



SPECIAL POINTS OF INTEREST:

- What you need to know about how the wet season affects water quality
- Important notes on optimizing sample collection methods
- LRD launches new bacteria sampling project

INSIDE THIS ISSUE:

Results Summary	1
Results Summary Grades	3
Collection Tips	4
Bacteria Sampling Project	5

Our Mission

Welcome to the *Ebb & Flow*, the Loxahatchee River District's quarterly newsletter for the Volunteer Water Quality Monitoring Program. The purpose of this newsletter is to provide the volunteers with summaries of the results and helpful tips for collecting data as well as information about the Loxahatchee River's water quality, restoration projects, and monitoring activities by the District's WildPine Laboratory.

Water Quality Results Summary: April— June 2015

In this issue of *Ebb & Flow*, we look at the transition from the dry season into the wet season and what this means in terms of water quality in the Loxahatchee River estuary. The rainy season officially began on May 1st and extends through October 31st.

This year the wet season had a slow start. The historic (1991-2014) average rainfall in our area is about 3.2 inches in April, 4.5 inches in May, 7.8 inches in June, and about

6.3 inches in July (Figure 1). In April of this year, we had more than the average amount of rain at 4.8 inches.

However, May and June of 2015 were well below historical averages with 2.8 and 5.0 inches of rain respectively. July's heavier than average rainfall (at 7.9 inches) has helped to make up some of the deficit.

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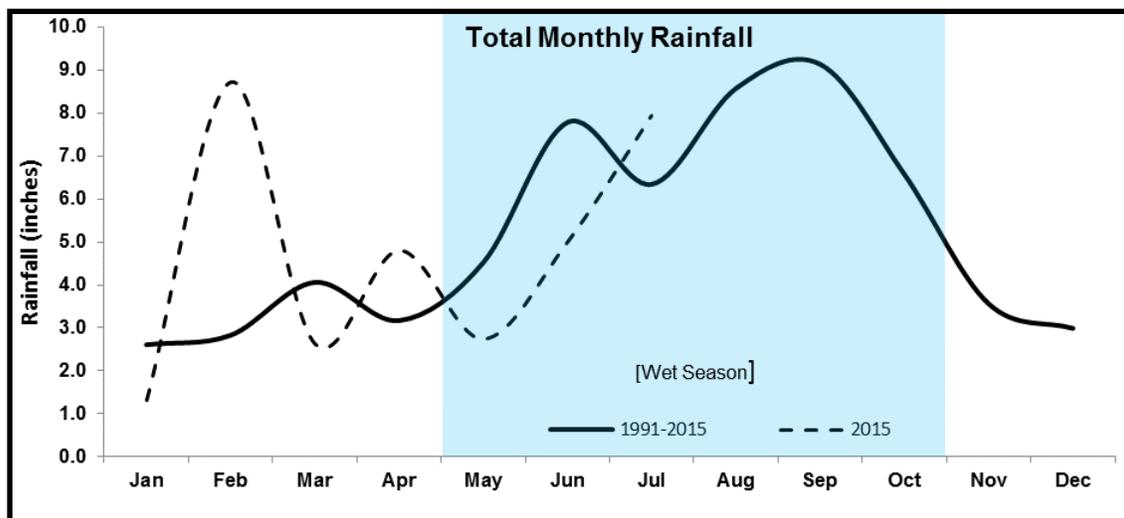


Figure 1

Results Summary

(Continued from page 1)

Volunteers may see higher than average salinity and pH values in the wet season

With less rain, there is less freshwater flow into the Loxahatchee River (Figure 2). We see the effects of these lower river flows in an abundance of clear ocean waters flowing into the Jupiter Inlet and estuary during the flood tides. Lower flows also translate to higher salinity and pH values farther upstream than we typically see during the wet season.

Water temperatures are also on the rise, which translates to lower dissolved oxygen values early in the morning and higher dissolved oxygen (DO) values during the course of the day.

The combination of bright sunlight, clear water, and warm temperatures makes for optimal oxygen production by the seagrasses and algae.

The downside of warm water is it cannot hold onto the oxygen as well as cold water because it dissipates quickly into the atmosphere.

