



Hudson Bayou Condition Report for 2019

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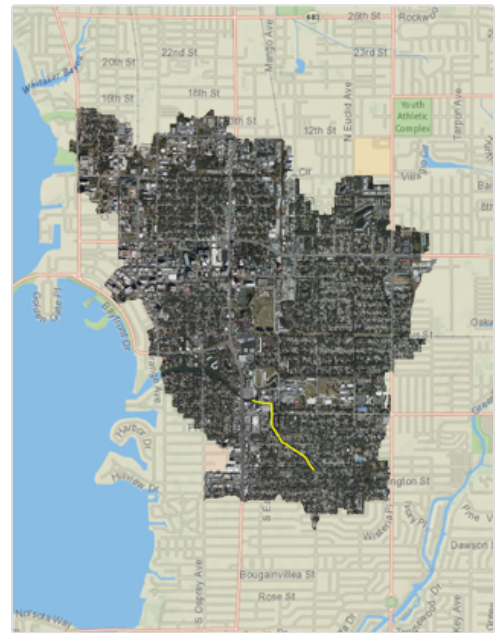
PASS

Chl-a
N
P
DO

4 out of 4 indicators were rated as **PASS.**

All four indicators must pass for the creek to be rated as **PASS.**

Hudson Bayou



Size: 2,406 acres
Location: North Sarasota County
Discharges into: Sarasota Bay

The Hudson Bayou Basin is entirely within the bounds of the City of Sarasota. Its surface water system has undergone significant alteration over the past century. The Sarasota County 1847 General Land Office Survey does not confirm Hudson Bayou but does show a few inland waterways. The 1959 USDA NRCS Soil Survey Map shows that Hudson Bayou extended about 1 mile inland from the bay through somewhat poorly drained soil associated with flatwoods. The survey also shows an area of well-drained soil likely consisting of scrub land north of the bayou, which continues north along the coast. *For basin details see: **Sarasota Bay Water Quality Management Plan (2012)***

Water Chemistry Ratings | Freshwater Portion of the Creek

Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of nitrogen, phosphorus, and chlorophyll *a*, and a minimum allowable concentration of dissolved oxygen in these streams.

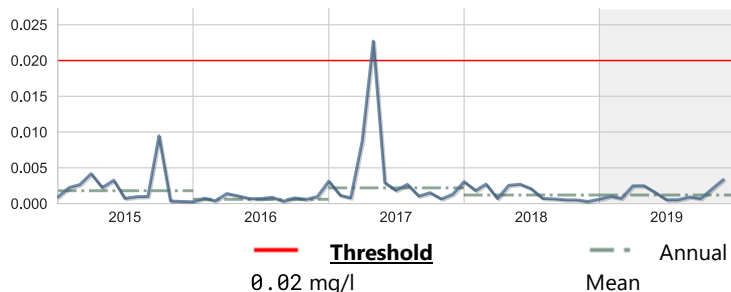


Chlorophyll a

Score: Pass

Units: mg/l	Year 2019	Historical period of record
High	0.024	0.1568
Mean	0.0012	0.0013
Low	0.0004	0.0002
No. of Samples	50	696

Five-year Rolling Average

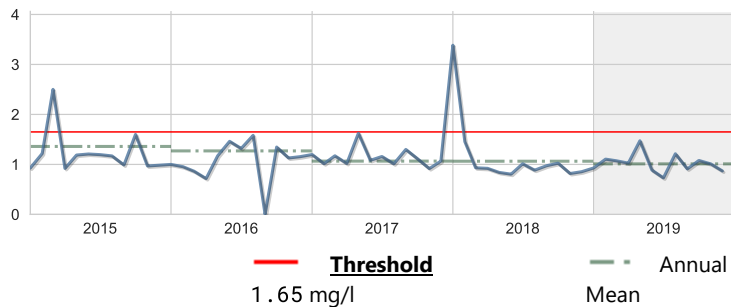


Nitrogen, Total

Score: Pass

Units: mg/l	Year 2019	Historical period of record
High	3.303	17.52
Mean	1.0106	0.9034
Low	0.625	0.0018
No. of Samples	49	406

