Alligator Creek Condition Report for 2019

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

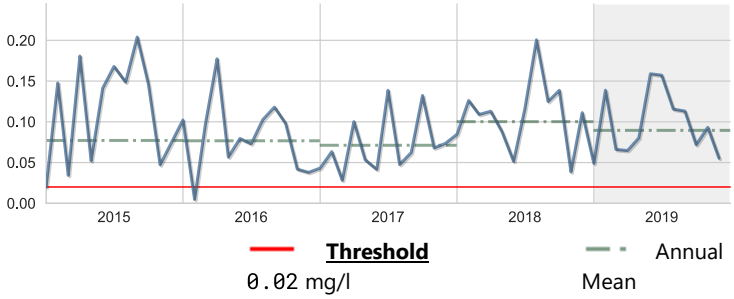
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of nitrogen, phosphorus, and chlorophyll *a*, and a minimum allowable concentration of dissolved oxygen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

Chl-a Chlorophyll a

Score: Caution

Units: mg/l	Year 2019	Historical period of record
High	0.315	0.351
Mean	0.0895	0.0683
Low	0.0051	0.0004
No. of Samples	130	650

Five-year Rolling Average

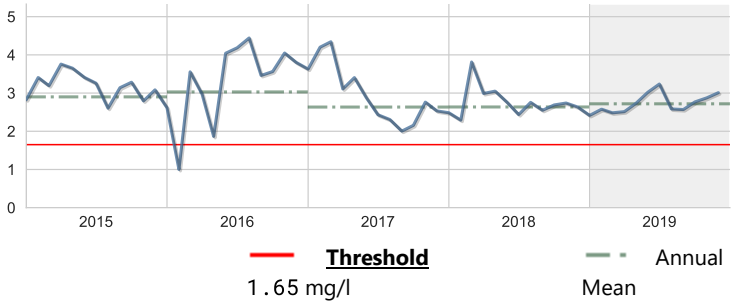


N Nitrogen, Total

Score: Caution

Units: mg/l	Year 2019	Historical period of record
High	4.161	6.745
Mean	2.7188	2.8336
Low	0.759	0.41
No. of Samples	125	504

Five-year Rolling Average

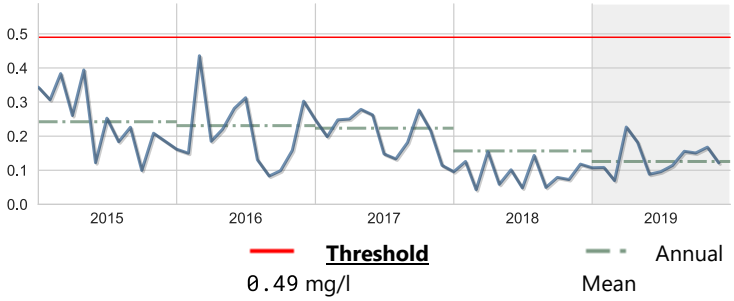


P Phosphorus, Total

Score: Pass

Units: mg/l	Year 2019	Historical period of record
High	0.457	0.87
Mean	0.1258	0.1759
Low	0.015	0.012
No. of Samples	125	673

