



Hudson Bayou Condition Report for 2012

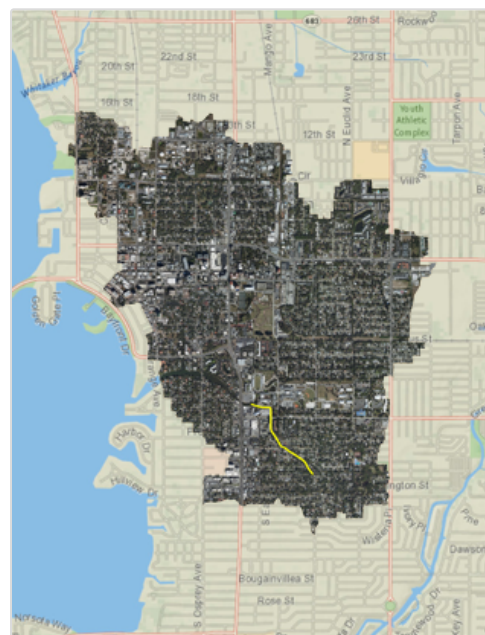
CAUTION

Chl-a
N
P
DO

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

2 out of 4 indicators were 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.

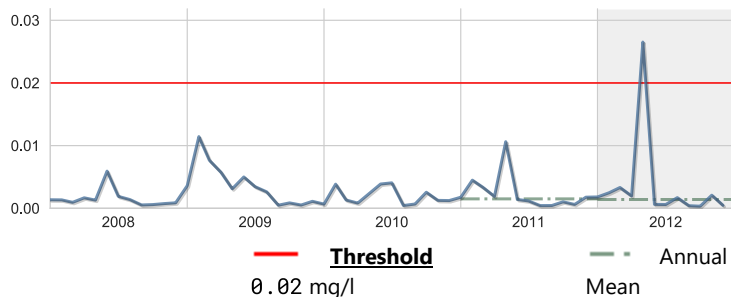


Chlorophyll a

Score: Pass

Units: mg/l	Year 2012	Historical period of record
High	0.1568	0.1568
Mean	0.0014	0.0015
Low	0.0003	0.0003
No. of Samples	72	301

Five-year Rolling Average

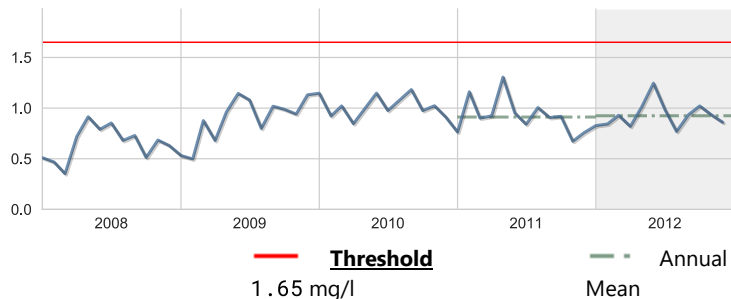


Nitrogen, Total

Score: Pass

Units: mg/l	Year 2012	Historical period of record
High	1.866	1.866
Mean	0.9244	0.821
Low	0.549	0.082
No. of Samples	24	161

Five-year Rolling Average



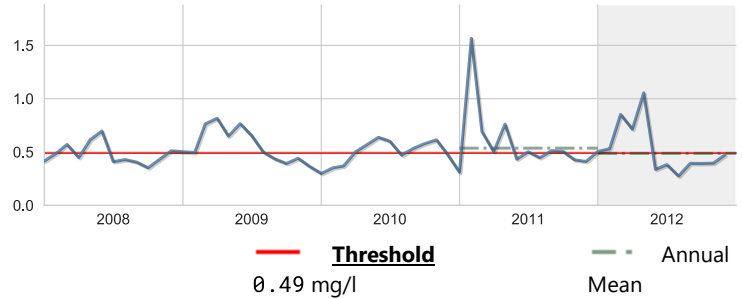


Phosphorus, Total

Score: Pass

Units: mg/l	Year 2012	Historical period of record
High	1.41	4.05
Mean	0.487	0.4769
Low	0.216	0.15
No. of Samples	72	308

