Alligator Creek Condition Report for 2016

CAUTION

Chl-a N P DO

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

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

Size: 6,789 acres
Location: South Sarasota County
Discharges into: Lemon Bay

Like other coastal areas in Sarasota County, the Alligator Creek Basin is characterized by low topographic relief and sandy soils. Its predominant land uses are single-family medium- and high density-residential, with smaller portions of open land, commercial, and institutional land uses. Upland and developed land use/land cover encompass the vast majority of the watershed, with wetland and surface waters making up the rest. The lower and middle reaches of Alligator Creek have been previously dredged for navigation and drainage purposes (Parsons, 2002). Despite the urbanization of the lower and middle reaches, large areas of the historic creek floodplain in the upper reach remain undeveloped, most notably in the Alligator Creek Conservation Area upstream and just downstream of Venice East Boulevard. *For basin details see:* ***Alligator Creek Sediment Management Plan (2006)***

Alligator Creek



Water Chemistry Ratings | Freshwater Portion of the Creek

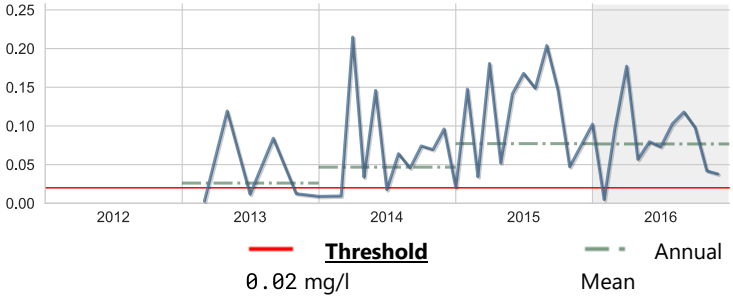
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of nitrogen, phosphorus, and chlorophyll *a*, and a minimum allowable concentration of dissolved oxygen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

Chl-a Chlorophyll a

Score: Caution

Units: mg/l	Year 2016	Historical period of record
High	0.285	0.351
Mean	0.0767	0.0577
Low	0.0023	0.0023
No. of Samples	64	239

Five-year Rolling Average

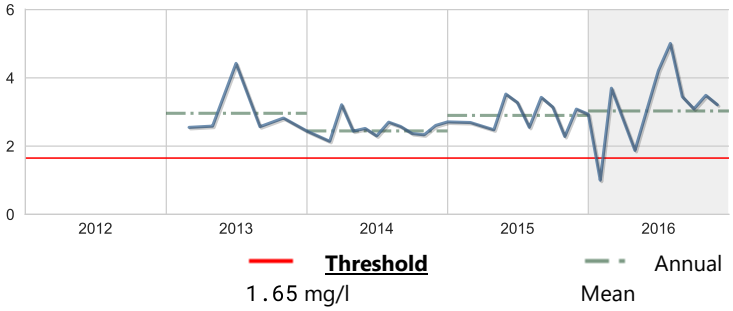


N Nitrogen, Total

Score: Caution

Units: mg/l	Year 2016	Historical period of record
High	5.947	6.745
Mean	3.03	2.4397
Low	0.874	0.41
No. of Samples	20	137

Five-year Rolling Average

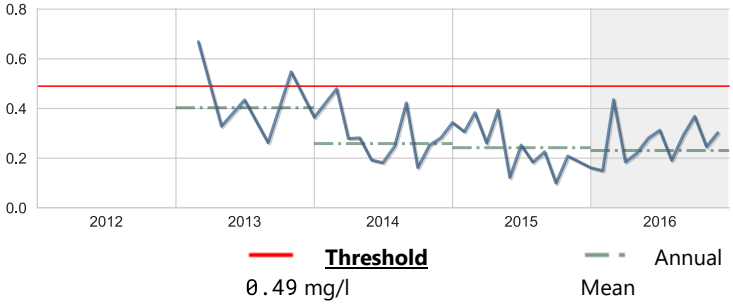


P Phosphorus, Total

Score: Pass

Units: mg/l	Year 2016	Historical period of record
High	0.619	0.705
Mean	0.2309	0.2584
Low	0.063	0.033
No. of Samples	51	251

