Alligator Creek Condition Report for 2018

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

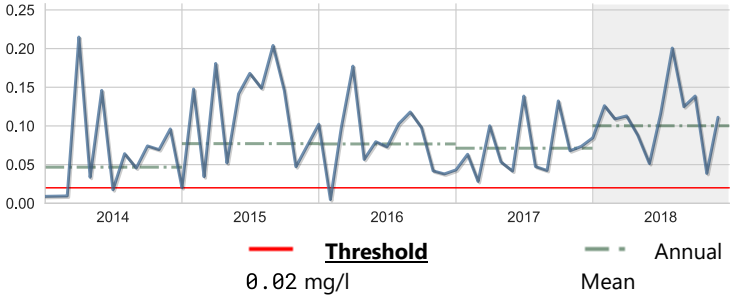
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of nitrogen, phosphorus, and chlorophyll *a*, and a minimum allowable concentration of dissolved oxygen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

Chl-a Chlorophyll a

Score: Caution

Units: mg/l	Year 2018	Historical period of record
High	0.281	0.351
Mean	0.1002	0.0621
Low	0.0021	0.0004
No. of Samples	60	340

Five-year Rolling Average

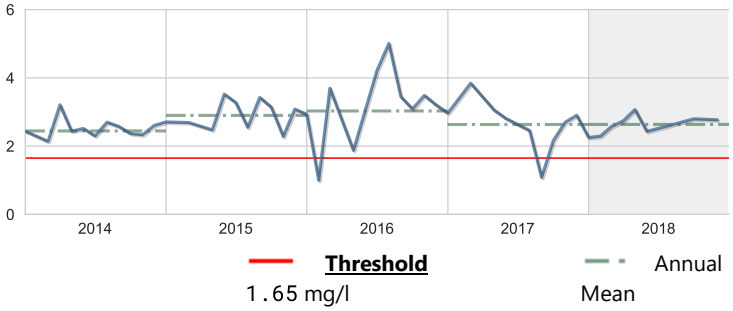


N Nitrogen, Total

Score: Caution

Units: mg/l	Year 2018	Historical period of record
High	3.073	6.745
Mean	2.6362	2.4442
Low	2.253	0.41
No. of Samples	10	139

Five-year Rolling Average

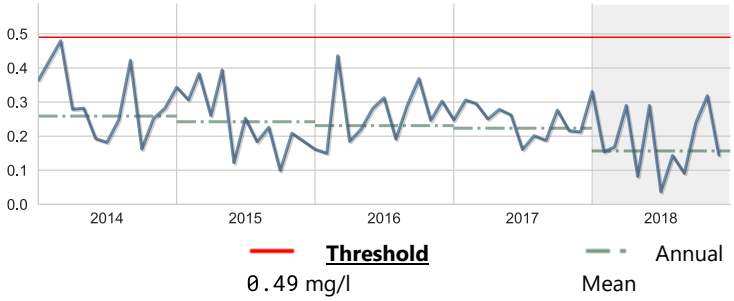


P Phosphorus, Total

Score: Pass

Units: mg/l	Year 2018	Historical period of record
High	0.559	0.87
Mean	0.1567	0.2467
Low	0.012	0.012
No. of Samples	37	308

