

MEMORANDUM

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DATE: August 7, 2014

SUBJECT: Operational Position Statement for Aug 5 - Aug 11, 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 August 5, 2014 through Aug 11, 2014, the SFWMD recommendation to the USACE is to follow the 2008 LORS release guidance to manage the Lake Okeechobee stage. Specifically, that the USACE continue with the ten day pulse release averaging 1,500 cfs started on July 29, 2014 and when that pulse is completed start a new pulse of with same size and characteristics. Given the local runoff occurring and that the pulses prescribed by the WCP meter flow at S-79 (local runoff subtracted from the Lake Okeechobee releases at S-77) the SFWMD does not recommend increasing the pulse at this time. The lake stage continues to rise and is currently nearing the middle third of the Low Sub-band so a larger pulse may be needed in the future when reduced local runoff in Caloosahatchee River make the pulse more effective.

2008 LORS Release Guidance (Part C): As of July 29, the Lake Okeechobee stage was within the Low Sub-band and 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 Lake Okeechobee regulatory releases to the WCAs. Limited EAA canal flow-through capacity and limited STA treatment capacity have been available due to wet season rainfall. STA conditions are being monitored to identify opportunities to treat Lake releases and current conditions are more favorable for sending Lake O regulatory releases to the WCAs though the STAs. Lake regulatory releases via S-354 to STA-3/4 will continue, and STA-3/4 will be directed to northwest WCA-3A via G-404 when practicable. This week the SFWMD continues to discharge additional lake regulatory releases via S-352 and S-5A to STA-1W and/or STA-1E western flow-way, to be passed through WCA-1 to tide via S-39 and to WCA-2A via the S-10's. Lake O regulatory releases via S-351 are also planned to be sent through WCA-2A to WCA-3A after treatment in STA-2. As noted above, the opportunity to make these Lake O regulatory releases depend on rainfall and available flow-through conveyance capacity.

SFWMD Everglades' scientists report northwestern WCA-3A water levels are above land surface, but this area can receive Lake Okeechobee regulatory releases without adverse impacts. For other parts of the WCA system, ascension rates have been moderate to high this week, but generally still below the 0.25 feet per week stage increase limit needed to protect apple snail egg clusters from drowning. While rainfall may cause rapid ascensions, moderate ascension rates (in the range of 0.07 to 0.15 feet per week) are preferred for ecosystem needs in the wet season.

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”. The lake stage is within the lower third of the Low Sub-band. Consistent with the 2007 SEIS analysis of the selected plan and the 2008 Water Control Plan language on page 7-15, releases should be limited to 2,000 cfs at S-79 and 730 cfs at S-80.

For the St. Lucie Estuary, SFWMD estuary scientists suggest that if S-80 releases are required by the LORS 2008, then discharges should be maintained below 2,000 cfs (from all sources including flows from S-80, S-49, S-97, Ten Mile Creek and the tidal basin) to protect oyster populations near the US1 Bridge.

For the Caloosahatchee Estuary, SFWMD estuary scientists recommend consideration of two critical flow thresholds that are associated with protective salinity conditions for adult oysters between Cape Coral and Shell Point. A monthly mean flow < 1,500 cfs at S-79 would be protective of oysters downstream of Cape Coral. A monthly mean flow < 3,000 cfs at S-79 would be protective of oysters near Shell Point. The releases from S-79 should be conducted in a pulse pattern to mitigate potential stratification and phytoplankton accumulation in the water column. Suggested pulse schedules are given below.

Table 3. 10-day pulse pattern					
Day	300 cfs	450 cfs	650 cfs	1000 cfs	1200 cfs
1	800	1100	1300	1600	1800
2	1000	1600	1900	2200	2400
3	500	850	1300	1800	2000
4	400	500	900	1400	1600
5	200	350	700	1100	1300
6	100	100	400	800	1000
7	0	0	0	600	800
8	0	0	0	300	500
9	0	0	0	200	400
10	0	0	0	0	200

10-day pulse pattern				
Day	1500cfs	2000 cfs	2500 cfs	3000 cfs
1	2100	2700	2700	2000
2	2700	3500	4200	5500
3	2300	3000	5000	6500
4	2000	2600	3800	5000
5	1700	2200	3000	4000
6	1400	1800	2200	3000
7	1100	1500	1500	2000
8	800	1200	1200	1000
9	600	900	900	500
10	300	600	500	500

Weather and Climate

Rainfall during the past week totaled 3.00 inches district wide (through 7 a.m. August 5th). Lake Okeechobee received 2.12 inches of rain during the past 7-days. District-wide rainfall during the past 30 days totaled 9.39 inches (136% of average). During the past week rainfall recorded for the Upper and Lower Kissimmee Basins was 1.09 and 1.37 inches, respectively. For the past 30 days the Upper Basin received about 102% of average rainfall, while the lower basin received about 130% of average rainfall.