Five-year Rolling Average



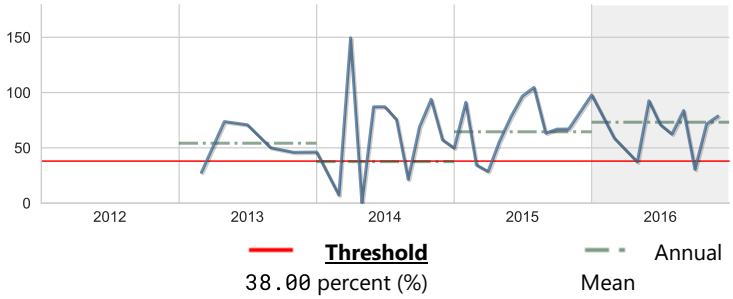
DO Dissolved Oxygen Saturation

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

Score: Pass

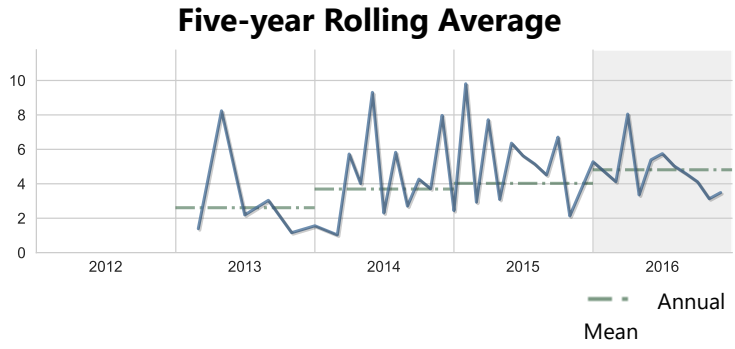
Units: percent (%)	Year 2016	Historical period of record
High	147.60	197.40
Mean	73.17	54.42
Low	10.60	0.05
No. of Samples	60	313

Five-year Rolling Average



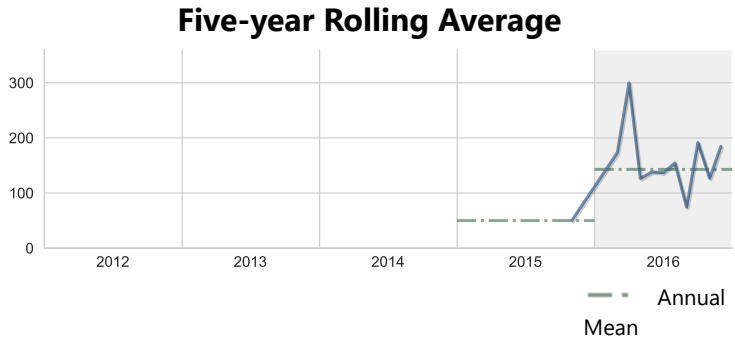
BOD, Biochemical oxygen demand

Units: mg/l	Year 2016	Historical period of record
High	9.02	16.30
Mean	4.81	3.94
Low	0.951	0.556
No. of Samples	62	237



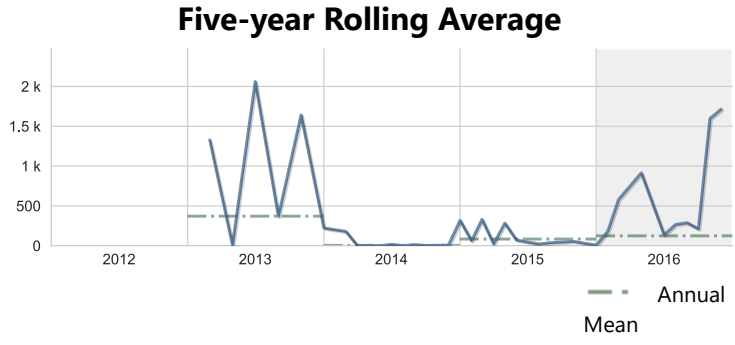
Color

Units: PCU	Year 2016	Historical period of record
High	350.00	350.00
Mean	142.81	122.93
Low	25.00	20.00
No. of Samples	54	81



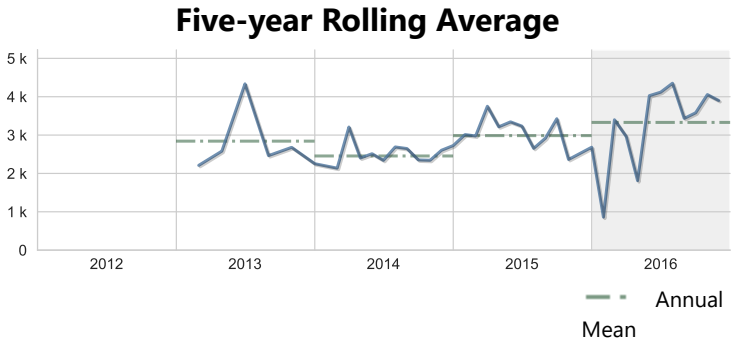
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2016	Historical period of record
High	1760.00	2430.00
Mean	124.03	13.33
Low	0.014	0.008
No. of Samples	31	288



