MEMORANDUM

TO: Laureen Borochaner, Chief, Engineering Division (USACE)

FROM: John Mitnik, Chief District Engineer (SFWMD)

DATE: December 19, 2024

SUBJECT: System Operational Position Statement December 17, 2024 to January 6, 2025

This Position Statement is to provide operational input for the three-week period from December 17, 2024 to January 6, 2025 based on system conditions and data observed during the previous Monday to Sunday 7-day period.

Current climate conditions: District December rainfall to date is much below normal (46% of normal). The rainfall forecast (issued December 18) calls for below normal rainfall for the coming 7-day period and uncertain for the following period.

Climate and weather forecasts: The most recent CPC precipitation outlook for Dec 2024 is slightly increased chances (33-40%) of below Normal rainfall or south Florida. La Nina conditions (drier) are expected to emerge during the November 2024 through January 2025 and persist through the winter. The 3-month window of Dec 2024 – Feb 2025 shows substantial increased chances (50-60%) of below normal rainfall for areas north of the EAA, and increased chances (40-50%) of below normal for the respective remainder areas of the District. The 3-month window of Jan 2025 – Mar 2025 shows outlooks for substantial increased chances (50-60%) of below normal rainfall for the entire District. The 3-month windows of Feb 2025 – Apr 2025 and Mar 2025 – May 2025 indicate increased chances (40-50%) of below normal rainfall for the entire District. All the 3-month windows from Apr 2024 – Jun 2024 into the transition to the 2024-2025 Dry Season show equal chances of below, normal and above normal rainfall.

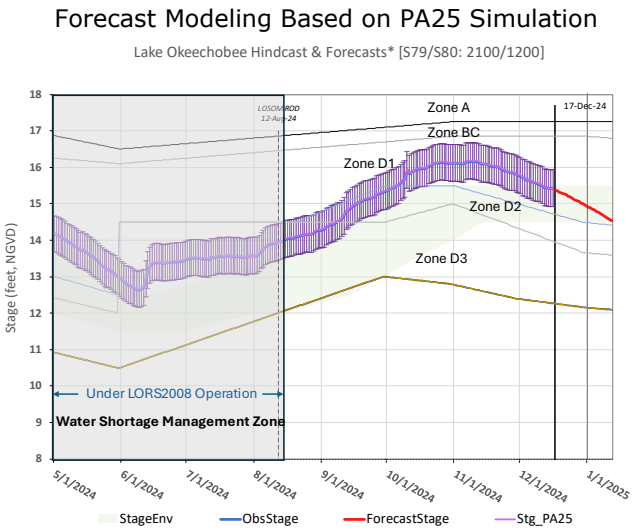
Hydrologic and tropical outlooks: Current climatological conditions are Normal, but forecasted to turn drier by the start of the dry season. Current hydrological conditions are Normal. Based on the conditions at the start of the month the stage is projected to stay in Zone D for the next 2 months.

