Little Sarasota Bay Condition Report for 2022

CAUTION

Chl-a N P

2 out of 3 indicators were rated as **PASS**.

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

Bays included in this report:
Blind Pass, **Dryman Bay**, **Little Sarasota Bay**

Summary:

Both Chlorophyll *a* and Total Nitrogen were higher in Little Sarasota Bay in 2022, with increases late in the year likely related to the effects of Hurricane Ian in late September. The mean Chlorophyll *a* level rose sharply, from 6.49 ug/l to 10.44 ug/l, exceeding the threshold of 10.4 ug/l and demoting Little Sarasota Bay's chlorophyll rating from "Excellent" to "Caution". Total Nitrogen levels also rose, but not as dramatically, with the mean concentration increasing from 0.466 mg/l to 0.529 mg/l, above the target value.

Note: Beginning in 2020, Sarasota County switched from measuring apparent color to true color. The latter will be added to Bay Conditions reports in the near future.

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

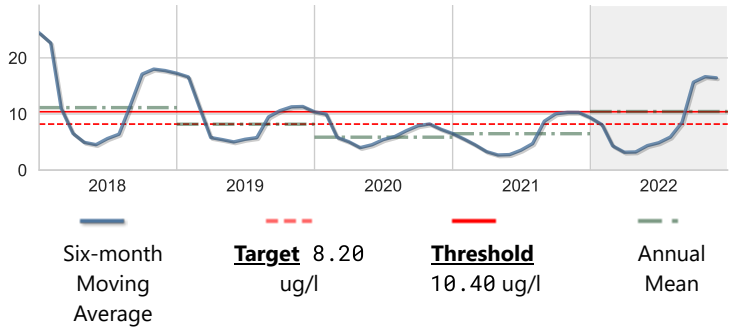
a desirable goal to be attained, while a threshold is an undesirable level which is to be avoided. An individual indicator receives an "Excellent" rating if its mean value is below the target, a "Good" rating if its mean value is above the target but does not exceed the threshold, and a "Caution" rating 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.

Chl-a Chlorophyll a

Score: Caution

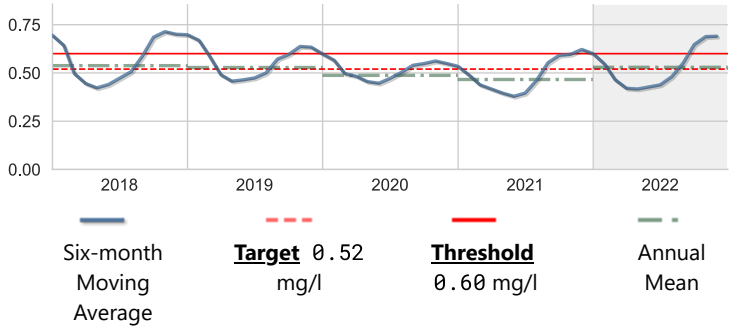
Units: ug/l	Year 2022	Historical period of record
High	59.40	96.90
Mean	10.44	8.22
Low	0.87	0.06
No. of Samples	71	3045



N Nitrogen, Total

Score: Good

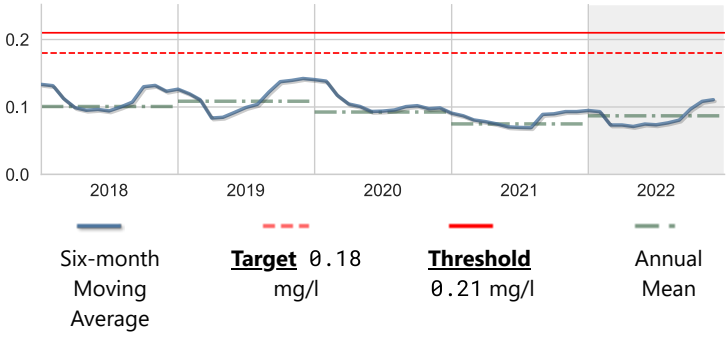
Units: mg/l	Year 2022	Historical period of record
High	1.405	1.465
Mean	0.529	0.488
Low	0.295	0.055
No. of Samples	71	1886



