

Loxahatchee River District

Water Reclamation | Environmental Education | River Restoration

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

MEMORANDUM

TO: Albrey Arrington, Ph.D., Executive Director
FROM: Bud Howard, Director of Information Services
DATE: April 15, 2016
SUBJECT: Monthly Governing Board Update for February 2016

WildPine Ecological Laboratory

Riverkeeper Project

In March, LRD and Town of Jupiter staff sampled 55 water quality monitoring sites. Seventy percent of the stations showed safe levels of microorganisms, up from 60% last month. Station 56 (Papaya Village Outfall in Martin County) was the only station that exceeded DEP/EPA's Numeric Nutrient Criteria (NNC) for nitrogen, phosphorus, and chlorophyll *a*. Based on the results downstream at Station 53 (JD Park Road Culvert) the nutrients are assimilated and water quality improves as the water flows through the park before it reaches the north fork of the Loxahatchee River.



Station 88, the newly reconfigured drainage for Sonoma Isles, was discharging to the Loxahatchee flood plain when we sampled on March 14. Efforts made to reduce nutrient loading to the river through the development of Sonoma Isles appear to be working. The phosphorus concentration was just over DEP/EPA's NNC of 0.120 mg/L at 0.125 mg/L. This result was greatly improved from historical values that were often 10 times higher. At left, lab staff is pictured sampling the new drainage structure, the first time we observed flow since its installation in December 2015.

Station 107 (Rivers Edge) had bacteria levels were below the DEP/EPA's NNC for fecal coliforms in fresh water, an observation we see less than 20% of the time, possibly a result of heavy rainfall and flushing to the system.

RECOVER Science Meeting

Betsy and Jerry attended the Restoration Coordination and Verification (RECOVER) meeting, hosted by the South Florida Water Management District from March 1-2. The meeting provides a forum for the scientific community to discuss RECOVER restoration as it relates to the Comprehensive Everglades Restoration Plan (CERP) and discuss on-going research in Florida. One highlighted issue is the *Vallisneria americana* (Tape Grass) die-off that is occurring on the west coast. Scientists at the meeting

Stephen B. Rockoff
Board Member

Dr. Matt H. Rostock
Board Member

Gordon M. Boggie
Chairman

Harvey M. Silverman
Board Member

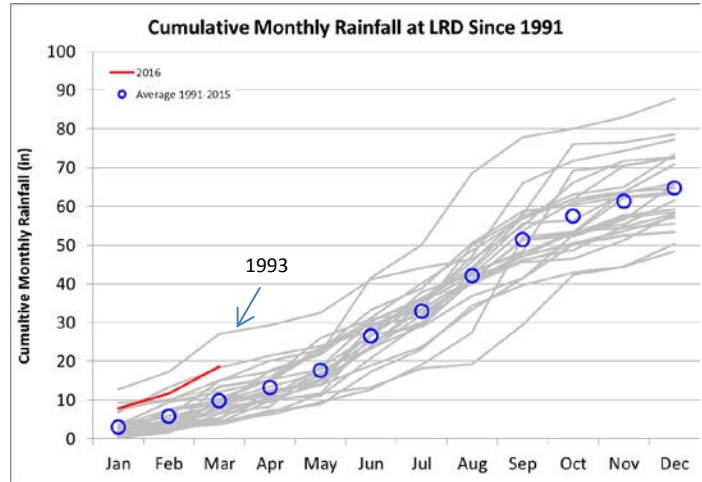
James D. Snyder
Board Member

expressed interest in evaluating the healthy tape grass beds that have expanded throughout the Northwest Fork of the Loxahatchee River over the past several years.

Hydrologic and Datasonde Monitoring

2016 continues to be an abnormally wet year with March rainfall at LRD totaling 7.0”, which is more than twice the typical March total of 3.0”. This brings the accumulated rainfall for the year to 18.6”. In the past twenty-five years of record, only 1993 had higher accumulated rainfall through March (see figure). More than half of the month’s total rainfall occurred on March 25 when rainfall measured at LRD totaled 3.7”.