Often during the summer months, the oxygen that remains from the day's production is quickly consumed and lost during the night, which can result in very low oxygen levels early in the early morning. The less rainfall and lower river flows resulted in excellent water quality results.

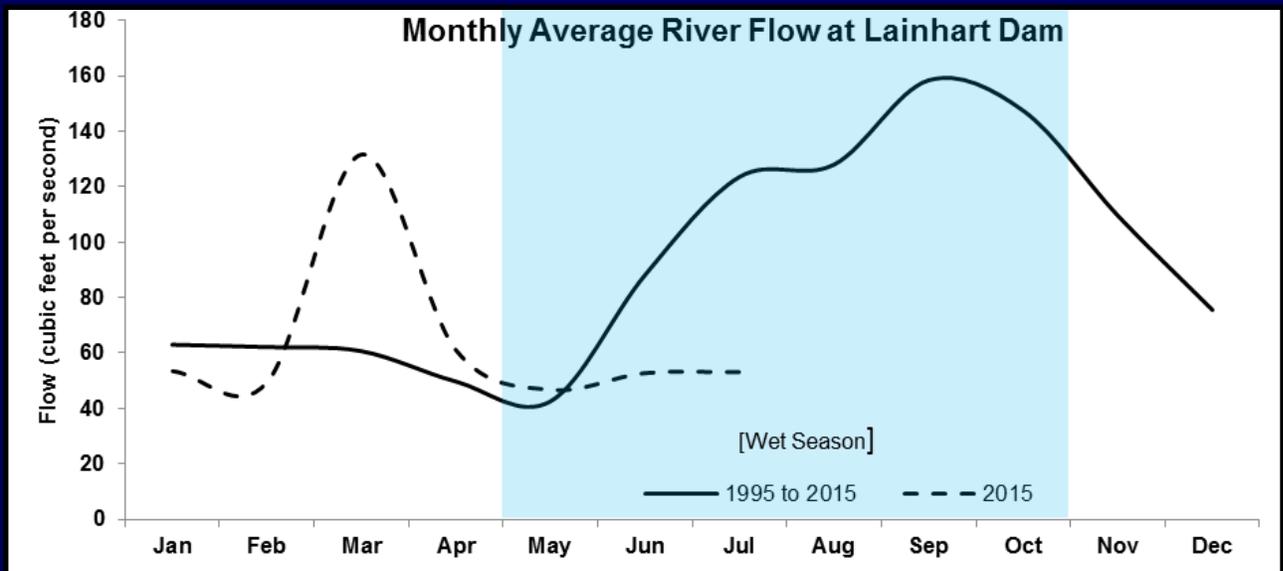
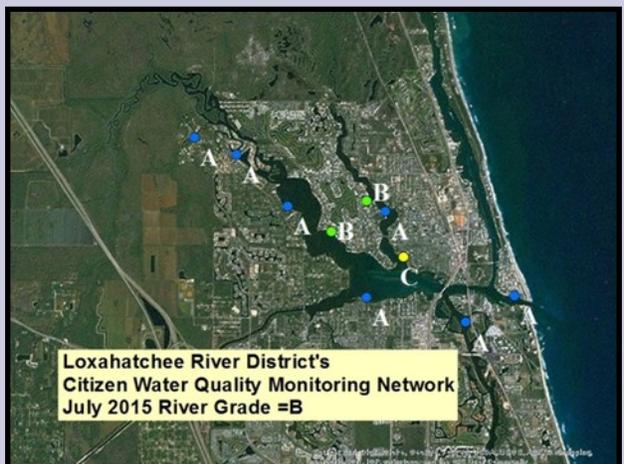


Figure 2

Results Summary Water Quality Grades

The four maps represent the average monthly scores at each volunteer monitoring site from April through July 2015. The overall grade from April through June was an A, then B in July as rainfall and river flows increased resulting in reduced salinity, clarity, and dissolved oxygen.



Sample Testing Reminder

When you are sampling and testing at your site, please remember that temperature can seriously affect your results. Economizing your time and streamlining your routine when you are testing helps to provide the most accurate results.

For example, as your sample warms up, it is losing oxygen, so here are a couple of tips to help you get the most accurate DO, temperature, and salinity results during this time of year.