Five-year Rolling Average



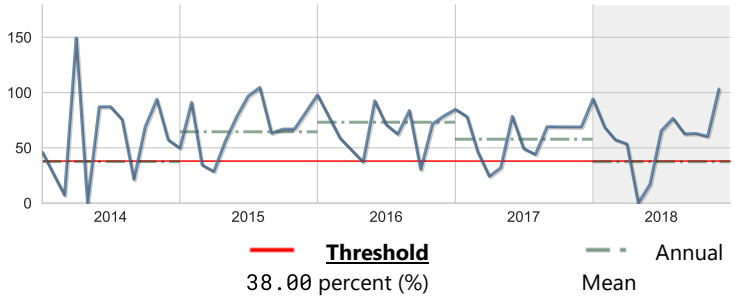
DO Dissolved Oxygen Saturation

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

Score: Caution

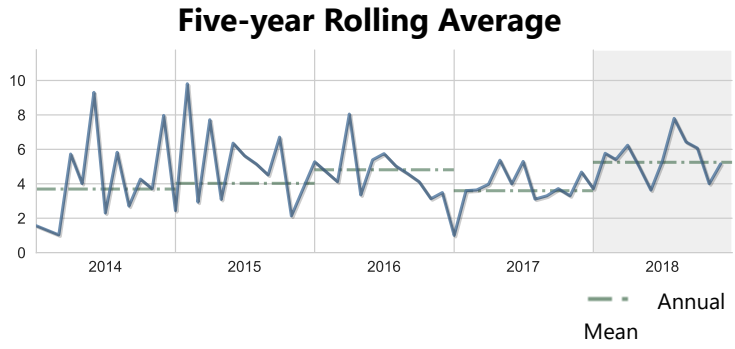
Units: percent (%)	Year 2018	Historical period of record
High	138.20	197.40
Mean	37.47	50.3
Low	0.10	0.05
No. of Samples	62	416

Five-year Rolling Average



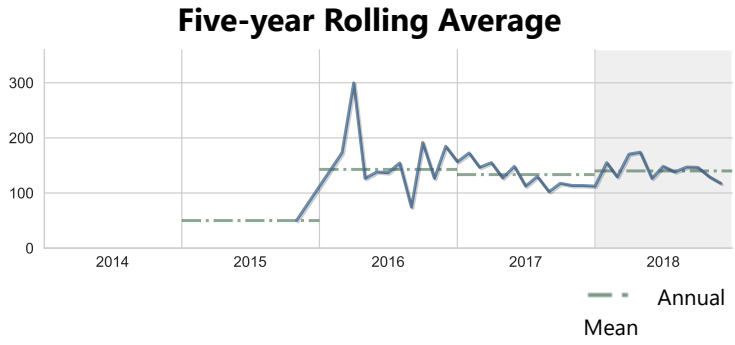
BOD, Biochemical oxygen demand

Units: mg/l	Year 2018	Historical period of record
High	9.60	12.10
Mean	5.25	3.95
Low	1.44	0.556
No. of Samples	60	336



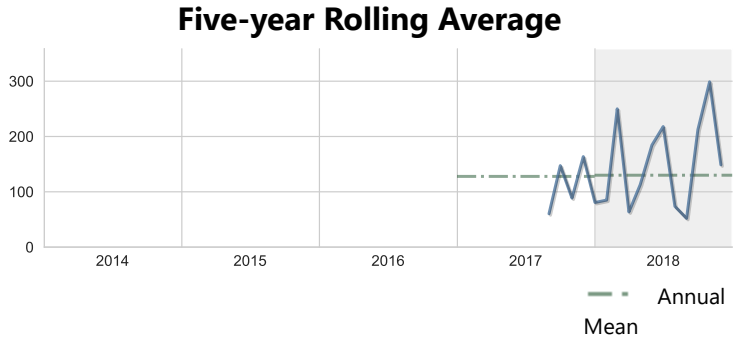
Color

Units: PCU	Year 2018	Historical period of record
High	300.00	300.00
Mean	140.04	130.42
Low	80.00	20.00
No. of Samples	60	192



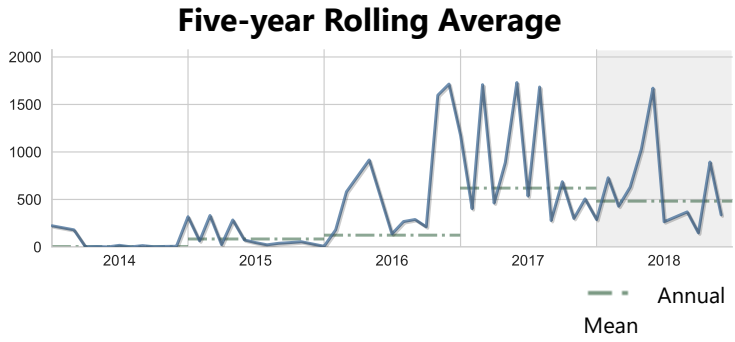
Escherichia coli

Units: cfu/100ml	Year 2018	Historical period of record
High	19863.00	19863.00
Mean	129.99	128.48
Low	10.00	10.00
No. of Samples	62	78



