Alligator Creek Condition Report for 2013

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

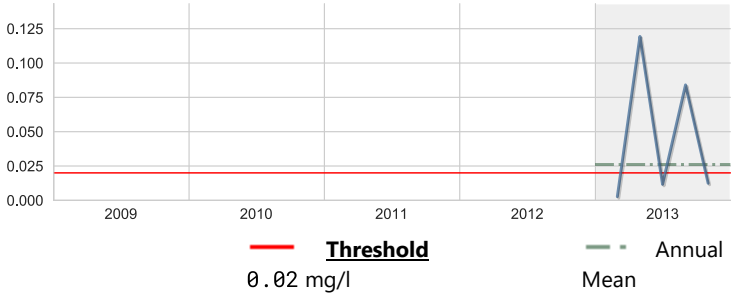
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of nitrogen, phosphorus, and chlorophyll *a*, and a minimum allowable concentration of dissolved oxygen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

Chl-a Chlorophyll a

Score: Caution

Units: mg/l	Year 2013	Historical period of record
High	0.125	0.125
Mean	0.0261	0.0261
Low	0.0027	0.0027
No. of Samples	18	18

Five-year Rolling Average

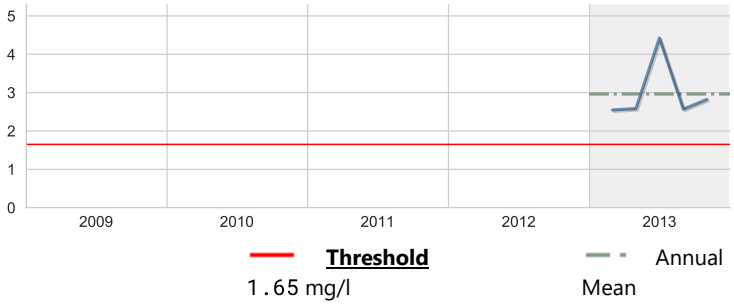


N Nitrogen, Total

Score: Caution

Units: mg/l	Year 2013	Historical period of record
High	6.745	6.745
Mean	2.9621	1.6143
Low	2.204	0.41
No. of Samples	9	23

Five-year Rolling Average

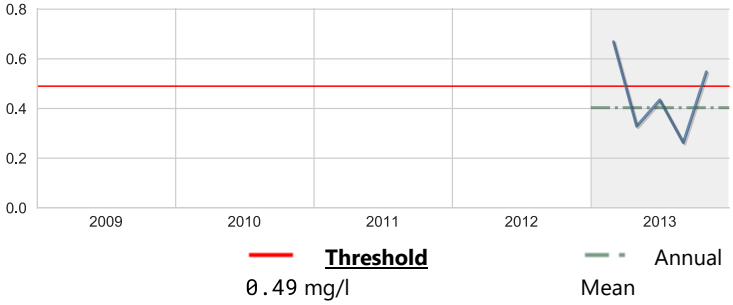


P Phosphorus, Total

Score: Pass

Units: mg/l	Year 2013	Historical period of record
High	0.669	0.669
Mean	0.4034	0.3476
Low	0.258	0.10
No. of Samples	18	32