Five-year Rolling Average



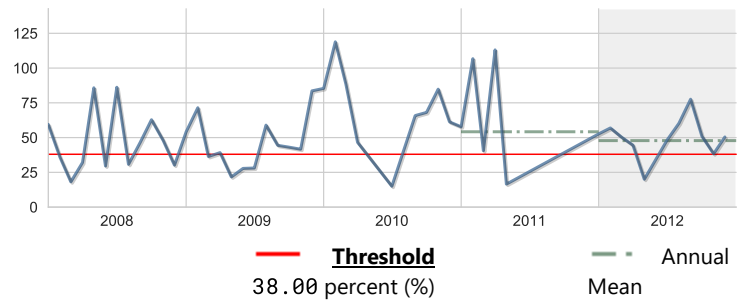
Dissolved Oxygen Saturation

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

Score: Pass

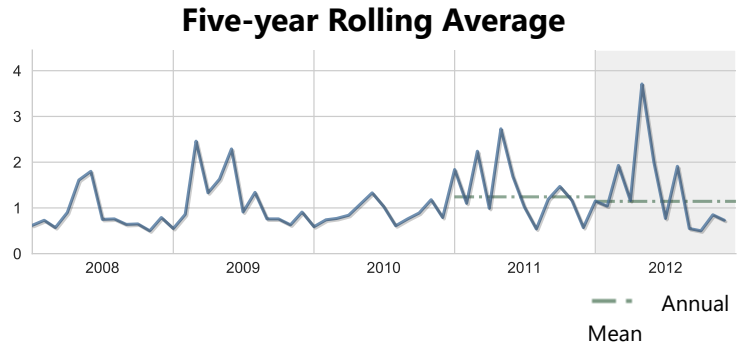
Units: percent (%)	Year 2012	Historical period of record
High	118.50	144.70
Mean	47.83	53.31
Low	8.10	4.20
No. of Samples	63	347

Five-year Rolling Average



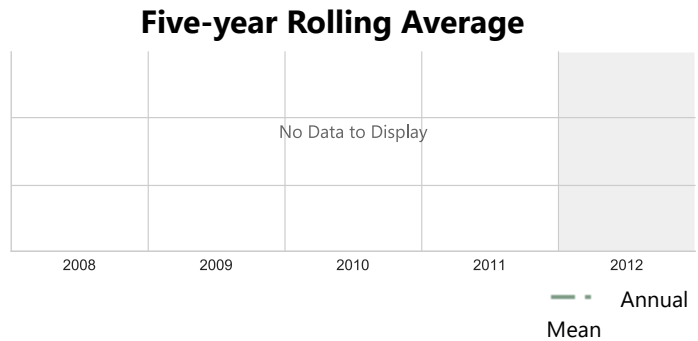
BOD, Biochemical oxygen demand

Units: mg/l	Year 2012	Historical period of record
High	8.44	9.01
Mean	1.14	1.04
Low	0.50	0.50
No. of Samples	68	285



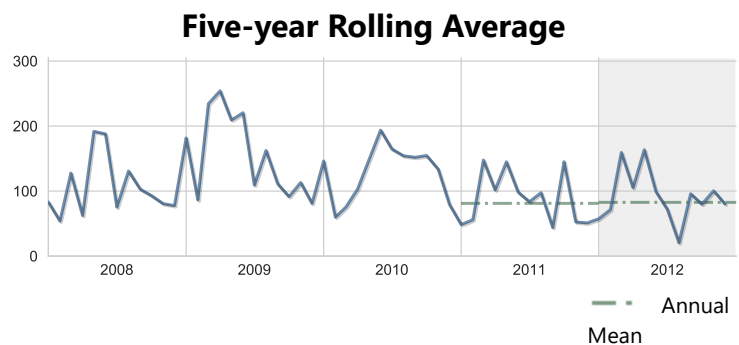
Color

Units: PCU	Year 2012	Historical period of record
High		65.00
Mean		43.6
Low		20.00
No. of Samples	0	10



