Alligator Creek Condition Report for 2017

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

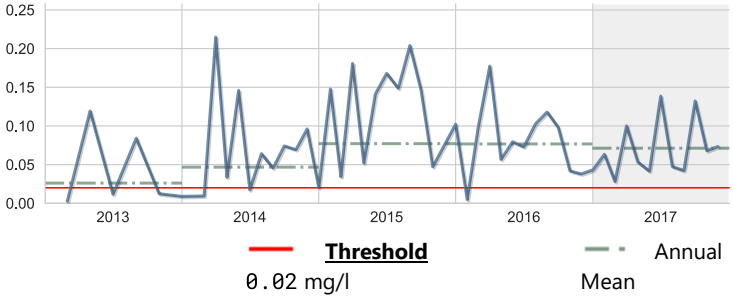
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of nitrogen, phosphorus, and chlorophyll *a*, and a minimum allowable concentration of dissolved oxygen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

Chl-a Chlorophyll a

Score: Caution

Units: mg/l	Year 2017	Historical period of record
High	0.26	0.351
Mean	0.0712	0.0604
Low	0.0004	0.0004
No. of Samples	68	307

Five-year Rolling Average

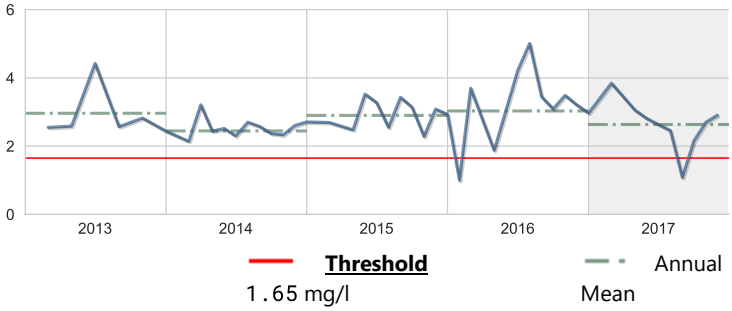


N Nitrogen, Total

Score: Caution

Units: mg/l	Year 2017	Historical period of record
High	3.845	6.745
Mean	2.6339	2.4571
Low	1.83	0.41
No. of Samples	14	151

Five-year Rolling Average

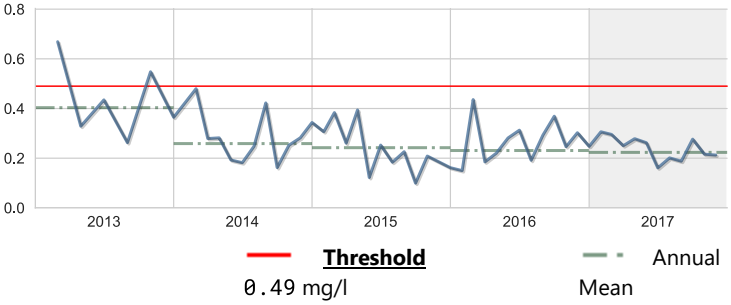


P Phosphorus, Total

Score: Pass

Units: mg/l	Year 2017	Historical period of record
High	0.87	0.87
Mean	0.2234	0.2514
Low	0.063	0.033
No. of Samples	59	310

