

Sarasota Bay Condition Report for 2016

CAUTION



2 out of 3 indicators were rated as PASS.

All three indicators must pass for the bay to be rated as PASS.

Summary:

The overall health in Sarasota Bay degraded slightly in 2016, changing from the previous year. Chlorophyll a showed a clear increase, while phosphorus and nitrogen slightly decreased.

Water Quality: Two of the three water quality indicators (nitrogen and phosphorus) were rated as excellent (below their respective targets). However, chlorophyll a exceeded the target and threshold values. The mean for chlorophyll a was calculated as an arithmetic mean and the means for nitrogen and phosphorus were calculated as geometric means (per the Numeric Nutrient Criteria outlined in the Florida Administrative Code, section 62-302.532). Mean chlorophyll a concentration was 0.0067 mg/l, above the target value of 0.0052 mg/l and the threshold of 0.0061 mg/l. The mean concentration of total nitrogen decreased marginally to 0.3528 mg/l, still below its target value of 0.51 mg/l. Mean total phosphorus concentration increased marginally, but at 0.0639 mg/l was still well below its target value of 0.150 mg/l.

Biotic Indicator: A survey of the biotic indicator, seagrass, was performed in 2016 by the Southwest Florida Water Management District. In 2016, the total area of seagrass in the lower portion of Sarasota Bay (the area within Sarasota County) was estimated to be 3,639 acres, well above the target of 2,022 acres.



Bays included in this report: Bayou Louise, Brushy Bayou, Pansey Bayou, Sarasota 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.

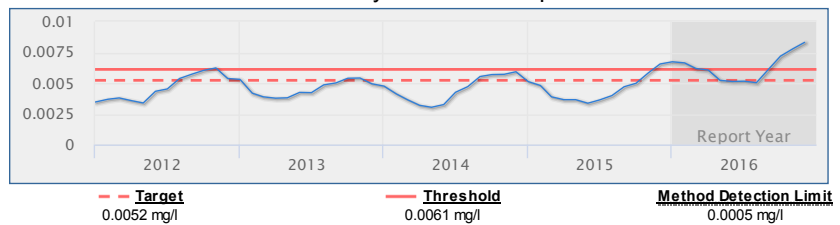
The Five-year Trend Graphs below illustrate the general trend of water quality parameters. They show a six-month running average, which moderates high and low values in the data.

Chlorophyll a

Score: Caution

Units: mg/l	Year 2016	Historical period of record
High	0.0434	0.049
Mean	0.0067	0.0049
Low	0.0016	0.0002
No. of Samples	199	5,065

Five-year Trend Graph

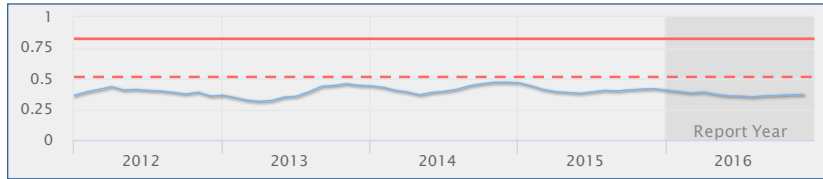


Nitrogen, Total

Score: Excellent

Units: mg/l	Year 2016	Historical period of record
High	0.695	1.87
Mean	0.3528	0.3381
Low	0.195	0.03
No. of Samples	198	4,862

Five-year Trend Graph



--- Target
0.51 mg/l

— Threshold
0.822 mg/l

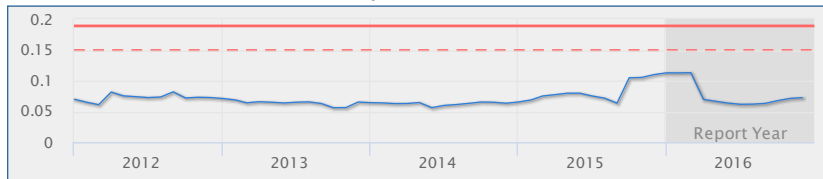
Targets and thresholds shown on this graph are advisory approximations computed by Sarasota County using recent data. Regulatory thresholds have not been established.

