

MEMORANDUM

TO: Laureen Borochaner, Chief, Engineering Division (USACE)
FROM: John Mitnik, Chief District Engineer (SFWMD)
DATE: October 17, 2024
SUBJECT: System Operational Position Statement October 15, 2024 to October 21, 2024

This Position Statement is to provide operational input for the one-week period from October 15, 2024 to October 21, 2024 based on system conditions and data observed during the previous Monday to Sunday 7-day period.

Current climate conditions: District October rainfall to date is much above normal (237% of normal). The rainfall forecast (issued October 16) calls for below normal rainfall for the coming 7-day period and the following one.

Climate and weather forecasts: The most recent CPC precipitation outlook for Oct 2024 is for substantial increased chances (50%-60%) of above Normal rainfall for south Florida. La Nina conditions (drier) are expected to emerge during the September through November and persist through the winter. The transition into the 2024 – 2025 Dry Season goes through the 3-month window of Oct 2024 – Dec 2024 with equal chances of below, normal, and above normal (EC) for south Florida. The 3-month windows of Nov 2024 – Jan 2025 and Feb 2025 – April 2025 show increased chances (40-50%) of below normal rainfall for the entire District. The 3-month windows of Dec 2024 – Feb 2025 and Jan 2025 – Mar 2025 show outlooks for substantial increased chances (50-60%) of below normal rainfall for the entire District. The 3-month windows Mar 2025 – May 2025 shows slightly increased chances (33-40%) of below normal rainfall for south Florida. The transition into the 2025 wet season shows equal chances (EC) of rainfall for the state of Florida.

Hydrologic and tropical outlooks: Current climatological conditions are Normal, but forecasted to turn drier by the start of the dry season. Current hydrological conditions are Normal. Based on the conditions at the start of the month the stage is projected to stay in Zone D for the next 2 months.

Water-supply conditions: The Lake Okeechobee seasonal net inflow outlook is Dry at Moderate risk for water supply. The multi-seasonal net inflow outlook is Dry at High risk for water supply.

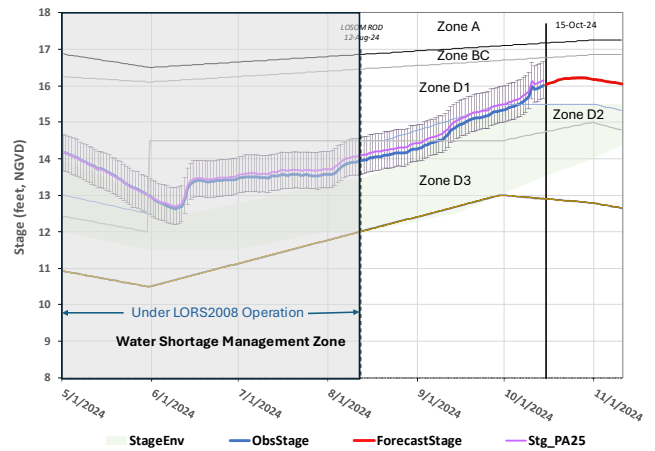
Estuary conditions: For the two 7-day periods, September 30 to October 6, 2024 and October 7 to October 13, 2024, total inflow to the Caloosahatchee Estuary averaged approximately 5,950 cfs and 7,700 cfs with no flow coming from Lake Okeechobee through S-77. Salinities in the upper estuary were within the optimal range (0-10) for tape grass during both 7-day periods. Salinities were in the damaging range (<5) for adult eastern oysters at Cape Coral, and in the upper stressed range (>25) at Sanibel for first 7-day period. Cape Coral and Sanibel salinities were missing over the past two weeks due to the effects of Hurricane Helene and are undergoing repairs. Fort Myers and Shell Point stations stopped reporting during Hurricane Milton and are also undergoing repairs. Salinities were in the optimal range (10-25) at Shell Point during both 7-day periods. Total discharge to the St. Lucie Estuary was about 2,200 cfs and 5,900 cfs over the past two 7-day periods with no flow coming from Lake Okeechobee, about 550 cfs and 1,400 cfs coming from C-44 Basin, about 400 cfs and 900 cfs coming from C-23 Basin, about 250 cfs and 900 cfs coming from C-24 Basin, and about 1,000 cfs and 2,700 cfs coming from Tidal Basin during the two periods, respectively. The average salinity in the middle estuary was within the lower stressed range (5-9) during the first 7-day period and decreased to the damaging range (<5) for adult eastern oysters during the most recent 7-day period.

