



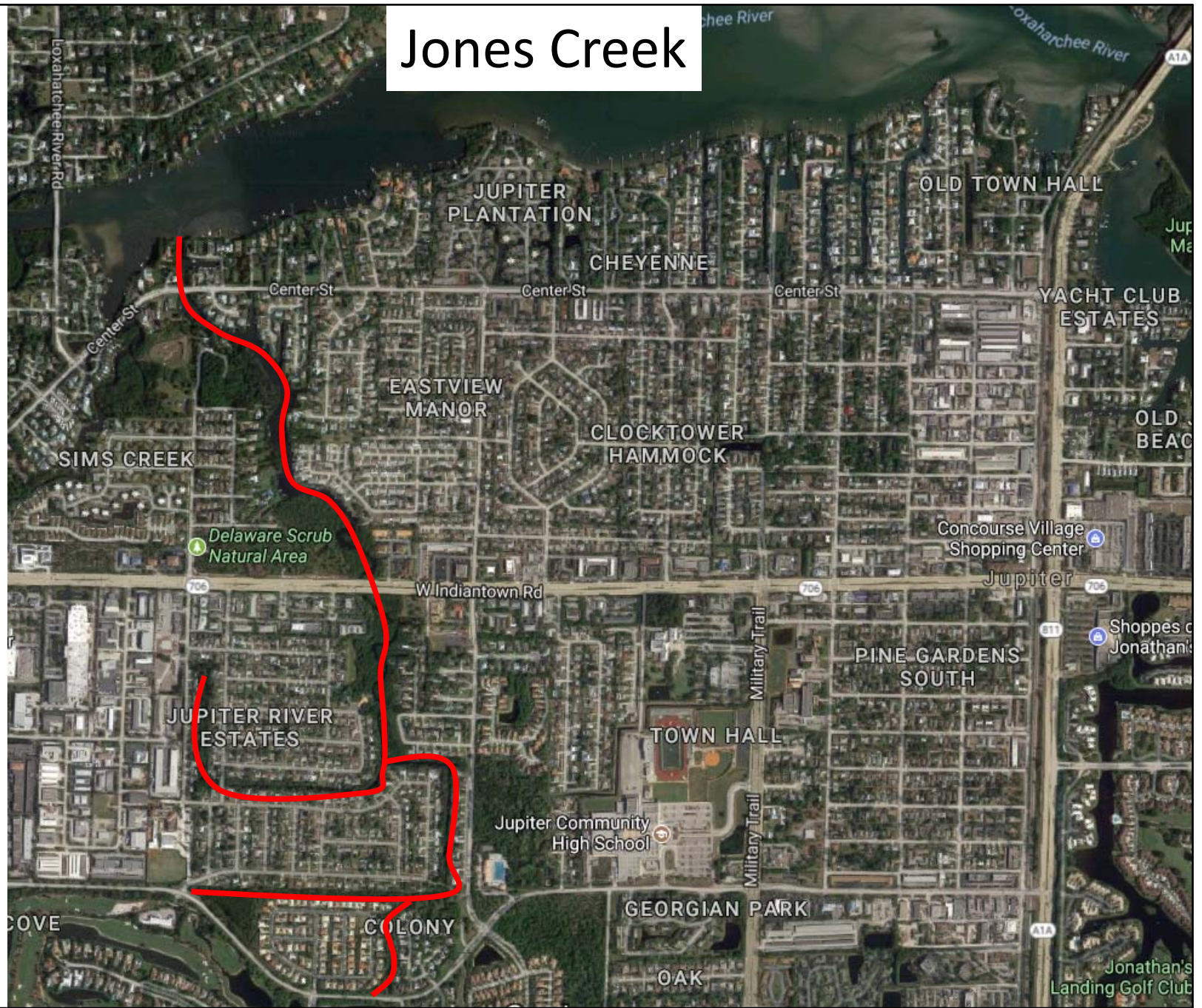
Loxahatchee River Watershed Status Jones Creek

Staff Presentation to the Loxahatchee River District's Governing Board
August 17, 2017



