

Cow Pen Slough Condition Report for 2016

✓

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 >>](#)

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.

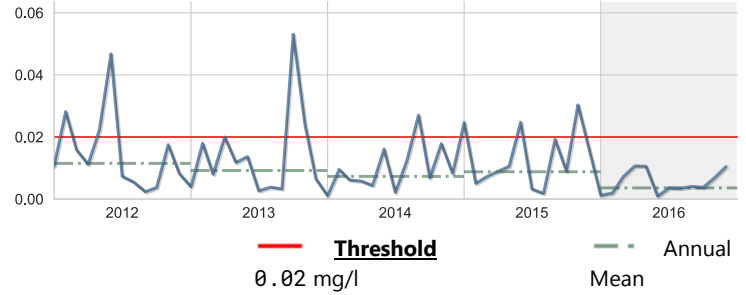


Chlorophyll a

Score: Pass

Units: mg/l	Year 2016	Historical period of record
High	0.0192	0.243
Mean	0.0036	0.0097
Low	0.0006	0.0006
No. of Samples	28	710

Five-year Rolling Average

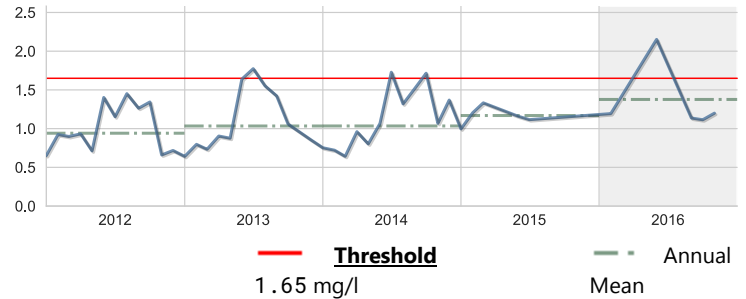


Nitrogen, Total

Score: Pass

Units: mg/l	Year 2016	Historical period of record
High	2.186	2.73
Mean	1.3768	0.991
Low	0.917	0.15
No. of Samples	7	400

Five-year Rolling Average



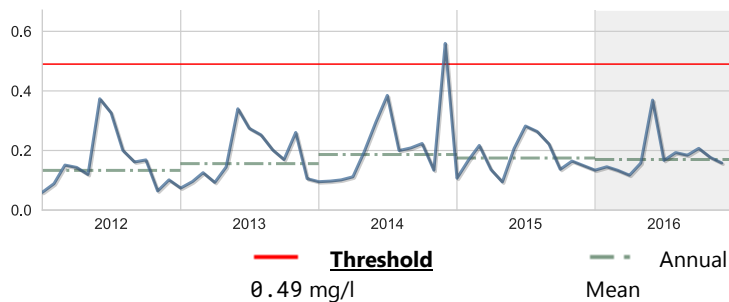


Phosphorus, Total

Score: Pass

Units: mg/l	Year 2016	Historical period of record
High	0.381	1.19
Mean	0.1698	0.1787
Low	0.117	0.02
No. of Samples	24	753

