

# Blackburn Bay Condition Report for 2010

## 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.



### Summary:

The overall health of Blackburn Bay has remained in good condition. All three water quality indicators were rated as pass. However, the biotic indicator, seagrass, has continued to decrease.

**Water quality:** All three water quality indicators (chlorophyll a, nitrogen, and phosphorus) were rated as pass (below the threshold) and remained in excellent condition. Although there has been a slight increase in chlorophyll a levels, the mean level is still slightly below the threshold value of 0.0082 mg/l. Nitrogen levels have remained constant and below the threshold (0.430 mg/l) and hovering very closely to the target level of 0.360 mg/l. Phosphorus levels have decreased with the average greatly below the target level of 0.170 mg/l.

**Biotic Indicator:** The total acreage of seagrass has remained relatively constant since 1988 but in 2010 the average level of seagrass (323 acres) was still below the target 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.

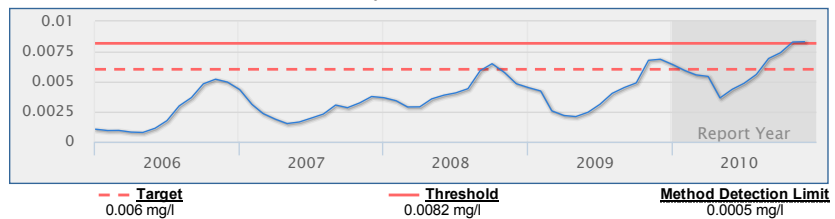
The Five-year Trend Graphs below illustrate the general trend of water quality parameters. They show a six-month running average, which moderates high and low values in the data.

#### Chlorophyll a

Score: Good

Units: mg/l	Year 2010	Historical period of record
<b>High</b>	0.015	0.043
<b>Mean</b>	0.006	0.005
<b>Low</b>	0.0009	0.0002
<b>No. of Samples</b>	299	3,734

Five-year Trend Graph

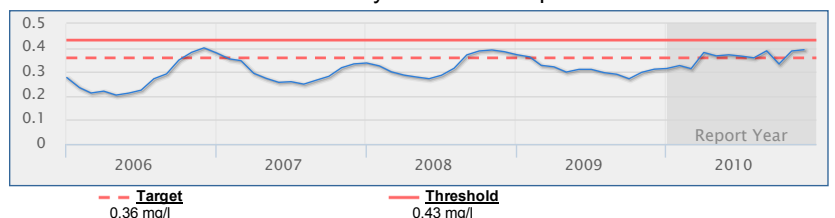


#### Nitrogen, Total

Score: Good

Units: mg/l	Year 2010	Historical period of record
<b>High</b>	0.84	1.189
<b>Mean</b>	0.3619	n/a
<b>Low</b>	0.116	0.0001
<b>No. of Samples</b>	45	610

Five-year Trend Graph

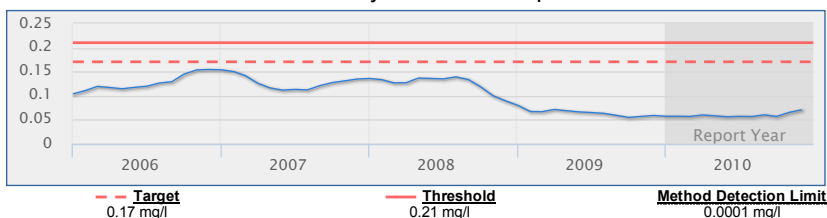


## Phosphorus, Total

Score: Excellent

Units: mg/l	Year 2010	Historical period of record
High	0.14	0.53
Mean	0.0559	n/a
Low	0.05	0.05
No. of Samples	283	3,700

Five-year Trend Graph



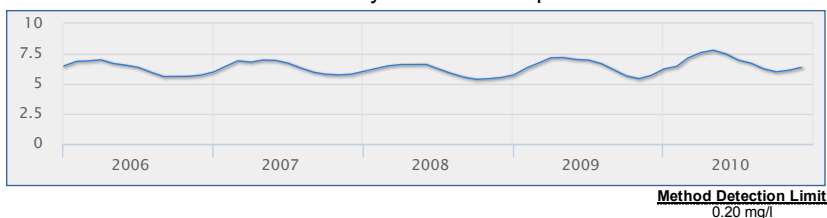
## Other Measures of Bay Health

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 2010	Historical period of record
High	9.20	11.90
Mean	6.92	6.55
Low	4.60	1.60
No. of Samples	48	762

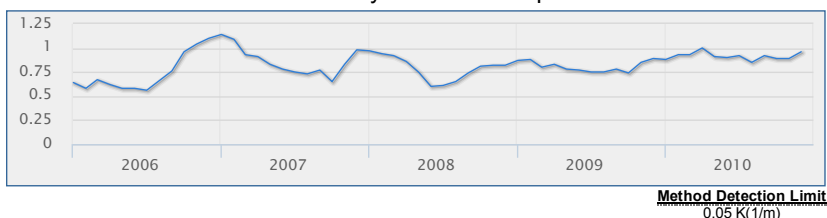
Five-year Trend Graph



## Light Attenuation

Units: K(1/m)	Year 2010	Historical period of record
High	1.83	5.03
Mean	0.92	0.87
Low	0.32	0.16
No. of Samples	48	604