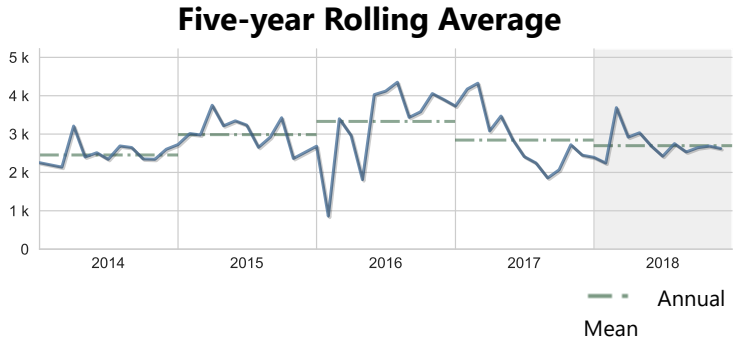
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2018	Historical period of record
High	2040.00	2430.00
Mean	482.21	35.34
Low	12.00	0.008
No. of Samples	19	295



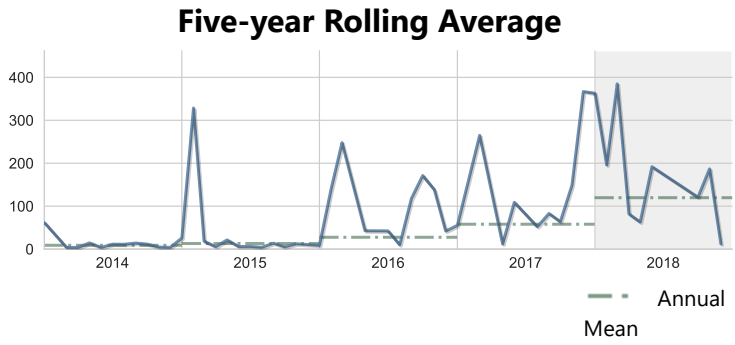
Nitrogen, Kjeldahl

Units: ug/l	Year 2018	Historical period of record
High	5200.00	6740.00
Mean	2697.43	2563.56
Low	1890.00	140.00
No. of Samples	60	366



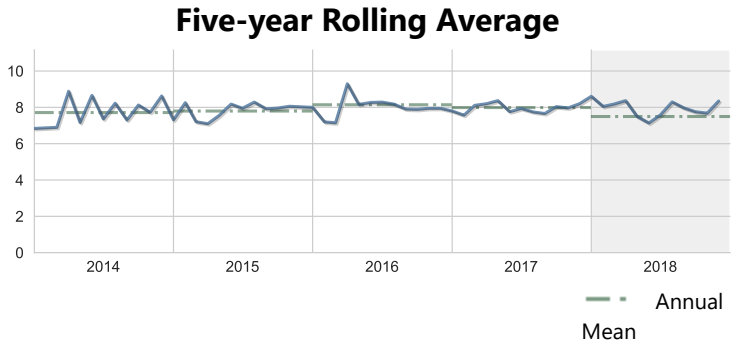
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2018	Historical period of record
High	385.00	855.00
Mean	119.72	18.54
Low	12.00	0.00
No. of Samples	10	222



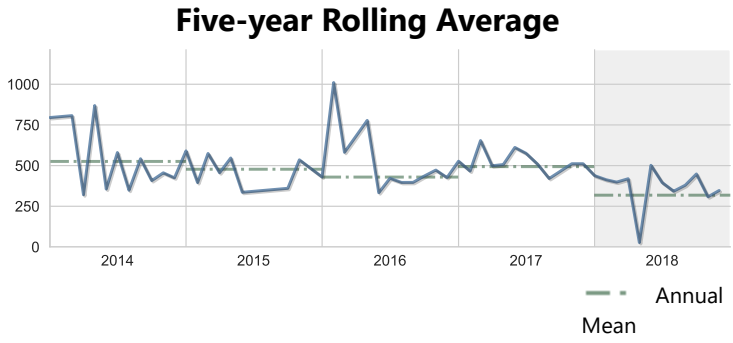
pH

Units: None	Year 2018	Historical period of record
High	9.60	9.98
Mean	7.5	7.26
Low	0.20	0.20
No. of Samples	117	2,076



