

Palma Sola Bay Condition Report for 2011

PASS



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 remained relatively constant with a slight decrease in chlorophyll a and nitrogen and a slight increase in phosphorus. Moreover, 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). The mean for chlorophyll a was calculated as an arithmetic mean and the means for nitrogen and phosphorus were calculated as geometric means (Numeric Nutrient Criteria Recommendations). Both chlorophyll a and nitrogen were rated as excellent condition, means (chlorophyll a = 3.8ug/l, nitrogen = 615.1ug/l) below the recommended target values (chlorophyll a = 8.5ug/l, nitrogen = 740.0 ug/l). The phosphorus level in Palma Sola Bay has slightly increased and was now scored as good (was scored as excellent in 2010), the mean (160.6ug/l) was above the target value (130.0ug/l) but below the threshold (260.0ug/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 was above the target level (1,031 acres) at 1,138 acres.



Palma Sola Bay

Water Chemistry Ratings

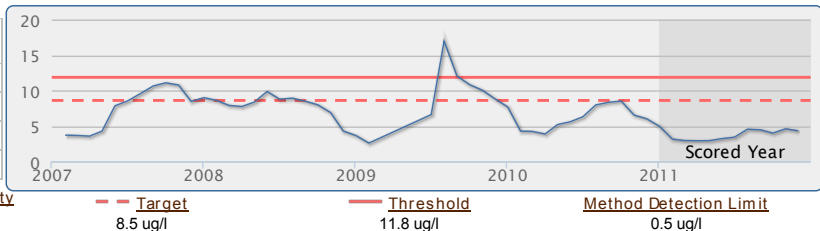
Total nitrogen, total phosphorus, and chlorophyll a levels are monitored carefully by water resource managers and used by regulatory authorities to determine whether a bay meets the water quality standards mandated by the Clean Water Act. The trend graphs for these indicators are shown below, along with 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 2011	Historical period of record
High	13.4	38.3
Mean	3.8	7.4
Low	1.0	0.9
Samples	38	436



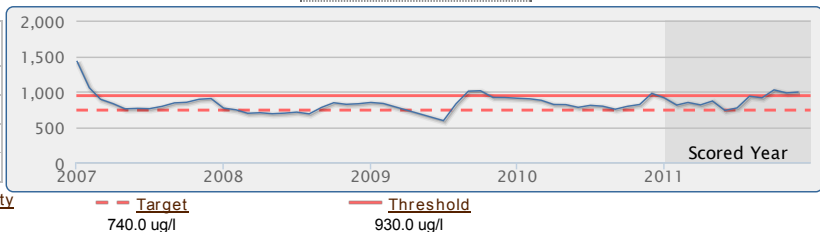
Data Sources: [Sarasota County](#), [Manatee County](#)

Nitrogen, Total

Score: Excellent

Five Year Trend Graph

Units: ug/l	Year 2011	Historical period of record
High	2,020.0	2,510.0
Mean	615.1	n/a
Low	40.0	30.0
Samples	29	318



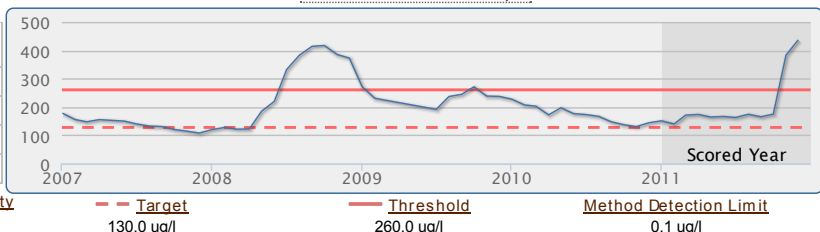
Data Sources: [Sarasota County](#), [Manatee County](#)

Phosphorus, Total

Score: Good

Five Year Trend Graph

Units: ug/l	Year 2011	Historical period of record
High	1,610.0	1,610.0
Mean	160.6	n/a
Low	56.0	8.0
Samples	34	408