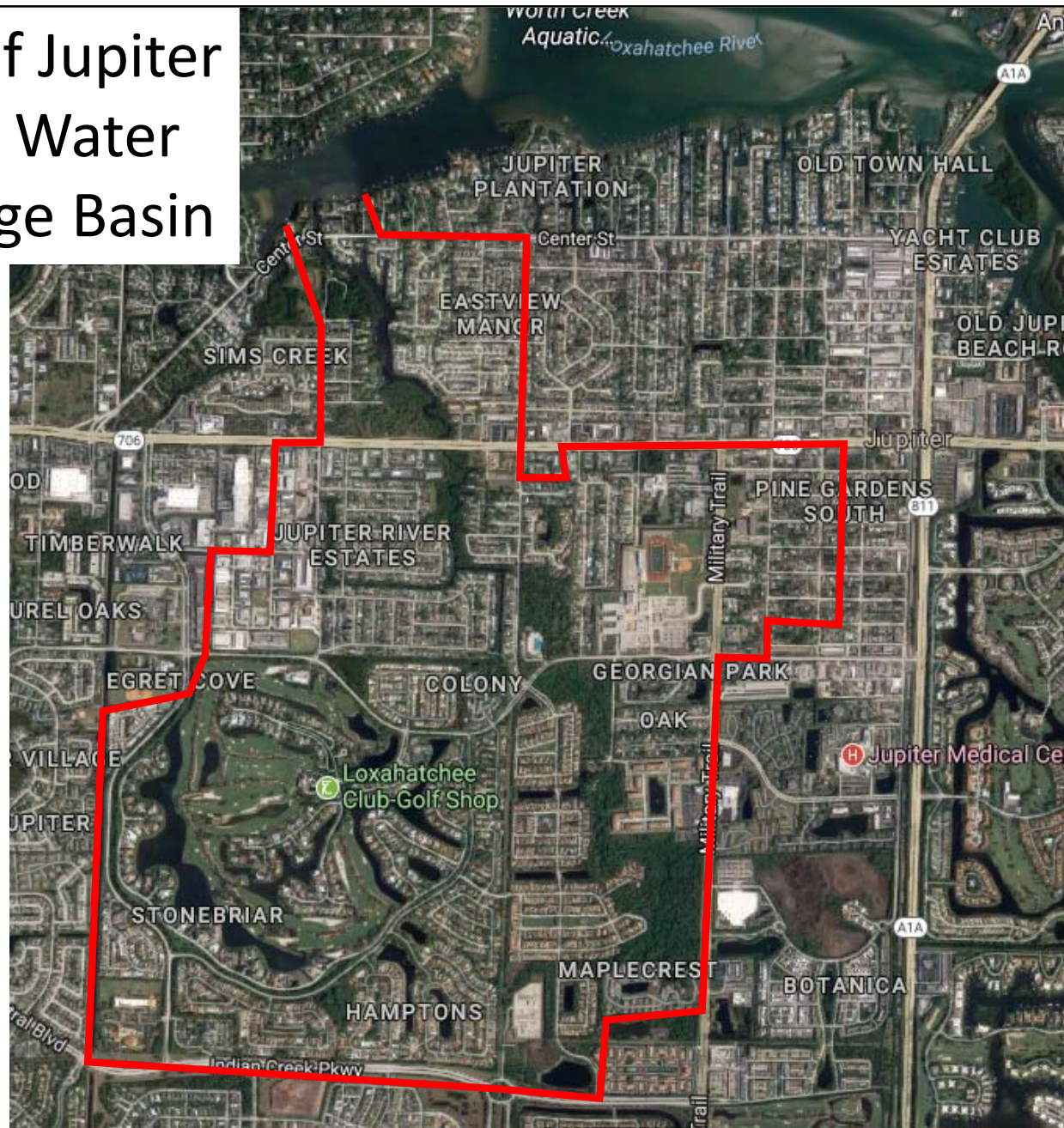
This presentation was provided to the Loxahatchee River District's Governing Board to provide them with an update on the Jones Creek water quality issue and a sewer overflow that affected Jones Creek on July 18, 2017.
Please contact Bud Howard at the Loxahatchee River District (561-747-5700 x108) if you have any questions about this presentation.

Jones Creek



The red line shows the main channels of Jones Creek.

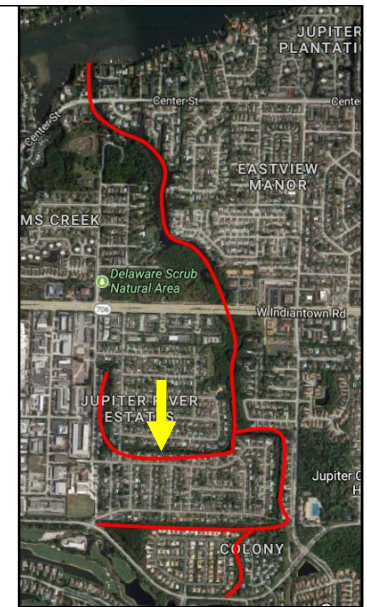
Town of Jupiter Storm Water Drainage Basin



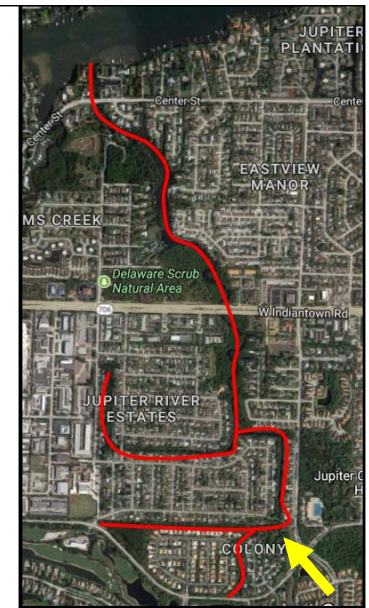
The red line, taken from the Town of Jupiter's Storm Water Master Plan, outlines the Jones Creek drainage basin, which includes River Estates, Loxahatchee Club, Hampton's, Maplewood, Paseos, and the areas in the vicinity of Jupiter High School. The newer residential communities, e.g., Loxahatchee Club, Hampton's, Maplewood, and Paseos, have on-site storm water treatment systems that treat stormwater runoff before it is discharged to Jones Creek.



A virtual tour of Jones Creek - This is looking north, just south of Indiantown Road, behind the dermatology office. While Jones Creek is a heavily urbanized creek, much of the creek is lined with extensive mangroves. This particular location is the site of the Loxahatchee River District's RiverKeeper water quality monitoring site #75 with water quality results dating back to 2007.



Virtual Tour of Jones Creek continued – this is looking east from a property on Sioux St at a very low tide. As you move upstream, Jones Creek narrows considerably and becomes very shallow, especially during low tide.



