

Blackburn Bay Condition Report for 2018



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 mean concentration of chlorophyll *a* increased in 2018 and now exceeds the threshold. However, the mean concentrations of nutrients — nitrogen and phosphorus — were nearly unchanged from 2017 and are still relatively low.

Note: Beginning in 2018, additional water quality indicators are being displayed on Bay Conditions pages.

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. An individual indicator receives an "Excellent" rating if its mean value is below the target, a "Good" rating if its mean value is above the target but does not exceed the threshold, and a "Caution" rating if the mean value exceeds the threshold.

The charts 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.



Blackburn Bay

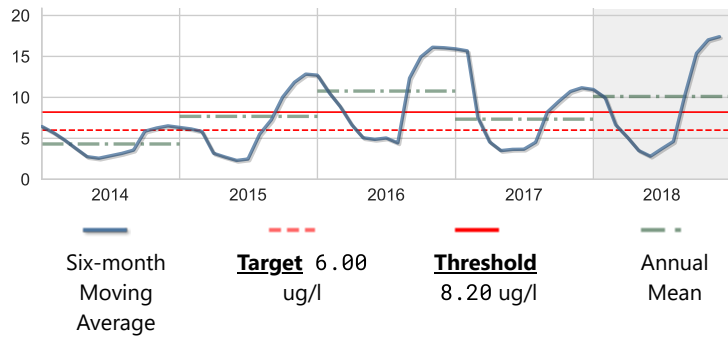
Bays included in this report:
Blackburn Bay



Chlorophyll a

Score: Caution

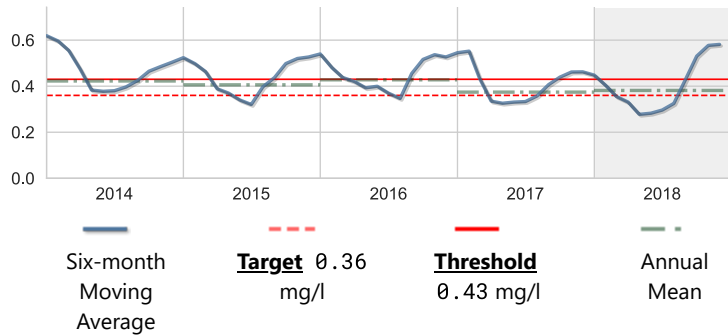
Units: ug/l	Year 2018	Historical period of record
High	49.33	59.70
Mean	10.11	5.45
Low	0.88	0.20
No. of Samples	48	1980



Nitrogen, Total

Score: Good

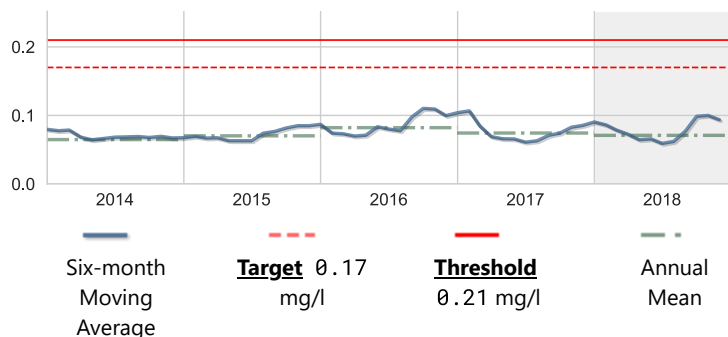
Units: mg/l	Year 2018	Historical period of record
High	1.087	2.205
Mean	0.382	0.331
Low	0.155	0.055
No. of Samples	48	1131



Phosphorus, Total

Score: Excellent

Units: mg/l	Year 2018	Historical period of record
High	0.220	0.530
Mean	0.071	0.096
Low	0.050	0.050
No. of Samples	48	1150

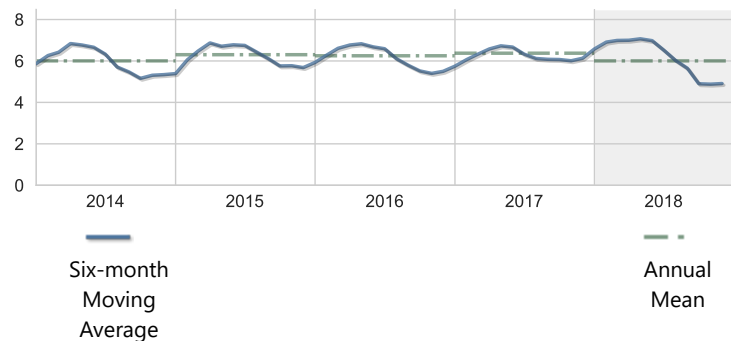


Other Measures of Bay Health

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.

