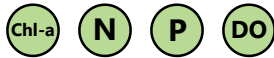


Whitaker Bayou Condition Report for 2015



PASS



4 out of 4
indicators
were rated as
PASS.

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

Size: 4,967 acres

Location: North Sarasota County, south Manatee County

Discharges into: Sarasota Bay

Whitaker Bayou is a highly urbanized basin that has changed in land use and hydrology since the mid-1900s. The Sarasota County 1847 General Land Office Survey indicates that Whitaker Bayou only extended about a quarter of a mile inland from the bay. The survey also displays a separate waterway that extends inland from 0.25 mile northeast of the head of Whitaker Bayou. Seasonal patterns in freshwater inflows have not changed significantly between historic and current conditions, indicating that changes in land use have not altered the intra-annual pattern of inflows to the bay. Land use has, however, affected the magnitude of total inflow to the bay, if not the relative contributions of individual sources (runoff, baseflow, irrigation, point sources). *For full basin details see: **Sarasota Bay Water Quality Management Plan (2012)***

Whitaker Bayou



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.

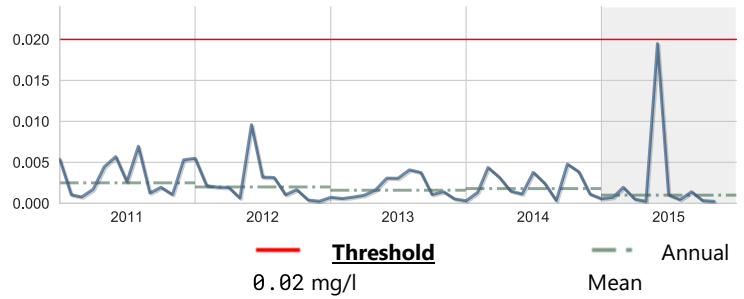


Chlorophyll a

Score: Pass

Units: mg/l	Year 2015	Historical period of record
High	0.0195	0.0595
Mean	0.001	0.0019
Low	0.0003	0.00
No. of Samples	24	555

Five-year Rolling Average

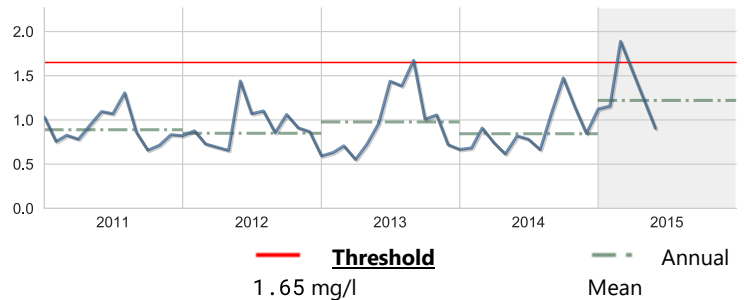


Nitrogen, Total

Score: Pass

Units: mg/l	Year 2015	Historical period of record
High	1.89	15.76
Mean	1.2212	0.9013
Low	0.905	0.30
No. of Samples	4	322

Five-year Rolling Average



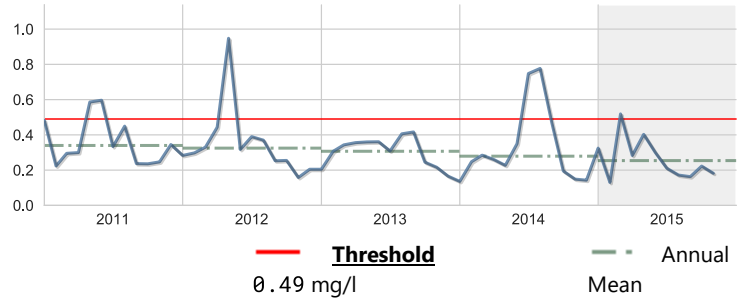


Phosphorus, Total

Score: Pass

Units: mg/l	Year 2015	Historical period of record
High	0.519	2.38
Mean	0.254	0.3071
Low	0.13	0.082
No. of Samples	24	573

