

Sarasota Bay Condition Report for 2019

✓

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:

Sarasota Bay continued to have excellent water quality in 2019. All three rated indicators are well below target values, and two out of three decreased from their 2018 levels. Phosphorus did increase slightly, but is far lower than the target value of 0.15 mg/l and is not a cause for concern.

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



Bays included in this report: Bayou Louise, Brushy Bayou, Pansy 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. 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.

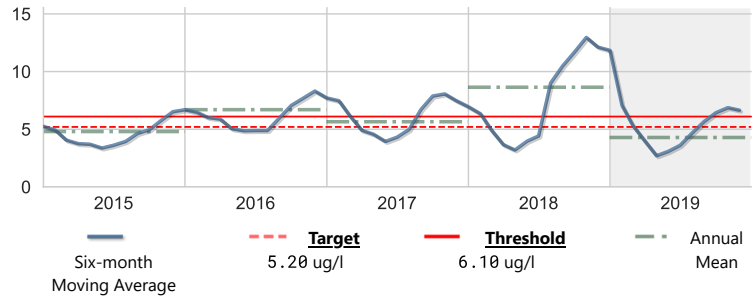
The charts below illustrate the general trend of water quality parameters. They show a six-month running average, which moderates high and low values in the data.



Chlorophyll a

Score: Excellent

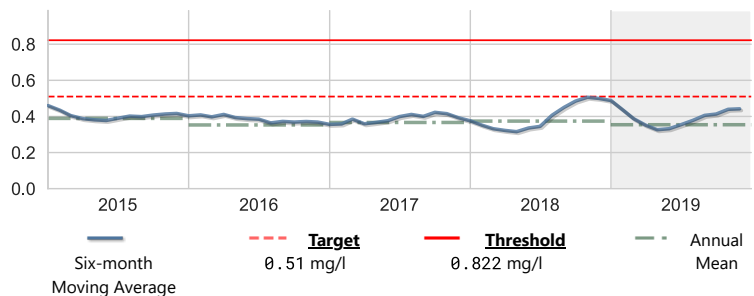
Units: ug/l	Year 2019	Historical period of record
High	16.80	129.20
Mean	4.28	4.84
Low	0.72	0.15
No. of Samples	180	8763



Nitrogen, Total

Score: Excellent

Units: mg/l	Year 2019	Historical period of record
High	0.725	2.075
Mean	0.354	0.342
Low	0.135	0.030
No. of Samples	180	5618



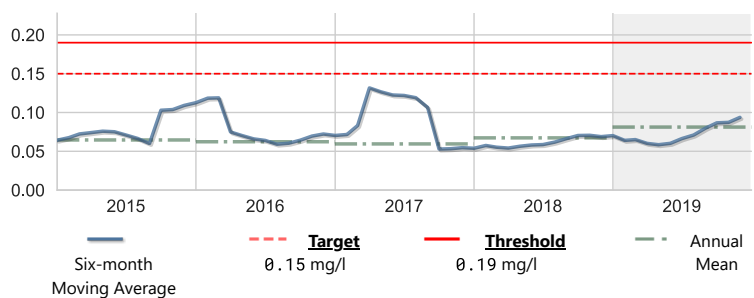
Targets and thresholds shown on this graph are advisory approximations computed by Sarasot recent data. Regulatory thresholds have not been established.



Phosphorus, Total

Score: Excellent

Units: mg/l	Year 2019	Historical period of record
High	0.220	4.400
Mean	0.081	0.082
Low	0.050	0.002
No. of Samples	180	5783

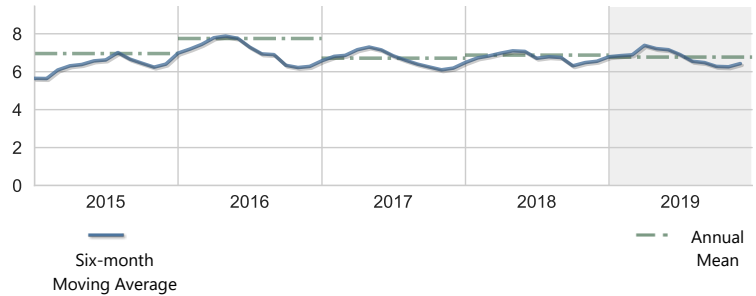


Other Measures of Bay Health

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.

