

# Extended Hydrologic Outlook

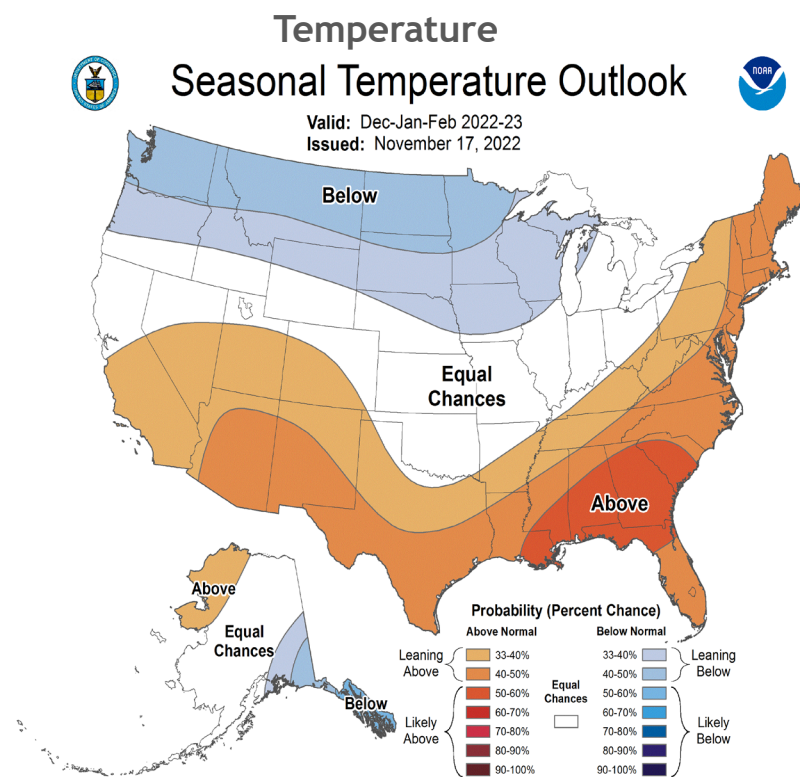
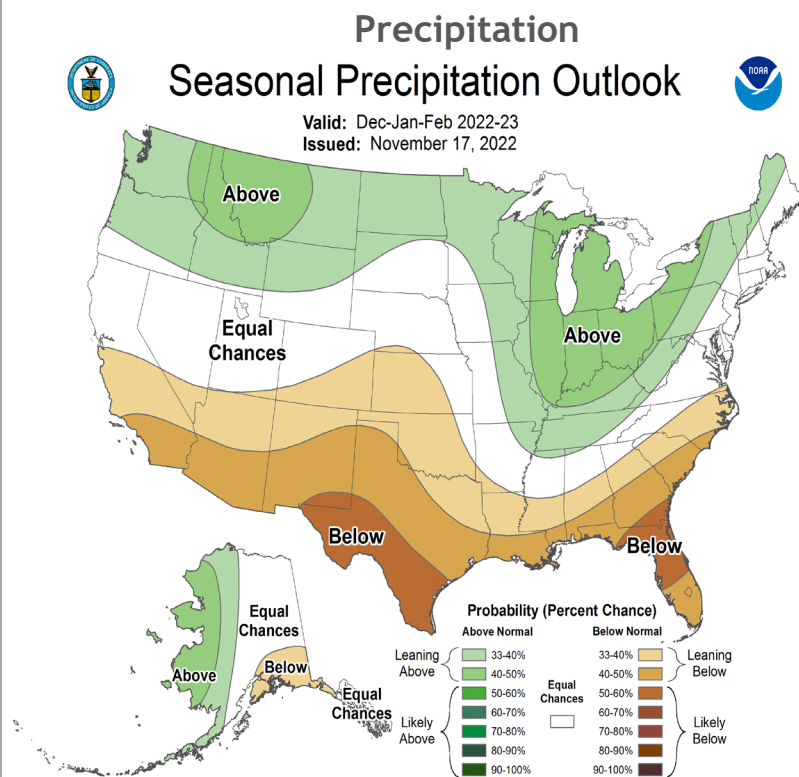
## December 7, 2022

