Alligator Creek Condition Report for 2015

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

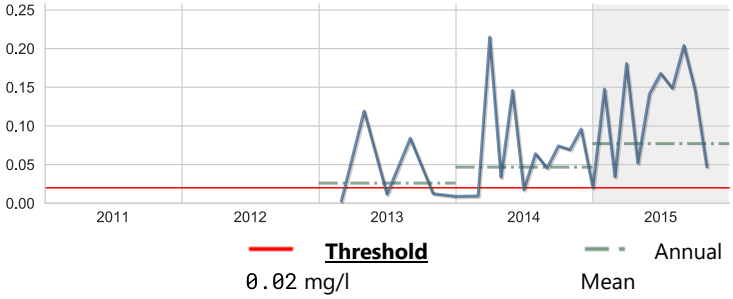
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of nitrogen, phosphorus, and chlorophyll *a*, and a minimum allowable concentration of dissolved oxygen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

Chl-a Chlorophyll a

Score: Caution

Units: mg/l	Year 2015	Historical period of record
High	0.351	0.351
Mean	0.0771	0.0519
Low	0.0025	0.0023
No. of Samples	58	175

Five-year Rolling Average

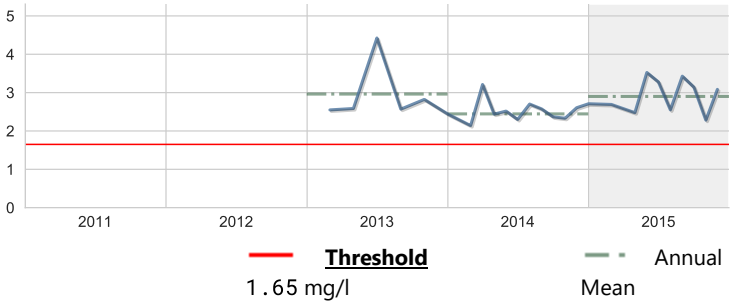


N Nitrogen, Total

Score: Caution

Units: mg/l	Year 2015	Historical period of record
High	4.2693	6.745
Mean	2.9004	2.351
Low	1.076	0.41
No. of Samples	29	117

Five-year Rolling Average

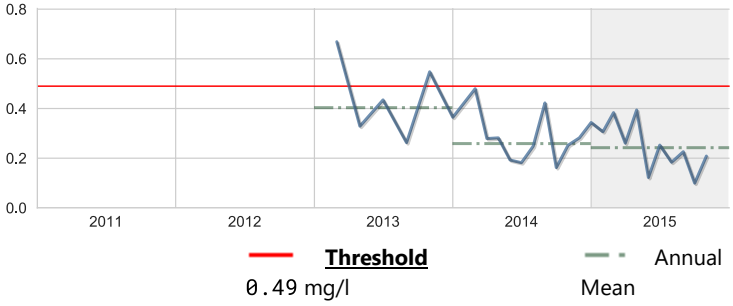


P Phosphorus, Total

Score: Pass

Units: mg/l	Year 2015	Historical period of record
High	0.626	0.705
Mean	0.2423	0.266
Low	0.033	0.033
No. of Samples	60	200