Lake Okeechobee stage and ecological conditions:

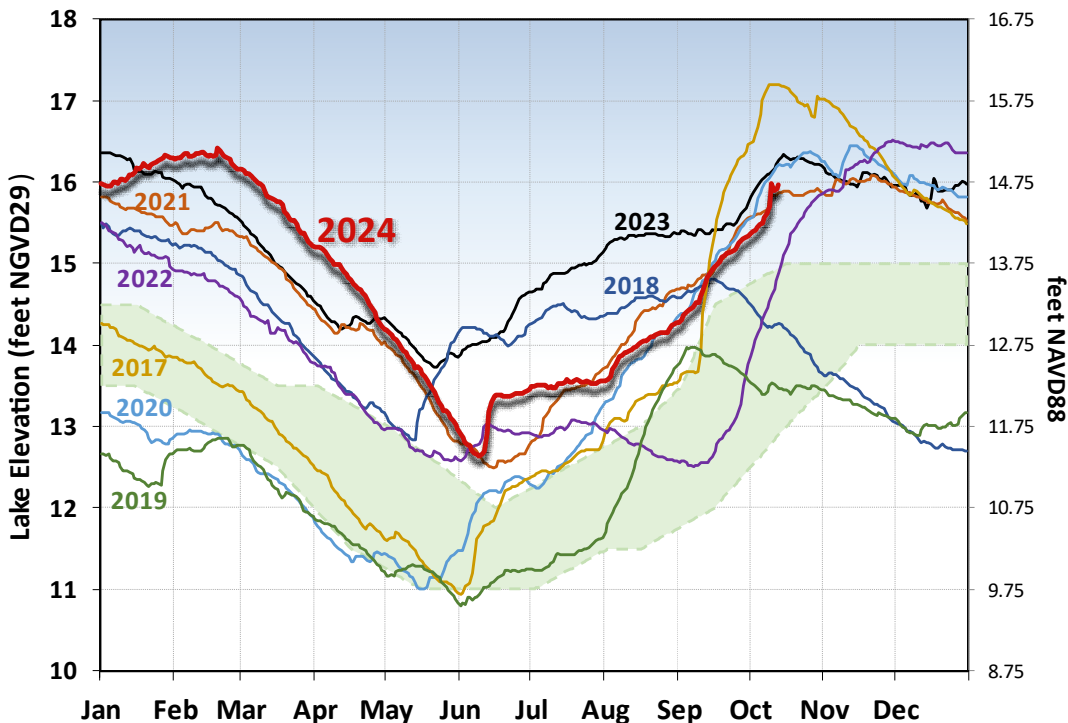
On October 13 the daily average Lake Okeechobee stage was 14.65 feet NAVD88 (15.96 feet NGVD29), which placed it within the upper third of Zone D (Zone D1 of the PA25 simulation) of the Lake Okeechobee System Operating Manual (LOSOM) above the ecological envelope. Lake stage increased by 0.64 feet over the preceding 14-day period. The current climate outlook is for ENSO-neutral with La Niña favored to develop during September-November (ENSO- increased likelihood of below normal dry season rainfall north of the Lake). The LOSOM criteria to consider implementation of Recovery Operations to lower the lake level into Lake Okeechobee's Recovery Envelope has been triggered. Efforts to manage Lake levels into the Recovery Envelope could reduce the chance of prolonged Recovery Operations which include releases to the St. Lucie Estuary and Lake Worth Lagoon. The District recommends USACE implements a non-harmful release from Lake Okeechobee to the Caloosahatchee Estuary with an average discharge of 2,000 cfs (7-day pulse) as measured at the S-79 structure, zero lake releases to the St. Lucie Estuary and zero lake releases to the Lake Worth Lagoon. The USACE should continue to track Red Tide and Blue Green Algae conditions, and should conditions change during this operational period, the USACE should look to reassess releases as needed. The USACE typically implements the releases to the estuaries over a 7-day period starting on Saturday and ending on Friday.