Five-year Rolling Average



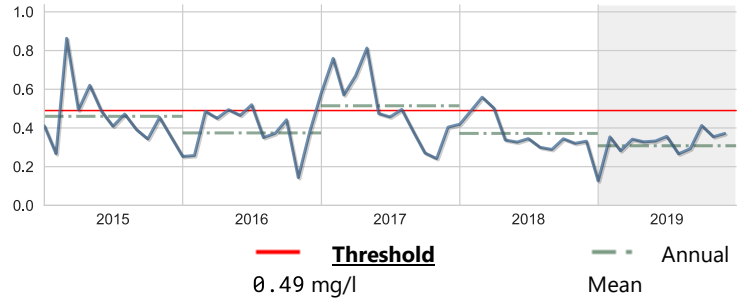


Phosphorus, Total

Score: Pass

Units: mg/l	Year 2019	Historical period of record
High	1.80	4.05
Mean	0.3081	0.4361
Low	0.047	0.047
No. of Samples	49	715

Five-year Rolling Average



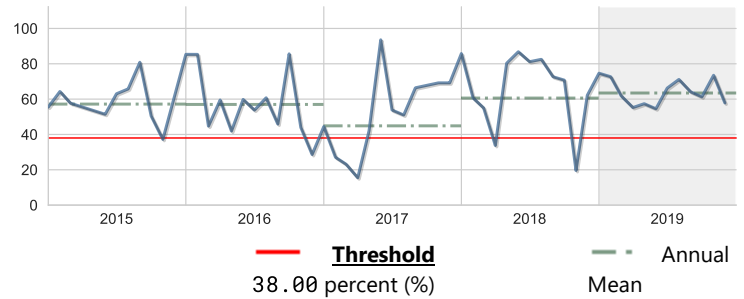
Dissolved Oxygen Saturation

Note: Low DO saturation also may be naturally influenced by inflows from nearby wetlands or groundwater sources.

Score: Pass

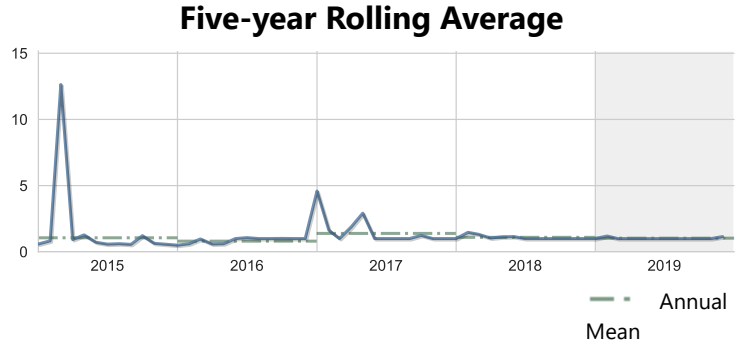
Units: percent (%)	Year 2019	Historical period of record
High	96.10	144.70
Mean	63.45	53.07
Low	22.60	3.30
No. of Samples	25	713

Five-year Rolling Average



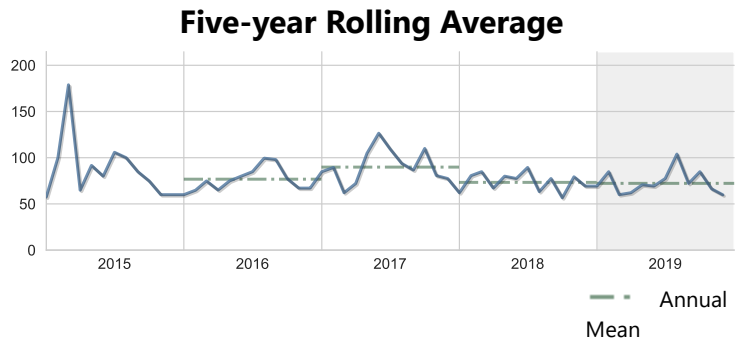
BOD, Biochemical oxygen demand

Units: mg/l	Year 2019	Historical period of record
High	1.32	13.10
Mean	1.03	0.98
Low	1.00	0.50
No. of Samples	44	677