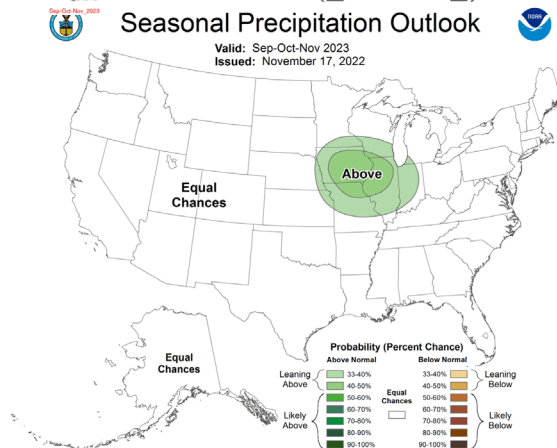
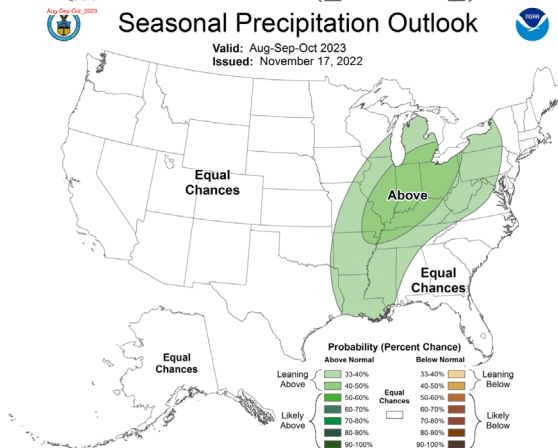
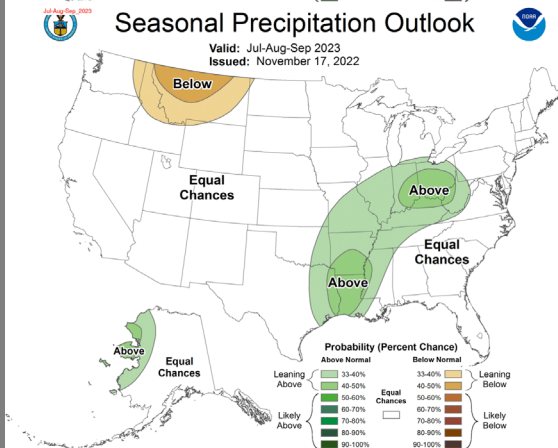
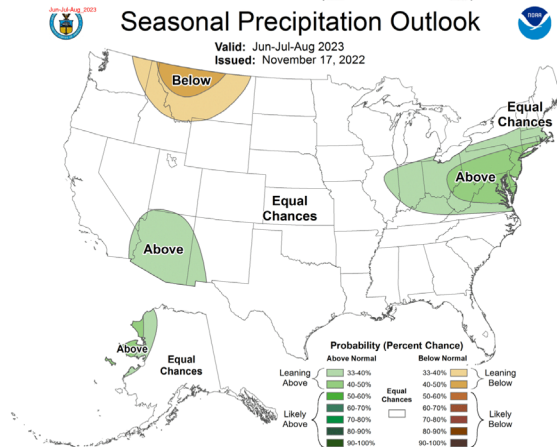
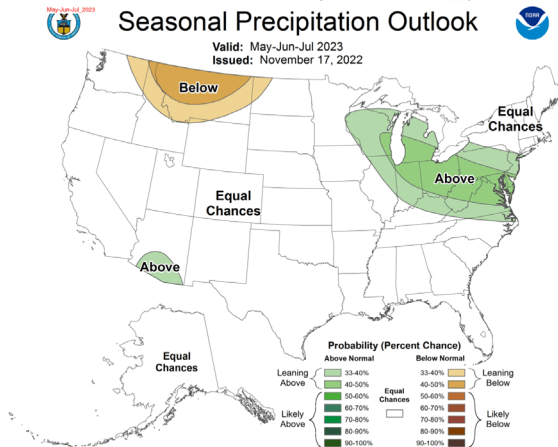
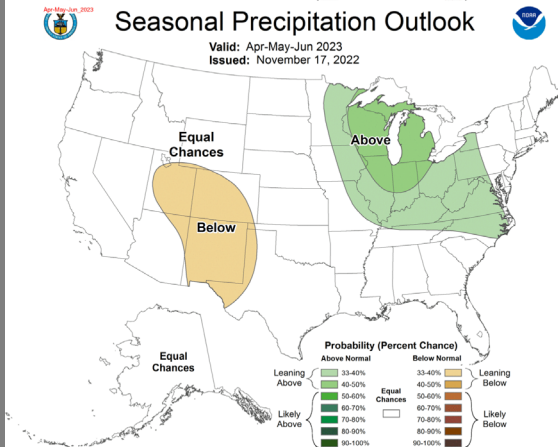
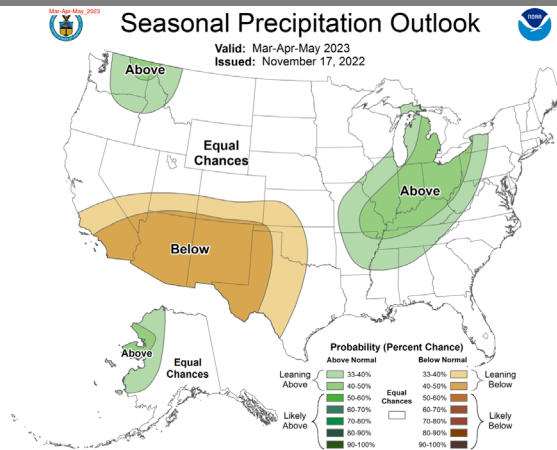
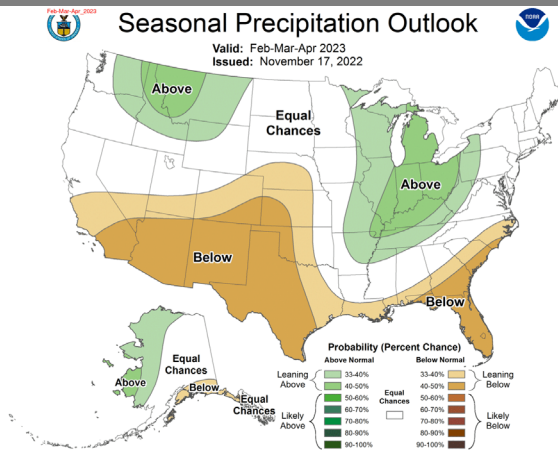
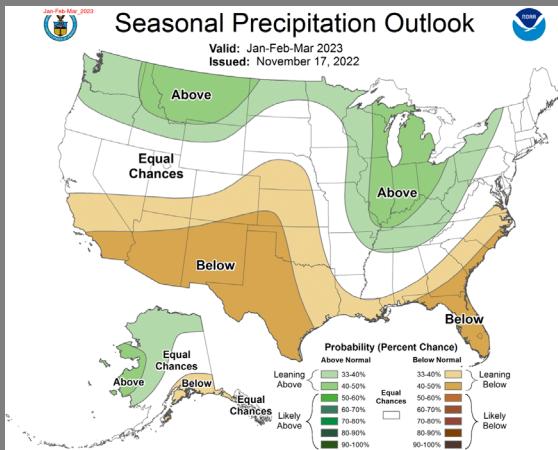
- The Climate Prediction Center (CPC) is forecasting below normal rainfall for December through February.
- La Niña is present. There is a 76% chance of La Niña during the winter (December-February) 2022-23, with a transition to ENSO-neutral favored in February-April 2023 (57% chance).
- Atlantic Multidecadal 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

## December 2022 - February 2023

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





# Teleconnections to South Florida

Climate anomalies being related to each other at large distances:

## El Niño Southern Oscillation (ENSO)

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)

