



Cow Pen Slough Condition Report for 2014

✓

PASS

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

Chl-a N P DO

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

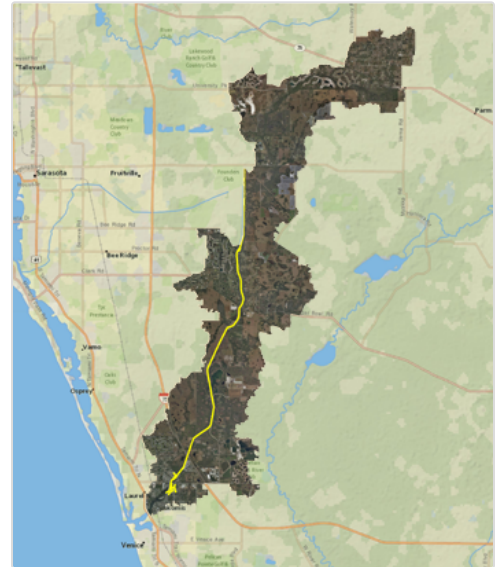
For more information, please see: **Cow Pen Slough Basin Master Plan (USDA Report, 1997)**

[View county-wide water quality trends >>](#)

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.

Cow Pen Slough



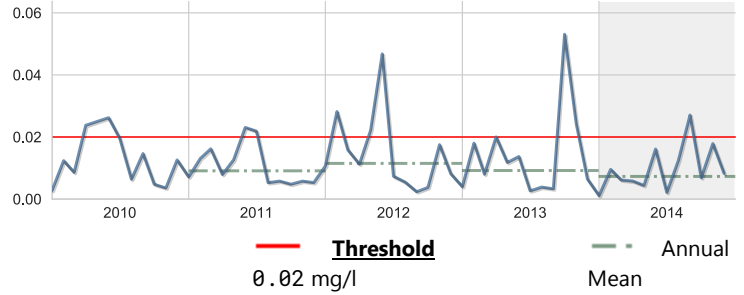


Chlorophyll a

Score: Pass

Units: mg/l	Year 2014	Historical period of record
High	0.0356	0.243
Mean	0.0073	0.0102
Low	0.0009	0.0006
No. of Samples	95	628

Five-year Rolling Average

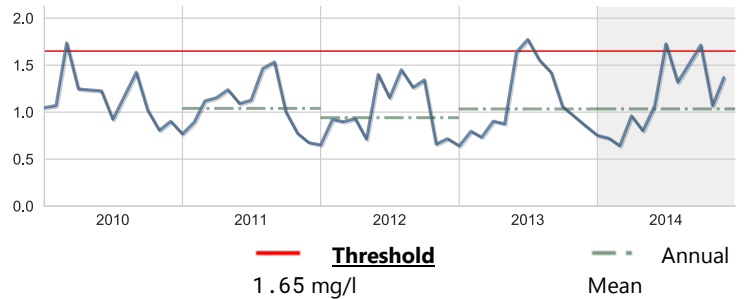


Nitrogen, Total

Score: Pass

Units: mg/l	Year 2014	Historical period of record
High	1.822	2.73
Mean	1.0344	0.9803
Low	0.50	0.15
No. of Samples	39	382

Five-year Rolling Average



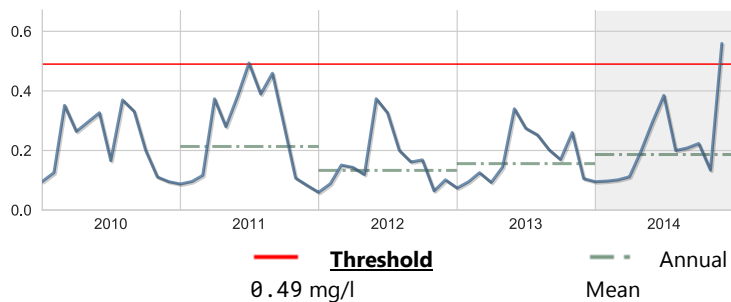


Phosphorus, Total

Score: **Pass**

Units: mg/l	Year 2014	Historical period of record
High	0.583	1.19
Mean	0.1865	0.1793
Low	0.072	0.02
No. of Samples	95	678