Five-year Rolling Average



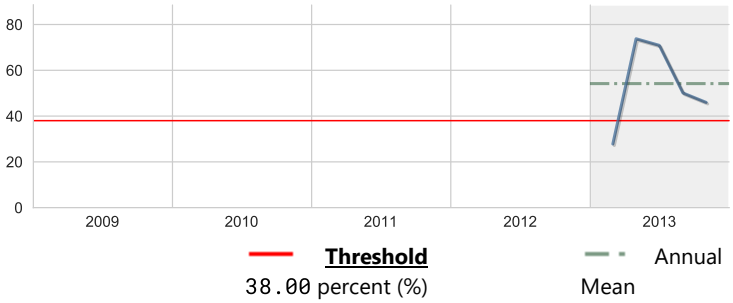
DO Dissolved Oxygen Saturation

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

Score: Pass

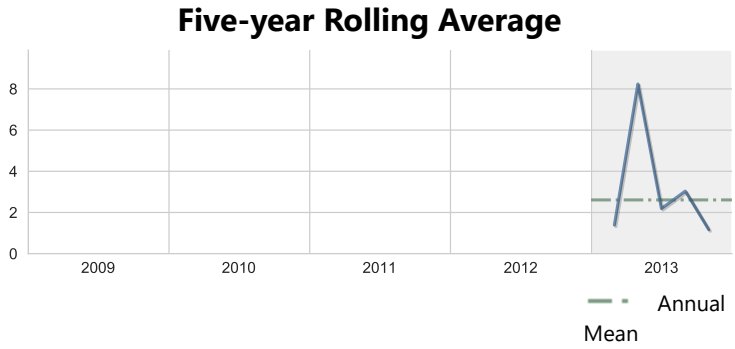
Units: percent (%)	Year 2013	Historical period of record
High	86.80	117.073
Mean	54.19	47.66
Low	26.70	20.6896
No. of Samples	27	54

Five-year Rolling Average



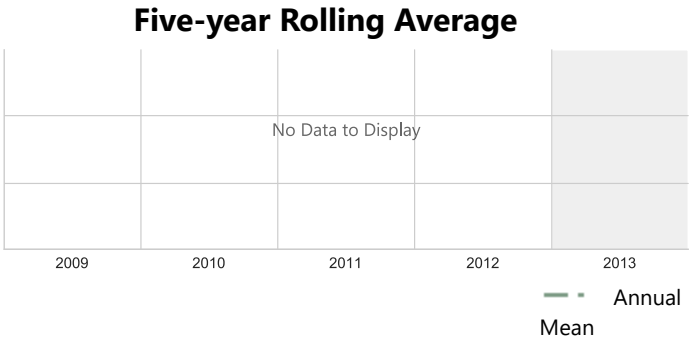
BOD, Biochemical oxygen demand

Units: mg/l	Year 2013	Historical period of record
High	8.55	8.55
Mean	2.61	2.61
Low	1.07	1.07
No. of Samples	18	18



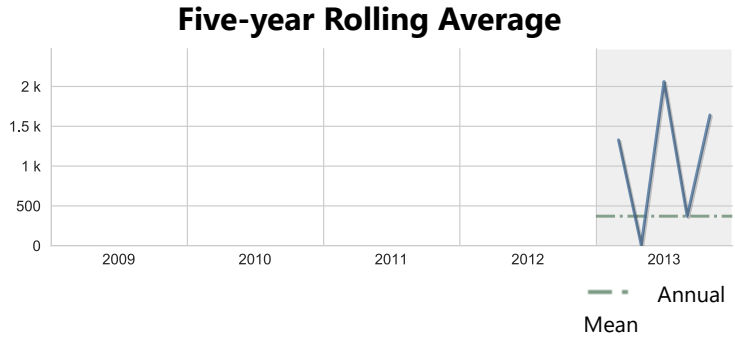
Color

Units: PCU	Year 2013	Historical period of record
High		200.00
Mean		93.2
Low		20.00
No. of Samples	0	26



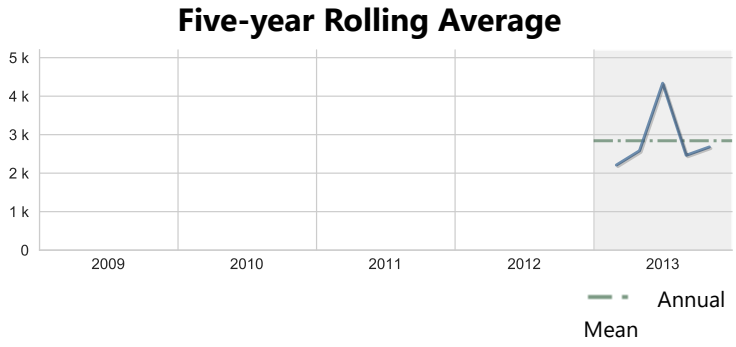
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2013	Historical period of record
High	2430.00	2430.00
Mean	371.07	14.83
Low	8.00	0.1414
No. of Samples	18	44