The rainfall through March maintained increased flow into the river. Lainhart Dam had a mean daily flow of 115 cfs with a peak flow of 310 cfs occurring on March 25, the day of peak rainfall for the month. The S-46 flood control structure reported minimal to no flow with the exception of 342 cfs reported on March 31.



In March, salinity throughout the river was similar to historically observed levels. The most “extreme” deviations were at the Inlet with a 3ppt salinity drop below the historical monthly average. The rest of the sites were also slightly below average salinity. It is likely that the rainy days in the latter part of the month were not enough to significantly reduce monthly average salinity due to the lack of rain for the first 18 days of the month.

Oyster Recruitment Monitoring

Oyster settlement monitoring for February 10 to March 9 showed that spring recruitment season has yet to commence. Oyster settlement within both river forks was minimal with an average of 3.2 spat/m² in the Northwest Fork and 3.2 spat/m² in the Southwest Fork. Daily average water temperatures were slightly warmer than last month with a mean range of between 21.2°C (70.2°F) and 22.1°C (71.8°F) and peak temperature ranges between 25°C (77°F) and 26°C (79°F), which historically corresponds with minimal to no oyster settlement activity. We generally see an increase in oyster spawning when the average water temperature reaches about 28.0°C (82.4°F). In addition to oyster spat settlement, we also are monitoring the temporal settlement patterns of various organisms (oysters, barnacles, bryozoans, etc.) on travertine tiles to better understand possible interactions with oysters.

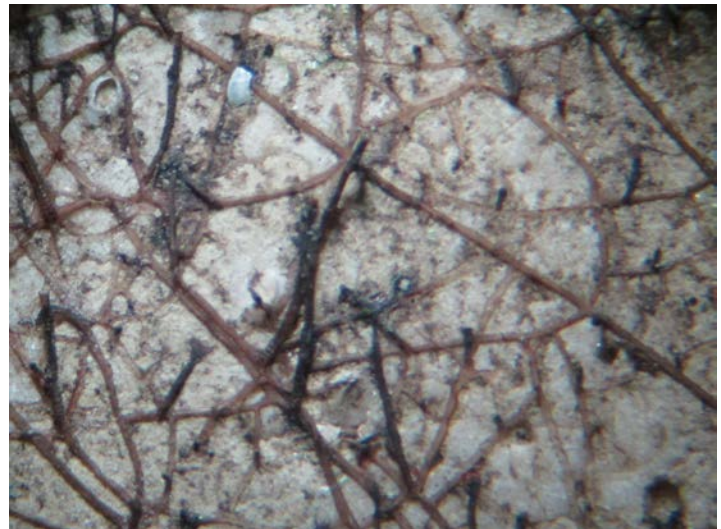


Image the creeping bryozoan *Aetea sica*, one of the several other organisms observed in abundance on the travertine tile.

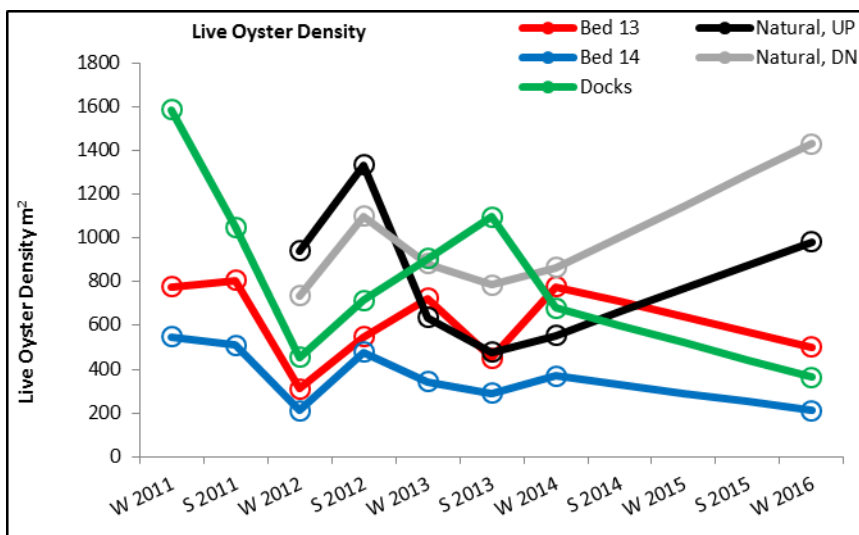
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Oyster Bed Monitoring

