

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: February 11, 2016
SUBJECT: Monthly Governing Board Update

WildPine Ecological Laboratory



New Laboratory Intern

Anthony Matusik is our new intern for the spring semester. Anthony has a background in biology and recently received his Master's degree from Florida International University in Environmental Studies. Anthony served as a Peace Corps Volunteer for two years in Panama working on Environmental Conservation. During that time he also collaborated with Panamanian agencies in designing a management plan for an internationally protected wetland as part of his thesis research. At left, Anthony is filtering wastewater to be analyzed as part of an evaluation comparing our existing filters with our new deep bed filters.

Riverkeeper Project

In January, LRD and Town of Jupiter staff sampled 52 water quality monitoring water sites. Nutrient concentrations were elevated overall, largely as a result of increased flows from the unusually heavy rains. Total nitrogen in the watershed exceeded DEP/EPA's Numeric Nutrient Criteria (NNC; 1.54 mg/L) at six sites. Jupiter High School's canal had the highest nitrogen at 2.6 mg/L. Total phosphorus in the watershed exceeded the NNC at ten sites. Two sites in particular were over 3 times higher than the NNC (0.12 mg/L) for freshwater canals: Indian Creek Parkway at Sims Canal and Jupiter High School's canal. Bacteria levels throughout the watershed were also elevated due to the amount of stormwater entering the system. Fourteen sites scored "poor" for fecal coliform and/or enterococci bacteria; these sites were located in the River's Edge and Southwest Fork drainage basins. Thankfully, the bacteria counts in the canal behind Jupiter High School has improved, which had counts over 50,000 cfu/100mL in December and January. Results from sampling this and last week were below 200 cfu/100 mL.

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Stormwater Improvements

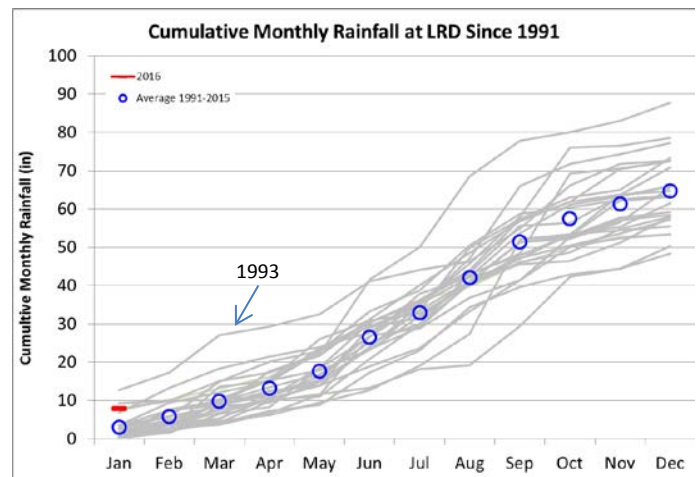


The culvert pipe that was the sampling station 88 (left) at Sonoma Isles (previously Parcel 19), and the newly completed water control structure (right). This station drained the former agriculture site with high Phosphorus loads. The new drainage feature is connected to a wetland treatment area and will only discharge during extreme rain events. This should improve water quality at this site.

Hydrologic and Datasonde Monitoring

As predicted with the strong El Niño, 2016 is getting off to a wet start with the wettest January on record according to the SFWMD. Total rainfall for January, measured at LRD, was 7.9” with a single daily total of 3.0” occurring on January 27. This is more than twice the historical monthly total of 3.2” (see figure.)

The rainfall during January resulted in substantially increased flow through the water control structures. Lainhart Dam had a mean daily flow of 160 cfs with a maximum flow of 273 cfs occurring on January 28. The S-46 flood control structure discharged for 17 days – highly unusual for January. Five days had a daily average flow of over 300 cfs, with a maximum of 723 cfs occurring on January 28. The majority of increased flows occurred toward the end of the month as a result of the 3” rain event.