Five-year Rolling Average



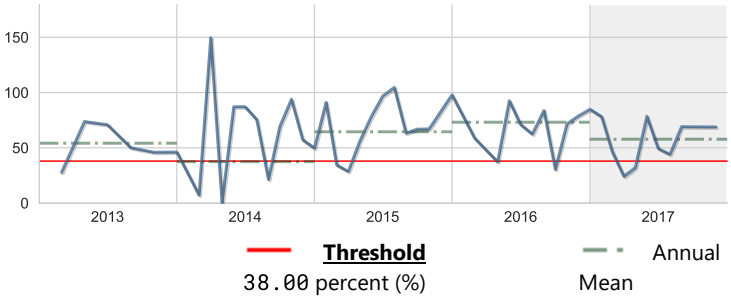
DO Dissolved Oxygen Saturation

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

Score: Pass

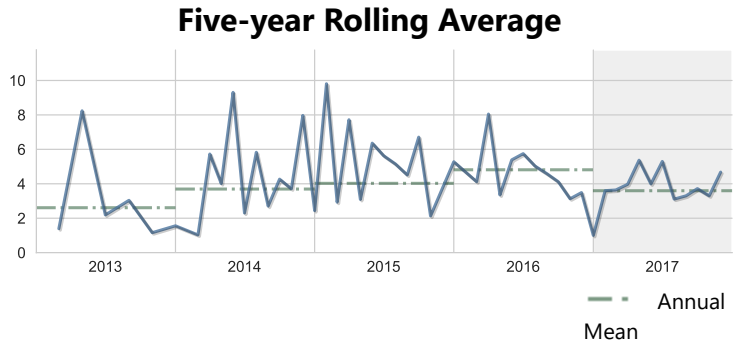
Units: percent (%)	Year 2017	Historical period of record
High	187.00	197.40
Mean	57.81	54.98
Low	2.20	0.05
No. of Samples	64	377

Five-year Rolling Average



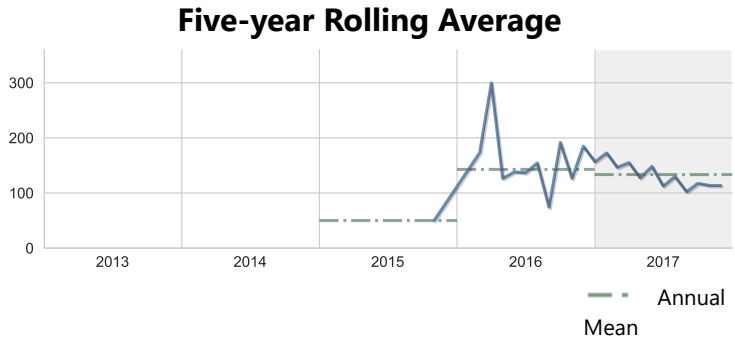
BOD, Biochemical oxygen demand

Units: mg/l	Year 2017	Historical period of record
High	10.30	16.30
Mean	3.6	3.86
Low	1.00	0.556
No. of Samples	68	305



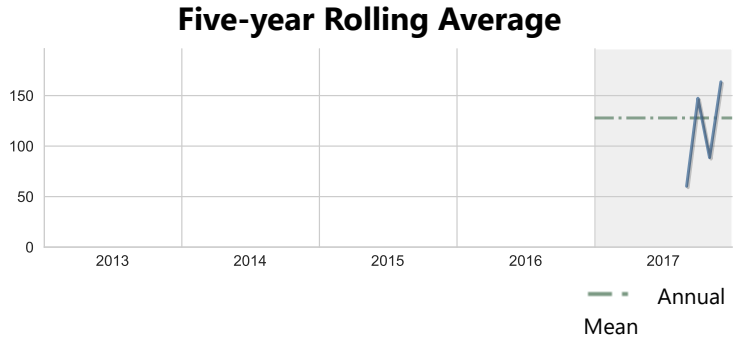
Color

Units: PCU	Year 2017	Historical period of record
High	300.00	350.00
Mean	133.41	127.6
Low	75.00	20.00
No. of Samples	68	149



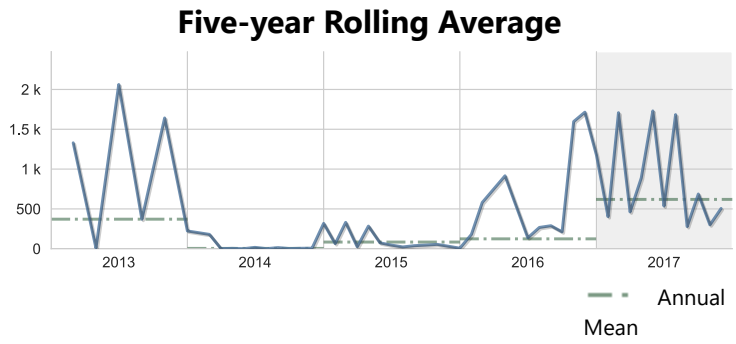
Escherichia coli

Units: cfu/100ml	Year 2017	Historical period of record
High	5172.00	5172.00
Mean	127.85	127.85
Low	31.00	31.00
No. of Samples	18	18