Five-year Rolling Average



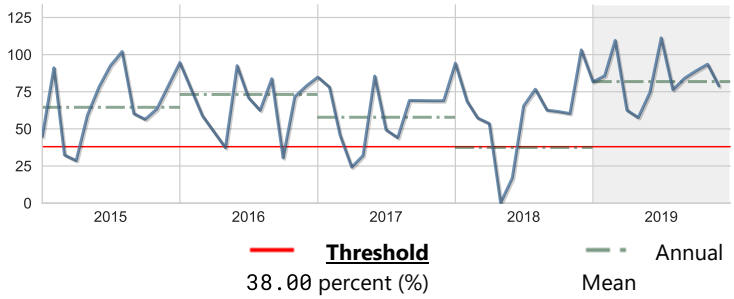
DO Dissolved Oxygen Saturation

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

Score: Pass

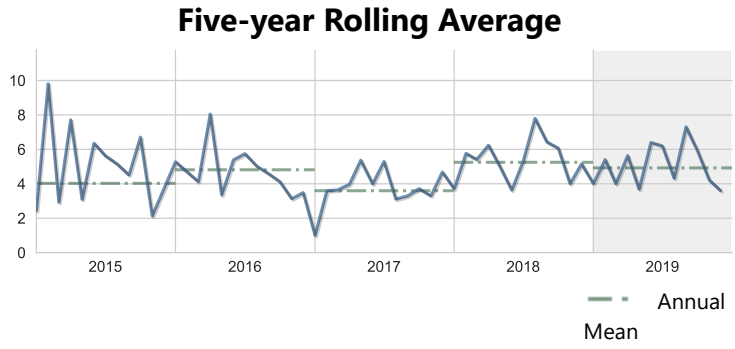
Units: percent (%)	Year 2019	Historical period of record
High	186.065	197.40
Mean	81.83	52.73
Low	20.3444	0.05
No. of Samples	65	389

Five-year Rolling Average



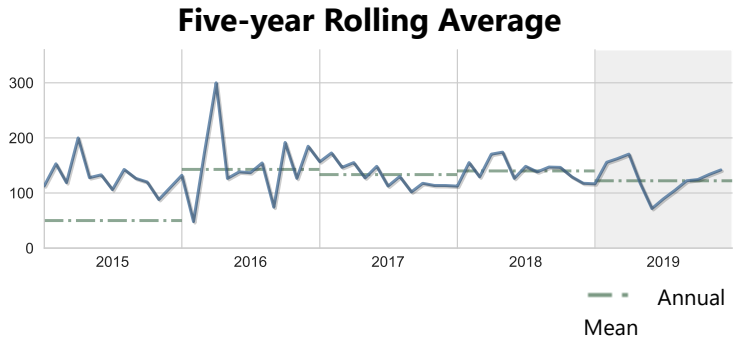
BOD, Biochemical oxygen demand

Units: mg/l	Year 2019	Historical period of record
High	12.70	12.70
Mean	4.92	4.1
Low	1.00	0.556
No. of Samples	120	636



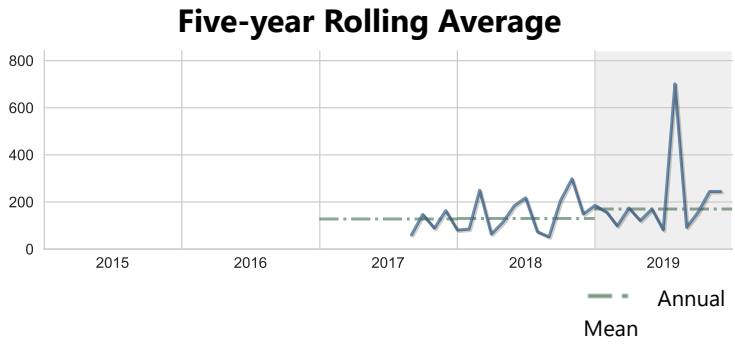
Color

Units: PCU	Year 2019	Historical period of record
High	400.00	400.00
Mean	122.18	126.91
Low	48.00	20.00
No. of Samples	125	764



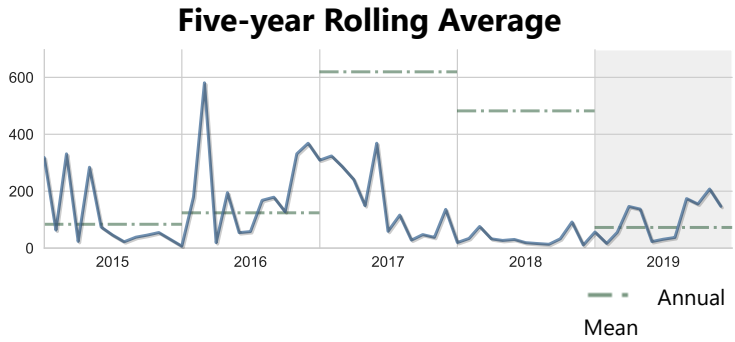
Escherichia coli

Units: cfu/100ml	Year 2019	Historical period of record
High	9208.00	19863.00
Mean	170.11	152.76
Low	10.00	10.00
No. of Samples	125	204