## Pacific Decadal Oscillation (PDO)

Increases variations in south Florida dry season rainfall, positive leads to more El Niño events, negative leads to more La Niña events

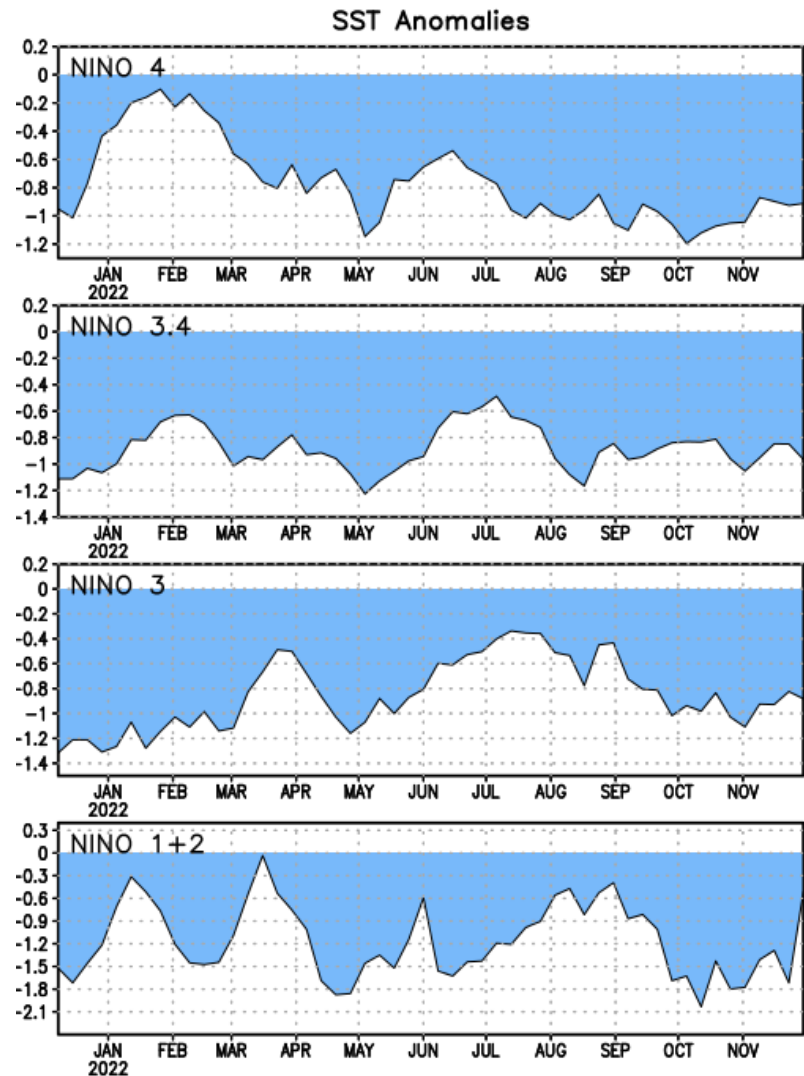
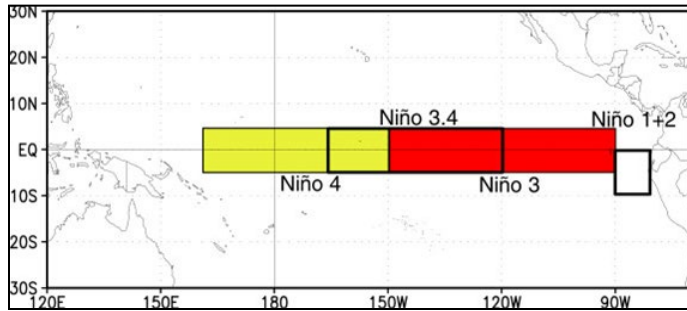
## Atlantic Multidecadal Oscillation (AMO)

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

# Niño Region SST Departures (°C) Recent Evolution

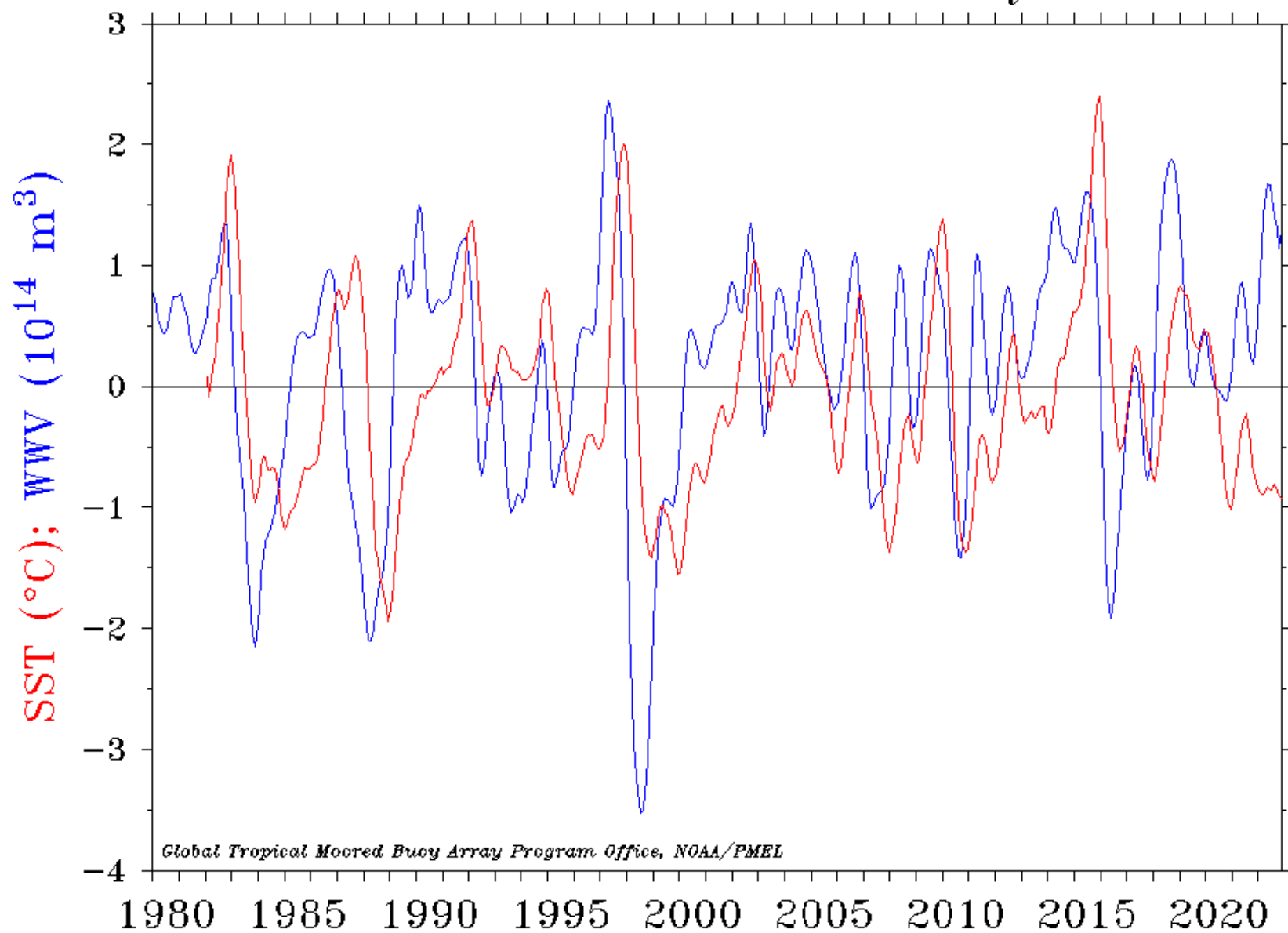
The latest weekly SST departures are:

