

Loxahatchee River District

Water Reclamation | Environmental Education | River Restoration

2500 Jupiter Park Drive, Jupiter, Florida 33458

Telephone (561) 747-5700 • Fax (561) 747-9929 • www.loxahatcheeriver.org



D. Albrey Arrington, Ph.D., Executive Director

MEMORANDUM

TO: Albrey Arrington, Ph.D., Executive Director
FROM: Bud Howard, Director of Information Services
DATE: July 14, 2016
SUBJECT: Monthly Governing Board Update for June 2016

WildPine Ecological Laboratory

Riverkeeper Project

In June, the LRD and Town of Jupiter staff organized another large sampling run in which 59 water quality monitoring sites were sampled. In addition, after Jupiter received 1.5 inches rain event, we focused on additional sampling in the Sims/Jones Creek basins, western, and coastal communities to assess water quality for sucralose, nutrient and bacteriological analyses.

Our Weekly Bacteria Program expanded to encompass a more thorough analysis of *enterococci* and *fecal coliform* bacteria in the Dubois drainage basin. LRD, in partnership with the University of Miami and NOAA, are spearheading rigorous bacteria sampling efforts within the Dubois drainage basin to better understand elevated bacteria levels in the Dubois drainage basin. This is a very timely project as the Dubois Lagoon is an extremely popular recreational location during the summer months. Sam and Kyle, our two interns, performed 72 bacteria tests as well as took numerous field readings on June 9, 2016 over the entire 12 hour tide cycle. The samples were collected at six sites between the snorkel lagoon at the Inlet and Ocean Way Drive. As a supplement to the intense sampling on the 9th, another 64 tests performed by the interns throughout June were added to our Dubois bacteria database to be analyzed. In general, we continue to see good water quality results during incoming tide, and higher bacteria counts during outgoing tide, particularly after significant rain events.



Sam and Kyle sampling at Dubois swimming lagoon.

World Ocean Day Sampling Event

On June 29th, LRD was invited to participate in World Ocean Day, a global, synchronized event in which marine and estuarine waterbodies are sampled on the same day to evaluate microbial communities. Elizabeth Kelly, a Ph.D. candidate from the University of Miami who is involved in the Dubois bacteria project, toured the Dubois drainage basin with staff in order to better understand the

Stephen B. Rockoff
Board Member

Dr. Matt H. Rostock
Board Member

Gordon M. Boggie
Chairman

Harvey M. Silverman
Board Member

James D. Snyder
Board Member

system, and World Ocean Day water samples were collected from the snorkeling lagoon, the Dubois swimming beach, and Carlin Park. Samples will be evaluated by a laboratory in Bremen, Germany, and will yield information on the various bacteria, protozoans, and viruses that live in these waterbodies, providing more insight into the pathogenicity of certain bacteria within the system.

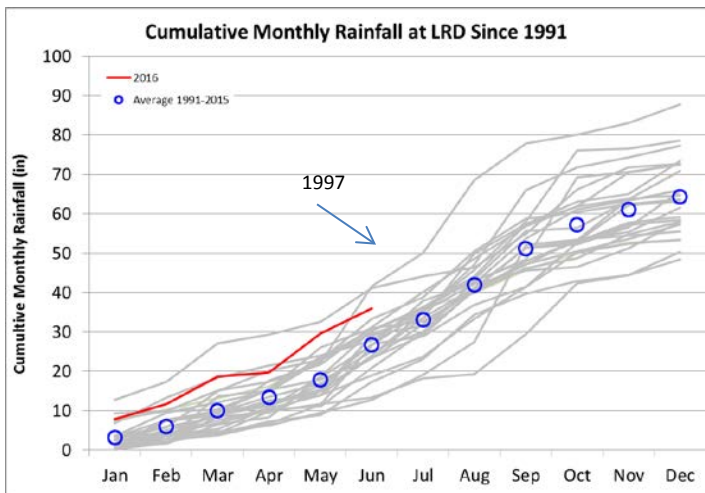


Hydrologic and Datasonde Monitoring

June 2016 experienced less than average rainfall with monthly total of 6.32” measured at the LRD - less than the 8.8” of rainfall total typically observed during June. The cumulative rainfall for 2016 continues to be one of the wettest years since 1991, with only 1993 and 1997 having higher cumulative rainfall through the year to date. June had moderate rainfall events with rain distributed somewhat evenly throughout the month. The highest single day of rain was 1.51” and occurred on June 8th.

Elizabeth Kelly from UM, at right, explains how to prepare a microbial sample to our intern Sam, left.