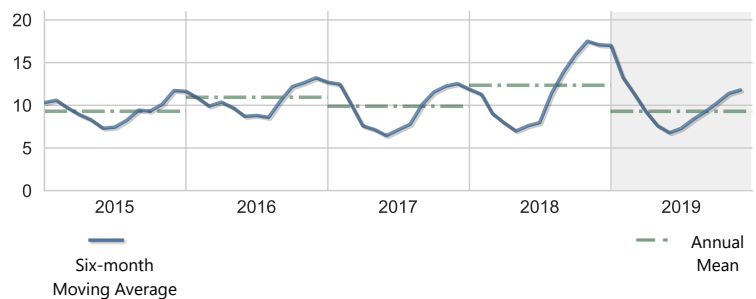
Dissolved Oxygen

Units: mg/l	Year 2019	Historical period of record
High	9.97	13.80
Mean	6.77	6.72
Low	4.65	0.10
No. of Samples	180	17598



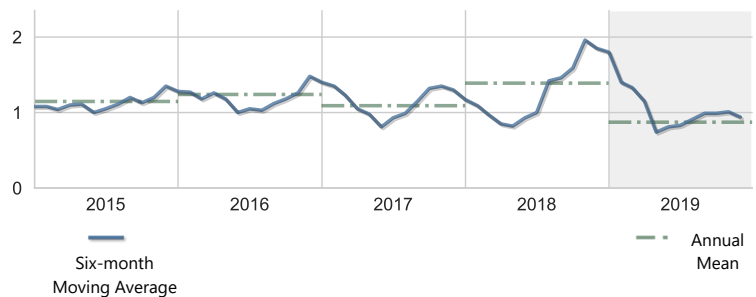
Apparent Color

Units: PCU	Year 2019	Historical period of record
High	24.00	98.00
Mean	9.29	12.82
Low	2.00	0.00
No. of Samples	180	5554



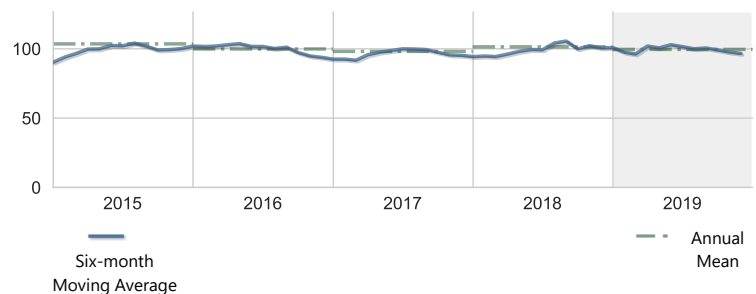
BOD, Biochemical oxygen demand

Units: mg/l	Year 2019	Historical period of record
High	2.70	9.20
Mean	0.87	1.16
Low	0.50	0.50
No. of Samples	180	4169



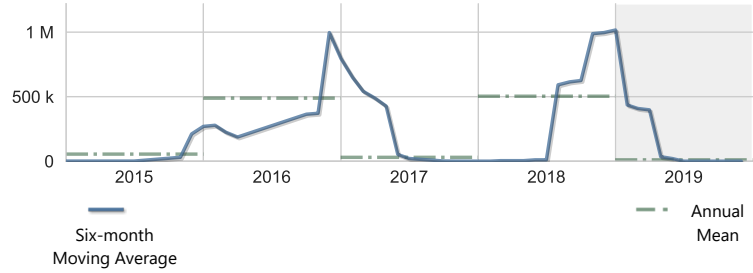
Dissolved oxygen saturation

Units: percent (%)	Year 2019	Historical period of record
High	138.00	214.71
Mean	99.58	97.92
Low	72.00	21.92
No. of Samples	180	16579



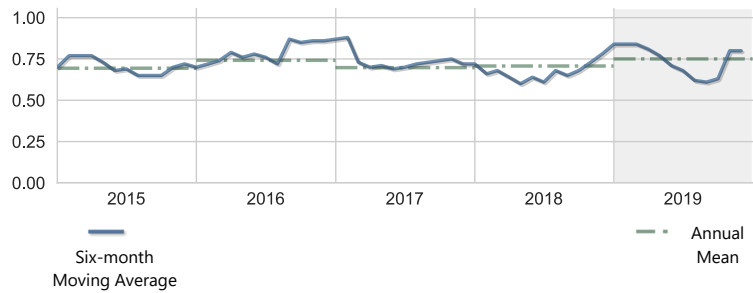
Karenia brevis ("red tide")

Units: #/l	Year 2019	Historical period of record
High	852000.00	13440000.00
Mean	10205.56	92384.49
Low	0.00	0.00
No. of Samples	180	3186



