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:	March 10, 2016
SUBJECT:	Monthly Governing Board Update for February 2016

WildPine Ecological Laboratory

Riverkeeper Project



In February, LRD and Town of Jupiter staff sampled 34 water quality monitoring sites. Bacteria samples were collected and analyzed at all of the stations. Sixty percent of the stations showed safe levels of microorganisms, and the remaining 40% of samples with elevated bacteria concentrations were collected from Jones and Sims Creeks, as well as one station at the River's Edge community (Station 107). Nutrient concentrations were analyzed at 14 stations and all but one station showed low levels of nitrogen, phosphorus and chlorophyll *a*. Station 60, located in the bay of the Northwest Fork, exceeded DEP/EPA's Numeric Nutrient Criteria (NNC; 0.03

mg/L) for phosphorus. These results, driven by the higher than normal rains and flows (discussed below), were unusual given February is typically the best month of the year for water quality. Betsy Stoner, our senior scientist pictured above, is preparing standards to run with samples on our nutrient analyzer.

Hydrologic and Datasonde Monitoring

2016 continues to be an abnormally wet year with February rainfall at LRD totaling 3.8" which is twice the typical February total of 1.9". The highest single-day rain total occurred on February 16 with 1.4". Cumulative rainfall total for 2016 through February is 11.6". In the historic context, typical cumulative rainfall measured at LRD for the same period is 5.9" (from 1991-2015; See figure on the right).

Stephen B. Rockoff Board Member Dr. Matt H. Rostock Board Member Gordon M. Boggie Chairman

Cumulative Monthly Rainfall at LRD Since 1991 100 2016 90 O Average 1991-2015 80 (iii 70 Rainfall 60 0 0 Monthly 50 0 40 1993 0 0 30 Cum 20 10 0 Apr May Feb Mar Jun Aug Sep Oct Nov Dec

> Harvey M. Silverman Board Member

James D. Snyder Board Member The rainfall during February maintained increased flow into the River. Lainhart Dam had a mean daily flow of 193 cfs with a maximum flow of 231 cfs occurring on February 16, the day of peak rainfall for the month. The S-46 flood control structure discharged for 20 of the 23 days for which data are available. Mean daily flow was 138 cfs with peak flow of 379 cfs on February 1. Flow at the S-46 structure gradually decreased throughout the month and the low discharges may be associated with the construction of the tailwater weir.

Average salinities were more than 2 standard deviations below the historical mean at Jupiter Inlet and site 72 at Loxahatchee River Road bridge for the third consecutive month. The North Bay site had similar results in February. During February 3rd-6th, the Inlet, North Bay, and site 72 experienced unusually low salinities of 13, 8.6, and 1.5 ppt, respectively. However, even during periods of low salinity these sites continue to experience a wide range of salinities coinciding with the ebb and flow of the tides. On February 6, for example, salinity at site 72 ranged from a daily (and monthly) minimum of 1.5ppt to a daily maximum of 29ppt.

Oyster Recruitment Monitoring

Oyster settlement monitoring confirmed that the cessation of oyster spawning has continued into the winter season. Daily average water temperatures were between 20.2° C (68.4°F) and 20.9° C (69.6°F), which historically corresponds with minimal to no oyster settlement activity. We typically don't sample in February, but we are monitoring the temporal settlement patterns of various organisms (oysters, barnacles, worms, etc.) on the new non-glazed travertine tiles in lieu of adult oyster shell. Oyster settlement on the tiles within both river forks remain minimal with an average of 6.4 spat/m² in the Northwest Fork and 3.2 spat/m² in the Southwest Fork.





Laboratory intern Anthony prepares oyster settlement monitoring arrays with travertine tiles.

Volunteer Water Quality Monitoring

The volunteer water quality grade for February was a low "B". The abundance of freshwater into the system lowered the water clarity, salinity and the pH values into the "Fair" and "Poor" ranges. The lone "F" grade in the N. Fork was due to poor water clarity, very low salinity, and a lower than normal pH values.

Information Technology

Deep Bed Filter Construction Project Cameras

Staff have installed cameras to monitor and document the progress of the Deep Bed Filter Construction Project.



Customer Service Geographic Information System (GIS) Tool Dave has been developing a GIS tool that displays maps and data for the Customer Service Department that is essential for our new, long-term project to reconcile and verify all information in our customer service database with the water meter and parcel data. The compiled information will improve how we monitor ownership, mailing address, and development status data against county and town records.



Customer Service

Payment Processing

The 1st Quarter Bills were due on February 19 and staff processed over 15,000 payments totaling over \$1.9M. Like January, 40% of those were electronic payments and processed very efficiently with our digital payments tool. Staff continues to assist with formulating policy and procedure improvements for the Board's consideration.