Five-year Rolling Average



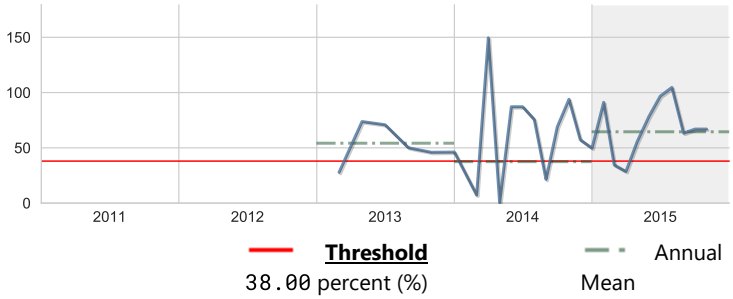
DO Dissolved Oxygen Saturation

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

Score: Pass

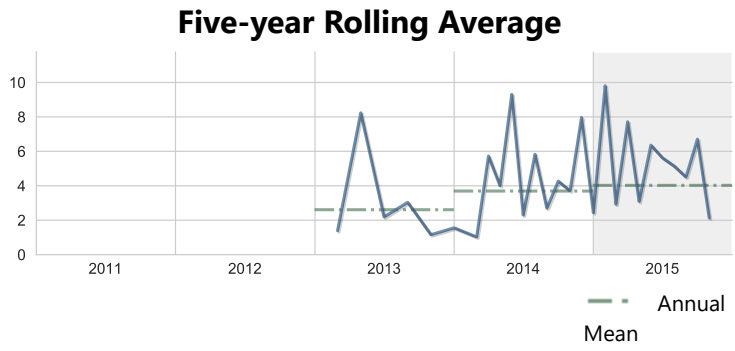
Units: percent (%)	Year 2015	Historical period of record
High	169.50	197.40
Mean	64.52	50.73
Low	8.90	0.05
No. of Samples	117	253

Five-year Rolling Average



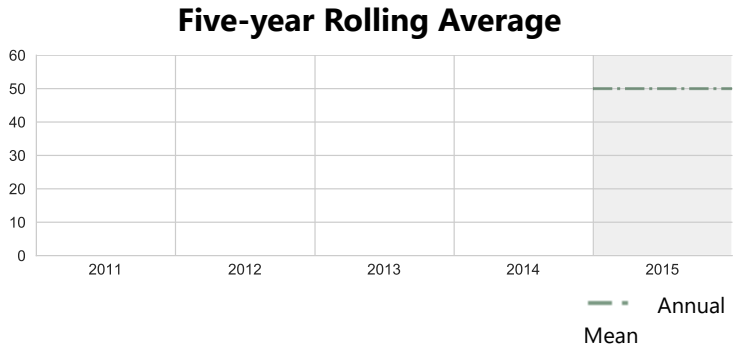
BOD, Biochemical oxygen demand

Units: mg/l	Year 2015	Historical period of record
High	10.20	16.30
Mean	4.03	3.67
Low	0.772	0.556
No. of Samples	58	175



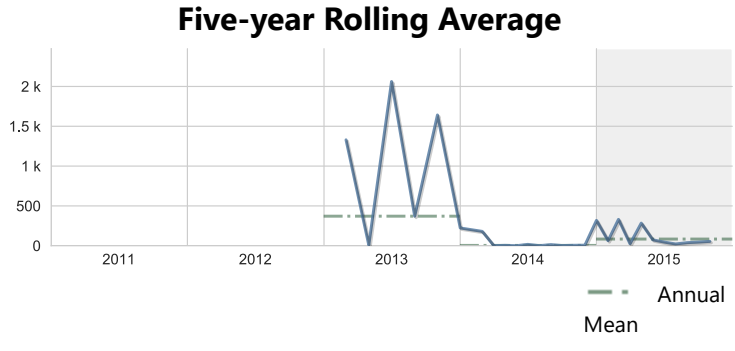
Color

Units: PCU	Year 2015	Historical period of record
High	50.00	200.00
Mean	50.0	91.07
Low	50.00	20.00
No. of Samples	1	27



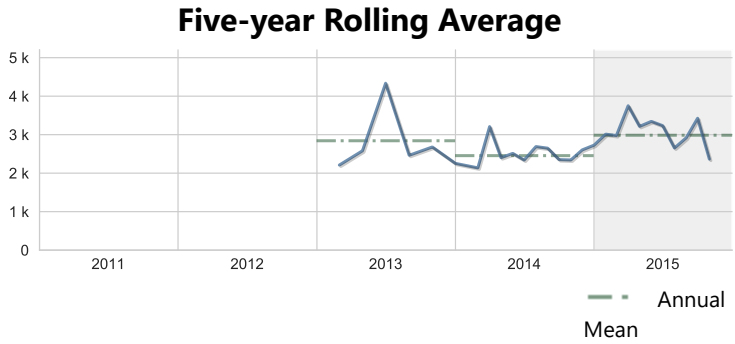
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2015	Historical period of record
High	1900.00	2430.00
Mean	83.75	10.18
Low	8.00	0.008
No. of Samples	60	257



