Matheny Creek Condition Report for 2011

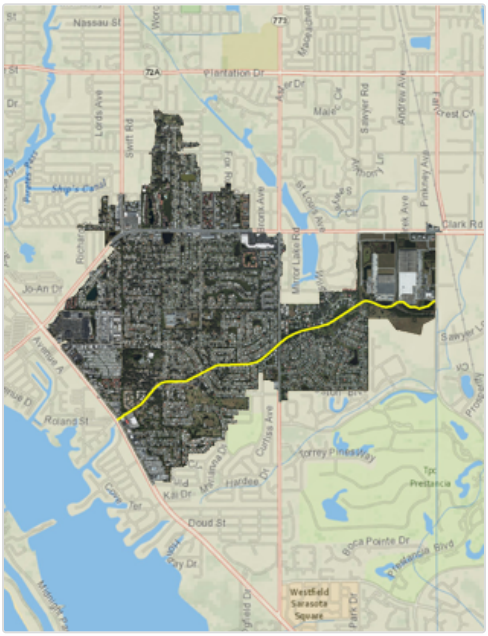
PASS

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**.

Matheny Creek



Size: 1,724 acres
Location: Central Sarasota County
Discharges into: Little Sarasota Bay

Drainage from the Matheny Creek Basin is provided by two major man-made canals referenced herein as the Matheny Creek Main, which extends easterly from U.S. 41 to the headwaters of the basin and the Denham Acres Lateral which extends north from U.S. Highway 41 to Clark Road. Two water level control structures (MC-1 and MC-2) are located in the Matheny Creek Main and one water level control structure (DL-1) is located in the Denham Acres Lateral. A network of other laterals, branches and feeder ditches in the basin conduct stormwater into these two primary drainage systems. These other man-made ditches are the Breakwater Lateral, the Coral Lakes Branch, the Gulf Gate Branch, the Williamsburg Branch and the Shadow Lakes Feeder. *For basin details see:* ***Matheny Creek Basin Master Plan (1994)***

Water Chemistry Ratings | Freshwater Portion of the Creek

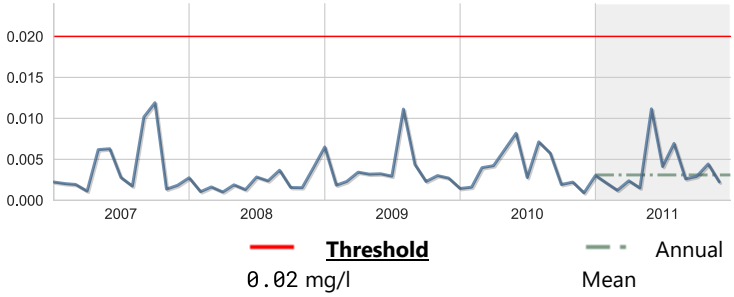
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of nitrogen, phosphorus, and chlorophyll *a*, and a minimum allowable concentration of dissolved oxygen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

Chl-a Chlorophyll a

Score: Pass

Units: mg/l	Year 2011	Historical period of record
High	0.021	0.056
Mean	0.0031	0.0027
Low	0.0011	0.0006
No. of Samples	72	242

Five-year Rolling Average

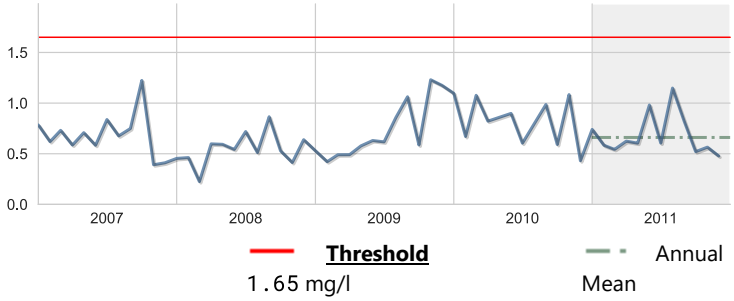


N Nitrogen, Total

Score: Pass

Units: mg/l	Year 2011	Historical period of record
High	1.18	2.99
Mean	0.6608	0.7094
Low	0.446	0.211
No. of Samples	24	150

Five-year Rolling Average

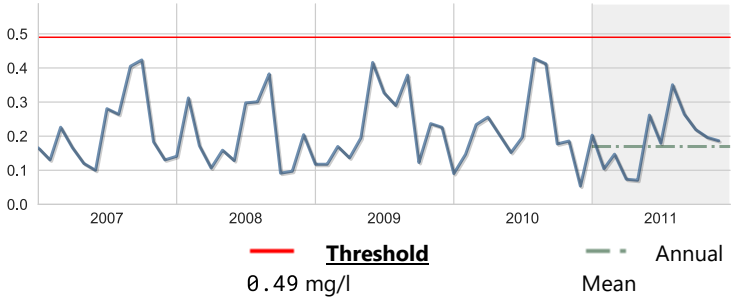


P Phosphorus, Total

Score: Pass

Units: mg/l	Year 2011	Historical period of record
High	0.373	1.60
Mean	0.1697	0.1857
Low	0.041	0.041
No. of Samples	72	246