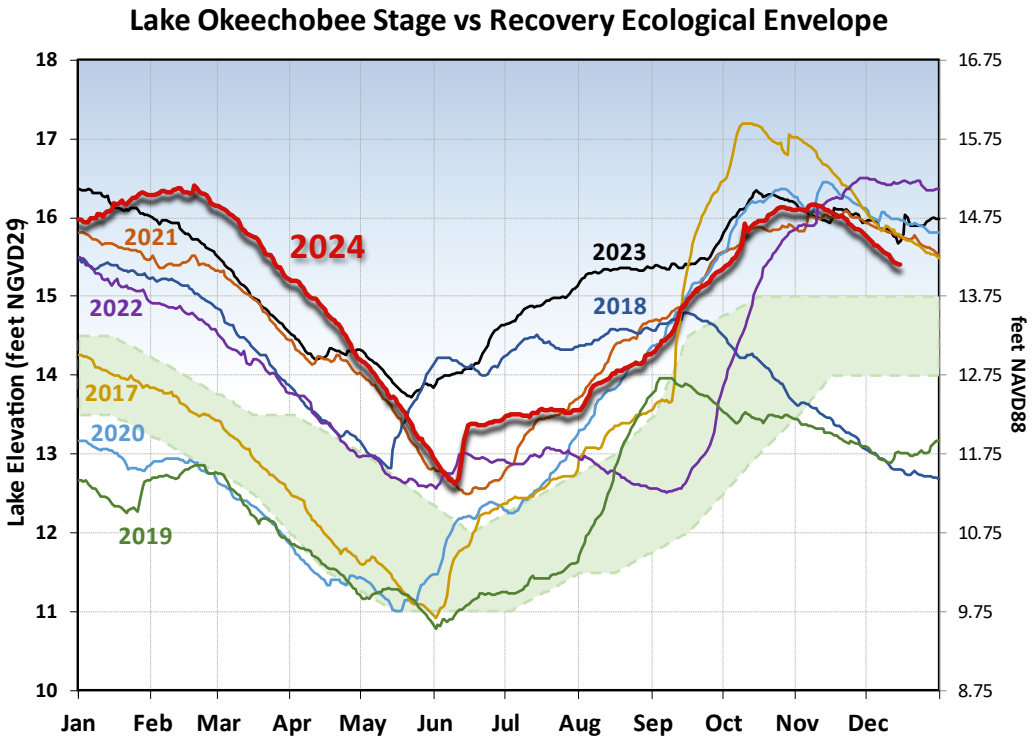
Water-supply conditions: The Lake Okeechobee seasonal net inflow outlook is Extremely Dry at High risk for water supply. The multi-seasonal net inflow outlook is Normal at Moderate risk for water supply.

Estuary conditions: For the 7-day period, December 9 to December 15, 2024, total inflow to the Caloosahatchee Estuary averaged approximately 2,200 cfs with about 1,400 cfs coming from Lake Okeechobee through S-77. Salinities in the upper estuary were within the optimal range (0-10) for tape grass. Salinities were in the optimal range (10-25) for adult eastern oysters at Cape Coral and Shell Point, and in the upper stressed range (>25) at Sanibel. Total discharge to the St. Lucie Estuary was about 1,300 cfs with about 950 cfs coming from Lake Okeechobee, about 70 cfs coming from C-44 Basin, about 30 cfs coming from C-23 Basin, no flow coming from C-24 Basin, and about 250 cfs coming from Tidal Basin. The average salinity in the middle estuary was within the optimum range (10-25) for adult eastern oysters.

Lake Okeechobee stage and ecological conditions:

On December 15 the daily average Lake Okeechobee stage was 14.11 feet NAVD88 (15.41 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 decreased by 0.15 feet over the preceding 7-day period. The current climate outlook is for ENSO-neutral with La Niña favored to develop during November 2024-January 2025 (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. The USACE should continue non-harmful Recovery Operations for Lake Okeechobee as described in LOSOM to increase the likelihood of success this dry season. The District will continue to monitor system conditions throughout the system and coordinate with USACE as needed. 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.





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 December 13, 2024, that Karenia brevis, the Florida red tide dinoflagellate, was observed at low to high concentrations in and offshore of Lee County, background to medium concentrations in and offshore of Collier County, and low concentrations offshore of Monroe County. On the east coast, red tide was observed at very low concentrations in one sample from Brevard County. In the most recent non-obscured satellite image from December 9, 2024, NOAA's Harmful Algal Bloom Monitoring System suggests minimal bloom activity on Lake Okeechobee.