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

Other Measures of Bay Health

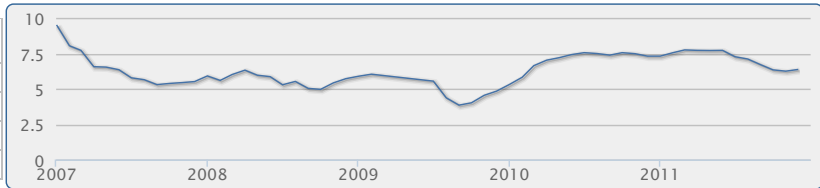
In addition to nutrient levels and chlorophyll concentration, dissolved oxygen levels, and water clarity are also objective indicators of bay health. These have complex interactive cycles which are affected by rainfall, temperature, and tidal action, as well as other factors. High nutrient levels (nitrogen 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 2011	Historical period of record
High	9.6	10.5
Mean	7.3	6.7
Low	5.2	2.6
Samples	30	375

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

Five Year Trend Graph



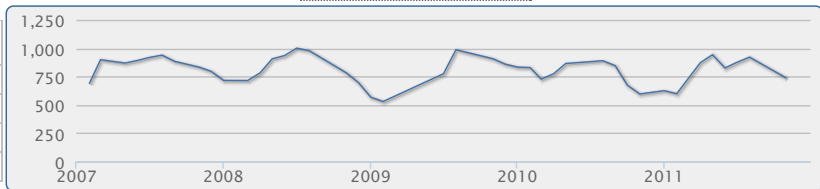
Method Detection Limit
0.2 mg/l

Light Attenuation

Units: K(1/m)	Year 2011	Historical period of record
High	1,484.0	5,328.0
Mean	834.0	638.4
Low	176.0	26.0
Samples	91	1,621

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

Five Year Trend Graph



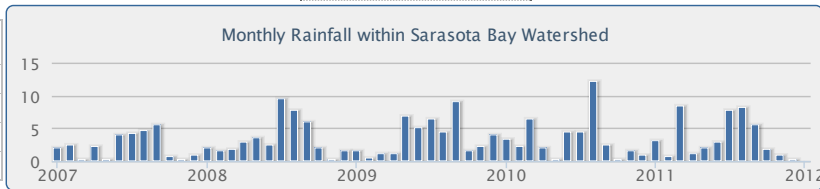
Method Detection Limit
0.1 K(1/m)

Rainfall

Units: inches	Year 2011	Historical period of record
High	43.2	45.3
Mean		28.3
Low		0.9
Samples	363	3,110

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

Five Year Trend Graph

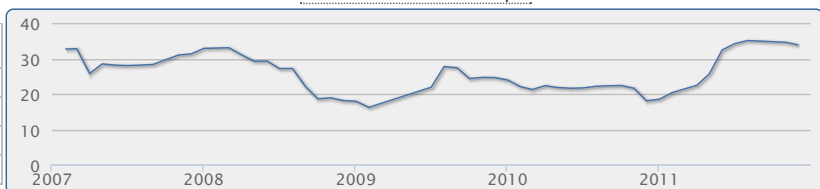


Salinity

Units: PSS	Year 2011	Historical period of record
High	36.0	41.5
Mean	32.3	29.1
Low	8.5	0.9
Samples	18	344

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

Five Year Trend Graph



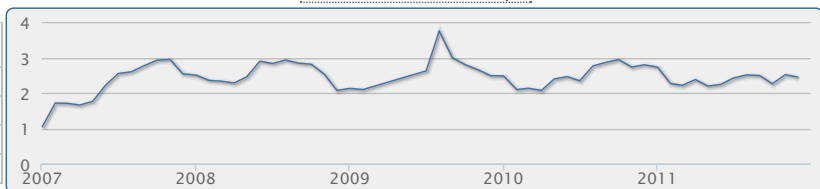
Method Detection Limit
0.1 PSS

Turbidity

Units: NTU	Year 2011	Historical period of record
High	4.5	18.8
Mean	2.5	2.7
Low	1.1	0.1
Samples	31	417