Five-year Rolling Average



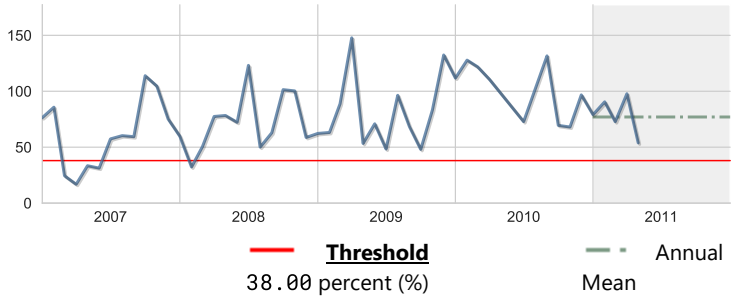
DO Dissolved Oxygen Saturation

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

Score: Pass

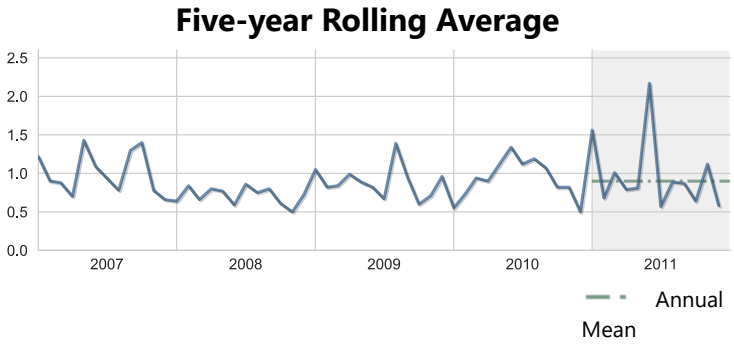
Units: percent (%)	Year 2011	Historical period of record
High	134.60	179.10
Mean	77.0	77.11
Low	47.50	4.97
No. of Samples	72	292

Five-year Rolling Average



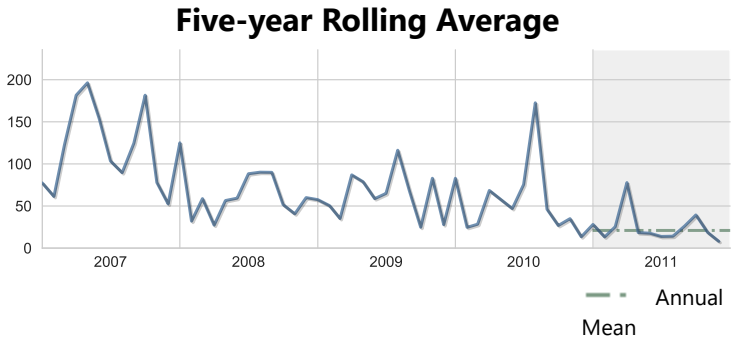
BOD, Biochemical oxygen demand

Units: mg/l	Year 2011	Historical period of record
High	2.86	3.35
Mean	0.9	0.91
Low	0.50	0.50
No. of Samples	72	224



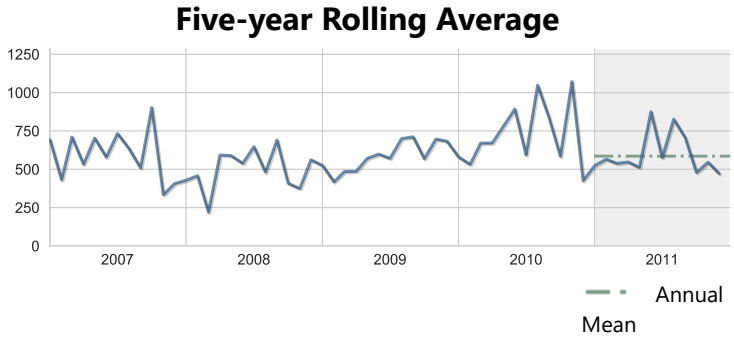
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2011	Historical period of record
High	83.00	379.00
Mean	20.98	42.52
Low	8.00	8.00
No. of Samples	72	246