Five-year Rolling Average



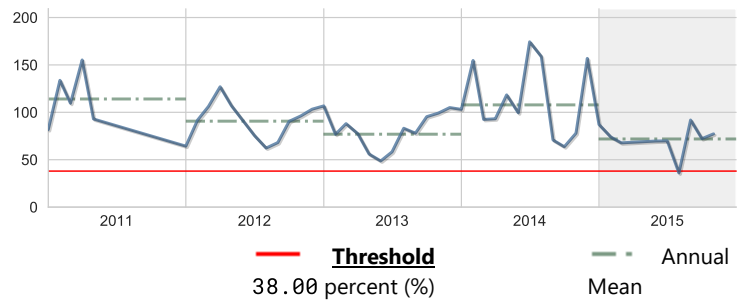
Dissolved Oxygen Saturation

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

Score: Pass

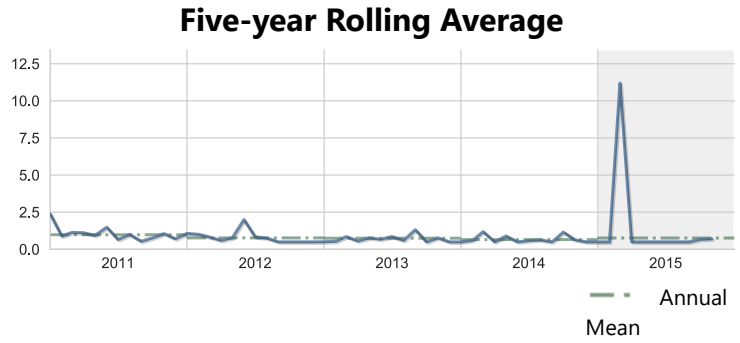
Units: percent (%)	Year 2015	Historical period of record
High	91.90	262.30
Mean	71.89	85.45
Low	36.00	7.0588
No. of Samples	17	683

Five-year Rolling Average



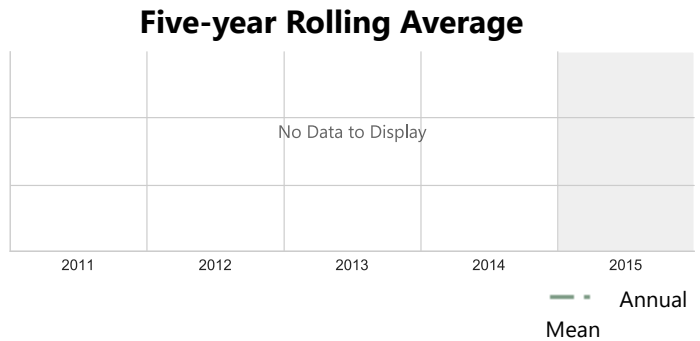
BOD, Biochemical oxygen demand

Units: mg/l	Year 2015	Historical period of record
High	11.20	175.00
Mean	0.76	0.88
Low	0.50	0.50
No. of Samples	24	512



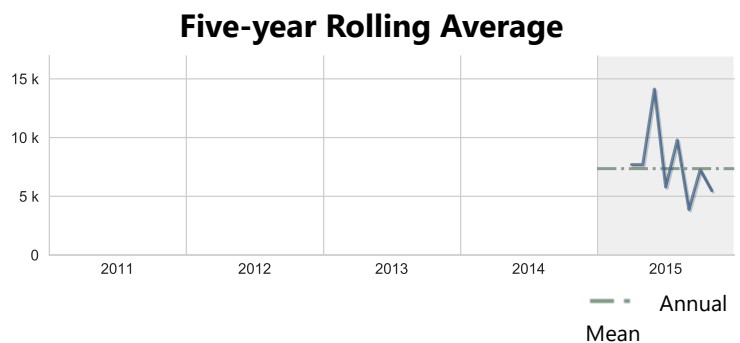
Color

Units: PCU	Year 2015	Historical period of record
High		220.00
Mean		76.7
Low		20.00
No. of Samples	0	124