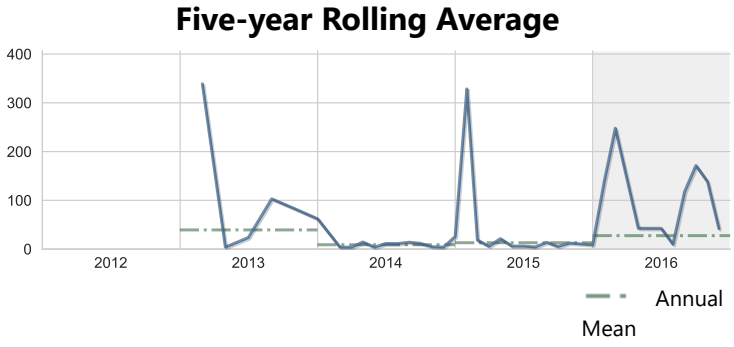
Nitrogen, Kjeldahl

Units: ug/l	Year 2016	Historical period of record
High	5920.00	6740.00
Mean	3330.21	2513.05
Low	851.00	140.00
No. of Samples	66	279



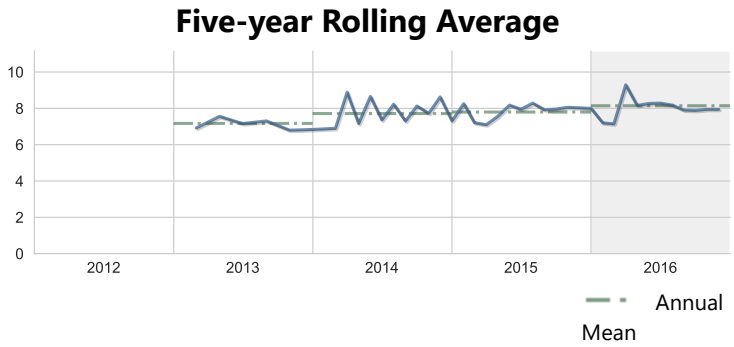
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2016	Historical period of record
High	248.00	855.00
Mean	27.57	14.12
Low	4.00	0.00
No. of Samples	27	225



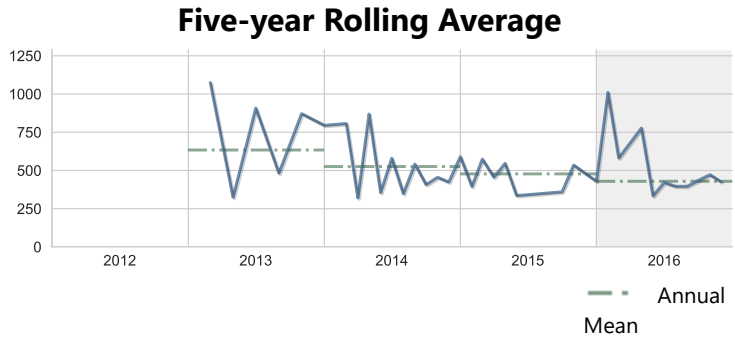
pH

Units: None	Year 2016	Historical period of record
High	9.92	9.92
Mean	8.14	7.23
Low	6.60	6.05
No. of Samples	117	1,870



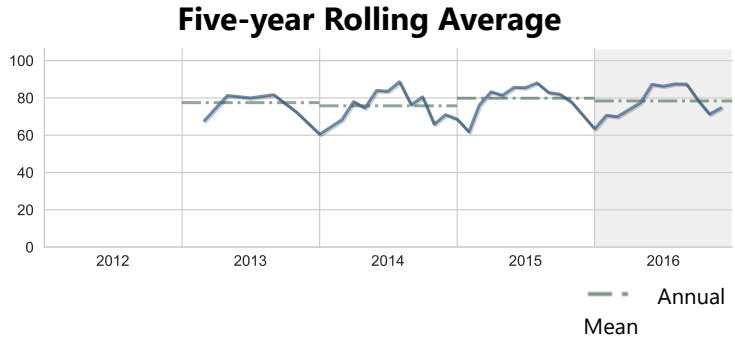
Specific conductance

Units: umho	Year 2016	Historical period of record
High	1022.00	2105.00
Mean	429.42	628.62
Low	271.00	271.00
No. of Samples	56	1,787