Five-year Rolling Average



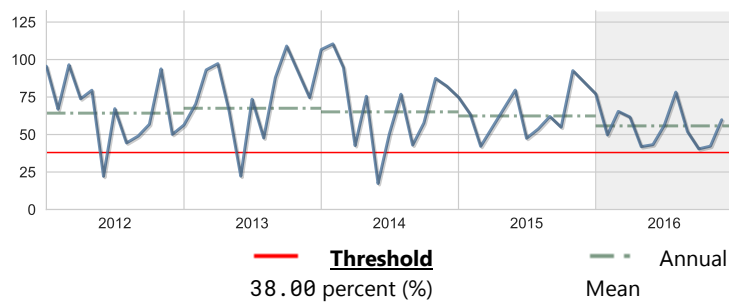
Dissolved Oxygen Saturation

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

Score: Pass

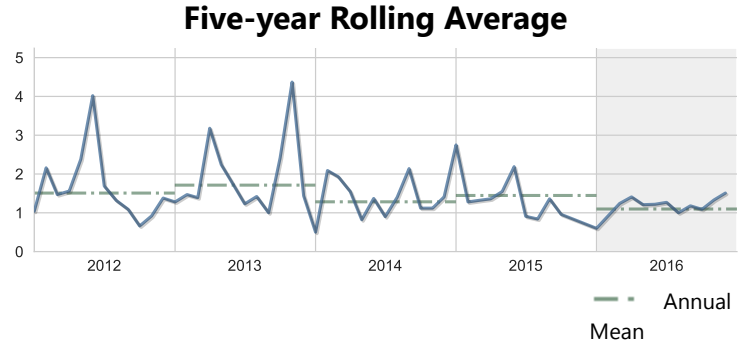
Units: percent (%)	Year 2016	Historical period of record
High	91.90	227.16
Mean	55.76	70.59
Low	21.20	2.381
No. of Samples	26	955

Five-year Rolling Average



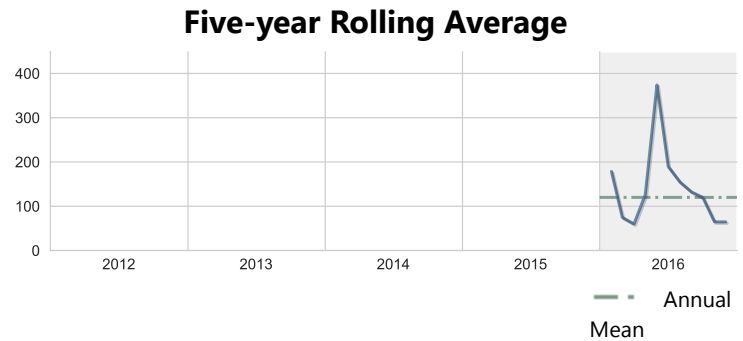
BOD, Biochemical oxygen demand

Units: mg/l	Year 2016	Historical period of record
High	2.28	13.90
Mean	1.1	1.63
Low	0.598	0.00
No. of Samples	24	704



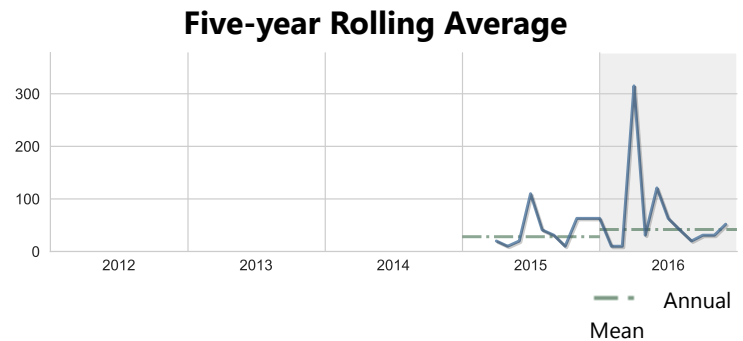
Color

Units: PCU	Year 2016	Historical period of record
High	400.00	650.00
Mean	120.03	87.99
Low	45.00	10.00
No. of Samples	22	296



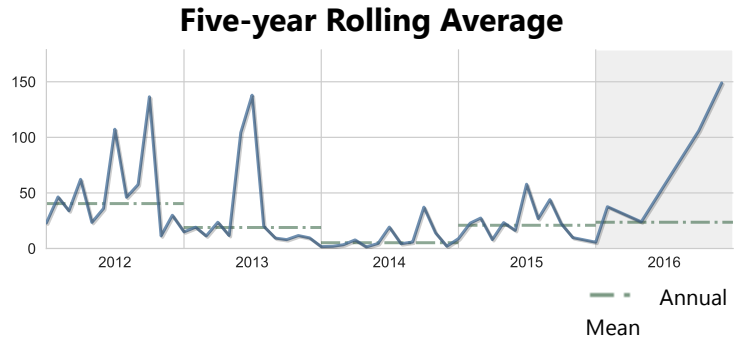
Escherichia coli

Units: cfu/100ml	Year 2016	Historical period of record
High	315.00	315.00
Mean	41.86	37.12
Low	10.00	10.00
No. of Samples	13	29