Five-year Rolling Average



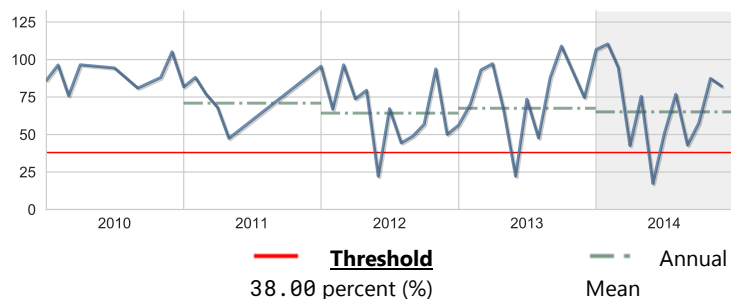
Dissolved Oxygen Saturation

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

Score: **Pass**

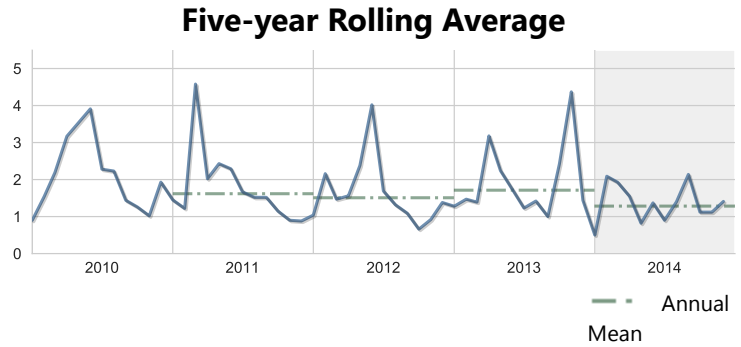
Units: percent (%)	Year 2014	Historical period of record
High	121.30	227.16
Mean	65.11	71.41
Low	13.90	2.381
No. of Samples	90	895

Five-year Rolling Average



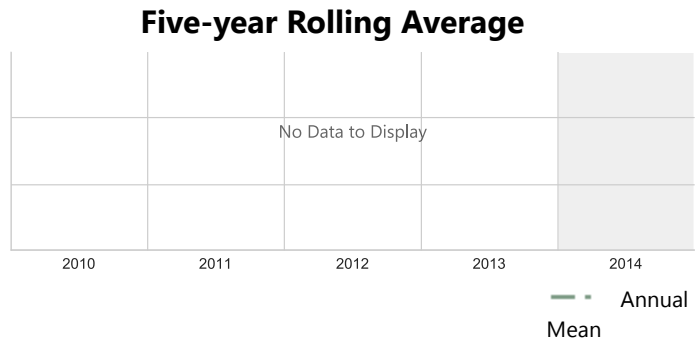
BOD, Biochemical oxygen demand

Units: mg/l	Year 2014	Historical period of record
High	6.44	13.90
Mean	1.28	1.67
Low	0.50	0.00
No. of Samples	93	634



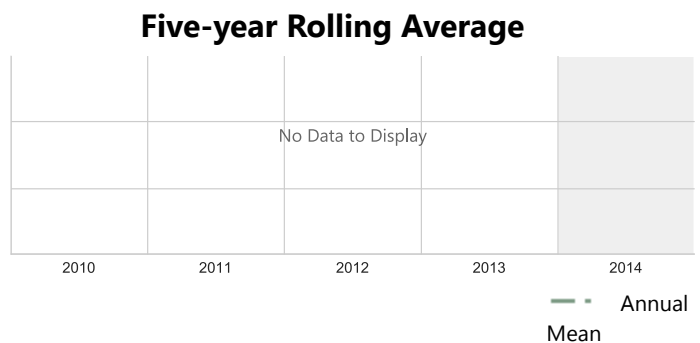
Color

Units: PCU	Year 2014	Historical period of record
High		650.00
Mean		85.82
Low		10.00
No. of Samples	0	274