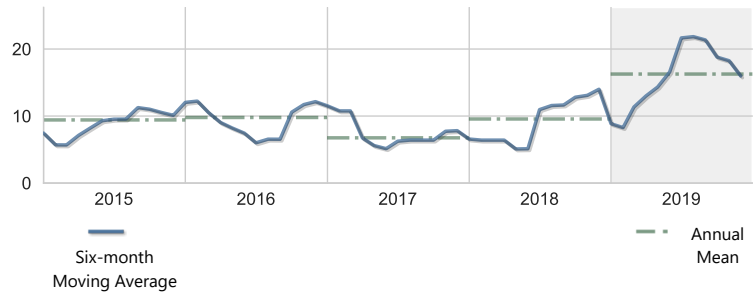
Light Attenuation

Units: K(1/m)	Year 2019	Historical period of record
High	3.63	4.23
Mean	0.75	0.69
Low	0.24	0.04
No. of Samples	180	4662



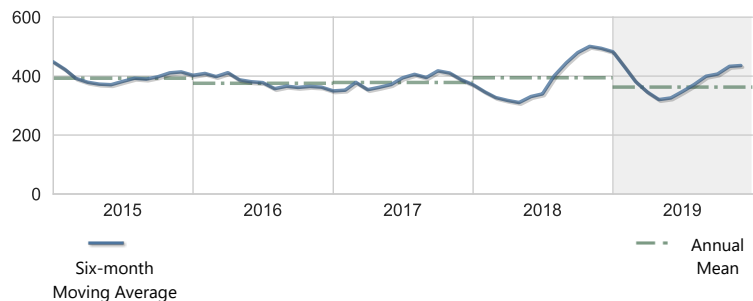
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2019	Historical period of record
High	73.00	159.00
Mean	16.27	11.11
Low	5.00	5.00
No. of Samples	180	4684



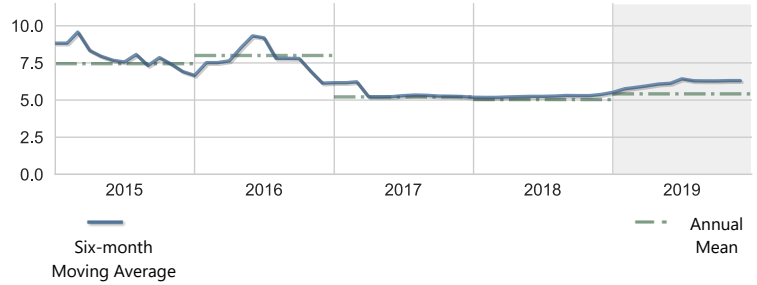
Nitrogen, Kjeldahl

Units: ug/l	Year 2019	Historical period of record
High	720.00	2030.00
Mean	362.72	372.95
Low	130.00	10.00
No. of Samples	180	5907



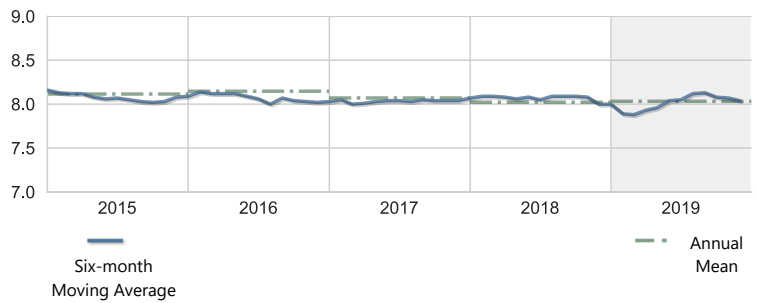
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2019	Historical period of record
High	24.00	210.00
Mean	5.42	8.39
Low	5.00	1.00
No. of Samples	180	6727



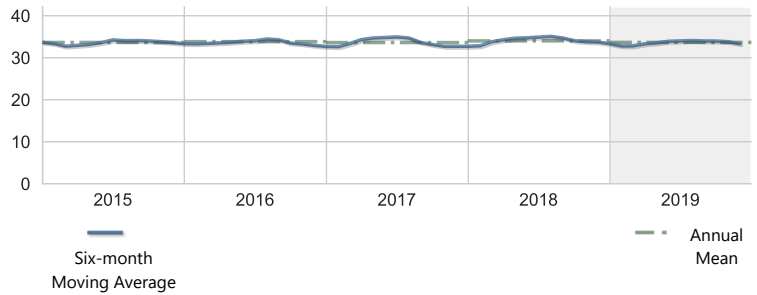
pH

Units: None	Year 2019	Historical period of record
High	8.49	9.62
Mean	8.03	8.07
Low	7.51	3.90
No. of Samples	180	14640



