Cow Pen Slough Condition Report for 2013

PASS

Chl-a N P DO

4 out of 4 indicators were rated as **PASS**.

All four indicators must pass for the creek to be rated as **PASS**.

Size: 47,518 acres
Location: North and central Sarasota County, south Manatee County
Discharges into: Dona Bay

For more information, please see: **Cow Pen Slough Basin Master Plan (USDA Report, 1997)**

View county-wide water quality trends »

Cow Pen Slough

Water Chemistry Ratings | Freshwater Portion of the Creek

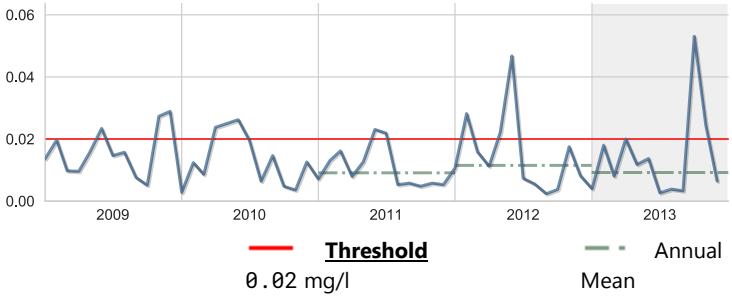
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of nitrogen, phosphorus, and chlorophyll *a*, and a minimum allowable concentration of dissolved oxygen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

Chlorophyll a

Score: Pass

Units: mg/l	Year 2013	Historical period of record
High	0.0617	0.243
Mean	0.0092	0.0109
Low	0.0014	0.0006
No. of Samples	74	533

Five-year Rolling Average

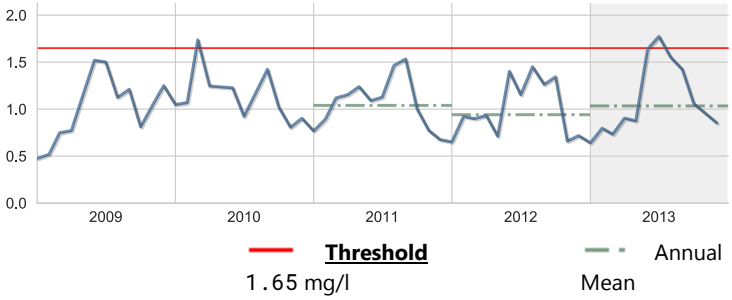


Nitrogen, Total

Score: Pass

Units: mg/l	Year 2013	Historical period of record
High	1.791	2.73
Mean	1.034	0.9744
Low	0.508	0.15
No. of Samples	24	343

Five-year Rolling Average

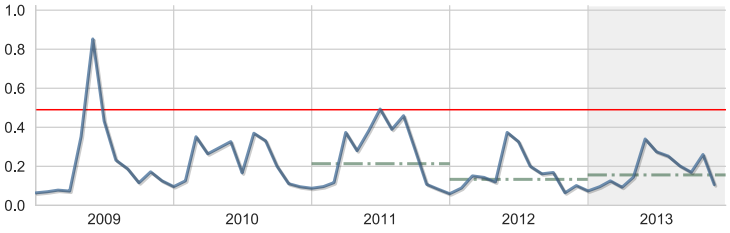


Phosphorus, Total

Score: Pass

Units: mg/l	Year 2013	Historical period of record
High	0.356	1.19
Mean	0.1559	0.1782
Low	0.057	0.02
No. of Samples	72	583

Five-year Rolling Average



Threshold 0.49 mg/l

Annual Mean

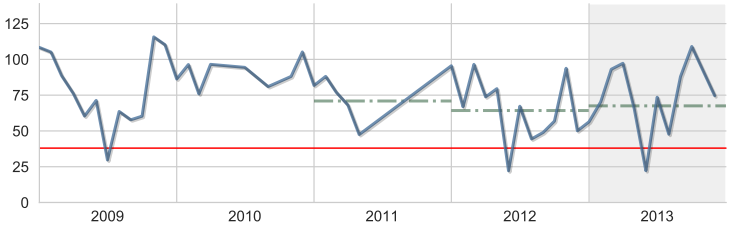
Dissolved Oxygen Saturation

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	144.70	227.16
Mean	67.52	72.15
Low	17.40	2.381
No. of Samples	68	805

