

Palma Sola Bay Condition Report for 2010

PASS Chl-a N P

3 out of 3 indicators were rated as PASS.

[Learn more about how this report is created](#)

Summary:

The overall health in Palma Sola Bay has remained high. Water quality indicators have remained constant and the biotic indicator, seagrass, has increased above the target acreage.

Water quality: All three water quality indicators (chlorophyll a, nitrogen, and phosphorus) were rated as pass (below the threshold). Both chlorophyll a and phosphorus indicators remained in excellent condition. Both indicators were below the target levels of 8.2 and 130.0 ug/l, respectively. Nitrogen levels have decreased since 2006 and remain constant right below the threshold value (930.0 ug/l).

Biotic Indicator: The biotic indicator, seagrass, has remained in good condition. The acreage of seagrass has increased by 15% since 1999 and now the total acreage is above the target level (1,031 acres) at 1,138 acres.



Palma Sola Bay

Water Chemistry Ratings

Total nitrogen, total phosphorus, and chlorophyll a levels are monitored carefully by water resource managers and used by regulatory authorities to determine whether a bay meets the water quality standards mandated by the Clean Water Act. The trend graphs for these indicators are shown below, along with their target and threshold values. A target value is a desirable goal to be attained, while a threshold is an undesirable level which is to be avoided. [Learn More about these ratings and how they are calculated »](#)

Chlorophyll a

Score: Excellent

Five Year Trend Graph

Units: ug/l	Year 2010	Historical period of record
High	22.7	38.3
Mean	5.7	7.7
Low	1.5	0.9
Samples	35	398



Data Sources: [Sarasota County](#), [Manatee County](#)

--- Target 8.5 ug/l — Threshold 11.8 ug/l Method Detection Limit 0.5 ug/l

Nitrogen, Total

Score: Excellent

Five Year Trend Graph

Units: ug/l	Year 2010	Historical period of record
High	1,600.0	2,510.0
Mean	704.5	n/a
Low	290.0	30.0
Samples	28	289



Data Sources: [Sarasota County](#), [Manatee County](#)

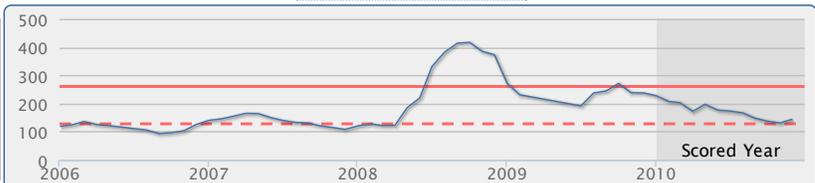
--- Target 740.0 ug/l — Threshold 930.0 ug/l

Phosphorus, Total

Score: Excellent

Five Year Trend Graph

Units: ug/l	Year 2010	Historical period of record
High	320.0	1,332.0
Mean	107.4	n/a
Low	56.0	8.0
Samples	30	374



Data Sources: [Sarasota County](#), [Manatee County](#)

--- Target 130.0 ug/l — Threshold 260.0 ug/l Method Detection Limit 0.1 ug/l

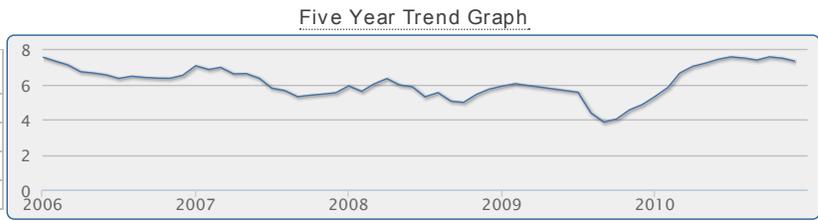
Other Measures of Bay Health

In addition to nutrient levels and chlorophyll concentration, dissolved oxygen levels, and water clarity are also objective indicators of bay health. These have complex interactive cycles which are affected by rainfall, temperature, and tidal action, as well as other factors. High nutrient levels (nitrogen and phosphorus) can stimulate excessive growth of marine algae (indicated by chlorophyll a level), resulting in reduced water clarity (and increased light attenuation) and depleted oxygen levels. Both plants and animals in a bay need oxygen to survive, and the seagrasses which provide food and cover for bay creatures need light for photosynthesis.