Phosphorus, Total

Score: Excellent

Units: mg/l	Year 2016	Historical period of record
High	0.22	4.40
Mean	0.064	0.0851
Low	0.05	0.002
No. of Samples	199	4,988

Five-year Trend Graph



--- Target
0.15 mg/l

— Threshold
0.19 mg/l

..... Method Detection Limit
0.0001 mg/l

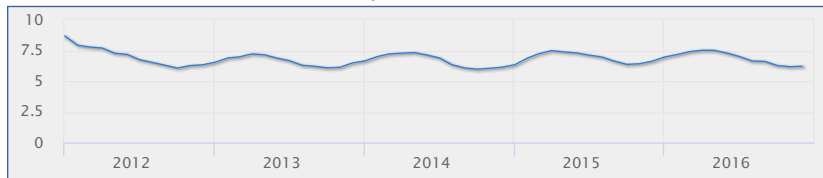
Other Measures of Bay Health

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 2016	Historical period of record
High	12.30	13.80
Mean	7.75	6.7
Low	4.40	0.10
No. of Samples	358	16,519

Five-year Trend Graph

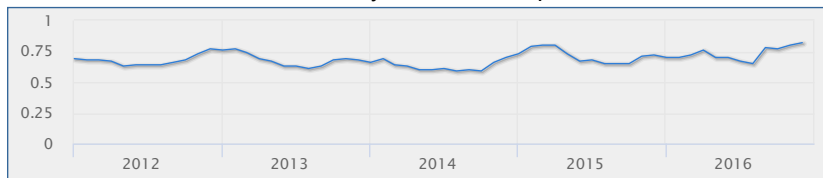


..... Method Detection Limit
0.20 mg/l

Light Attenuation

Units: K(1/m)	Year 2016	Historical period of record
High	4.02	5.68
Mean	0.74	0.69
Low	0.20	0.05
No. of Samples	169	3,958

Five-year Trend Graph

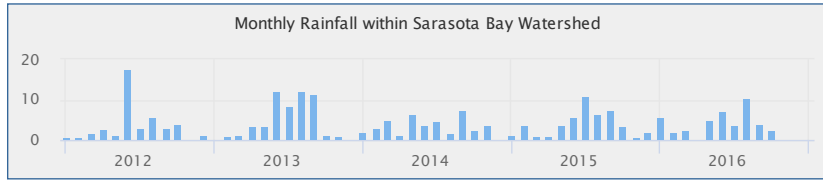


..... Method Detection Limit
0.05 K(1/m)

Rainfall

Units: inches/yr	Year 2016	Historical period of record
High	43.98	56.04
Mean		35.07
Low		8.12
No. of Samples	366	4,705

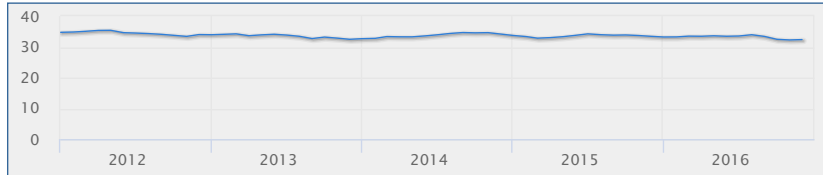
Five-year Trend Graph



Salinity

Units: PSS	Year 2016	Historical period of record
High	38.90	68.20
Mean	33.84	33.26
Low	18.80	3.60
No. of Samples	350	18,026

Five-year Trend Graph

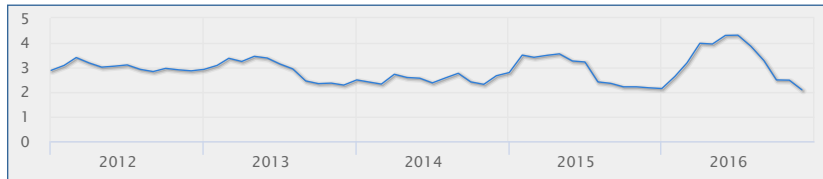


Method Detection Limit
0.10 PSS

Turbidity

Units: NTU	Year 2016	Historical period of record
High	14.00	39.00
Mean	3.17	2.63
Low	0.55	0.03
No. of Samples	199	14,572