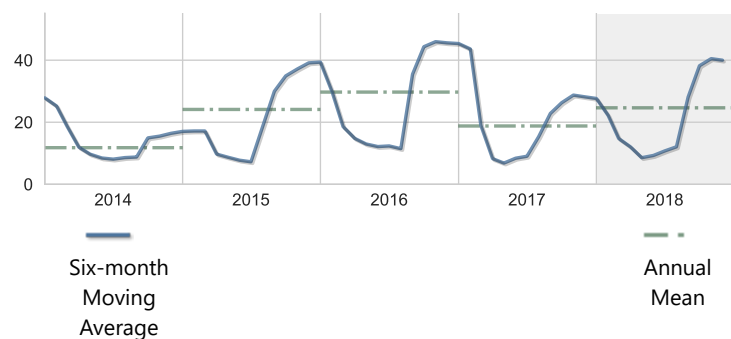
Dissolved Oxygen

Units: mg/l	Year 2018	Historical period of record
High	8.95	11.90
Mean	6.00	6.43
Low	1.27	1.27
No. of Samples	48	1164



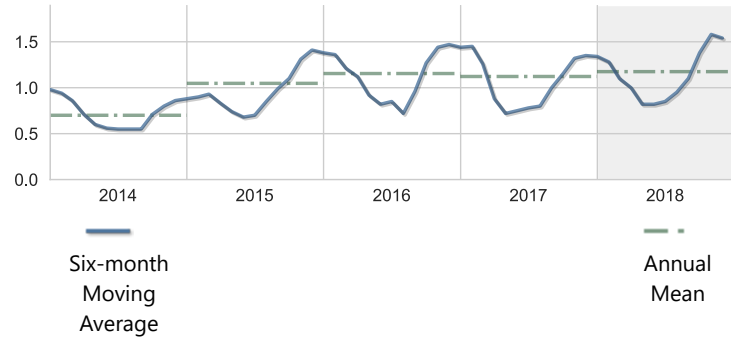
Apparent Color

Units: PCU	Year 2018	Historical period of record
High	120.00	250.00
Mean	24.65	19.99
Low	2.00	2.00
No. of Samples	48	1146



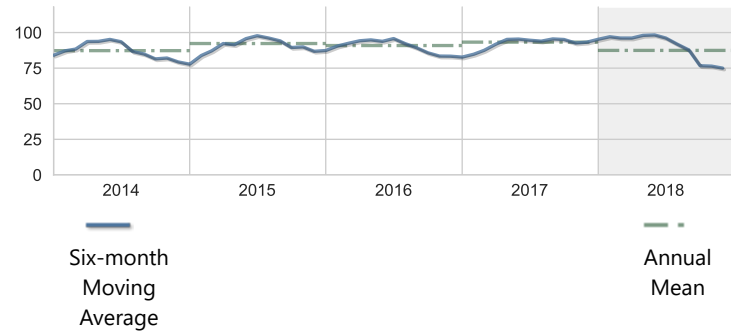
BOD, Biochemical oxygen demand

Units: mg/l	Year 2018	Historical period of record
High	2.70	7.10
Mean	1.18	1.08
Low	0.50	0.50
No. of Samples	48	1035