Forecast Modeling Based on PA25 Simulation

Lake Okeechobee Hindcast & Forecasts* [S79/S80: 2000/0]



Lake Okeechobee Stage vs Recovery Ecological Envelope



The current and seven prior year's annual stage hydrographs for Lake Okeechobee in comparison to the recovery envelope (light green). A shift from the normal ecological envelope to the recovery envelope occurred because the 30-day minimum lake stage (elevations exposed for at least 30 days, nonconsecutively) in the June 1 – July 31, 2023, window was >11.75 feet NAVD88 (13 feet NGVD29)

Navigation and recreation conditions: Currently, there are no planned deviation or declared water shortage impacting navigation or lockages.

STOF water supply conditions: Current Lake Okeechobee stage is sufficiently high that water supply deliveries to the Seminole Tribe of Florida (STOF) Brighton Reservation, if needed, will not be impacted. When Lake Okeechobee stage recedes below 8.75 feet NAVD88 (10 feet NGVD29) and 6.75 feet NAVD88 (8 feet NGVD29), water supply delivery is not achievable via Pump Station G-207 on the Harney Pond Canal and Pump Station G-208 on the Indian Prairie Canal, respectively, as the respective canals become disconnected from Lake Okeechobee.

Algal Bloom conditions: The FWRI reported on October 4, 2024, showed that *Karenia brevis*, the Florida red tide dinoflagellate, was not observed in any samples collected statewide over the past week. In the most recent non-obscured satellite image from September 29, 2024, NOAA's Harmful Algal Bloom Monitoring System suggests patches of moderate cyanobacteria abundance in the northwestern region of the Lake and outside of Fisheating Bay.

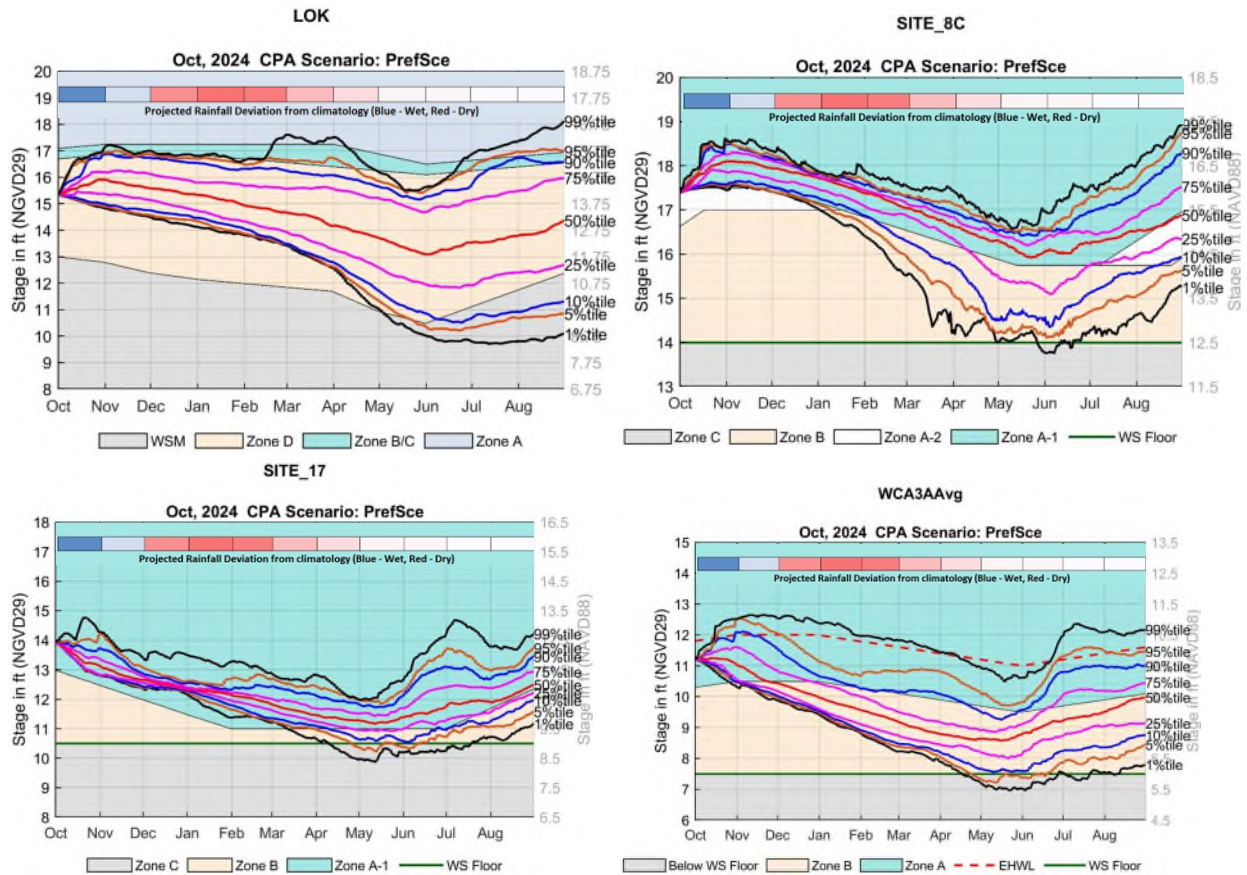
STA conditions: In STA-1E, Central Flow-way is offline for construction activities. An operational restriction is in place in the Western Flow-way for post-construction vegetation grow-in, and in the Eastern Flow-way for vegetation establishment following erosion repair. In STA-1W, an operational restriction is in place in the Northern Flow-way for vegetation management activities. Treatment cells are above target stage. Vegetation in the flow-ways is highly stressed. The 365-day PLRs for the Eastern and Western Flow-ways are high (≥ 1.0 g/m²/yr). STA-2 has operational restrictions in place in Flow-ways 2 and 4 for vegetation management activities. Online treatment cells are above target stage. Vegetation in Flow-ways 2, 3, and 4 is stressed, and in 5 is highly stressed. The 365-day Phosphorus Loading Rates (PLRs) for flow-ways 2 and 3 are high (≥ 1.0 g/m²/yr). In STA-3/4, Eastern Flow-way is under limitations for post-drawdown vegetation grow-in, treatment cells are above target stage, vegetation in the Eastern and Central flow-ways is stressed to highly stressed, and the 365-day PLRs for the Central and Western Flow-ways are high (≥ 1.0 g/m²/yr). For the current operational period the USACE is not requesting flows south to the STAs because it is not beneficial to the WCAs. The District will continue to work with the USACE to manage Lake Okeechobee levels in an effort to curtail harmful discharges over this year. To help with this objective the District will move as much water south through the Stormwater Treatment Areas as possible under the current permits, recognizing the existing conditions in the STAs at the conclusion of the wet season, and as regional conditions allow.