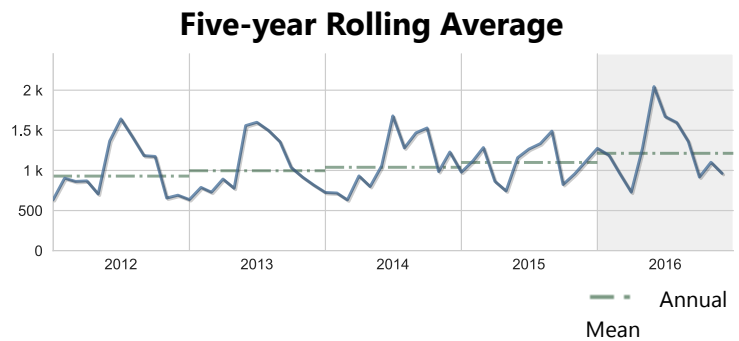
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2016	Historical period of record
High	149.00	605.00
Mean	23.64	15.81
Low	0.055	0.00
No. of Samples	8	854



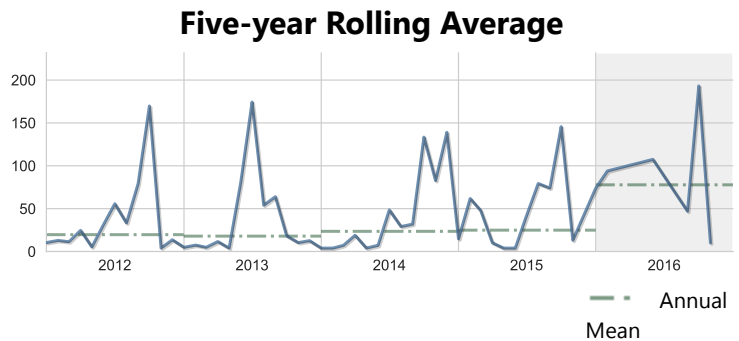
Nitrogen, Kjeldahl

Units: ug/l	Year 2016	Historical period of record
High	2080.00	8400.00
Mean	1213.44	1006.18
Low	627.00	0.00
No. of Samples	27	840



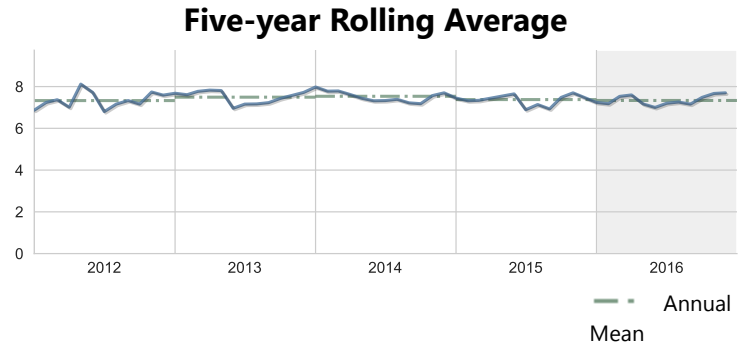
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2016	Historical period of record
High	285.00	2210.00
Mean	77.79	20.76
Low	10.00	0.00
No. of Samples	9	734



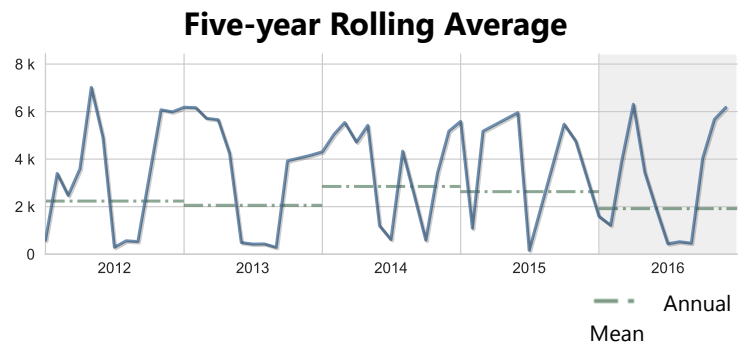
pH

Units: None	Year 2016	Historical period of record
High	8.02	11.50
Mean	7.33	7.59
Low	6.80	5.80
No. of Samples	53	4,059



