

## MEMORANDUM

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Terrie Bates, Director, Water Resources Division

**FROM:** Susan Sylvester, Chief, Water Control Operations Bureau  
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Dean Powell, Chief, Water Supply Bureau

**DATE:** May 28, 2014

**SUBJECT:** Operational Position Statement for May 27-June 2, 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**

This week's SFWMD recommendation is to initiate a 300 cfs (7-day average) environmental water supply release to the Caloosahatchee Estuary measured at S-79 and supplemented by Lake O releases at S-77 as needed. The recommended S-79 pulse release patterns for both 7-day and 10-day periods are provided on page 2; however the SFWMD recommends the 7-day release. The SFWMD recognizes that during dry periods S-77 releases may also be needed to maintain C-43 canal stages to meet the authorized project purposes of navigation and water supply to permitted users. Also, as the weather transitions to the wet season, C-43 basin runoff may contribute to flows at S-79 which could exceed the requested target flow of 300 cfs and reduce the need for S-77 releases.

This recommendation is made consistent with the Lake Okeechobee Adaptive Protocols (AP) release guidance. The Lake stage is within the Beneficial Use Subband and the 2008 LORS guidance does not apply. The USACE's Water Control Plan for Lake Okeechobee and the EAA defers to the SFWMD's AP or other SFWMD authorities for environmental water supply deliveries in the Beneficial Use Subband. The SFWMD governing board directed staff to use the SFWMD's Lake Okeechobee AP release guidance as the basis for S-77 release recommendations to the USACE when the lake stage is within or below the Baseflow Subband.

2008 LORS Release Guidance (Part C): With the Lake Okeechobee stage receding into the Beneficial Use Subband, Part C of the 2008 LORS does not suggest releases are needed to manage lake stages.

Consistent with the LORS release guidance, the USACE is no longer requesting the SFWMD to make Lake Okeechobee regulatory releases to the WCAs. Irrigation demands continue to be very high with the lack of rainfall. Therefore southward releases from Lake O continue at near-maximum rates to meet EAA irrigation needs and supplement water supply releases to coastal Palm Beach, Broward and Miami-Dade Counties.

2008 LORS Release Guidance (Part D): With the Lake Okeechobee stage receding into the Beneficial Use Subband, Part D of the 2008 LORS does not suggest releases are needed to manage lake stages.

For the St. Lucie Estuary, SFWMD estuary scientists reported that salinity at the US-1 bridge is within the preferred range and releases of freshwater from Lake Okeechobee are not recommended.

For the Caloosahatchee Estuary, SFWMD estuary scientists reported salinity conditions remain within the preferred ranges for tape grass in the upper estuary and for oysters in the lower estuary. Forecast salinity near the I-75 Bridge

will increase without releases at S-79, and the 30-day moving average salinity is expected to rise above 5 psu within the next two weeks. SFWMD scientists continue to recommend releases averaging 450 cfs at S-79. However the SFWMD agency recommendation, consistent with the SFWMD governing board direction to follow the AP release guidance, is for S-79 releases averaging 300 cfs, supplemented as needed with Lake Okeechobee releases at S-77. Recommended pulse release patterns are provided in the following table for a 10-day and 7-day release period. SFWMD estuary scientists prefer the 7-day pattern, which is the SFWMD's recommendation.

<u>10-day S-79 pulse pattern</u>		<u>7-day S-79 pulse pattern</u>	
Day	(300 cfs)	Day	(300 cfs)
1	800	1	600
2	1000	2	900
3	500	3	500
4	400	4	100
5	200	5	0
6	100	6	0
7	0	7	0
8	0		
9	0		
10	0		

### Weather and Climate

Rainfall during the past week totaled 0.12 inches district wide (through 7 a.m. May 27<sup>th</sup>). Lake Okeechobee received 0.01 inches of rain during the past 7-days. District-wide rainfall during past 30 days totaled 3.01 inches (84% of average). The Upper and Lower Kissimmee Basins averaged 0.35 inches of rainfall during the past week. For the past 30 days the Upper Basin received about 167% of average rainfall, while the lower basin received about 151% of average rainfall.

