Alligator Creek Condition Report for 2011

CAUTION

Chl-a N P DO

2 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



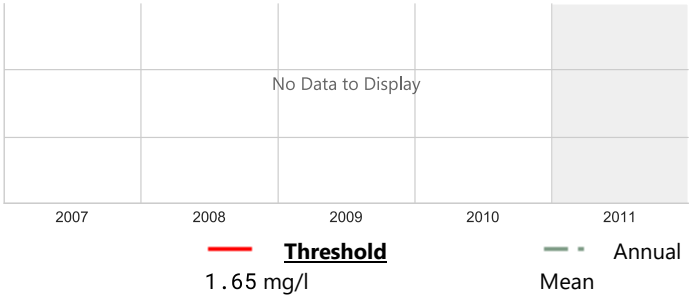
Water Chemistry Ratings | Freshwater Portion of the Creek

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.

Nitrogen, Total

Units: mg/l	Year 2011	Historical period of record
High		1.97
Mean		1.0928
Low		0.41
No. of Samples	0	14

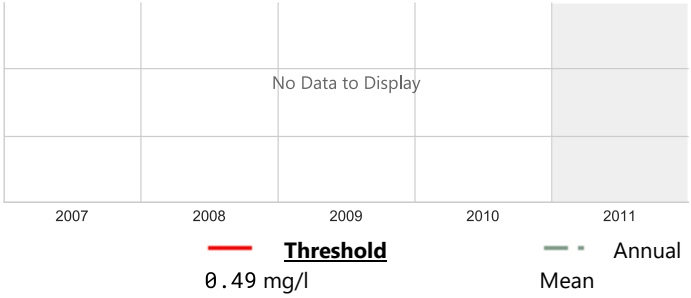
Five-year Rolling Average



Phosphorus, Total

Units: mg/l	Year 2011	Historical period of record
High		0.54
Mean		0.2871
Low		0.10
No. of Samples	0	14

Five-year Rolling Average

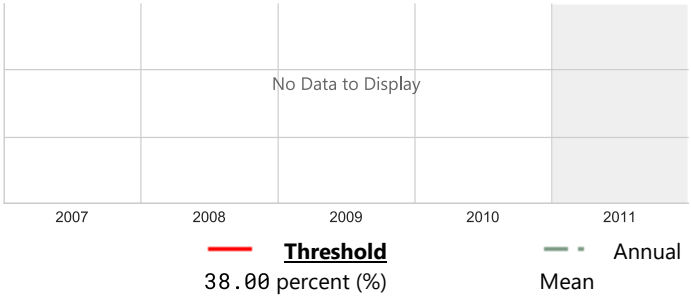


Dissolved Oxygen Saturation

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

Units: percent (%)	Year 2011	Historical period of record
High		117.073
Mean		41.92
Low		20.6896
No. of Samples	0	27

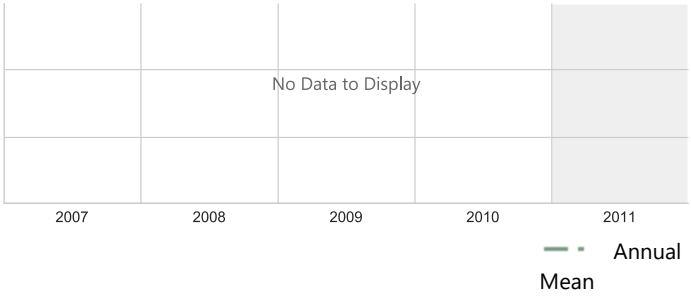
Five-year Rolling Average



Color

Units: PCU	Year 2011	Historical period of record
High		200.00
Mean		93.2
Low		20.00
No. of Samples	0	26