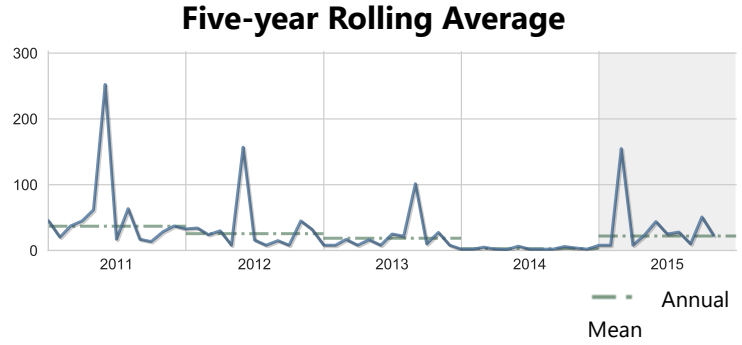
Escherichia coli

Units: cfu/100ml	Year 2015	Historical period of record
High	14136.00	14136.00
Mean	7354.35	7354.35
Low	3873.00	3873.00
No. of Samples	14	14



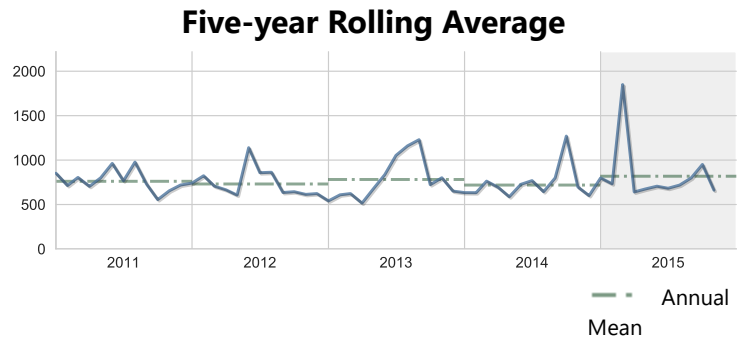
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2015	Historical period of record
High	155.00	30060.00
Mean	21.98	19.96
Low	8.00	0.008
No. of Samples	24	642



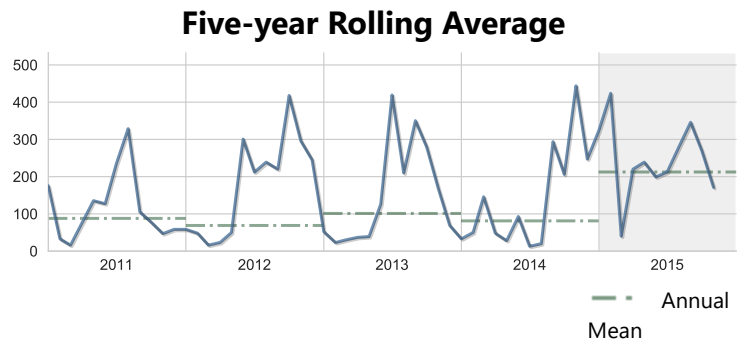
Nitrogen, Kjeldahl

Units: ug/l	Year 2015	Historical period of record
High	1850.00	15360.00
Mean	818.31	777.65
Low	641.00	200.00
No. of Samples	24	616



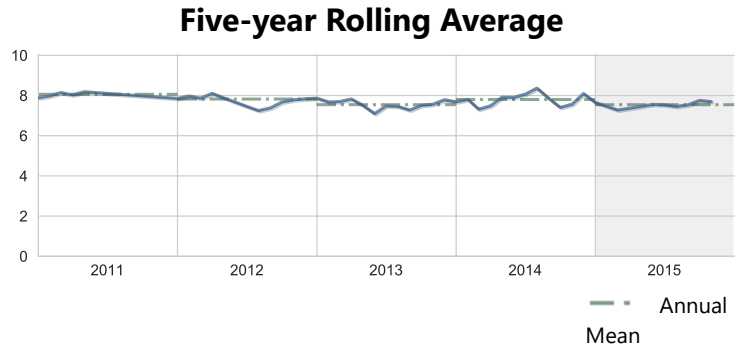
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2015	Historical period of record
High	424.00	1020.00
Mean	212.45	78.4
Low	40.00	0.00
No. of Samples	24	587