Virtual Tour of Jones Creek continued – this is looking west down Jones Creek near the North County Aquatic Complex. Here the creek is very narrow, and only navigable by kayak. Note the significant turbidity observed on August 15, 2017.

2012 Water Quality Scoring - Bacteria



Loxahatchee River District
WildPine Laboratory
www.loxahatcheeriver.org

RiverKeeper Water Quality Monitoring Program
Annual Stoplight Maps

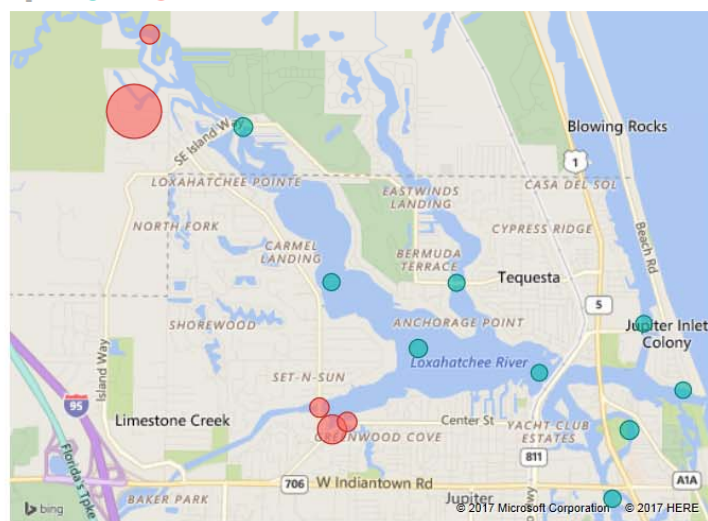
Bacteria - Enterococci and Fecal Coliform
Scored to EPA/DEP Water Quality Criteria

Year

- ☐ 2017
- ☐ 2016
- ☐ 2015
- ☐ 2014
- ☐ 2013
- ☒ 2012
- ☐ 2011
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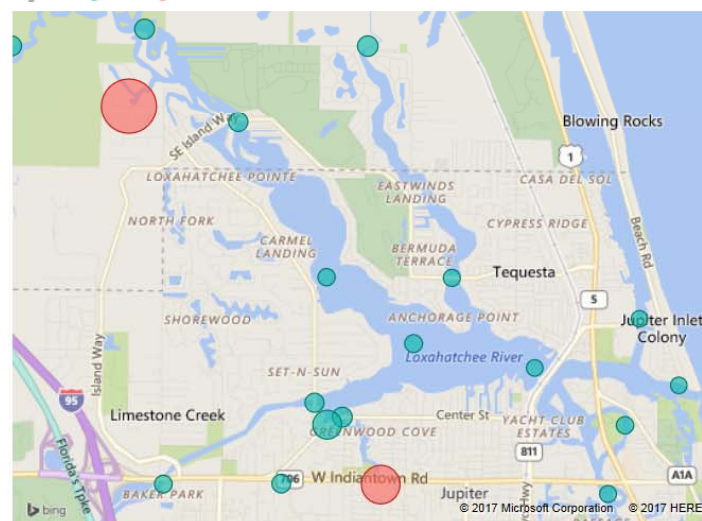
Enterococci Bacteria

EC_Score ● GOOD ● POOR



Fecal Coliform Bacteria

FC_Score ● GOOD ● POOR



The Loxahatchee River District conducts extensive water quality monitoring throughout the Loxahatchee River watershed, including Jones Creek. We take pride in making these data freely available to agencies and the public through an interactive web page (<https://loxahatcheeriver.org/river/river-keeper>). The charts above show a history of poor water quality conditions in Jones Creek. Here in 2012 we see bacteria counts greater than the EPA standard (Red/poor symbol) in Jones Creek and River's Edge (the tributary into the Northwest Fork). The size of the symbol corresponds to the concentration of bacteria (higher concentration = larger symbol). On our water quality website, you can thoroughly explore these data.

2015 Water Quality Scoring - Bacteria



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WildPine Laboratory
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RiverKeeper Water Quality Monitoring Program
Annual Stoplight Maps