Phosphorus, Total

Score: Excellent

Units: mg/l	Year 2022	Historical period of record
High	0.220	0.510
Mean	0.087	0.120
Low	0.050	0.050
No. of Samples	71	1900

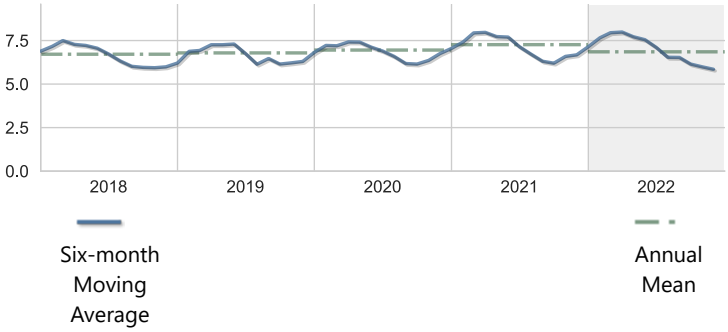


Other Measures of Bay Health

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

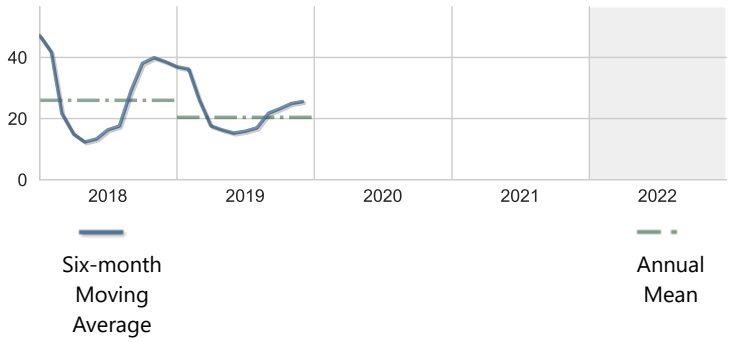
Units: mg/l	Year 2022	Historical period of record
High	9.29	11.60
Mean	6.85	6.66
Low	4.22	2.80
No. of Samples	71	2031



Apparent Color

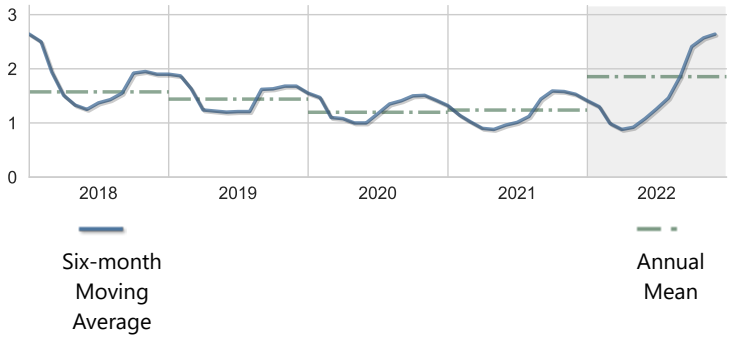
Note: The latest available sample for this parameter is from December 2019

Units: PCU	Year 2022	Historical period of record
High		190.00
Mean		24.61
Low		3.00
No. of Samples	0	1681



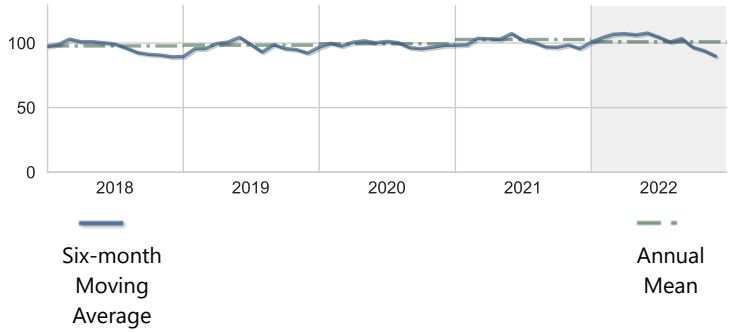
BOD, Biochemical oxygen demand

Units: mg/l	Year 2022	Historical period of record
High	4.80	6.50
Mean	1.85	1.69
Low	0.50	0.50
No. of Samples	71	1747



