

MEMORANDUM

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DATE: October 30, 2014

SUBJECT: Operational Position Statement for Oct 28, 2014 – Nov 3, 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 28th, 2014 through November 3rd, 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 remain low, with the exception of direct rainfall on October 21st. 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 24th, 2014 and will end 7 am October 31st, 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.

Current Lake Okeechobee Stage: The October 28st, 2014 Lake Okeechobee stage (reported by the USACE as the stage on October 27th, 2400 hrs) was 15.94 feet NGVD. Due to substantial rain falling directly over Lake Okeechobee on October 21st, 2014, lake stage increased to 16.01 feet NGVD for the first half last week, but declined for the second half, with a net increase of 0.16 feet. Lake stage is in the upper third of the Low Sub-band, 0.24 feet from the Intermediate Sub-band.

2008 LORS Release Guidance (Part C): Given the current Lake Okeechobee 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 continue maximum practicable Lake Okeechobee regulatory releases to the WCAs and drier conditions in the EAA over the past week are allowing these operations. Some of the water releases south were consumed by local water users and the rest were treated in STAs 1E, 1W, 2 and 3/4 on a 24/7 basis as conditions allow. The week of October 21st to October 27th, the SFWMD implemented lake regulatory releases via S-352 and S-5A to STA-1W and/or STA-1E, with the additional benefit of allowing the collection of hydrodynamic information related to flow and stage in the STA cells. These releases are being passed through WCA-1 to tide via S-39 and to WCA-2A via S-10's. Lake Okeechobee regulatory releases via S-351 and S-354 were also made and sent to WCA-2A and WCA-3A after treatment in STA 2 and STA 3/4. S-38 and S-143 are also being used to pass excess WCA-2A water to tide. There have been challenges with vegetation clogging the manatee screens at S-351, S-352 and S-354 and both the USACE and SFWMD are working to ensure the maximum practicable releases are maintained.

Water levels throughout the WCAs continued to recede over the past week and conditions remain favorable to receive lake regulatory releases. While stages in WCA-1, remain close to the middle of Zone A-2, the water level in the canal, measured at the Site 1-8C gage is slightly higher than the marsh, measured by the 3-gage average. It is recommended that the canal water level be maintained slight lower than the marsh to prevent intrusion of canal water into the marsh. It is also the understanding of the SFWMD that the request to have a minimum of three week for stage to remain between 17 and 17.5 feet NGVD (or within Zone-A2) as requested by Refuge staff has been achieved and normal dry season recession rates may be initiated.

The recession rate in WCA-2A has been steeper than ecologically desirable and therefore WCA-2A can continue to handle inflow from WCA-1 via the S10s. It is recommended to retain stages about a half foot above regulation for ecosystem health and support for wading bird foraging.

Everglades' scientists indicate that Lake Okeechobee regulatory releases flows into northwestern WCA-3A from the STAs are desirable to keep the peat 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.

Florida Bay continues to need much higher inflow to reduce salinities to benefit the bay's ecosystems. Salinities remain elevated (6-15 psu) because of the wet season's low inflow and low rainfall. Potential for an MFL violation in 2015 is a concern.

For this operational week, Lake Okeechobee releases south via S-351 and S-354 will be sent to WCA-2A and WCA-3A after treatment in STA 2 and STA 3/4.

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 did not change compared to last week.

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 512 cfs and from all other sources averaged 1,060 cfs. The average monthly inflow into the estuary over the last 30 days was 1,457 cfs. Mean monthly flows have fallen below the 2,000 cfs oyster harmful threshold and salinity at the US1 bridge remains in 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 1,048 cfs over the past week, with 465 cfs released from Lake Okeechobee. Over the past month, S-79 total flows averaged 2,039 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 0.70 inches district wide (through 7 a.m. October 28st). Lake Okeechobee received 1.78 inches of rain during the past seven days. District-wide rainfall during the past 30 days totaled 2.81 inches (71 percent of average). During the past week rainfall recorded for the Upper and Lower Kissimmee Basins was 0.00 and 0.30 inches, respectively. For the past 30 days the Upper Basin received 71 percent of average rainfall, while the lower basin received 75 percent of average rainfall. District meteorologists have stated that the 2014-2015 dry season in south Florida has started, since the sea breeze cycle typical of the wet season ended towards the first week of October.

The SFWMD weather forecasts for the next two weeks are for below 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 28st, 2014, stages for most of the lakes in the Upper Kissimmee were closely following the regulation lines but have begun to level off and without additional rainfall, not all lakes will reach the winter pool stage by the end of October. Kissimmee-Hatchineha-Cypress remain about 0.70 feet below schedule. 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 four weeks.

The October 28st, 2014 Lake Okeechobee stage (reported by the USACE as the stage on October 27th, 2400 hrs) was 15.94 feet NGVD, 0.16 feet higher than last week. The lake stage is about 0.9 feet higher than a month ago and about 0.60 feet higher than one year ago. The October 28st stage was 0.89 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 and slow reduction of lake stages will help in minimizing these ecological impacts.

Daily release rates at the lake structures, averaged for the week ending October 27th, were estimated as 465 cfs at S-77 and 0 cfs at S-308. At the tidal structures, average daily discharges were about 1,048 cfs at S-79 and 512 cfs at S-80. The proportion of S-77 releases in the S-79 flows increased this week. 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 31st, 0700 hours.

Lake Okeechobee regulatory releases south were conducted this week, through S-352 and S-5A into STAs 1E and 1W, and from S-351 and S-354 into STA2 and STA 3/4.

For the 7-day period ending October 27th, 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 opened on October 22nd 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 0.6 feet above the bottom of Zone A (top zone). According to USACE posted statistics, stage in WCA-2A is at the median of the historical elevation for this time of the year. Discharges from WCA-2A via the S-11s continue. S-34, S-38 and S-143 are discharging and this has transitions to water supply mode. S-144 through S-146 into WCA-2B were closed on October 21st.
- WCA-3A: Stage is just at 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 16th, 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 under the Operational Planning topic.