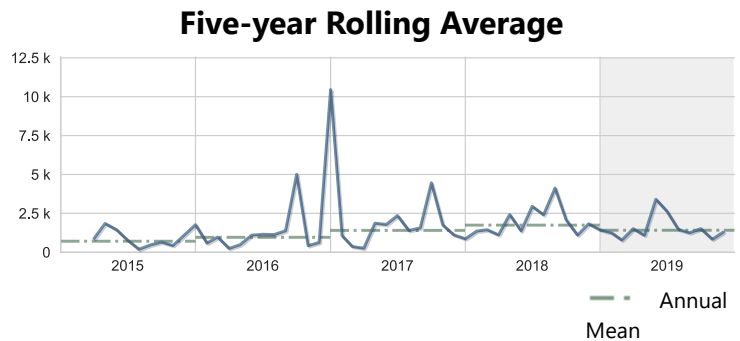
Color

Units: PCU	Year 2019	Historical period of record
High	120.00	400.00
Mean	72.23	72.45
Low	40.00	20.00
No. of Samples	49	796



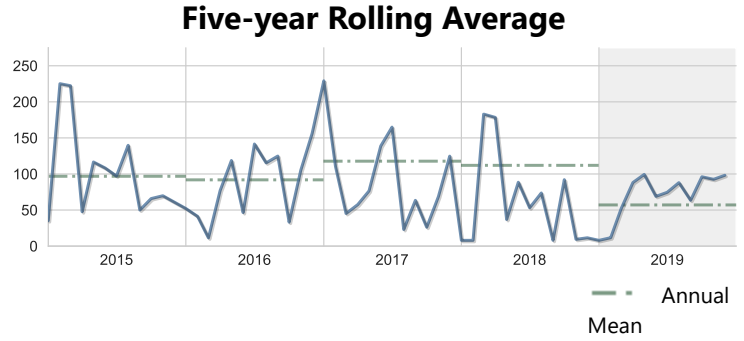
Escherichia coli

Units: cfu/100ml	Year 2019	Historical period of record
High	5475.00	10462.00
Mean	1414.99	1228.53
Low	315.00	41.00
No. of Samples	48	218



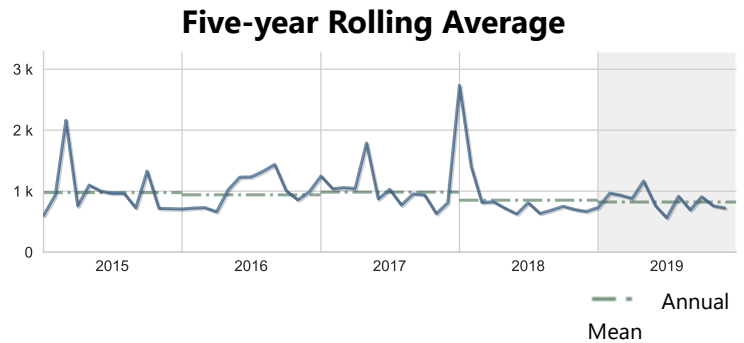
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2019	Historical period of record
High	309.00	650.00
Mean	57.08	52.68
Low	8.00	0.008
No. of Samples	49	737



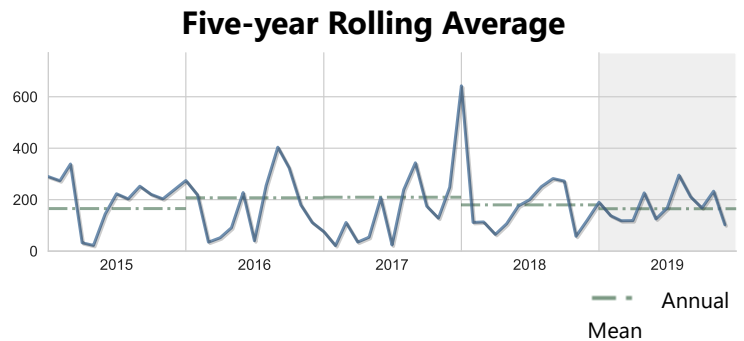
Nitrogen, Kjeldahl

Units: ug/l	Year 2019	Historical period of record
High	3060.00	13800.00
Mean	821.72	782.02
Low	446.00	0.00
No. of Samples	49	714



