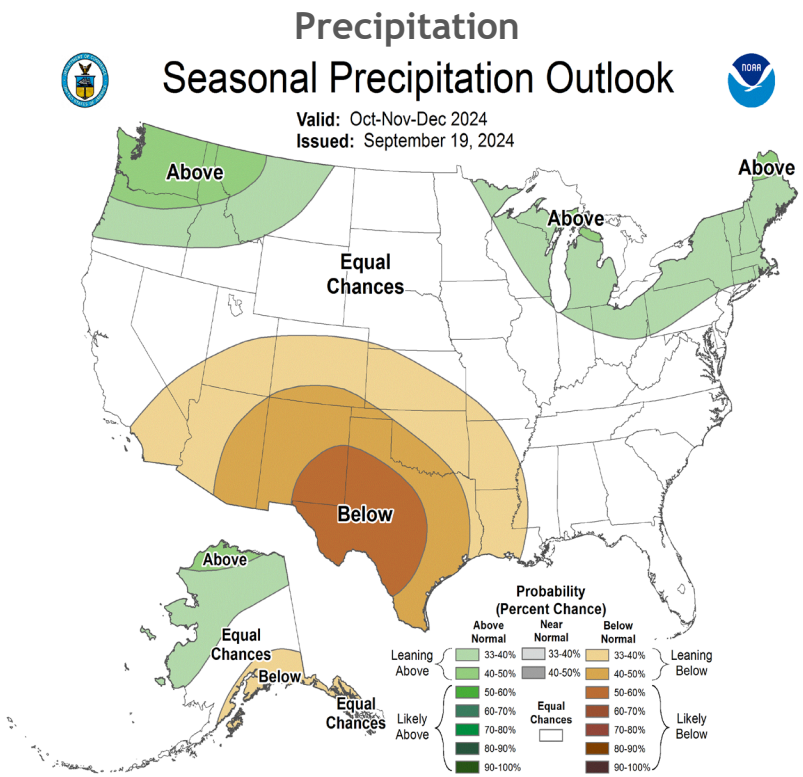
Extended Hydrologic Outlook
October 15, 2024

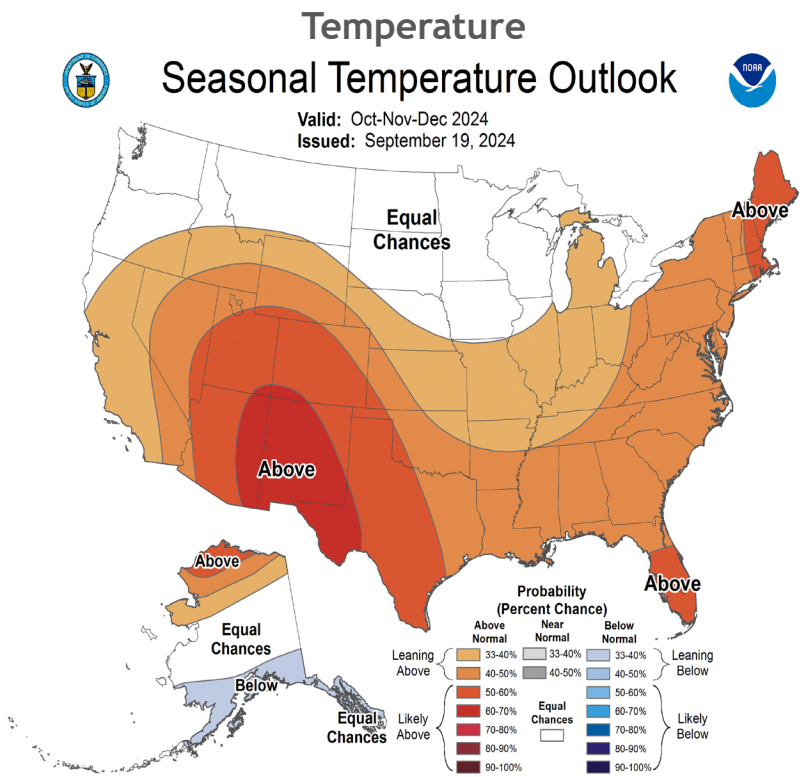
- The Climate Prediction Center (CPC) is forecasting equal chances for below normal, normal and above normal rainfall for October through December.
- ENSO Neutral conditions are present. La Niña is favored to emerge in September-November (60% chance) and is expected to persist through January-March 2025. This is likely to be a weak La Niña event.
- Atlantic Multidecadal Oscillation (AMO) is currently in the warm phase:
  - Average annual inflow to Lake Okeechobee is nearly 50% greater during the warm phase compared to the cold phase.

U. S. Seasonal Outlooks

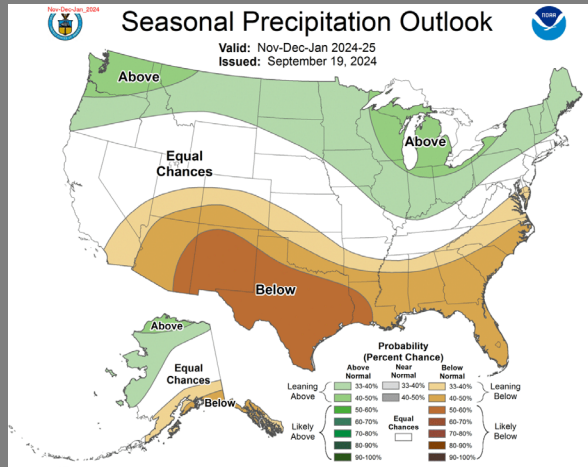
October-December 2024

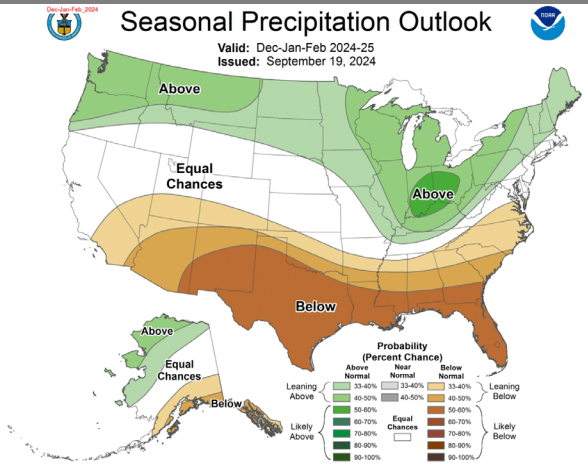
The seasonal outlooks combine the effects of long-term trends, soil moisture, and, when appropriate, ENSO.