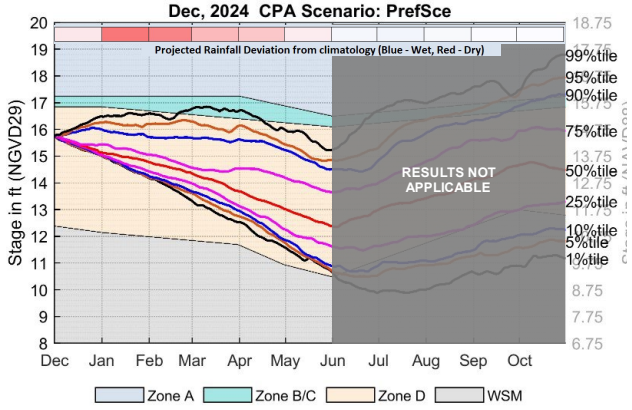
STA conditions: In STA-1E, Central Flow-way is offline for construction activities. An operational restriction is in place in the Western Flow-way for post-construction vegetation grow-in. Online treatment cells are near target stage. In STA-1W, an operational restriction is in place in the Northern Flow-way for vegetation management activities. Treatment cells are near 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 $g/m^2/yr$). STA-2 has operational restrictions in place in Flow-ways 2 and 4 for vegetation management activities. Online treatment cells are near 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 $g/m^2/yr$). In STA-3/4, Eastern Flow-way is under limitations for post-drawdown vegetation grow-in. Treatment cells are near or 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 $g/m^2/yr$). For the current operational period, USACE is requesting maximum practicable regulatory releases be sent south from Lake Okeechobee towards 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 December 15 the daily average stage in WCA-1 was at 15.25 feet NAVD88 (16.84 feet NGVD29), in Zone B and 0.5 feet below regulation schedule. On December 15 the daily average stage in WCA-2A was at 11.39 feet NAVD88 (12.90 feet NGVD29), in Zone A and 1.14 feet above regulation schedule. On December 15 the daily average stage in WCA-3A was at 8.65 feet NAVD88 (10.17 feet NGVD29), in Zone B and 033 feet below regulation schedule. Over the 7-day period, December 9 to December 15, 2024, a total of 15,100 acre-feet were sent from Lake Okeechobee south to STA1E (2,500 acre-feet), STA2 (1,500 acre-feet), STA3/4 (1,900 acre-feet), and A1-FEB (9,200 acre-feet). About 3,300 acre-feet of Lake regulatory releases reached the Lake Worth Lagoon through the C-51 canal and passed to the Intracoastal Canal through S-155 and S-41 during this period.

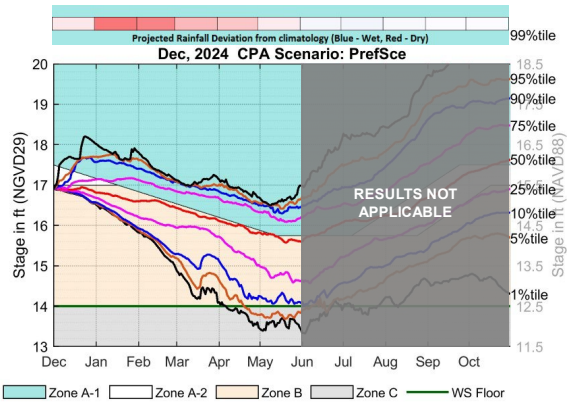
ENP conditions: Releases from WCA-3A to the ENP continue through the S-12 structures, the S-344 structure, and the S-333 structures. The S12C/D are fully open and passing the largest proportion of the releases. Releases through S-333 and S-333N are limited by the constraint in L-29 canal stage, currently at 6.76 feet NAVD88 (8.3 feet NGVD29). Hydrologic connectivity within the major sloughs of ENP have diminished over the past month, more so in Taylor Slough. Comparing current conditions to the 20-year percentiles for December 15th; depth conditions are now just below average in WCA-1, the northern and eastern portion of WCA-3A, and southeast ENP. Salinity increased on average in Florida Bay compared to last week and is now at the WY2001-2016 Interquartile Range (IQR) 25th percentile in the eastern region, at the 50th percentile in the western region, and remains below the IQR but above estimated historical levels (circa 1900) in the central region. The Tamiami Trail Flow Formula (TTFF) recommends 1542 cfs of daily target 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.

December 2024 Conditional Position Analysis (CPA) results for Lake Okeechobee, WCA-1, WCA-2A and WCA-3A under LOSOM Recovery Operations.

