

## MEMORANDUM

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**DATE:** October 23, 2014

**SUBJECT:** Operational Position Statement for Oct 21, 2014 – Oct 27, 2014

The U.S. Army Corps of Engineers (USACE) is responsible for managing Lake Okeechobee water levels and makes operational decisions about whether to retain water or release water based on their regulation schedule release guidance (2008 LORS). The USACE makes this decision taking into account the best available science and data provided by its staff and a variety of partners, which includes the South Florida Water Management District (SFWMD).

The SFWMD team has discussed the system wide environmental conditions, the water supply conditions, and has evaluated the overall status of the water management system. Detailed reports are available at the SFWMD's [Operational Planning](#) internet page.

### **Recommendation to the USACE**

For the period October 21<sup>st</sup>, 2014 through October 27<sup>th</sup>, 2014, the SFWMD supports the implementation of releases to the Caloosahatchee Estuary measured at S-79 and no releases to the St. Lucie Estuary. Releases through S-79 should be of such magnitude that they help improve and/or maintain beneficial salinity conditions across the Estuary. The Lake stage remains within the Low Sub-band and total inflows to the Lake continued to decline over the past seven days. This recommendation aligns with 2008 LORS release guidance which allows for a range of zero to 3,000 cfs to the Caloosahatchee and zero to 1,170 to the St. Lucie to manage the Lake Okeechobee stage.

The USACE is presently implementing a 7-day pulse release averaging 1,000 cfs at S-79 and no releases at S-80, which started 7 am on October 17<sup>th</sup>, 2014 and will end 7 am October 24<sup>th</sup>, 2014. The current release implementation is measured at S-79 and requires that the Lake Okeechobee releases (at S-77) be reduced to account for any local runoff into the Caloosahatchee River (C-43) between S-77 and S-79. This accounting is performed on a daily basis.

Lake Okeechobee Stage Position: The October 21<sup>st</sup>, 2014 Lake Okeechobee stage (reported by the USACE on October 20<sup>th</sup>) was 15.78 feet NGVD. Lake stage increased for the first half last week, but declined for the second half, with a net increase of 0.06 feet. As of October 21<sup>st</sup> Lake stage is in the upper third of the Low Sub-band, presently 0.32 feet from the Intermediate Sub-band. Substantial rain took place directly over Lake Okeechobee on October 21<sup>st</sup>, 2014. The reported value by USACE for October 21<sup>st</sup> is 15.87 feet NGVD, an increase of 0.09 feet. This increase in stage does not modify the LORS 2008 recommendation for this week.

2008 LORS Release Guidance (Part C): Given the current Lake stage position, Part C of the 2008 LORS suggests “Up to Maximum Practicable to the WCAs if desirable or with minimum Everglades Impacts”.

Consistent with the LORS release guidance, the USACE is requesting the SFWMD to make maximum practicable Lake Okeechobee regulatory releases to the WCAs. The EAA transitioned into water supply operating mode over the last 7 days. As of the time of preparation of this report, STAs 2 and 3/4 were identified as having treatment capacity to receive Lake regulatory releases to be passed to the WCAs. However, substantial rainfall over the District on October 21<sup>st</sup>, with focus on Palm Beach County, Lake Okeechobee and Martin County, resulted in STA 2 receiving local runoff from the EAA. STA 3/4 can still receive releases from the Lake and STA 2 will be used if capacity becomes available later during the week.

Water levels throughout the WCAs continued to recede for the past week. Stages in WCA-1 are high for this time of the year, with the canal and the 3-gage average marsh stages close to the middle of Zone A-2. The current stage in WCA-1 is within the range requested by Refuge staff for stage to remain between 17 and 17.5 feet NGVD for the 3-gage average by the end of the wet season. WCA-2A and WCA-3A stages are both in Zone A of their respective regulation schedules and relatively high for this time of the year, but have continued to recede.

Everglades' scientists report northwestern WCA-3A water levels are above land surface, but this area can receive Lake Okeechobee regulatory releases to help maintain peat soils wet throughout the dry season. In the past, releases to NW WCA-3A have amounted to the order of 200-400 cfs. Cascading of Lake regulatory releases through the WCAs will help increasing flows to ENP and Florida Bay.

Salinity in Florida Bay continues to be in the high range. District scientists noted that Florida Bay fresh water flows are below average for this time of the year and flows are needed to reduce salinities that benefit the bay's ecosystems and to raise the nearshore wetland stages.

2008 LORS Release Guidance (Part D): The outcome from Part D of the 2008 LORS release guidance is: “S-79 up to 3,000 cfs and S-80 up to 1,170 cfs”. Release guidance changed as compared to last week. Tributary Hydrologic Conditions switched to the Wet classification. The current recommendation decreases the discharge magnitude and moves the measurement location for releases to the Caloosahatchee from S-77 to S-79.

For the St. Lucie Estuary, SFWMD estuary scientists suggest that mean monthly fresh water inflows exceeding 2,000 cfs (from all sources including flows from S-80, S-49, S-97, Ten Mile Creek and the tidal basin) will result in harmful salinity conditions for oyster populations near the US1 Bridge. Mean monthly flows exceeding 3,000 cfs from all sources will cause damage to seagrasses in the vicinity of the St. Lucie Inlet. Over the past week, flows to the St. Lucie Estuary from S-80 were practically null cfs and from all other sources averaged 927 cfs and the average monthly flow over the last 30 days was 1,957 cfs. Mean monthly flows are slightly below the 2,000 cfs oyster harmful threshold and salinity at the US1 bridge increased to the good range for adult oysters. Based on current conditions, additional inflows from the Lake will pose further ecological risk.

