

Blackburn Bay Condition Report for 2014

PASS

Chl-a
N
P

3 out of 3 indicators were rated as PASS.

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



Blackburn Bay

Bays included in this report: **Blackburn Bay**

Summary:

The overall health of Blackburn Bay has remained good in 2014 with two out of three water quality parameters, chlorophyll *a* and phosphorus, below their associated target levels. Nitrogen concentration remained fairly steady and is in the “Good” range, between target and threshold levels.

Water Quality: All three water quality indicators (chlorophyll *a*, nitrogen, and phosphorus) were rated as pass (below threshold). 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). The mean chlorophyll *a* level (0.0043 mg/l) again decreased, keeping it well below the target level of 0.006 mg/l. The mean nitrogen level increased almost imperceptibly from 2013, to 0.4226 mg/l, retaining its “Good” score. Phosphorus concentrations in the bay have remained relatively constant and low, with a mean of 0.0647 mg/l, well below the target (0.170 mg/l) and threshold (0.210 mg/l) levels and earning a score of “Excellent”.

Biotic Indicator: Measurement of the biotic indicator, seagrass, was performed in 2014 by the Southwest Florida Water Management District. Total seagrass acreage in Blackburn Bay was measured to be 344 acres. Seagrass acreage continues to slowly increase, but it is still below the target level of 447 acres.

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: Excellent

Units: mg/l	Year 2014	Historical period of record
High	0.0239	0.043
Mean	0.0043	0.005
Low	0.0011	0.0002
No. of Samples	58	902

Five-year Trend Graph

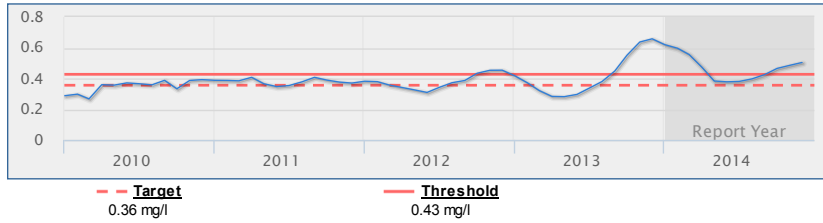


Nitrogen, Total

Score: Good

Units: mg/l	Year 2014	Historical period of record
High	0.855	2.205
Mean	0.4226	n/a
Low	0.265	0.055
No. of Samples	58	896

Five-year Trend Graph

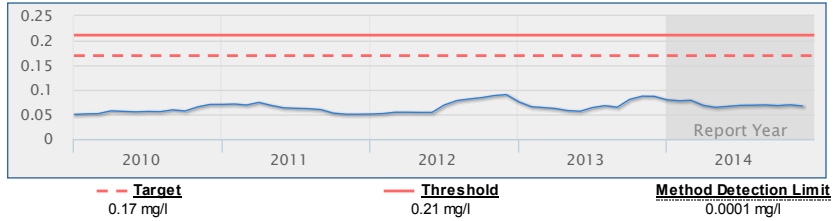


Phosphorus, Total

Score: Excellent

Units: mg/l	Year 2014	Historical period of record
High	0.12	0.53
Mean	0.0647	n/a
Low	0.05	0.05
No. of Samples	58	903

Five-year Trend Graph



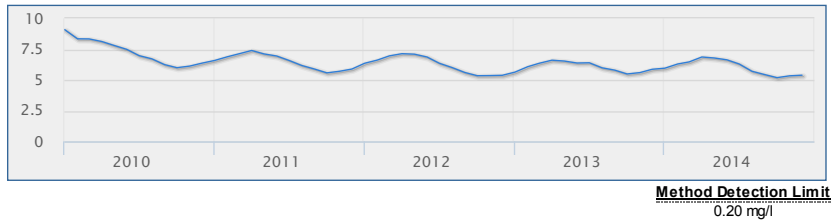
Other Measures of Bay Health

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 2014	Historical period of record
High	8.20	11.90
Mean	6.0	6.47
Low	3.20	1.60
No. of Samples	48	956

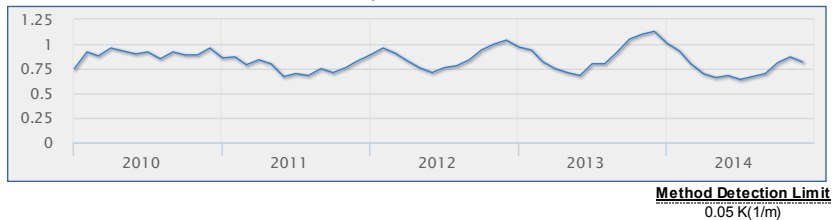
Five-year Trend Graph



Light Attenuation

Units: K(1/m)	Year 2014	Historical period of record
High	2.31	5.03
Mean	0.75	0.86
Low	0.35	0.16
No. of Samples	47	794