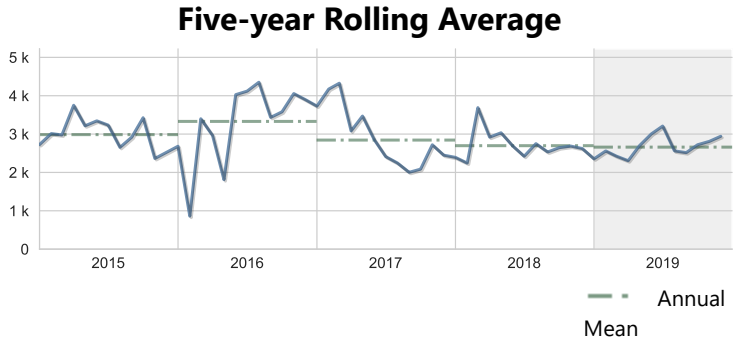
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2019	Historical period of record
High	1850.00	2430.00
Mean	72.59	47.86
Low	8.00	0.008
No. of Samples	125	708



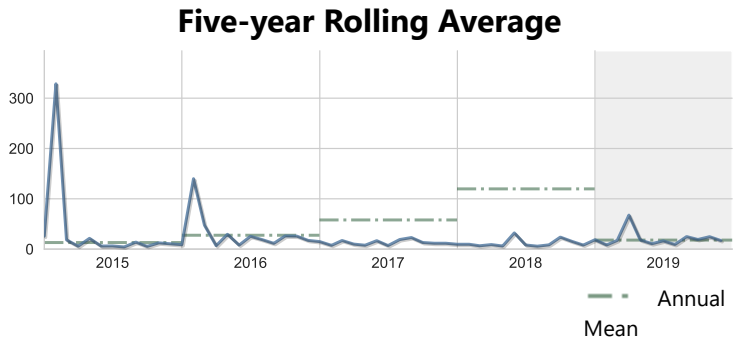
Nitrogen, Kjeldahl

Units: ug/l	Year 2019	Historical period of record
High	4150.00	6740.00
Mean	2659.66	2757.44
Low	680.00	140.00
No. of Samples	125	670



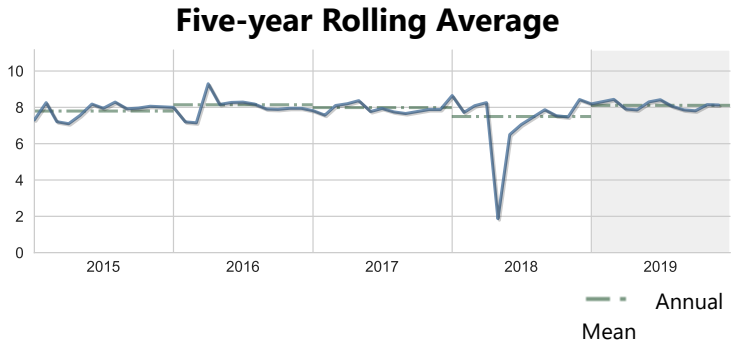
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2019	Historical period of record
High	895.00	895.00
Mean	17.93	14.18
Low	4.00	0.00
No. of Samples	125	664



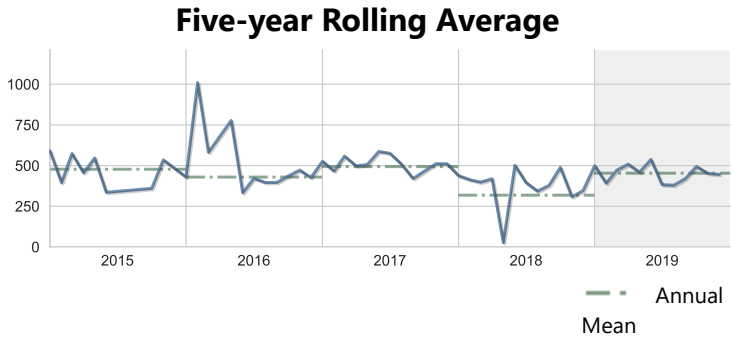
pH

Units: None	Year 2019	Historical period of record
High	9.94	9.94
Mean	8.11	7.26
Low	6.90	0.20
No. of Samples	65	2,080