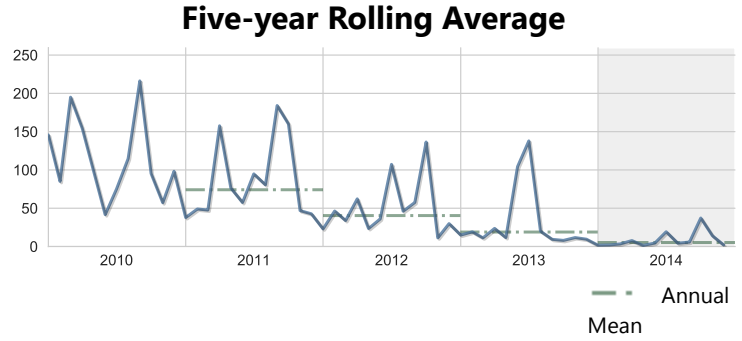
Escherichia coli

Units: cfu/100ml	Year 2014	Historical period of record
High		230.00
Mean		117.47
Low		60.00
No. of Samples	0	2



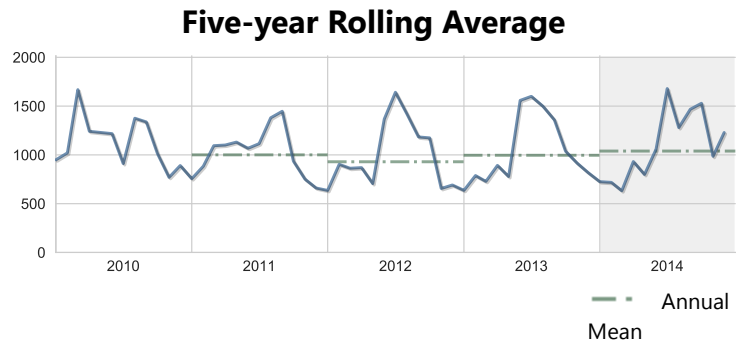
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2014	Historical period of record
High	169.00	605.00
Mean	5.22	15.46
Low	0.008	0.00
No. of Samples	115	795



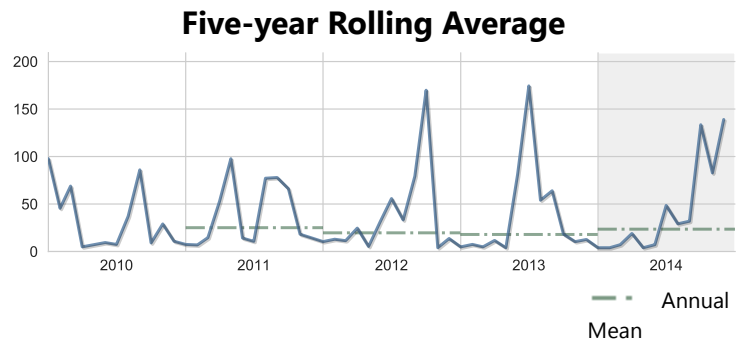
Nitrogen, Kjeldahl

Units: ug/l	Year 2014	Historical period of record
High	1710.00	8400.00
Mean	1039.22	993.59
Low	487.00	0.00
No. of Samples	95	762



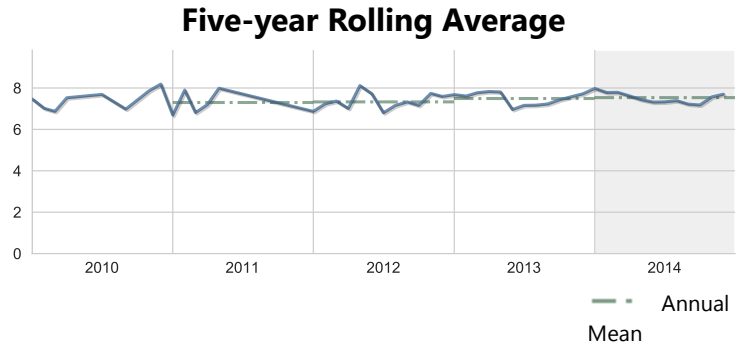
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2014	Historical period of record
High	302.00	2210.00
Mean	23.53	20.08
Low	4.00	0.00
No. of Samples	83	674