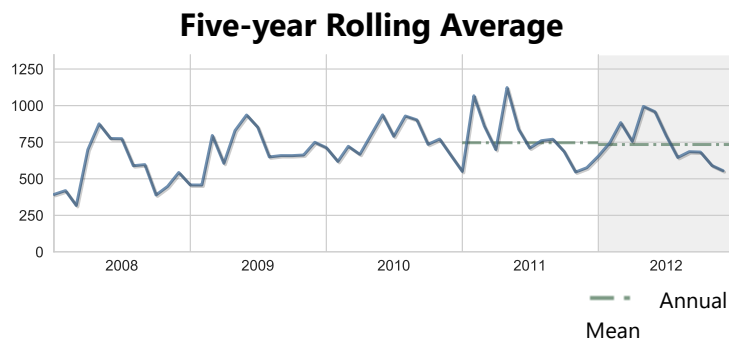
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2012	Historical period of record
High	609.00	609.00
Mean	82.64	92.17
Low	14.00	0.4065
No. of Samples	72	306



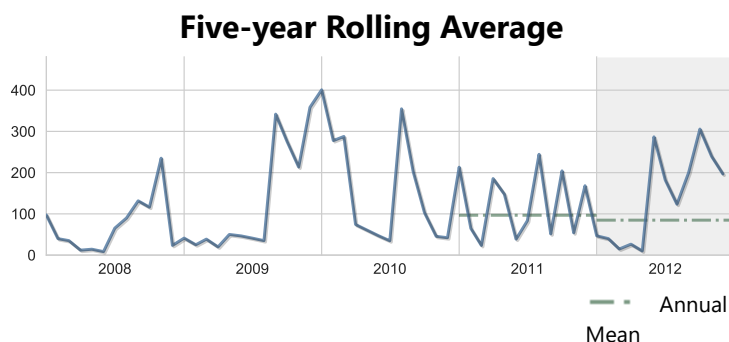
Nitrogen, Kjeldahl

Units: ug/l	Year 2012	Historical period of record
High	1860.00	1860.00
Mean	734.02	698.82
Low	470.00	0.00
No. of Samples	72	307



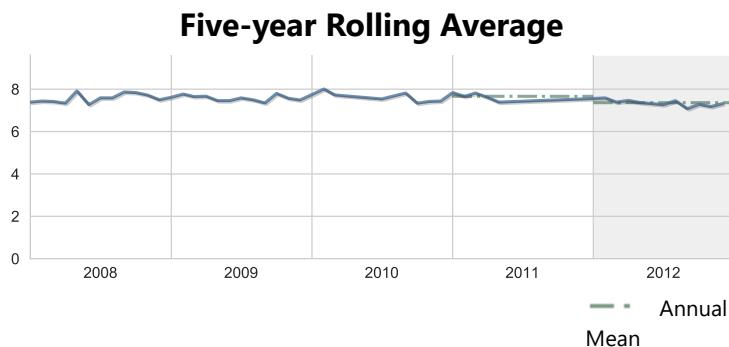
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2012	Historical period of record
High	597.00	681.00
Mean	84.78	93.23
Low	4.00	4.00
No. of Samples	72	307



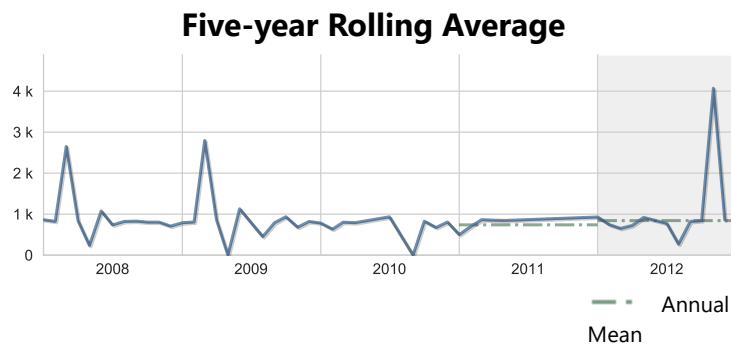
pH

Units: None	Year 2012	Historical period of record
High	7.77	9.10
Mean	7.36	7.57
Low	6.91	6.64
No. of Samples	66	260