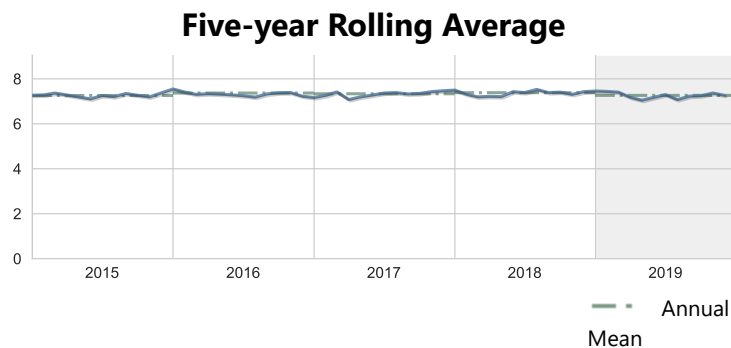
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2019	Historical period of record
High	344.00	3720.00
Mean	164.72	121.4
Low	44.00	4.00
No. of Samples	49	715



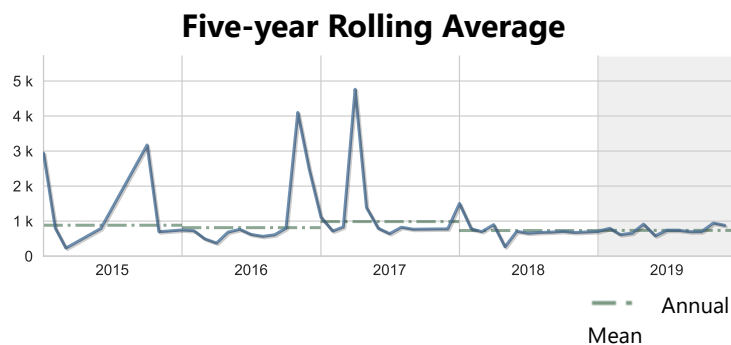
pH

Units: None	Year 2019	Historical period of record
High	7.64	758.00
Mean	7.26	7.46
Low	6.94	6.62
No. of Samples	25	689



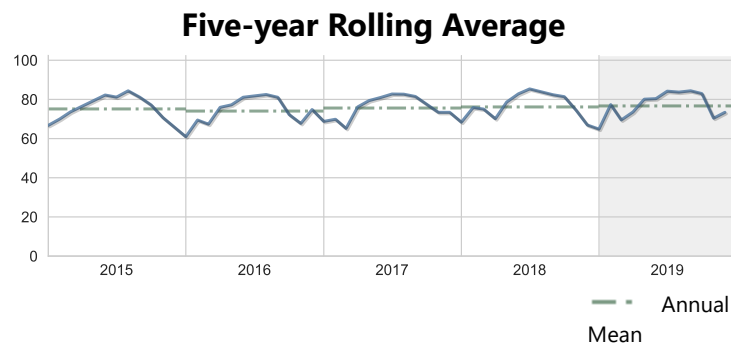
Specific conductance

Units: umho	Year 2019	Historical period of record
High	1545.48	54000.00
Mean	735.44	821.54
Low	396.645	0.445
No. of Samples	25	617



Temperature, water

Units: deg F	Year 2019	Historical period of record
High	85.5685	91.40
Mean	76.67	73.61
Low	64.8426	53.87
No. of Samples	25	515



Water Chemistry Ratings | Tidal Portion of the Creek

Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of chlorophyll *a* and a minimum allowable concentration of dissolved oxygen in these streams. Florida has no regulatory thresholds for nitrogen or phosphorus in tidal creeks so trends are used to rate the creeks.

Water quality data are not available for the tidal portion of this creek.

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.