Temperature, water

Units: deg F	Year 2016	Historical period of record
High	93.956	93.956
Mean	78.38	69.49
Low	60.944	56.858
No. of Samples	53	1,749



Water Chemistry Ratings | Tidal Portion of the Creek

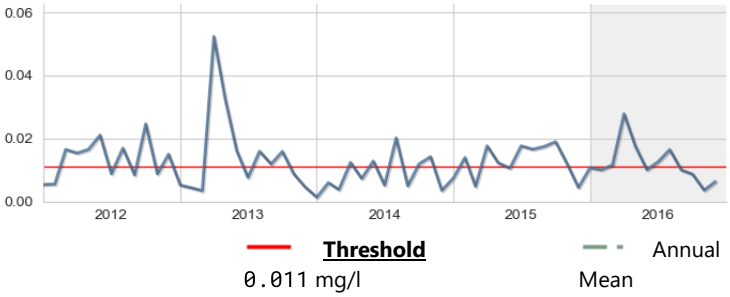
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of chlorophyll *a* and a minimum allowable concentration of dissolved oxygen in these streams. Florida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

Chlorophyll a

Score: Caution

Units: mg/l	Year 2016	Historical period of record
High	0.2	0.4
Mean	0.0113	0.0096
Low	0.0007	0.0003
No. of Samples	108	1,457

Five-year Rolling Average



Nitrogen, Total

Units: mg/l	Year 2016	Historical period of record
High	7.9	23.8
Mean	1.5002	1.1061
Low	0.619	0.00
No. of Samples	62	818

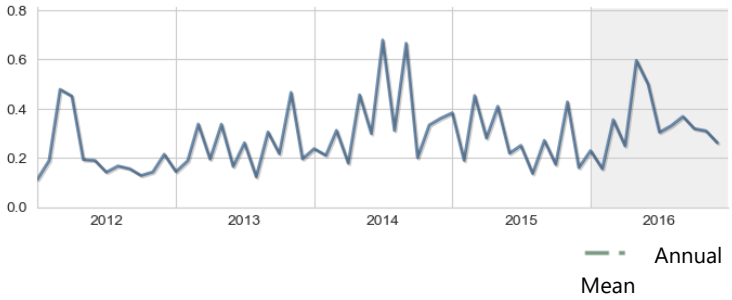
Five-year Rolling Average



Phosphorus, Total

Units: mg/l	Year 2016	Historical period of record
High	1.3	4.8
Mean	0.3111	0.2337
Low	0.067	0.004
No. of Samples	99	1,505

Five-year Rolling Average



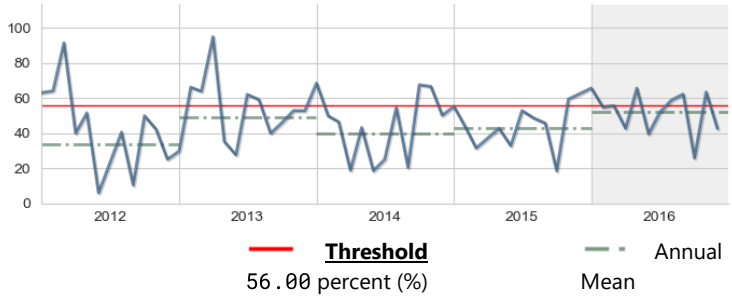
DO Dissolved Oxygen Saturation

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

Score: Caution

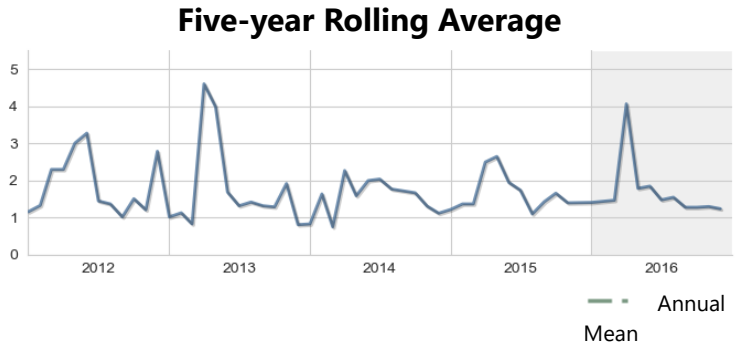
Units: percent (%)	Year 2016	Historical period of record
High	212.6	212.6
Mean	52.5	46.23
Low	10.90	1.30
No. of Samples	89	1,066

