

Jones Creek Water Quality Investigation Update

Loxahatchee River District – April 16, 2018

The Loxahatchee River District (LRD), in partnership with the Town of Jupiter and other agencies and universities, are working to improve our understanding of the causes of the chronically high bacteria concentrations and high turbidity events (poor water clarity or milky appearance) in Jones Creek. Some of you have been keeping us informed of changes in the water clarity in Jones Creek and we appreciate your assistance.

With the help of Dr. Harwood of USF and Dr. Solo-Gabriele from UM (top researchers in the areas of fecal indicator bacteria in recreational waters), and review of the scientific literature, the evidence suggests that bacteria are thriving in the extensive leaf litter and vegetation debris in the poorly flushed, choked waterway. In addition, because the waterway is so overgrown, there is little sunlight reaching the water to provide any UV treatment. Therefore, we believe the biggest, lowest hanging fruit of opportunity for improvement (ie. reducing bacteria concentrations) is to remove the exotic vegetation (such as schefflera and Brazilian pepper) and trim back the mangroves, which would open the waterway for cleanup efforts (raking out the leaf debris) and provide sunlight exposure for UV treatment. Simply put, it appears the best prospect for improving water quality in Jones Creek is reduction of leaf litter and increased sunlight.

Recently we have been working with water quality experts at the State's Department of Environmental Protection (FDEP) to understand the high turbidity conditions in Jones Creek. FDEP's laboratory has the capability for very specialized analysis that we do not have. During the recent high turbidity event, some of you contacted us and we collected water samples on March 4, 2019 and sent those samples to FDEP's laboratory in Tallahassee. Their analysis is complete, and the following is a summary of DEP's findings and opinion of these results.

1. Moderately high enteric bacteria concentrations 2,000 to 3,000 cells/100 mL – consistent with our previous observations. DEP considers bacteria concentrations of this magnitude a lower level concern.
2. High Total Phosphorus concentrations. Yard fertilizer is a common cause.
3. Molecular tests for human sewage (HF-183 and PMA) show super low concentrations. DEP staff indicates that because the concentrations are so low this is likely indicative of a single, recent discharge of a small amount of human waste – for example a camper drain, homeless person, etc.
4. None of the chemical tracers that are specific to untreated sewage (Acetaminophen, Hydrocodone, Ibuprofen, nor Naproxen) were detected. This confirms that fecal bacteria are not coming from broken sewer infrastructure.
5. Sucralose (the artificial sweetener Splenda) levels were typical for urban streams.

In addition, we sent water samples to a researcher at the USGS that specializes in algae identification and he reports non-toxic algae populations (ie. no microcystis algae)

Unfortunately, the turbidity issue remains a mystery. DEP's recommendation is to keep a careful eye out for anything unusual that may be a potential cause.

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We would like to collect another set of samples for DEP analysis during the next turbidity event – preferably immediately after the water turns into the milky appearance. Any help you can provide with reporting water conditions is greatly appreciated.

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Water Quality Results are available on LRD's website at loxahatcheeriver.org, under the Protecting The River section, then RiverKeeper section. Data visualization and summary tools are provided in the Data Explorer and Stoplight windows. Please contact us if you would like any assistance.