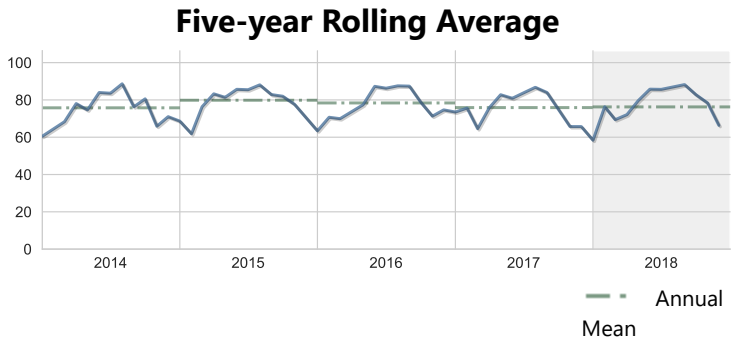
Specific conductance

Units: umho	Year 2018	Historical period of record
High	1265.00	3723.00
Mean	318.16	613.74
Low	11.70	11.70
No. of Samples	62	1,895



Temperature, water

Units: deg F	Year 2018	Historical period of record
High	90.482	93.956
Mean	76.26	69.8
Low	56.444	56.444
No. of Samples	57	1,847



Water Chemistry Ratings | Tidal Portion of the Creek

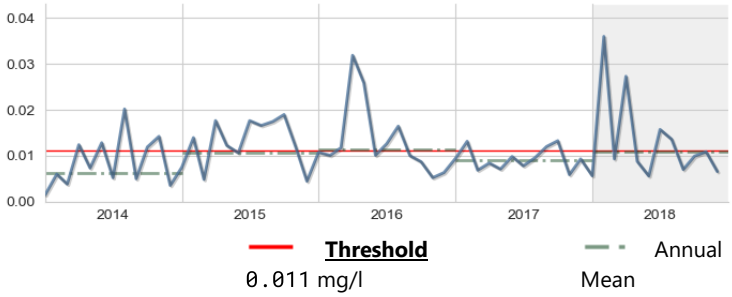
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of chlorophyll *a* and a minimum allowable concentration of dissolved oxygen in these streams. Florida 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 2018	Historical period of record
High	4.3	4.3
Mean	0.0108	0.0096
Low	0.0008	0.0003
No. of Samples	84	1,651

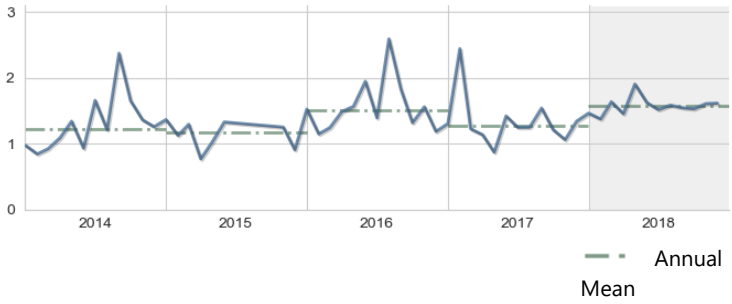
Five-year Rolling Average



Nitrogen, Total

Units: mg/l	Year 2018	Historical period of record
High	3.2	23.8
Mean	1.5674	1.1374
Low	0.92	0.00
No. of Samples	50	931

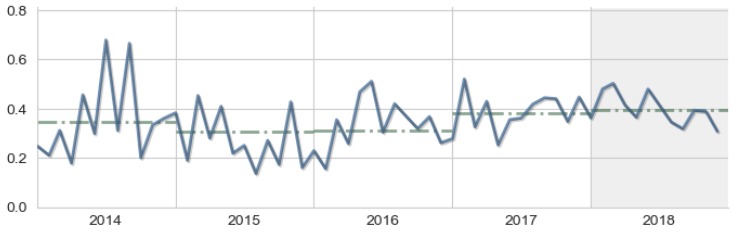
Five-year Rolling Average



Phosphorus, Total

Units: mg/l	Year 2018	Historical period of record
High	1.6	4.8
Mean	0.3936	0.2464
Low	0.10	0.004
No. of Samples	82	1,686