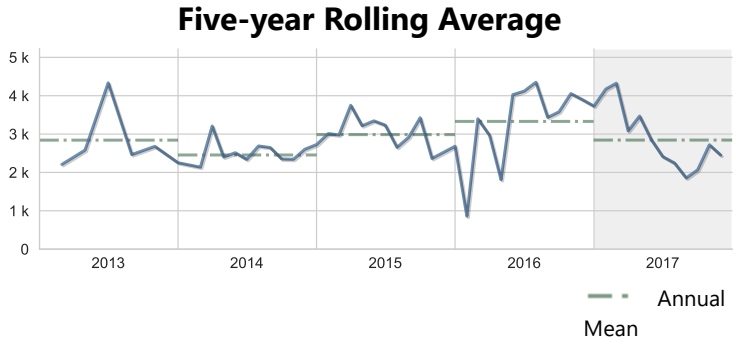
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2017	Historical period of record
High	2080.00	2430.00
Mean	619.46	19.15
Low	14.00	0.008
No. of Samples	30	318



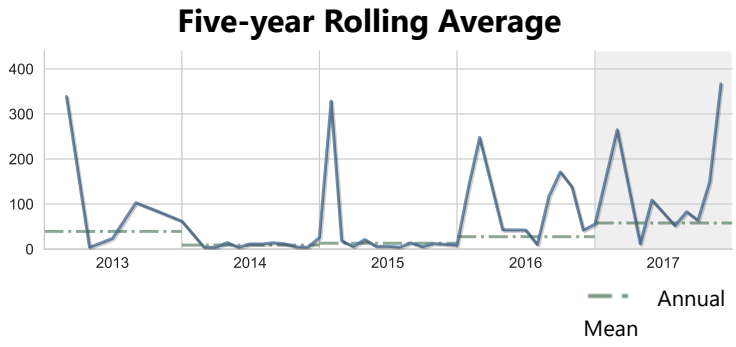
Nitrogen, Kjeldahl

Units: ug/l	Year 2017	Historical period of record
High	6650.00	6740.00
Mean	2843.68	2575.4
Low	1820.00	140.00
No. of Samples	69	348



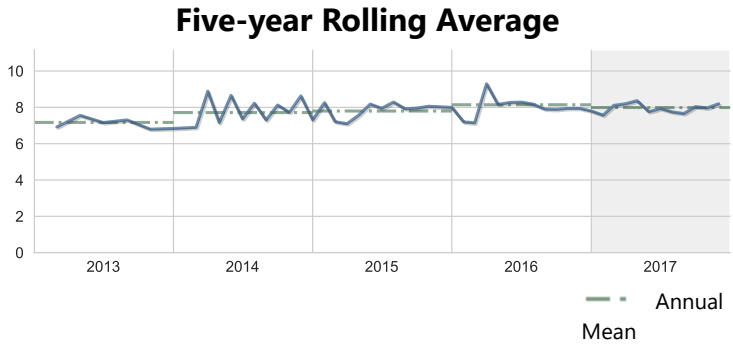
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2017	Historical period of record
High	367.00	855.00
Mean	57.96	15.35
Low	10.00	0.00
No. of Samples	14	239



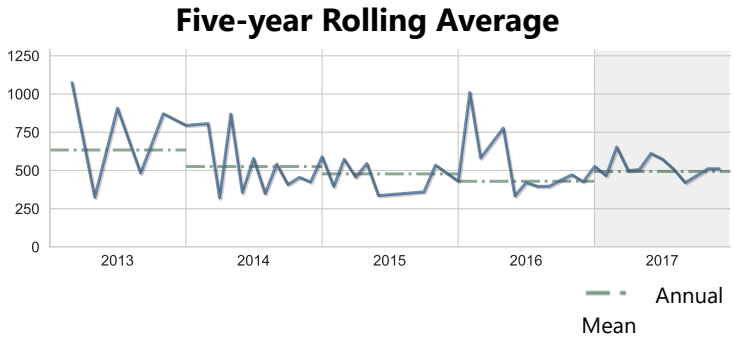
pH

Units: None	Year 2017	Historical period of record
High	9.98	9.98
Mean	7.99	7.27
Low	5.76	5.76
No. of Samples	132	2,002