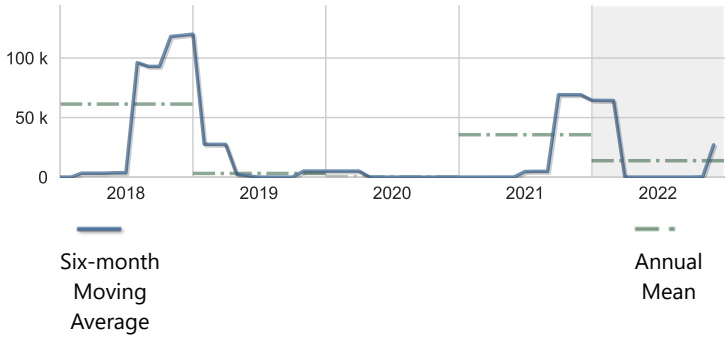
Dissolved oxygen saturation

Units: percent (%)	Year 2022	Historical period of record
High	150.00	167.00
Mean	100.94	96.25
Low	69.00	45.00
No. of Samples	71	2031



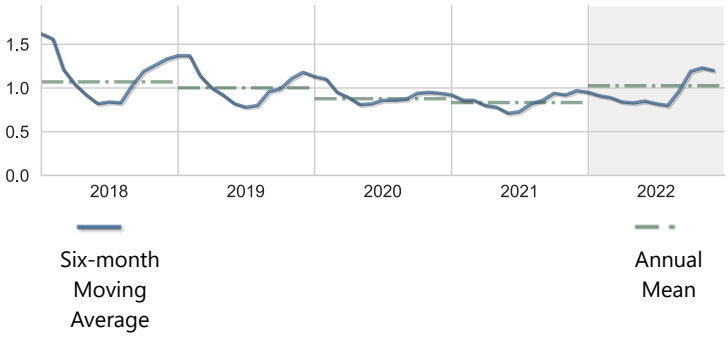
Karenia brevis ("red tide")

Units: #/l	Year 2022	Historical period of record
High	600000.00	2603000.00
Mean	13767.61	26827.88
Low	0.00	0.00
No. of Samples	71	1191



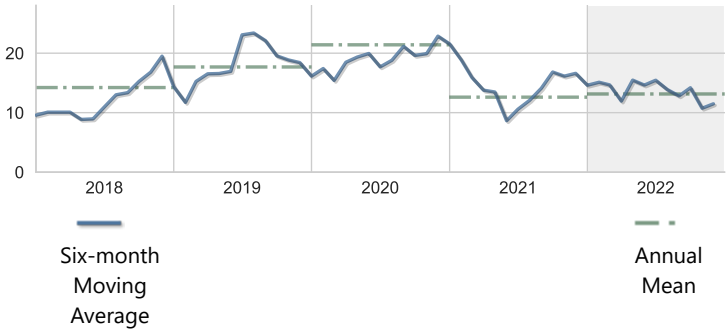
Light Attenuation

Units: K(1/m)	Year 2022	Historical period of record
High	3.36	4.14
Mean	1.03	1.01
Low	0.36	0.08
No. of Samples	71	1812



