

PROJECT: QUARTERLY CANALS

<p>1. DESCRIPTION: Quarterly Canals and ICW Monitoring</p>
<p>2. PURPOSE/GOALS: To establish baseline water quality conditions in the primary water bodies of the eastern, urban core of Broward County. The network primarily focuses on monitoring the South Florida Water Management District’s (SFWMD) primary freshwater canals, remnant natural estuarine rivers (e.g., New River), and estuarine Intracoastal Waterway (ICW). Currently, the waters monitored with this program are considered Class III waters within the state of Florida that means their current designated use is for “Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife” (Florida Administrative Code 62-302 http://www.dep.state.fl.us/water/wqssp/classes.htm). Thus, this project allows for a long term understanding of a critical water resource in eastern Broward County. In addition, it provides important information to understand the potential influence of urban systems on downstream waterbodies (Everglades and Atlantic Ocean) within the South Florida watershed.</p>
<p>3. HISTORICAL UPDATE: The long-term water quality monitoring of the Broward County canals started since 1972.</p>
<p>USE OF DATA:</p> <ul style="list-style-type: none">• Data is used internally to track the long-term water quality of the county’s major surface water features. In addition, any significant departures from long term ambient condition may be identified. Special studies and restoration efforts have been developed based directly or indirectly on the results of this project. Some of the current projects include the algal bloom monitoring, bacteria monitoring and the DNA source tracking. In addition, to understand potential influence of regulatory and policy decisions on surface water quality and by NPDES MS4 to understand ambient quality of major surface water and potential influence of stormwater discharges on surface water quality.• Data is used externally by the Florida Department of Environmental Protection (FDEP) and the United States Environmental Protection Agency (USEPA) as part of their respective Total Maximum Daily Load (TMDL) programs. This represents perhaps the most important external use of the data, as the network provides, almost exclusively, the only ambient water quality data in eastern Broward County.• Data requested and used by universities and private consultants in various projects from thesis work to permit applications in various municipalities.
<p>5. RELEVANCE: This project is very relevant to EMED’s mission as it provides baseline information on the county’s critical water resources. Data used in the TMDL program is critical for the successful implementation of the Clean Water Act (Federal) and the Impaired Waters Rule (IWR, State of Florida) as well as understanding compliance patterns with Broward County’s Chapter 27 water quality standards.</p>
<p>6. EFFECTIVENESS: As the division is in its 40+ years of implementation, the water quality network is run very optimally and effectively in its current quarterly timeframe. Occasional changes in operation have been made based on length of work days and other projects (e.g., SFWMD Everglades sampling). Currently, the network is very effective in providing complete coverage of eastern Broward County Waterbody Identification areas (WBIDS) outlined by the FDEP for the IWR implementation.</p>

7. SAMPLE SITES: The number of sampling sites has ranged over the years from 44 to over 90 sites countywide. Currently 45 sites constitute Ambient Surface Water Quality Network. Note some of the latitude and longitude information provided below was obtained from software programs such as Google Earth. The EMED has all former site information in an in-house database.

An additional focus has been added to this project to reflect a more accurate state of Broward County's bodies of water. Some sites deemed not representative of the real surface water condition in our county (sites where debris accumulate at canal gates) were removed and replaced with ones where at least there is no flow impediment close by. When new locations are >200 meters from the original location, new site numbers are designated.

SAMPLING CONSIDERATIONS: Sampling may be adversely affected by inclement weather such as rain.

PARAMETERS: Temperature, pH, Conductivity, Salinity, and Dissolved Oxygen, Nutrients, Turbidity, Chlorophyll a, Copper.

8. FREQUENCY/DURATION/SCHEDULE: Current sampling (and basically since 1989) has been performed on a quarterly basis with an attempt to gather two wet season and two dry season samples within the traditional quarterly calendar. There is no attempt to schedule sampling based on weather, tides, or other factors (e.g., canal maintenance) thus some data may be the result of unique environmental conditions.

9. DELIVERABLES: Data is entered into WIN/previously STORET. In addition, an Excel database is maintained on the G drive for internal use of data. Data is reported via technical reports as well as the FDEP Basin reports.

10. SPECIAL EQUIPMENT/SUPPLIES CONSIDERATIONS: All samples are collected at the sub-surface (approximately 0.5 meters). Sampling is performed with Niskin samplers on land runs and by hand on ICW boat runs. A YSI datasonde is used for field parameters and pre- and post-calibrations are performed on the day the sampling run is performed.

11. UNIQUE QA/QC REQUIREMENTS: Field duplicate necessary for each run as well as a Field Clean Equipment Blank. In addition, chlorophyll a and orthophosphate require one additional replicate per run.

12. FUNDING/REVENUE: Broward County General Fund