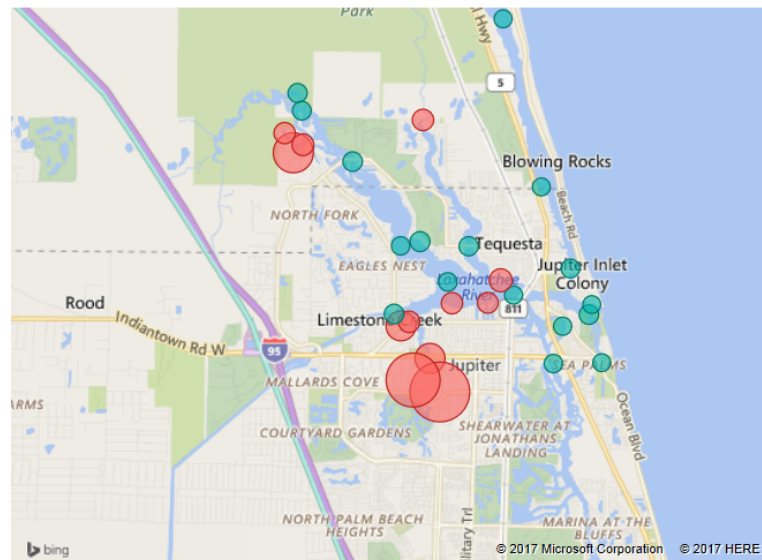
Bacteria - Enterococci and Fecal Coliform
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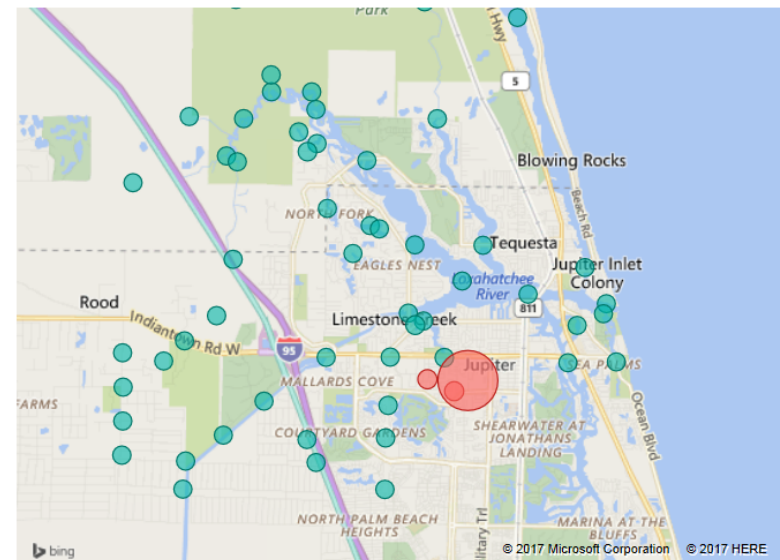
Enterococci Bacteria

EC_Score ● GOOD ● POOR



Fecal Coliform Bacteria

FC_Score ● GOOD ● POOR



In 2015, LRD added water quality monitoring sites within Jones Creek to improve our understanding of the location, frequency and severity of high bacteria counts. The new sites consistently show high bacteria counts, particularly at the upstream monitoring stations.

2016 Water Quality Scoring - Bacteria



Loxahatchee River District
WildPine Laboratory
www.loxahatcheeriver.org

RiverKeeper Water Quality Monitoring Program
Annual Stoplight Maps

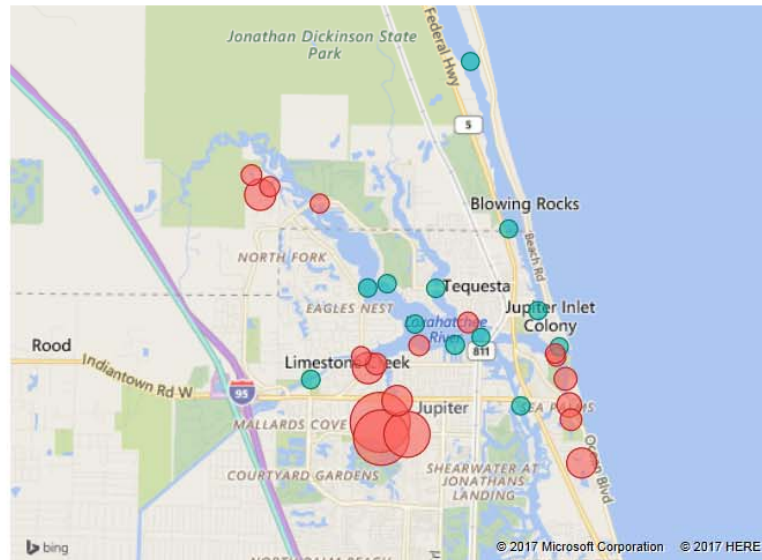
Bacteria - Enterococci and Fecal Coliform
Scored to EPA/DEP Water Quality Criteria

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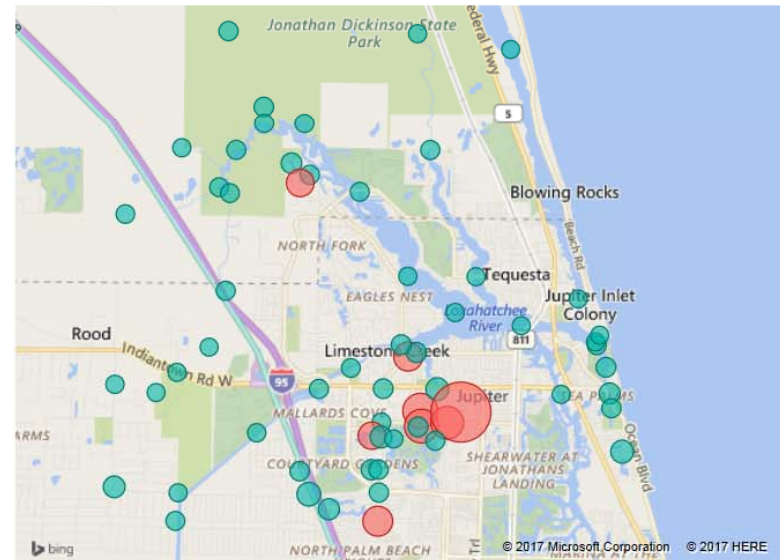
Enterococci Bacteria

EC_Score ● GOOD ● POOR



Fecal Coliform Bacteria

FC_Score ● GOOD ● POOR



In 2016 we sampled even more locations in Jones Creek and far upstream of DuBois creek. Both areas showed high enteric bacteria counts.