Five-year Rolling Average



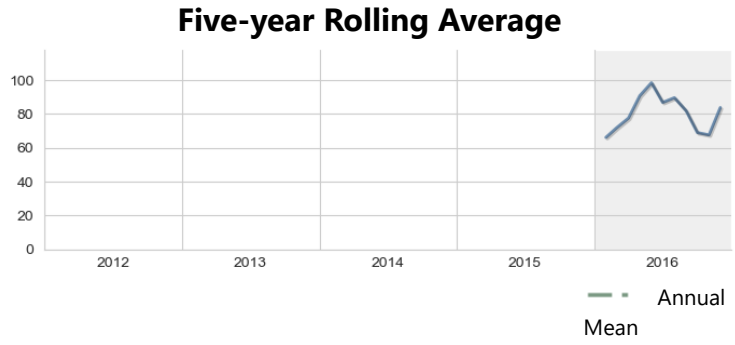
BOD, Biochemical oxygen demand

Units: mg/l	Year 2016	Historical period of record
High	6.6	20.0
Mean	1.52	1.82
Low	0.50	0.50
No. of Samples	83	921



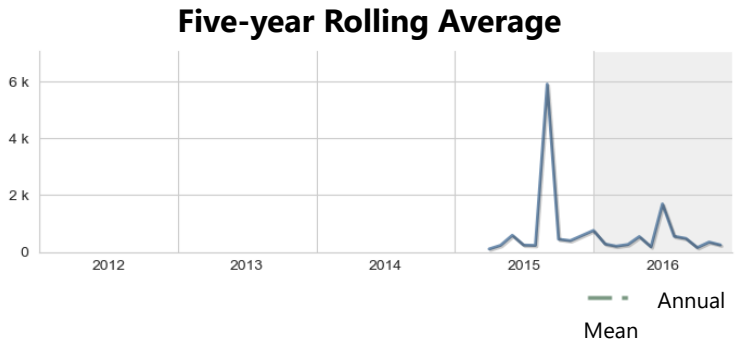
Color

Units: PCU	Year 2016	Historical period of record
High	180.0	220.0
Mean	80.66	78.59
Low	40.00	20.00
No. of Samples	71	174



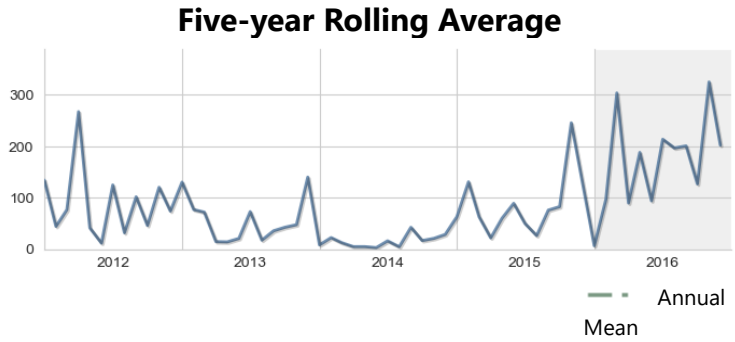
Enterococcus Group Bacteria

Units: cfu/100ml	Year 2016	Historical period of record
High	2,200.0	14,000.0
Mean	386.92	387.72
Low	80.00	80.00
No. of Samples	26	55



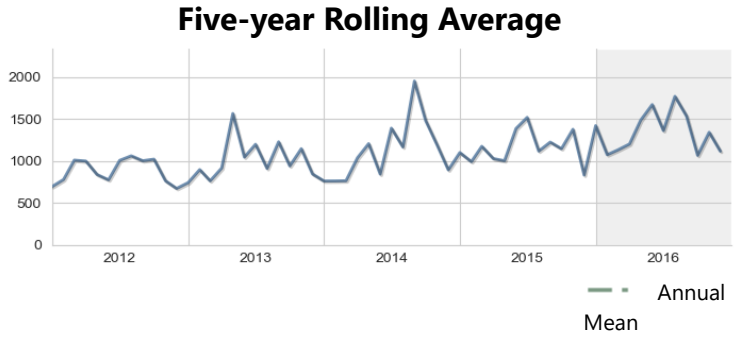
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2016	Historical period of record
High	1,140.0	2,170.0
Mean	79.27	35.47
Low	0.057	0.008
No. of Samples	58	1,053