Five-year Rolling Average

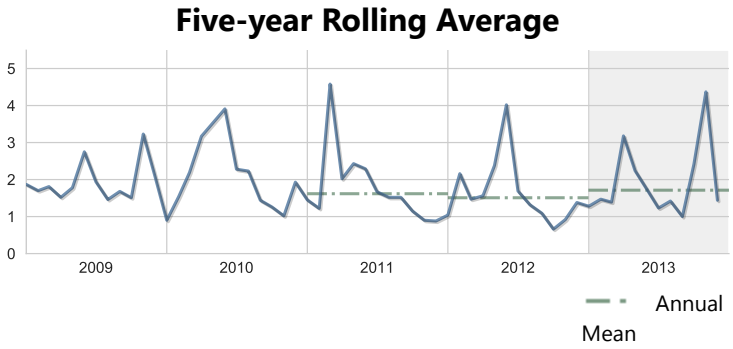


Threshold 38.00 percent (%)

Annual Mean

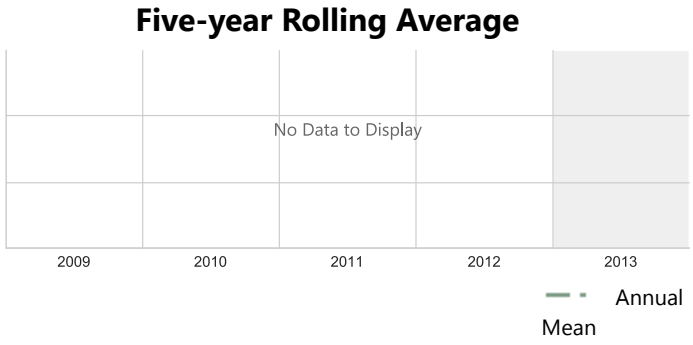
BOD, Biochemical oxygen demand

Units: mg/l	Year 2013	Historical period of record
High	4.52	13.90
Mean	1.71	1.74
Low	0.50	0.00
No. of Samples	72	541



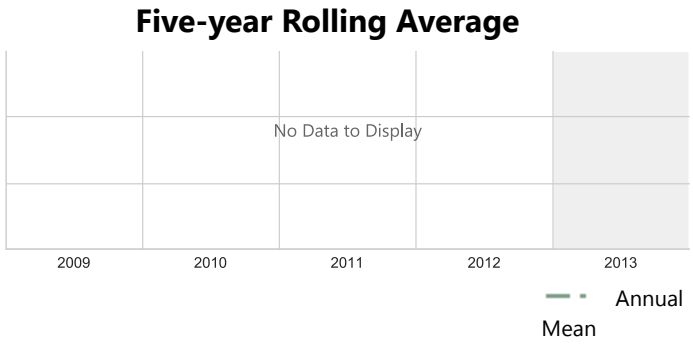
Color

Units: PCU	Year 2013	Historical period of record
High		650.00
Mean		85.82
Low		10.00
No. of Samples	0	274



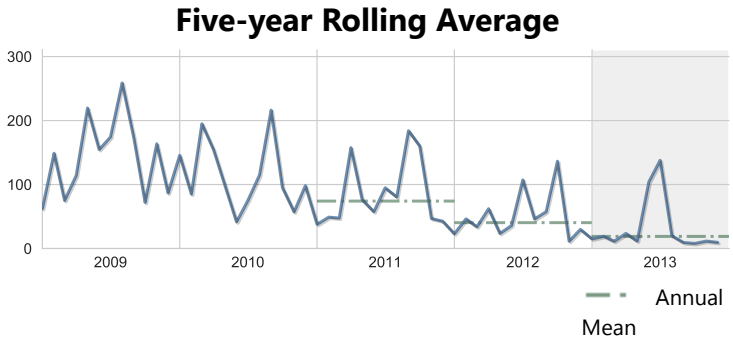
Escherichia coli

Units: cfu/100ml	Year 2013	Historical period of record
High		230.00
Mean		117.47
Low		60.00
No. of Samples	0	2