The SFWMD weather forecast for the upcoming week is for below-average rainfall. For week two, the forecast is more uncertain and is for average rainfall. The available (15-May) Climate Prediction Center (CPC) outlook for June indicates increased chances of above-normal rainfall for central and southern Florida. The available (15-May) CPC outlook for all the three-month windows for the wet season indicate equal chances of below-normal, normal and above-normal rainfall for central and southern Florida. Longer-range CPC climate outlooks for parts of the 2014-15 dry season indicate increased chances of above-normal rainfall associated with the forecast for an El Niño event.

### Current Conditions and Operations

The May 26, 2014 Lake Okeechobee stage (reported by the USACE on May 27<sup>th</sup>) was 12.54 feet NGVD, 0.25 feet lower than last week. The Lake stage is about 0.6 feet lower than a month ago and is about 0.8 feet lower than one year ago. The May 26<sup>th</sup> stage was about 0.6 feet below the historical average for this date. The stage is now within the Beneficial Use Subband of the 2008 Lake Okeechobee Regulation Schedule (2008 LORS).

Daily release rates at the Lake structures, averaged for the week ending May 26<sup>th</sup>, were estimated at about 1,360 cfs at S-77 and 0 cfs at S-308. At the tidal structures, average daily discharges were about 877 cfs at S-79 and 0 cfs at S-80. Some of the S-77 release this time of year may be for water supply purposes, or some of the S-79 discharge may be from C-43 basin runoff. Average rates during the past 7-days may differ from the 10-day target mainly because the target pulse has a variable pattern over the 10-day period. Note that the current 10-day S-77 LORS baseflow release will end 22-May. Baseflow releases are regulatory discharges and not environmental water supply releases. Environmental water supply releases at S-79 per the SFWMD's Lake Okeechobee Adaptive Protocols release guidance are recommended to begin on 22-May. No Lake O releases via S-308 and S-80 to the St. Lucie Estuary are planned.

The WCA-1 stage is currently about 0.5 feet below its regulation schedule. For WCA-2A, the S-11B headwater stage is about 10.1 feet, NGVD, and remains below the water supply floor elevation (10.5 feet, NGVD). Water supply releases through S-38 are being balanced by preceding inflow volumes from Lake Okeechobee. As is normal this time of the year, the marsh in WCA-2A is higher than canal stage and above the regulation schedule. The WCA-3A regulation stage (3 gage average) is about 0.4 feet below the bottom of Zone E1; and the S-333 headwater stage is

slightly below the water supply floor elevation (7.5 feet, NGVD). Water supply releases from WCA-3A now require preceding inflows from Lake Okeechobee.

SFWMD everglades' scientists continue to recommend Lake Okeechobee releases to northwestern WCA-3A and to northeastern WCA-3A to maintain peat hydration which helps to prevent loss of peat through increased decomposition. Recession rates are very high and SFWMD scientists recommend slowing the rates if possible. Releases from WCA-1 and WCA-2A to coastal Palm Beach and Broward Counties will continue as needed to help maintain coastal canal stages for water supply. S-333 and S-334 are open as needed to help maintain canal stages in the South Dade Conveyance System (SDCS). All WCA primary discharge structures (S10s, S11s, and S12s) are closed; however S-11C could be opened soon to facilitate Lake O inflows to balance the water supply outflows from WCA-3A. Inflows to the WCAs from Lake Okeechobee will continue as needed, and consistent with the WCA regulation schedules, to supplement water supply releases from the WCAs.

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

This week the SFWMD's Lake Okeechobee Adaptive Protocol (AP) release guidance flowchart is applicable since the Lake Okeechobee stage is within the Beneficial Use Subband of the 2008 LORS.

The Lake O AP release guidance suggests releases up to 300 cfs at S-79, to be supplemented by Lake O releases at S-77 as needed. This week's outcome is based on forecast salinity at the Val-I75 site being above the 5 psu threshold and less than a 50% chance of the Lake stage falling below elevation 11.0 feet, NGVD by 1-June. The specific salinity criterion in the AP release guidance states "Estuary 'needs' water when the 30-day moving average salinity at the I-75 bridge is projected to exceed 5 practical salinity units (psu) within 2 weeks." Further details are below.

#### Lake O 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 Subband 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 subband 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 subband 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 Baseflow Subband 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 subbands.

There are two primary branches of the AP release guidance flowchart. The upper branch pertains to the 2008 LORS baseflow (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](http://www.sfwmd.gov) under the Operational Planning topic.