

WATER QUALITY REPORT CARD

St. Joseph Bay - 2024



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ABOUT

Several agencies monitor water quality in St. Joseph Bay for a variety of metrics that make up water quality (e.g., salinity, nutrients, fecal coliform). This report focuses on long-term trends in total nitrogen, total phosphorus, chlorophyll, and fecal coliform. The St. Andrew and St. Joseph Bays Estuary Program analyzed data from state partners to assess how water quality in St. Joseph Bay compares to Florida's environmental standards, especially regarding nutrients and bacteria that can affect ecosystem and human health.

BAY WIDE ANNUAL WATER QUALITY SCORES

| Metric | Year | | | | Overall Trend |
|--------------------------|------|------|------|------|---------------|
| Nitrogen (TN) | 2024 | 2023 | 2022 | 2021 | ↓ 😊 |
| Phosphorus (TP) | 2024 | 2023 | 2022 | 2021 | ↑↑ 😞 |
| Chlorophyll (CHL) | 2024 | 2023 | 2022 | 2021 | ↑ 😞 |
| Fecal Coliform (FC) | 2024 | 2023 | 2022 | 2021 | ↓ 😊 |
| Sanitary Sewer Overflows | 4 | 0 | 2 | 2 | |

Results based on FDEP water quality criteria rules 62-302.531, 62-302.532

LEGEND

■ **Poor - >59.9%**

Many stations don't meet criteria, take action

■ **Fair - 60-79.9%**

Some stations don't meet criteria, investigate causes

■ **Good - 80-100%**

Most stations meet criteria, continue monitoring



Significantly Declining



Declining



Increasing



Increasing Significantly

METRICS EVALUATED

Nutrients, like **Nitrogen** and **Phosphorus**, are essential for plant and animal growth but too much or too little can impact the balance of a system. **Chlorophyll** is responsible for photosynthesis and a measure of how much algae is present. **Fecal coliform** is a measure of potential contamination from pathogenic microorganisms that could impact human health.