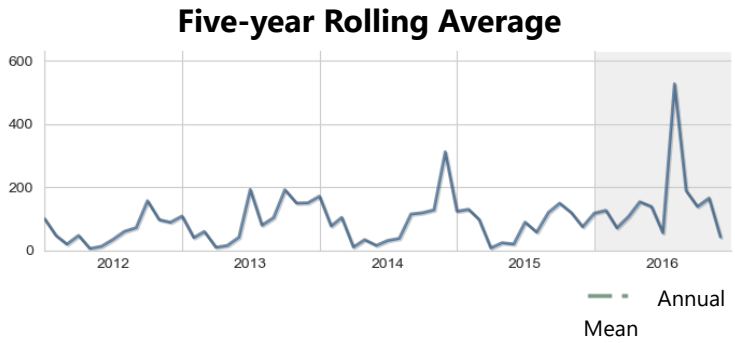
Nitrogen, Kjeldahl

Units: ug/l	Year 2016	Historical period of record
High	3,800.0	23,800.0
Mean	1323.3	1036.31
Low	610.00	80.00
No. of Samples	108	1,561



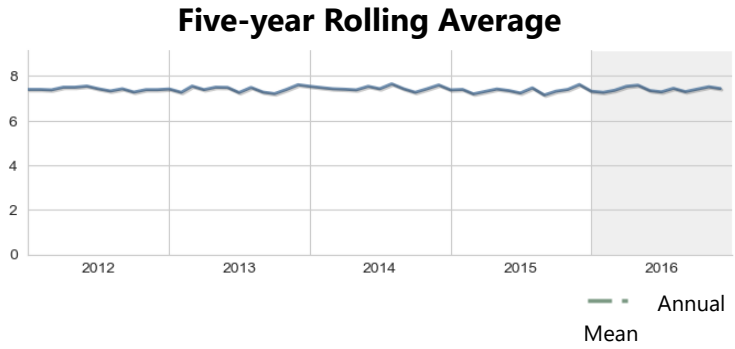
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2016	Historical period of record
High	4,590.0	4,590.0
Mean	115.37	51.83
Low	9.00	0.00
No. of Samples	77	1,427



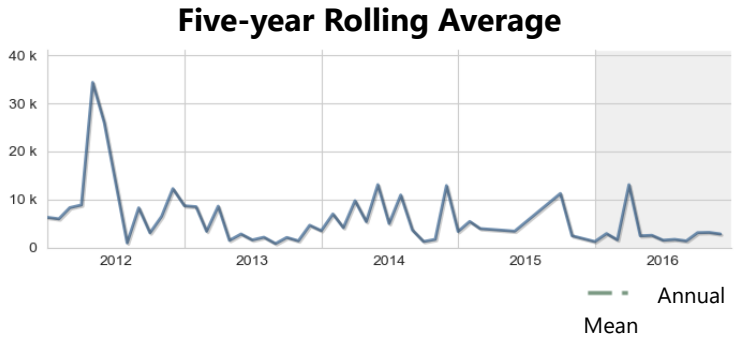
pH

Units: None	Year 2016	Historical period of record
High	9.0	9.3
Mean	7.39	7.4
Low	6.90	6.00
No. of Samples	192	6,306



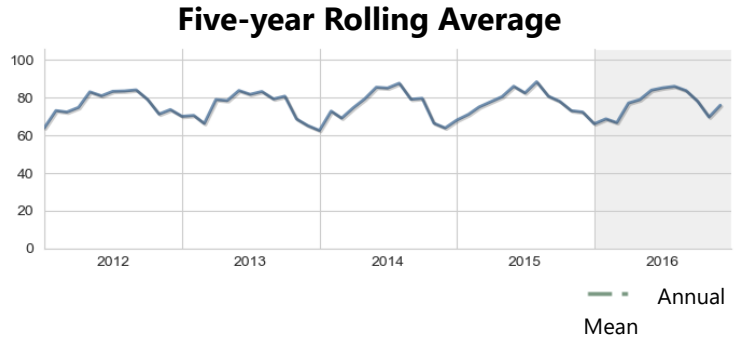
Specific conductance

Units: umho	Year 2016	Historical period of record
High	46,933.0	53,581.0
Mean	2067.66	3606.95
Low	425.00	0.823
No. of Samples	84	5,723