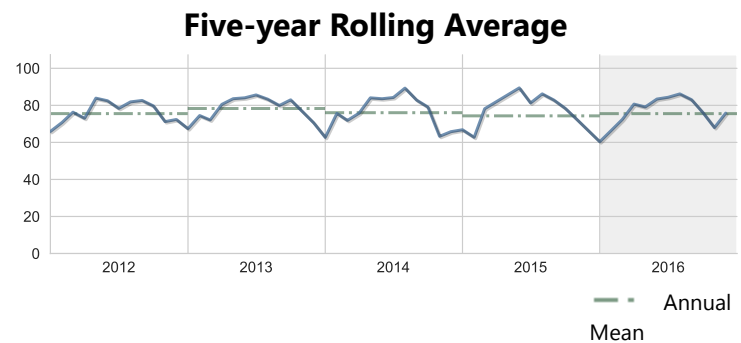
Specific Conductance

Units: umho	Year 2016	Historical period of record
High	44173.00	59844.40
Mean	1915.93	17084.8
Low	233.00	0.512
No. of Samples	28	4,099



Temperature, water

Units: deg F	Year 2016	Historical period of record
High	86.36	92.426
Mean	75.52	77.43
Low	59.90	47.372
No. of Samples	25	3,835

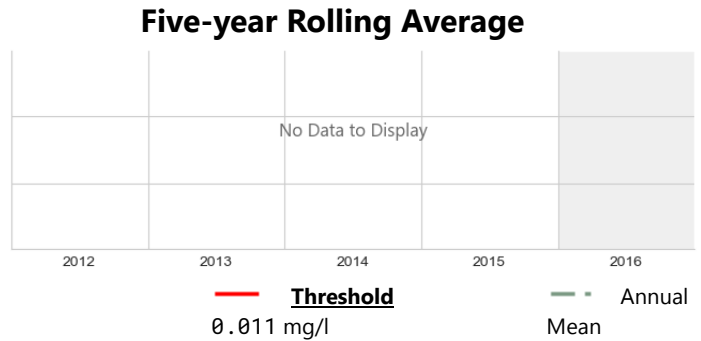


Water Chemistry Ratings | Tidal Portion of the Creek

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.

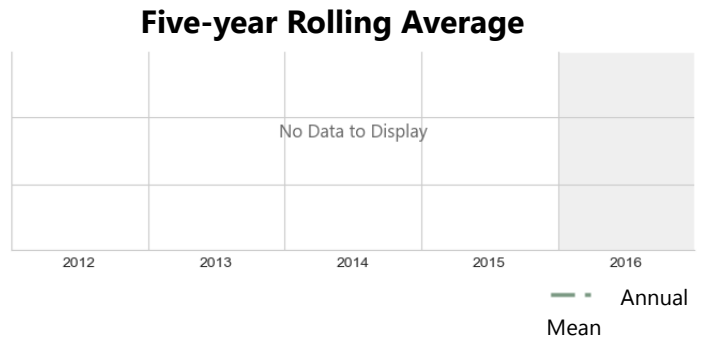
Chlorophyll a

Units: mg/l	Year 2016	Historical period of record
High		0.0
Mean		0.0104
Low		0.004
No. of Samples	0	15



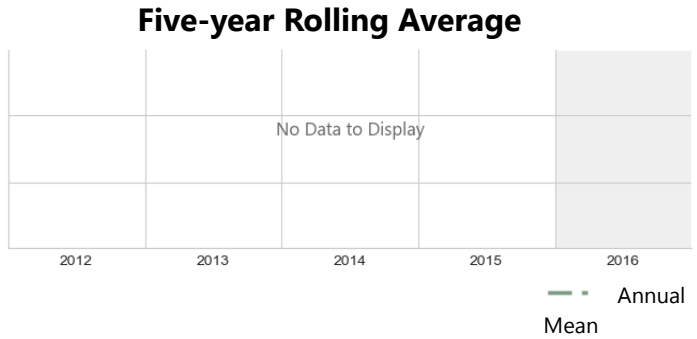
Nitrogen, Total

Units: mg/l	Year 2016	Historical period of record
High		2.2
Mean		1.0972
Low		0.16
No. of Samples	0	42



