

Holly Abeels, Florida Sea Grant Agent

FS# 7108SG

## Water Quality Monitoring in the Indian River Lagoon

Water quality has been a hot topic in our area, especially with regard to the Indian River Lagoon, for many years now. We often hear more about this term when news and events bring up various subjects such as algae blooms, seagrass loss, oyster restoration, fish kills, fertilizer bans, septic tanks, and freshwater discharges from Lake Okeechobee. More and more people are talking about water quality and want to learn more about the current water conditions in the Indian River Lagoon. Fortunately, there are actually many agencies with websites that show water quality conditions in our Lagoon. Additionally, many of these agencies have remote water quality stations that collect samples of water at various intervals during the day, and display real time data for what's happening in the water. All you have to know is where to look.

The most common parameters that are taken at all water quality stations or monitoring sites are temperature, salinity, and dissolved oxygen. Stations may also collect data on specific conductance, nitrates, nitrites, chlorophyll, turbidity, water color, phosphates, wind speed, pH, precipitation, gage height, and many others. The list depends mainly on which parameters matter most to the organization collecting the data, and cost of the device that can collect the desired information. Not all sites or stations have the same parameters, but most try to collect as much data as they can within the budget and personnel they have.

Below is a list of websites where you can find water quality data online. It's important to note that some agencies have automated, real-time water quality stations where data is collected remotely via a device, and is then downloaded or transmitted. These are generally more expensive systems. Some agencies sample locations at various intervals (usually monthly), so data may not be timely, depending on how long it takes to analyze the sample and input the data. All monitoring systems or sampling types generally have some type of Quality Assurance/Quality Control (QA/QC) system set up to ensure accurate data. Take some time looking at each site and the types of data they are providing. You can definitely learn a lot about water quality monitoring in our area just by learning more about these programs.

*USGS National Water Information System*

[http://waterdata.usgs.gov/nwis/dv?referred\\_module=sw&site\\_no=02248380](http://waterdata.usgs.gov/nwis/dv?referred_module=sw&site_no=02248380)

This website features data for Haulover Canal near Mims, FL. They take daily measurements of 6 parameters. You can see what the current conditions are at this site at any time. They also have data for a couple of our local streams, namely Crane Creek and Turkey



## [Water Quality Monitoring in the IRL]

Creek. You can view all their monitoring stations and check out the data on this map:

<http://maps.waterdata.usgs.gov/mapper/index.html>.

*ORCA: Ocean Research & Conservation Association*

<http://www.teamorca.org/cfiles/kilroy.cfm>

ORCA uses Kilroy™ deployed at several sites in the Indian River Lagoon to monitor water speed, direction, temperature, depth, and much more. Their stations provide real-time, automated water quality monitoring over an extended period of time. You can view the sites where Kilroy™ are deployed here: <http://www.teamorca.org/orca/kilroy-map.cfm>, and view the live data here: <http://api.kilroydata.org/public/>. You can also plot historical data over time to see how the parameters have changed. You can see trends or even plot data during a period of time when an event occurred, such as a fish kill, to see what the water quality was like during the time of the event.



*FAU Harbor Branch Indian River Lagoon Observatory*

<http://fau.loboviz.com/>

Harbor Branch has a network of land/ocean biogeochemical observatory (LOBO) units and weather sensors that provide real-time, automated water quality data for nine sites in the Indian River Lagoon and St. Lucie Estuary. You can view current and historical data for all of their sites and choose from the 11 water quality parameters and the 8 weather parameters that they measure.



*St Johns River Water Management District (SJRWMD)*

<http://sjrwmd.com/watershedfacts/stationscounty.html>

The SJRWMD has 2 sites they monitor in Brevard county, one is located in the Indian River and the other is located in Crane Creek. You can view data for both of these sites by clicking on their name at the website listed above. Each page talks more about the site itself, and water quality data that you can download may be found at the bottom of the page. Both sites have been monitored since 1996. These sites are sampled either every other month (Indian River site) or monthly (Crane Creek site).



*SJRWMD Continuous Sensor-based Water Quality Data*

<http://webapub.sjrwmd.com/agws10/hdswq/>

The SJRWMD also has several continuous water based sensors that collect data at several sites in the Lagoon. You can view both current and archived data. Simply choose the water body of interest, and the data type, then click on the dot representing the station site to download the data.

[Water Quality Monitoring in the IRL]

*Florida Oceanographic Society*

[https://www.floridaocean.org/p/21/water-quality#.V4\\_OjbgrKM8](https://www.floridaocean.org/p/21/water-quality#.V4_OjbgrKM8)

You can view water quality data that has been collected by Florida Oceanographic Society volunteers over the years. Once a week volunteers test the water quality in the St Lucie River Estuary for 5 parameters, and they post the information each week on Thursday. Their reports also give a grade to each area of the estuary so you can visually see how good or bad the water quality is in a given area.



*US Environmental Protection Agency (EPA) STORET and WQX*

<https://www.epa.gov/waterdata/storage-and-retrieval-and-water-quality-exchange>

State EPA agencies store their water quality data in STORET (STOrage and RETrieval) and WQX (Water Quality eXchange). Since it's a national data storage site it takes a bit of digging to get information for Florida, but if you want to see data that is collected by FL Department of Environmental Protection then this is the place to look. They actually have quite a lot of data for the Indian River Lagoon.

*Water-CAT: The Florida Water Resource Monitoring Catalog*

<http://catalog.wateratlas.usf.edu/stations/>

This website contains metadata for thousands of monitoring stations across Florida. You can filter the data to search only those sites in Brevard county, and estuary stations alone. Brevard county has 811 data points that you can view. Once you search for a particular site or type of sites, you can click on the station name and find out more about where the site is located; if it's still active; which project is monitoring this site; how often it is monitored; and the parameters that are collected. Some sites have data you can view, but others don't. You can find out more information about this database at this website:

<http://www.dep.state.fl.us/water/monitoring/council/catalog-wg.htm>.