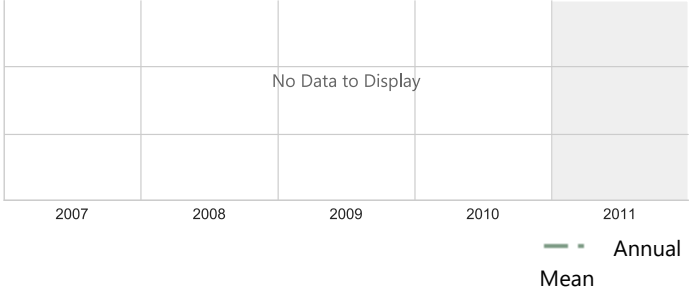
Five-year Rolling Average



Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2011	Historical period of record
High		7.3306
Mean		1.6
Low		0.1414
No. of Samples	0	26

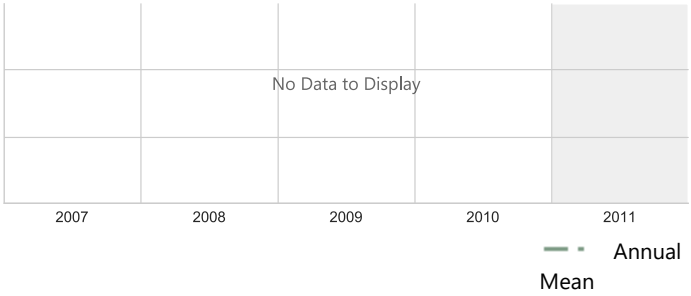
Five-year Rolling Average



Nitrogen, Kjeldahl

Units: ug/l	Year 2011	Historical period of record
High		1740.00
Mean		870.97
Low		140.00
No. of Samples	0	27

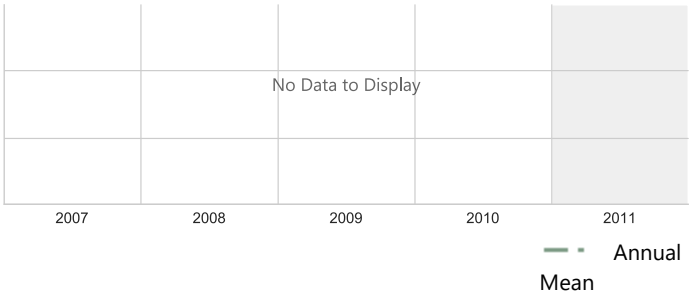
Five-year Rolling Average



Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2011	Historical period of record
High		150.00
Mean		64.17
Low		0.00
No. of Samples	0	14

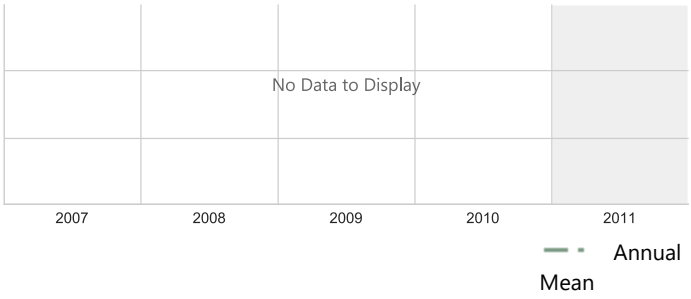
Five-year Rolling Average



pH

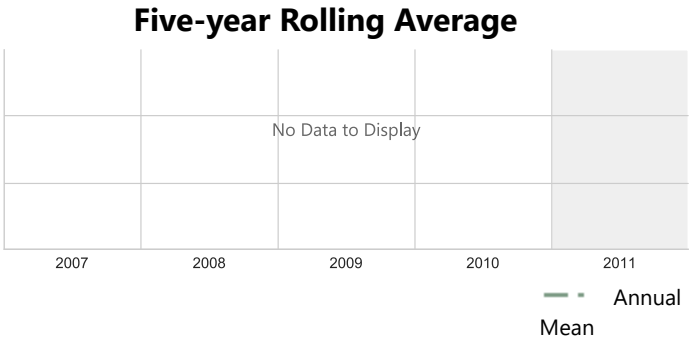
Units: None	Year 2011	Historical period of record
High		8.31
Mean		7.13
Low		6.61
No. of Samples	0	1,613