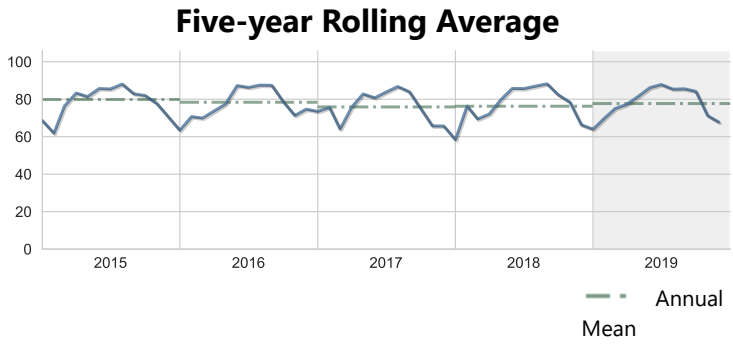
Specific conductance

Units: umho	Year 2019	Historical period of record
High	4251.00	4251.00
Mean	453.34	606.98
Low	271.583	11.70
No. of Samples	65	1,974



Temperature, water

Units: deg F	Year 2019	Historical period of record
High	90.7536	93.956
Mean	77.69	70.07
Low	58.388	56.444
No. of Samples	65	1,926



Water Chemistry Ratings | Tidal Portion of the Creek

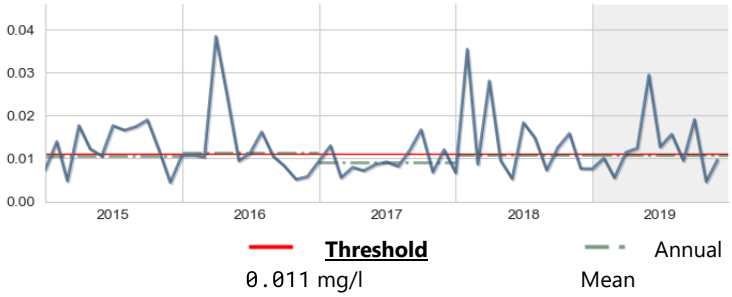
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of chlorophyll *a* and a minimum allowable concentration of dissolved oxygen in these streams. Florida 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 2019	Historical period of record
High	0.2	4.3
Mean	0.0109	0.0098
Low	0.0006	0.0003
No. of Samples	168	2,063

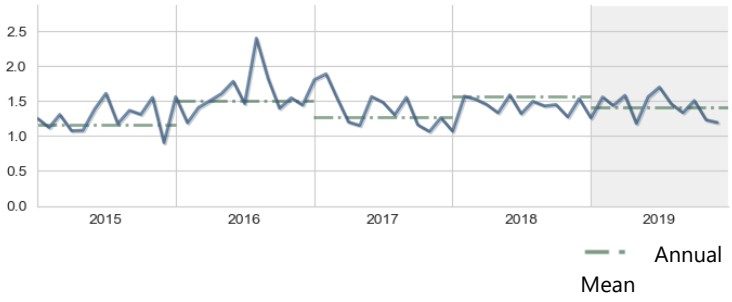
Five-year Rolling Average



Nitrogen, Total

Units: mg/l	Year 2019	Historical period of record
High	5.4	23.8
Mean	1.4078	1.2352
Low	0.364	0.00
No. of Samples	168	1,352

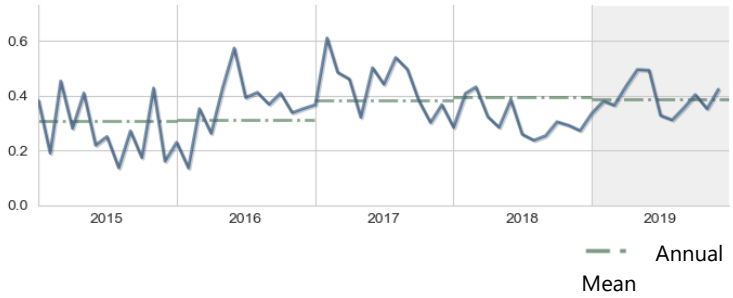
Five-year Rolling Average



Phosphorus, Total

Units: mg/l	Year 2019	Historical period of record
High	1.7	4.8
Mean	0.3855	0.2701
Low	0.041	0.004
No. of Samples	168	2,106