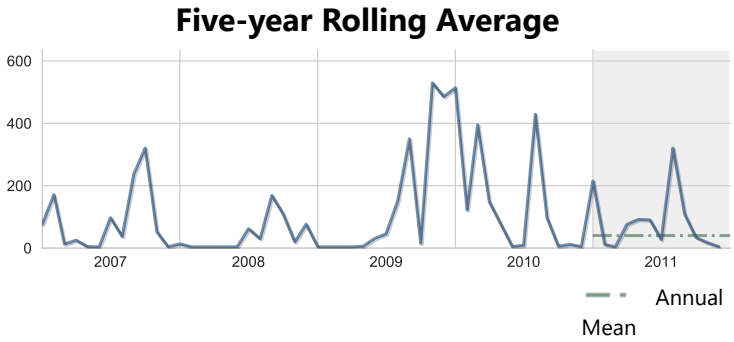
Nitrogen, Kjeldahl

Units: ug/l	Year 2011	Historical period of record
High	1080.00	2700.00
Mean	585.71	622.48
Low	440.00	207.00
No. of Samples	72	246



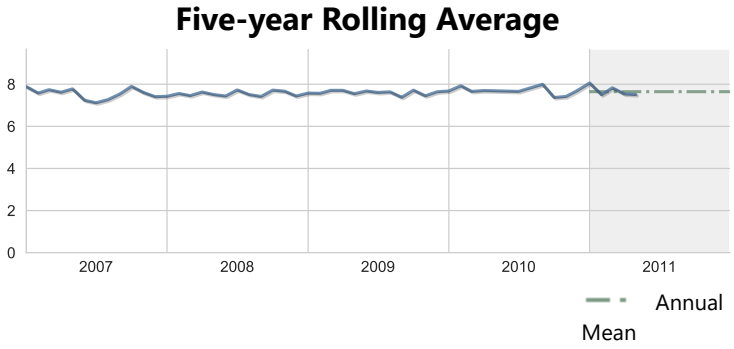
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2011	Historical period of record
High	351.00	634.00
Mean	40.23	41.31
Low	4.00	4.00
No. of Samples	72	246



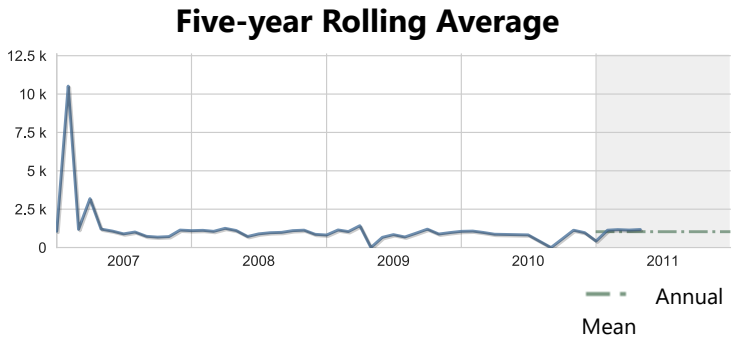
pH

Units: None	Year 2011	Historical period of record
High	8.06	8.07
Mean	7.65	7.6
Low	7.39	6.46
No. of Samples	27	188



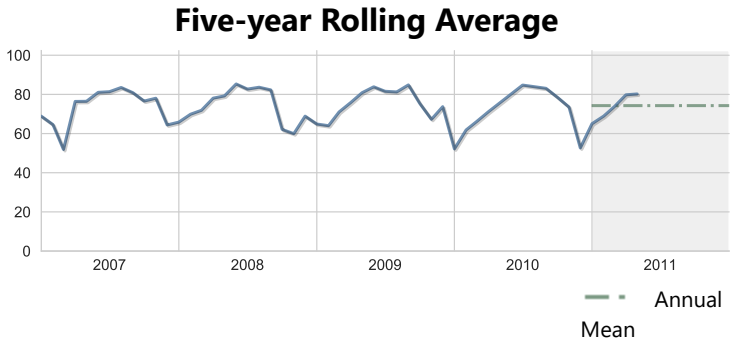
Specific conductance

Units: umho	Year 2011	Historical period of record
High	1401.00	19300.00
Mean	1032.9	645.96
Low	424.00	0.667
No. of Samples	27	192



Temperature, water

Units: deg F	Year 2011	Historical period of record
High	81.77	86.936
Mean	74.27	72.46
Low	65.03	36.05
No. of Samples	18	164