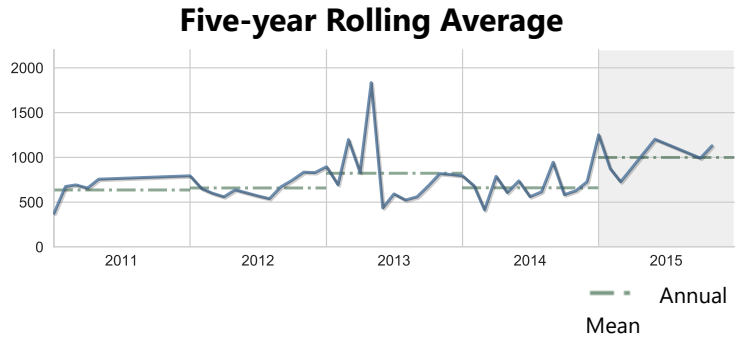
pH

Units: None	Year 2015	Historical period of record
High	7.91	11.77
Mean	7.54	7.68
Low	7.28	6.10
No. of Samples	19	820



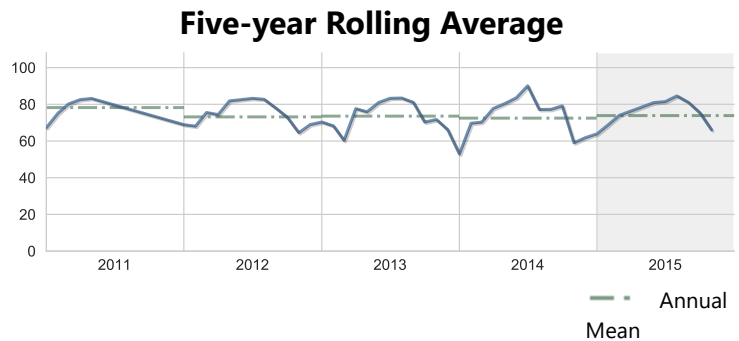
Specific conductance

Units: umho	Year 2015	Historical period of record
High	1253.00	49645.00
Mean	999.16	649.09
Low	727.00	0.524
No. of Samples	14	874



Temperature, water

Units: deg F	Year 2015	Historical period of record
High	84.596	91.40
Mean	73.85	69.09
Low	63.914	14.018
No. of Samples	13	760



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.

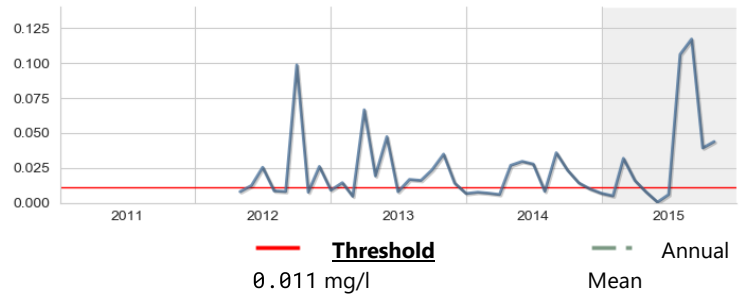


Chlorophyll a

Score: Pass

Units: mg/l	Year 2015	Historical period of record
High	0.1	0.1
Mean	0.0109	0.0127
Low	0.0004	0.0004
No. of Samples	24	182