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

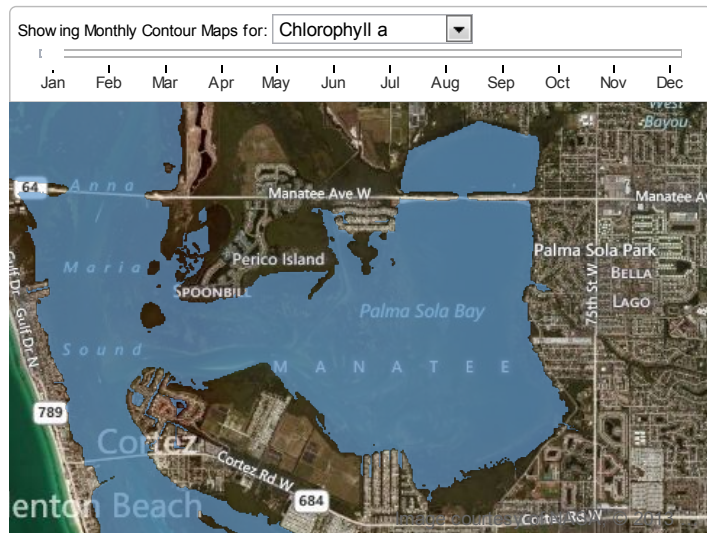
Five Year Trend Graph



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 »](#)

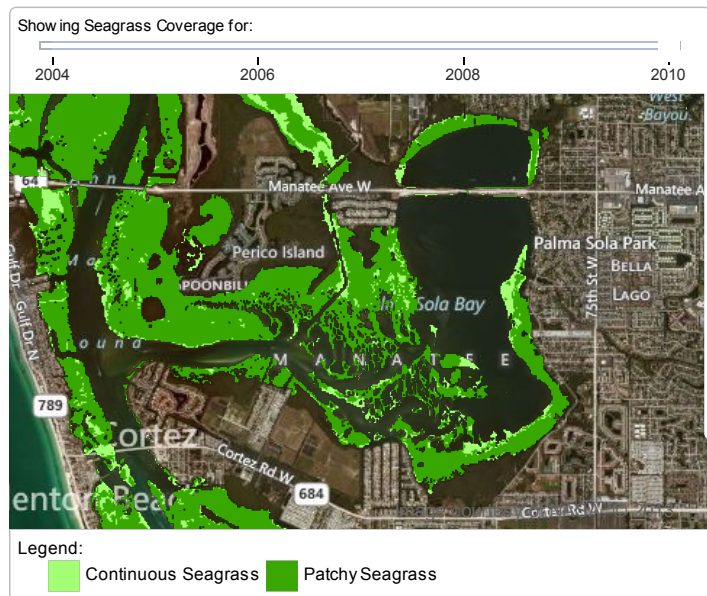


Visit the [Water Quality Contour Mapping Tool](#) to view and compare monthly water quality contour maps for ten different water quality indicators. In addition, you can generate your own custom maps.

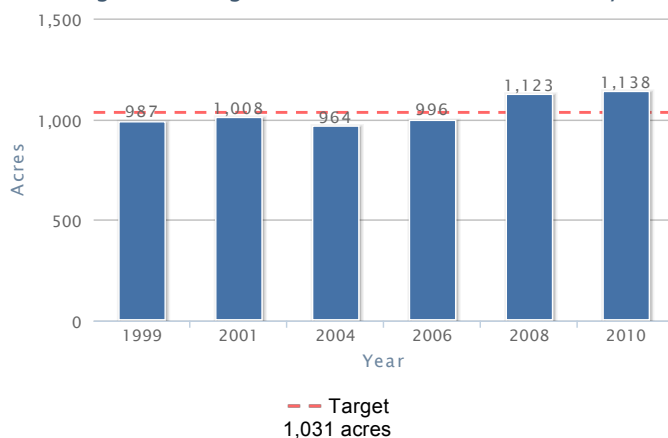


Seagrasses

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 »](#)