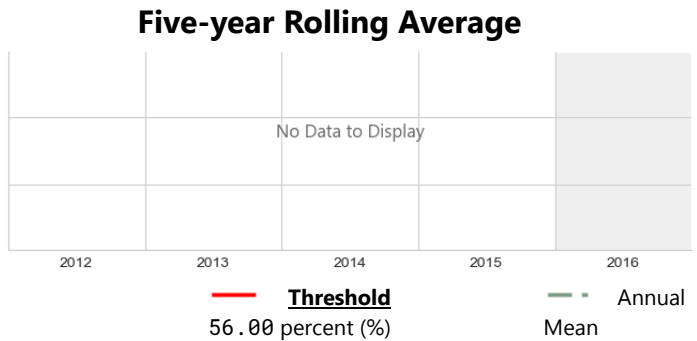
Phosphorus, Total

Units: mg/l	Year 2016	Historical period of record
High		0.6
Mean		0.1913
Low		0.043
No. of Samples	0	39



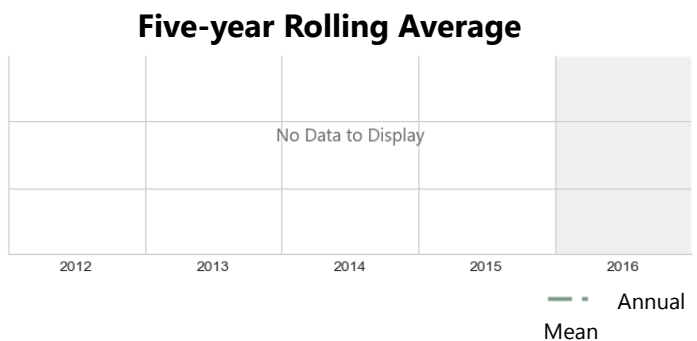
Dissolved Oxygen Saturation

Units: percent (%)	Year 2016	Historical period of record
High		122.5
Mean		73.4
Low		48.1012
No. of Samples	0	128



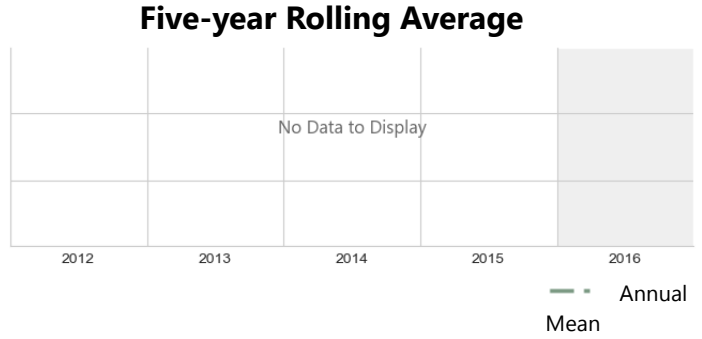
BOD, Biochemical oxygen demand

Units: mg/l	Year 2016	Historical period of record
High		1.2
Mean		1.2
Low		1.20
No. of Samples	0	1



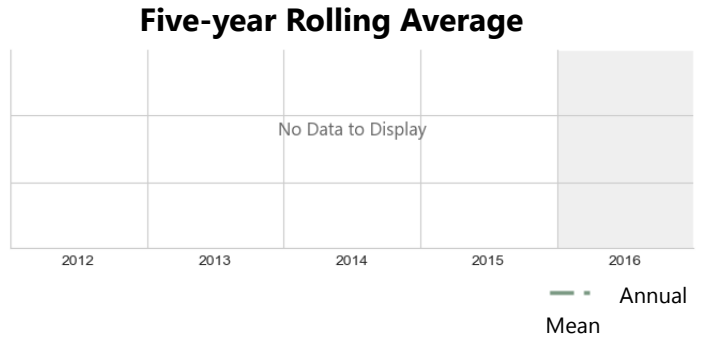
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Units: PCU	Year 2016	Historical period of record
High		300.0
Mean		72.04
Low		10.00
No. of Samples	0	112