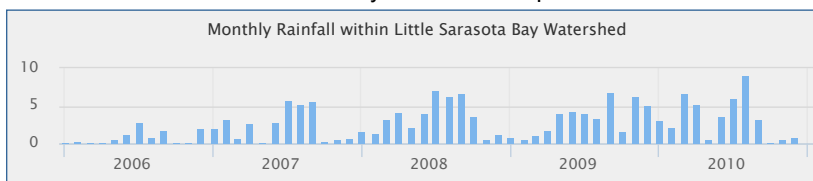
Five-year Trend Graph



## Rainfall

Units: inches/yr	Year 2010	Historical period of record
High	41.43	52.18
Mean		32.68
Low		9.86
No. of Samples	365	3,995

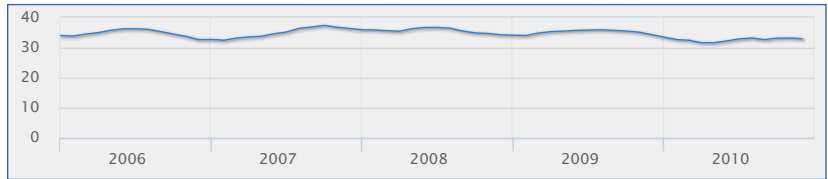
Five-year Trend Graph



## Salinity

Units: PSS	Year 2010	Historical period of record
High	35.70	39.30
Mean	32.6	33.35
Low	25.80	5.70
No. of Samples	48	756

Five-year Trend Graph



Method Detection Limit  
0.10 PSS

## Turbidity

Units: NTU	Year 2010	Historical period of record
High	13.00	39.00
Mean	5.08	3.7
Low	2.20	0.20
No. of Samples	299	3,734

Five-year Trend Graph



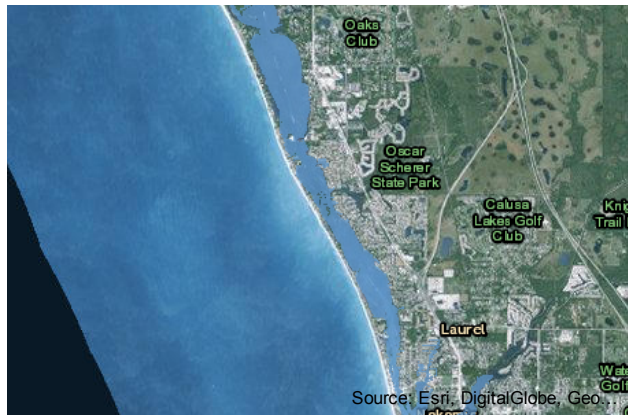
Method Detection Limit  
0.20 NTU

## Bay Contour Maps

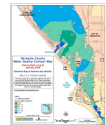
Contour mapping is one of the best ways to visualize spatial differences in coastal water quality. The interactive map shown below presents monthly data for one selected water quality indicator atop an aerial view of the bay. Choose a different water quality parameter from the list at the top to change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

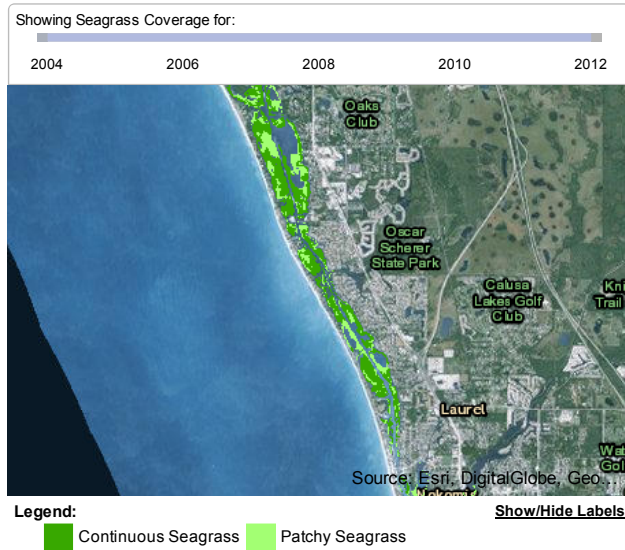


### Contour Legend:

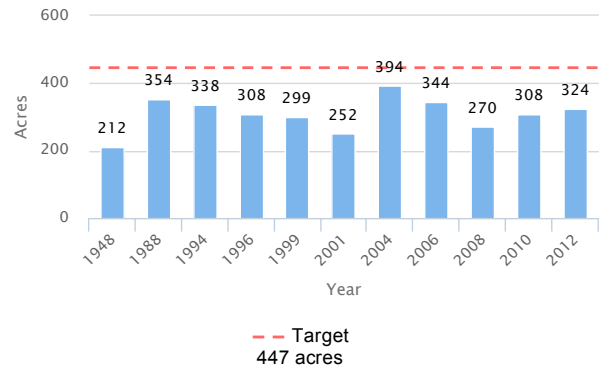
- Less than 1 mg/l
- 1.0 - 5.9 mg/l
- 6.0 - 10.9 mg/l
- 11.0 - 17.9 mg/l
- Greater than 18 mg/l

## 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