Temperature, water

Units: deg F	Year 2016	Historical period of record
High	92.4	92.4
Mean	76.19	75.2
Low	62.618	53.528
No. of Samples	92	5,825

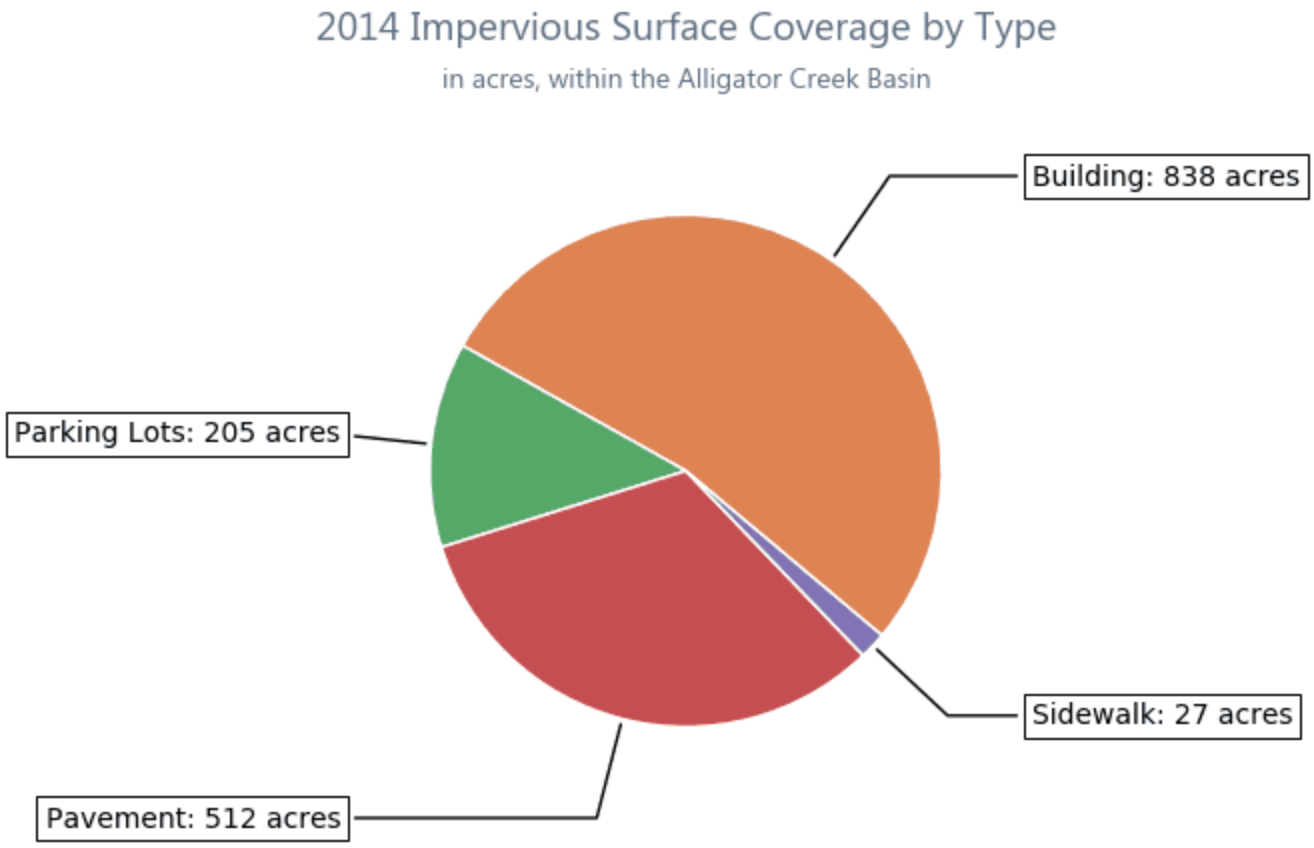


Impervious Features

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.