June began with decreasing flows at Lainhart Dam, as May’s rain continued to drain from the watershed. Flow decreased to 78 cfs until the 1.5” rain event on June 8th. Flow then increased to a max of 155 cfs and oscillated between 99 and 138 cfs for the remainder of the month. There was no supplemental flow through G-161 from Grassy Waters Preserve this month. The S-46 flood control structure had only two days of flow throughout the month of June and occurred following the 1.5” of rainfall on June 8. Major construction at the Tailwater weir continues and may result in unusual operation schedules.



Salinity throughout June was very similar to historical averages at most sites. Kitching Creek remained fresh during the month indicating that flows were sufficient enough to keep saltwater downstream of this location.

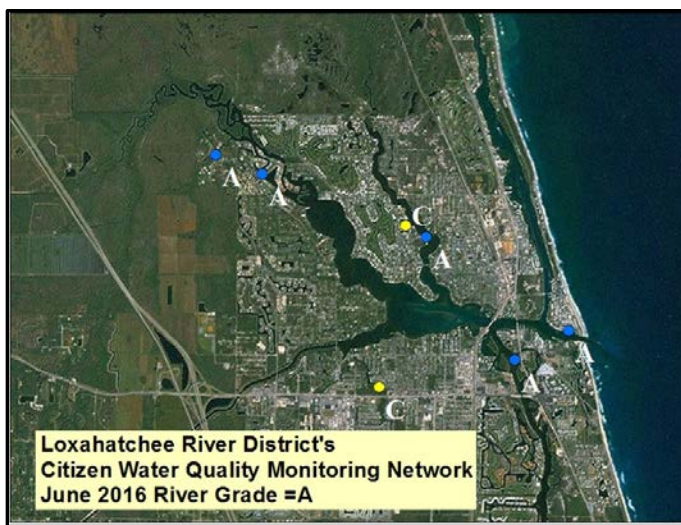
Oyster Recruitment Monitoring

Oyster spat monitoring in June showed minimal settlement as is expected during the summer months. Settlement was observed at all four sites, though more so in the Southwest Fork than in the Northwest Fork (NWF). Mean oyster settlement density in the Southwest Fork (SWF) was 97 spat m² compared to 206 spat m² counted last month. The downstream site in the SWF had a mean density of 108 oysters spat m² while density at the upstream site was slightly less at only 87 m². This compares to last month’s figures of 368 spat m² and 43 spat m² respectively. Settlement evaluation of the NWF upstream site was only 32 spat m² compared to last month’s mean of 292 spat m². Mean settlement density at each of the two NWF sites was 32 spat m⁻².

Temperature is a primary factor in triggering oyster reproduction. Our daily average water temperatures in June were warmer than April with a mean range of 29.9°C (85.8°F) at both sites, and peak temperature ranges between 32.9°C (91.2°F) - 33.4°C (92.1°F). Generally, oyster settlement is observed when the average water temperature reaches ~28.0°C (82.4°F) and decreases as max temperatures near 31°C (88°F) or higher. Interestingly, staff observed possible spawning (photo right) on June 25 suggesting that perhaps spawning occurs but spat do not successfully settle.



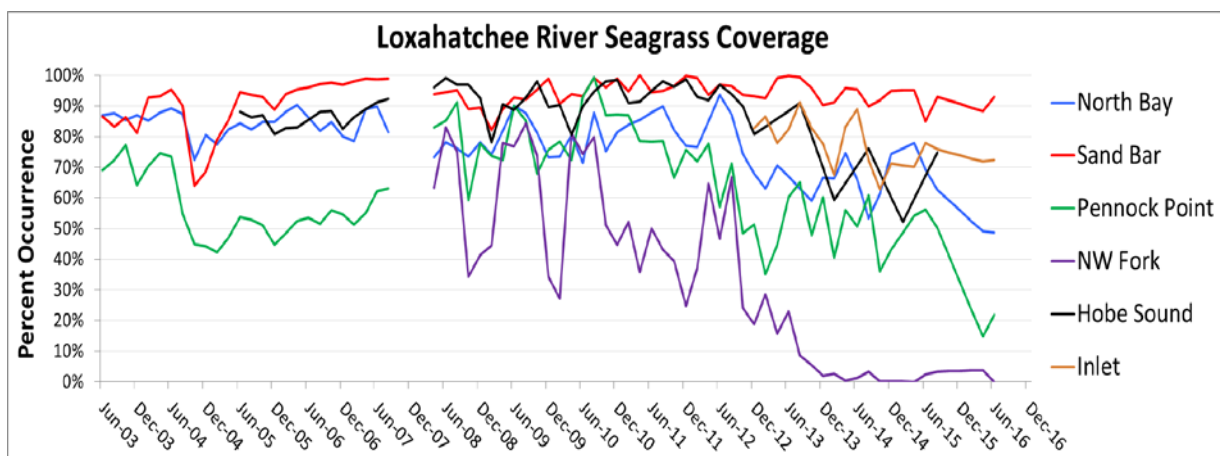
Volunteer Water Quality Monitoring



The cumulative Volunteer Water Quality Grade for June scored an “A”. With a few exceptions, the conditions in the watershed were all within the “good” range. The visibility scores, however, were mostly in the “fair” range. This was probably due to the flow of fresh water from the upstream tributaries that drain into the estuary during this time of year.