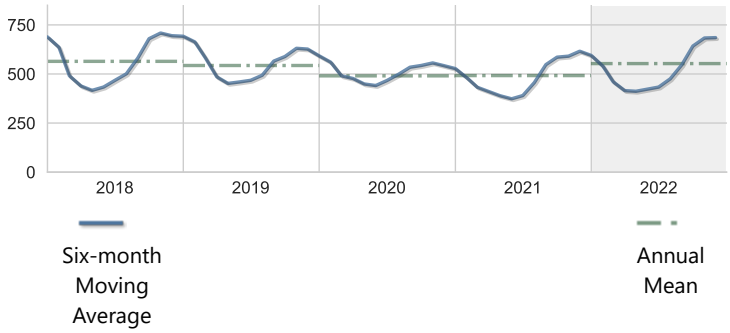
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2022	Historical period of record
High	34.00	246.00
Mean	13.14	16.16
Low	5.00	5.00
No. of Samples	71	1894



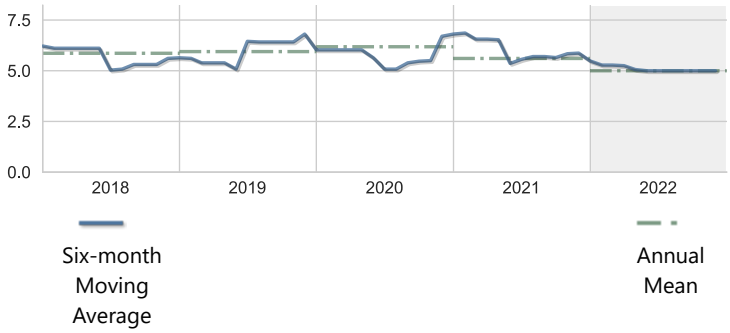
Nitrogen, Kjeldahl

Units: ug/l	Year 2022	Historical period of record
High	1400.00	1460.00
Mean	552.96	510.69
Low	290.00	50.00
No. of Samples	71	1900



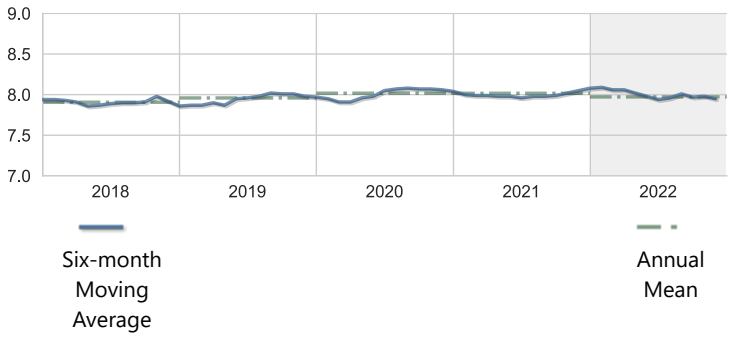
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2022	Historical period of record
High	5.00	92.00
Mean	5.00	6.10
Low	5.00	5.00
No. of Samples	71	2457



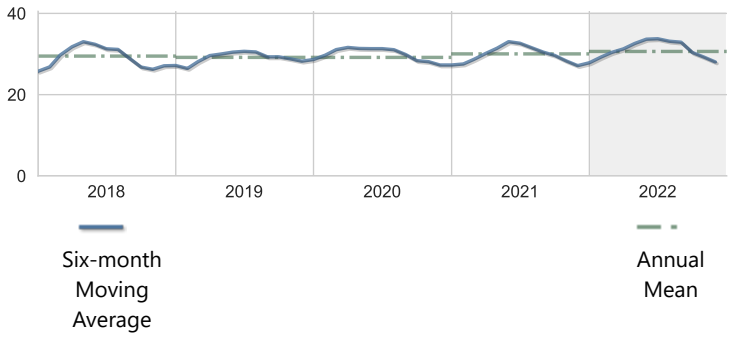
pH

Units: None	Year 2022	Historical period of record
High	8.55	8.55
Mean	7.97	7.96
Low	7.73	6.20
No. of Samples	71	2031