Five-year Trend Graph



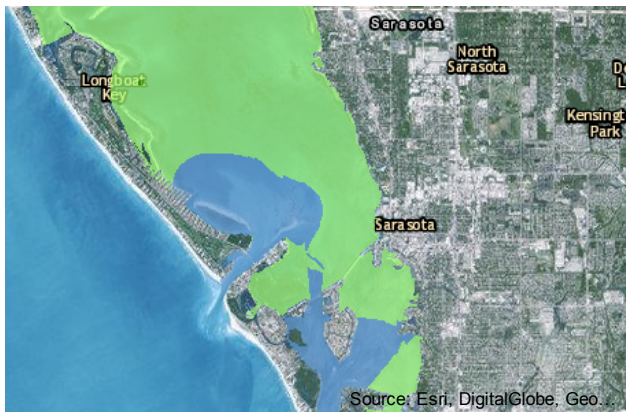
Method Detection Limit
0.20 NTU

Bay Contour Maps (2016)

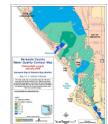
Contour mapping is one of the best ways to visualize spatial differences in coastal water quality. The interactive map shown below presents monthly data for one selected water quality indicator atop an aerial view of the bay. Choose a different water quality parameter from the list at the top to change the map.

Showing 2016 Monthly Contour Maps for: Chlorophyll a

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec



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.

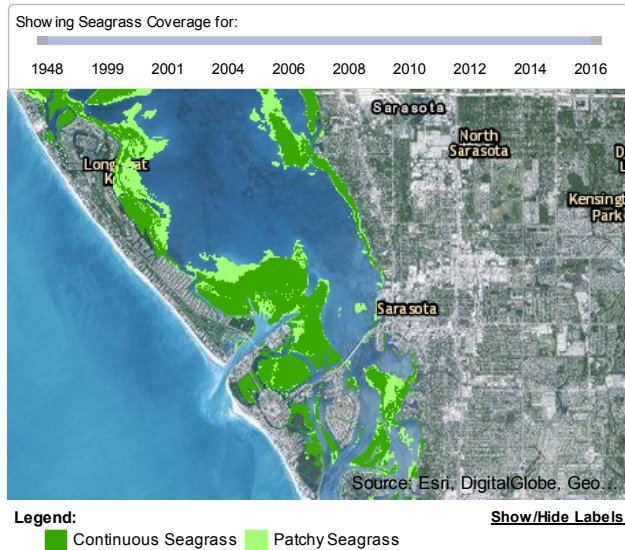


Contour Legend:

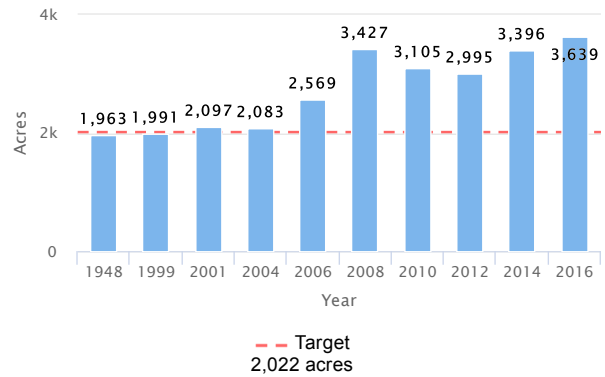
- Less than 1 mg/l
- 1.0 - 5.9 mg/l
- 6.0 - 10.9 mg/l
- 11.0 - 17.9 mg/l
- Greater than 18 mg/l

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.



Seagrass Acreage Variation within Sarasota Bay



Land Use / Land Cover

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.

Sarasota Bay is located within the Sarasota Bay Watershed. The chart below shows the land use / land cover characteristics for Sarasota Bay Watershed within the boundary of this Water Atlas. [View details about the Sarasota Bay Watershed »](#)

2011 Land Use / Land Cover for Sarasota Bay Watershed

as a percentage of land area for this watershed