First, collect and fix your dissolved oxygen sample as soon as possible. Remember, the water is evaporating from your sample bucket during this time, albeit not very quickly, but this means that the salts in your sample are slowly concentrating, giving you a salinity result that may be higher than it actually is.

Next, try to perform your tests in a shady spot away from direct sunlight. If this is not possible, then you can collect a separate, fresh sample for the DO, temperature, and the salinity test. You can attach a string to your thermometer and hang it in the water, or use the bucket to grab a fresh sample to quickly read your result and get an accurate reading.

Just remember that as time moves on, the parameters in the bucket can change, so learn to economize your time.

Volunteers are encouraged to try some of these tips to optimize the accuracy of their sample data.

Enhance the efficacy of the volunteer test kit supplies by efficient collection techniques



New Bacteria Sampling Project

This summer we had two interns, Wellsley and Amanda. Wellsley joins us from the University of Miami, and Amanda comes to us from Florida Gulf Coast University. Wellsley and Amanda helped to implement a new bacteria sampling project this summer that will continue to provide important information to the community on an ongoing basis.

The purpose of this project is to conduct water quality (bacteria) sampling throughout the estuary in popular recreation areas. Once a week on an outgoing tide (to capture worst case conditions), the interns collected water samples at 10 sites and brought them back to the WildPine Lab at the Loxahatchee River District (LRD). Then they worked with LRD staff to perform tests for *Enterococcus faecalis* bacteria.

E. faecalis is one of the most common of the 17 *Enterococcus* bacteria species and is naturally found in lakes, rivers, and oceans. It is also a normal component of human gut flora and can be marker for human pathogens.

We will continue to test for enterococcus estuarine waters because of its ability to thrive in warm saline waters. Each week, the LRD will post the weekly results on web maps available at the Loxahatchee River District's Web site to inform the public of water quality conditions before the weekend.

To access the current results map, go to www.loxahatcheeriver.org, click on the Maps and Apps button on the left menu button (under General Information), and then select "3-Weekly Water Quality Results for Bacteria" on the next map listing screen.

These maps are viewable on any device (computer, tablet, or smartphone); you can zoom in and out as well as enter the address of a specific location to view the nearest sample results. You can also access this map directly at <http://tinyurl.com/LoxRiverWQ>.



**Our 2015
summer interns
Wellsley (left)
and Amanda**



Loxahatchee River District

Preserving Nature by Design

2500 Jupiter Park Drive
Jupiter, Florida

Phone: 561-747-5700

Fax: 561-747-9929

E-mail: info@loxahatcheeriver.org

The Loxahatchee River District is an Independent Special District created by the Florida Legislature in 1971. It is governed by a five-member publicly elected Governing Board. We operate an award-winning facility that collects wastewater from the community and recycles it for irrigation needs, preserving fresh water supplies for the environment. By engaging the public with relevant and compelling environmental education opportunities, such as the River Center and Busch Wildlife Sanctuary, we foster stewardship among residents and visitors. As the leading authority on the Loxahatchee River, we also spearhead ongoing water quality studies and collaborate on river restoration projects.

Have a topic you would like us to cover?

Are you curious for more information about any of these topics?

Interested in the Loxahatchee River District's Volunteer Water Quality Monitoring Program?

Please contact David Porter at david.porter@loxahatcheeriver.org or 561-747-5709 ext. 127.

LRD and River Center—Upcoming Events

September 2015:

- Thursday 17—Family Seine and Snorkel Expedition
- Saturday 19—International Coastal Cleanup at Coral Cove Park

October 2015:

- Friday 2—Friends of the Loxahatchee River Meeting, Sustainable Farming Practices at Home

For more information about these events and to RSVP, contact the River Center at 561-743-7123.

The Loxahatchee River District's River Center is located inside Burt Reynolds Park at 805 N US Highway 1 in Jupiter and is open to the public throughout the year, Tuesday through Saturday from 9:00 a.m. to 4:00 p.m. Visitors can explore freshwater and marine aquatic exhibits with an interactive experience to learn about the river, its majestic environmental value, and diverse wildlife. There are live aquatic exhibits along with a unique touch tank experience where guests can hold and touch living aquatic life. For more information about the River Center, call 561-743-7123 or visit www.loxahatcheeriver.org/rivercenter.