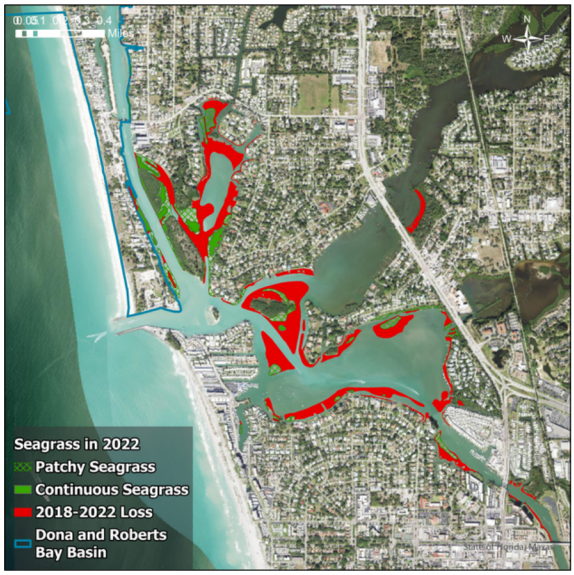
Seagrass in Dona & Roberts Bays Basin

FISH, WILDLIFE & HABITAT PROTECTION

Seagrass Measures Water Quality & Improves Estuary Health

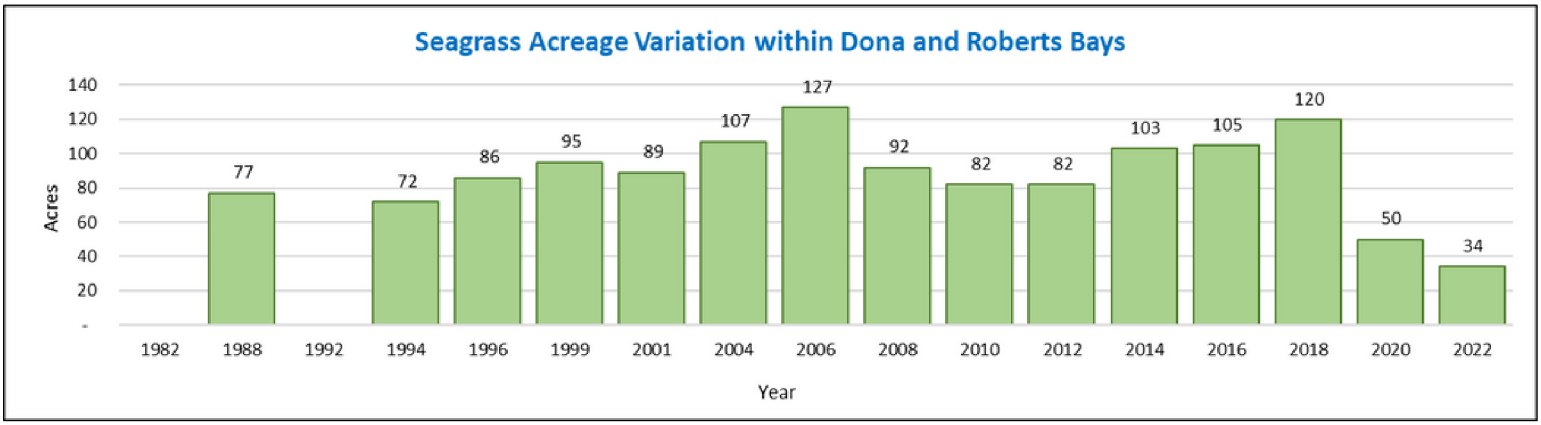
Seagrass beds provide many benefits. It is nursery habitat for fish and shellfish and it contributes to better water quality by trapping sediments, storing carbon, and filtering nutrients from stormwater runoff. Seagrass requires clean water and ample sunlight to grow, and therefore it is used by agencies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

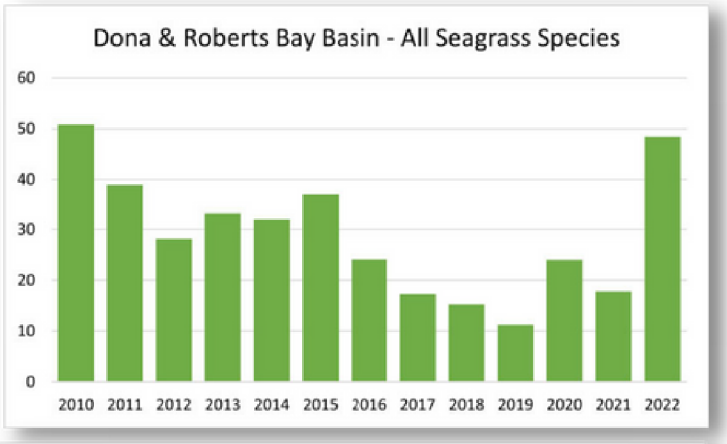
The graph below depicts results from seagrass mapping in Dona and Roberts Bays from 1988–2022. Seagrass acreage in the Dona and Roberts Bay basin had been steadily increasing since 2010. In 2018, seagrass reached 120 acres, passing the target 112 acres for Dona and Roberts Bay. However, between 2018 and 2022, 86 acres of seagrass were lost, representing a 72% loss of total acreage and reaching an all-time historic low. The cause of this decline is complex and involves several likely factors including increasing nutrient pollution loads, red tide, hurricanes, rainfall pattern and others. The CHNEP continues to work with our partners to investigate causes. Learn more about what the Partnership is doing protect and improve water quality in Dona & Roberts Bays (CHNEP.org).