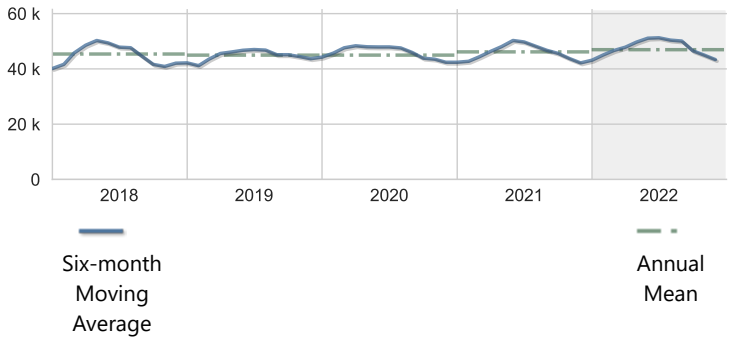
Salinity

Units: PSS	Year 2022	Historical period of record
High	36.30	39.50
Mean	30.63	30.30
Low	16.70	7.30
No. of Samples	71	2031



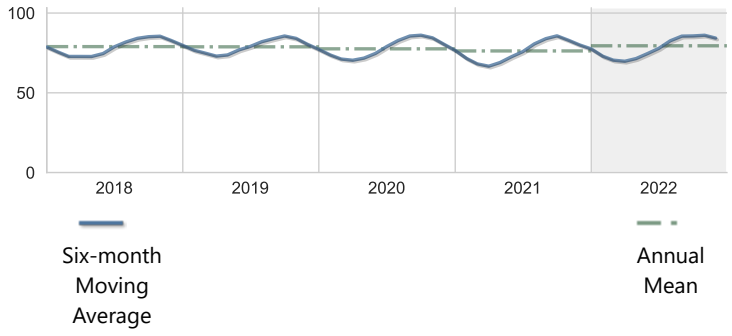
Specific conductance

Units: umho	Year 2022	Historical period of record
High	54700.00	59030.00
Mean	46949.30	46514.13
Low	27200.00	12670.00
No. of Samples	71	2031



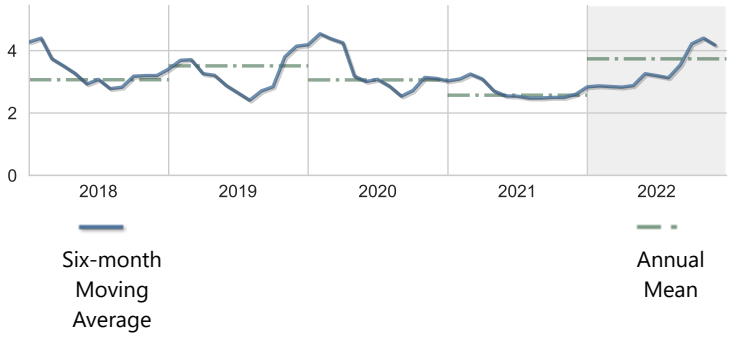
Temperature, water

Units: deg F	Year 2022	Historical period of record
High	90.68	92.12
Mean	79.47	77.43
Low	60.26	47.48
No. of Samples	71	2031



Turbidity

Units: NTU	Year 2022	Historical period of record
High	9.00	18.00
Mean	3.74	3.77
Low	1.50	0.60
No. of Samples	71	1894