Five-year Rolling Average



Nitrogen, Total

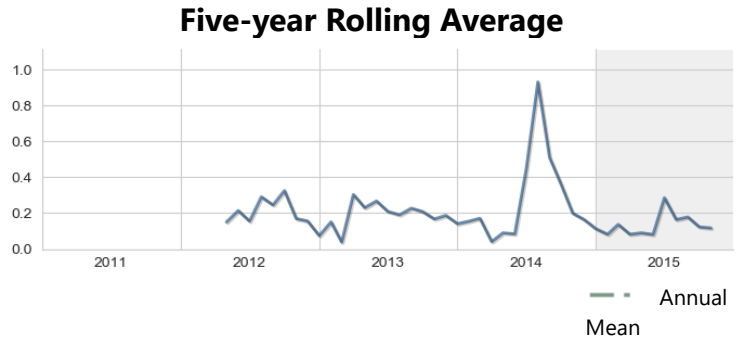
Units: mg/l	Year 2015	Historical period of record
High	2.0	7.0
Mean	1.0764	1.1388
Low	0.63	0.054
No. of Samples	10	130

Five-year Rolling Average



Phosphorus, Total

Units: mg/l	Year 2015	Historical period of record
High	0.3	2.0
Mean	0.1185	0.2389
Low	0.081	0.038
No. of Samples	24	229

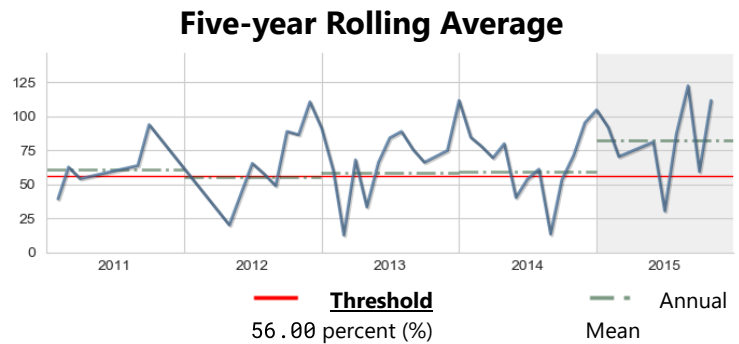


Dissolved Oxygen Saturation

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

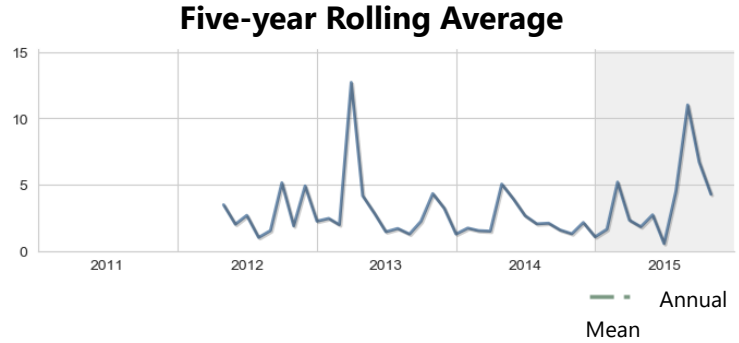
Score: Pass

Units: percent (%)	Year 2015	Historical period of record
High	122.3	381.3
Mean	82.04	63.34
Low	30.30	0.00
No. of Samples	17	569



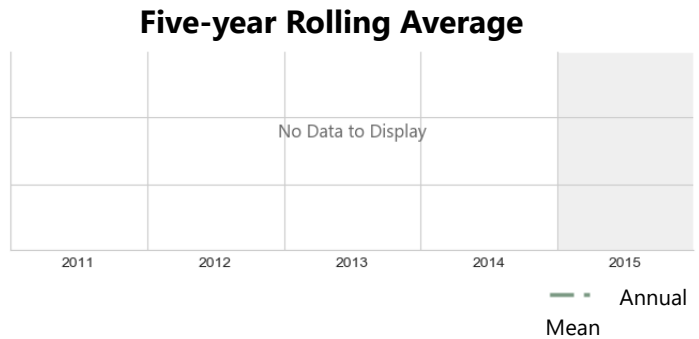
BOD, Biochemical oxygen demand

Units: mg/l	Year 2015	Historical period of record
High	11.0	12.7
Mean	2.53	2.45
Low	0.543	0.543
No. of Samples	24	169