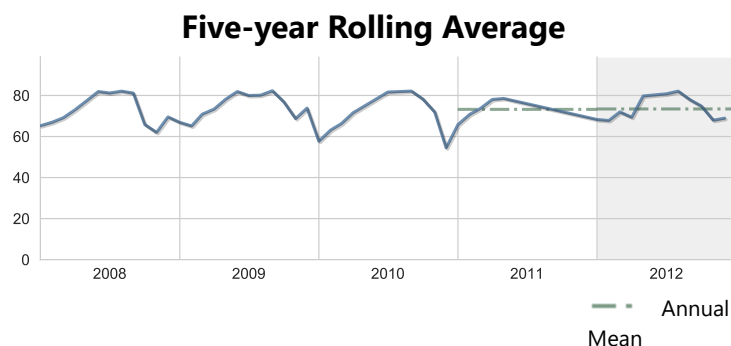
Specific conductance

Units: umho	Year 2012	Historical period of record
High	20313.00	54000.00
Mean	842.29	888.41
Low	235.00	0.445
No. of Samples	66	257



Temperature, water

Units: deg F	Year 2012	Historical period of record
High	82.31	91.40
Mean	73.42	72.63
Low	67.10	53.87
No. of Samples	44	209



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.

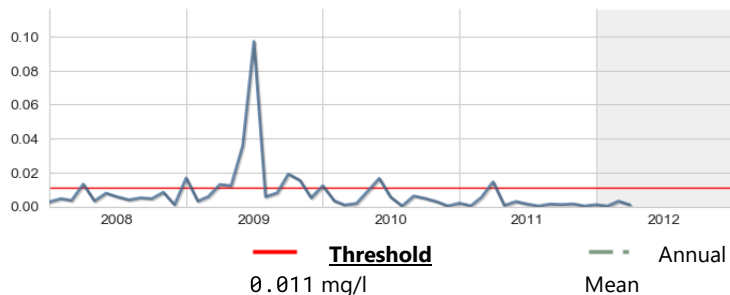


Chlorophyll a

Score: Pass

Units: mg/l	Year 2012	Historical period of record
High	0.0	0.1
Mean	0.0009	0.0029
Low	0.0003	0.0003
No. of Samples	12	157

Five-year Rolling Average

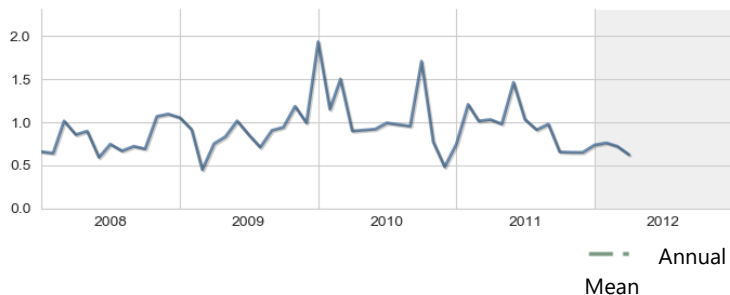


Nitrogen, Total

Score: Pass

Units: mg/l	Year 2012	Historical period of record
High	0.8	1.9
Mean	0.706	0.8558
Low	0.621	0.34
No. of Samples	4	129

Five-year Rolling Average



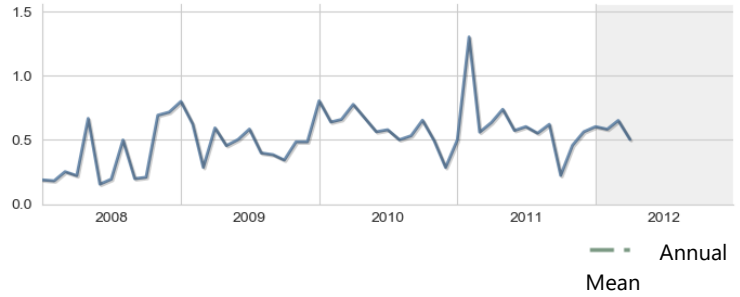


Phosphorus, Total

Score: Caution

Units: mg/l	Year 2012	Historical period of record
High	0.7	1.3
Mean	0.5815	0.3484
Low	0.502	0.05
No. of Samples	12	197