Five-year Rolling Average



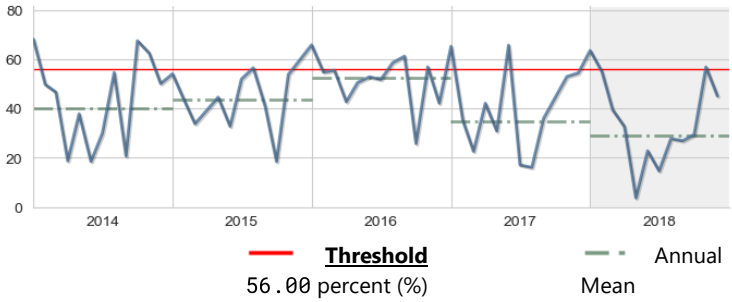
Dissolved Oxygen Saturation

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

Score: Caution

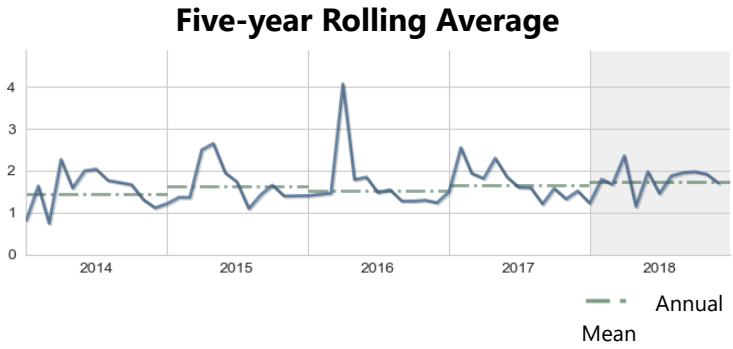
Units: percent (%)	Year 2018	Historical period of record
High	115.6	212.6
Mean	29.12	44.04
Low	0.40	0.40
No. of Samples	86	1,225

Five-year Rolling Average



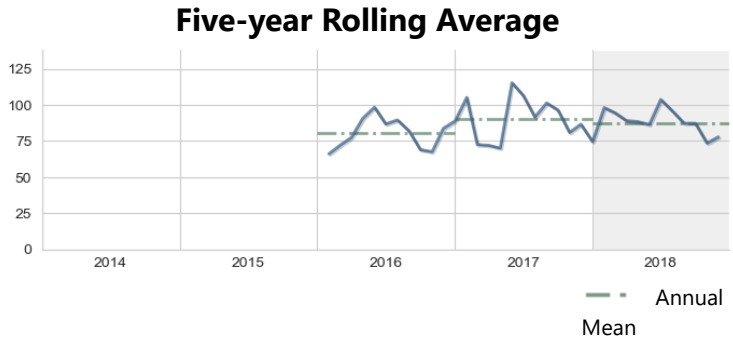
BOD, Biochemical oxygen demand

Units: mg/l	Year 2018	Historical period of record
High	12.2	20.0
Mean	1.72	1.8
Low	1.00	0.50
No. of Samples	81	1,079



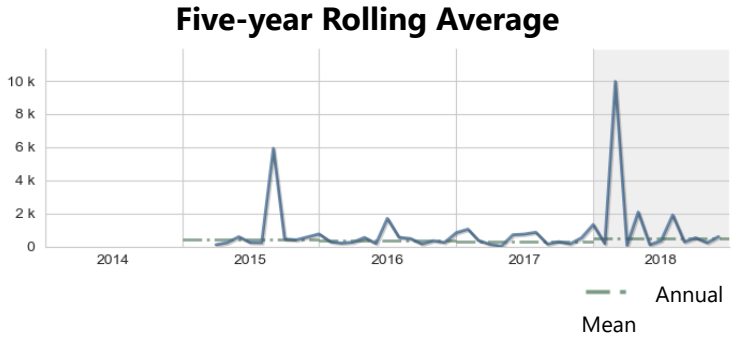
Color

Units: PCU	Year 2018	Historical period of record
High	200.0	240.0
Mean	87.55	84.08
Low	40.00	20.00
No. of Samples	84	335



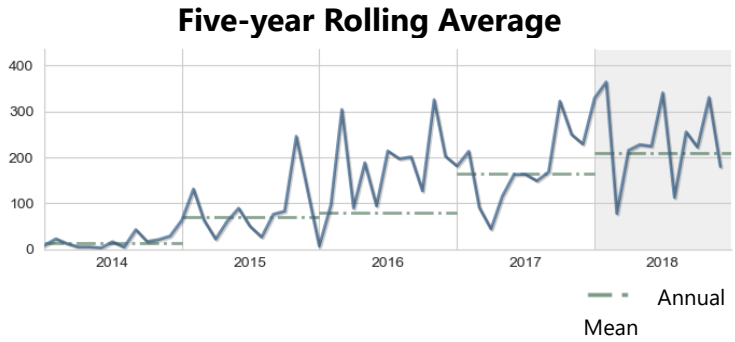
Enterococcus Group Bacteria

Units: cfu/100ml	Year 2018	Historical period of record
High	18,000.0	18,000.0
Mean	481.64	391.79
Low	30.00	10.00
No. of Samples	26	106