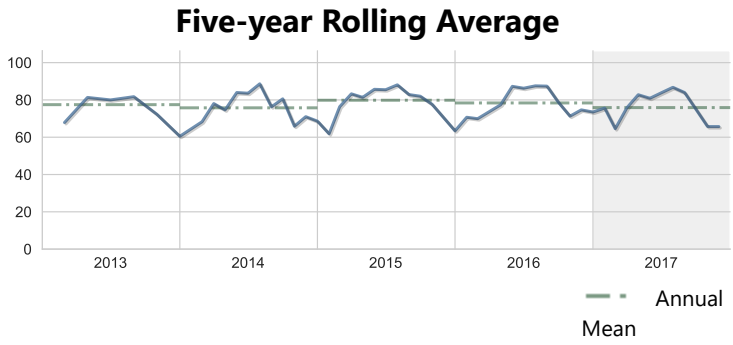
Specific conductance

Units: umho	Year 2017	Historical period of record
High	3723.00	3723.00
Mean	493.6	623.39
Low	291.00	271.00
No. of Samples	64	1,851



Temperature, water

Units: deg F	Year 2017	Historical period of record
High	89.06	93.956
Mean	75.89	69.7
Low	57.38	56.858
No. of Samples	64	1,813



Water Chemistry Ratings | Tidal Portion of the Creek

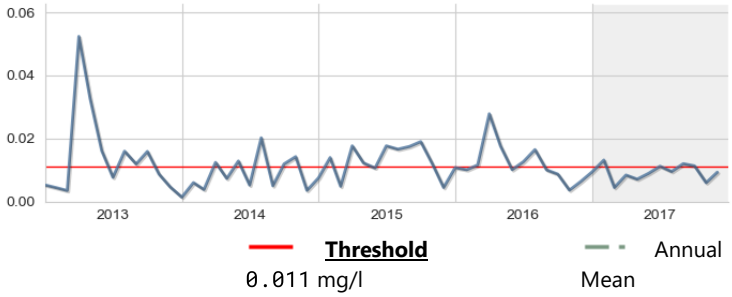
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of chlorophyll *a* and a minimum allowable concentration of dissolved oxygen in these streams. Florida 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 2017	Historical period of record
High	0.1	0.4
Mean	0.009	0.0096
Low	0.001	0.0003
No. of Samples	106	1,563

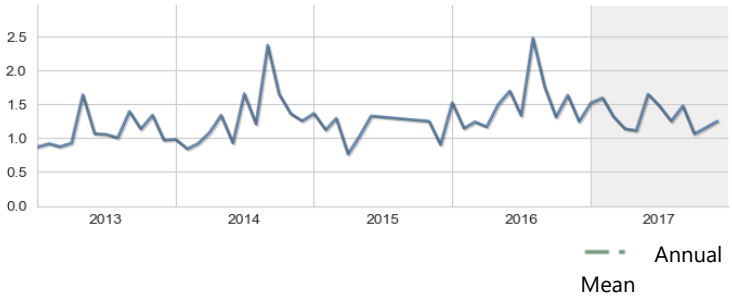
Five-year Rolling Average



Nitrogen, Total

Units: mg/l	Year 2017	Historical period of record
High	3.7	23.8
Mean	1.2779	1.1173
Low	0.524	0.00
No. of Samples	61	879

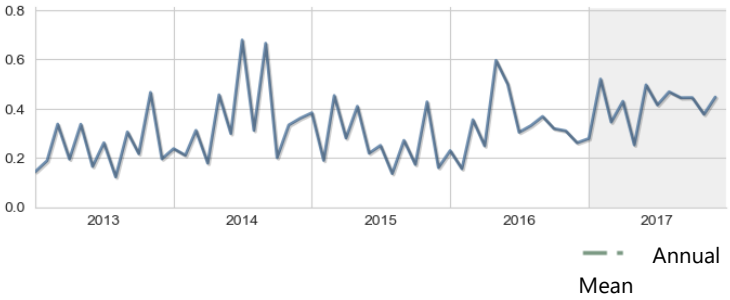
Five-year Rolling Average



Phosphorus, Total

Units: mg/l	Year 2017	Historical period of record
High	2.4	4.8
Mean	0.3819	0.2408
Low	0.062	0.004
No. of Samples	97	1,602