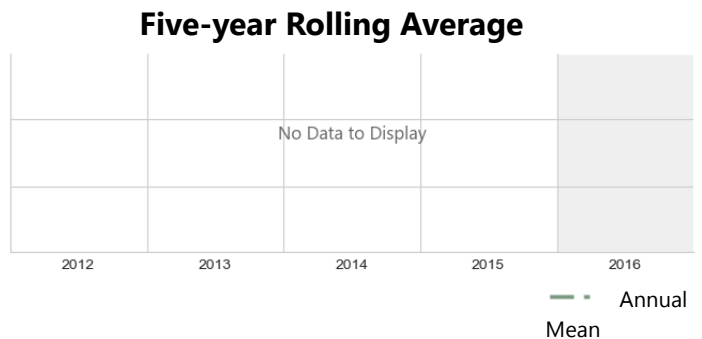
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2016	Historical period of record
High		203.0
Mean		1.03
Low		0.00
No. of Samples	0	85



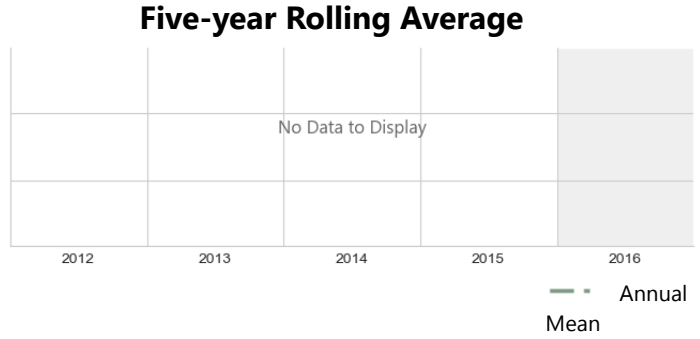
Nitrogen, Kjeldahl

Units: ug/l	Year 2016	Historical period of record
High		2,163.0
Mean		1032.51
Low		50.00
No. of Samples	0	75



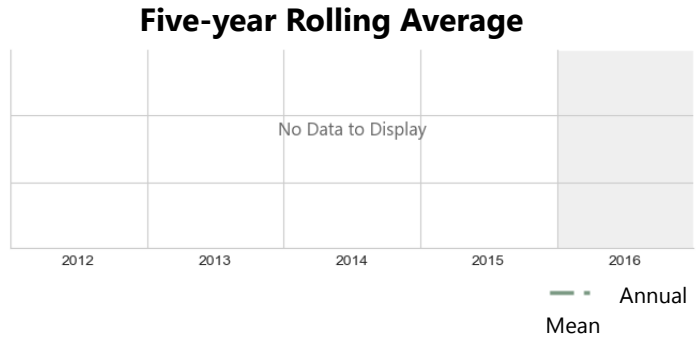
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2016	Historical period of record
High		250.0
Mean		46.62
Low		0.00
No. of Samples	0	45



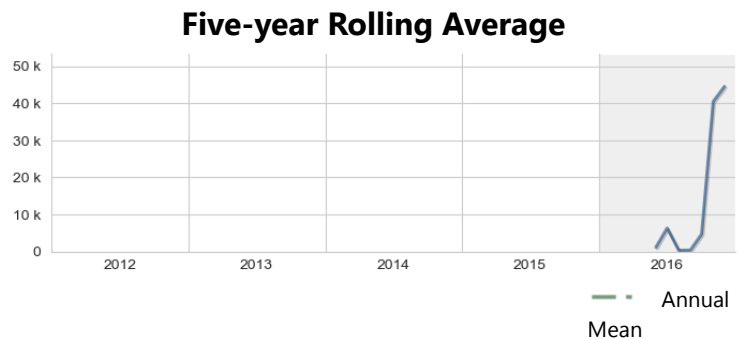
pH

Units: None	Year 2016	Historical period of record
High		8.6
Mean		7.61
Low		6.80
No. of Samples	0	160