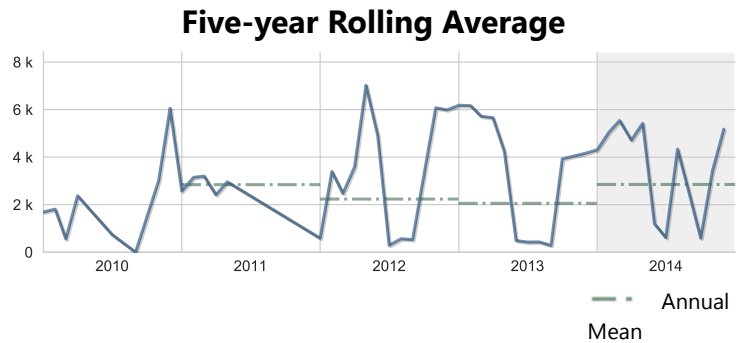
pH

Units: None	Year 2014	Historical period of record
High	8.23	11.50
Mean	7.54	7.59
Low	7.03	5.80
No. of Samples	73	3,963



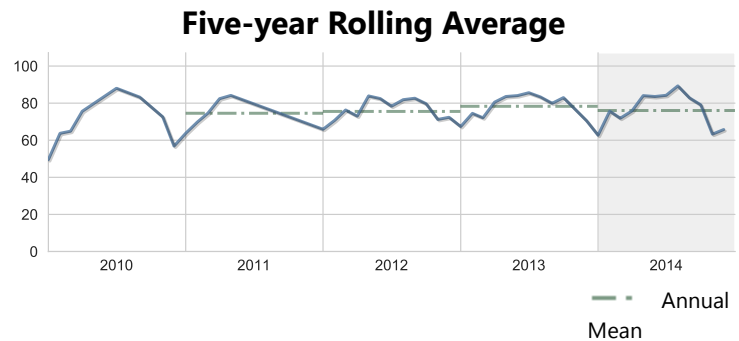
Specific Conductance

Units: umho	Year 2014	Historical period of record
High	45344.00	59844.40
Mean	2849.92	17638.12
Low	485.00	0.512
No. of Samples	90	4,035



Temperature, water

Units: deg F	Year 2014	Historical period of record
High	89.528	92.426
Mean	76.03	77.46
Low	60.80	47.372
No. of Samples	67	3,779

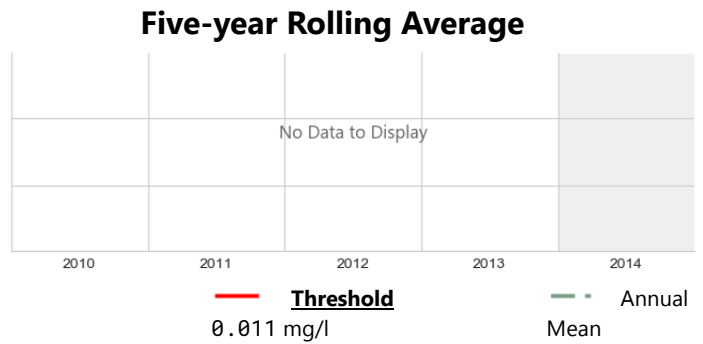


Water Chemistry Ratings | Tidal Portion of the Creek

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.

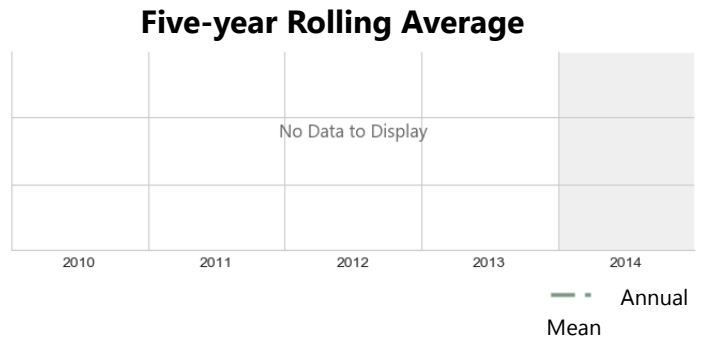
Chlorophyll a

Units: mg/l	Year 2014	Historical period of record
High		0.0
Mean		0.0104
Low		0.004
No. of Samples	0	15