Annual Averages

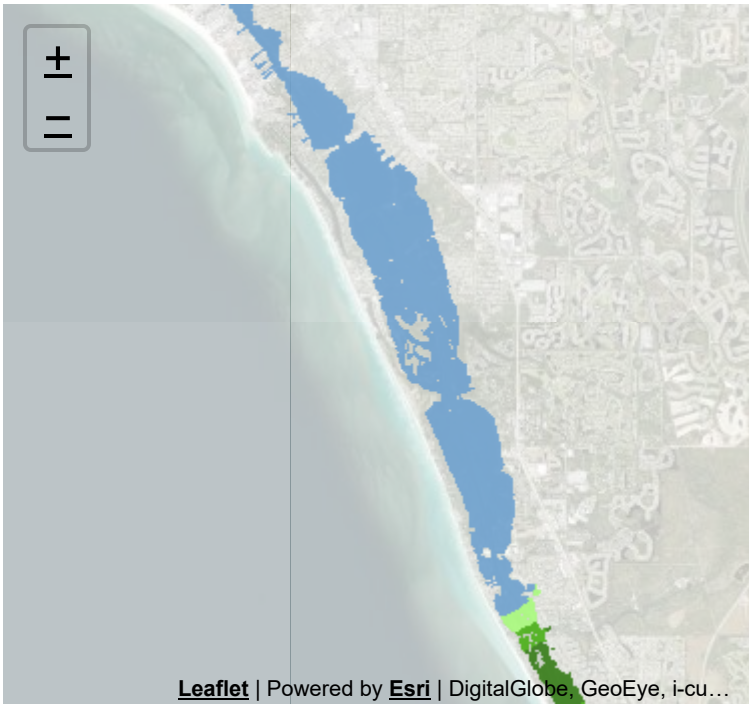
Indicator	Units	2018	2019	2020	2021	2022	Trend
Dissolved Oxygen	**mg/l**	6.71	6.79	6.95	7.26	6.85	
Dissolved oxygen saturation	**percent (%)**	97.76	98.33	99.41	102.72	100.94	
Light Attenuation	**K(1/m)**	1.07	1.00	0.88	0.83	1.03	
Salinity	**PSS**	29.49	29.17	29.17	30.03	30.63	
Turbidity	**NTU**	3.07	3.51	3.06	2.57	3.74	

Bay Contour Maps (2022)

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 2022 Monthly Contour Maps for: Chlorophyll a

January



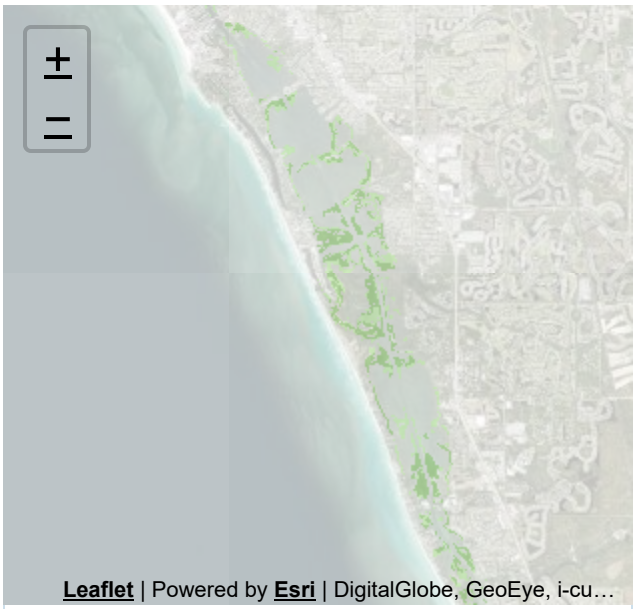
Contour Legend:

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

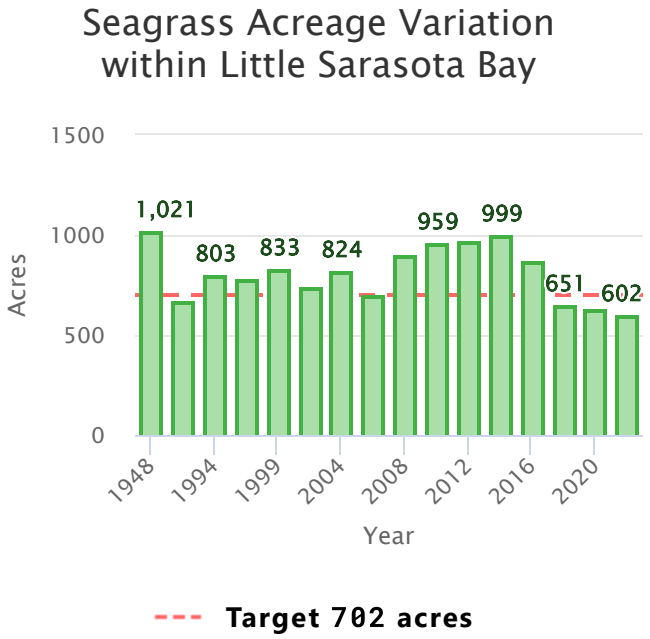
Seagrasses

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 2022:



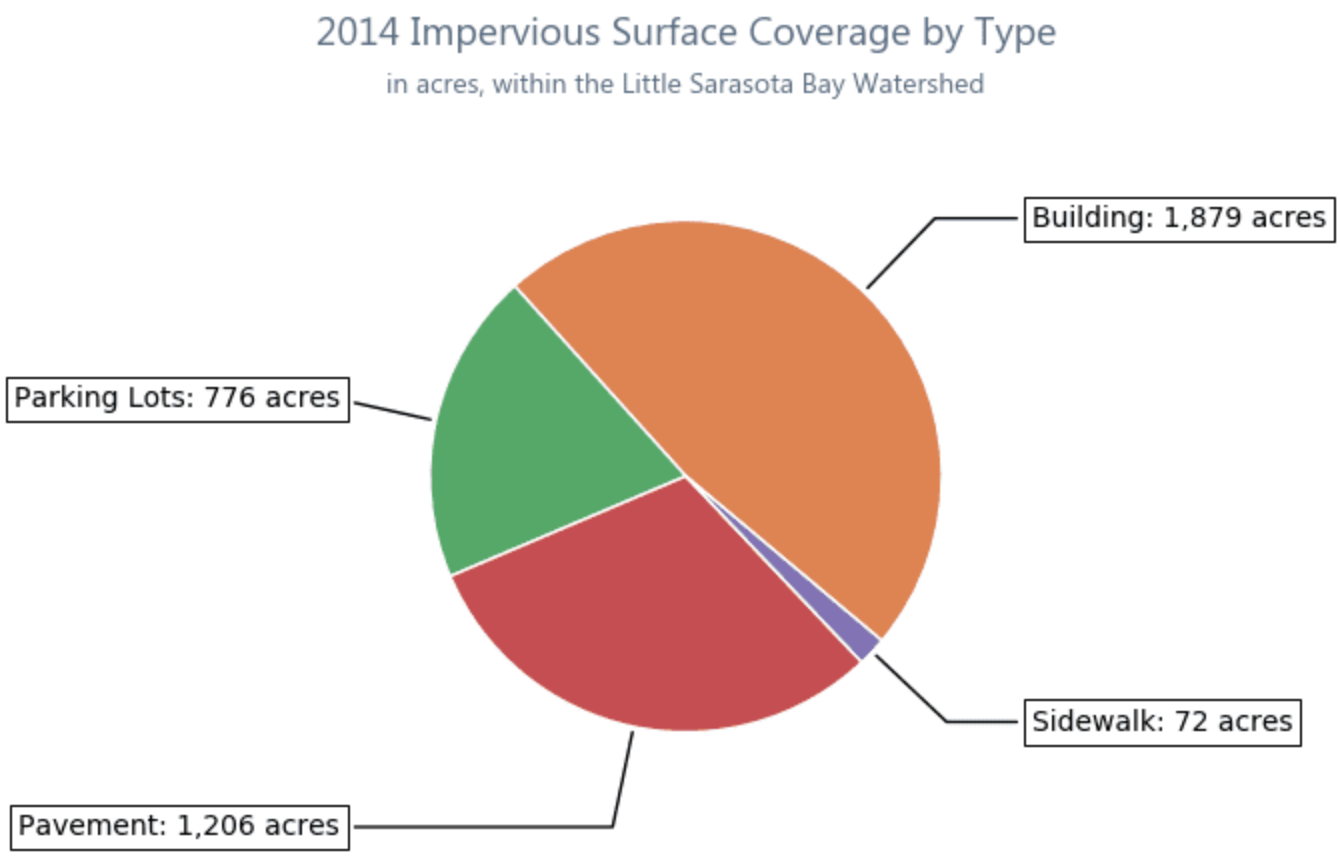
Legend:
Continuous Seagrass Patchy Seagrass