Five-year Rolling Average



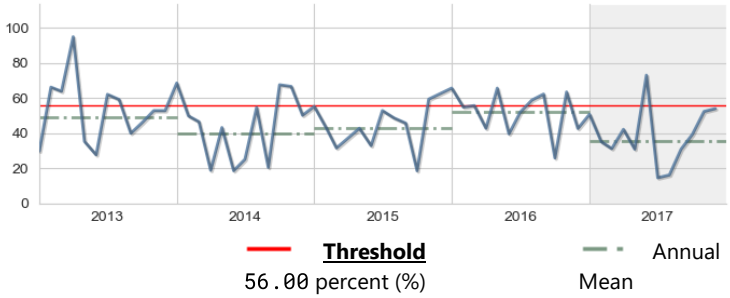
DO Dissolved Oxygen Saturation

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

Score: Caution

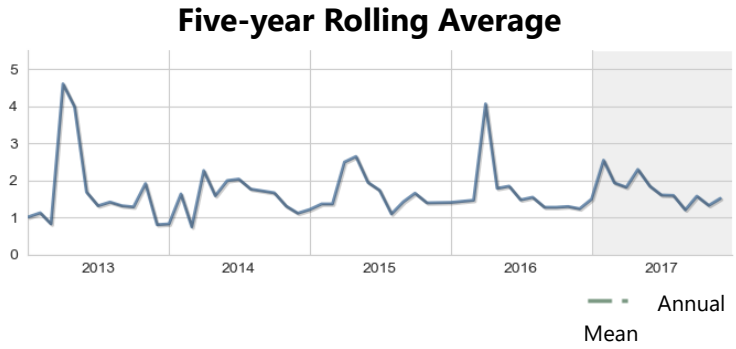
Units: percent (%)	Year 2017	Historical period of record
High	168.1	212.6
Mean	34.63	45.42
Low	1.30	1.30
No. of Samples	69	1,135

Five-year Rolling Average



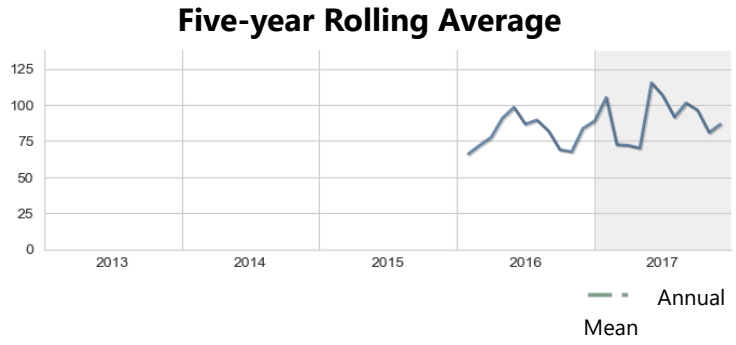
BOD, Biochemical oxygen demand

Units: mg/l	Year 2017	Historical period of record
High	4.3	20.0
Mean	1.66	1.8
Low	1.00	0.50
No. of Samples	77	998



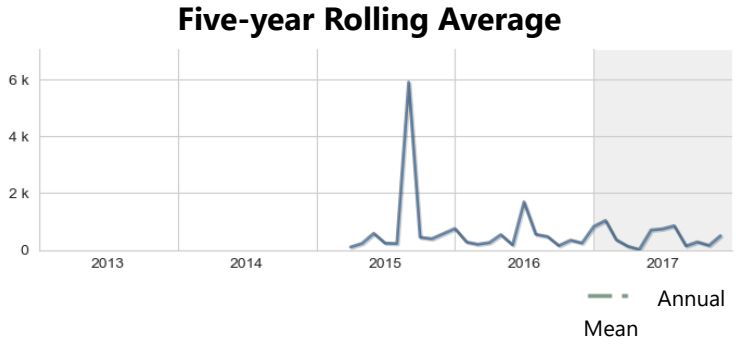
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Units: PCU	Year 2017	Historical period of record
High	240.0	240.0
Mean	90.5	82.16
Low	35.00	20.00
No. of Samples	80	254



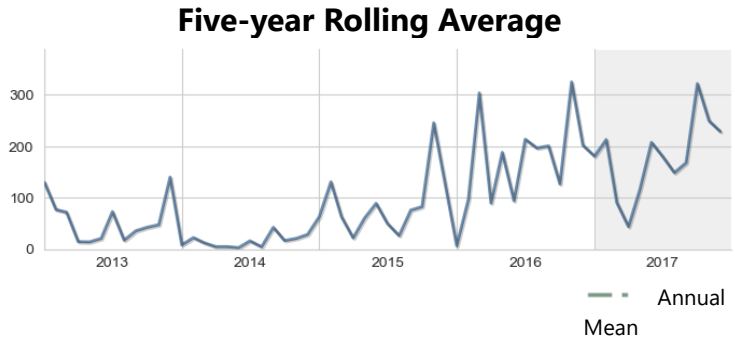
Enterococcus Group Bacteria

Units: cfu/100ml	Year 2017	Historical period of record
High	2,400.0	14,000.0
Mean	315.75	364.27
Low	10.00	10.00
No. of Samples	24	79