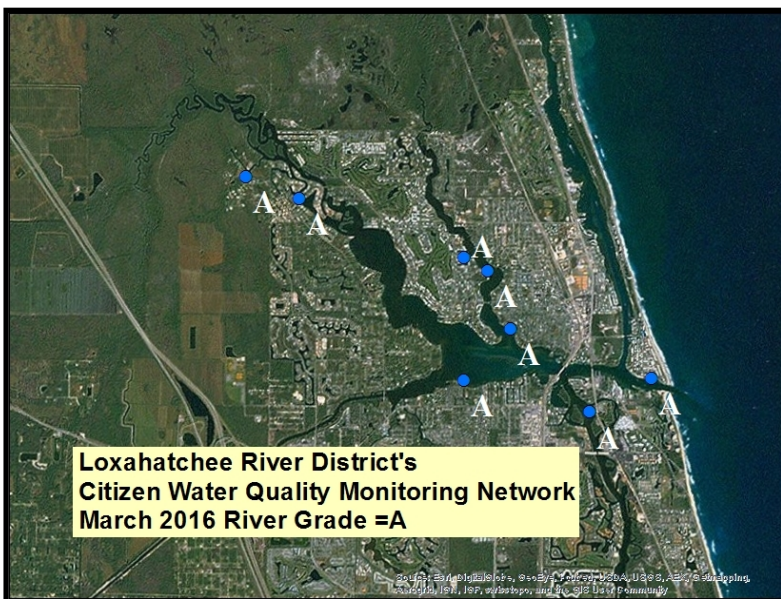
Staff completed the monitoring of both NOAA oyster restoration beds and restoration Dock beds in March. For reference, natural oyster beds were also monitored. Live oysters were observed at all sites. Bed 13 (west of “oyster island”) continues to have slightly higher oyster density than the larger restoration site Bed 14 (east of the island and west of the banyan tree). Several sample points within Bed 14 and the Dock sites had no (or very few oysters) and are covered in sand either from subsidence or accumulation of sand. Independent of the sand-covered sites, the natural oyster beds had considerably higher oyster density than any of the restoration beds.



Natural oyster beds (red) and oyster restoration sites (yellow) in the Northwest Fork.



Oyster density (m²) at all five monitoring sites. Oyster beds were not sampled during summer 2014 through all of 2015.



Volunteer Water Quality Monitoring

The water quality in the Loxahatchee watershed improved substantially in March. The grade at each station was an “A”, which gave the entire watershed an “A” grade for the month. The rain did not contribute any excessive tannin stained freshwater into the system until later in the month. In general, all of the parameters scored in the “Good” to “Fair” ranges. Fifty percent of the water clarity readings were “Clear to Bottom”.

Information Technology

Computer Deployment

Joel configured and deployed nine new, replacement computers for staff in various departments as part of continuous life-cycle replacement program. We generally replace District computers every 5 years.

Computerized Maintenance Management System - CMMS

Alan and Dave continue to work through software installation, configuration, and data conversion of our CMMS upgrade. Two installations of the software are complete – one for testing and one for production. They are now working through test imports of various data sets and beginning the extensive configuration of the system to suit our needs. The new program offers a wealth of features and capabilities that were not possible with our existing system.

Customer Service

Payment Processing

In March the Customer Service Team closed out the 1st Quarter Billing processing the last couple thousand late payments. Staff used the “quiet” time to perform important account research and maintenance. Second quarter bills were sent April 12th and 13th and included notification of the new policies approved by the Board last month and take effect in July.

Lien Account Data Migration and New Procedures Planning and Testing

We have begun the research, planning and testing the migration of data for our lien accounts from our attorney’s office back into our customer management database, and the new procedures for managing delinquent accounts.

Account Information Cross-Referencing Project

Staff also received training on a new mapping and database tool to cross reference our account information with the County property appraisers, Town of Jupiter, and Village of Tequesta. This long-term project will help to reconcile and verify all information in our customer service to improve how we monitor ownership, mailing address, and development status data against county and town records.