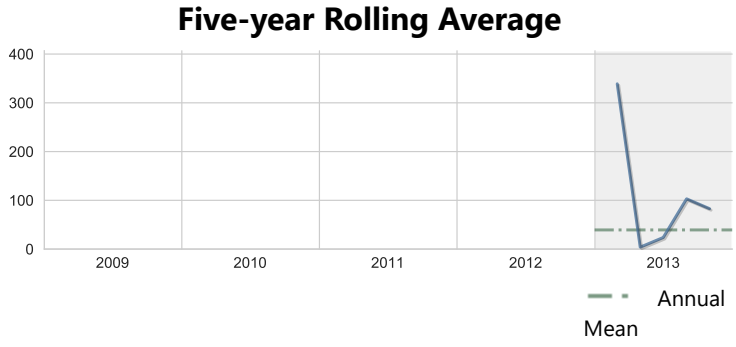
Nitrogen, Kjeldahl

Units: ug/l	Year 2013	Historical period of record
High	6740.00	6740.00
Mean	2841.7	1397.76
Low	2200.00	140.00
No. of Samples	18	45



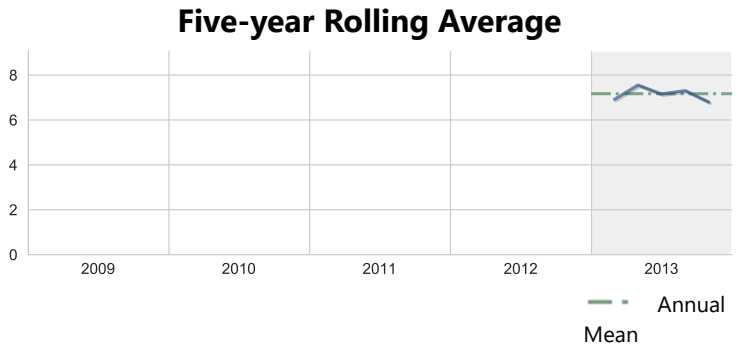
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2013	Historical period of record
High	339.00	339.00
Mean	39.3	47.33
Low	4.00	0.00
No. of Samples	18	32



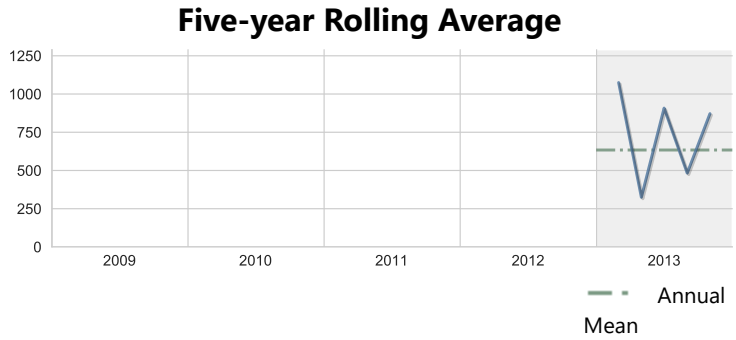
pH

Units: None	Year 2013	Historical period of record
High	8.06	8.31
Mean	7.17	7.13
Low	6.53	6.53
No. of Samples	18	1,631



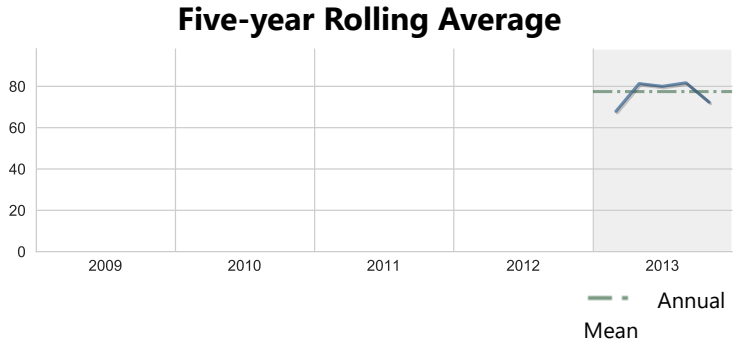
Specific conductance

Units: umho	Year 2013	Historical period of record
High	1108.00	2105.00
Mean	633.89	644.95
Low	308.00	276.00
No. of Samples	18	1,639