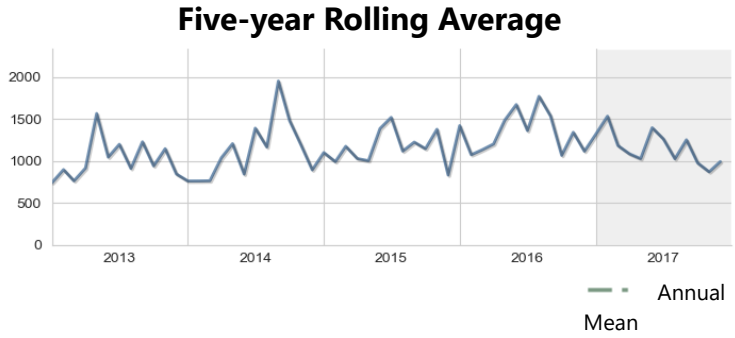
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2017	Historical period of record
High	1,520.0	2,170.0
Mean	164.26	38.53
Low	10.00	0.008
No. of Samples	60	1,113



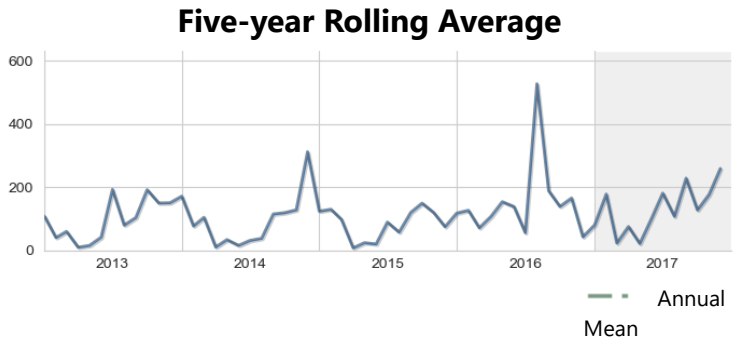
Nitrogen, Kjeldahl

Units: ug/l	Year 2017	Historical period of record
High	3,240.0	23,800.0
Mean	1142.31	1042.34
Low	460.00	80.00
No. of Samples	99	1,660



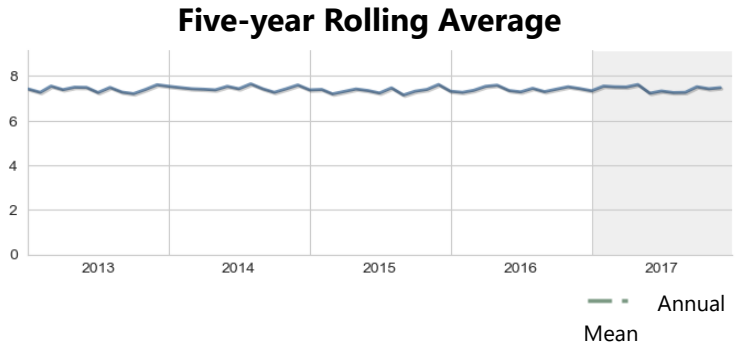
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2017	Historical period of record
High	1,140.0	4,590.0
Mean	109.35	53.47
Low	4.00	0.00
No. of Samples	62	1,489



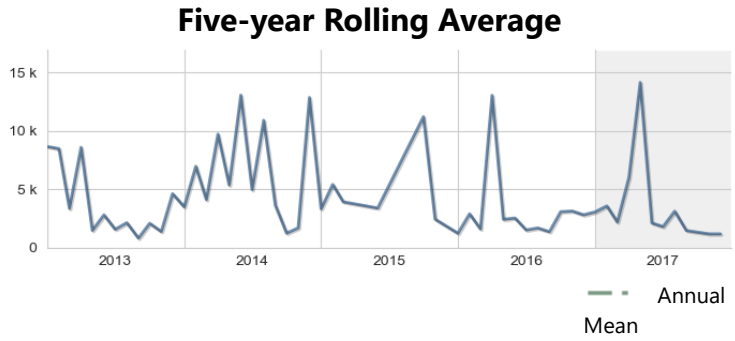
pH

Units: None	Year 2017	Historical period of record
High	8.1	9.3
Mean	7.41	7.4
Low	6.60	6.00
No. of Samples	163	6,469