Water Chemistry Ratings | Tidal Portion of the Creek

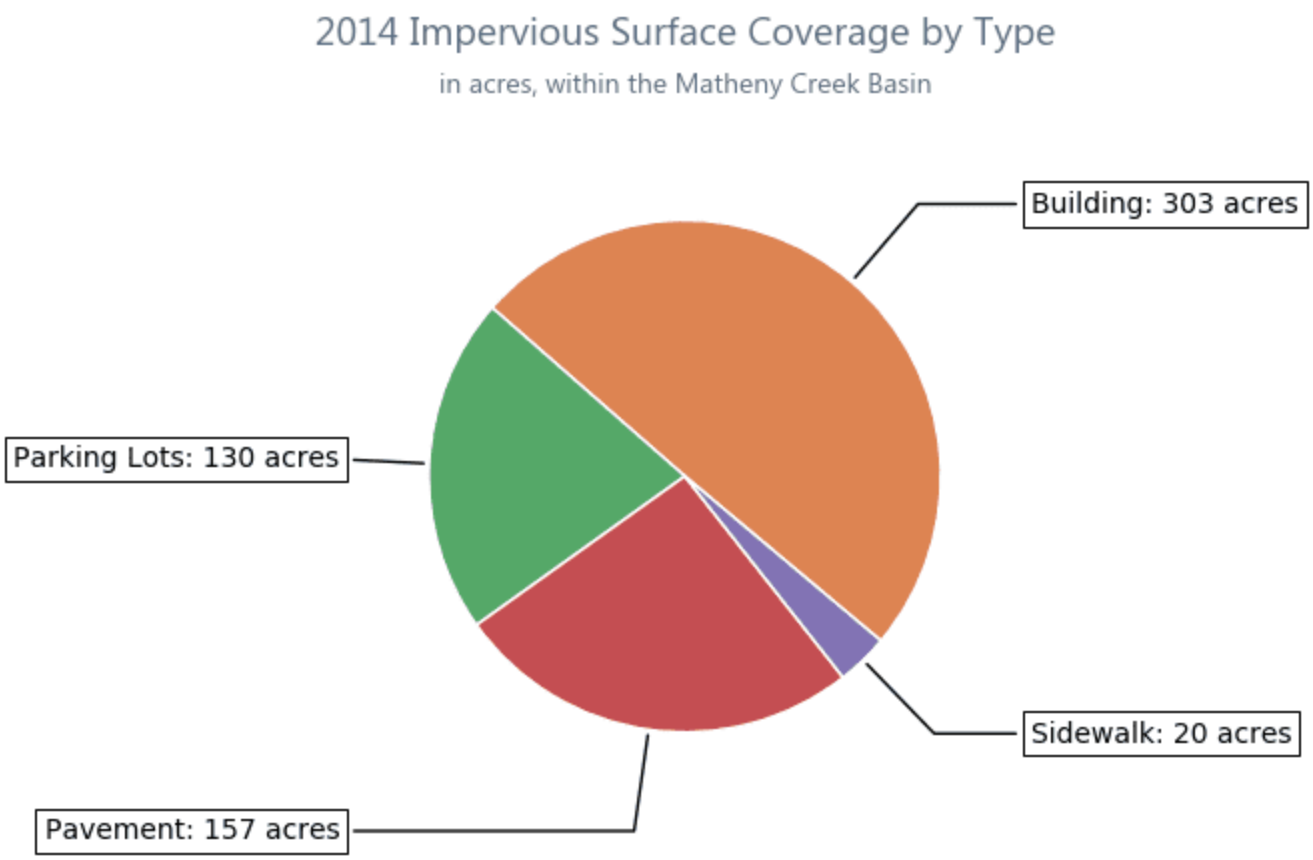
Creek Conditions Ratings are based on comparing nitrogen, phosphorus, chlorophyll and dissolved oxygen to water quality guidelines or regulations. Florida law defines a maximum allowable concentration of chlorophyll *a* and a minimum allowable concentration of dissolved oxygen in these streams. Florida has no regulatory thresholds for nitrogen or phosphorus in tidal creeks so trends are used to rate the creeks.

Water quality data are not available for the tidal portion of this creek.

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.

35% of the land area within the **Matheny 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 Matheny Creek Basin

Land Use Classification	1990	1995	1999	2005	2011	2014	2017	Trend
Urban & Built-up	1,566 90.9%	1,569 91.1%	1,555 90.2%	1,587 92%	1,588 92.1%	1,573 91.2%	1,594 92.5%	
Agriculture	0 0%	0 0%	0 0%	0 0%	0 0%	19 1.1%	0 0%	
Rangeland	57 3.3%	34 2%	34 2%	15 0.9%	15 0.9%	11 0.6%	9 0.5%	
Upland Forests	15 0.9%	18 1.1%	24 1.4%	3 0.2%	3 0.2%	3 0.2%	3 0.2%	
Water	36 2.1%	53 3.1%	61 3.5%	56 3.3%	55 3.2%	55 3.2%	57 3.3%	
Wetlands	16 0.9%	13 0.8%	10 0.6%	14 0.8%	14 0.8%	14 0.8%	14 0.8%	
Transportation and Utilities	33 1.9%	36 2.1%	40 2.3%	49 2.9%	49 2.9%	49 2.9%	46 2.7%	

2017 Land Use / Land Cover for Matheny Creek Basin

as a percentage of land area for this basin