For the Caloosahatchee Estuary, SFWMD estuary scientists suggest that mean monthly flows measured at S-79 that exceed 1,500 cfs will result in harmful salinity conditions for oysters living in the vicinity of the Cape Coral Bridge. At mean monthly flows exceeding 2,800 cfs, salinity in Iona Cove will become low enough to cause mortality of shoal grass. At slightly higher flows (3,000 cfs) oysters in this area will be impacted by low salinity. Mean monthly flows of 4,500 cfs will adversely impact seagrasses in San Carlos Bay. Flow at S-79 averaged 1,078 cfs over the past week, with 269 cfs released from Lake Okeechobee. Over the past month, S-79 total flows averaged 2,634 cfs, which is above the 1,500 cfs threshold for oysters. Based on current

conditions, additional discharges from Lake Okeechobee resulting in mean monthly flows greater than 1500 cfs at S-79 would pose an ecological risk for oysters at the Cape Coral Bridge.

### Weather and Climate

Rainfall during the past week totaled 0.60 inches district wide (through 7 a.m. October 21<sup>st</sup>). Lake Okeechobee received 0.96 inches of rain during the past seven days. District-wide rainfall during the past 30 days totaled 4.53 inches (96 percent of average). During the past week rainfall recorded for the Upper and Lower Kissimmee Basins was 0.61 and 0.67 inches, respectively. For the past 30 days the Upper Basin received 135 percent of average rainfall, while the lower basin received 154 percent of average rainfall. Decreased rainfall in the Upper and Lower Kissimmee Basins is suggesting the on-setting of the dry season weather pattern for the north portion of the district.

The SFWMD weather forecasts for this week and next week are above average rainfall. The available (16-October) Climate Prediction Center (CPC) outlook for November indicates equal chances of below-normal, normal and above-normal rainfall for central and southern Florida. The available (16-October) longer range CPC outlook for all the three-month windows through May 2015 indicate increased chances of above-normal rainfall for central and southern Florida.

### Current Conditions and Operations

As of October 21<sup>st</sup>, 2014, stages for most of the lakes in the Upper Kissimmee are increasing following very close the regulation lines. Kissimmee-Hatchineha-Cypress is the exception being 0.40 feet below schedule. The SFWMD intends to allow stages to rise to the regulation schedule lines up to the winter pool stage by the end of October if there are sufficient inflows. Flows through S-65 and the other structures in the Kissimmee River and the C-38 canal have decreased considerably compared to previous weeks. Today, flow through S-65 is close to the minimum of 300 cfs. Inundation depths in the Kissimmee River floodplain have decreased considerable over the last three weeks.

The October 21<sup>st</sup>, 2014 Lake Okeechobee stage (reported by the USACE on October 20<sup>th</sup>) was 15.78 feet NGVD, 0.06 feet higher than last week. The Lake stage is about 1.1 feet higher than a month ago and about 0.30 feet higher than one year ago. The October 21<sup>st</sup> stage was 0.72 feet above the historical average for this date. District scientists indicate the recent fast increase in Lake stage caused some ecological impacts, such as uprooting of vegetation and inundation of apple snail egg clutches. Stabilization of Lake stages will help in minimizing these ecological impacts.

Daily release rates at the Lake structures, averaged for the week ending October 20<sup>th</sup>, were estimated as 269 cfs at S-77 and 0 cfs at S-308. At the tidal structures, average daily discharges were about 1,078 cfs at S-79 and 0 cfs at S-80. The proportion of S-77 releases in the S-79 flows increased this. Average release rates during the past seven days may differ from the target because this seven day averaging period differs from the implementation period. The current S-79 seven day pulse release averaging 1,000 cfs will end on October 24<sup>th</sup>, 0700 hours.

No Lake Okeechobee regulatory releases south took place this past week.

For the 7-day period ending October 20<sup>th</sup>, 2014, Water Conservation Area operations are summarized as follows:

- WCA-1: Last week, stage remained in Zone A-2 of the regulation schedule, which puts WCA-1 around the 20 percent exceedance line for the historical elevation for this time of the year. The S-10A structure was closed on October 15<sup>th</sup> and S-39 is being used as much as possible to bring and maintain WCA-1 canal stages lower than the marsh.

- WCA-2A: Stage is about 0.7 feet above the bottom of Zone A (top zone). According to USACE posted statistics, stage in WCA-2A is slightly below the 25 percent upper quartile elevation for this time of the year. Discharges from WCA-2A via the S-11s continue and S-11B gate releases were increased on October 15<sup>th</sup>. S-34, S-38 and S-143 discharges continue to help manage stages in WCA-2A. S-144 through S-146 into WCA-2B remain open.
- WCA-3A: Stage is 0.1 feet above the Zone A (top zone) - Zone D line, which puts the WCA-3A stage close to the median stage for this time of the year. WCA-3A releases through the S12 structures are being performed with fully opened gates. S-333 remains closed due to G-3273 being above the 6.80 feet NGVD threshold. S-151 remains open passing water to WCA-3B and S-31 is being used as much as possible to pass water to tide through S-26, conditional on available capacity in the C-6 canal.

#### SFWMD Lake Okeechobee Adaptive Protocol (AP) Release Guidance

This week the SFWMD is not applying the Lake Okeechobee Adaptive Protocol release guidance flowchart since the Lake Okeechobee stage is above the Base-flow Sub-band of the 2008 LORS. The Adaptive Protocols process is documented in the District publication Final Adaptive Protocols for Lake Okeechobee Operations (September 16<sup>th</sup>, 2010).

For additional information pertaining to operations history and past recommendations, refer to the archives of LORS-2008 Release Guidance outcomes and operational position statements at [www.sfwmd.gov](http://www.sfwmd.gov) under the Operational Planning topic.