Niño 4	-0.9°C
Niño 3.4	-1.0°C
Niño 3	-0.9°C
Niño 1+2	-0.5°C

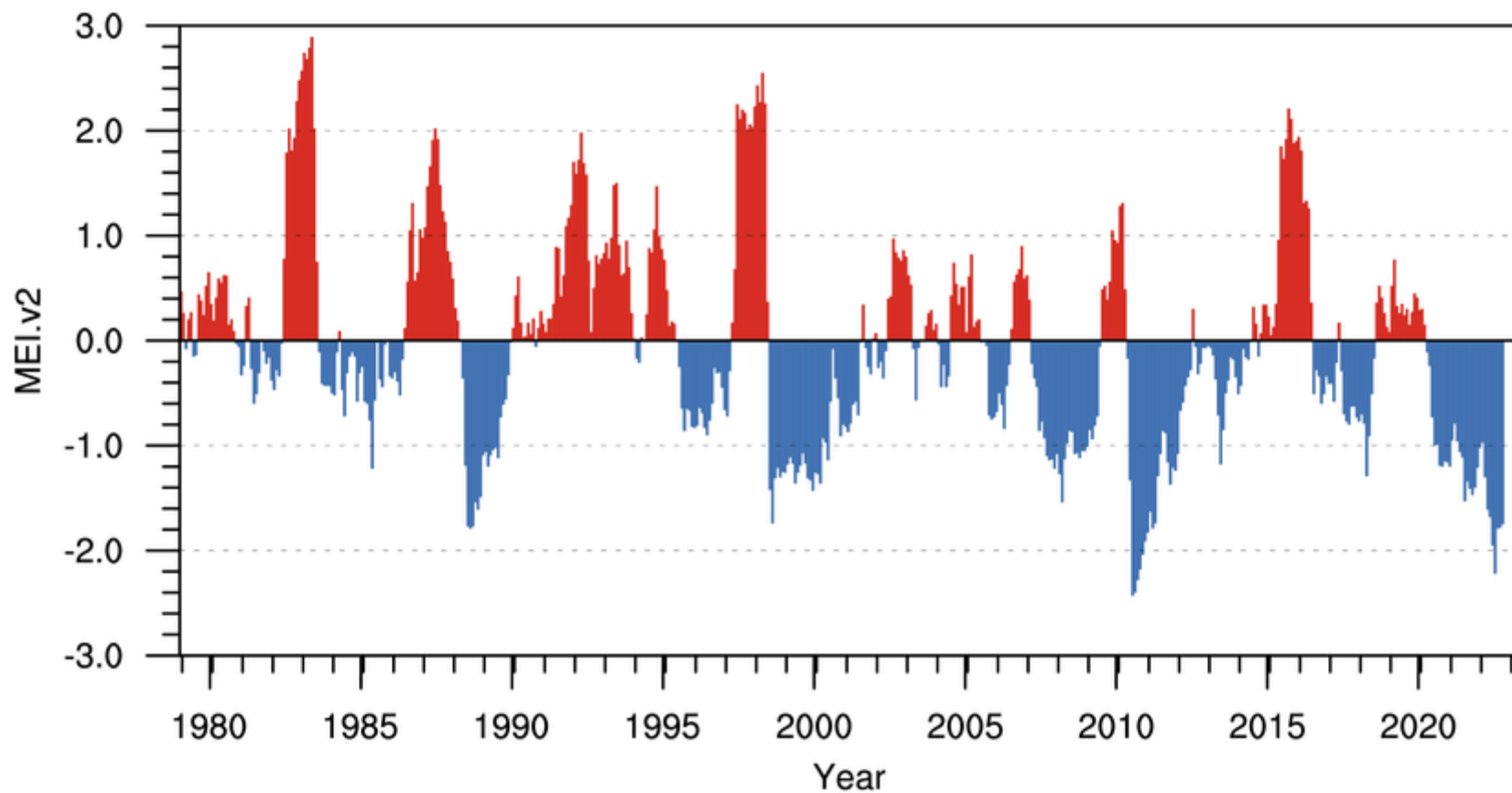


This weekly sea surface temperature data is based on OISSTv2.1 (Huang et al., 2021).