23% of the land area within the **Alligator Creek Basin** is covered by impervious surfaces

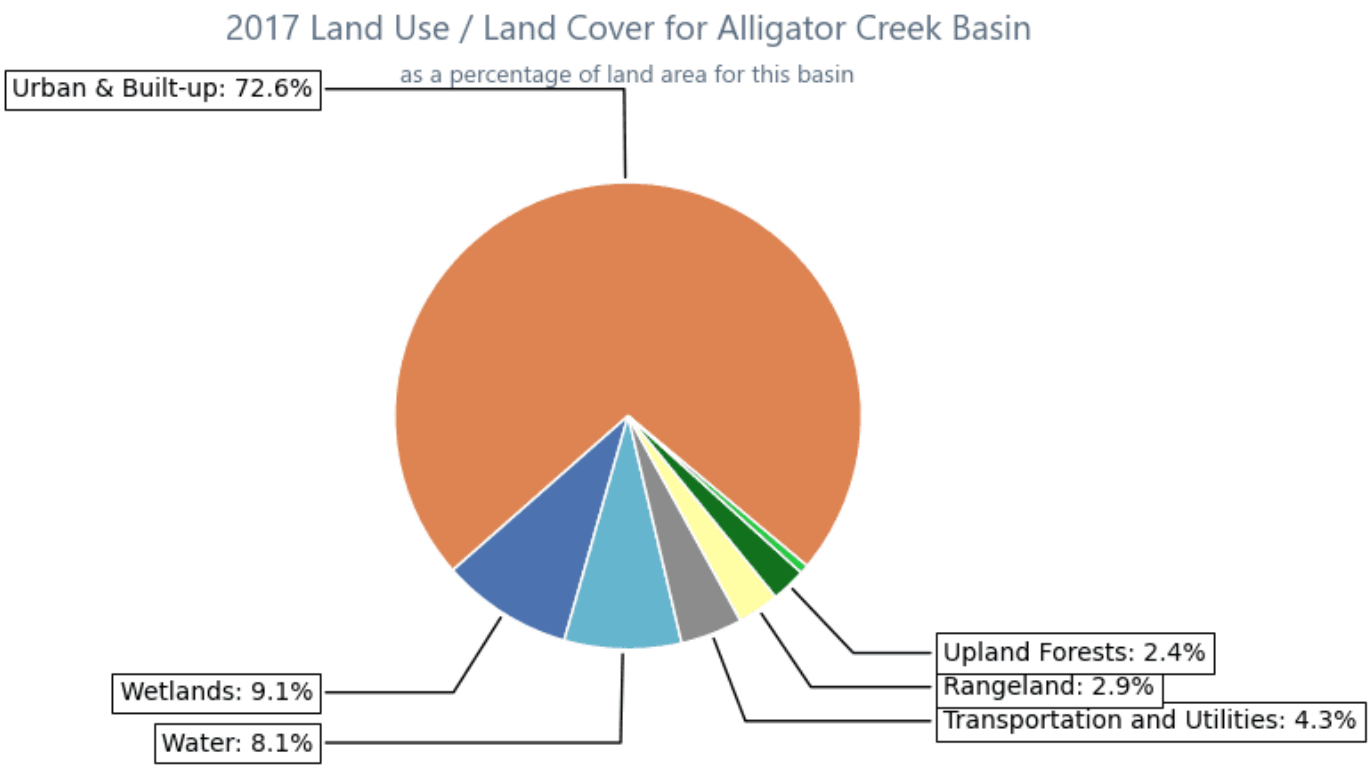


Land Use / Land Cover

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 Alligator Creek Basin

Land Use Classification	1990	1995	1999	2005	2011	2014	2017	Trend
Urban & Built-up	3,990 58.8%	4,415 65%	5,066 74.6%	4,720 69.5%	4,812 70.9%	4,812 70.9%	4,927 72.6%	
Agriculture	73 1.1%	62 0.9%	71 1%	282 4.2%	64 0.9%	64 0.9%	42 0.6%	
Rangeland	550 8.1%	740 10.9%	95 1.4%	223 3.3%	294 4.3%	294 4.3%	200 2.9%	
Upland Forests	821 12.1%	230 3.4%	190 2.8%	181 2.7%	173 2.6%	173 2.6%	162 2.4%	
Water	361 5.3%	610 9%	574 8.4%	484 7.1%	528 7.8%	528 7.8%	548 8.1%	
Wetlands	737 10.9%	459 6.8%	518 7.6%	619 9.1%	625 9.2%	625 9.2%	618 9.1%	
Barren Land	22 0.3%	0 0%	2 0%	0 0%	0 0%	0 0%	0 0%	
Transportation and Utilities	234 3.4%	272 4%	275 4%	280 4.1%	293 4.3%	293 4.3%	293 4.3%	


2017 Land Use / Land Cover for Alligator Creek Basin
as a percentage of land area for this basin
Urban & Built-up: 72.6%
Wetlands: 9.1%
Water: 8.1%
Upland Forests: 2.4%
Rangeland: 2.9%
Transportation and Utilities: 4.3%