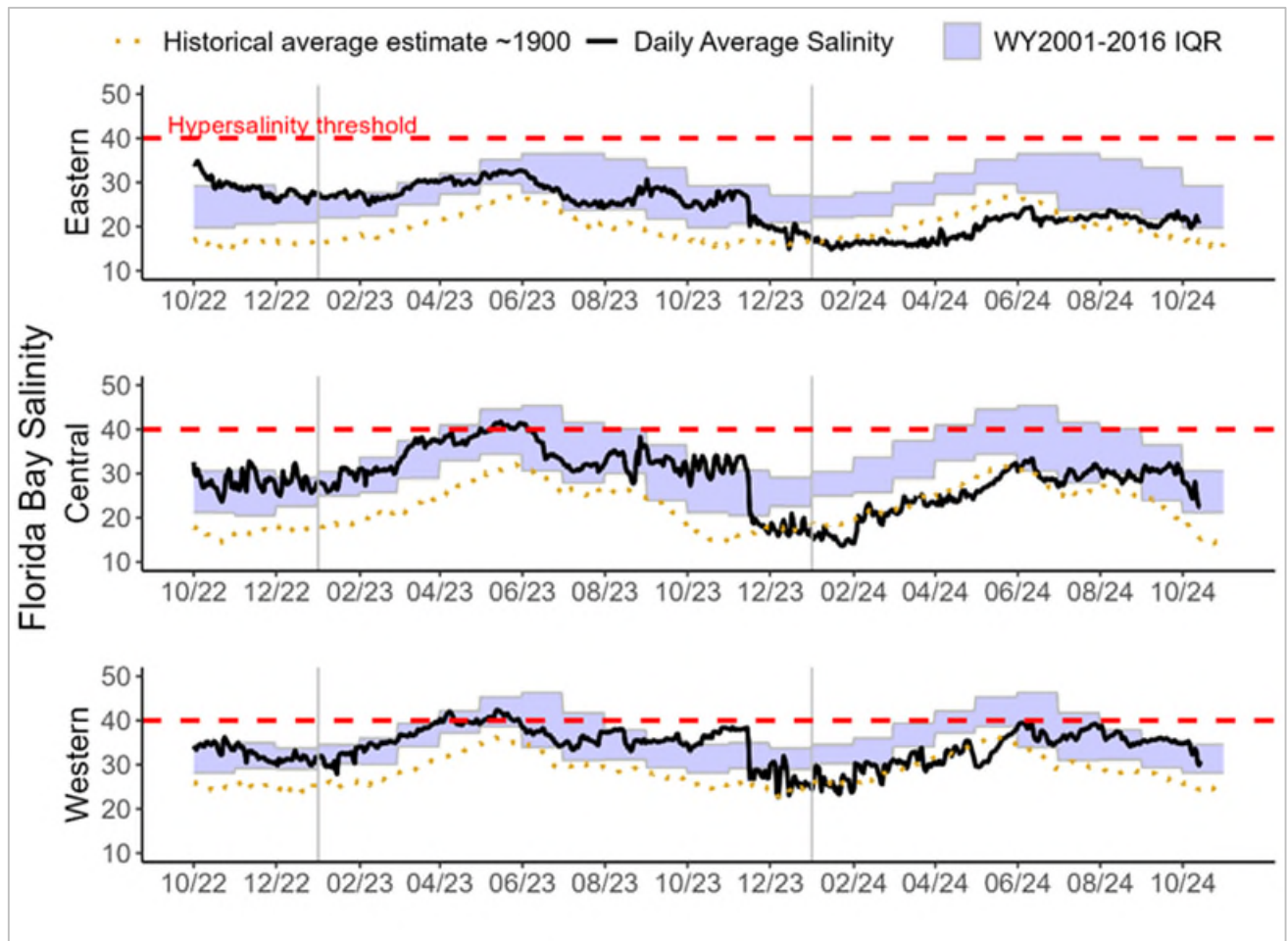
WCA conditions: On October 13 the daily average stage in WCA-1 was at 15.61 feet NAVD88 (17.21 feet NGVD29), in Zone A2 and 0.29 feet below regulation schedule. On October 13 the daily average stage in WCA-2A was at 12.49 feet NAVD88 (14.02 feet NGVD29), in Zone A and 1.23 feet above regulation schedule. On October 13 the daily average stage in WCA-3A was at 9.98 feet NAVD88 (11.50 feet NGVD29), in Zone A and 1.12 feet above regulation schedule. Flood control releases are being implemented by USACE to move water through the WCAs via the S-11 and S-12 structures. In addition, the District released water to tide from WCA-1 via the Hillsboro Canal at S-39, from WCA-2A via the C-14 Canal at S-38 and from WCA-3A through S-151 and S-31 into the C-6 Canal and via the NNR Canal at S-34E. Over the 7-day period from September 30 to October 13, 2024, no regulatory releases were sent from Lake Okeechobee south to the STAs. No lake regulatory releases reached the Lake Worth Lagoon through the C-51 canal during this period.