2017 Water Quality Scoring - Bacteria



Loxahatchee River District
WildPine Laboratory
www.loxahatcheeriver.org

RiverKeeper Water Quality Monitoring Program
Annual Stoplight Maps

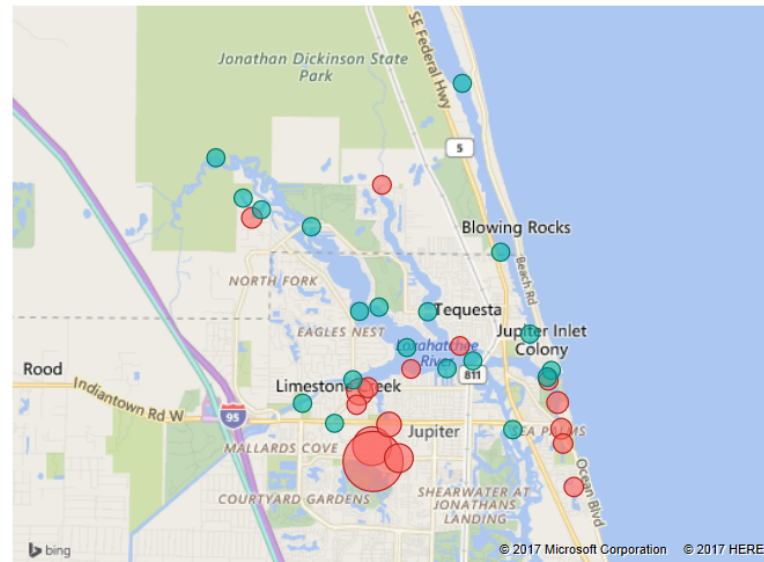
Bacteria - Enterococci and Fecal Coliform
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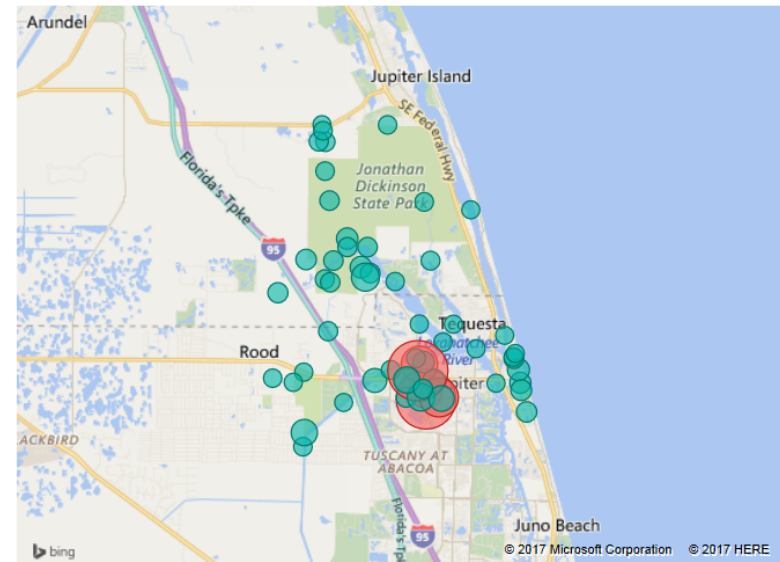
Enterococci Bacteria