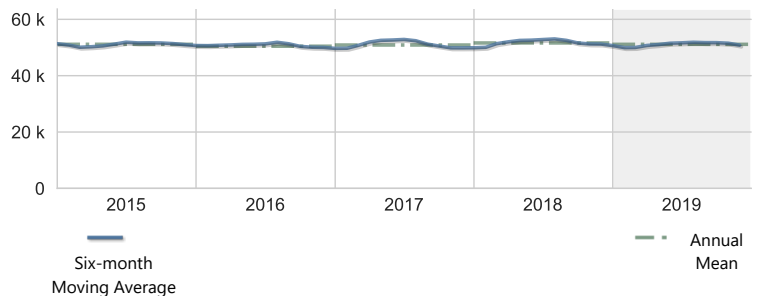
Salinity

Units: PSS	Year 2019	Historical period of record
High	36.70	68.20
Mean	33.66	33.28
Low	25.90	3.60
No. of Samples	180	19108



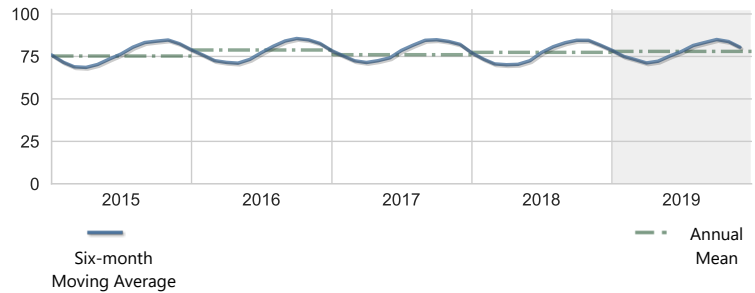
Specific conductance

Units: umho	Year 2019	Historical period of record
High	55200.00	94950.00
Mean	51128.89	51603.92
Low	40500.00	34.00
No. of Samples	180	6064



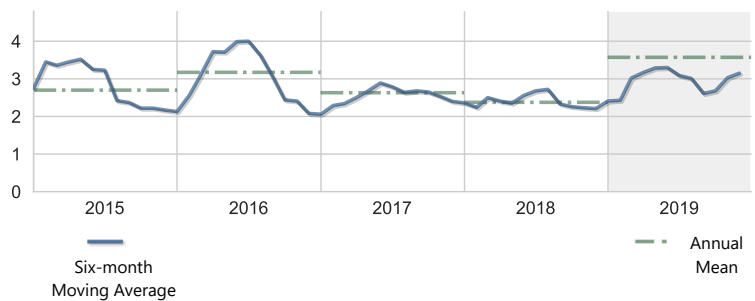
Temperature, water

Units: deg F	Year 2019	Historical period of record
High	89.78	100.40
Mean	77.97	76.96
Low	62.06	35.24
No. of Samples	180	19290



Turbidity

Units: NTU	Year 2019	Historical period of record
High	19.00	39.00
Mean	3.57	2.64
Low	0.40	0.03
No. of Samples	180	15366



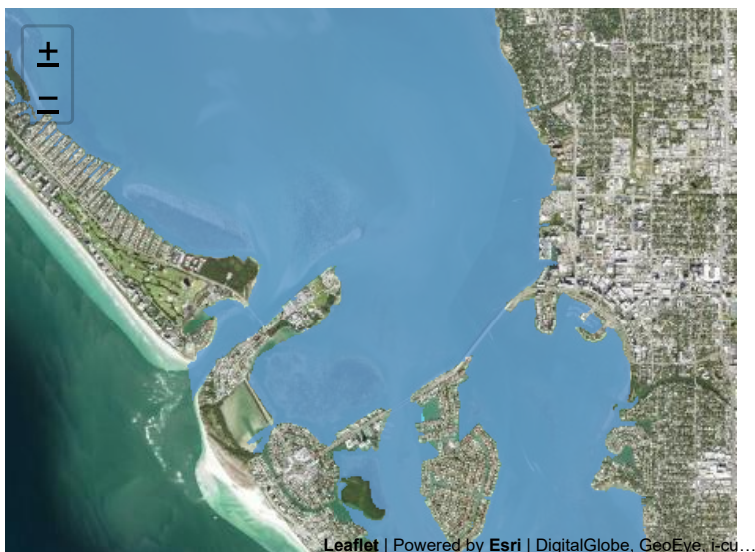
Annual Averages

Indicator	Units	2015	2016	2017	2018	2019	Trend
Dissolved Oxygen	mg/l	6.96	7.75	6.71	6.88	6.77	
Dissolved oxygen saturation	percent (%)	103.56	99.90	98.15	101.45	99.58	
Light Attenuation	K(1/m)	0.69	0.74	0.70	0.71	0.75	
Salinity	PSS	33.64	33.84	33.62	34.02	33.66	
Turbidity	NTU	2.70	3.17	2.63	2.38	3.57	