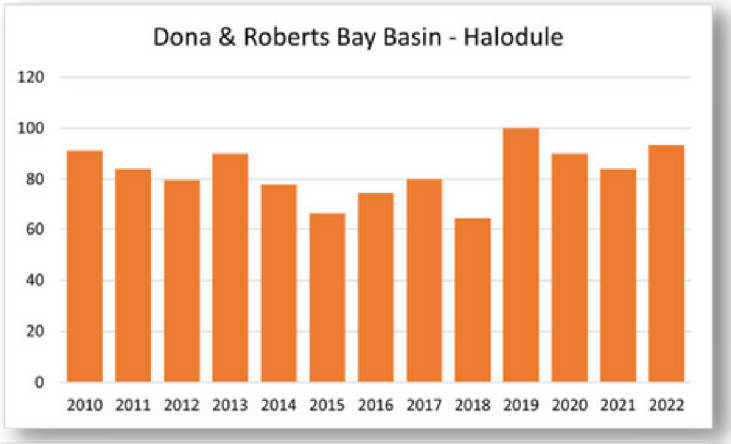


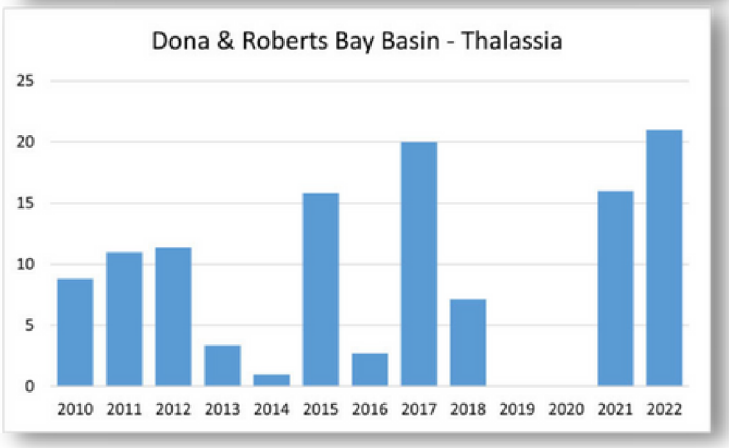
For more information, please visit the CHNEP Water Atlas at chnep.wateratlas.usf.edu.

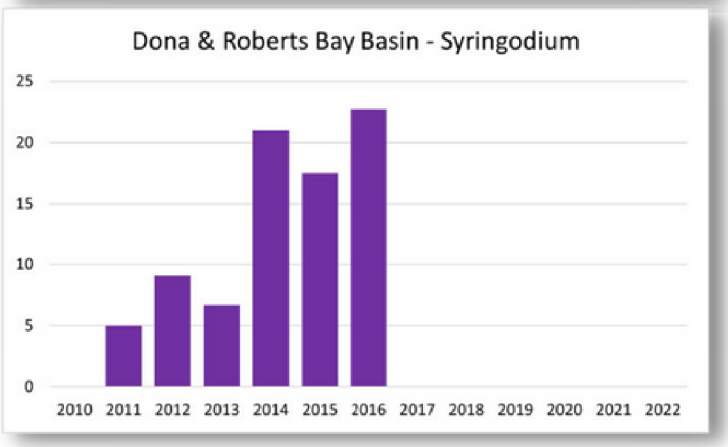
Seagrass Diversity and Health

The bar graphs below depict the changes in presence of different species of seagrass found at monitored locations in Dona & Roberts Bays. Persistent seagrass species include Shoal grass (*Halodule wrightii*), Turtle grass (*Thalassia testudinum*), and Manatee grass (*Syringodium filiforme*) for the years 2010–2021. The graphs demonstrate that overall seagrass abundance has continued to decline in recent years, although data collected in 2021 demonstrate large gains (though not full recovery) for Turtle grass throughout the region. The reason for this decline is complex and likely involves several factors. This includes impacts from recent storm events such as additional nutrient polluted runoff from land, Hurricane Irma, increased temperatures and rainfall, 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.









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