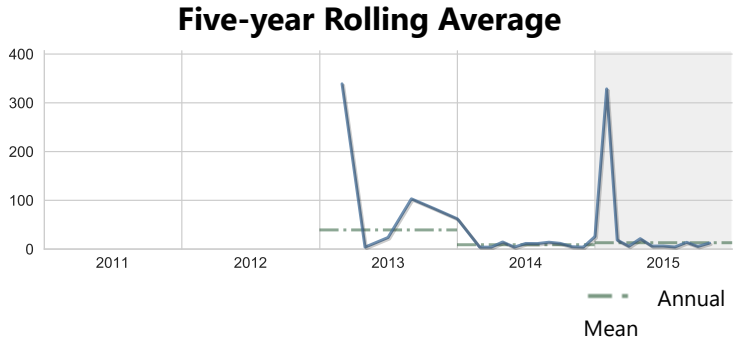
Nitrogen, Kjeldahl

Units: ug/l	Year 2015	Historical period of record
High	5110.00	6740.00
Mean	2985.53	2303.11
Low	1070.00	140.00
No. of Samples	60	213



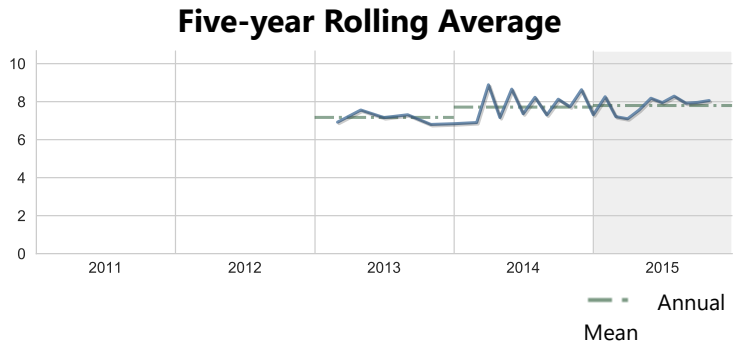
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2015	Historical period of record
High	855.00	855.00
Mean	13.06	12.87
Low	4.00	0.00
No. of Samples	60	198



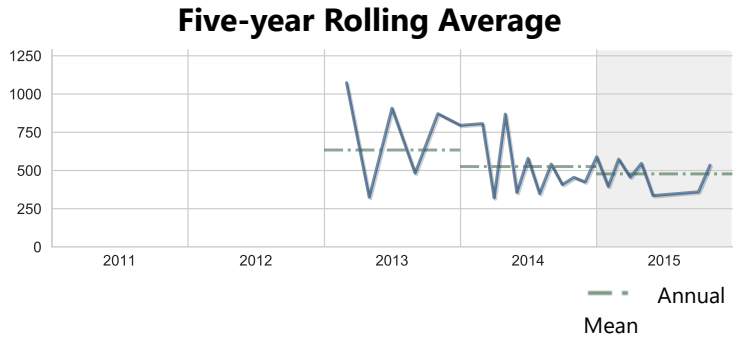
pH

Units: None	Year 2015	Historical period of record
High	9.14	9.21
Mean	7.8	7.17
Low	6.05	6.05
No. of Samples	70	1,753



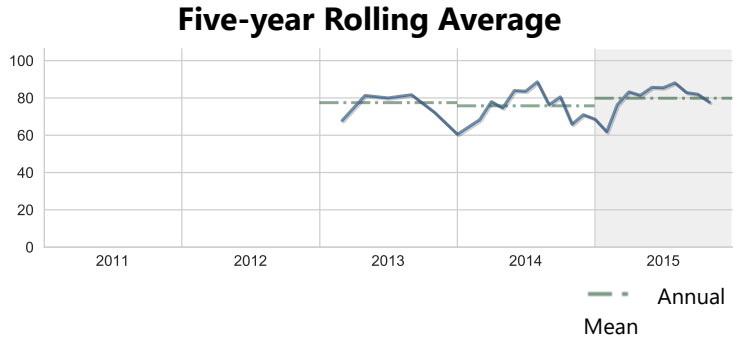
Specific conductance

Units: umho	Year 2015	Historical period of record
High	1030.00	2105.00
Mean	477.67	636.42
Low	295.00	271.00
No. of Samples	44	1,731