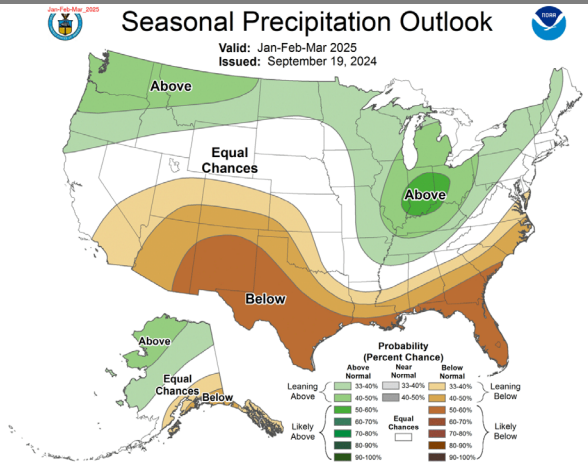


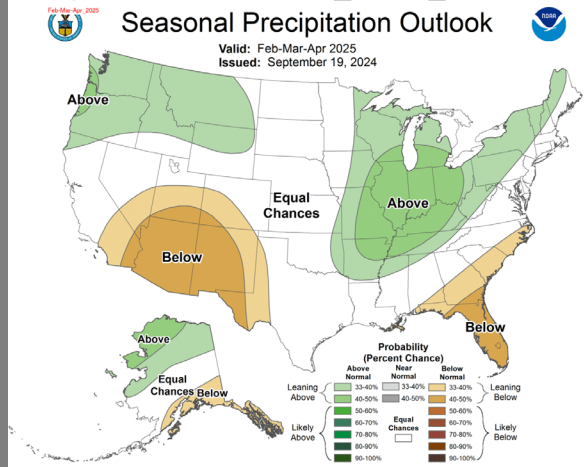


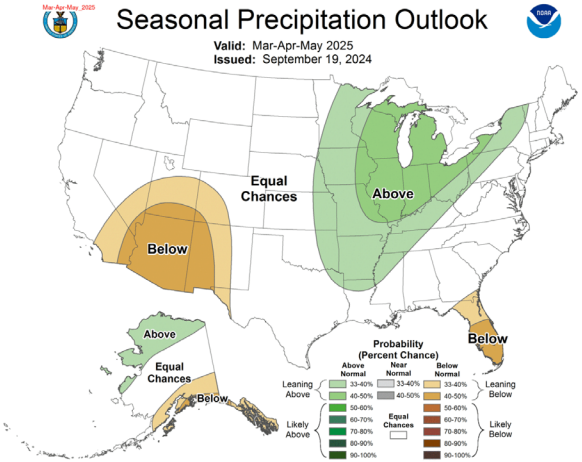
Prepared by: Climate Prediction Center/NCEP

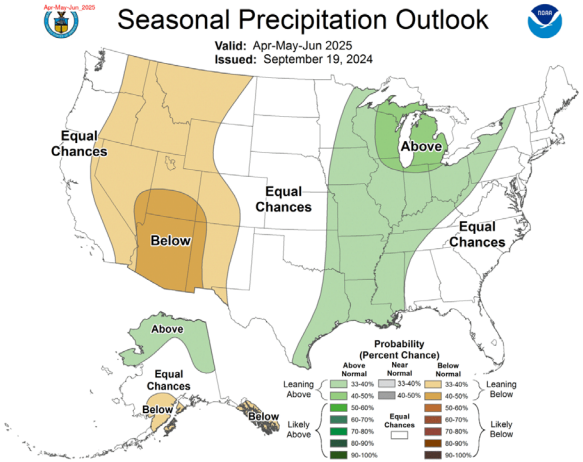


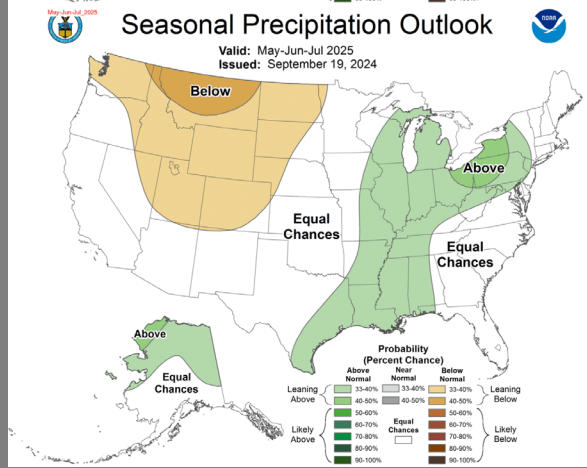


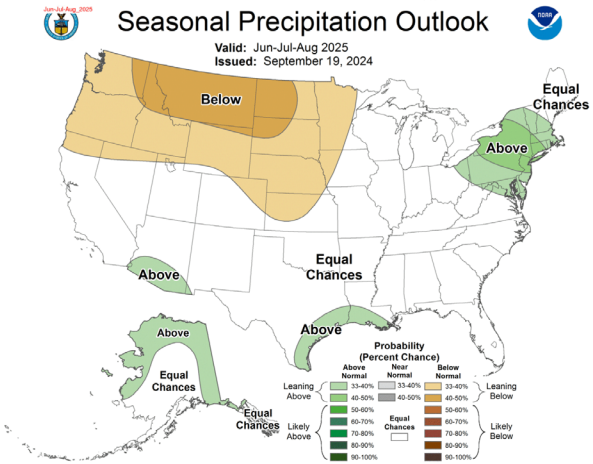


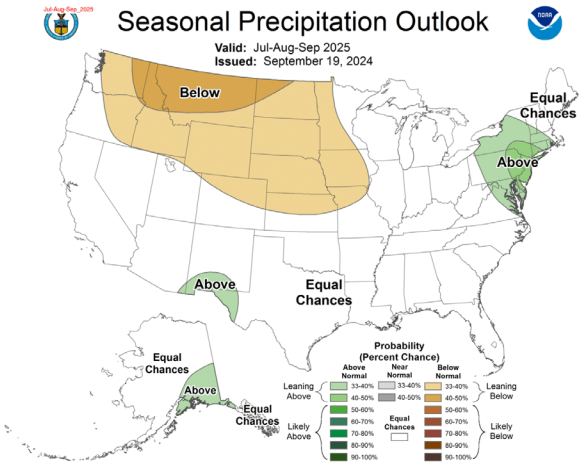












Prepared by: Climate Prediction Center/NCEP

Teleconnections to South Florida

Climate anomalies being related to each other at large distances:

<u>El Niño Southern Oscillation (ENSO)</u>

- El Niño increases the chances of a wetter-than-normal dry season and decreased tropical activity, La Niña increases the chances of a drier-than-normal dry season and increased tropical activity (both have most influence in south Florida from November through March)