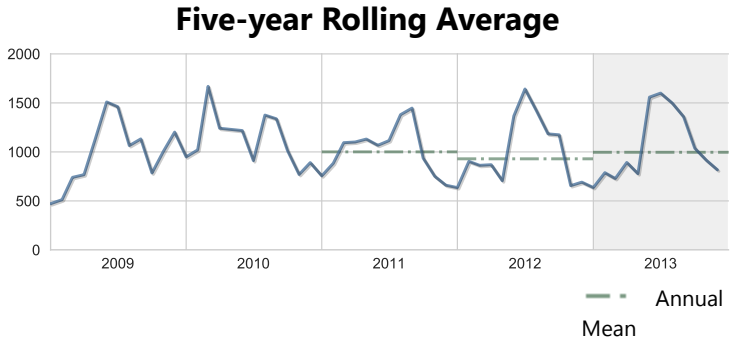
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2013	Historical period of record
High	142.00	605.00
Mean	18.91	18.61
Low	8.00	0.00
No. of Samples	72	680



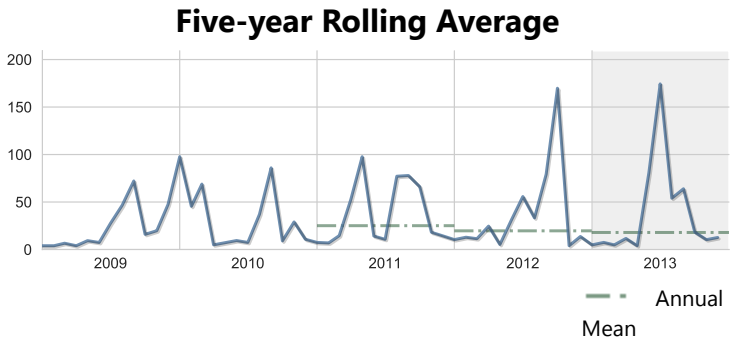
Nitrogen, Kjeldahl

Units: ug/l	Year 2013	Historical period of record
High	1630.00	8400.00
Mean	996.13	987.25
Low	502.00	0.00
No. of Samples	72	667



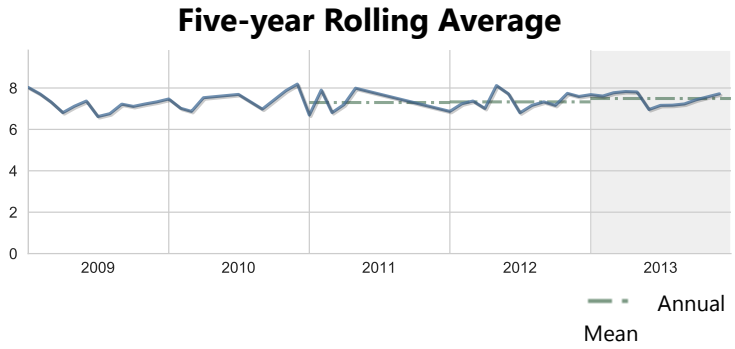
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2013	Historical period of record
High	181.00	2210.00
Mean	17.94	19.62
Low	4.00	0.00
No. of Samples	71	591



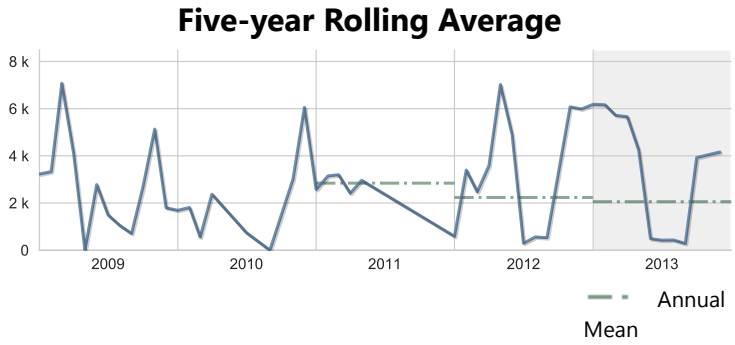
pH

Units: None	Year 2013	Historical period of record
High	8.17	11.50
Mean	7.49	7.59
Low	6.87	5.80
No. of Samples	68	3,890