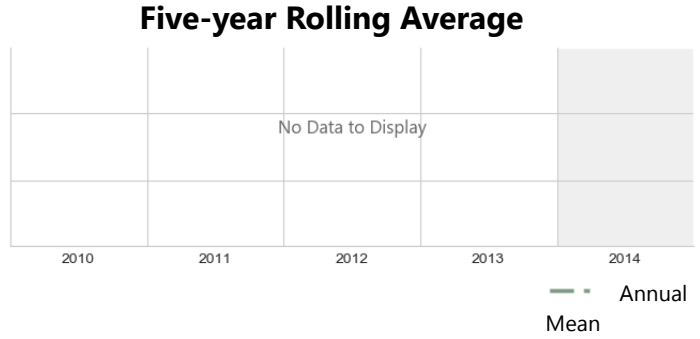
Nitrogen, Total

Units: mg/l	Year 2014	Historical period of record
High		2.2
Mean		1.0972
Low		0.16
No. of Samples	0	42



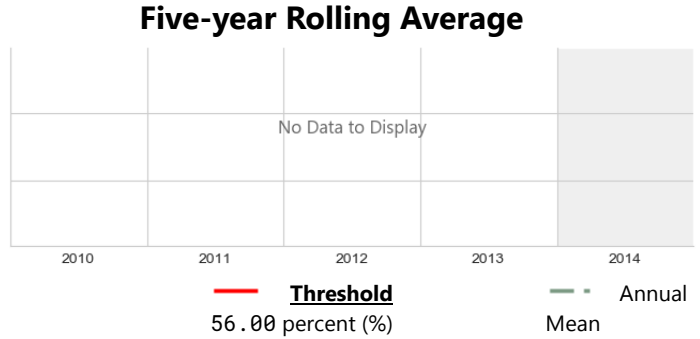
Phosphorus, Total

Units: mg/l	Year 2014	Historical period of record
High		0.6
Mean		0.1913
Low		0.043
No. of Samples	0	39



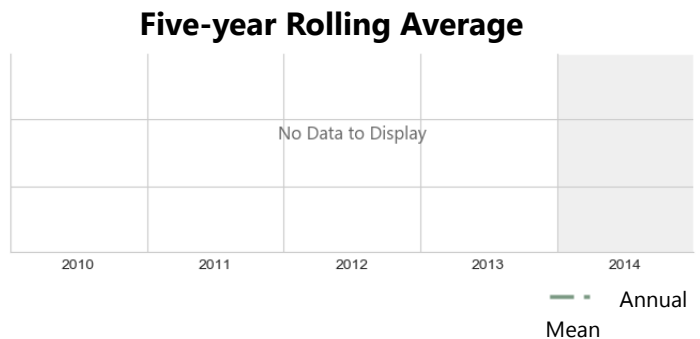
Dissolved Oxygen Saturation

Units: percent (%)	Year 2014	Historical period of record
High		122.5
Mean		73.4
Low		48.1012
No. of Samples	0	128



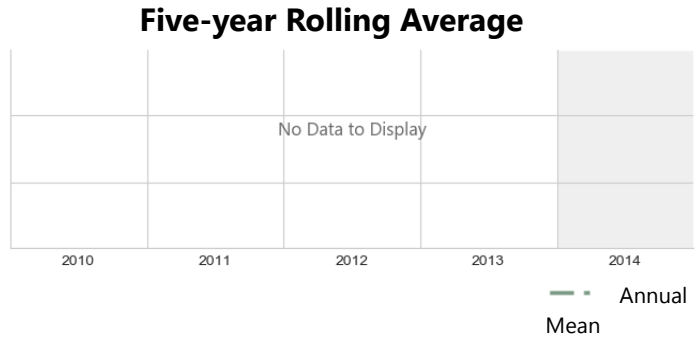
BOD, Biochemical oxygen demand

Units: mg/l	Year 2014	Historical period of record
High		1.2
Mean		1.2
Low		1.20
No. of Samples	0	1



