

MEMORANDUM

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DATE: January 22, 2014

SUBJECT: Operational Position Statement for January 21-27, 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 of January 21-27, 2014, the SFWMD recommends the USACE continue to follow the 2008 LORS release guidance to manage the Lake stage. The Lake stage receded about 0.12 feet during the past week to a stage of 13.92 feet, NGVD, and remains in the Low Subband about 0.1 feet above the Baseflow Subband.

2008 LORS Release Guidance (Part C): The 20-January outcome from Part C of the 2008 LORS suggests "Up to Maximum Practicable to WCAs IF desirable or with minimum Everglades Impacts". The Tributary Hydrologic Condition (THC) is within the normal classification again this week. The THC is determined by the wetter of the Palmer Index and the Lake O Net Inflow. The Lake O Net Inflow remains in the dry classification this week. The Palmer Index remains in the normal classification (2008 LORS classifications).

The USACE continues to advise the SFWMD to discharge water south from Lake Okeechobee per Part C of the LORS release guidance so long as the STAs are not adversely affected. The SFWMD continues to release Lake O regulatory discharges to northwestern WCA-3A. However Lake O regulatory discharges to WCA-1 were suspended on 20-Dec after the USFWS-LNWR staff requested discontinuation of treated Lake O regulatory releases to the Refuge. STA-1W vegetation stress prompted SFWMD STA staff to recommend discontinuation of Lake releases via STA-1W. Lake O regulatory discharges to WCA-2A were suspended last week due to a slowing recession rate, forecast rainfall and decreased WCA-2A water supply releases to the lower east coast via S-38.

However, water supply releases from WCA-2A to C-14 in Broward County will resume this week. Lake O regulatory releases to WCA-2A via STA-2 north build-out area will also resume. Recession rates in WCA-2A will be monitored closely to ensure that they continue to occur at rates similar to the regulation schedule slope. The WCA-1 stage is about 0.5 feet below the bottom of its regulation schedule. The WCA-2A stage is about 0.8 feet above the regulation schedule and the recession rate is similar to that of its schedule. WCA-3A stage is tracking along the bottom of Zone E1 at the same recession rate.

Treated Lake O regulatory discharges continue to be directed to northwest WCA-3A via STA-3/4 and G-404. Input from SFWMD everglades' scientists indicate these releases are providing some benefit to northwestern WCA-3A but are not large enough to adversely impact central and southern WCA-3A stages. The resumption of Lake O regulatory discharges to WCA-2A is based on input from interagency everglades' scientists who indicate the area will not be adversely impacted by the releases and may benefit from the releases.

2008 LORS Release Guidance (Part D): The outcome from Part D of the 2008 LORS release guidance is the same as last week: “S-79 up to 450 cfs, and S-80 up to 200 cfs”. The Water Control Plan allows the USACE to release the total of 650 cfs (450 + 200) at S-79 with no releases at S-80.

For the St. Lucie Estuary, SFWMD estuary scientists reported that salinity is improving in the estuary and local sources (runoff and ground water) are sufficient to meet requirements for freshwater. Therefore releases of freshwater from Lake Okeechobee are not recommended.

For the Caloosahatchee Estuary, SFWMD estuary scientists reported salinity conditions in the lower estuary are good and salinity near the I-75 bridge is slightly increasing, so freshwater inputs at S-79 are likely needed to keep the 30-day moving average salinity below 5 psu. The 30-day moving average salinity at Station Val I75 (I-75 bridge) is below 5 psu and is forecast to rise just above 5 psu within 14 days if no releases are made at S-79. If 650 cfs is released at S-79 then the 30-day moving average salinity is forecast to remain below 5 psu. SFWMD scientists suggest that continued baseflow releases should allow good salinity conditions the lower estuary while maintaining conditions conducive for submerged aquatic vegetation (SAV) in the estuary upstream of Ft. Myers. To mitigate potential stratification and phytoplankton accumulation in the water column, the release from S-79 should be released in a pulse pattern per the table below:

<u>10-day pulse pattern (cfs)</u>			<u>7-day pulse pattern (cfs)</u>		
Day	450	650	Day	450	650
1	1100	1300	1	1000	1450
2	1600	1900	2	1200	1700
3	850	1300	3	600	900
4	500	900	4	350	500
5	350	700	5	0	0
6	100	400	6	0	0
7	0	0	7	0	0
8	0	0			
9	0	0			
10	0	0			

Weather and Climate

Rainfall during the past week totaled 0.10 inches district wide (through 7 a.m. January 21st). Approximately 0.06 inches fell directly over Lake Okeechobee during the past 7-days. District-wide rainfall during the past 30 days totaled 1.75 inches (6% below-average). The Upper and Lower Kissimmee Basins recorded about 0.08 inches of rainfall during the past week. For the past 30 days the Upper Basin received about 54% of average rainfall, while the lower basin has received about 50% of average rainfall.

The SFWMD weather forecast for the upcoming week is for below-average rainfall. For week two, the forecast is also for below-average rainfall. The available (16-Jan) Climate Prediction Center (CPC) outlook for February is for increased chances of below-normal rainfall for central and southern Florida. The available (16-Jan) CPC outlook for the three-month window: Feb-Mar-Apr also indicates increased chances of below-normal rainfall for central and southern Florida. For the Mar-Apr-May windows through June all indicate equal chances of below-normal, normal and above-normal rainfall for central and southern Florida.

Current Conditions and Operations

The January 20, 2014 Lake Okeechobee stage (reported by the USACE on January 21st) was 13.92 feet NGVD, 0.12 feet lower than last week. The Lake stage is 0.39 feet lower than it was a month ago and is almost one foot lower than one year ago. The January 20th stage was about 0.8 feet below the historical average for this date. The stage is within the Low Subband and continues to recede parallel to, and within about 0.1 feet of, the Baseflow Sub-band of the 2008 Lake Okeechobee Regulation Schedule (2008 LORS).

Daily release rates, averaged for the past week (ending 21-Jan), at the Lake structures were about 958 cfs at S-77 and no flow at S-308. At the tidal structures, average daily discharges were about 777 cfs at S-79 and 0 cfs at S-80. S-79 remains open and, as of 21-Oct-2013, has been releasing target baseflow rates averaging 650 cfs. Lake releases at S-77 supplement C-43 basin runoff as needed to achieve the target flow rate. 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.

Irrigation demands are being supplied by Lake Okeechobee via S-351, S-352 and S-354. The releases have varied with local rainfall to maintain canal stages. C-10A releases have been made to assist with dewatering the L-8 Flow Equalization Basin as well as supplying water needs of the City of WPB and the LWDD. Some of the C-10A discharge is a Lake O regulatory release to tide via C-51 and S-155. Water supply releases from WCA-2A to maintain canal stages in the lower east coast will resume this week.

SFWMD Lake Okeechobee Adaptive Protocol (AP) Release Guidance

This week the SFWMD's Lake Okeechobee Adaptive Protocol (AP) release guidance flowchart is not applicable since the Lake Okeechobee stage is above the Baseflow Subband. Recent projections indicate the lake stage could recede into the Baseflow Subband within the next 3-4 weeks if dry conditions persist and the current recession rate increases slightly. The same outlook has been forecast since December, but stages continue to recede parallel with the top of the Baseflow Subband.

Please note that 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 under the Operational Planning topic.