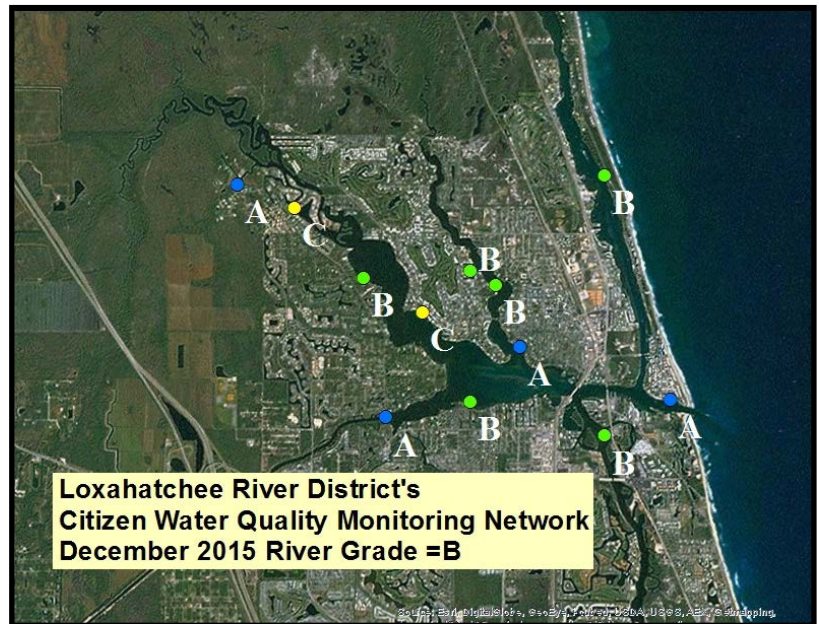
The Inlet and site 72 at Loxahatchee River Road in the SW Fork, experienced salinities as low as 6.5 and 0.9 ppt, respectively. The monthly average salinities at those sites were very unusual (more than 2 standard deviations below the historical mean). The lowest salinities of the month at the Inlet and 72 were recorded between 5:15-7:15am on Jan 28th (unsurprisingly just after low tide). However, at 8:43am flow through S-46 began a dramatic increase that topped out at 1,200 cfs (32M gal/hr) at 9:07am. Despite this massive surge from S-46, the incoming tide was still able to steadily increase salinities at Inlet and 72.

Oyster Recruitment Monitoring

Oyster settlement monitoring confirmed that oyster spawning has ended for the winter season. As we have observed previously, daily average water temperatures were between 24.1°C and 24.4°C and correspond with minimal to no oyster settlement activity. Following our assessment and recent publication on alternative oyster monitoring media, December monitoring marks the last time we will use oyster shells for quantifying oyster settlement. Starting 2016, we will use the square, non-glazed travertine tiles for a reusable, consistent size/shape monitoring media.

Volunteer Water Quality Monitoring

The volunteer water quality grade for December was dropped to a “B”. The abundance of freshwater into the system lowered the pH and water clarity values into the “poor” to “fair” ranges.



Information Technology

New Server Migration & Folder Organization

Staff have completed the migration and reorganization of files and folder structure on our new server. Despite the extensive integration of systems, the IT team completed the migration and reorganization of more than 1.6M files and folders with no major upsets.

Ransom Virus

Thanks to quick assessment, thinking and action, Joe successfully stopped and quickly recovered from a ransom virus. This event provided a valuable lesson to all staff to be extra vigilant and realize that we, District employees, are the biggest IT security vulnerability.

Customer Service

Payment Processing

In January, we sent out the 1st Quarter Billing and processed the onslaught of payments from our quick paying customers. Staff processed nearly 13,500 payments totaling nearly \$2M. More than 40% of those were electronic payments and processed very efficiently with our digital payments tool. Payment processing workload will remain heavy until bills are due on February 19. Staff have also been contributing to the ideas for policy and procedure improvements for the Board's consideration.