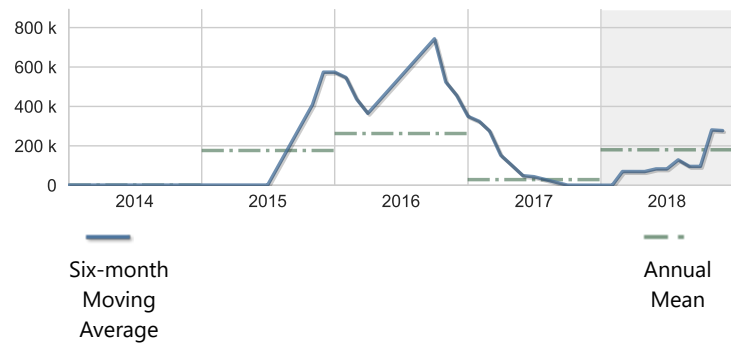
Dissolved oxygen saturation

Units: percent (%)	Year 2018	Historical period of record
High	114.00	198.00
Mean	87.46	94.06
Low	20.00	20.00
No. of Samples	48	1164



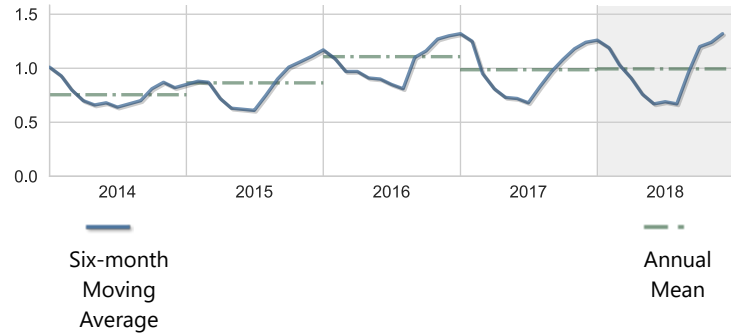
Karenia brevis ("red tide")

Units: #/l	Year 2018	Historical period of record
High	1906000.00	2280000.00
Mean	180104.17	63771.75
Low	0.00	0.00
No. of Samples	48	701



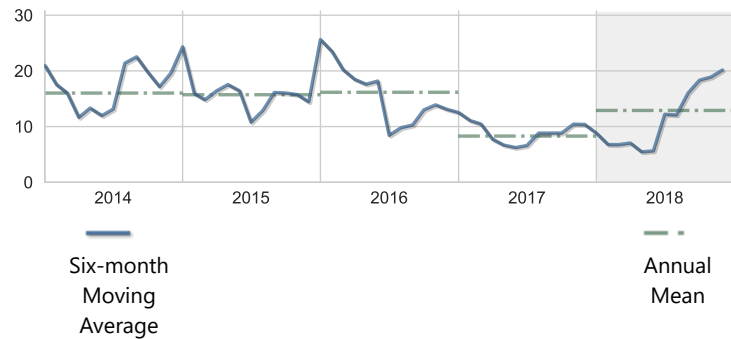
Light Attenuation

Units: K(1/m)	Year 2018	Historical period of record
High	2.82	5.03
Mean	0.99	0.89
Low	0.33	0.02
No. of Samples	48	1021



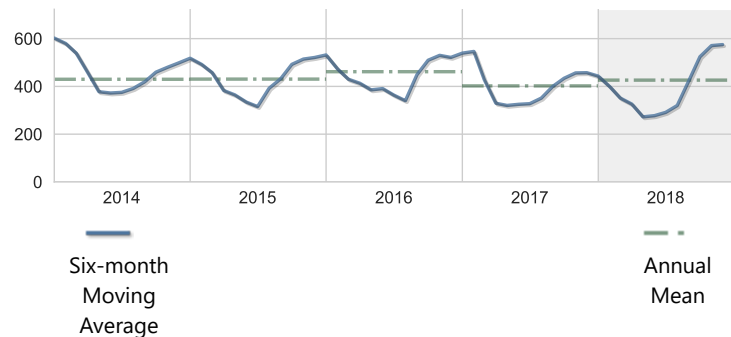
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2018	Historical period of record
High	58.00	132.00
Mean	12.90	14.86
Low	5.00	5.00
No. of Samples	48	1148