EC_Score ● GOOD ● POOR



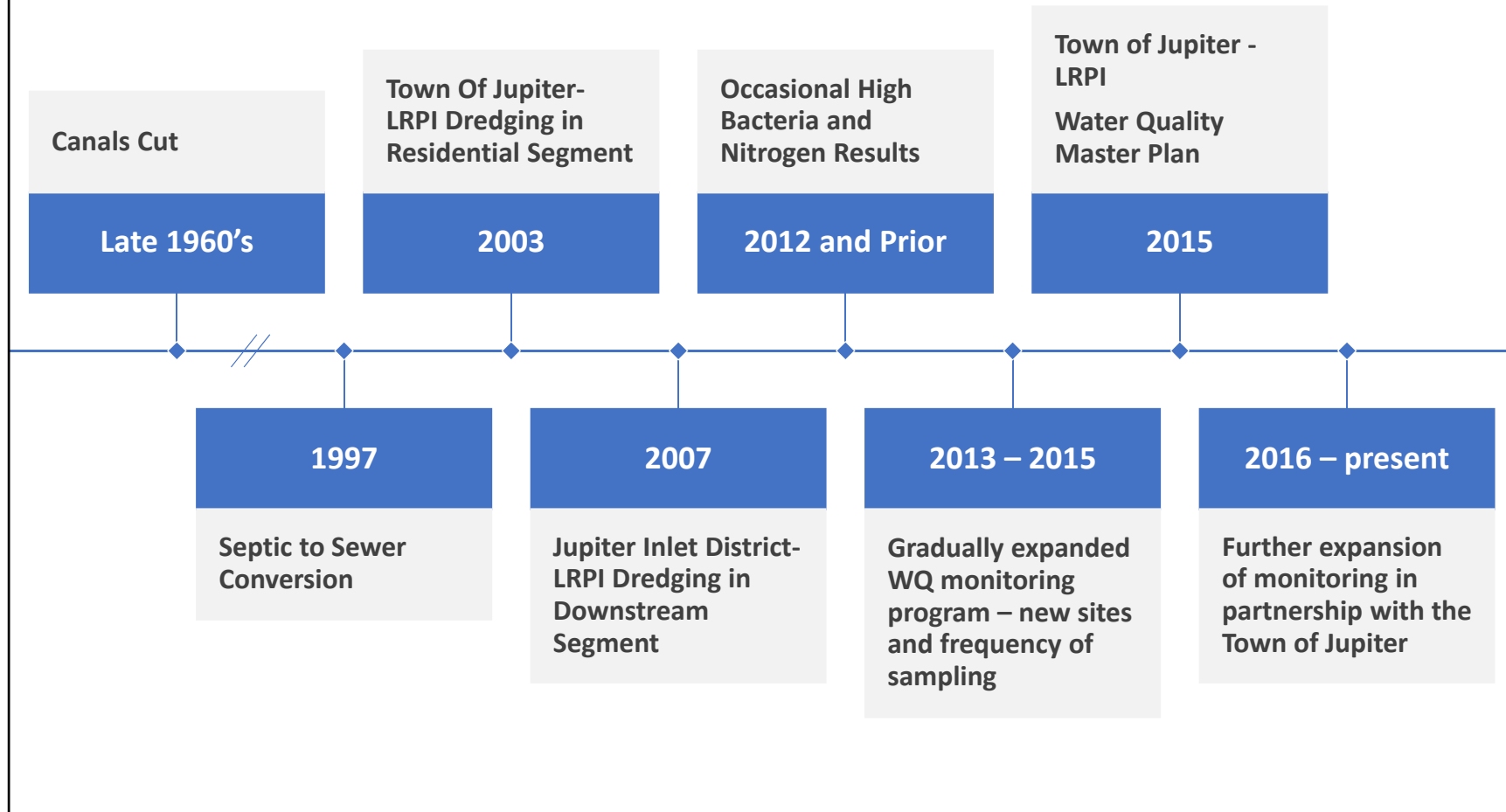
Fecal Coliform Bacteria

FC_Score ● GOOD ● POOR



Thus far in 2017 we continue to find elevated concentrations of enteric bacteria in Jones Creek. Work is ongoing to improve our understanding of the poor water quality patterns (e.g., elevated bacteria counts) across Jones Creek and through time. For example, why are these bacterial concentrations so persistent in Jones Creek?

Jones Creek Timeline



While trying to understand water quality issues in Jones Creek, it is important to look back at the work completed within Jones Creek. Aerial photos suggest Jones Creek was expanded through dredging in the late 1960's. In 1997, LRD completed the septic to sewer conversion for homes in the area. In 2003 and 2007 the Town of Jupiter and Jupiter Inlet District dredged the upstream and downstream portions of Jones Creek. The projects were intended to improve water quality and navigability, and the work was funded in part by the Loxahatchee River Preservation Initiative (LRPI).