Five-year Rolling Average



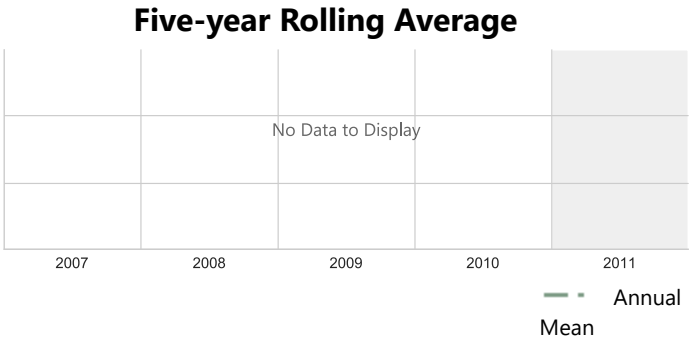
Specific conductance

Units: umho	Year 2011	Historical period of record
High		2105.00
Mean		645.07
Low		276.00
No. of Samples	0	1,621



Temperature, water

Units: deg F	Year 2011	Historical period of record
High		84.344
Mean		68.7
Low		59.00
No. of Samples	0	1,595



Water Chemistry Ratings | Tidal Portion of the Creek

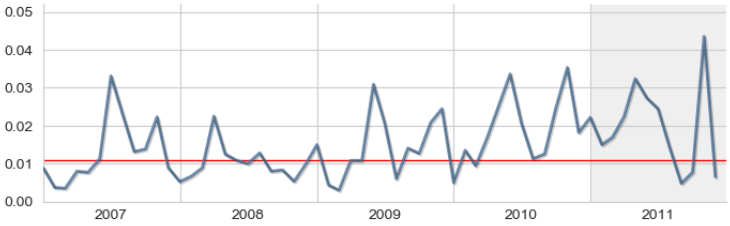
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of chlorophyll *a* and a minimum allowable concentration of dissolved oxygen in these streams. Florida 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 2011	Historical period of record
High	0.4	0.4
Mean	0.017	0.0102
Low	0.0029	0.0004
No. of Samples	129	693

Five-year Rolling Average



Threshold 0.011 mg/l

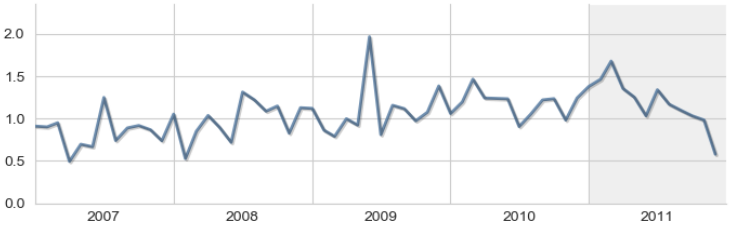
Annual Mean

Nitrogen, Total

Score: Pass

Units: mg/l	Year 2011	Historical period of record
High	2.5	3.2
Mean	1.1732	1.055
Low	0.352	0.00
No. of Samples	60	479

Five-year Rolling Average



Annual Mean

P Phosphorus, Total

Score: Pass

Units: mg/l	Year 2011	Historical period of record
High	0.6	1.2
Mean	0.2258	0.1943
Low	0.087	0.004
No. of Samples	117	750