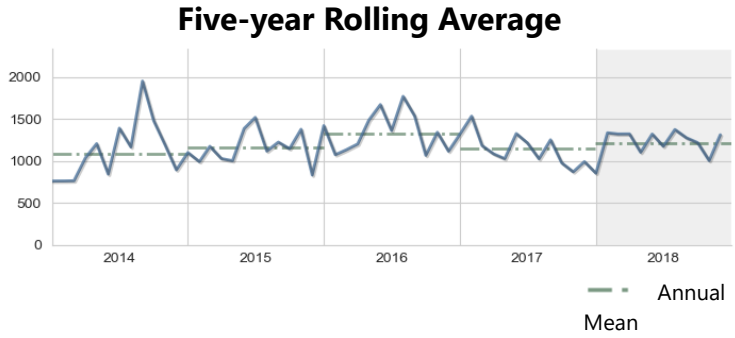
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2018	Historical period of record
High	1,380.0	2,170.0
Mean	209.66	40.71
Low	24.00	0.008
No. of Samples	37	1,152



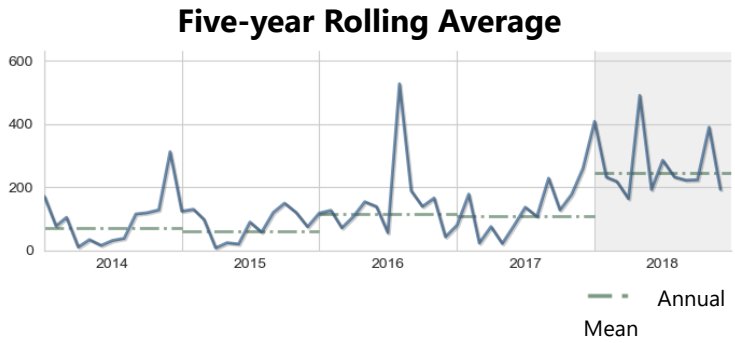
Nitrogen, Kjeldahl

Units: ug/l	Year 2018	Historical period of record
High	3,730.0	23,800.0
Mean	1206.14	1049.49
Low	606.00	80.00
No. of Samples	84	1,746



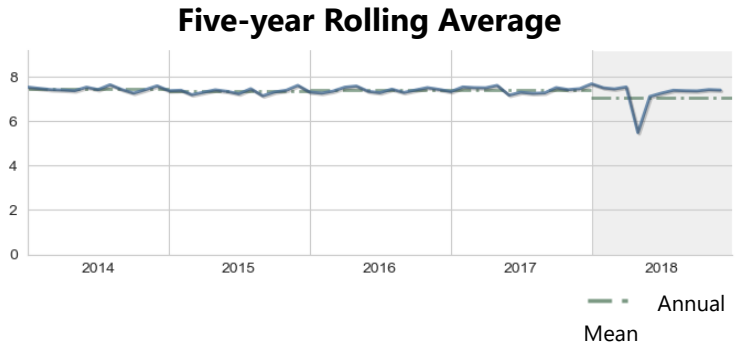
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2018	Historical period of record
High	1,100.0	4,590.0
Mean	244.45	56.15
Low	16.00	0.00
No. of Samples	50	1,541



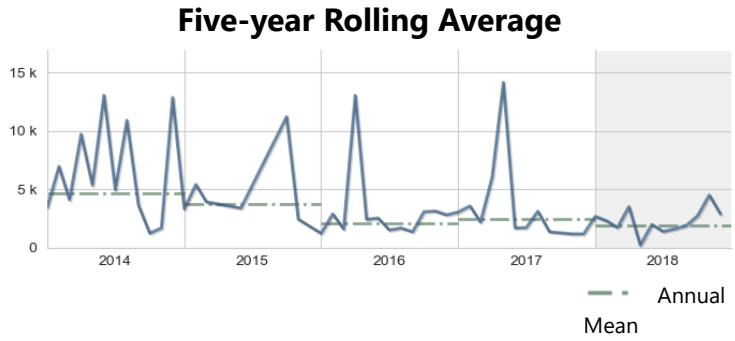
pH

Units: None	Year 2018	Historical period of record
High	8.2	9.3
Mean	7.05	7.39
Low	0.10	0.10
No. of Samples	163	6,634