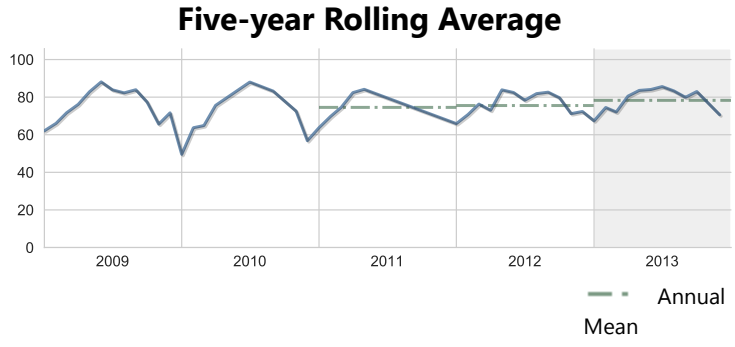
Specific Conductance

Units: umho	Year 2013	Historical period of record
High	47567.00	59844.40
Mean	2056.37	18387.05
Low	253.00	0.512
No. of Samples	68	3,945



Temperature, water

Units: deg F	Year 2013	Historical period of record
High	86.846	92.426
Mean	78.3	77.49
Low	65.75	47.372
No. of Samples	46	3,712

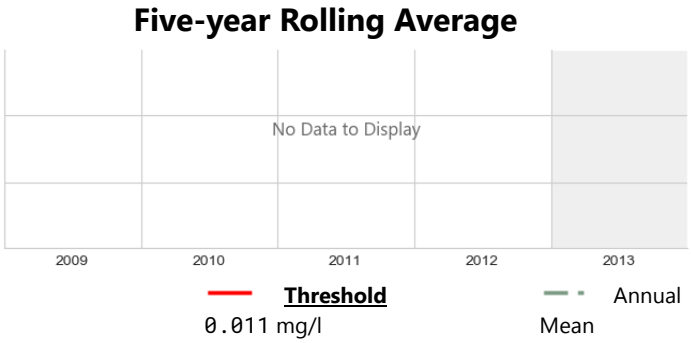


Water Chemistry Ratings | Tidal Portion of the Creek

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.

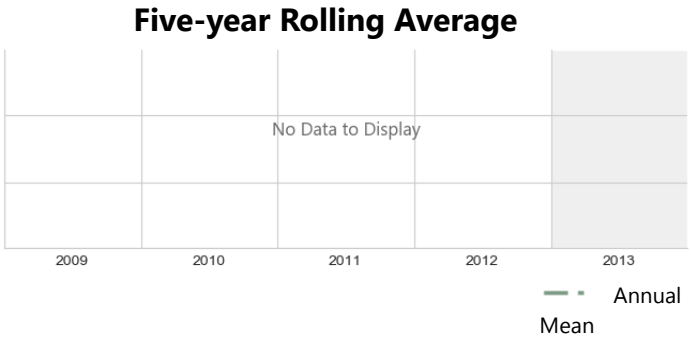
Chlorophyll a

Units: mg/l	Year 2013	Historical period of record
High		0.0
Mean		0.0104
Low		0.004
No. of Samples	0	15



Nitrogen, Total

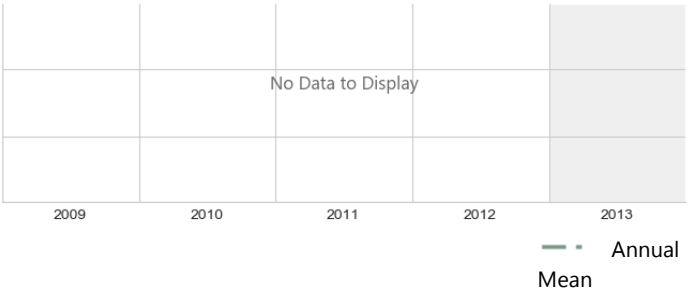
Units: mg/l	Year 2013	Historical period of record
High		2.2
Mean		1.0972
Low		0.16
No. of Samples	0	42



Phosphorus, Total

Units: mg/l	Year 2013	Historical period of record
High		0.6
Mean		0.1913
Low		0.043
No. of Samples	0	39

