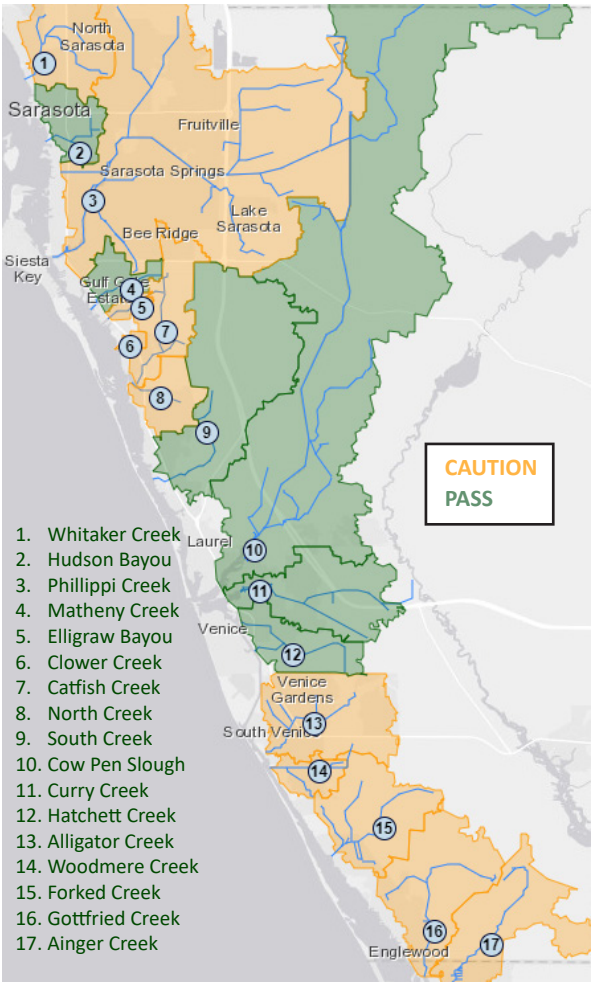
CREEK CONDITIONS

CHARTING CHANGES IN COASTAL WATER QUALITY

Sarasota's coastal creeks flow through neighborhoods and down to its bays. They act as conduits for surface water, carrying rainfall downstream and depositing it in estuaries, along with nutrients, pollutants and organic matter.
You can find the Creek Conditions pages at ***www.sarasota.wateratlas.usf.edu/creek-conditions/***

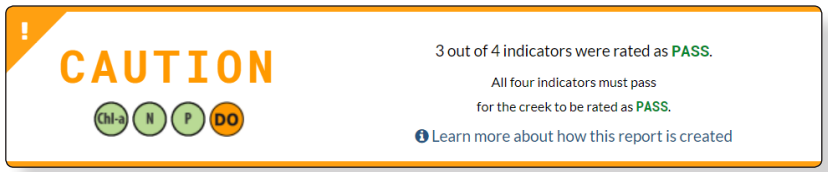
Creek Locations & Water Quality Summary

- Seventeen coastal creeks have annual water quality profiles in the Creek Conditions section of the Atlas.
- The Creek Conditions home page summarizes water quality for each creek and has a map which shows its watershed and location:



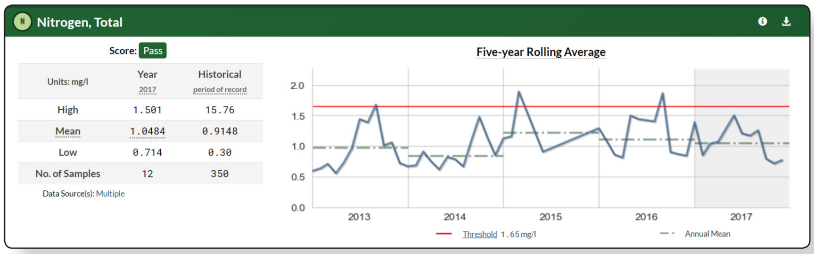
Other Water Quality Measures:

- Water Temperature – Varies with season
- Salinity – Varies with rainfall, location (upstream/ downstream) and tide stage
- Light Attenuation – Indicator of water clarity
- Turbidity – Measures suspended particles in water
- *E. coli* – Bacteria often associated with the presence of human or animal waste
- Ammonia – A form of nitrogen toxic to marine life
- pH – Measures water's acidity/alkalinity
- Conductivity – Measures ion concentration/salinity
- Biochemical Oxygen Demand – Indicates the amount of organic matter present



How Water Quality Ratings Are Assigned

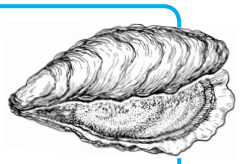
- Four water quality measures are used to rate each creek, each on a pass/fail basis: Chlorophyll *a* (Chl a), total nitrogen (TN), total phosphorus (TP), and dissolved oxygen (DO)
- All four measures in both freshwater and tidal segments must earn "Pass" ratings in order for the creek as a whole to receive that rating.
- Different criteria are used for freshwater and tidal segments.
- Freshwater: To pass, levels of all four scored water quality measures must not exceed established thresholds.
- Tidal: To pass, Chl a and DO levels must not exceed thresholds, and a trend analysis of TN and TP concentrations must not show an increasing trend for either.



How is Water Quality Changing Over Time?

- Each creek has an annual water quality summary that is divided into freshwater (upstream) and tidal (marine/downstream) segments with summaries of water quality for each segment.
- The trend graphs for all water quality measures except rainfall plot the geometric mean of all samples collected during each month, a mean which is less sensitive to "outlier" values.
- Bar graphs are used for rainfall. They show monthly cumulative rainfall which is an average of the data from all rainfall sensors in the major watershed of the creek.

OYSTERS: WATER QUALITY SENTINELS



Examining the chemical composition of water is one way to judge whether it is polluted. Another is to examine the health and abundance of the aquatic life that lives in it. Eastern Oysters prefer shallow, brackish (slightly salty) water with good clarity and water quality. Sarasota County has established a monitoring program to track their populations as a biological indicator. The number of oysters present and the percentage of live oysters is reported on the Creek Conditions pages along with water chemistry.