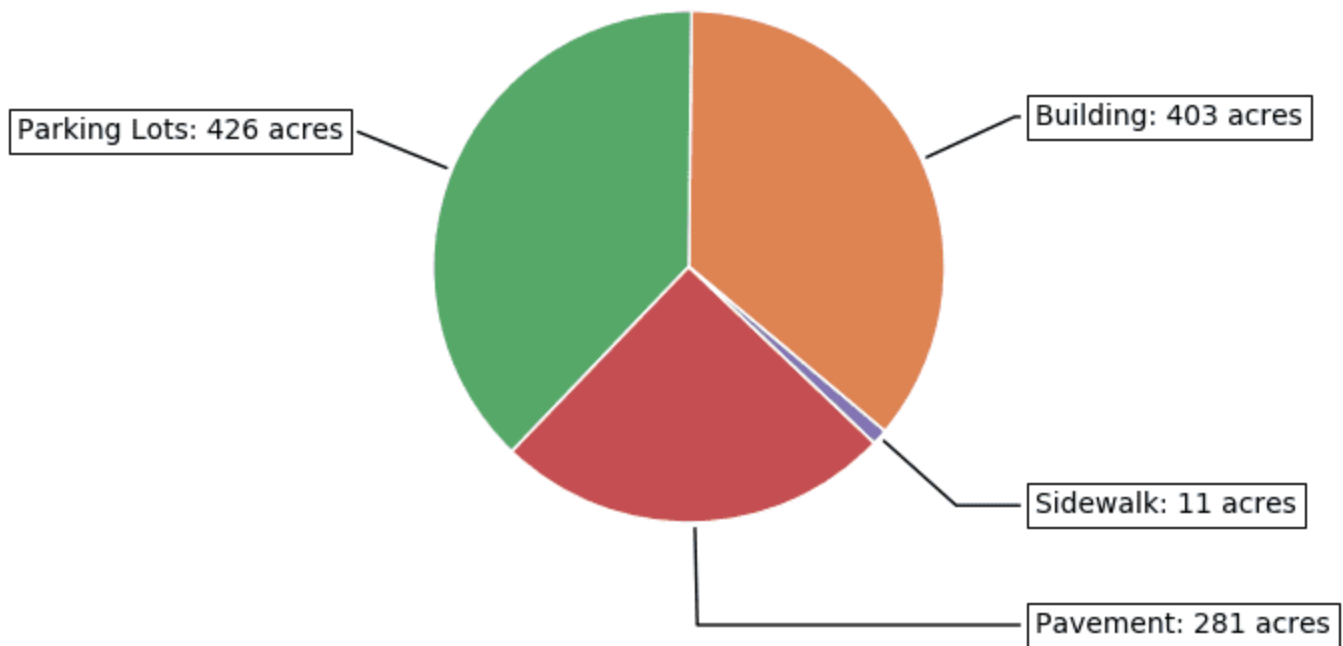


47% of the land area within the **Hudson Bayou Basin** is covered by impervious

surfaces

2014 Impervious Surface Coverage by Type

in acres, within the Hudson Bayou Basin



Land Use / Land Cover

Land use within a creek'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 (e.g. upland or wetland), 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.

Acreeage and Percentage within each Land Use / Land Cover Category for Hudson Bayou Basin

2019 Creek Conditions Report for Hudson Bayou

Land Use Classification	1990	1995	1999	2005	2011	2014	2017	Trend
Urban & Built-up	2,224 92.4%	2,244 93.3%	2,243 93.2%	2,260 93.9%	2,260 93.9%	2,249 93.5%	2,260 93.9%	
Upland Forests	16 0.7%	9 0.4%	9 0.4%	0 0%	0 0%	0 0%	0 0%	
Water	24 1%	25 1%	26 1.1%	26 1.1%	27 1.1%	27 1.1%	27 1.1%	
Wetlands	16 0.7%	13 0.5%	13 0.5%	10 0.4%	10 0.4%	10 0.4%	10 0.4%	
Transportation and Utilities	126 5.2%	115 4.8%	115 4.8%	109 4.6%	109 4.6%	120 5%	109 4.5%	

2017 Land Use / Land Cover for Hudson Bayou Basin
as a percentage of land area for this basin