Five-year Rolling Average



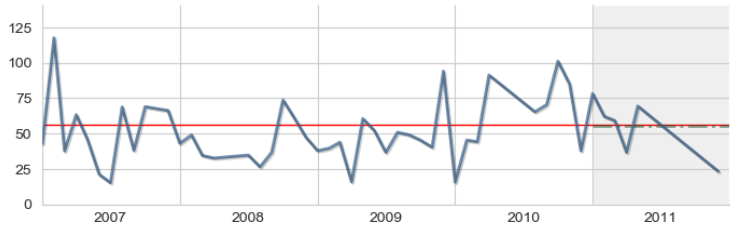
DO Dissolved Oxygen Saturation

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

Score: Caution

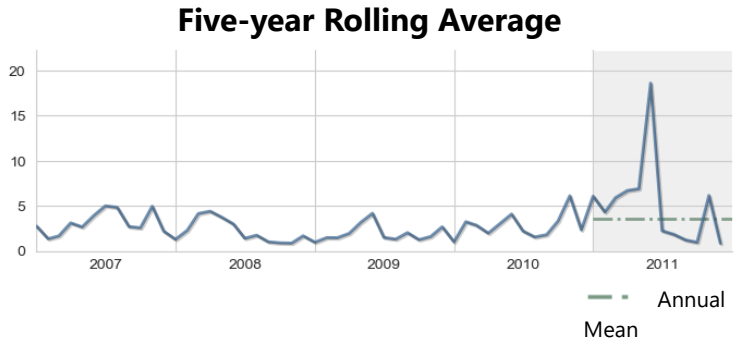
Units: percent (%)	Year 2011	Historical period of record
High	103.4	156.8
Mean	55.47	51.94
Low	16.30	4.70
No. of Samples	86	399

Five-year Rolling Average



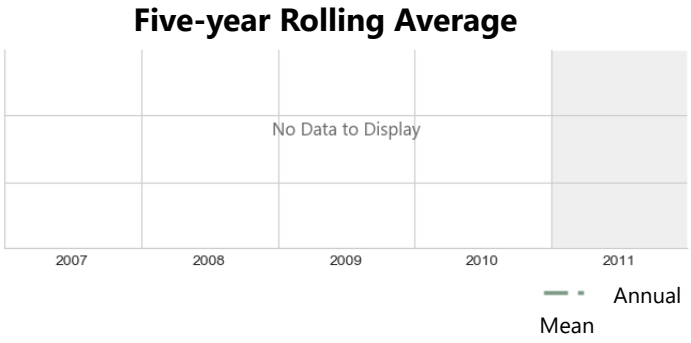
BOD, Biochemical oxygen demand

Units: mg/l	Year 2011	Historical period of record
High	20.0	20.0
Mean	3.62	2.68
Low	0.74	0.59
No. of Samples	86	284



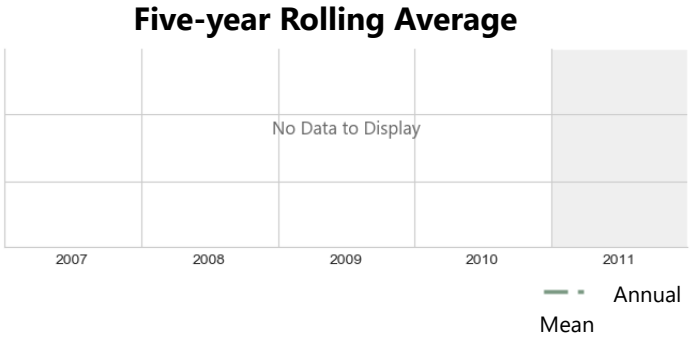
Color

Units: PCU	Year 2011	Historical period of record
High		220.0
Mean		77.19
Low		20.00
No. of Samples	0	103



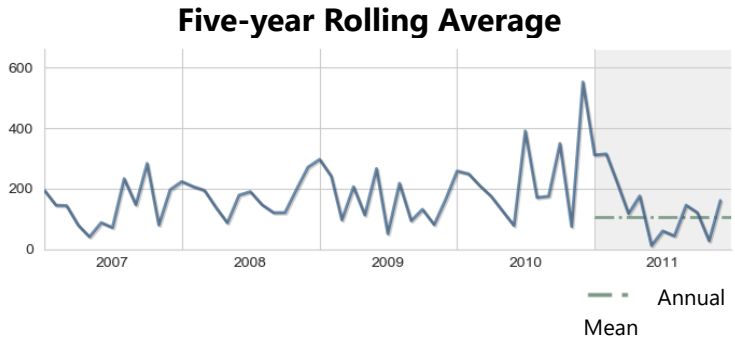
Enterococcus Group Bacteria

Units: cfu/100ml	Year 2011	Historical period of record
High		106.0
Mean		106.0
Low		106.00
No. of Samples	0	1