Five-year Rolling Average



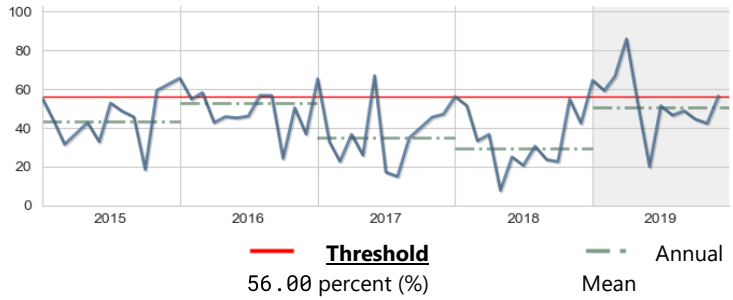
DO Dissolved Oxygen Saturation

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

Score: Caution

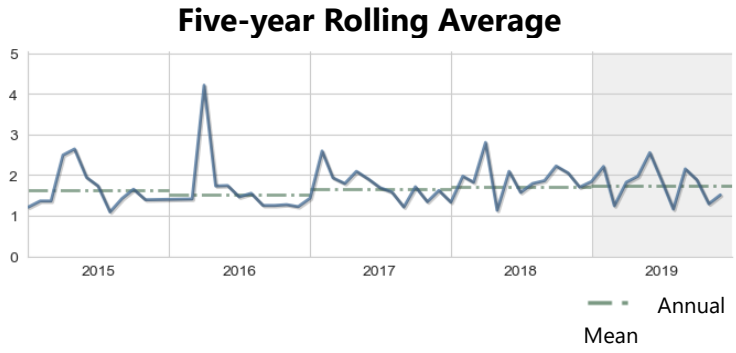
Units: percent (%)	Year 2019	Historical period of record
High	233.2	233.2
Mean	50.6	43.58
Low	0.7247	0.40
No. of Samples	84	1,338

Five-year Rolling Average



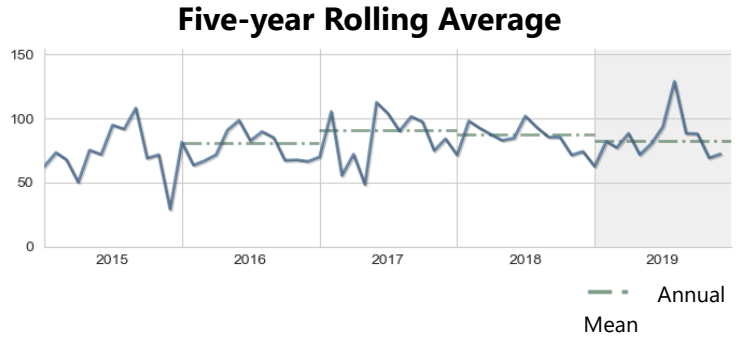
BOD, Biochemical oxygen demand

Units: mg/l	Year 2019	Historical period of record
High	7.9	20.0
Mean	1.75	1.77
Low	1.00	0.50
No. of Samples	168	1,482



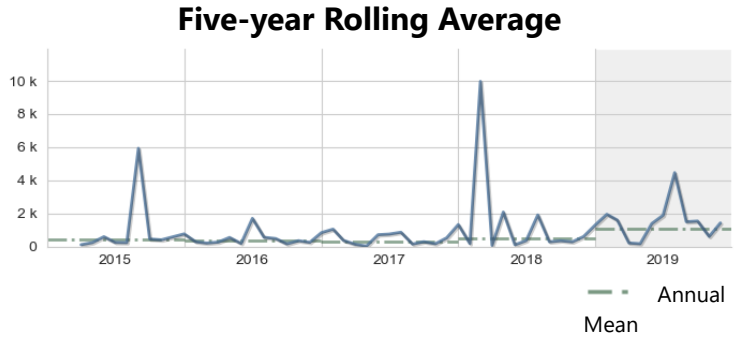
Color

Units: PCU	Year 2019	Historical period of record
High	300.0	300.0
Mean	82.01	65.19
Low	40.00	4.90
No. of Samples	168	2,371



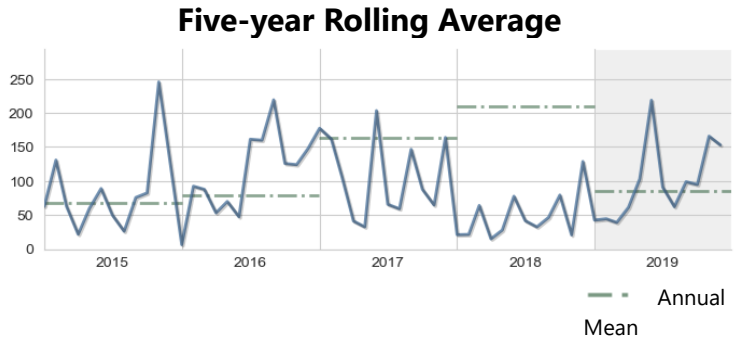
Enterococcus Group Bacteria

Units: cfu/100ml	Year 2019	Historical period of record
High	4,600.0	18,000.0
Mean	1093.92	482.66
Low	100.00	10.00
No. of Samples	48	225