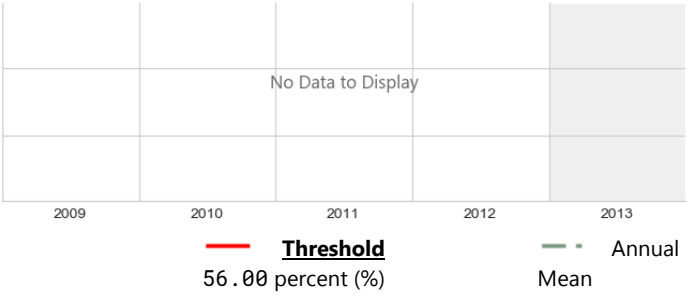
Five-year Rolling Average



Dissolved Oxygen Saturation

Units: percent (%)	Year 2013	Historical period of record
High		122.5
Mean		73.4
Low		48.1012
No. of Samples	0	128

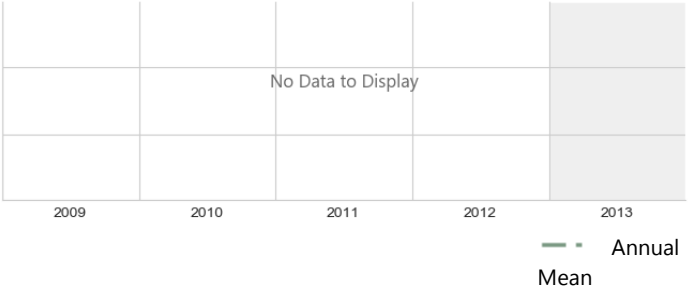
Five-year Rolling Average



BOD, Biochemical oxygen demand

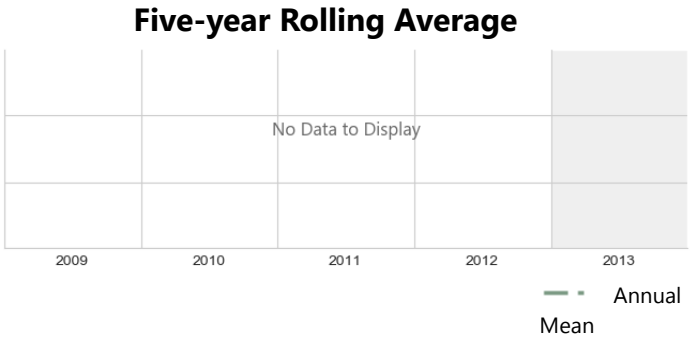
Units: mg/l	Year 2013	Historical period of record
High		1.2
Mean		1.2
Low		1.20
No. of Samples	0	1

Five-year Rolling Average



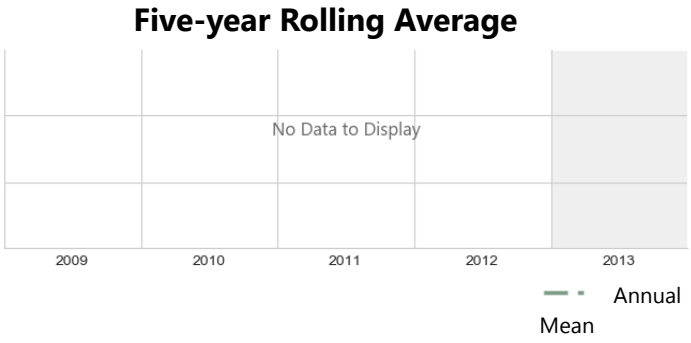
Color

Units: PCU	Year 2013	Historical period of record
High		300.0
Mean		72.04
Low		10.00
No. of Samples	0	112



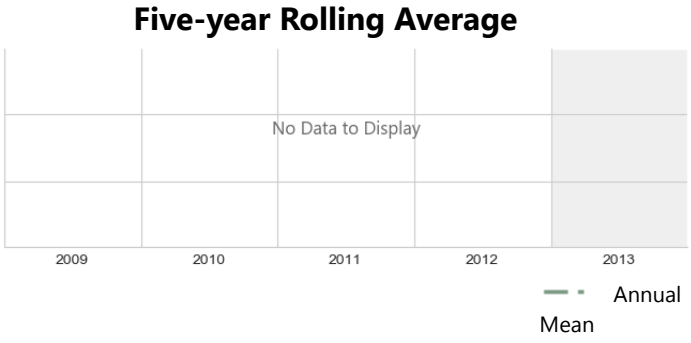
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2013	Historical period of record
High		203.0
Mean		1.03
Low		0.00
No. of Samples	0	85