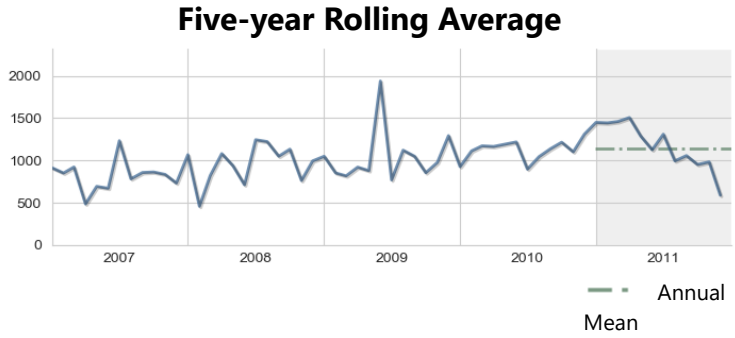
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2011	Historical period of record
High	466.0	712.0
Mean	105.38	45.85
Low	8.00	0.1368
No. of Samples	83	372



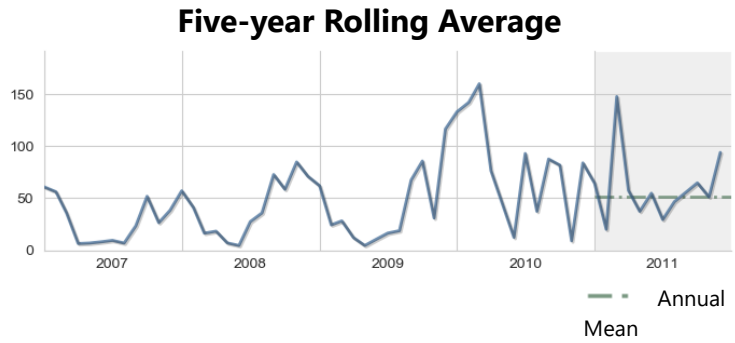
Nitrogen, Kjeldahl

Units: ug/l	Year 2011	Historical period of record
High	2,350.0	3,240.0
Mean	1140.74	1001.89
Low	300.00	80.00
No. of Samples	117	797



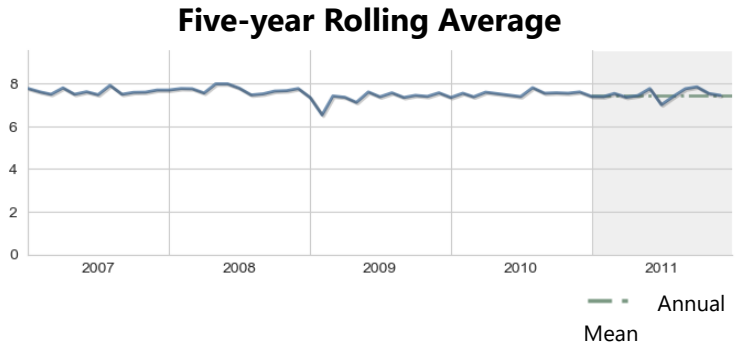
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2011	Historical period of record
High	320.0	1,410.0
Mean	51.86	39.39
Low	4.00	0.00
No. of Samples	115	709



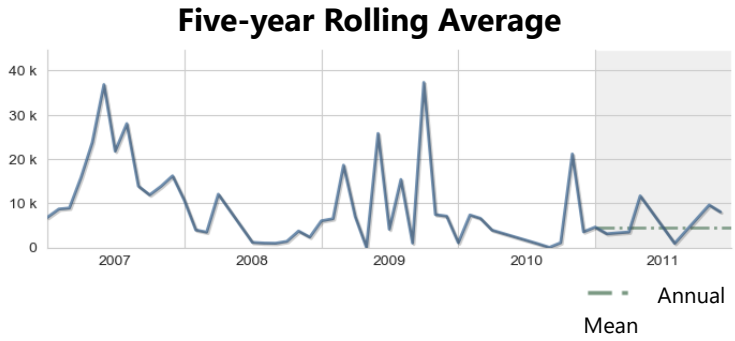
pH

Units: None	Year 2011	Historical period of record
High	7.9	9.3
Mean	7.47	7.4
Low	7.02	6.00
No. of Samples	79	5,539