# Warm Water Volume (5°N–5°S, 120°E–80°W) and NINO 3.4 SST Anomaly

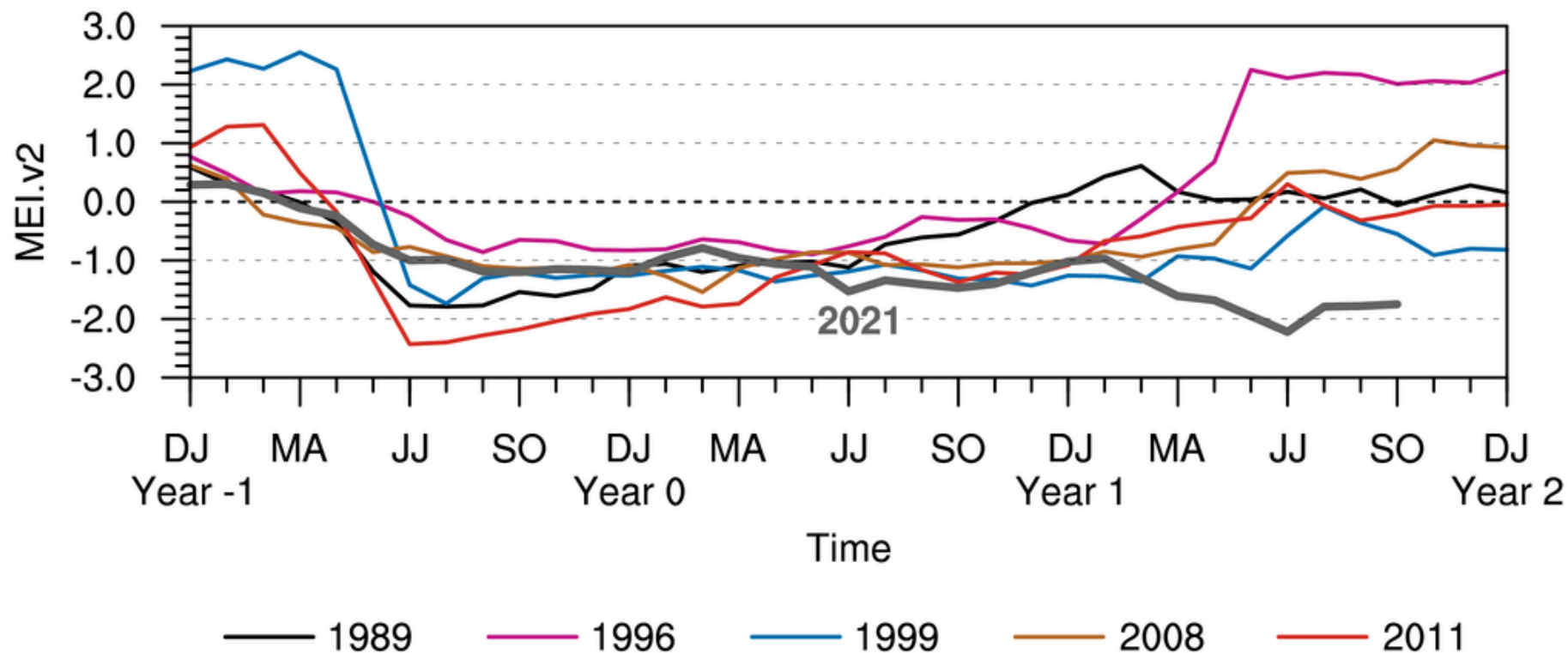


## Multivariate ENSO Index Version 2





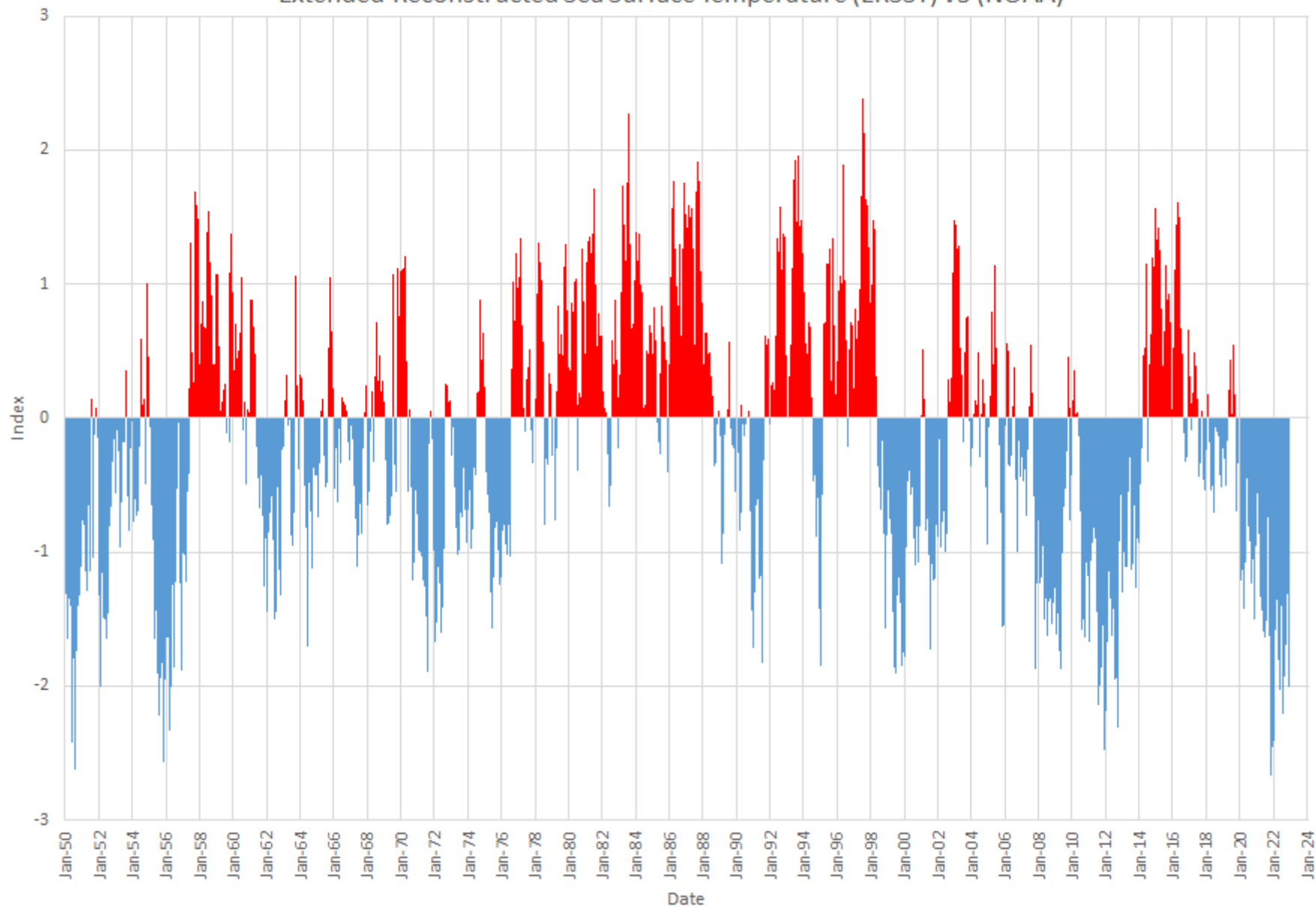
## MEI.v2 Evolution of Current ENSO Event in Historical Context