The SFWMD weather forecast for the upcoming week is above average rainfall. For week two, the forecast is more uncertain and is also for average rainfall. The available (31-July) Climate Prediction Center (CPC) outlook for August indicates equal chances of below-normal, normal and above-normal rainfall for central and southern Florida. The available (17-July) CPC outlook for all the three-month windows through November indicate equal chances of below-normal, normal and above-normal rainfall for central and southern Florida. Longer-range CPC climate outlooks for the winter of the 2014-15 indicate increased chances of above-normal rainfall associated with the forecast for an El Nino event.

Current Conditions and Operations

The August 5, 2014 Lake Okeechobee stage (reported by the USACE on August 4th) was 14.07 feet NGVD, 0.18 feet higher than last week. The Lake stage is about 1.05 feet higher than a month ago and is about 1.84 feet lower than one year ago. The August 4th stage was about 0.26 above the historical average for this date and rising within the Low Sub-band.

Daily release rates at the Lake structures, averaged for the week ending Aug 6th, were estimated at about 304 cfs at S-77 and 0 cfs at S-308. At the tidal structures, average daily discharges were about 2,496 cfs at S-79 and 185 cfs at S-80. The discharges at S-79 were mostly from local basin runoff produced from recent rainfall. All of the discharges at S-80 were from C-44 basin runoff. Average rates during the past 7-days may differ from the target because this 7-day averaging period differs from the implementation period. The current S-79 10-day target release of 1,500 cfs per the 2008 LORS will end on August 8th.

The WCA-1 stage is 0.06 feet above its regulation schedule and rising. WCA-2A stage continues to increase and is about 0.8 feet above its regulation schedule. The WCA-3A regulation stage (3 gage average) is now within Zone D and is rising towards Zone A.

Regulatory releases from WCA-1 to tide via S-39 will resume when additional Lake O releases are made and when conditions allow downstream capacity to be available. Regulatory releases from WCA-2A via the S-11s and S-38 continue to be made. Regulatory releases from the S-12s and S-333 are transitioning down to target rates. Everglades ecologists recommend gradual discharge rate changes to protect ecosystems and downstream habitat.

SFWMD Lake Okeechobee Adaptive Protocol (AP) Release Guidance

This week the SFWMD is not applying the Lake Okeechobee Adaptive Protocol (AP) release guidance flowchart since the Lake Okeechobee stage is above the Base-flow Sub-band of the 2008 LORS.

Lake Okeechobee Adaptive Protocols (AP) Background Information

The AP document included recommendations to conserve water in the beginning of the dry season when the Lake stage is in the Low Sub-band to ensure availability for later in the dry season when all water demands tend to be at their highest. Specific language on page 12 is shown here for convenience: "One of the fundamental tenets of adaptive protocols for Lake Okeechobee operations is to limit the 2008 LORS Low sub-band maximum release rate during the early part of the dry season to help conserve water and increase its potential availability for later in the dry season when the demand is largest. To implement this precept, when the lake stage is within the Low sub-band in the early part of the dry season, the weekly operations guidance may recommend to the USACE to limit the release volumes to no more than 50 percent of the maximum allowable. Factors that may influence this recommendation include lake stage trend, and weather and water condition forecasts."

The AP release guidance flowchart was designed primarily to guide release recommendations for circumstances when the Lake stage is within the Base-flow Sub-band or lower. The USACE's Water Control Plan (WCP) for Lake Okeechobee and the EAA recognizes that the SFWMD may allocate water to the environment through its "Adaptive

Protocols” or other SFWMD authorities. The WCP provides guidance as to releases, including Adaptive Protocol recommendations, in the various Lake schedule sub-bands.

There are two primary branches of the AP release guidance flowchart. The upper branch pertains to the 2008 LORS base-flow (aka, regulatory) releases while the lower branch pertains to environmental water supply releases. It is important to recognize that the AP was developed primarily to guide the water supply balance between Caloosahatchee Estuary, permitted water users, other water supply purposes of the water control system, and the Lake O MFL Rule. The water supply balance achieved by following the AP release guidance was evaluated by the Water Resources Advisory Commission and the SFWMD Governing Board, leading to board acceptance in September, 2010. [Final Adaptive Protocols for Lake Okeechobee Operations \(September 16, 2010\)](#).

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.