Temperature, water

Units: deg F	Year 2015	Historical period of record
High	89.078	89.906
Mean	79.83	69.22
Low	61.286	56.858
No. of Samples	56	1,696



Water Chemistry Ratings | Tidal Portion of the Creek

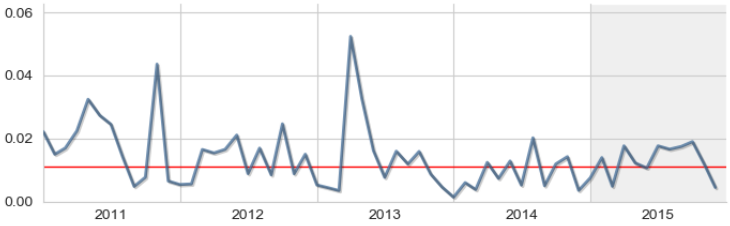
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of chlorophyll *a* and a minimum allowable concentration of dissolved oxygen in these streams. Florida 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	0.2	0.4
Mean	0.0107	0.0095
Low	0.0006	0.0003
No. of Samples	133	1,349

Five-year Rolling Average



Threshold 0.011 mg/l

Annual Mean

Nitrogen, Total

Units: mg/l	Year 2015	Historical period of record
High	2.8	23.8
Mean	1.1679	1.0787
Low	0.576	0.00
No. of Samples	40	756

Five-year Rolling Average

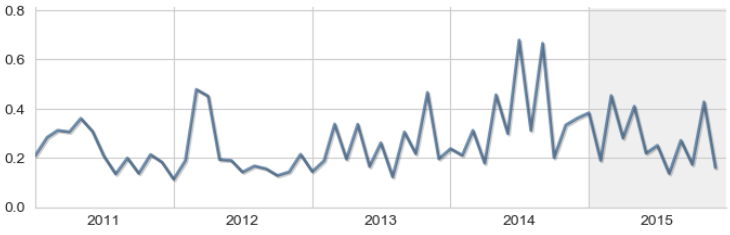


Annual Mean

Phosphorus, Total

Units: mg/l	Year 2015	Historical period of record
High	2.3	4.8
Mean	0.3062	0.2291
Low	0.08	0.004
No. of Samples	130	1,406

Five-year Rolling Average



DO

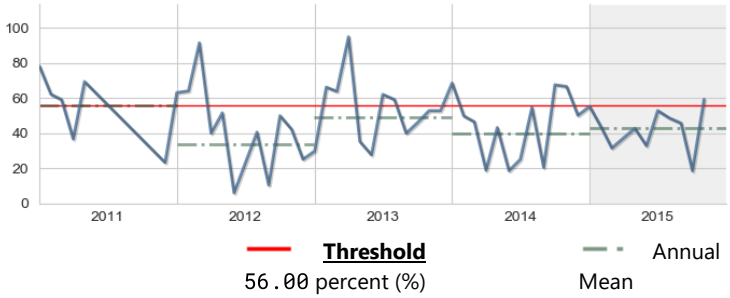
Dissolved Oxygen Saturation

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

Score: Caution

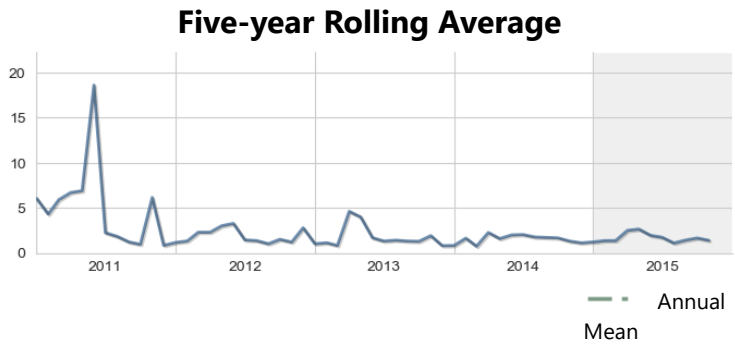
Units: percent (%)	Year 2015	Historical period of record
High	126.3	160.5
Mean	43.5	45.69
Low	4.50	1.30
No. of Samples	128	977