Temperature, water

Units: deg F	Year 2013	Historical period of record
High	82.814	84.344
Mean	77.46	68.74
Low	67.874	59.00
No. of Samples	9	1,604



Water Chemistry Ratings | Tidal Portion of the Creek

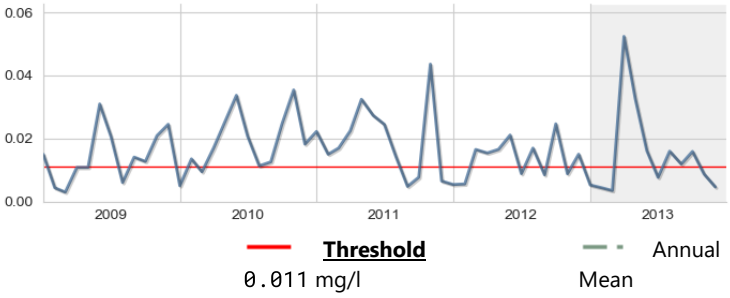
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of chlorophyll *a* and a minimum allowable concentration of dissolved oxygen in these streams. Florida 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 2013	Historical period of record
High	0.3	0.4
Mean	0.0101	0.0104
Low	0.0008	0.0004
No. of Samples	175	977

Five-year Rolling Average

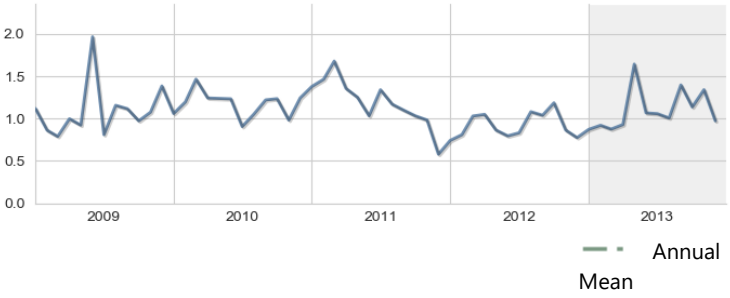


Nitrogen, Total

Score: Pass

Units: mg/l	Year 2013	Historical period of record
High	3.7	3.7
Mean	1.105	1.0482
Low	0.081	0.00
No. of Samples	73	596

Five-year Rolling Average

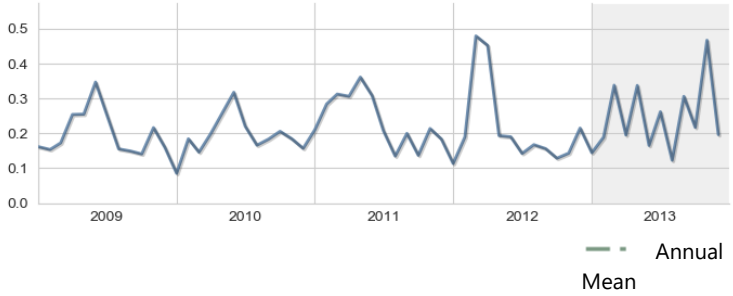


Phosphorus, Total

Score: Pass

Units: mg/l	Year 2013	Historical period of record
High	2.0	2.0
Mean	0.2448	0.2006
Low	0.069	0.004
No. of Samples	175	1,034