<u>Pacific Decadal Oscillation (PDO)</u>

- Increases variations in south Florida dry season rainfall, positive leads to more El Niño events, negative leads to more La Niña events
- The current PDO is negative

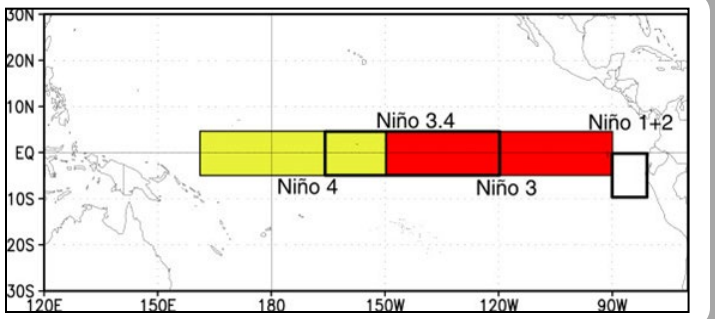
<u>Atlantic Multidecadal Oscillation (AMO)</u>

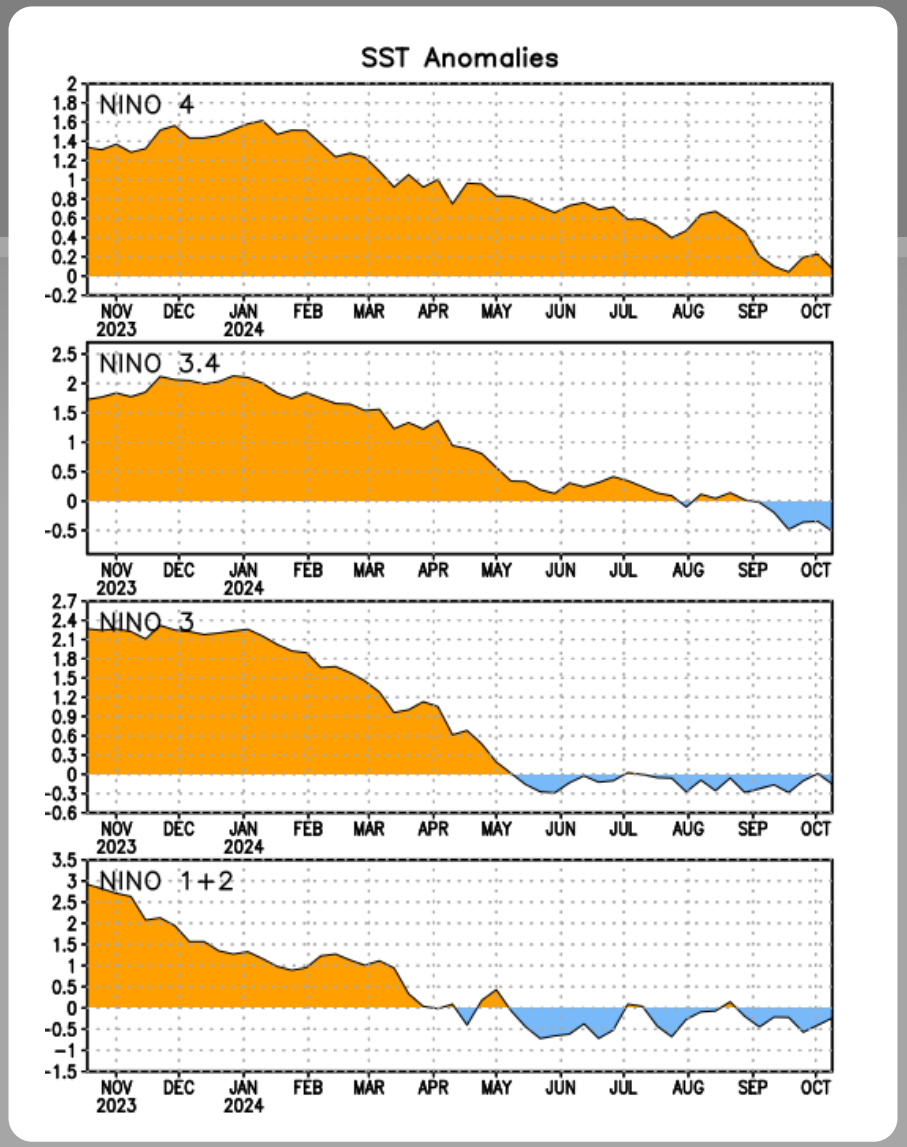
- Average annual inflow to Lake Okeechobee is nearly 50% greater during the warm phase compared to the cold phase of the AMO, easterly flow toward south Florida affected by phase
- The AMO is currently in the warm phase

Niño Region SST Departures (ºC) Recent Evolution

The latest weekly SST departures are:

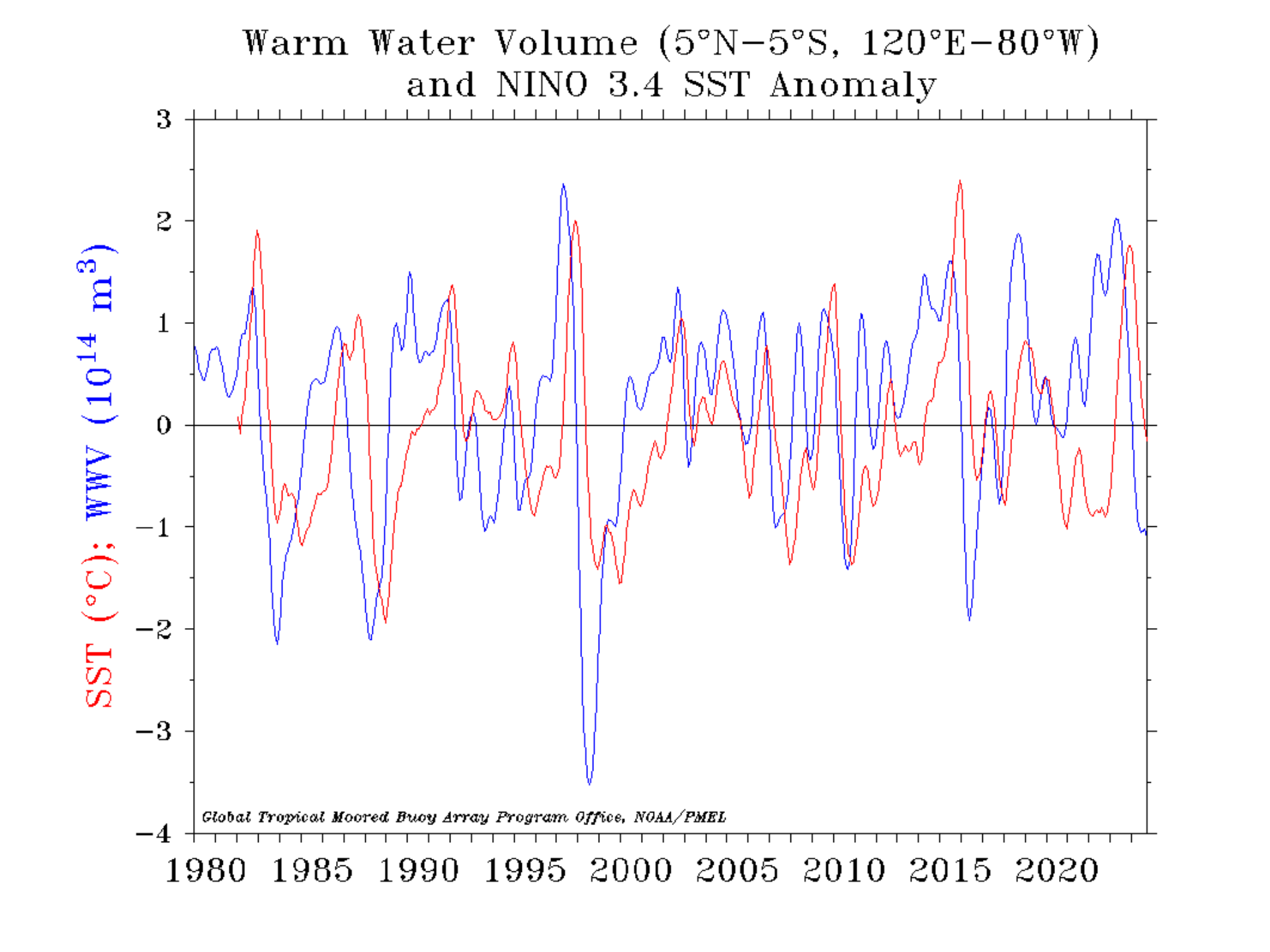
Niño 4	0.1ºC
Niño 3.4	-0.5ºC
Niño 3	-0.2ºC
Niño 1+2	-0.2ºC

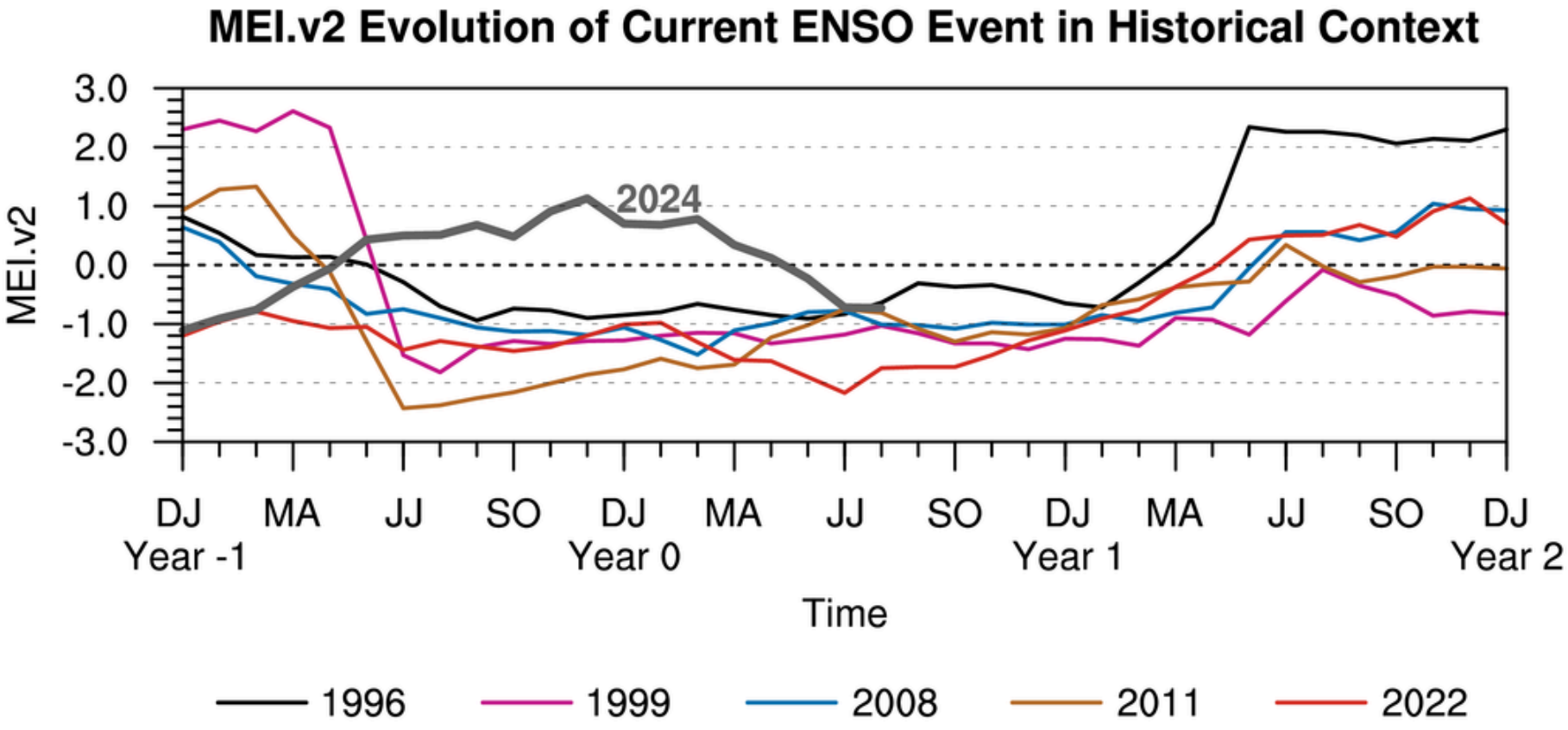




10/7/24: Due to a data outage at NOAA NCEI, the weekly SST data has been temporarily changed from OISSTv2.1 to UK Met OSTIA: https://ghrsst-pp.metoffice.gov.uk/ostia-website/index.html

Prepared by: Climate Prediction Center/NCEP


Warm Water Volume (5°N–5°S, 120°E–80°W)
and NINO 3.4 SST Anomaly
SST (°C); WWV (10^{14} m^3)
3
2
1
0
−1
−2
−3
−4
1980
1985
1990
1995
2000
2005
2010
2015
2020
Global Tropical Moored Buoy Array Program Office, NOAA/PMEL