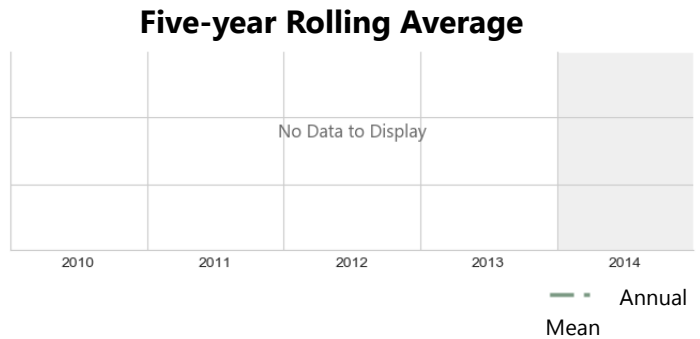
Color

Units: PCU	Year 2014	Historical period of record
High		300.0
Mean		72.04
Low		10.00
No. of Samples	0	112



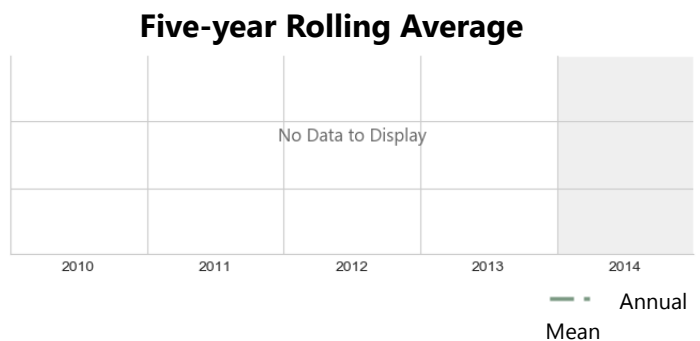
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2014	Historical period of record
High		203.0
Mean		1.03
Low		0.00
No. of Samples	0	85



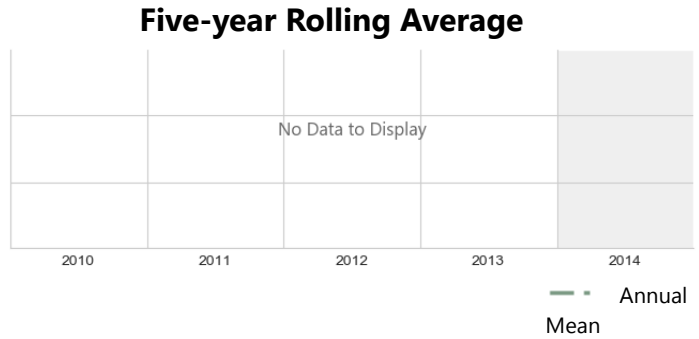
Nitrogen, Kjeldahl

Units: ug/l	Year 2014	Historical period of record
High		2,163.0
Mean		1032.51
Low		50.00
No. of Samples	0	75



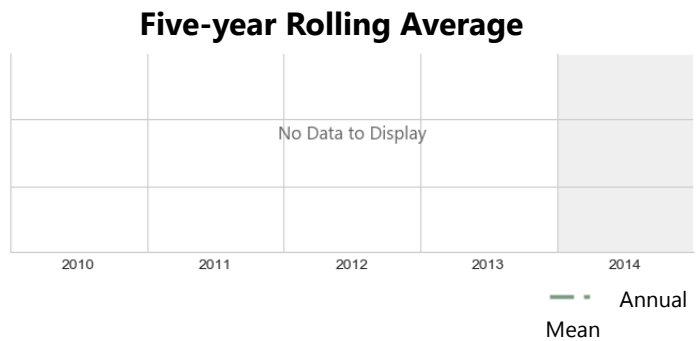
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2014	Historical period of record
High		250.0
Mean		46.62
Low		0.00
No. of Samples	0	45



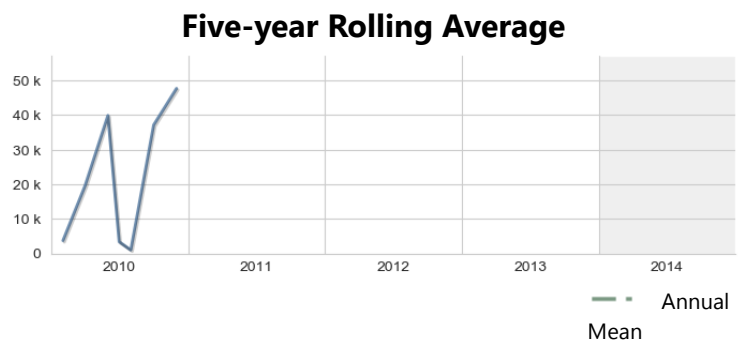
pH

Units: None	Year 2014	Historical period of record
High		8.6
Mean		7.61
Low		6.80
No. of Samples	0	160