Five-year Rolling Average



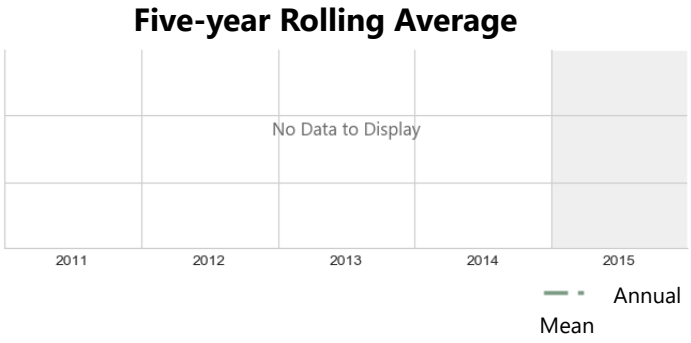
BOD, Biochemical oxygen demand

Units: mg/l	Year 2015	Historical period of record
High	19.6	20.0
Mean	1.61	1.85
Low	0.50	0.50
No. of Samples	112	838



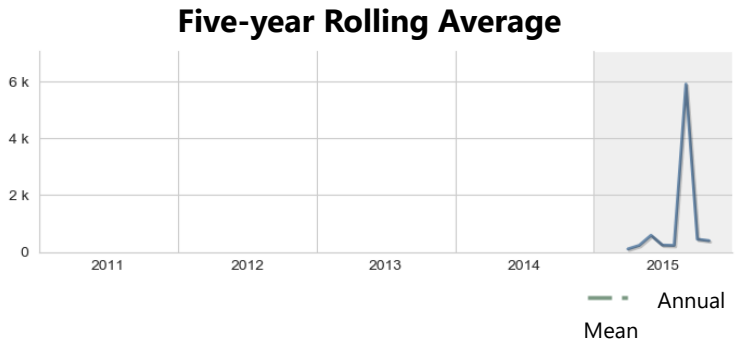
Color

Units: PCU	Year 2015	Historical period of record
High		220.0
Mean		77.19
Low		20.00
No. of Samples	0	103



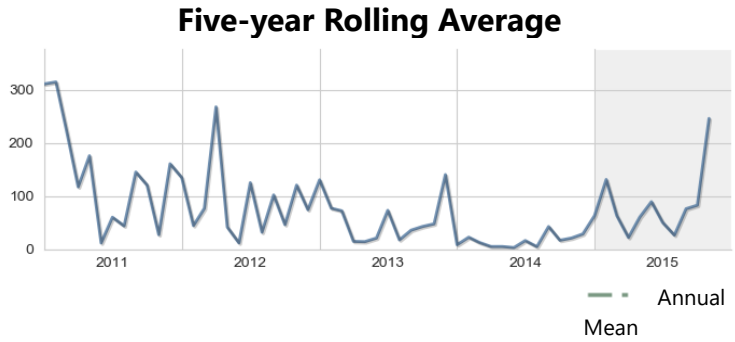
Enterococcus Group Bacteria

Units: cfu/100ml	Year 2015	Historical period of record
High	14,000.0	14,000.0
Mean	406.89	388.45
Low	80.00	80.00
No. of Samples	28	29