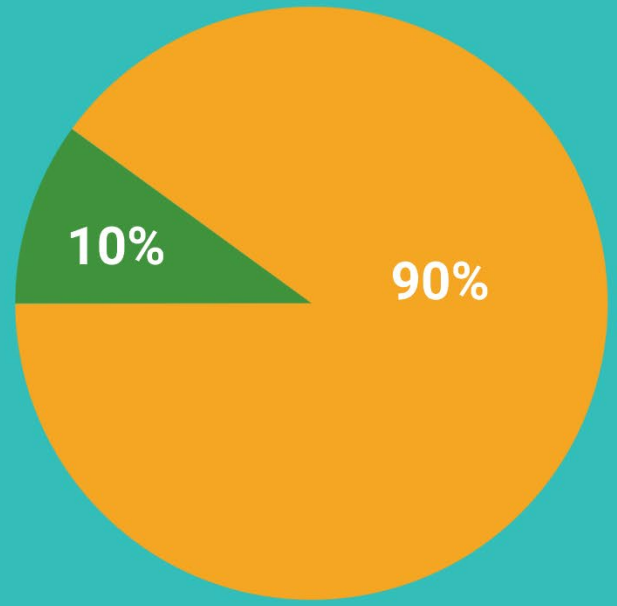
as of January 2024. We have switched to using the JRA3Q reanalysis which yields very similar results.

Prepared by: NOAA Physical Sciences Laboratory

2024 Tropical Outlook

2024 Atlantic Hurricane Season Outlook

AUGUST 8 UPDATE



Above normal Near normal Below normal

Season probability

Named storms
17 - 24

Hurricanes
8 - 13

Major hurricanes
4 - 7

Be prepared: Visit hurricanes.gov and follow @NWS and @NHC_Atlantic on X.

August 2024

Source: National Hurricane Center

COLORADO STATE UNIVERSITY FORECAST OF ATLANTIC HURRICANE ACTIVITY FROM OCTOBER 15–28, 2024

We believe that the most likely category for Atlantic hurricane activity in the next two weeks is above-normal (50%), with near-normal (40%) and below-normal (10%) being less likely.

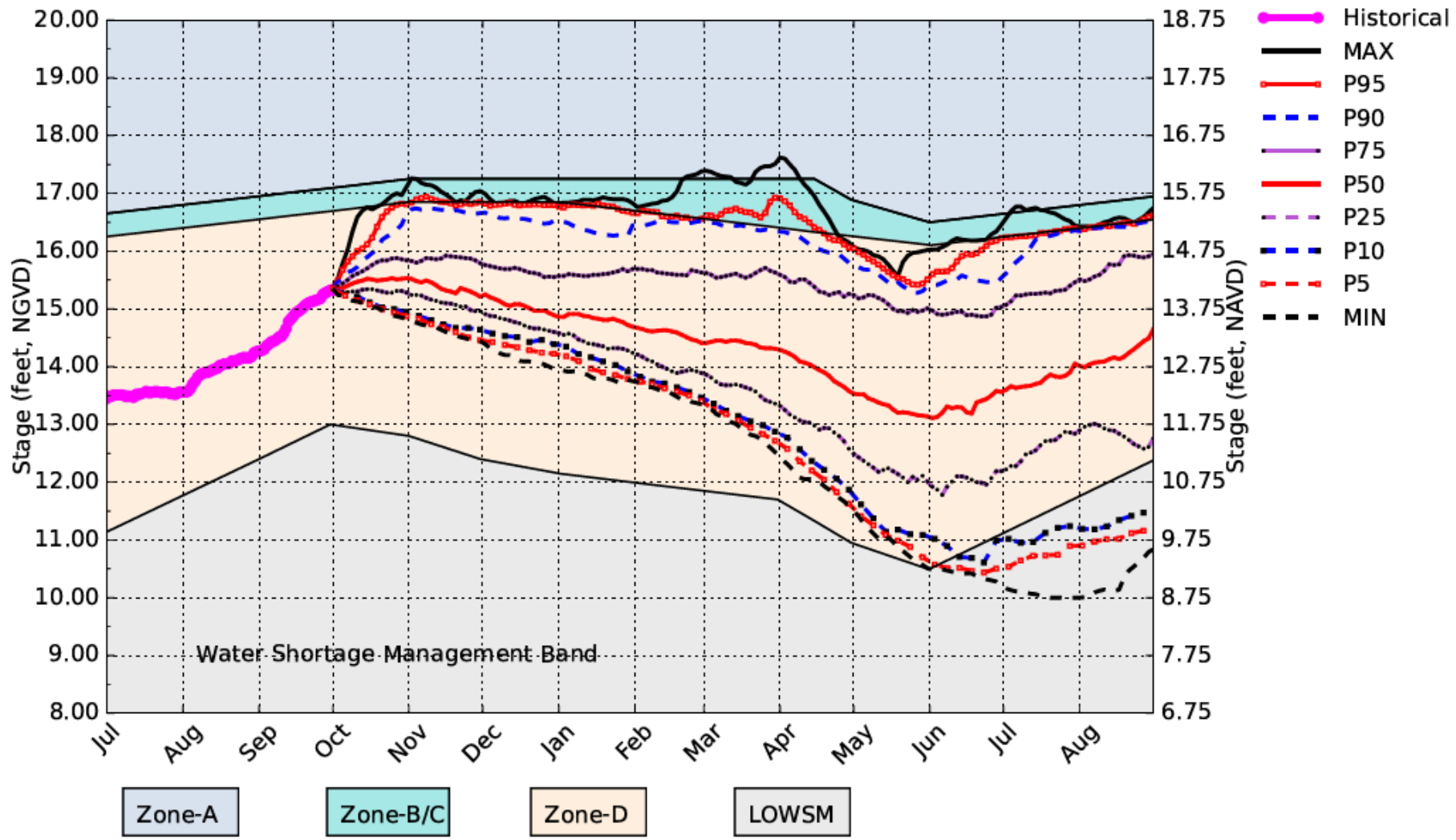
(as of 15 October 2024)

Source: Colorado State University (Tropical Meteorology Project)

October 2024 DPA Assumptions

- The October 1, 2024 Dynamic Position Analysis (DPA) simulation is based on historical climatic conditions spanning the period 1965-2016. This DPA posting is made with the South Florida Water Management Model (SFWMM) v7.3.3.
- The October 1, 2024 DPA resets the initial stages for Lake Okeechobee (LOK) and the Water Conservation Areas (WCAs) on September 1st of each year of the DPA simulation and conditions the simulation to real time data during September to achieve real time stages on October 1st for LOK and WCAs.
- The Lake Okeechobee operations follow the Lake Okeechobee System Operating Manual (LOSOM). Modeling assumptions are consistent with modeling performed for LOSOM Supplemental Environmental Impact Statement (SEIS).
- LOK Temporary Forward Pump operations will be in place, whenever necessary, to improve water supply deliveries from LOK under low LOK stages.
- STA surface area values are modified to reflect current flowways under operation. STA depths are maintained to a minimum of 6 inches using Lake Okeechobee releases.
- Lake Okeechobee Water Shortage Management (LOWSM) is included in the simulation which reflects the currently approved 40E-21 and 40E-22 water shortage rules.