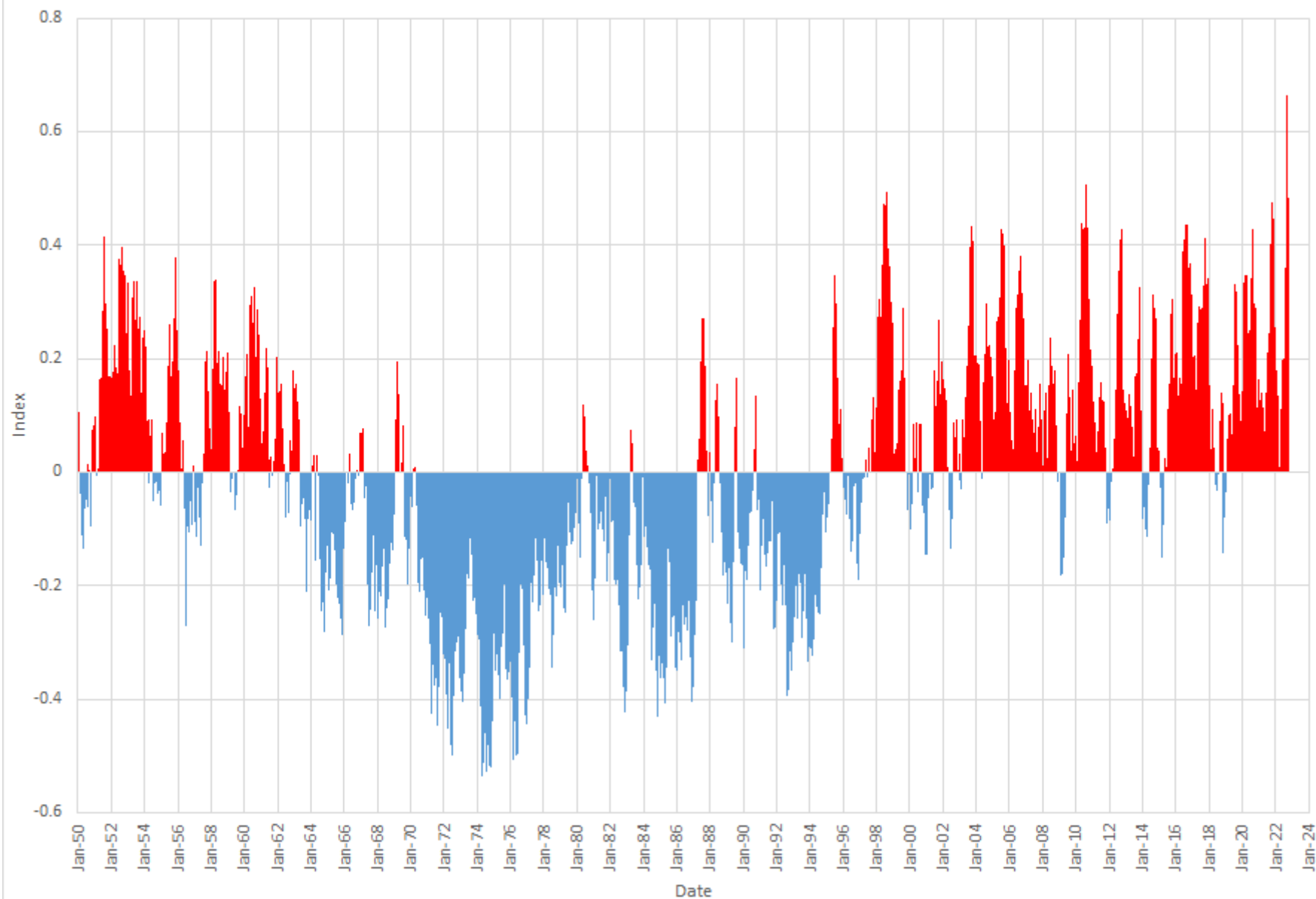


# Pacific Decadal Oscillation

## Extended Reconstructed Sea Surface Temperature (ERSST) v5 (NOAA)



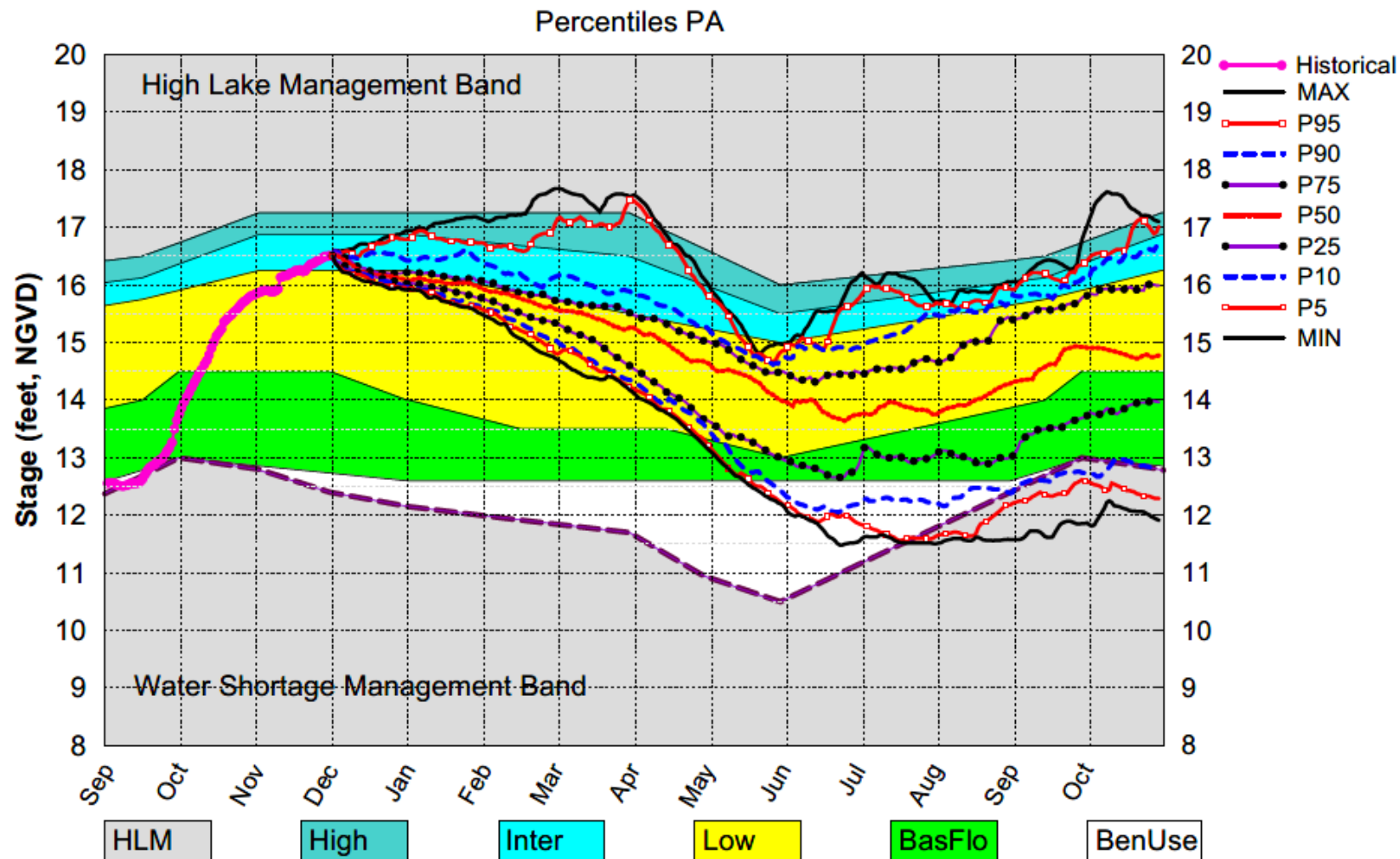
Index of the North Atlantic Temperatures (AMO) from Kaplan Extended SST V2 (NOAA)



# December DPA Assumptions

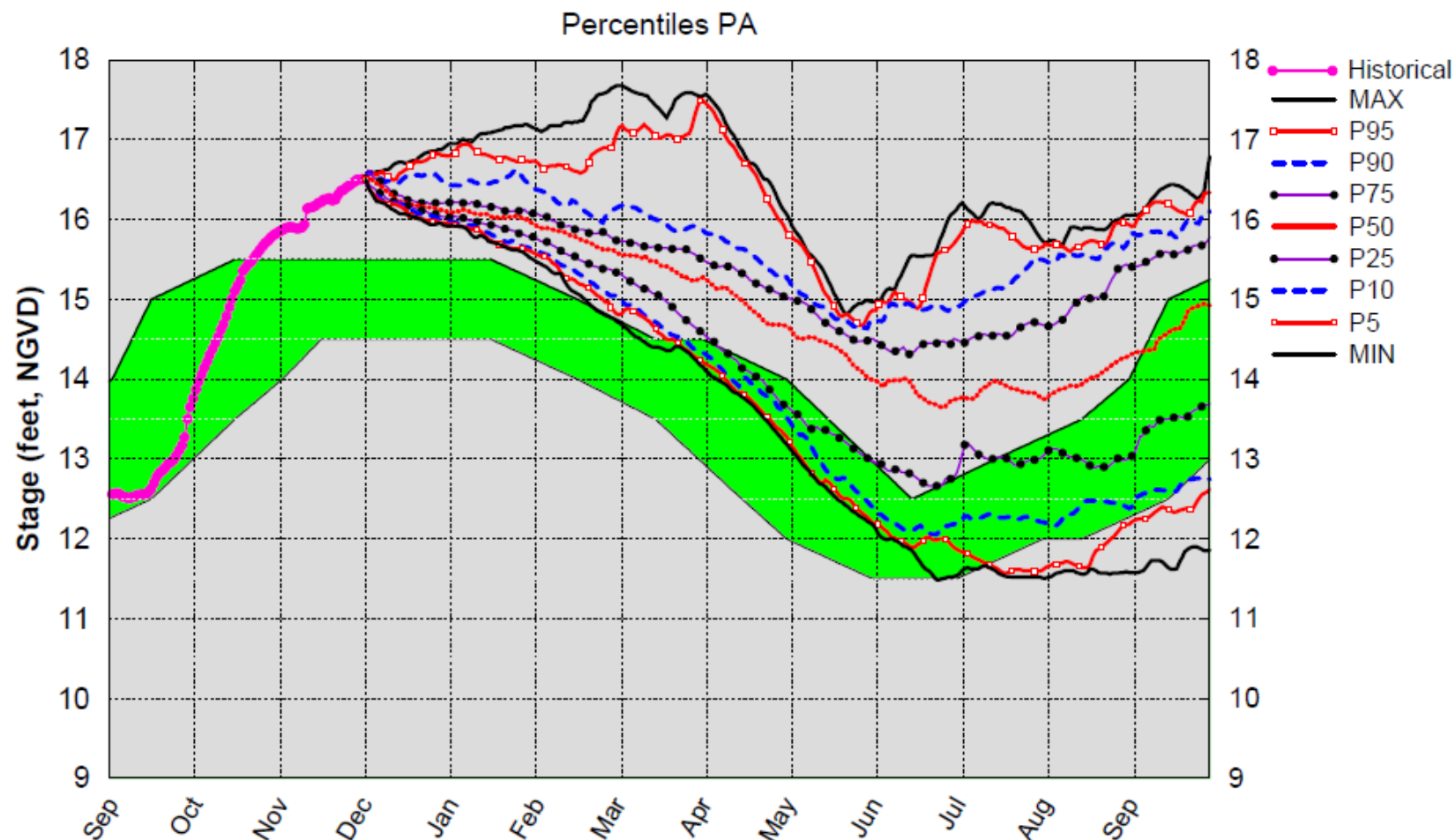
- The December 1, 2022 Dynamic Position Analysis (DPA) simulation is based on historical climatic conditions spanning the period 1965-2005. This DPA posting is made with the South Florida Water Management Model (SFWMM) v6.7.4 (Tamiami Trail) which includes the following improvement(s):
  - Improvements to include the Combined Operational Plan (COP)
- The December 1, 2022 DPA resets the initial stages for Lake Okeechobee (LOK) and the Water Conservation Areas (WCAs) on November 1<sup>st</sup> of each year of the DPA simulation and conditions the simulation to real time data during October to achieve real time stages on December 1<sup>st</sup> for LOK and WCAs.
- The Lake Okeechobee operations follow the Lake Okeechobee Regulation Schedule (LORS2008). Modeling assumptions are consistent with modeling performed for LORS2008 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 SFWMM December 2022 Position Analysis