Bay Contour Maps (2019)

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 2019 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

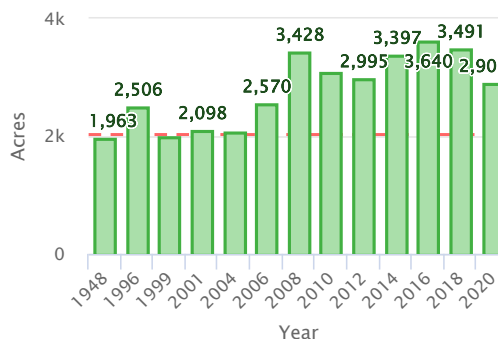
Among the most important habitats in Florida's estuarine environments, seagrass beds are indispensable for the role they play in cycling nutrients, supplying food for wildlife, stabilizing sediments, and providing habitat for juvenile and adult finfish and shellfish. Use the interactive map below to 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:



- Legend:**
- Continuous Seagrass
 - Patchy Seagrass

Seagrass Acreage Variation within Sarasota Bay



--- Target 2, 022 acres

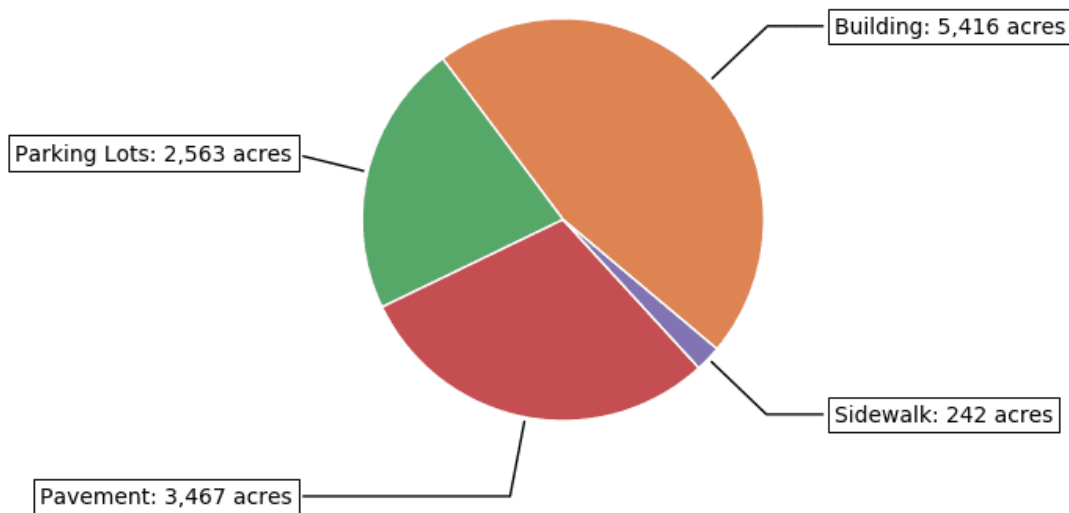
Impervious Features

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.

 **19%** of the land area within the **Sarasota Bay Watershed** is covered by impervious surfaces

2014 Impervious Surface Coverage by Type

in acres, within the 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.

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 »**](#)

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

2019 Bay Conditions Report for Sarasota Bay

Land Use Classification	1990	2005	2011	2014	2017	2020	Trend
Urban & Built-up	32,908 53.3%	37,844 61.3%	38,343 62.1%	37,987 61.6%	38,749 62.8%	56,970 59.1%	
Agriculture	6,338 10.3%	2,497 4%	2,215 3.6%	2,309 3.7%	1,822 3%	2,986 3.1%	
Rangeland	547 0.9%	199 0.3%	225 0.4%	430 0.7%	208 0.3%	261 0.3%	
Upland Forests	3,588 5.8%	2,109 3.4%	1,874 3%	1,923 3.1%	1,756 2.8%	2,075 2.2%	
Water	13,350 21.6%	14,227 23.1%	14,278 23.1%	14,131 22.9%	14,255 23.1%	25,360 26.3%	
Wetlands	2,870 4.7%	2,227 3.6%	2,229 3.6%	2,372 3.8%	2,327 3.8%	4,889 5.1%	
Barren Land	29 0%	9 0%	99 0.2%	109 0.2%	100 0.2%	76 0.1%	
Transportation and Utilities	1,845 3%	2,602 4.2%	2,452 4%	2,453 4%	2,511 4.1%	3,783 3.9%	

2020 Land Use / Land Cover for Sarasota Bay Watershed

as a percentage of land area for this watershed