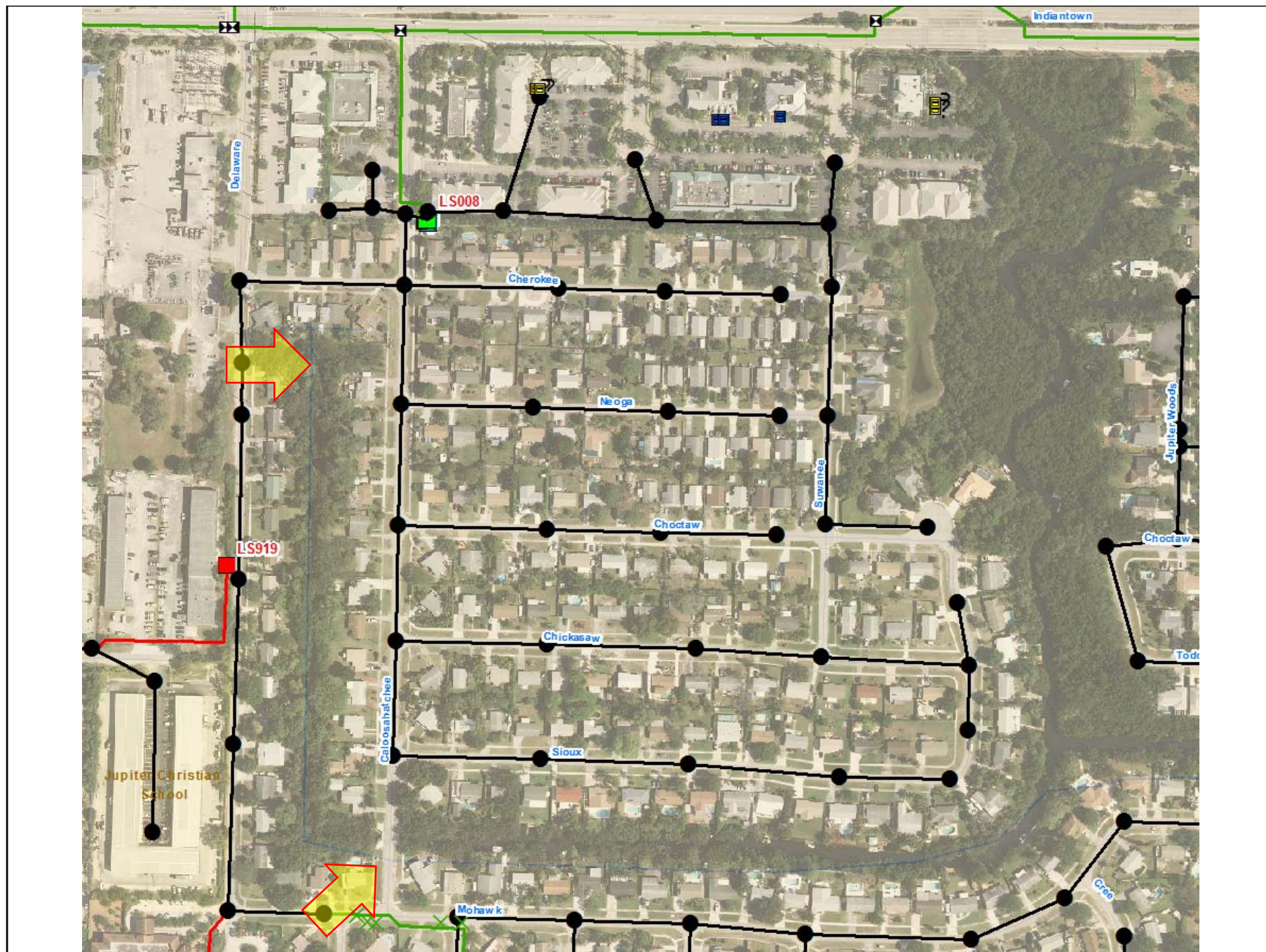
July 18, 2017 Sewer Overflow

- 10:00 pm Reported
- 12:00 am Remedied
- Estimate 2-3,000 gal
- Ground treated with lime (to kill pathogens)
- 8" gravity main blocked with sand and rocks
 - Lateral line damaged by adjacent construction project
- Two manholes overflowed into 2 storm drains
 - Storm drains connect to Jones Creek



Unfortunately, the Loxahatchee River District experienced a sewer overflow that affected Jones Creek the night of July 18, 2017. Upon being notified of the problem, District staff quickly responded, stopped the overflow, and cleaned up the site. The map on the following page shows the particular locations affected by the sewer overflow.

A contractor working on the adjacent construction project appears to have broken a sewer pipe, and that allowed sand and rocks to enter and block the sewer pipe. As wastewater flowed into the system, the blockage caused wastewater to overflow out of two manholes. The wastewater flowed into two storm drains and then entered the upper reaches of Jones Creek.



The yellow arrows indicate the two manholes that overflowed on July 18, 2017, and the locations where the overflow entered Jones Creek.

Monitoring Recovery



- Coordination with FDEP and DOH
- 7 Sites upstream and downstream of Point of Entry
- Fecal coliform and Enterococci bacteria
- 36 hours after SSO 68-82% reduction in bacteria counts
- 60 hours after SSO all sites back to “typical” condition
 - Bacteria Counts Similar or Below 2016 and 2017 data
 - Albeit “Poor” conditions per EPA/DEP WQ standards
 - Fecal 4x the WQ Standard
 - Entero 18x the WQ Standard
- Sampled 8 days from July 19 through July 31
- Remember – looking at “groups” of bacteria
 - Not all are pathogenic to humans
 - High concentrations are found in natural systems (ex. mangrove swamps, sediments, turfgrass, etc.)

The Loxahatchee River District, per our protocols, coordinated remediation of the sewer overflow with the Florida Department of Environmental Protection (FDEP) and the Department of Health (DOH). Sampling following the sewer overflow showed an immediate spike in bacteria counts; however, bacteria concentrations were back to ‘normal’ conditions within 3 days of the sewer overflow. The Loxahatchee River District continued post-overflow sampling longer than usual to ensure no significant changes in bacteria counts.

New Attention to Jones Creek WQ Issues

- FDEP & DOH Requested Signage to Inform Public of chronic high bacteria counts
- Developed Jones Creek web page
 - Loxahatcheeriver.org/jonescreek
- Phone recording
- Signs installed last Thurs (Aug 10)
- Getting calls from Residents
- Seeing website activity
- Renewed interest by community
 - Contacting politicians and others



The July 18, 2017 sewer overflow brought new attention to the chronic poor water quality conditions within Jones Creek. However, this water quality advisory is based on the nearly continuous elevated bacteria counts within Jones Creek. The Loxahatchee River District is committed to understanding this water quality issue, so that remediation of this poor water quality might occur.



Jones Creek

Extensive water quality monitoring by the Town of Jupiter and the Loxahatchee River District has shown consistently high fecal bacteria levels in Jones Creek canals. These bacteria are commonly found in the guts of humans and animals (dogs, raccoons, and even wading birds). These bacteria also naturally occur in certain habitats, like mangrove swamps. The best available information suggests the consistently high bacteria levels in Jones Creek result from a lack of water flow, animal excrement (predominantly dogs, raccoons, and wading birds) entering the waterway, and other natural causes. Importantly, we do NOT believe the elevated bacteria levels are due to human sewage. Nonetheless, the Health Department advises against consuming fish or swimming in waters with high bacteria counts. We urge residents to pick up dog waste and never dump pollutants or refuse, including grass clippings, into natural waterways, canals, or storm drains.

The Town of Jupiter and the Loxahatchee River District are working to better understand the issue, and develop sensible solutions. For more information, see the links below.

To participate in our volunteer water quality monitoring program, please contact the Loxahatchee River District's WildPine Laboratory at 561-747-5700 extension 127.