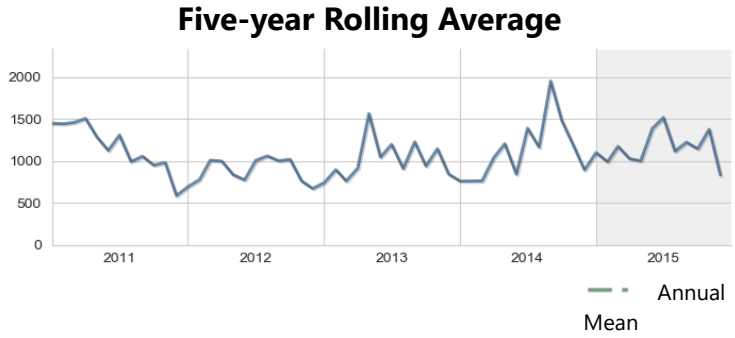
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2015	Historical period of record
High	1,420.0	2,170.0
Mean	68.56	33.85
Low	8.00	0.008
No. of Samples	115	995



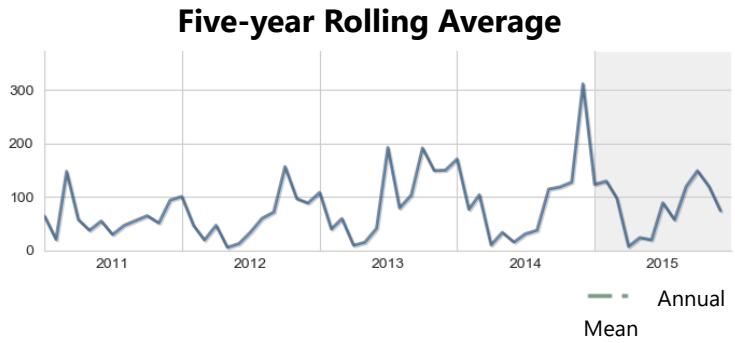
Nitrogen, Kjeldahl

Units: ug/l	Year 2015	Historical period of record
High	3,170.0	23,800.0
Mean	1153.58	1017.65
Low	561.00	80.00
No. of Samples	130	1,453



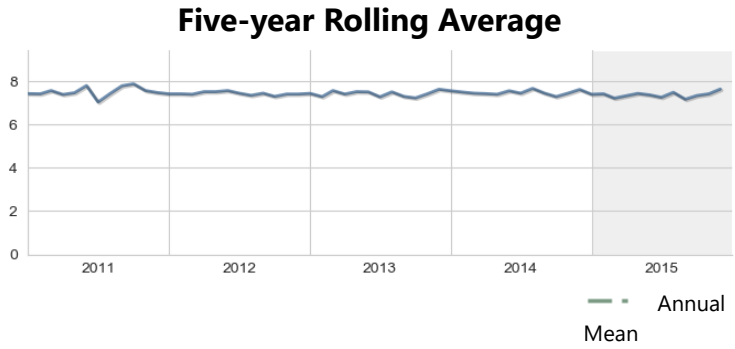
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2015	Historical period of record
High	669.0	1,410.0
Mean	59.52	49.51
Low	4.00	0.00
No. of Samples	130	1,350



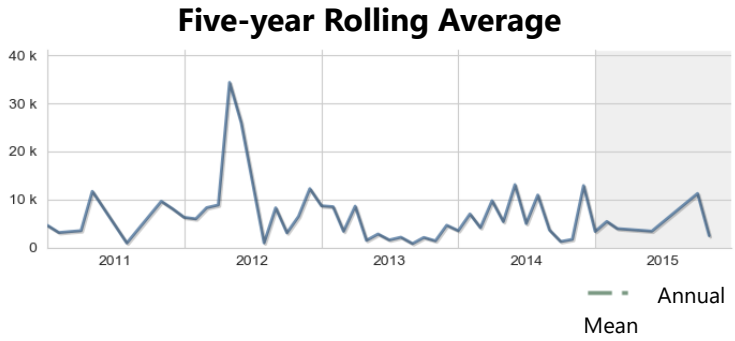
pH

Units: None	Year 2015	Historical period of record
High	8.0	9.3
Mean	7.34	7.4
Low	6.87	6.00
No. of Samples	122	6,114