Five-year Rolling Average



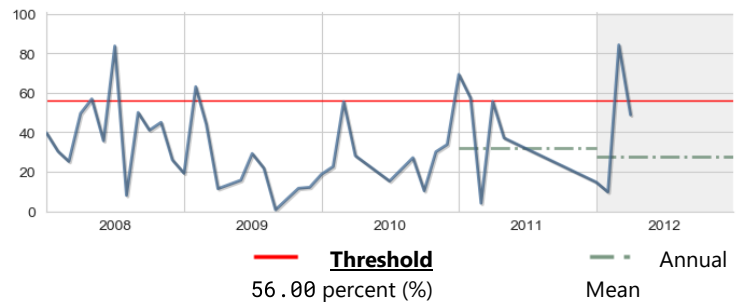
Dissolved Oxygen Saturation

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

Score: Caution

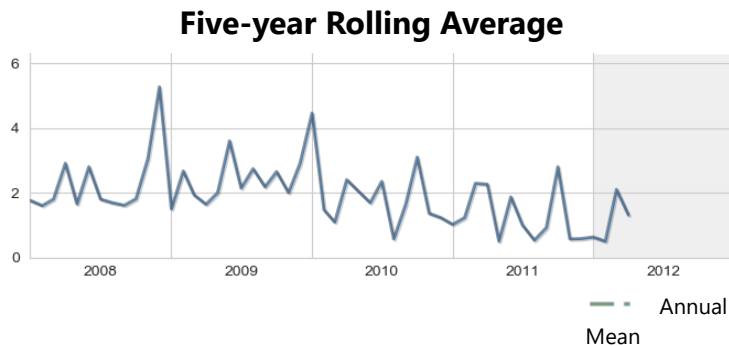
Units: percent (%)	Year 2012	Historical period of record
High	84.3	128.7
Mean	27.67	38.49
Low	9.70	0.70
No. of Samples	12	293

Five-year Rolling Average



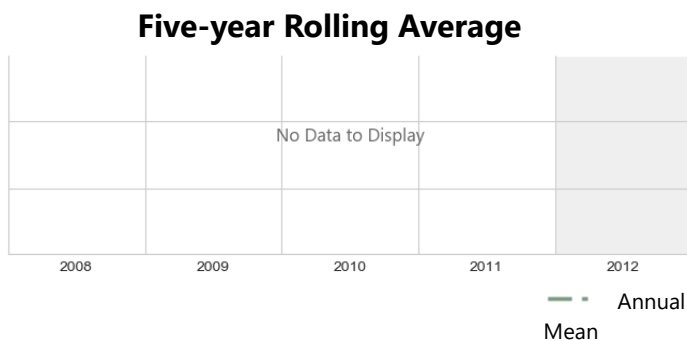
BOD, Biochemical oxygen demand

Units: mg/l	Year 2012	Historical period of record
High	2.1	5.4
Mean	1.05	1.63
Low	0.50	0.50
No. of Samples	10	137



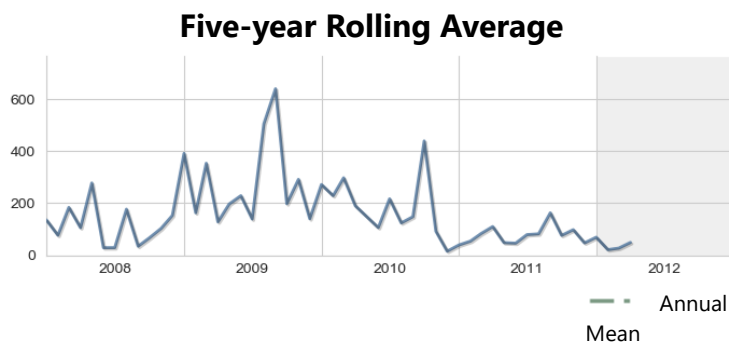
Color

Units: PCU	Year 2012	Historical period of record
High		125.0
Mean		23.7
Low		5.00
No. of Samples	0	121