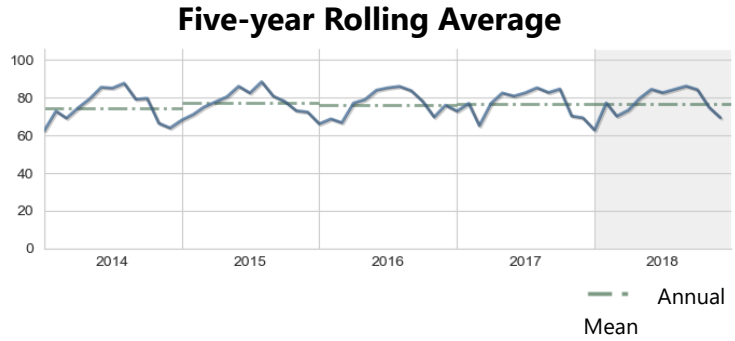
Specific conductance

Units: umho	Year 2018	Historical period of record
High	45,433.7	53,581.0
Mean	1922.89	3554.68
Low	25.00	0.823
No. of Samples	86	5,879



Temperature, water

Units: deg F	Year 2018	Historical period of record
High	89.3	92.4
Mean	76.38	75.23
Low	53.15	46.40
No. of Samples	79	5,984

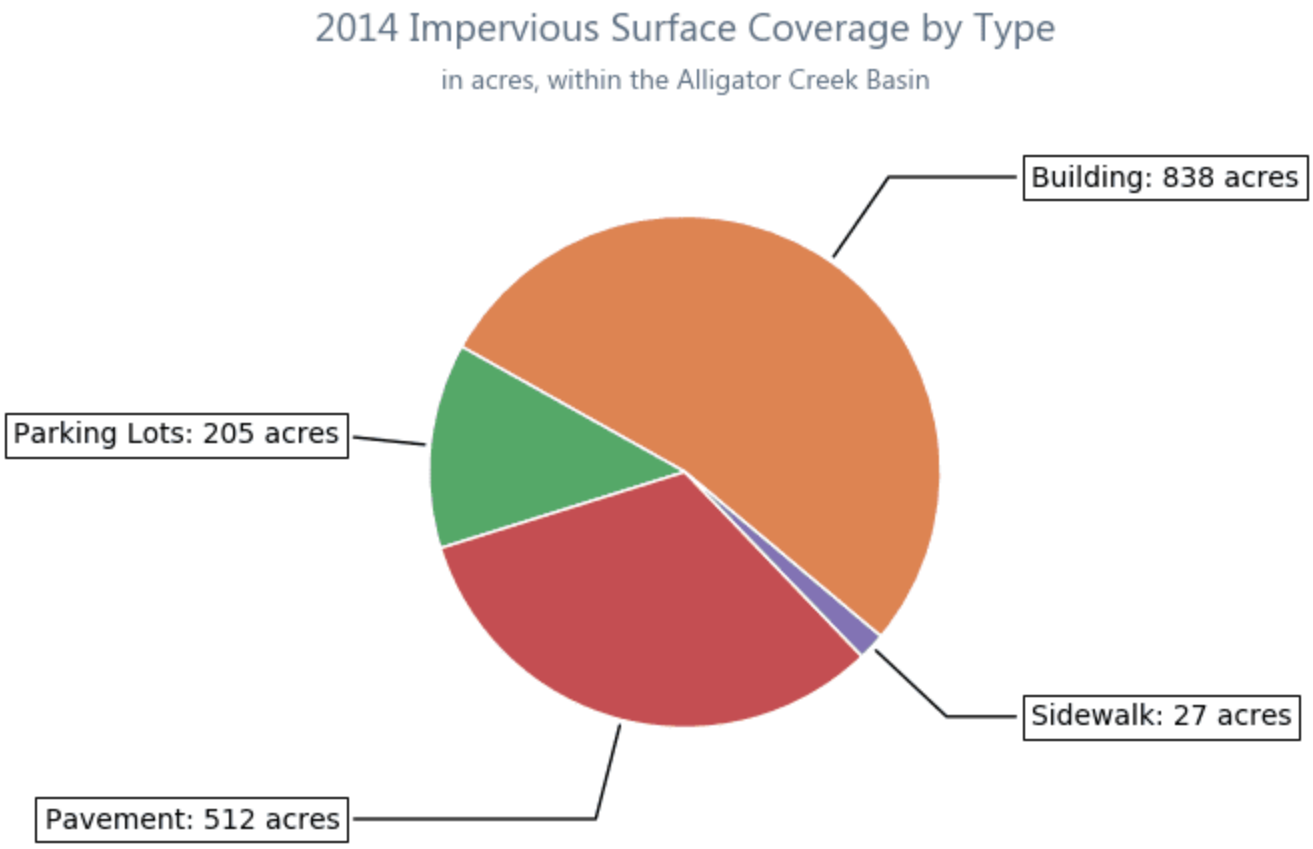


Impervious Features

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

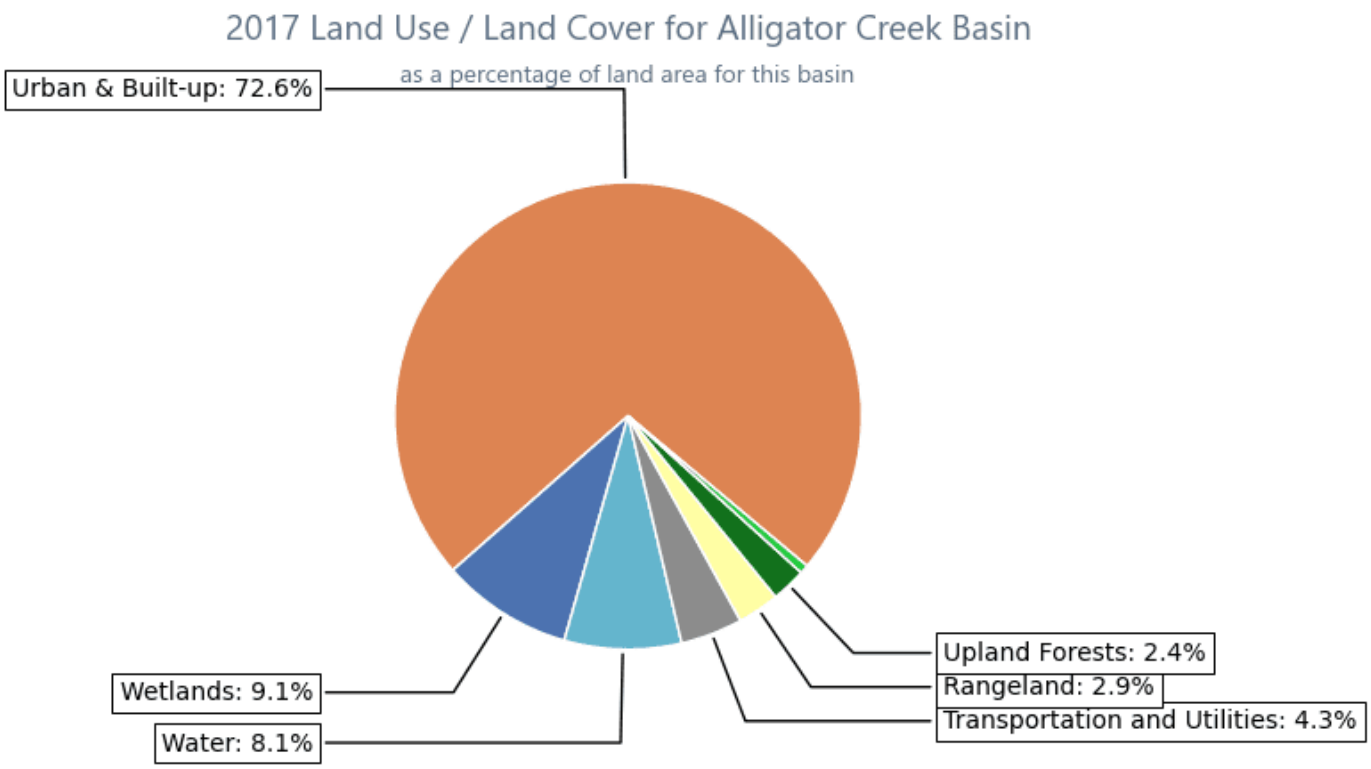


Land Use / Land Cover

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%