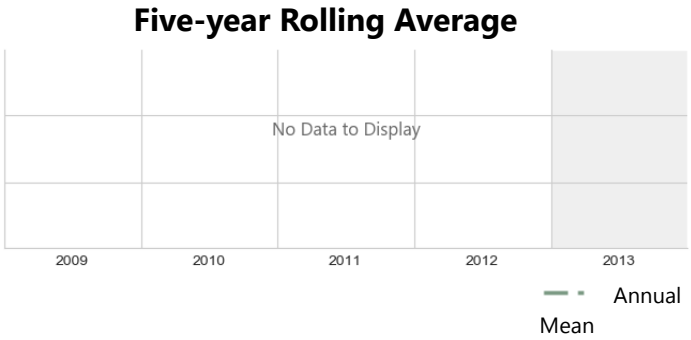
Nitrogen, Kjeldahl

Units: ug/l	Year 2013	Historical period of record
High		2,163.0
Mean		1032.51
Low		50.00
No. of Samples	0	75



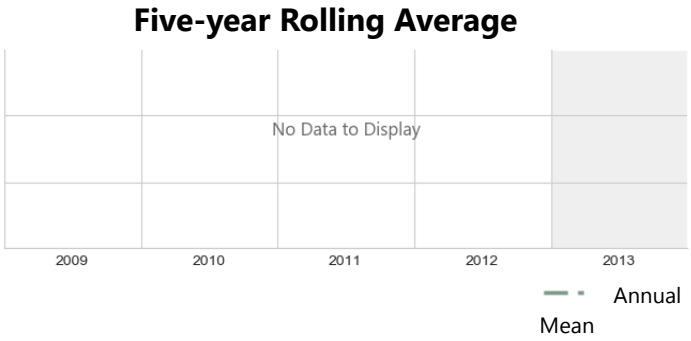
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2013	Historical period of record
High		250.0
Mean		46.62
Low		0.00
No. of Samples	0	45



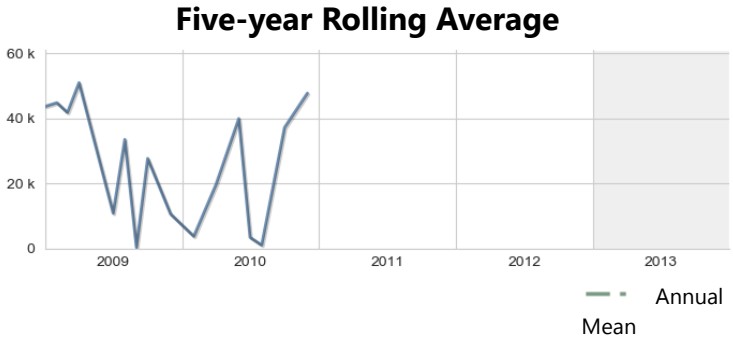
pH

Units: None	Year 2013	Historical period of record
High		8.6
Mean		7.61
Low		6.80
No. of Samples	0	160



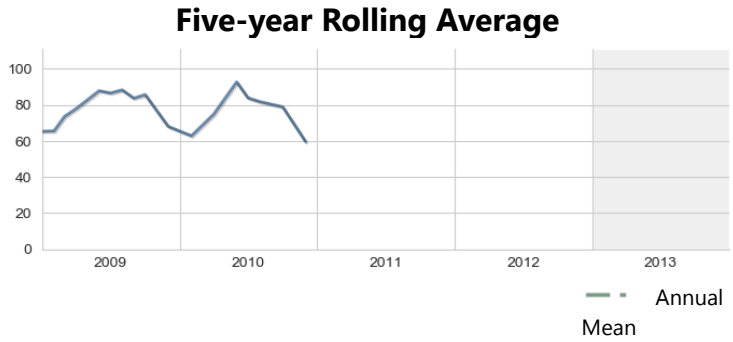
Specific Conductance

Units: umho	Year 2013	Historical period of record
High		51,300.0
Mean		14280.55
Low		19.00
No. of Samples	0	335