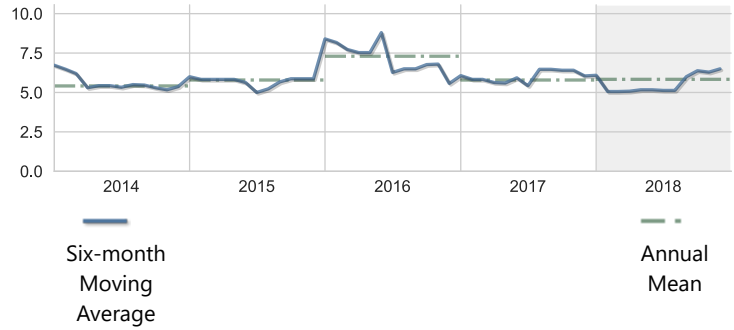
Nitrogen, Kjeldahl

Units: ug/l	Year 2018	Historical period of record
High	1070.00	2200.00
Mean	426.25	363.02
Low	150.00	0.05
No. of Samples	48	1151



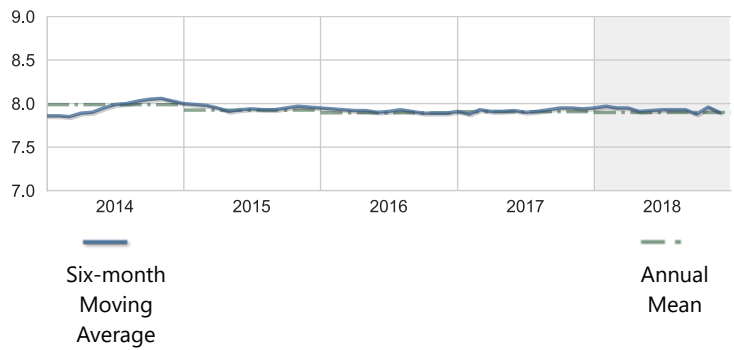
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2018	Historical period of record
High	17.00	65.00
Mean	5.83	6.02
Low	5.00	5.00
No. of Samples	48	1472



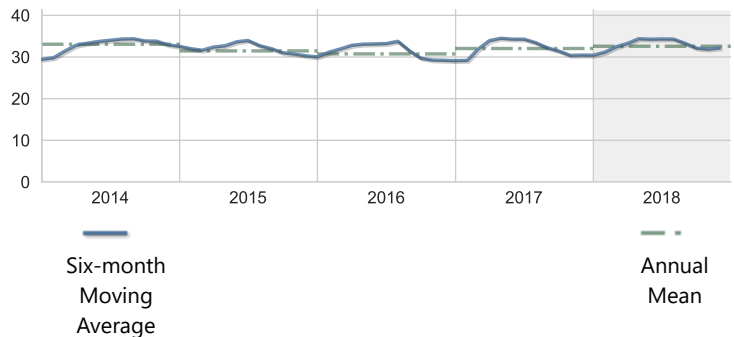
pH

Units: None	Year 2018	Historical period of record
High	8.20	8.40
Mean	7.90	7.93
Low	7.58	6.10
No. of Samples	48	1164



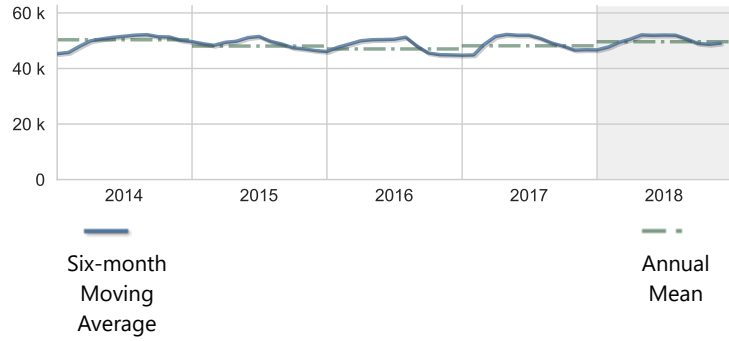
Salinity

Units: PSS	Year 2018	Historical period of record
High	35.80	39.30
Mean	32.58	32.89
Low	21.40	5.70
No. of Samples	96	1228