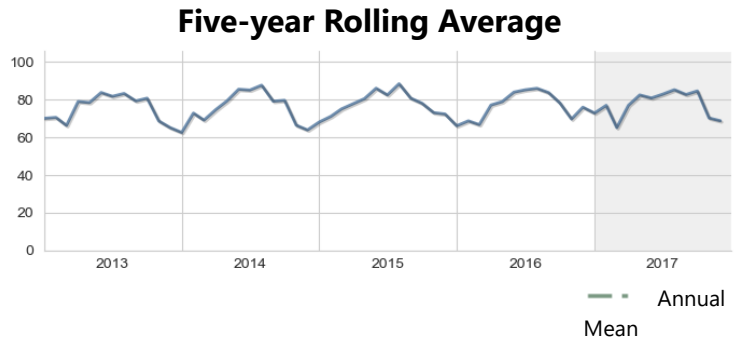
Specific conductance

Units: umho	Year 2017	Historical period of record
High	52,075.0	53,581.0
Mean	2446.24	3590.3
Low	9.90	0.823
No. of Samples	69	5,792



Temperature, water

Units: deg F	Year 2017	Historical period of record
High	88.2	92.4
Mean	76.49	75.21
Low	46.40	46.40
No. of Samples	80	5,905

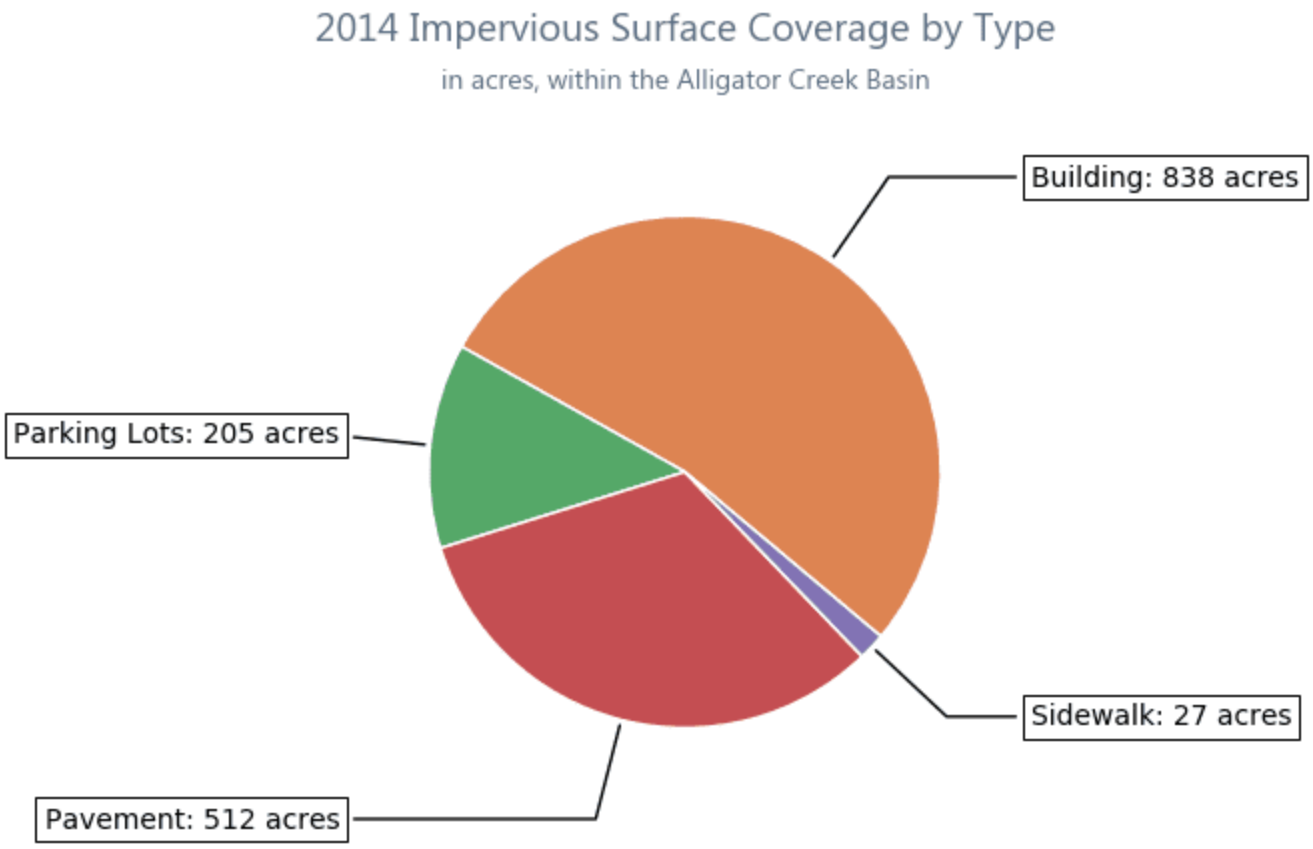


Impervious Features

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

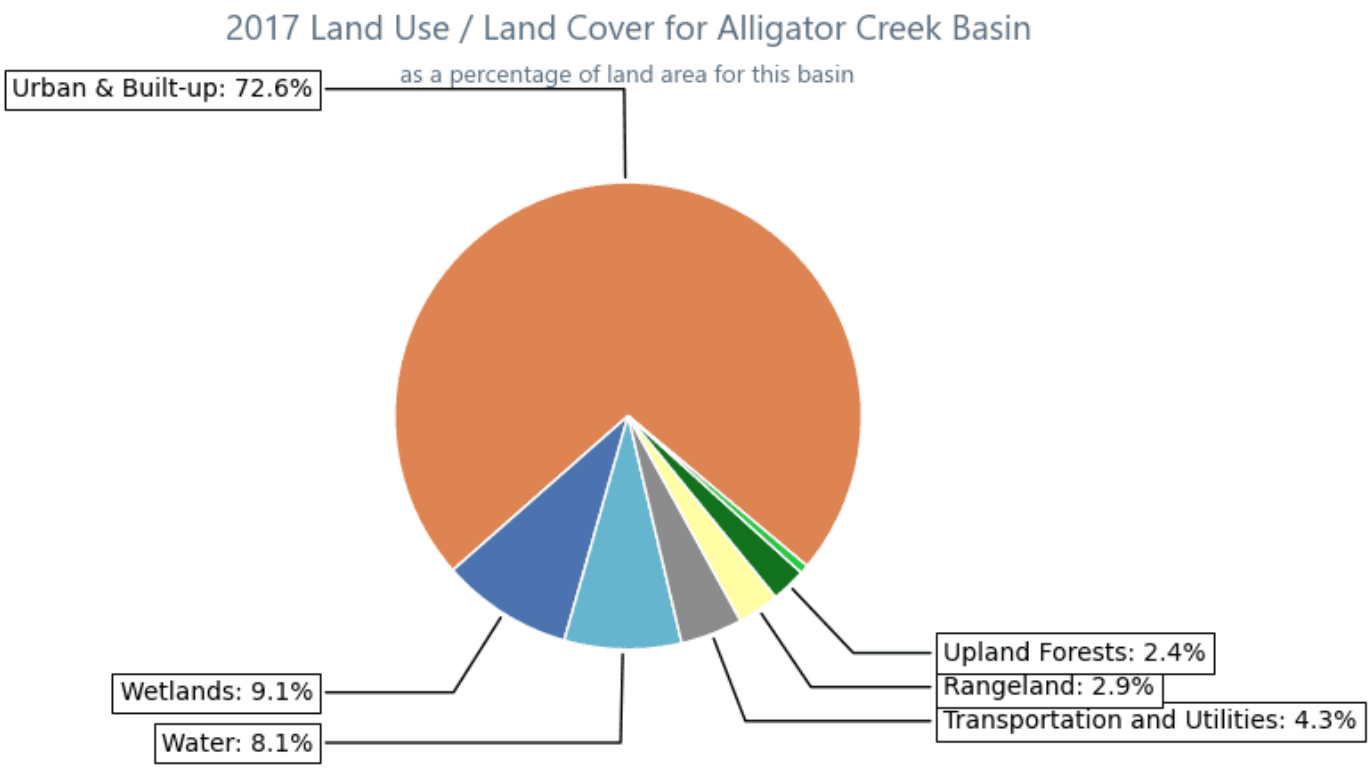


Land Use / Land Cover

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%