POTENTIAL SOURCES



Sewage and Wastewater



Animal Waste



Incompatible Agricultural Practices



Fertilizer Overuse



Atmospheric Deposition



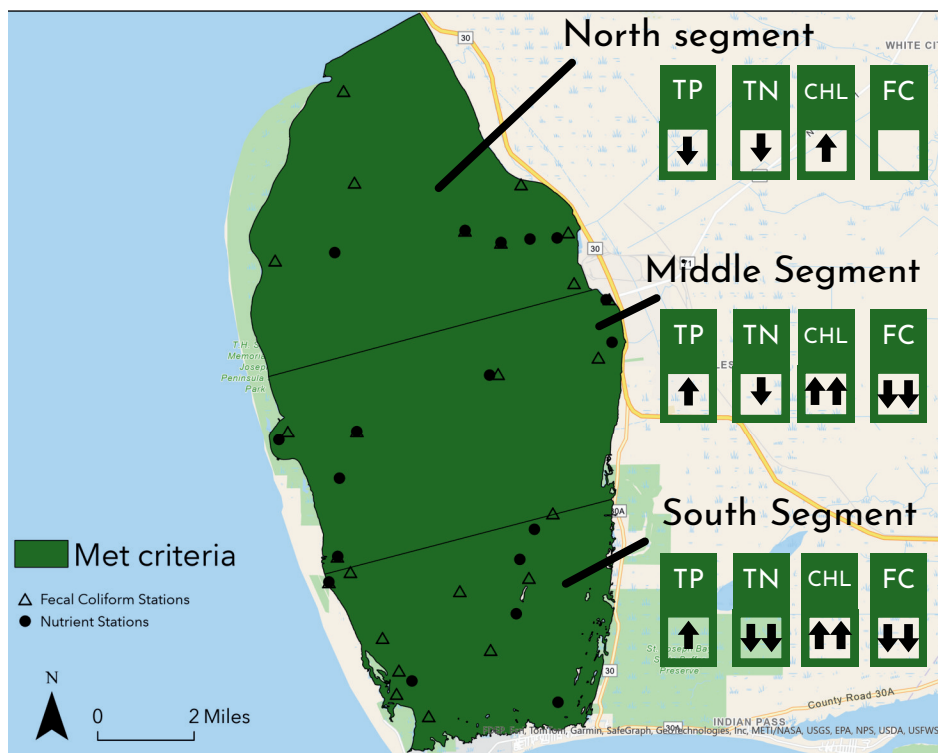
Stormwater

BAY SEGMENT TRENDS

The Florida Department of Agriculture (FDACS) monitors bacteria levels, while the Florida Department of Environmental Protection (FDEP) and other entities track nutrients and various water quality metrics at various sites in the Bay.

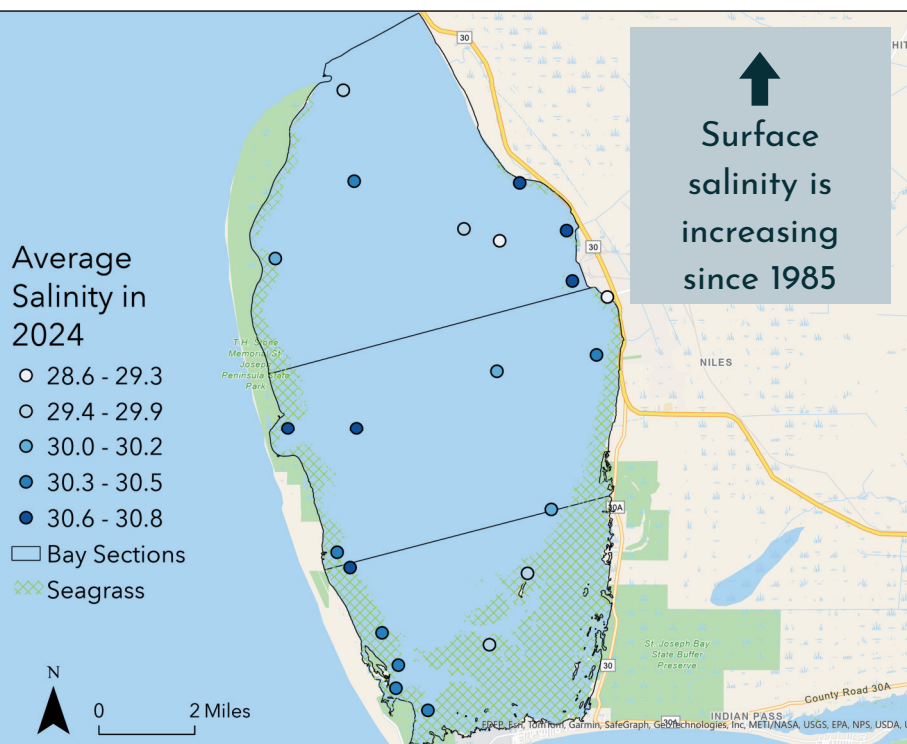
In 2024, no stations exceeded water quality standards for nutrients, chlorophyll, or fecal coliform. SASJBEP looked at long-term trends (since 2015) across the North, Middle, and South Bay segments.

Chlorophyll levels are rising in all three areas, which may suggest more algae. Nitrogen levels are decreasing across the Bay, a good sign for water quality. Phosphorus has increased in the Middle and South but declined in the North. In general, declining nutrient levels suggest improving conditions, while increases may raise concern.



Triangle symbols represent current FDACS stations monitored for FC and filled circles represent FDEP and other agency stations monitored for nutrients.

SALINITY



In 2024, surface salinity varied throughout the Bay and ranged from an average of 28 ppt to ~ 31 ppt. Salinity is important for species such as scallops which require salinities between 20-38 ppt to flourish.

All bay segments had an average salinity within this range (~30 ppt) in 2024 and overall, surface salinity has been increasing in the bay since 1985, when the mean salinity reported bay wide was ~ 20ppt (based on 23 FDACS stations).

Surface salinity varied throughout the bay, ranging from 28.6-30.8ppt and included stations from any agency that reported surface salinity.