Interactive Water Quality Maps

User's Guide

Microsoft Power BI

2 of 2

For additional information, please see:

- U.S. Environmental Protection Agency (EPA) Microbial/Recreational Water Quality Criteria
- Florida Department of Health – Florida Healthy Beaches Program
- Town of Jupiter's
 - Jones and Sims Creeks Water Quality Master Plan 2015
 - Completed Water Quality Improvement Project
- Loxahatchee River District's
 - Weekly Bacteria Testing Results
 - RiverKeeper Water Quality Monitoring Program

Search



Photo Gallery



Upcoming Events

LRECD Public Hearing
August 17 @ 6:50 pm - 7:00 pm

LRECD Board Meeting
August 17 @ 7:00 pm - 9:00 pm

LRPI Meeting
August 21 @ 12:00 pm - 2:00 pm

[View More...](#)

Employment Opportunities

- [Collections & Distribution System Operator Trainee](#)
- [WildPine Laboratory Internship](#)
- [River Center Internship](#)

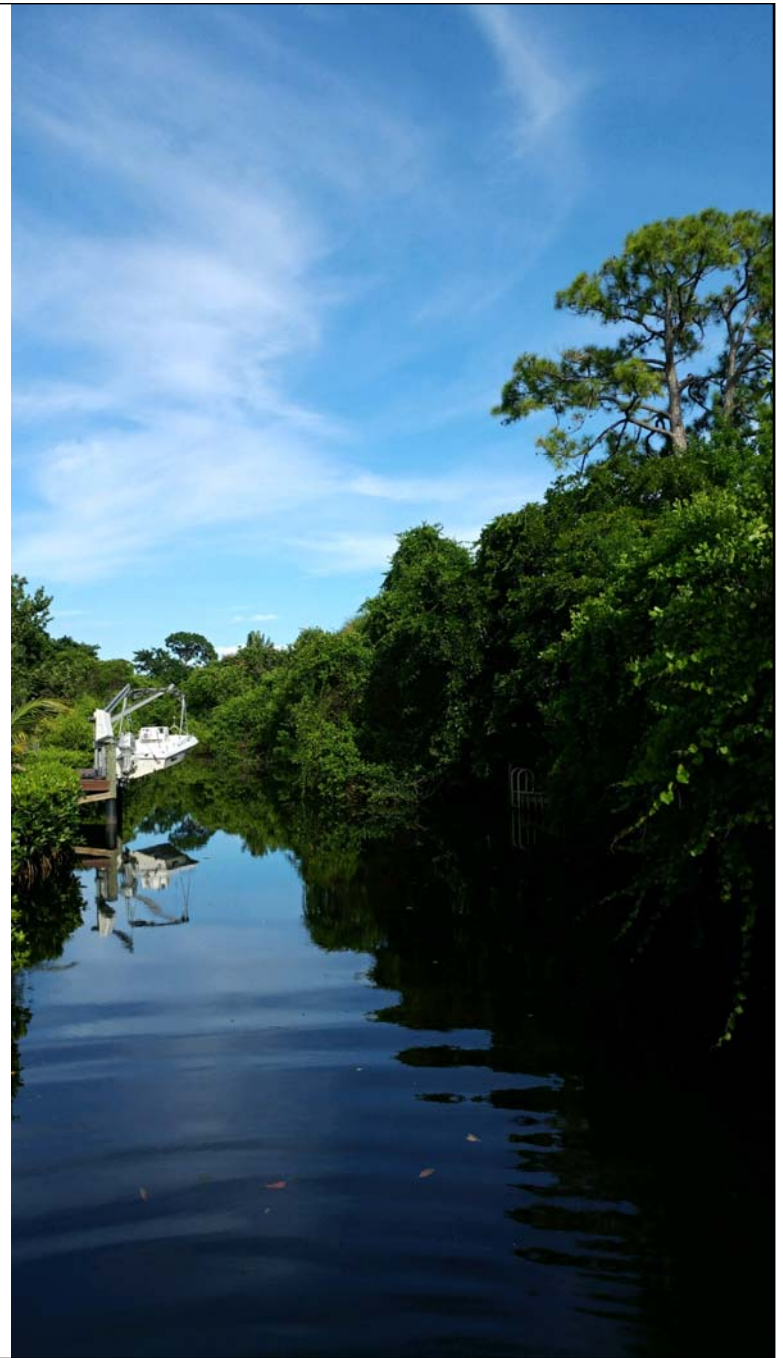
Customer Service

2500 Jupiter Park Dr.
Jupiter, Florida 33458-8962
Phone 561-747-5700 (Option 2)
Fax 561-747-9929
M-F 8:30 a.m. to 5:00 p.m.
info@lrecd.org

The Loxahatchee River District has created a new Jones Creek website that contains general information about the chronic poor water quality conditions in Jones Creek, an interactive map showing the WildPine laboratory's water quality results(results are updated continuously), and important links to other information. Additional information includes water quality criteria from U.S. Environmental Protection Agency and the Department of Health, the Town of Jupiter's Water Quality Master Plan, LRD's water quality monitoring programs, and even historic reports and information regarding Jones Creek.

Moving Forward

- Continue our role as “Information Provider”
- Additional sampling
 - In Partnership with TOJ
 - Re-evaluating results in December
 - (6-months of data from new sites)
- Exploring other types of analyses to gauge human health concerns
 - FDEP Laboratory in Tallahassee
 - Experts at UM and USF
- LRD Exploring Aeration Experiment to improve water quality
- Other opportunities as identified



The Loxahatchee River District intends to continue monitoring water quality conditions and exploring potential solutions for improving water quality in Jones Creek.

Pond Aerator - High Oxygen Transfer Unit



Sample photo of an aeration system the Loxahatchee River District hopes to install and test within Jones Creek. Such a test would include quantifying water quality improvements upstream and downstream of the aeration system. For more information about this presentation or the Loxahatchee River District's efforts within Jones Creek, please contact Bud Howard at the Loxahatchee River District (561-747-5700 x108).