Five-year Rolling Average



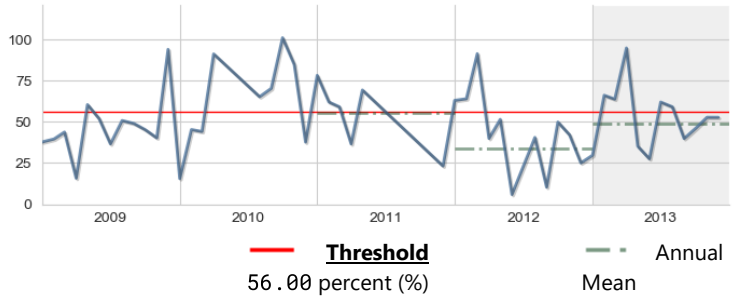
Dissolved Oxygen Saturation

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

Score: Caution

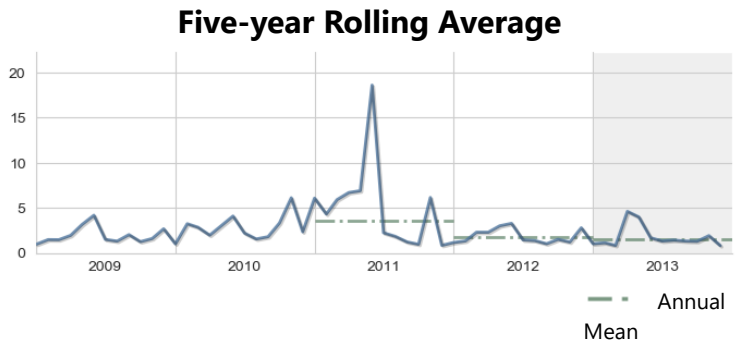
Units: percent (%)	Year 2013	Historical period of record
High	160.5	160.5
Mean	48.05	48.3
Low	11.2311	1.30
No. of Samples	159	636

Five-year Rolling Average



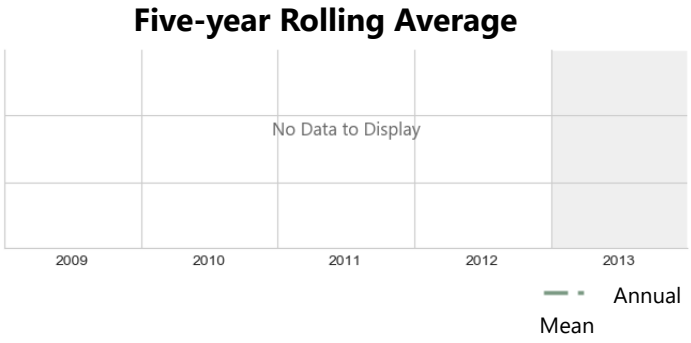
BOD, Biochemical oxygen demand

Units: mg/l	Year 2013	Historical period of record
High	14.6	20.0
Mean	1.52	2.12
Low	0.50	0.50
No. of Samples	145	511



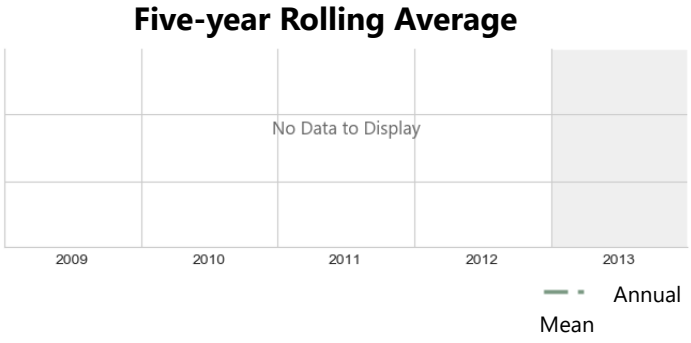
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Units: PCU	Year 2013	Historical period of record
High		220.0
Mean		77.19
Low		20.00
No. of Samples	0	103



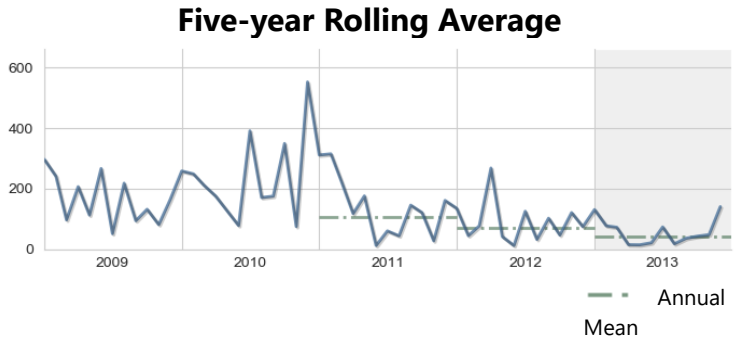
Enterococcus Group Bacteria

Units: cfu/100ml	Year 2013	Historical period of record
High		106.0
Mean		106.0
Low		106.00
No. of Samples	0	1