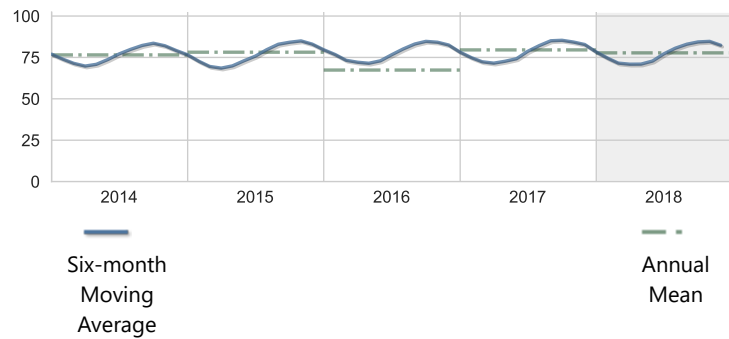
Specific conductance

Units: umho	Year 2018	Historical period of record
High	54100.00	58760.00
Mean	49639.58	50146.33
Low	34000.00	10130.00
No. of Samples	48	1164



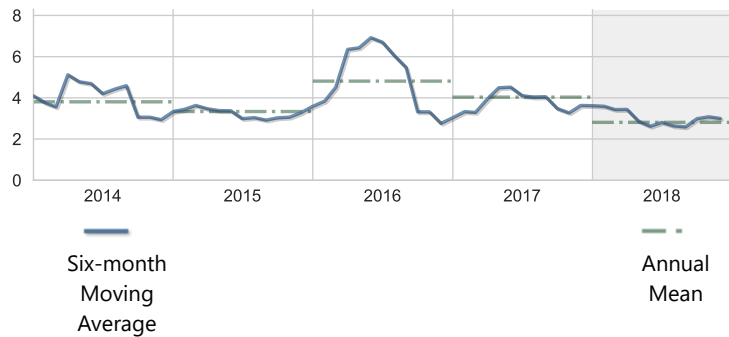
Temperature, water

Units: deg F	Year 2018	Historical period of record
High	89.24	92.84
Mean	77.76	76.65
Low	61.52	47.84
No. of Samples	48	1120



Turbidity

Units: NTU	Year 2018	Historical period of record
High	7.90	39.00
Mean	2.81	3.92
Low	0.80	0.20
No. of Samples	48	1146



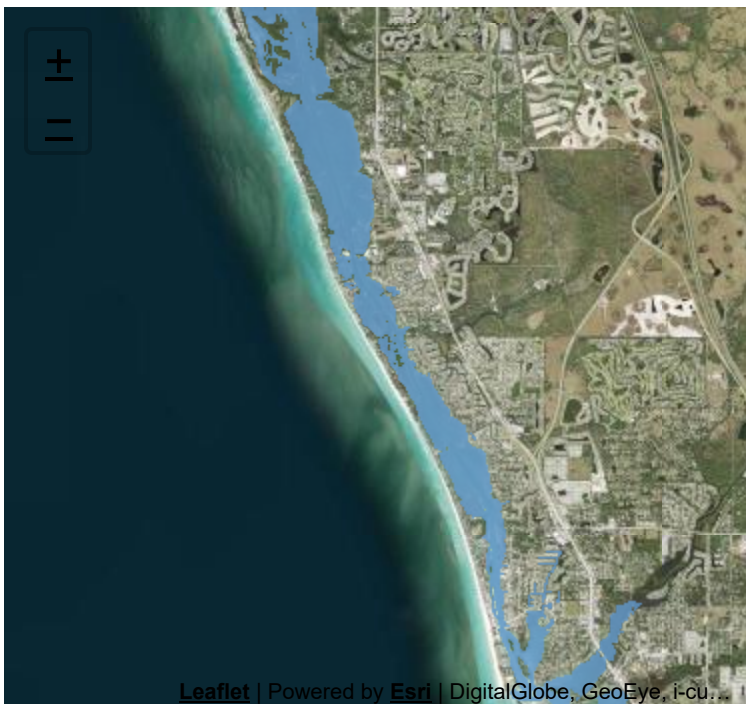
Annual Averages

Indicator	Units	2014	2015	2016	2017	2018	Trend
Dissolved Oxygen	mg/l	6.00	6.30	6.25	6.37	6.00	
Dissolved oxygen saturation	percent (%)	87.29	92.29	90.88	93.27	87.46	
Light Attenuation	K(1/m)	0.75	0.86	1.11	0.99	0.99	
Salinity	PSS	33.07	31.46	30.74	32.04	32.58	
Turbidity	NTU	3.81	3.34	4.81	4.03	2.81	