Impervious Features

Rain that falls on land that is in a natural state is absorbed and filtered by soils and vegetation as it makes it 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



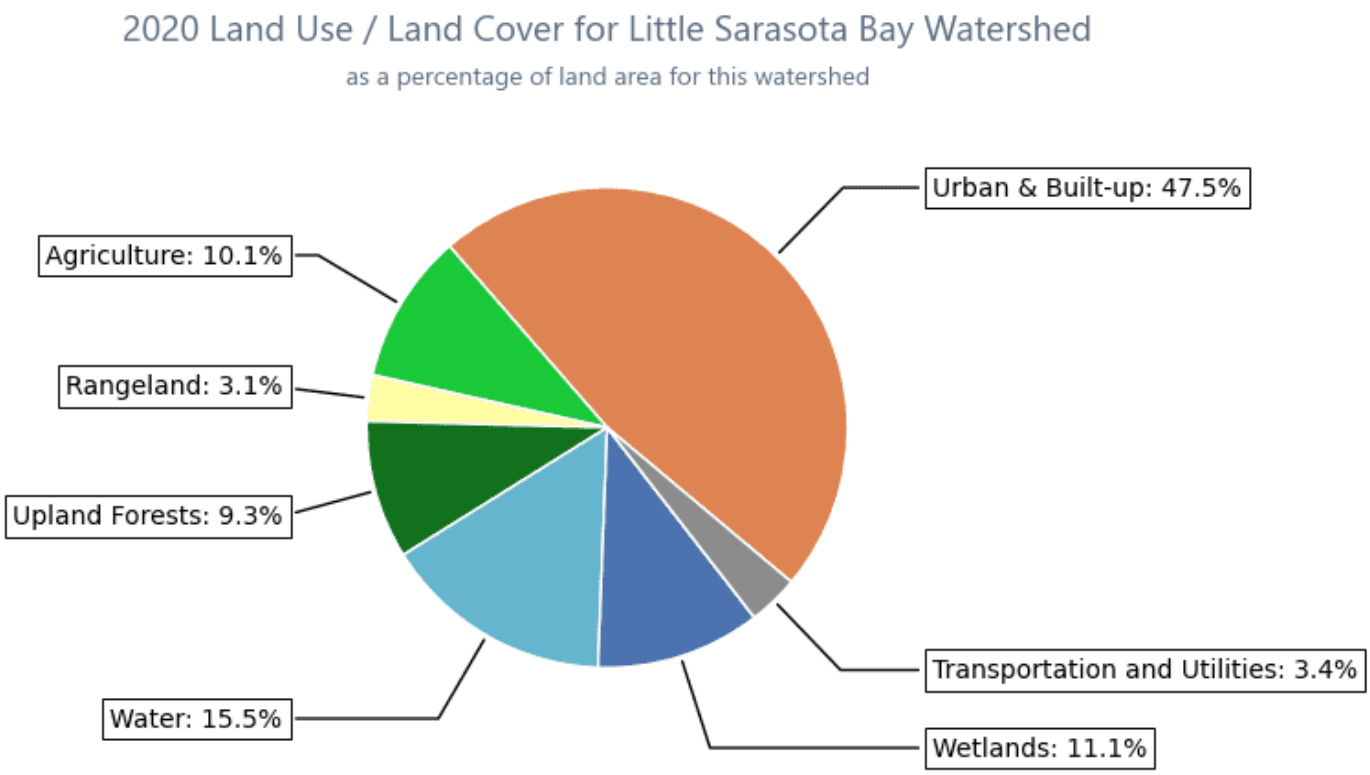
Land Use / Land Cover

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.

Little Sarasota 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

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
Urban & Built-up: 47.5%
Agriculture: 10.1%
Rangeland: 3.1%
Upland Forests: 9.3%
Water: 15.5%
Transportation and Utilities: 3.4%
Wetlands: 11.1%