Seagrass Monitoring

The second seagrass monitoring of 2016 was conducted in June. All five sites along the salinity gradient of the Loxahatchee River were assessed. Seagrass was present at four of the five sites but was absent once again from the Northwest Fork site. Two sites, North Bay and Pennock Point, had among the lowest percent occurrence of total seagrass in the 12 year period of record (48.8% and 21.8% respectively, see Figure below). Following Tropical Storm Isaac in 2012, seagrass at Northwest Fork declined sharply to complete loss and has yet to make a substantial recovery.



Information Technology

Website Update

Staff and our web development company continue to make good progress on the updating of District website as they convert much of the existing content to the new web technology. We anticipate “going live” with the first phase of the website in August.

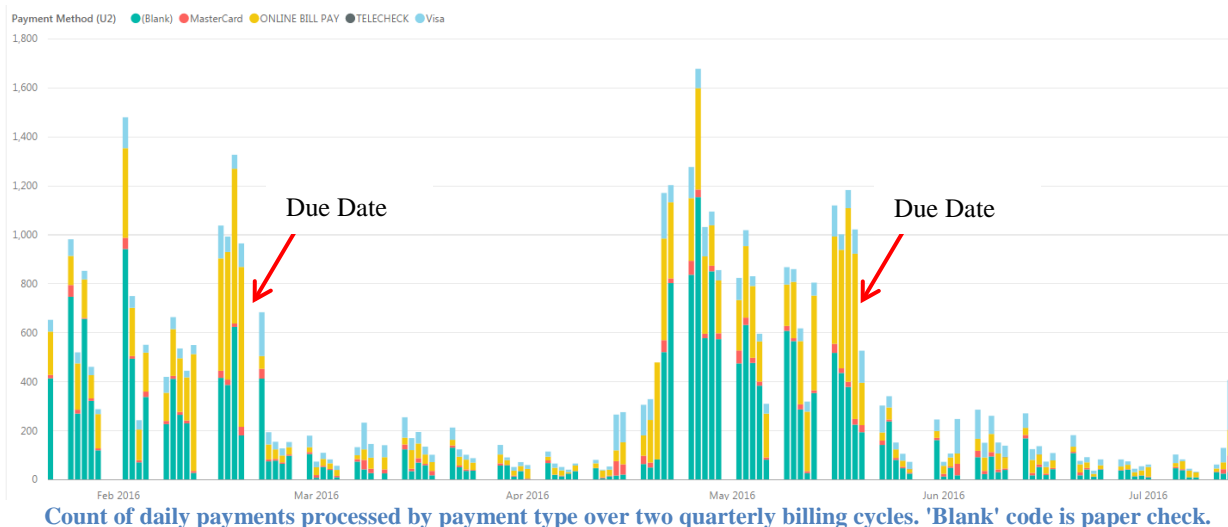
Computerized Maintenance Management System – Computerized Maintenance Management System (CMMS)

The bulk of last month’s work was in the hands of the software consultant’s team as they continue to develop the data conversion scripts they will use to transfer our asset information and historical maintenance data into the new program. We eagerly anticipate the first big data conversion test in the next few days. Next month we will review and refine the script for making the “live” conversion sometime in late August or early September.

Customer Service

Payment Processing

In June, staff closed out the 2nd Quarter Billing by processing roughly 2,800 late payments totaling over \$298,000 for the month. A new metric we are monitoring is the quarterly payment completion rate – this quarter more than 98.3% of our nearly 31,000 customers paid their bill (~500 unpaid). Staff also made preparations for our 3rd Quarter Billing that we sent on July 11 and 12.



Delinquent Account Processing Migration

The customer service team reached a key milestone as we continue to make preparations for the District to manage delinquent account data by completing the merging of District account data for all 500+ delinquent accounts. We continue to configure and test data systems to apply fees, charges and interest, as well as reconcile District data with the Attorney’s records. Meanwhile, the Attorney’s office has been busy processing a backlog of liens.