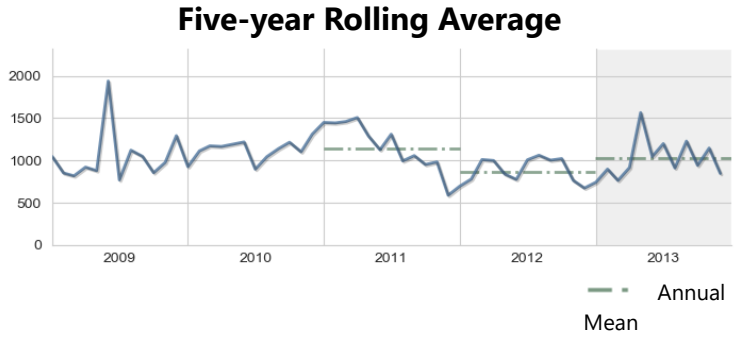
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2013	Historical period of record
High	1,220.0	1,220.0
Mean	42.21	47.46
Low	8.00	0.1368
No. of Samples	145	599



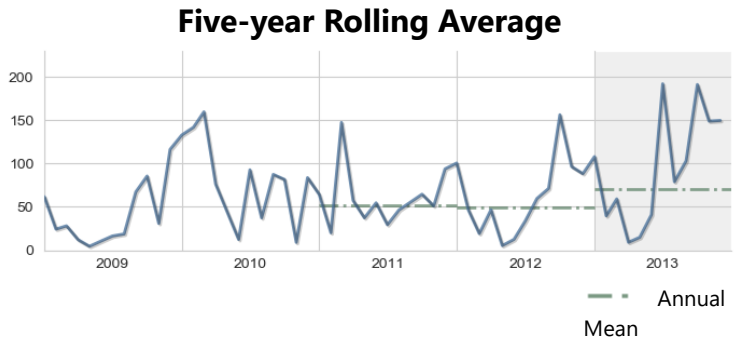
Nitrogen, Kjeldahl

Units: ug/l	Year 2013	Historical period of record
High	3,250.0	3,250.0
Mean	1021.17	989.31
Low	550.00	80.00
No. of Samples	175	1,081



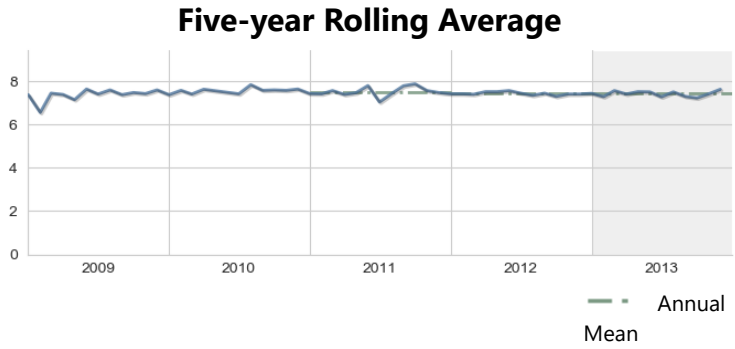
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2013	Historical period of record
High	952.0	1,410.0
Mean	70.62	44.79
Low	4.00	0.00
No. of Samples	175	991



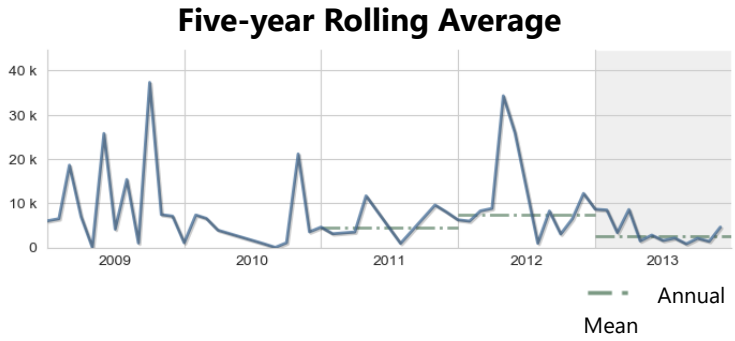
pH

Units: None	Year 2013	Historical period of record
High	8.2	9.3
Mean	7.41	7.4
Low	6.91	6.00
No. of Samples	169	5,813