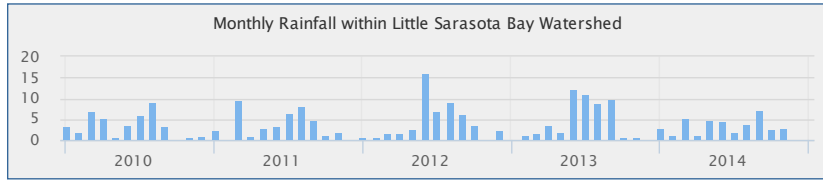
Five-year Trend Graph



Rainfall

Units: inches/yr	Year 2014	Historical period of record
High	39.52	52.18
Mean		33.33
Low		9.86
No. of Samples	356	4,299

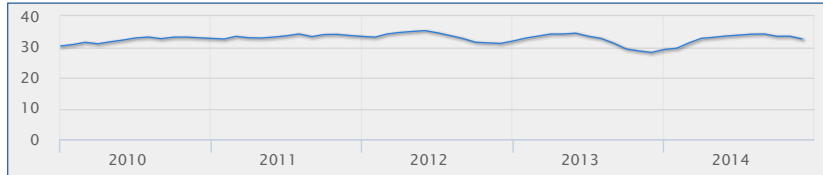
Five-year Trend Graph



Salinity

Units: PSS	Year 2014	Historical period of record
High	36.20	39.30
Mean	33.07	33.25
Low	22.80	5.70
No. of Samples	48	956

Five-year Trend Graph



Method Detection Limit
0.10 PSS

Turbidity

Units: NTU	Year 2014	Historical period of record
High	30.00	39.00
Mean	3.81	3.96
Low	1.20	0.20
No. of Samples	58	903

Five-year Trend Graph

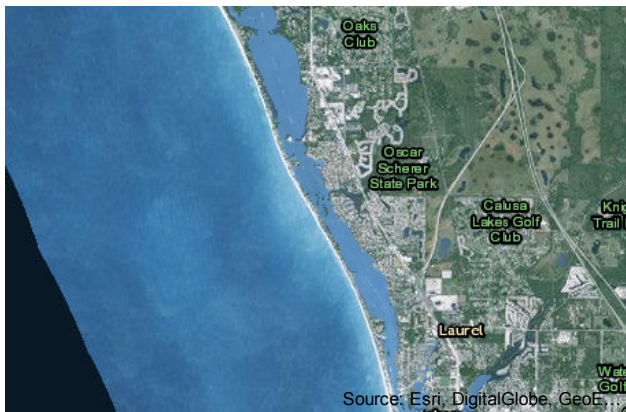


Method Detection Limit
0.20 NTU

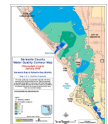
Bay Contour Maps

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.

Showing 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.

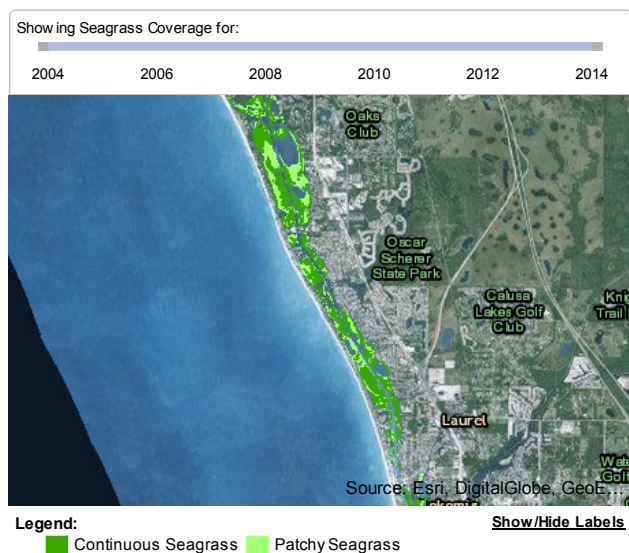


Contour Legend:

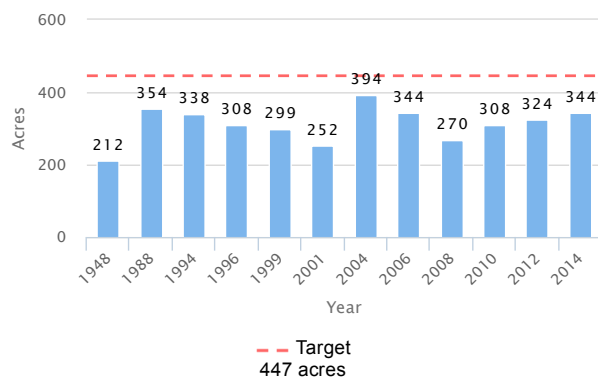
- Less than 1 mg/l
- 1.0 - 5.9 mg/l
- 6.0 - 10.9 mg/l
- 11.0 - 17.9 mg/l
- Greater than 18 mg/l

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 Blackburn 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.

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

2011 Land Use / Land Cover for Little Sarasota Bay Watershed

as a percentage of land area for this watershed