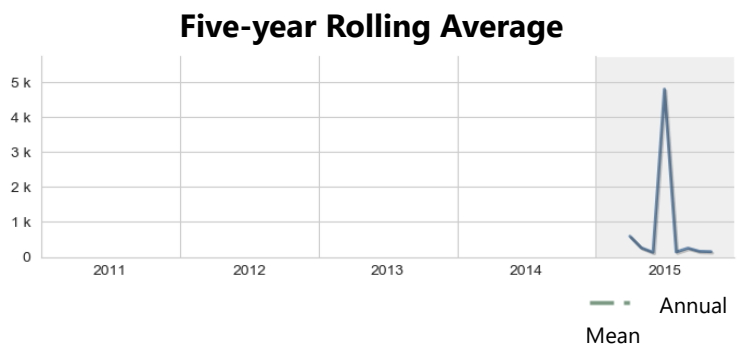
Color

Units: PCU	Year 2015	Historical period of record
High		200.0
Mean		54.6
Low		10.00
No. of Samples	0	134



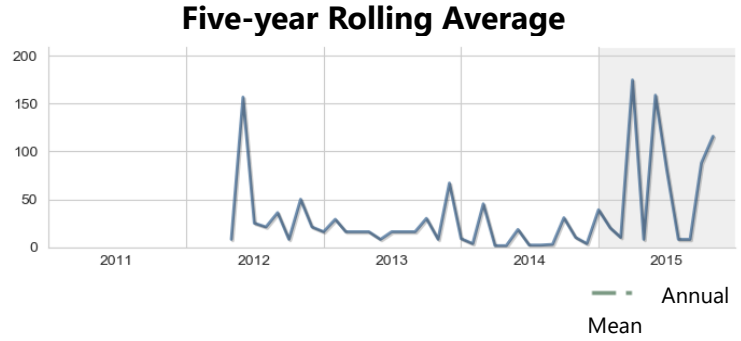
Enterococcus Group Bacteria

Units: cfu/100ml	Year 2015	Historical period of record
High	4,800.0	4,800.0
Mean	339.42	339.42
Low	130.00	130.00
No. of Samples	14	14



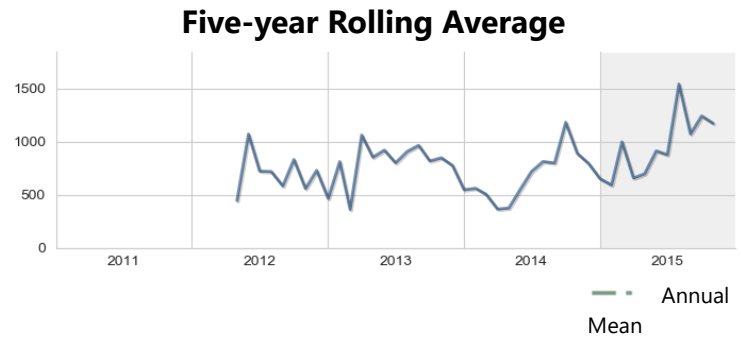
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2015	Historical period of record
High	175.0	1,930.0
Mean	31.66	14.41
Low	8.00	0.00
No. of Samples	24	283



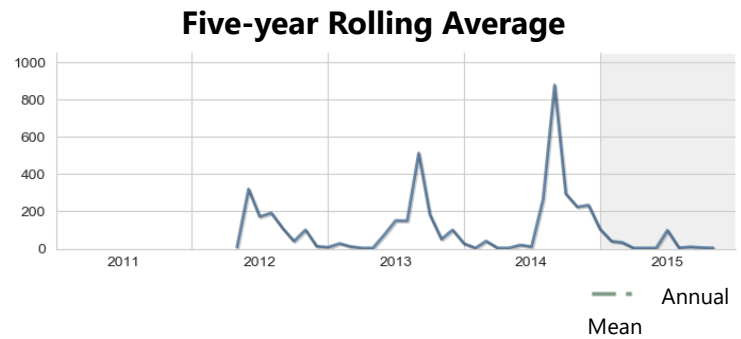
Nitrogen, Kjeldahl

Units: ug/l	Year 2015	Historical period of record
High	1,540.0	6,291.0
Mean	859.49	871.42
Low	590.00	50.00
No. of Samples	24	272