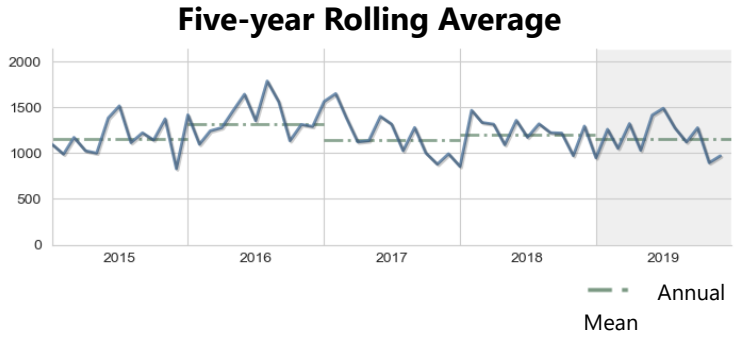
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2019	Historical period of record
High	1,430.0	2,170.0
Mean	84.7	45.1
Low	8.00	0.008
No. of Samples	168	1,684



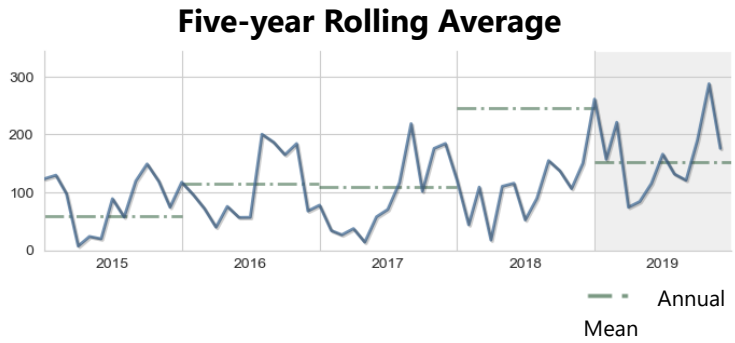
Nitrogen, Kjeldahl

Units: ug/l	Year 2019	Historical period of record
High	5,040.0	23,800.0
Mean	1157.96	1091.06
Low	351.00	80.00
No. of Samples	168	2,158



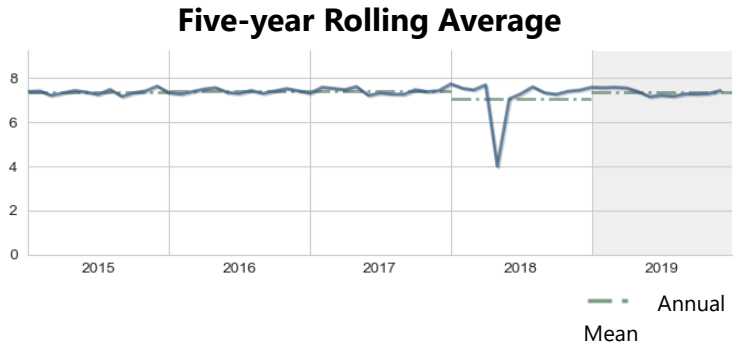
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2019	Historical period of record
High	1,050.0	4,590.0
Mean	152.83	62.05
Low	8.00	0.00
No. of Samples	168	2,044



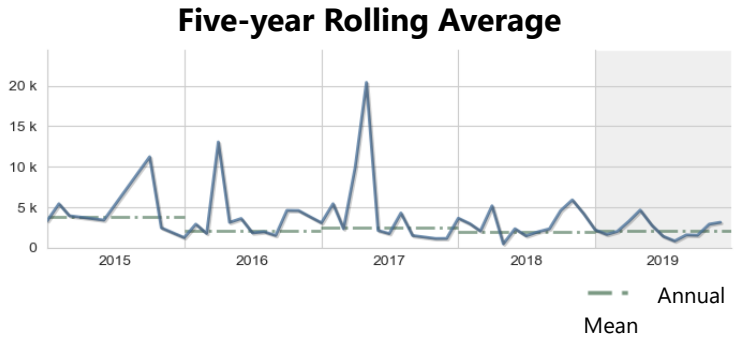
pH

Units: None	Year 2019	Historical period of record
High	8.2	9.3
Mean	7.36	7.39
Low	6.86	0.10
No. of Samples	83	6,761