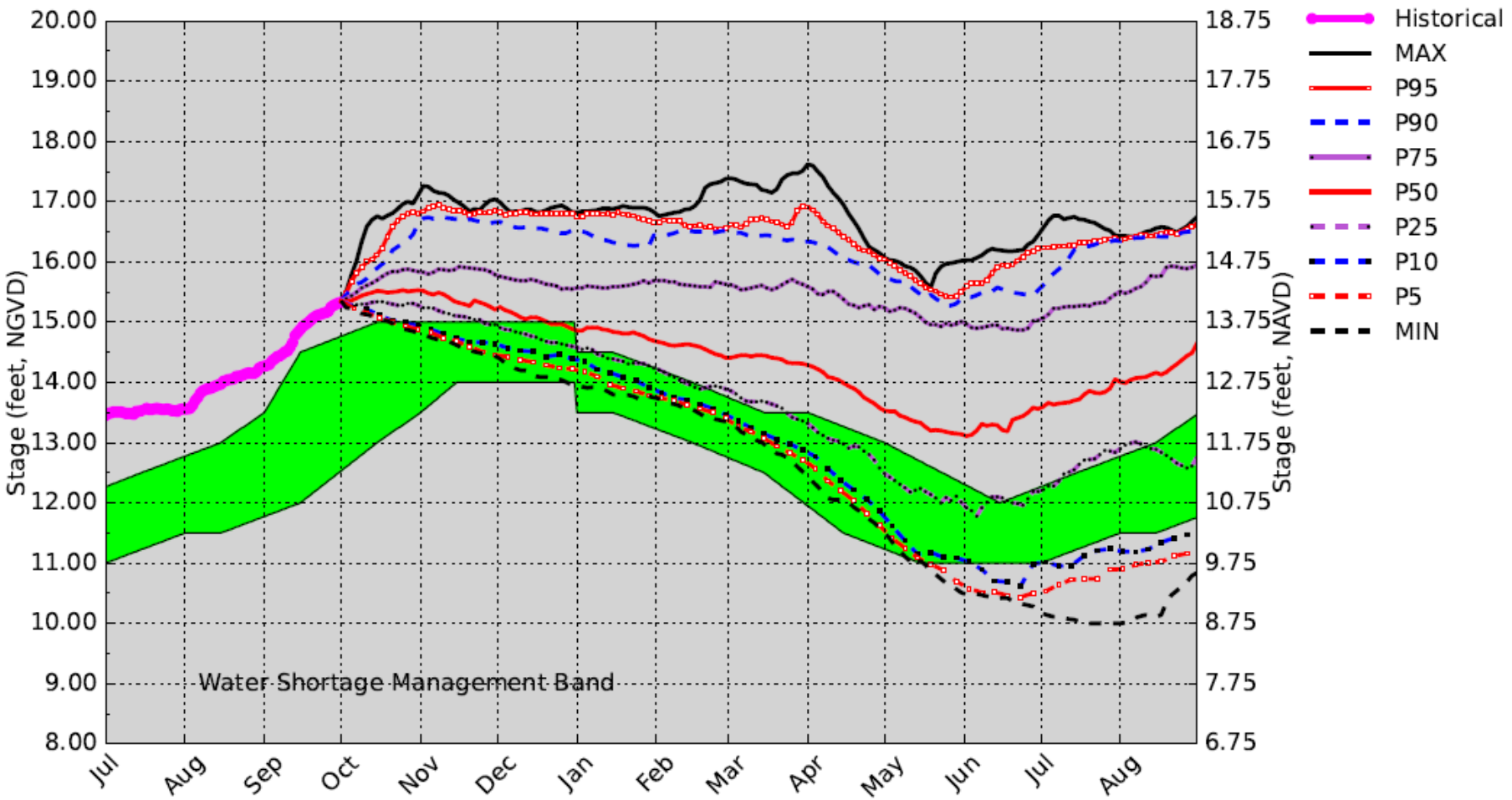
Lake Okeechobee SFWMM October 2024 Position Analysis



(See assumptions on the Position Analysis Results website)