Bay Contour Maps (2018)

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 2018 Monthly Contour Maps for: Chlorophyll a ▼
January



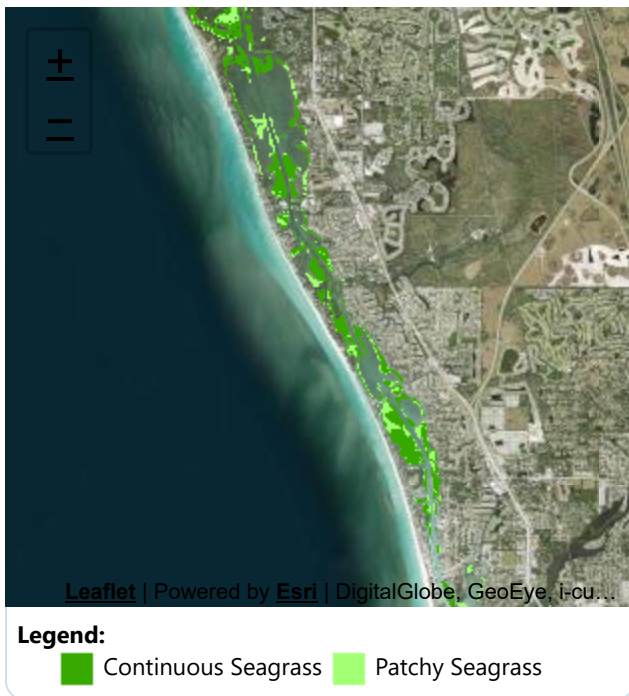
Contour Legend:

- 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

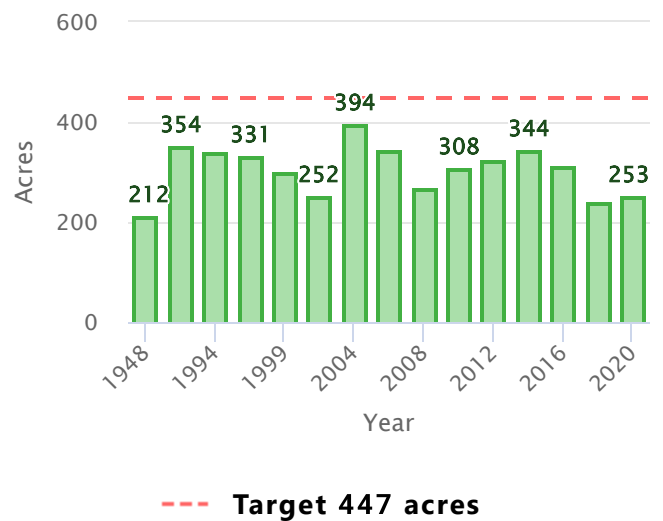
Seagrasses

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 calculations are aggregates of patchy and continuous seagrass measurements only. Recordings of attached algae are not included in these summaries.

Showing Seagrass Coverage for 2020:



Seagrass Acreage Variation within Blackburn Bay



Impervious Features

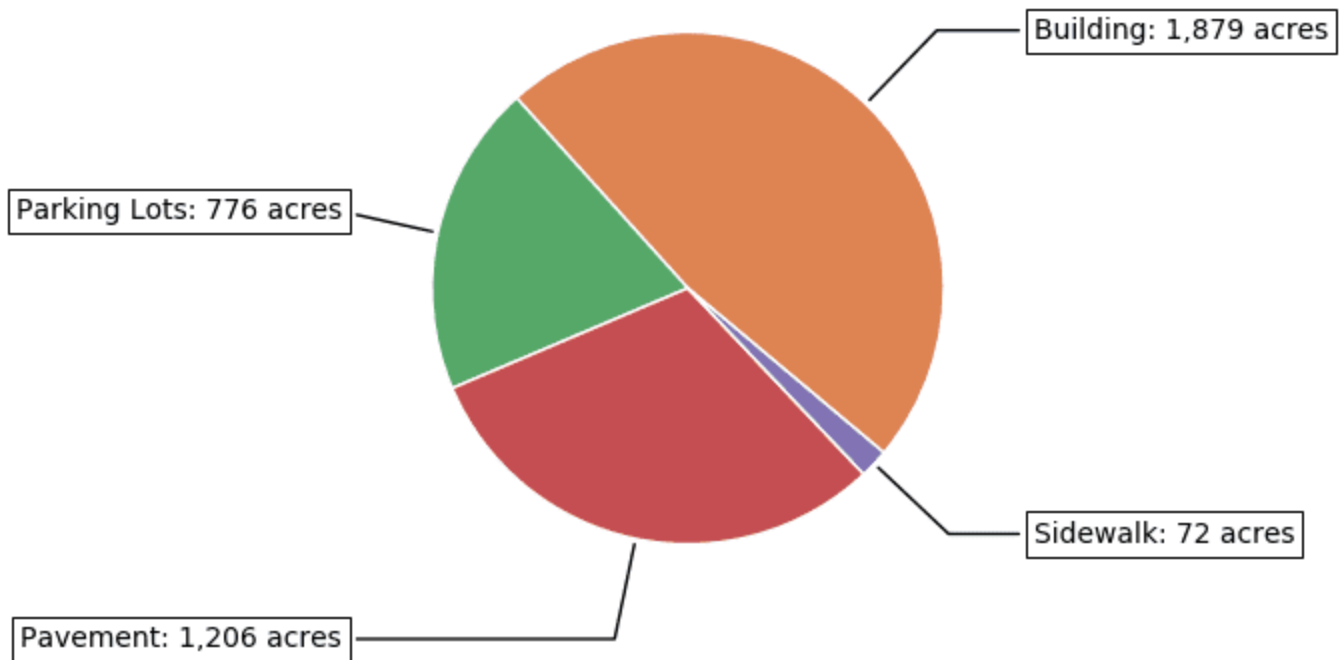
Rain that falls on land that is in a natural state is absorbed and filtered by soils and vegetation as it makes its way into underground aquifers. However, in developed areas, "impervious surfaces" impede this process and contribute to polluted urban runoff entering surface waters. These surfaces include human infrastructure like roads, sidewalks, driveways and parking lots that are covered by impenetrable materials such as asphalt, concrete, brick and stone, as well as buildings and other permanent structures. Soils that have been disturbed and compacted by urban development are often impervious as well.



14% of the land area within the **Little Sarasota Bay Watershed** is covered by

impervious surfaces

2014 Impervious Surface Coverage by Type in acres, within the Little Sarasota Bay Watershed








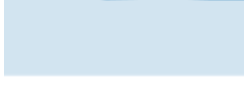

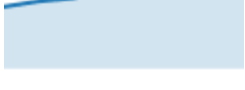
Land Use / Land Cover

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 »](#)**

Acreage and Percentage within each Land Use / Land Cover Category for Little Sarasota Bay Watershed

2018 Bay Conditions Report for Blackburn Bay

Land Use Classification	1990	2005	2011	2014	2017	2020	Trend
Urban & Built-up	8,943 31.9%	11,834 42.2%	12,102 43.1%	12,162 43.3%	12,777 45.5%	13,343 47.5%	
Agriculture	3,550 12.6%	3,228 11.5%	3,258 11.6%	4,223 15%	3,124 11.1%	2,837 10.1%	
Rangeland	825 2.9%	1,822 6.5%	1,474 5.3%	579 2.1%	1,233 4.4%	877 3.1%	
Upland Forests	7,098 25.3%	3,066 10.9%	2,981 10.6%	2,725 9.7%	2,687 9.6%	2,603 9.3%	
Water	3,429 12.2%	4,123 14.7%	4,147 14.8%	4,175 14.9%	4,227 15.1%	4,337 15.5%	
Wetlands	3,490 12.4%	3,133 11.2%	3,191 11.4%	3,227 11.5%	3,121 11.1%	3,120 11.1%	
Barren Land	62 0.2%	18 0.1%	19 0.1%	20 0.1%	6 0%	6 0%	
Transportation and Utilities	675 2.4%	841 3%	892 3.2%	952 3.4%	898 3.2%	948 3.4%	

2020 Land Use / Land Cover for Little Sarasota Bay Watershed

as a percentage of land area for this watershed