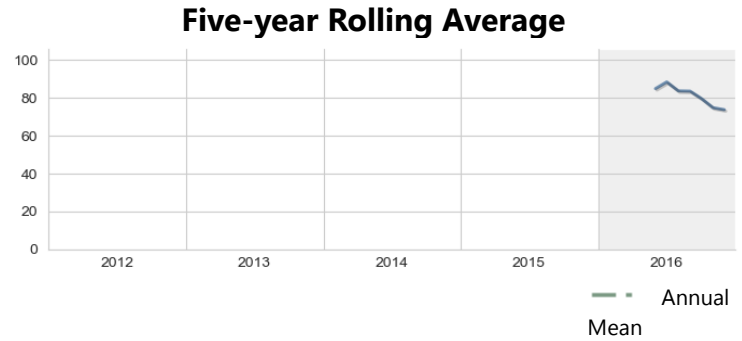
Specific Conductance

Units: umho	Year 2016	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 2016	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.

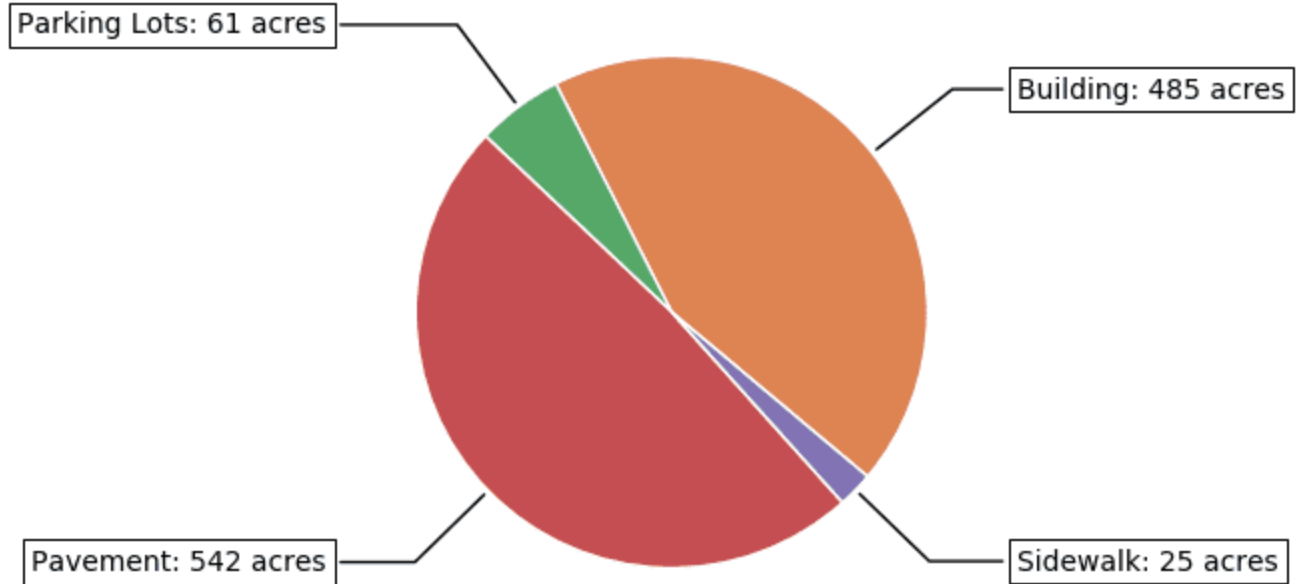


2% of the land area within the **Cow Pen Slough Basin** is covered by impervious

surfaces

2014 Impervious Surface Coverage by Type

in acres, within the Cow Pen Slough Basin


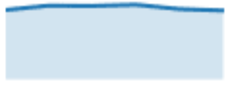








Land Use / Land Cover

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

2016 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