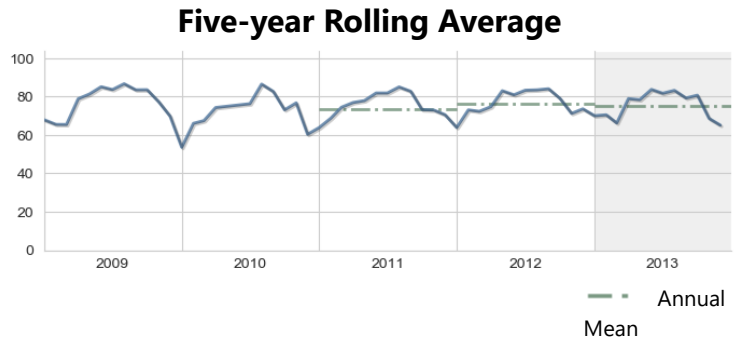
Specific conductance

Units: umho	Year 2013	Historical period of record
High	42,247.0	53,581.0
Mean	2492.99	3603.27
Low	358.00	0.823
No. of Samples	139	5,369



Temperature, water

Units: deg F	Year 2013	Historical period of record
High	85.4	92.3
Mean	75.21	75.17
Low	56.66	53.528
No. of Samples	104	5,511

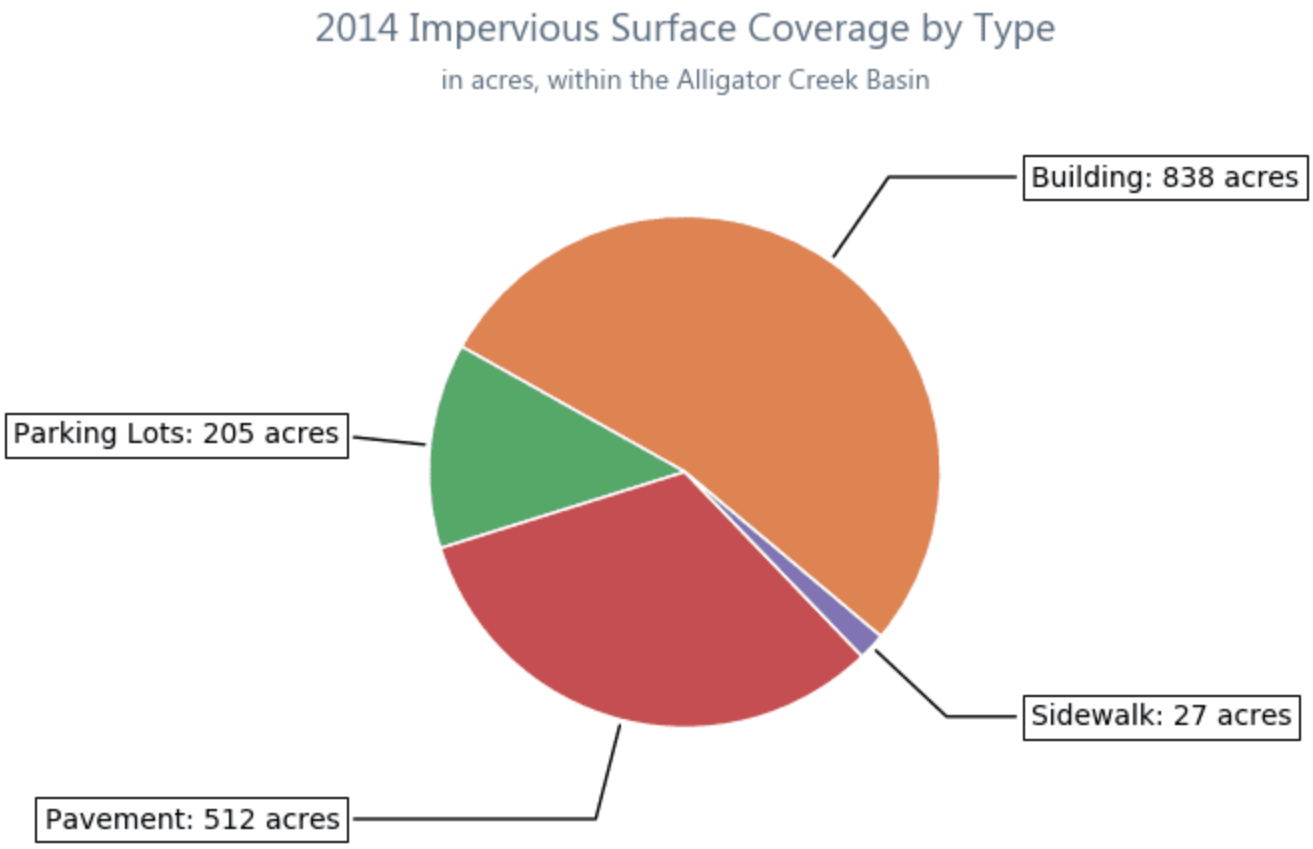


Impervious Features

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

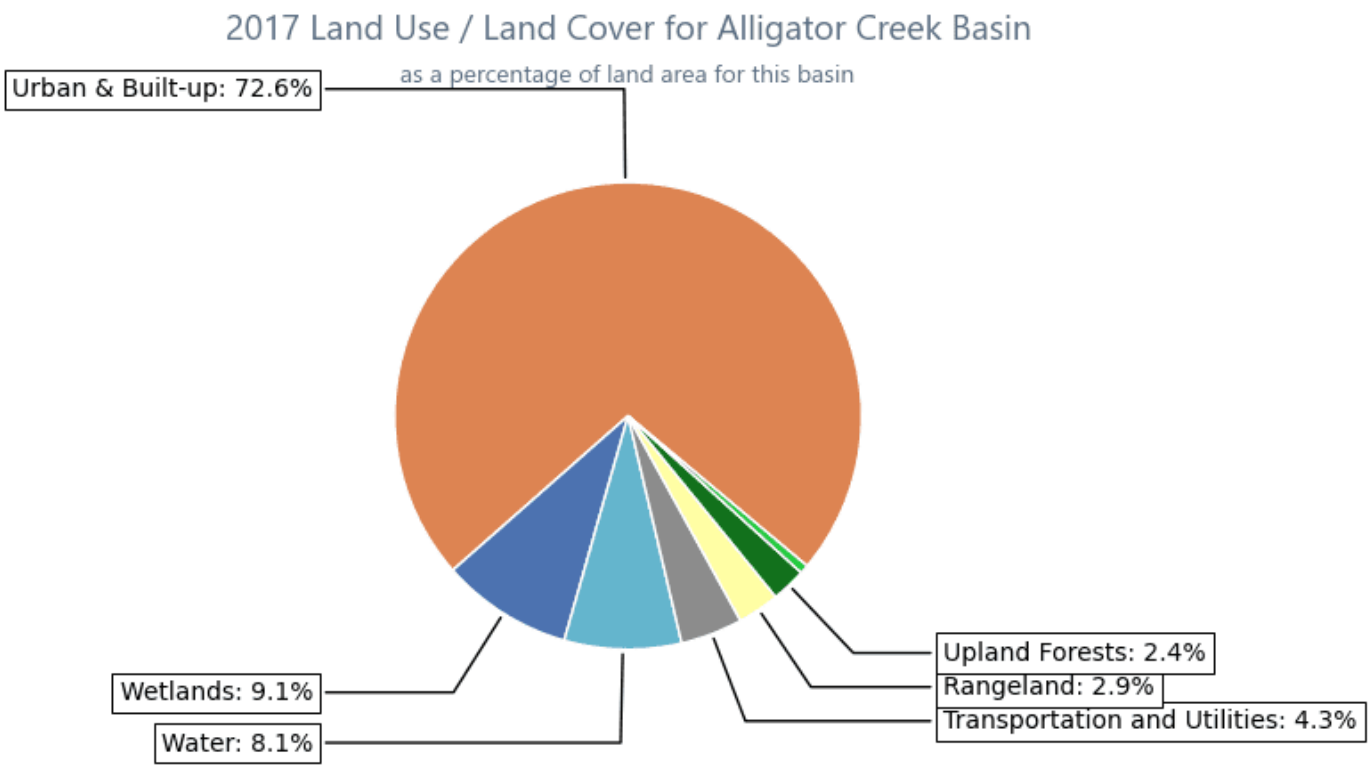


Land Use / Land Cover

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%