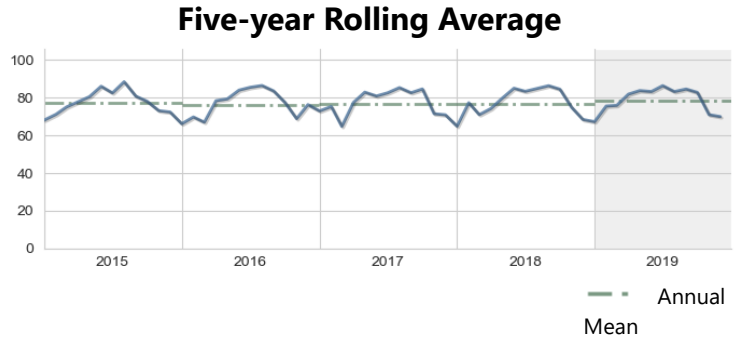
Specific conductance

Units: umho	Year 2019	Historical period of record
High	44,200.5	53,581.0
Mean	2074.9	3546.96
Low	449.69	0.823
No. of Samples	84	6,071



Temperature, water

Units: deg F	Year 2019	Historical period of record
High	88.9	92.4
Mean	78.46	75.31
Low	64.0215	46.40
No. of Samples	84	6,174

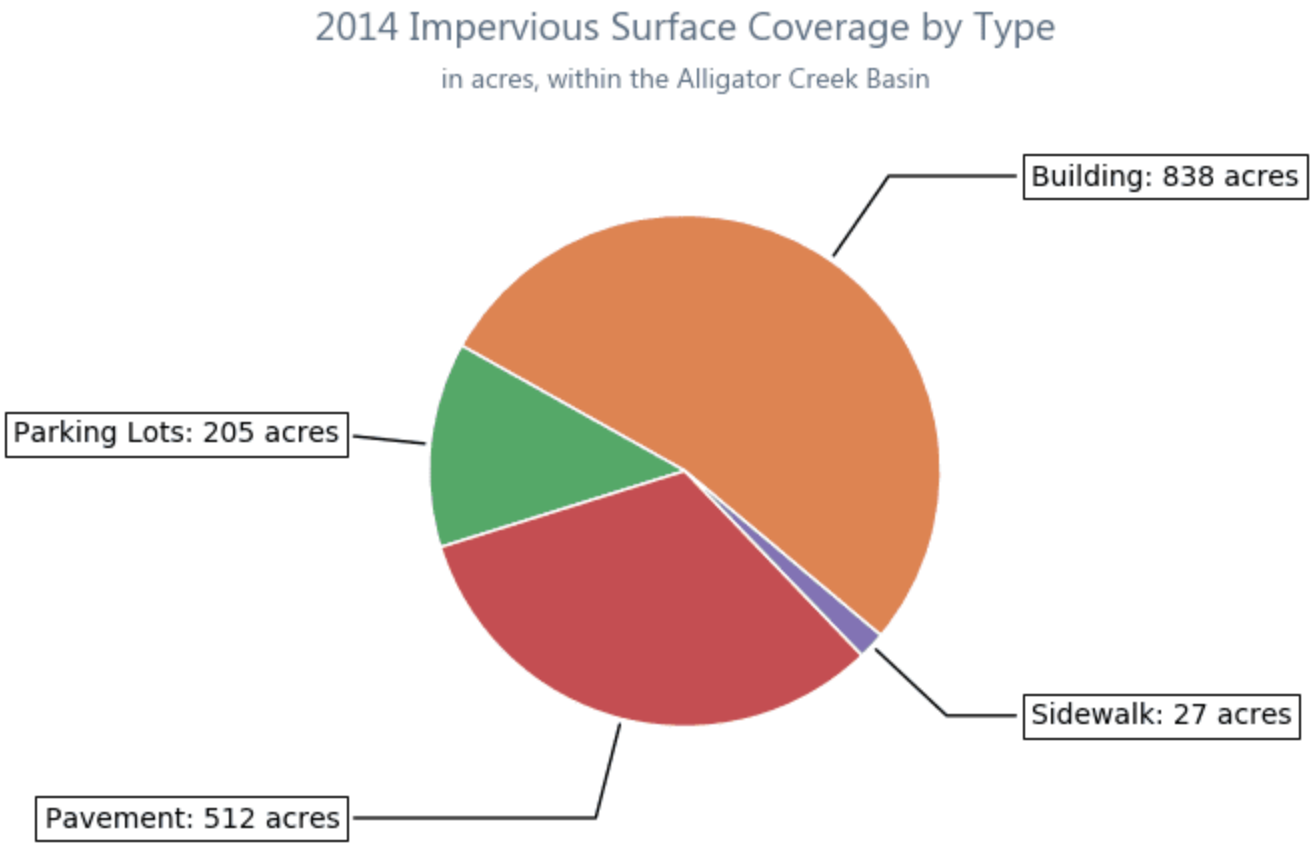


Impervious Features

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

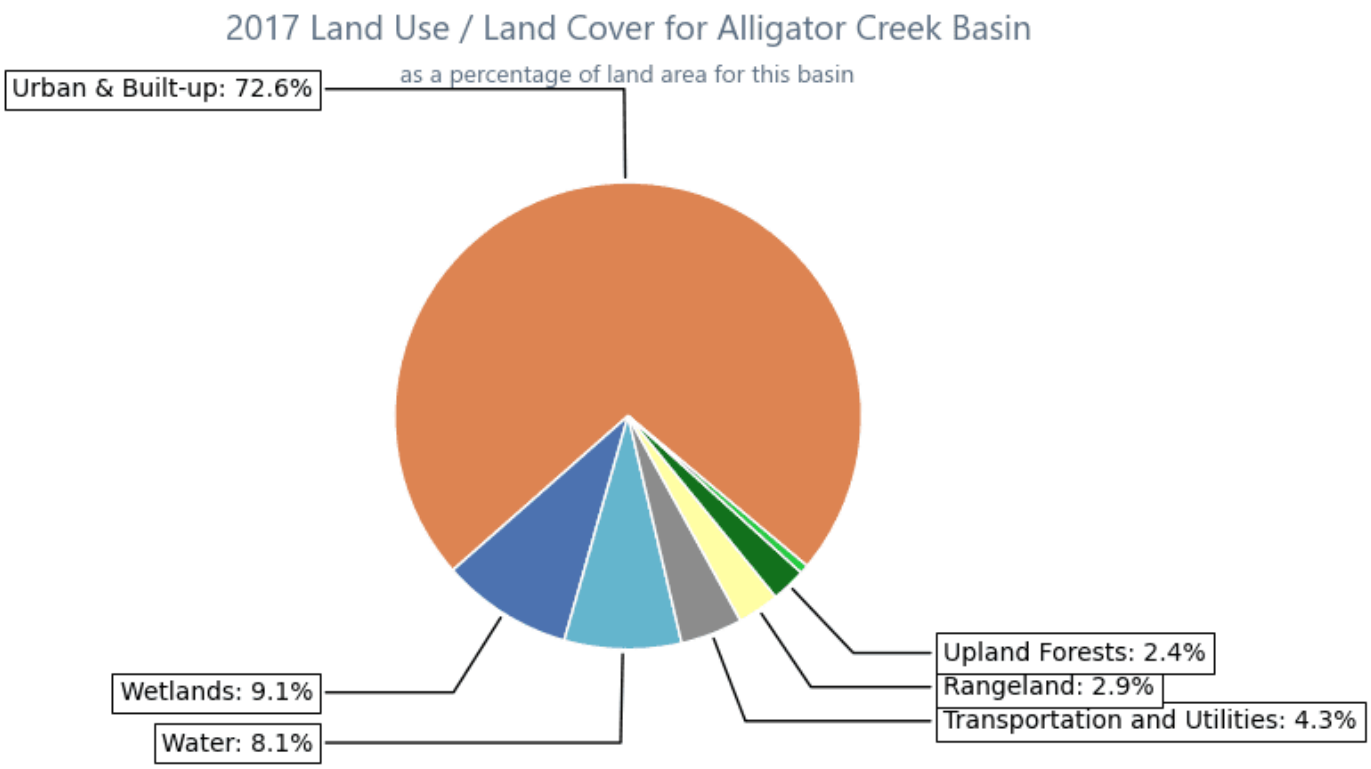


Land Use / Land Cover

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%