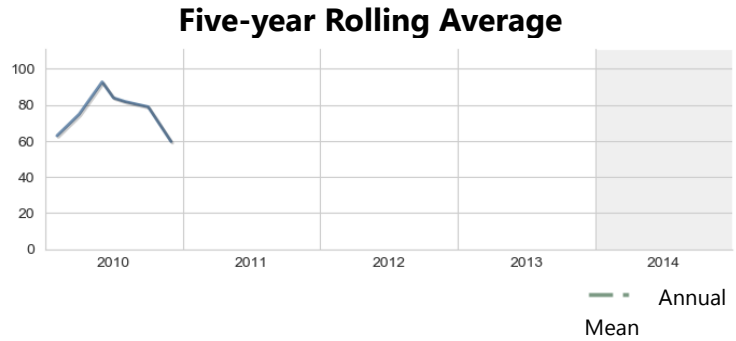
Specific Conductance

Units: umho	Year 2014	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 2014	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 its 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.

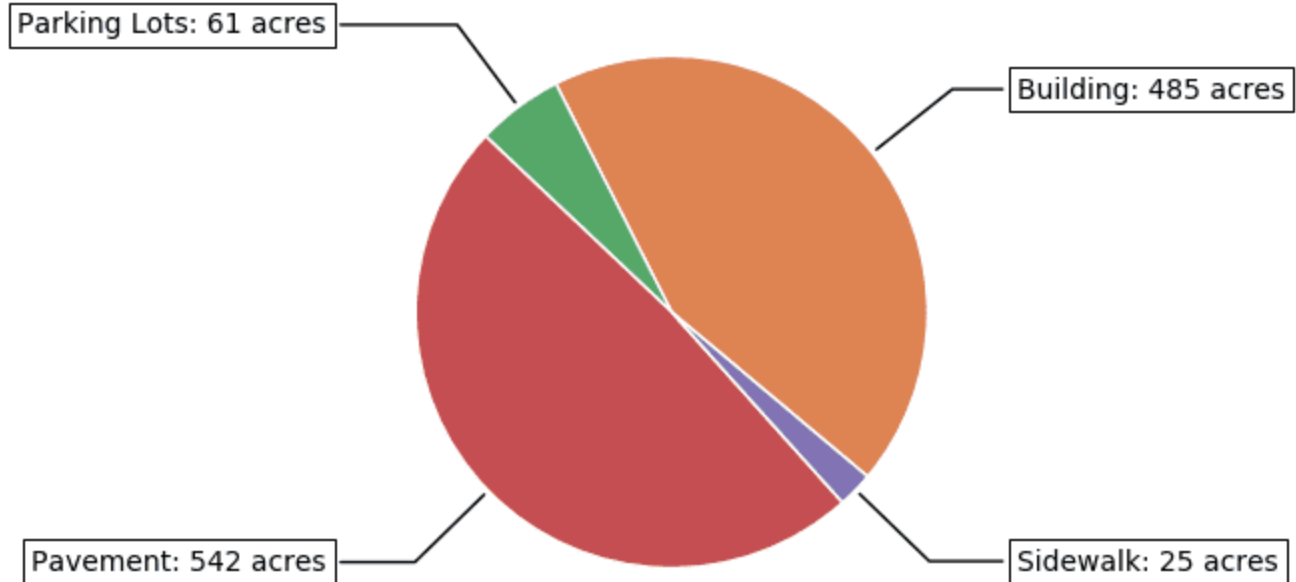


2% of the land area within the **Cow Pen Slough Basin** is covered by impervious

surfaces

2014 Impervious Surface Coverage by Type

in acres, within the Cow Pen Slough Basin


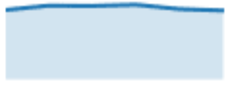








Land Use / Land Cover

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

2014 Creek Conditions Report for Cow Pen Slough

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