Dissolved Oxygen

Units: mg/l	Year 2010	Historical period of record
High	10.2	10.5
Mean	7.4	6.7
Low	6.0	2.6
Samples	30	345

Data Sources: [Sarasota County](#), [Manatee County](#)



Method Detection Limit
0.2 mg/l

Light Attenuation

Units: K(1/m)	Year 2010	Historical period of record
High	1,438.0	5,328.0
Mean	696.3	626.8
Low	61.0	26.0
Samples	79	1,530

Data Sources: [Sarasota County](#), [Manatee County](#)



Method Detection Limit
0.1 K(1/m)

Rainfall

Units: inches	Year 2010	Historical period of record
High	40.9	45.3
Mean		28.3
Low		0.9
Samples	365	3,110

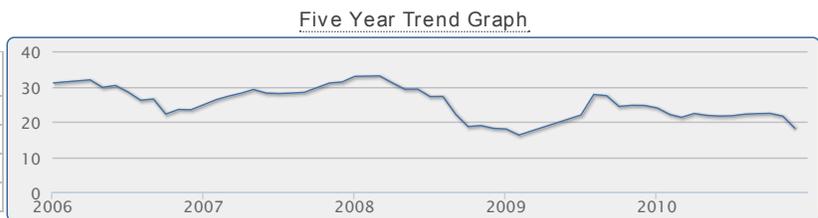
Data Sources: [Sarasota County](#), [Manatee County](#)



Salinity

Units: PSS	Year 2010	Historical period of record
High	34.0	41.5
Mean	21.0	29.0
Low	0.9	0.9
Samples	30	326

Data Sources: [Sarasota County](#), [Manatee County](#)

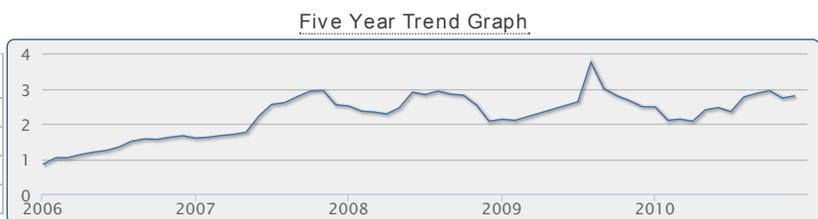


Method Detection Limit
0.1 PSS

Turbidity

Units: NTU	Year 2010	Historical period of record
High	7.9	18.8
Mean	2.5	2.7
Low	1.2	0.1
Samples	30	386

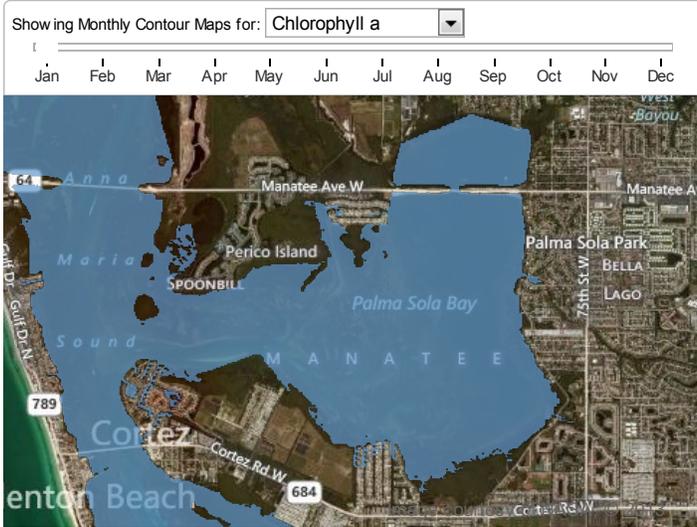
Data Sources: [Sarasota County](#), [Manatee County](#)