10/04/24 16:00:59

Lake Okeechobee SFWMM October 2024 Position Analysis

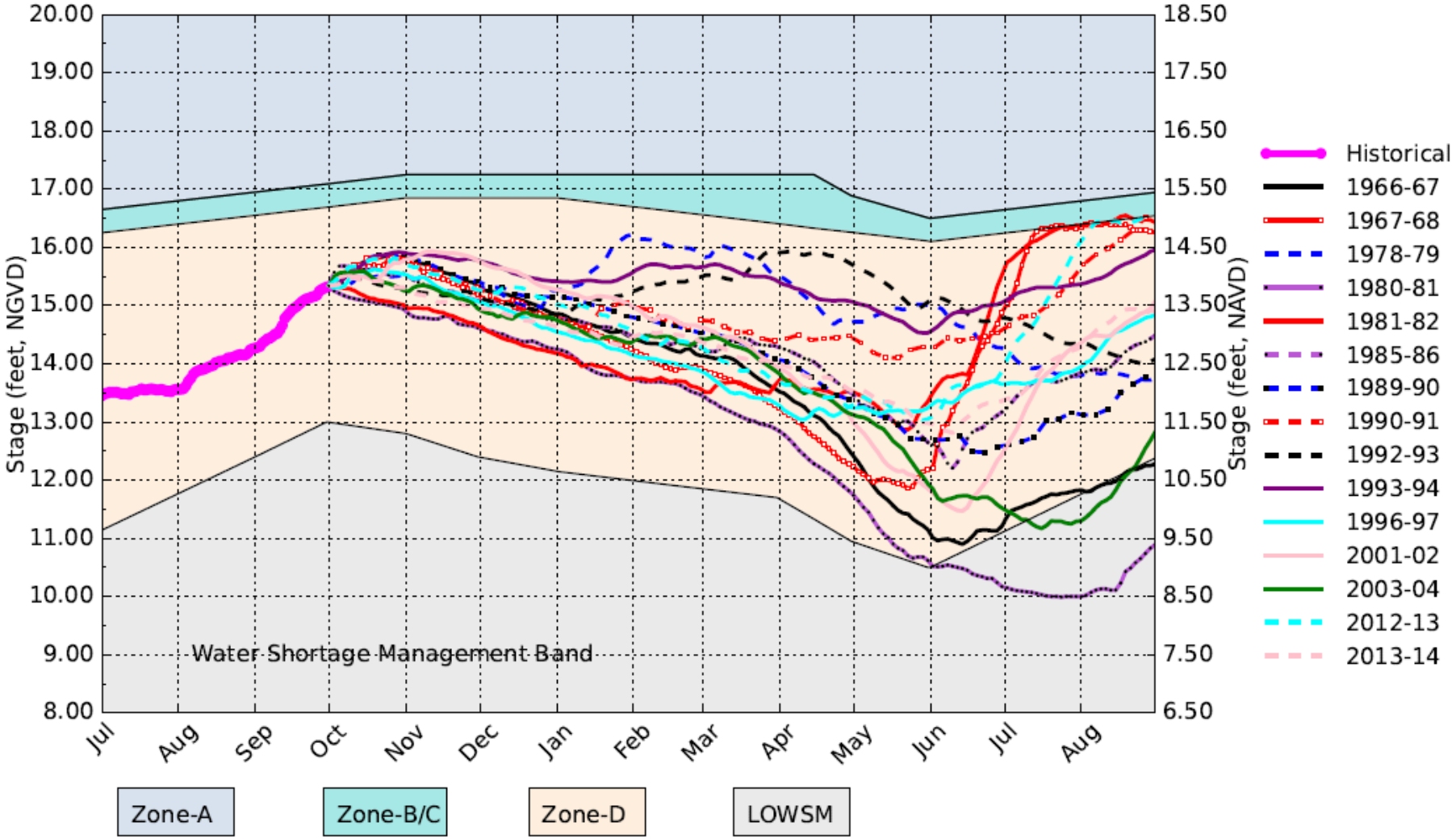


(See assumptions on the Position Analysis Results website)

10/07/24 16:01:19

Lake Okeechobee SFWMM October 2024 Position Analysis

All ENSO Neutral Years Plot PA

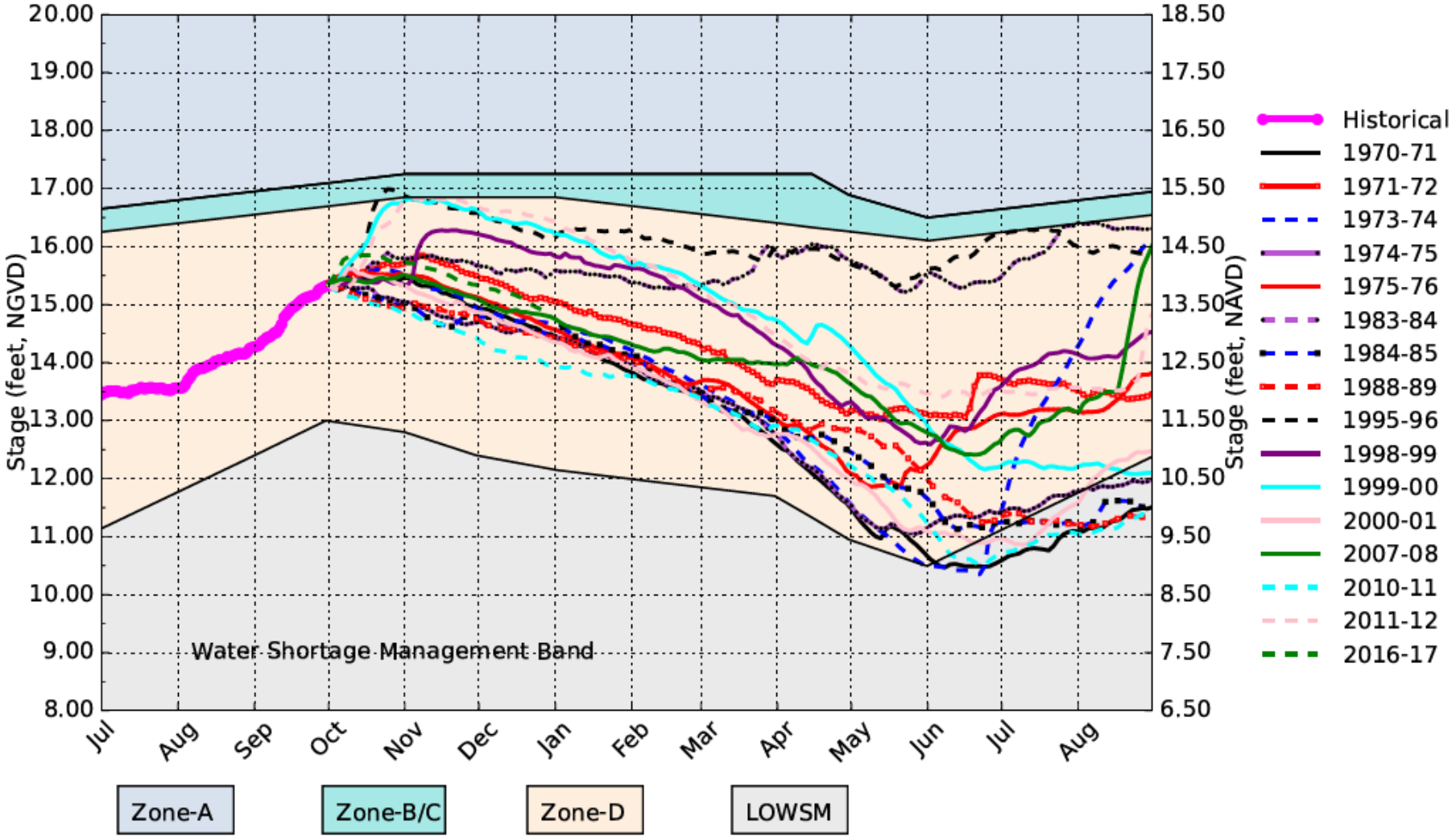


(See assumptions on the Position Analysis Results website)