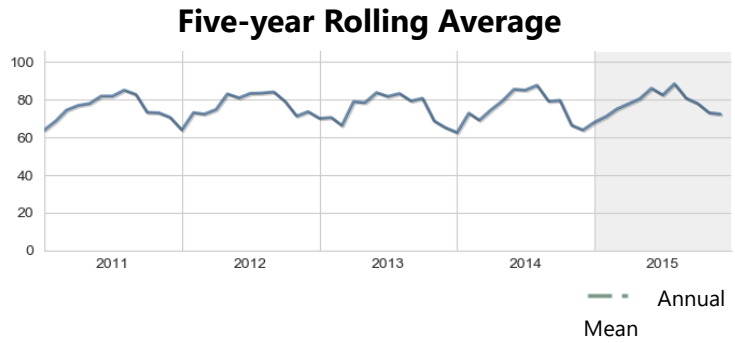
Specific conductance

Units: umho	Year 2015	Historical period of record
High	43,827.0	53,581.0
Mean	3738.03	3636.97
Low	761.00	0.823
No. of Samples	81	5,639



Temperature, water

Units: deg F	Year 2015	Historical period of record
High	91.0	92.3
Mean	77.36	75.18
Low	65.12	53.528
No. of Samples	81	5,733

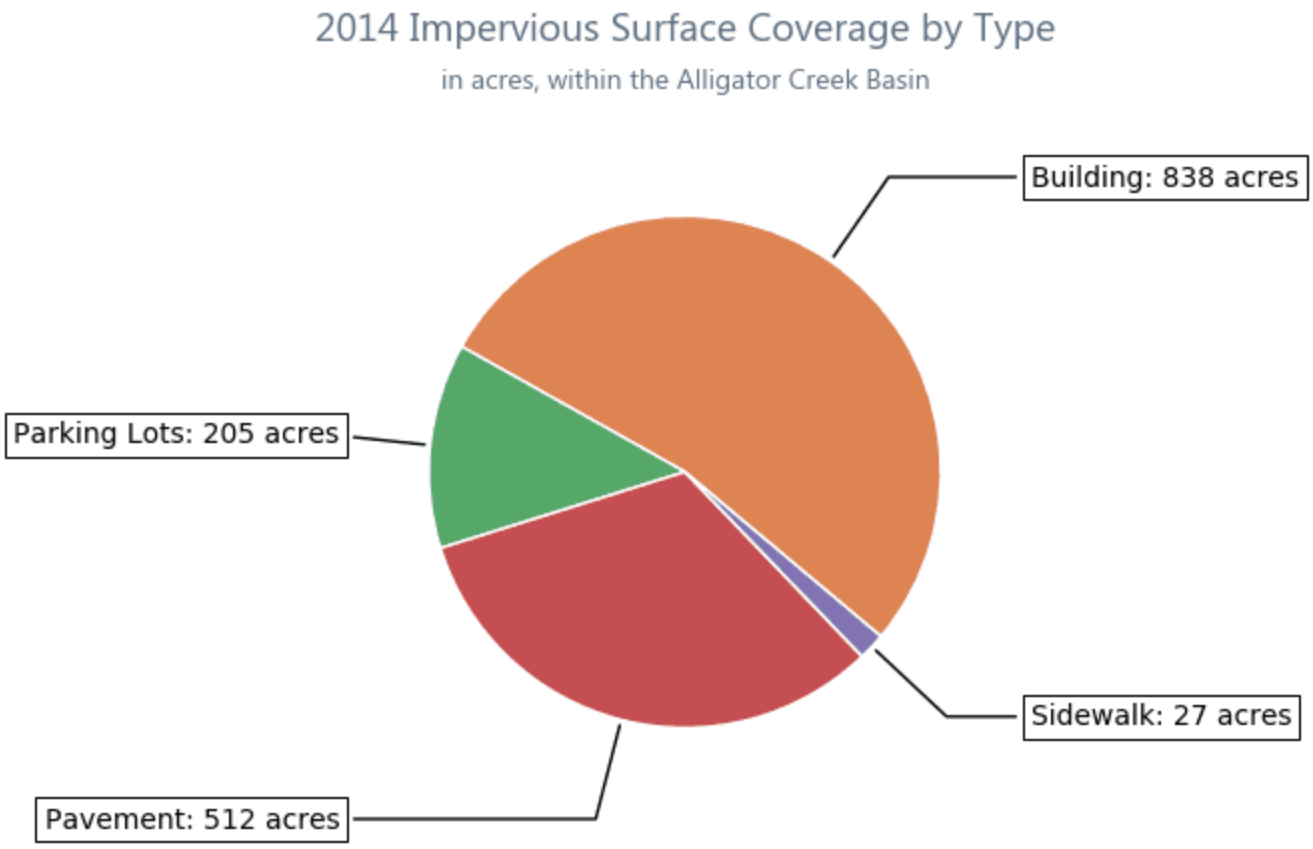


Impervious Features

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

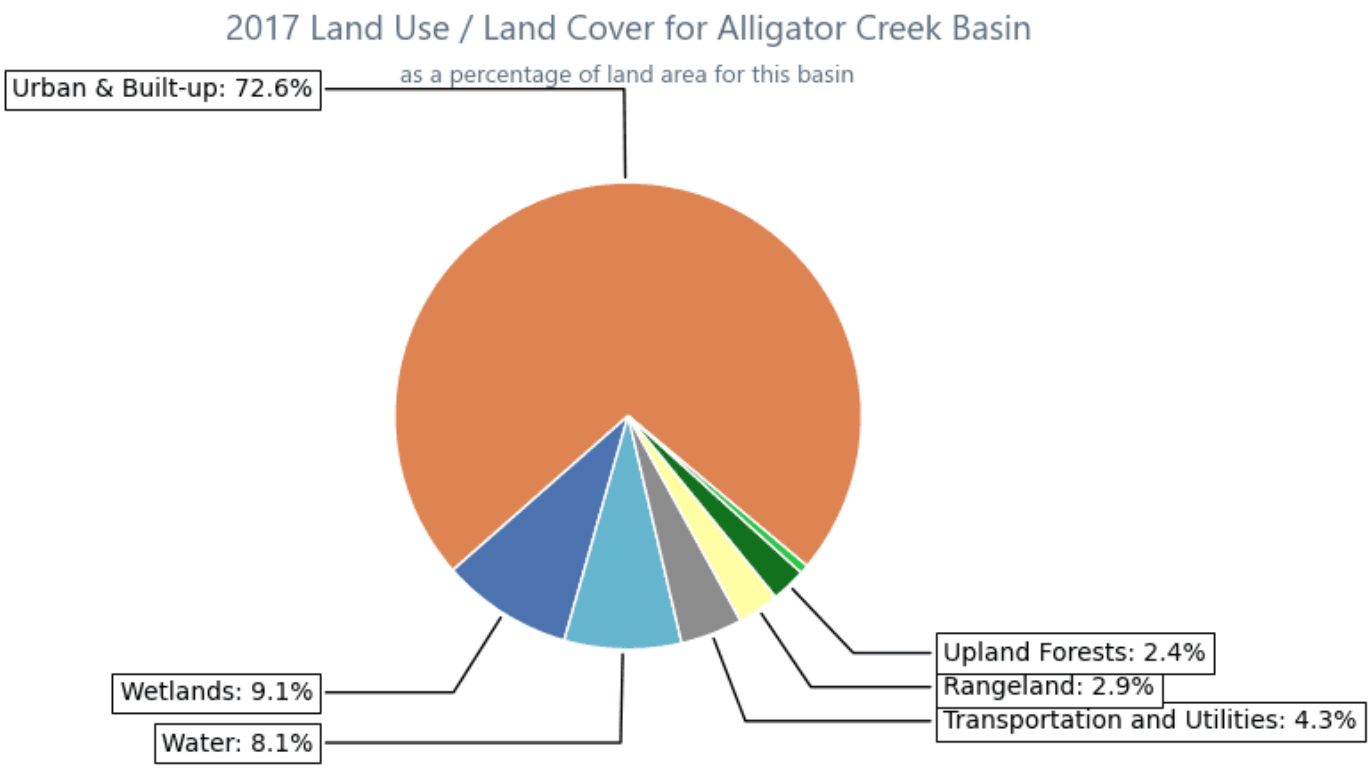


Land Use / Land Cover

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%