Method Detection Limit
0.2 NTU

Bay Contour Maps

Contour mapping is one of the best ways to visualize spatial differences in coastal water quality. The interactive map shown below presents monthly data for one selected water quality indicator atop an aerial view of the bay. Choose a different water quality parameter from the list at the top to change the map. [Learn More about Water Quality Contour Mapping »](#)

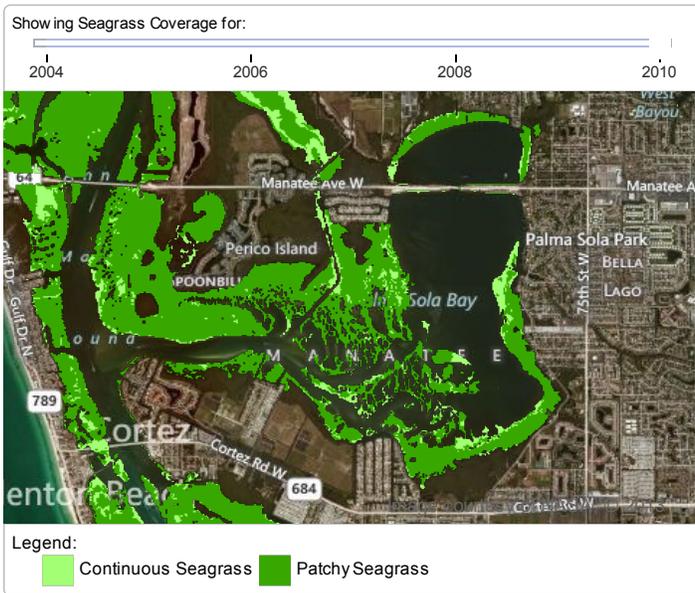


Visit the [Water Quality Contour Mapping Tool](#) to view and compare monthly water quality contour maps for ten different water quality indicators. In addition, you can generate your own custom maps.

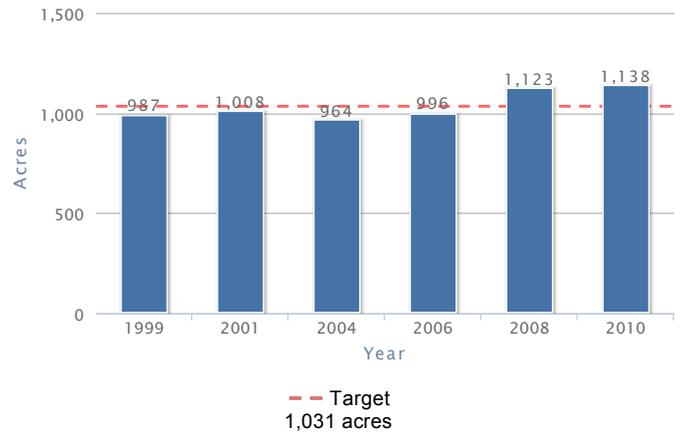


Seagrasses

Among the most important habitats in Florida's estuarine environments, seagrass beds are indispensable for the role they play in cycling nutrients, supplying food for wildlife, stabilizing sediments, and providing habitat for juvenile and adult finfish and shellfish. Use the interactive map below to observe the size, density and location of seagrass beds from year to year. The graph shows how the total amount of seagrass in the bay has changed over time. [Learn More about Seagrasses »](#)



Seagrass Acreage Variation within Palma Sola Bay



Land Use / Land Cover

Palma Sola Bay is located within the Sarasota Bay Watershed. [View details about the Sarasota Bay Watershed »](#)

Land use within a bay's watershed has a major effect on its water quality. In general, less development means better water quality. Land Cover/Land Use classifications categorize land in terms of its observed physical surface characteristics (upland or wetland, e.g.), and also reflect the types of activity that are taking place on it (agriculture, urban/built-up, utilities, etc.). Florida uses as its standard a set of statewide classifications which were developed by the Florida Department of Transportation. [Learn More about Land Use and Land Cover »](#)