ENP conditions: Releases from WCA-3A to the ENP continue through the S-12 structures, the S-344 structure, and the S-333 structures. The S12s (A through D) are fully open and passing the largest proportion of the releases. Releases through S-333 and S-333N are limited by the constraint in L-29 canal stage, currently at 6.96 feet NAVD88 (8.5 feet NGVD29). Looking back a year ago, current conditions is a more mixed trend exhibiting shallower conditions in WCA-1, significantly so in the southeast. WCA-3B is slightly shallower with the rest of the EPA is experiencing slightly deeper conditions. Hydrologic connectivity remains robust within the major sloughs of ENP. Stages increased in Taylor Slough last week and remain above the recent average. Salinity decreased on average in Florida Bay compared to last week and is within the WY2001-2016 Interquartile Range (IQR) for all three regions. Given that the WCA-3A stage remains in Zone

A, the Tamiami Trail Flow Formula (TTFF) continues to recommend maximum practicable releases from WCA-3A to ENP. The District recommends continuing with the current operations for the releases from WCA-3A in accordance with the Combined Operating Plan.

October 2024 Conditional Position Analysis (CPA) results for Lake Okeechobee, WCA-1, WCA-2A and WCA-3A.





Eastern (top panel), Central (middle panel) and Western (bottom panel) Florida Bay daily average salinities with WY2001-2016 interquartile (25-75 percentile) ranges (IQR) and estimated historical daily average salinities. The hypersalinity threshold indicates the level at which salinities start to become harmful to seagrass.