LOK



WCA1 Site 8-C



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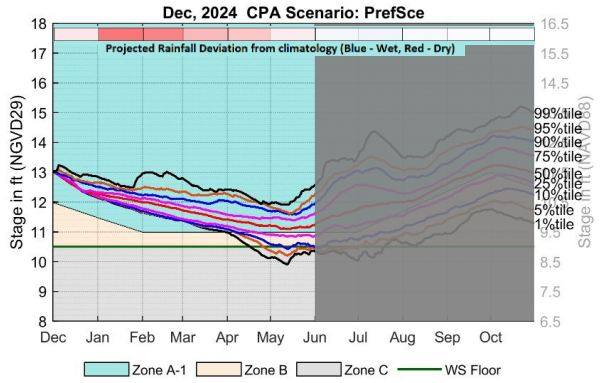
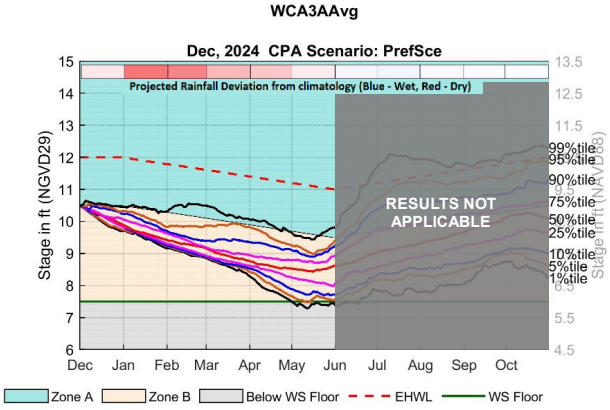
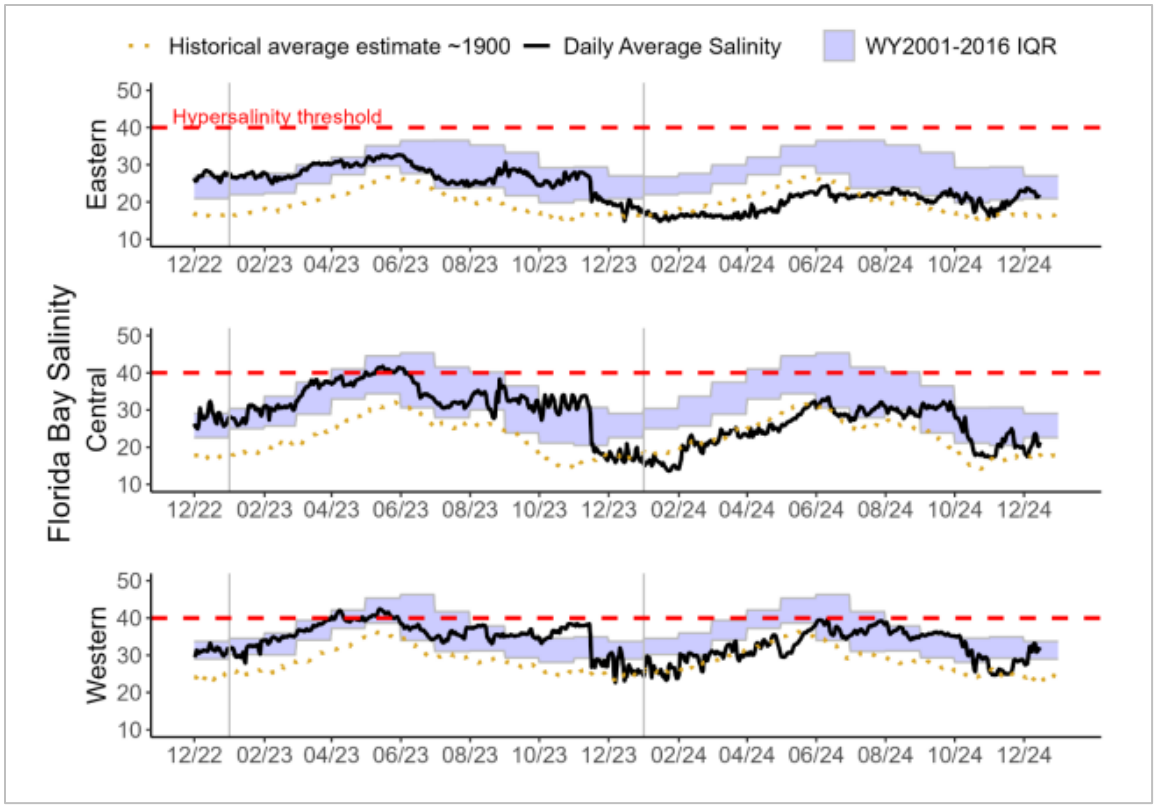


WCA3AAvg





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 hyper salinity threshold indicates the level at which salinities start to become harmful to seagrass.