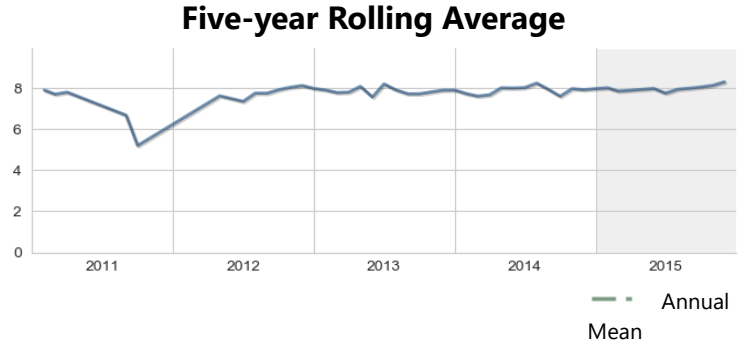
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2015	Historical period of record
High	105.0	3,275.0
Mean	15.32	68.17
Low	4.00	4.00
No. of Samples	24	231



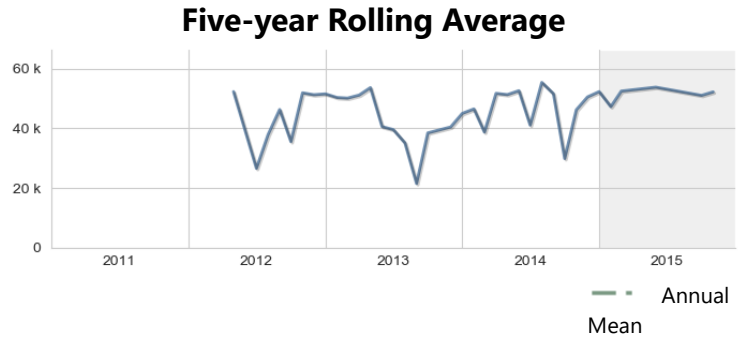
pH

Units: None	Year 2015	Historical period of record
High	8.3	8.8
Mean	7.99	7.61
Low	7.75	4.90
No. of Samples	21	2,826



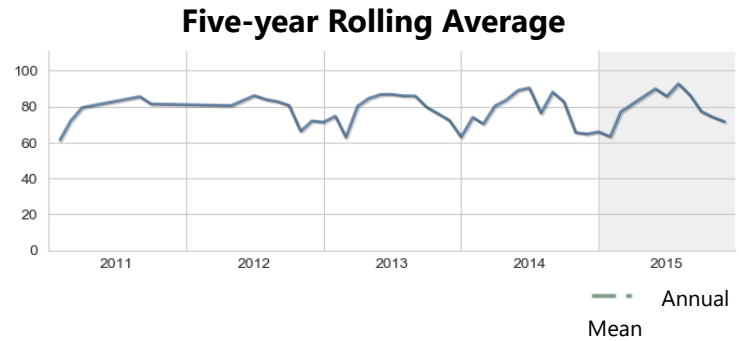
Specific conductance

Units: umho	Year 2015	Historical period of record
High	53,740.0	55,760.0
Mean	51375.68	7161.17
Low	47200.00	320.00
No. of Samples	14	2,683



Temperature, water

Units: deg F	Year 2015	Historical period of record
High	92.7	95.5
Mean	74.54	74.53
Low	62.24	49.10
No. of Samples	17	3,021



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.