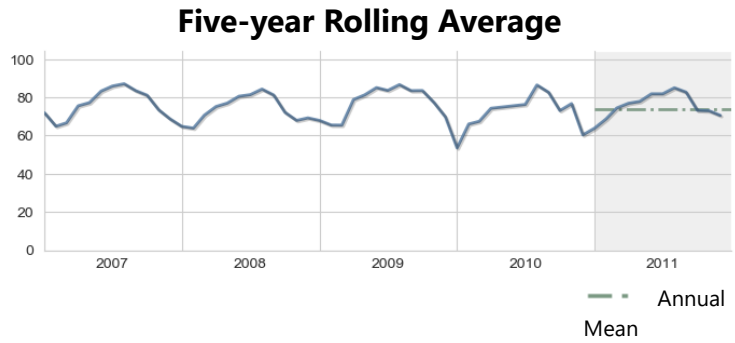
Specific conductance

Units: umho	Year 2011	Historical period of record
High	39,777.0	53,581.0
Mean	4579.68	3599.95
Low	312.00	0.823
No. of Samples	52	5,152



Temperature, water

Units: deg F	Year 2011	Historical period of record
High	86.0	92.3
Mean	73.61	75.15
Low	60.35	53.528
No. of Samples	60	5,339

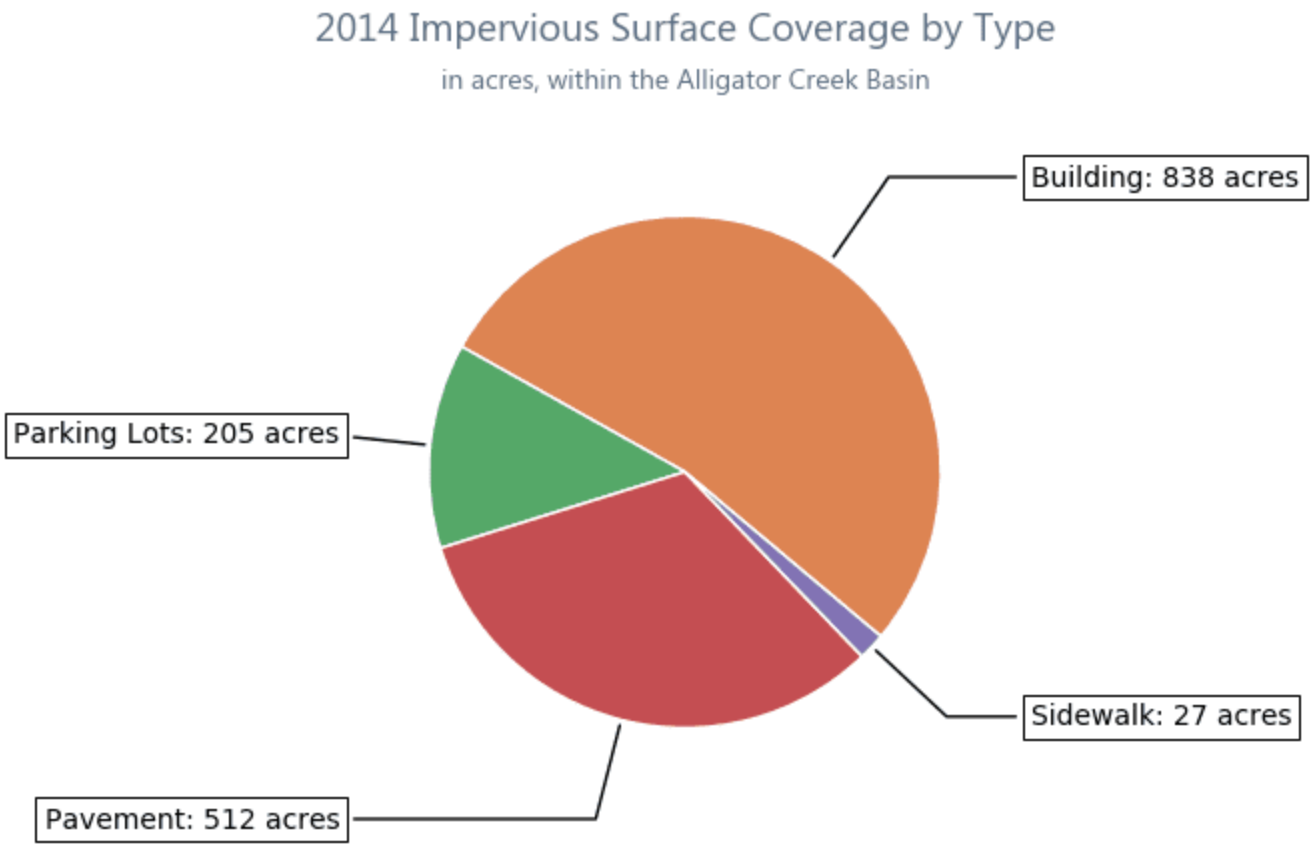


Impervious Features

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

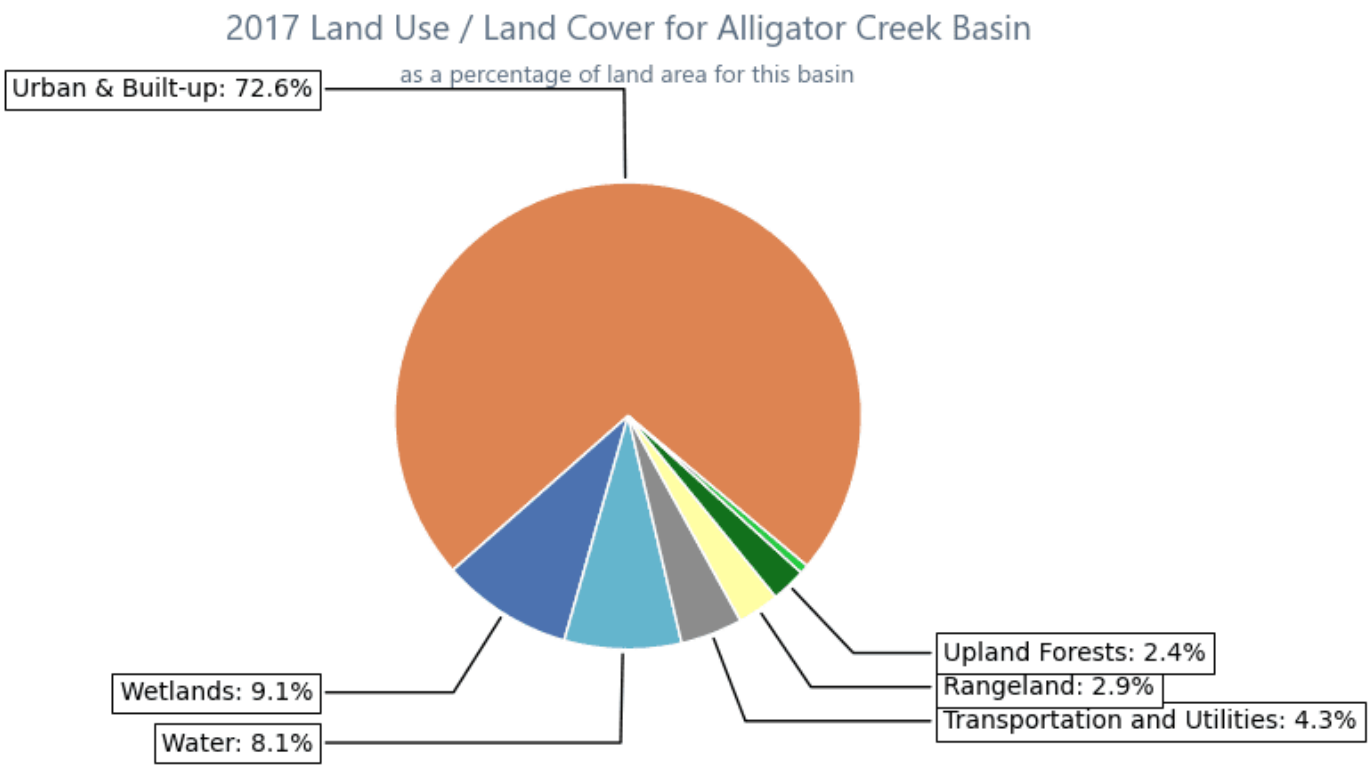


Land Use / Land Cover

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%