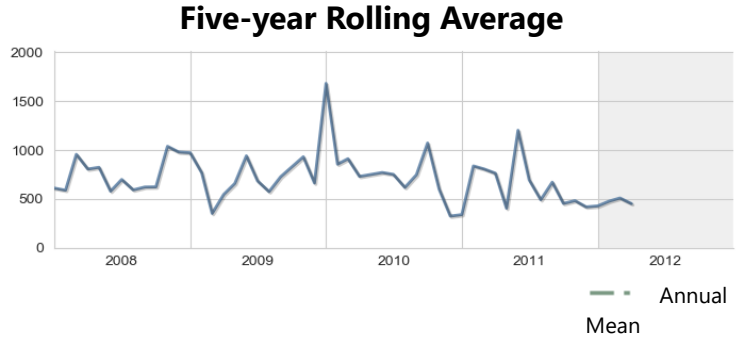
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2012	Historical period of record
High	81.0	912.0
Mean	37.19	23.48
Low	21.00	0.00
No. of Samples	12	244



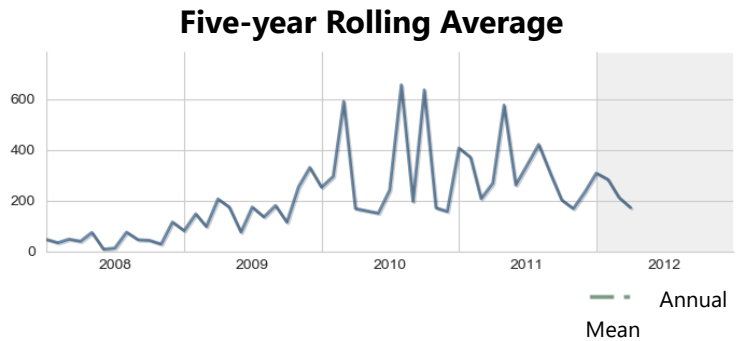
Nitrogen, Kjeldahl

Units: ug/l	Year 2012	Historical period of record
High	507.0	1,946.0
Mean	463.28	707.74
Low	426.00	160.00
No. of Samples	12	243



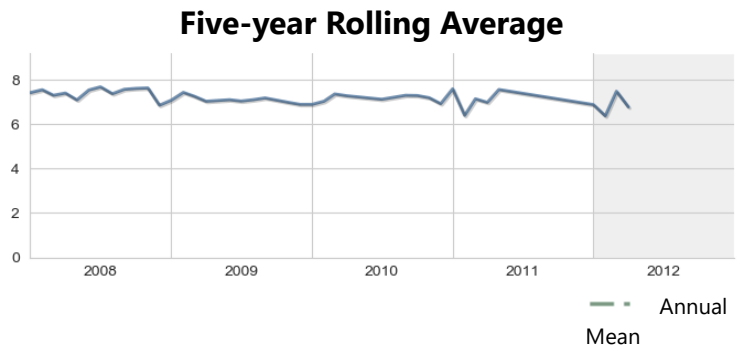
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2012	Historical period of record
High	308.0	656.0
Mean	237.44	90.66
Low	172.00	0.00
No. of Samples	12	205



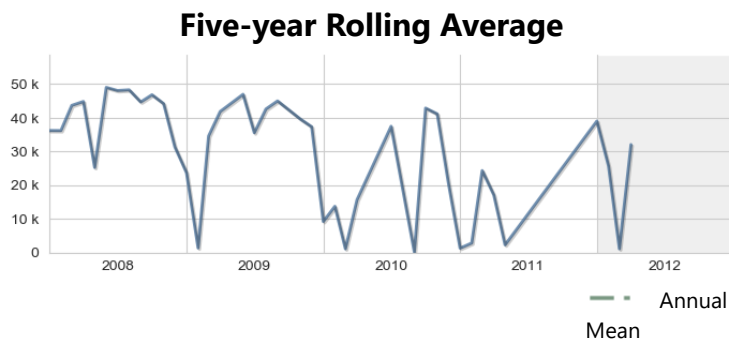
pH

Units: None	Year 2012	Historical period of record
High	7.5	8.4
Mean	6.87	7.6
Low	6.38	6.38
No. of Samples	12	245