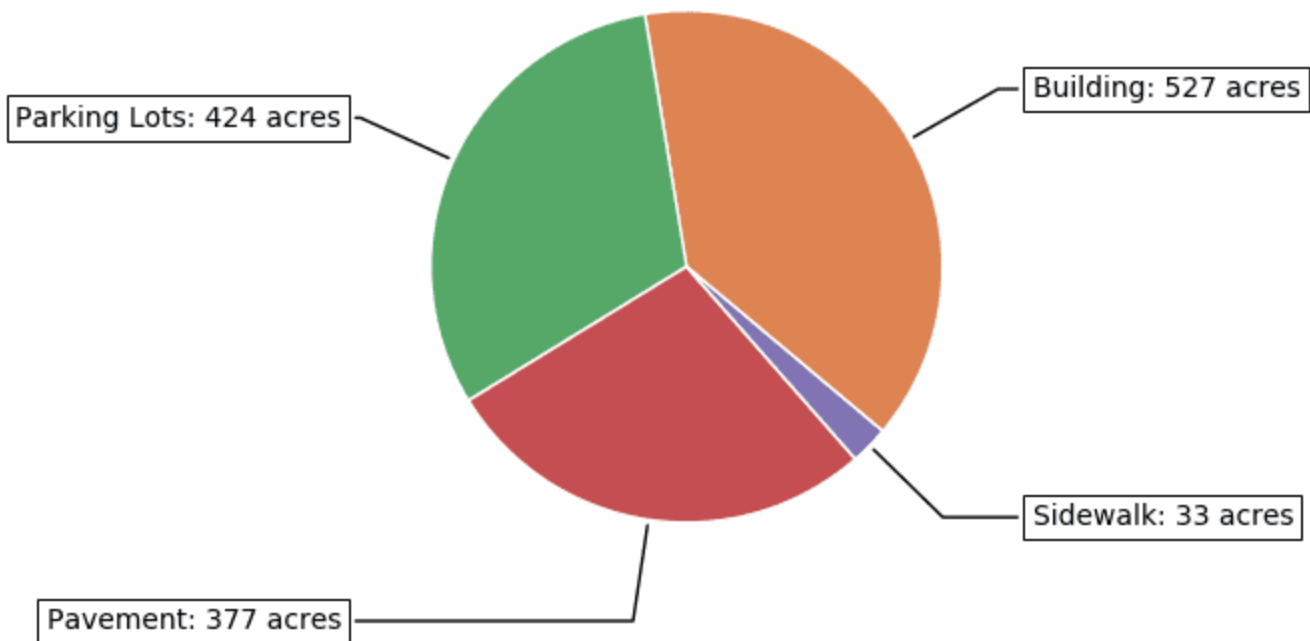


27% of the land area within the **Whitaker Bayou Basin** is covered by impervious

surfaces

2014 Impervious Surface Coverage by Type

in acres, within the Whitaker Bayou Basin



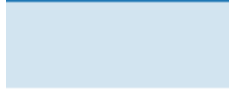


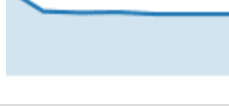

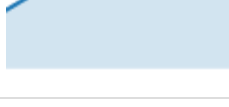


Land Use / Land Cover

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 Whitaker Bayou Basin

2015 Creek Conditions Report for Whitaker Bayou

Land Use Classification	1990	1995	1999	2005	2011	2014	2017	Trend
Urban & Built-up	3,830 77.1%	3,834 77.2%	3,831 77.1%	3,903 78.6%	3,952 79.6%	3,921 79%	3,951 79.6%	
Agriculture	214 4.3%	182 3.7%	188 3.8%	181 3.6%	181 3.6%	181 3.6%	178 3.6%	
Rangeland	4 0.1%	4 0.1%	4 0.1%	4 0.1%	4 0.1%	4 0.1%	4 0.1%	
Upland Forests	235 4.7%	249 5%	249 5%	195 3.9%	164 3.3%	195 3.9%	164 3.3%	
Water	130 2.6%	137 2.7%	140 2.8%	126 2.5%	88 1.8%	88 1.8%	89 1.8%	
Wetlands	315 6.4%	232 4.7%	227 4.6%	229 4.6%	222 4.5%	222 4.5%	222 4.5%	
Barren Land	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 0.1%	
Transportation and Utilities	238 4.8%	329 6.6%	329 6.6%	328 6.6%	356 7.2%	356 7.2%	355 7.2%	

2017 Land Use / Land Cover for Whitaker Bayou Basin