10/07/24 16:01:23

Lake Okeechobee SFWMM October 2024 Position Analysis

All La Nina Years Plot PA

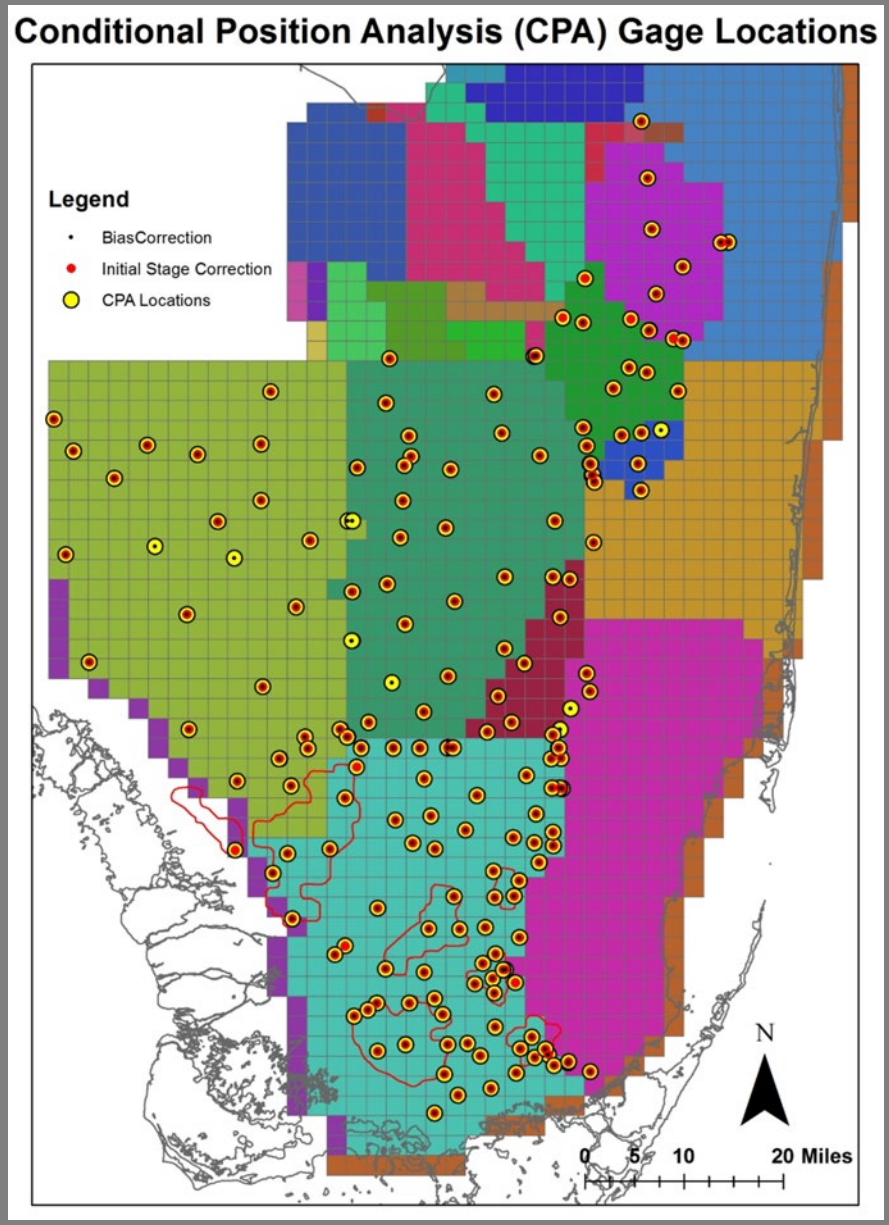


(See assumptions on the Position Analysis Results website)

10/04/24 16:01:05

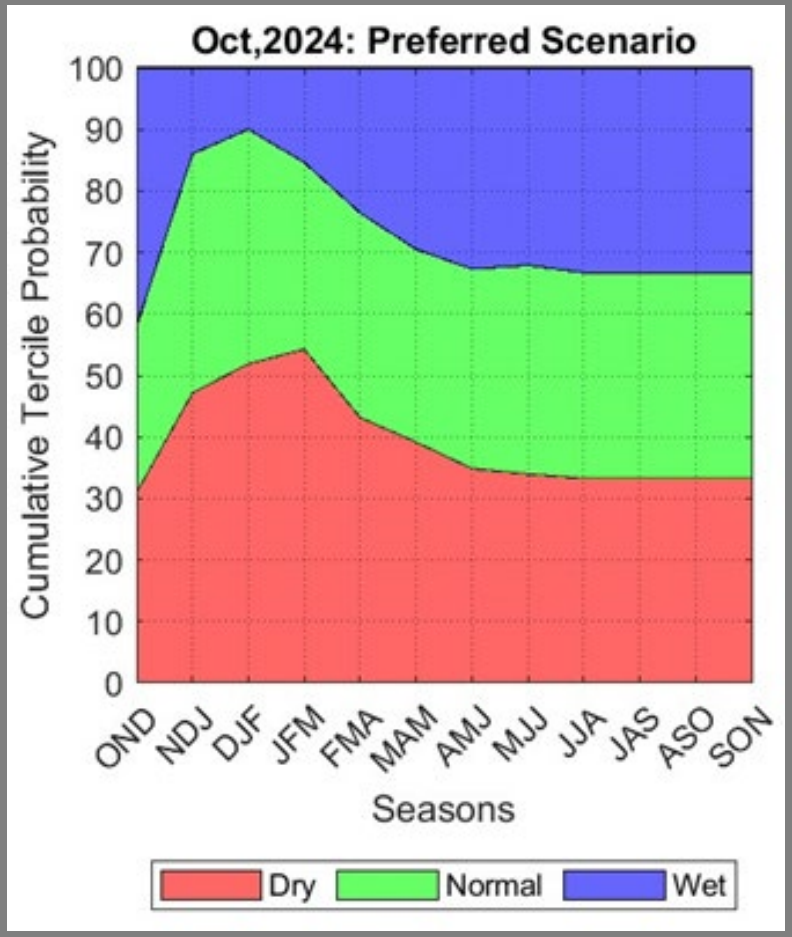
Conditional Position Analysis Overview

- CPA is a stochastic framework that transforms stages obtained from Dynamic Position Analysis (DPA) based on forecasted rainfall conditions over the next twelve months (Ali, 2016).
- DPA stage outputs are used as inputs to CPA.
- CPA is implemented for Lake Okeechobee and 200+ locations in the Everglades.



October 2024 CPA: Rainfall Scenarios

Seasonal rainfall tercile probabilities are calculated using a transition coefficient matrix that is based on historical rainfall data (1914 – 2022). Projected Niño-3.4 published by CPC is then used to calculate rainfall tercile probability projections.



Lake Okeechobee – LOSOM CPA implementation shows the percentile lines slightly shift upward until March 2025, though the stage recession rates are slightly higher from November 2024 compared to climatological percentile lines.