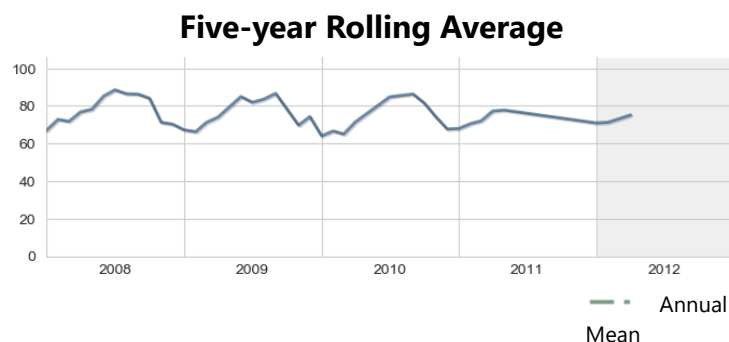
Specific conductance

Units: umho	Year 2012	Historical period of record
High	39,018.0	53,000.0
Mean	13550.04	30173.85
Low	1051.00	46.582
No. of Samples	12	326



Temperature, water

Units: deg F	Year 2012	Historical period of record
High	75.3	94.2
Mean	72.68	75.29
Low	71.006	51.80
No. of Samples	8	233



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.

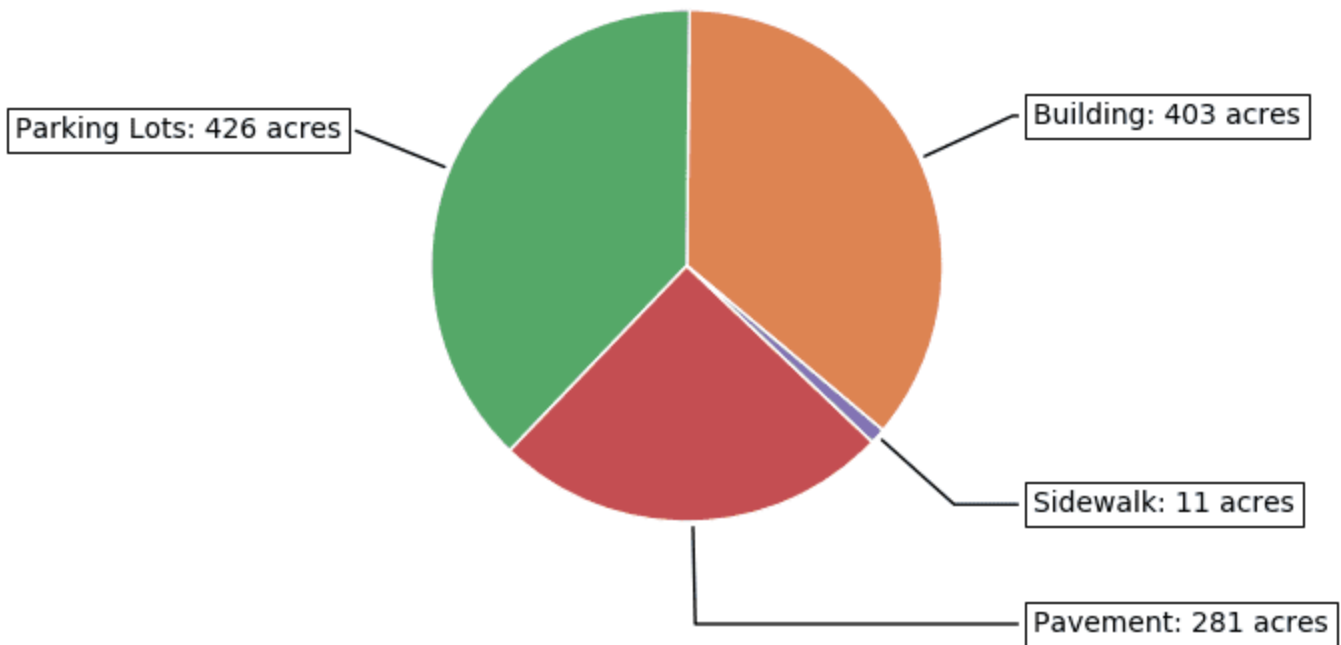


47% of the land area within the **Hudson Bayou Basin** is covered by impervious

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.

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

2012 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