Temperature, water

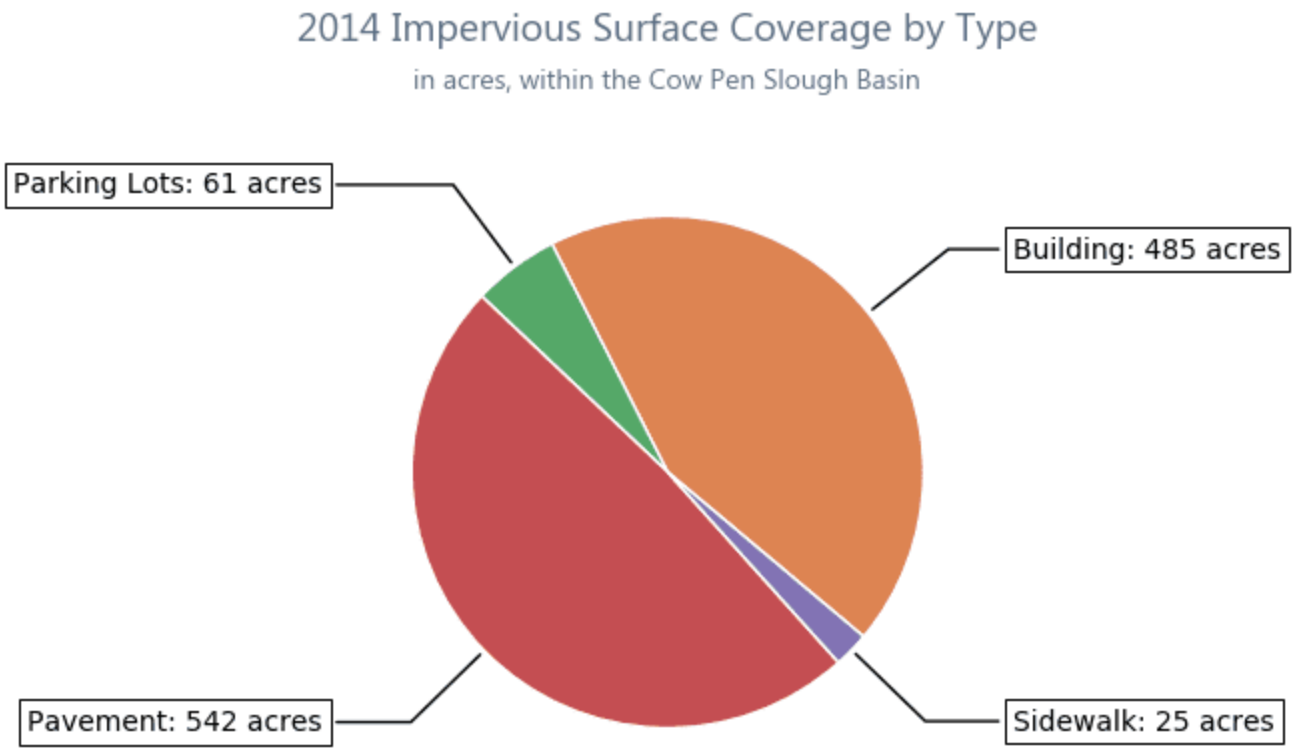
Units: deg F	Year 2013	Historical period of record
High		93.2
Mean		75.64
Low		51.80
No. of Samples	0	248



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.

2% of the land area within the **Cow Pen Slough Basin** is covered by impervious surfaces

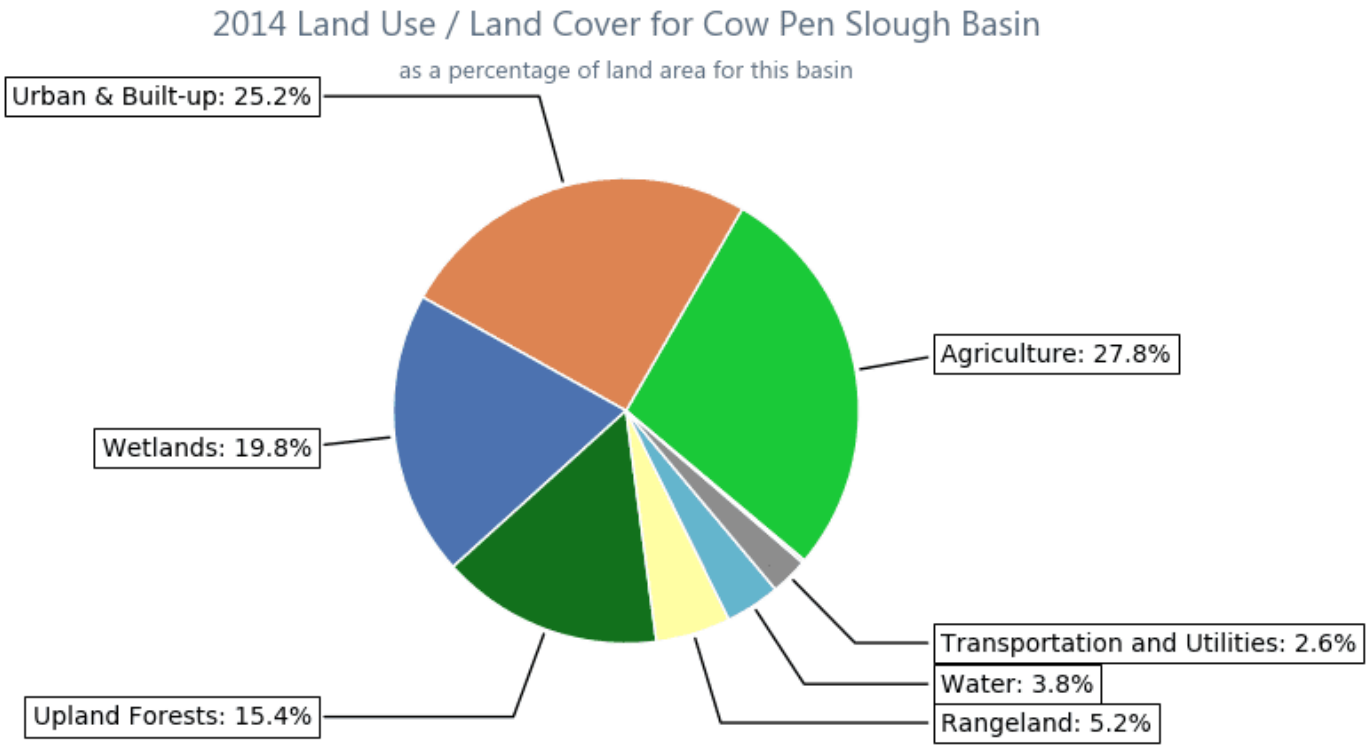


Land Use / Land Cover

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 Cow Pen Slough Basin

Land Use Classification	1990	1995	1999	2005	2011	2014	Trend
Urban & Built-up	4,508 **9.5%**	6,038 **12.7%**	8,975 **18.9%**	11,001 **23.2%**	11,730 **24.7%**	11,974 **25.2%**	
Agriculture	13,320 **28%**	14,164 **29.8%**	14,112 **29.7%**	14,347 **30.2%**	13,512 **28.4%**	13,227 **27.8%**	
Rangeland	7,041 **14.8%**	6,168 **13%**	4,056 **8.5%**	2,448 **5.2%**	2,307 **4.9%**	2,488 **5.2%**	
Upland Forests	11,445 **24.1%**	10,059 **21.2%**	8,503 **17.9%**	7,483 **15.7%**	7,376 **15.5%**	7,309 **15.4%**	
Water	816 **1.7%**	1,345 **2.8%**	1,521 **3.2%**	1,644 **3.5%**	1,763 **3.7%**	1,817 **3.8%**	
Wetlands	10,035 **21.1%**	9,310 **19.6%**	9,367 **19.7%**	9,471 **19.9%**	9,507 **20%**	9,397 **19.8%**	
Barren Land	16 **0%**	5 **0%**	2 **0%**	49 **0.1%**	110 **0.2%**	77 **0.2%**	
Transportation and Utilities	337 **0.7%**	430 **0.9%**	982 **2.1%**	1,075 **2.3%**	1,213 **2.6%**	1,230 **2.6%**	


2014 Land Use / Land Cover for Cow Pen Slough Basin
as a percentage of land area for this basin
Urban & Built-up: 25.2%
Agriculture: 27.8%
Wetlands: 19.8%
Transportation and Utilities: 2.6%
Water: 3.8%
Rangeland: 5.2%
Upland Forests: 15.4%