(See assumptions on the Position Analysis Results website)

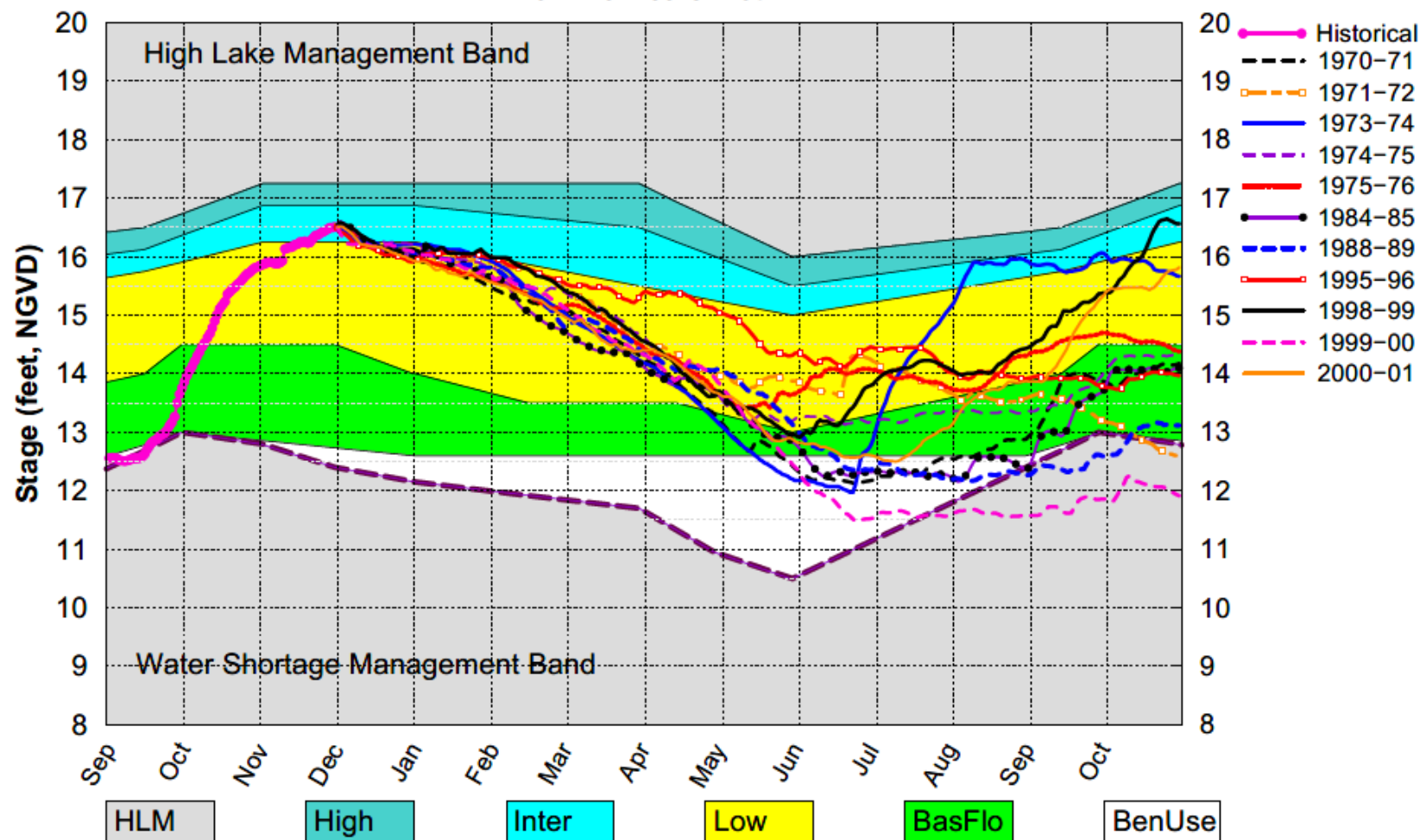
# Lake Okeechobee SFWMM December 2022 Position Analysis



(See assumptions on the Position Analysis Results website)

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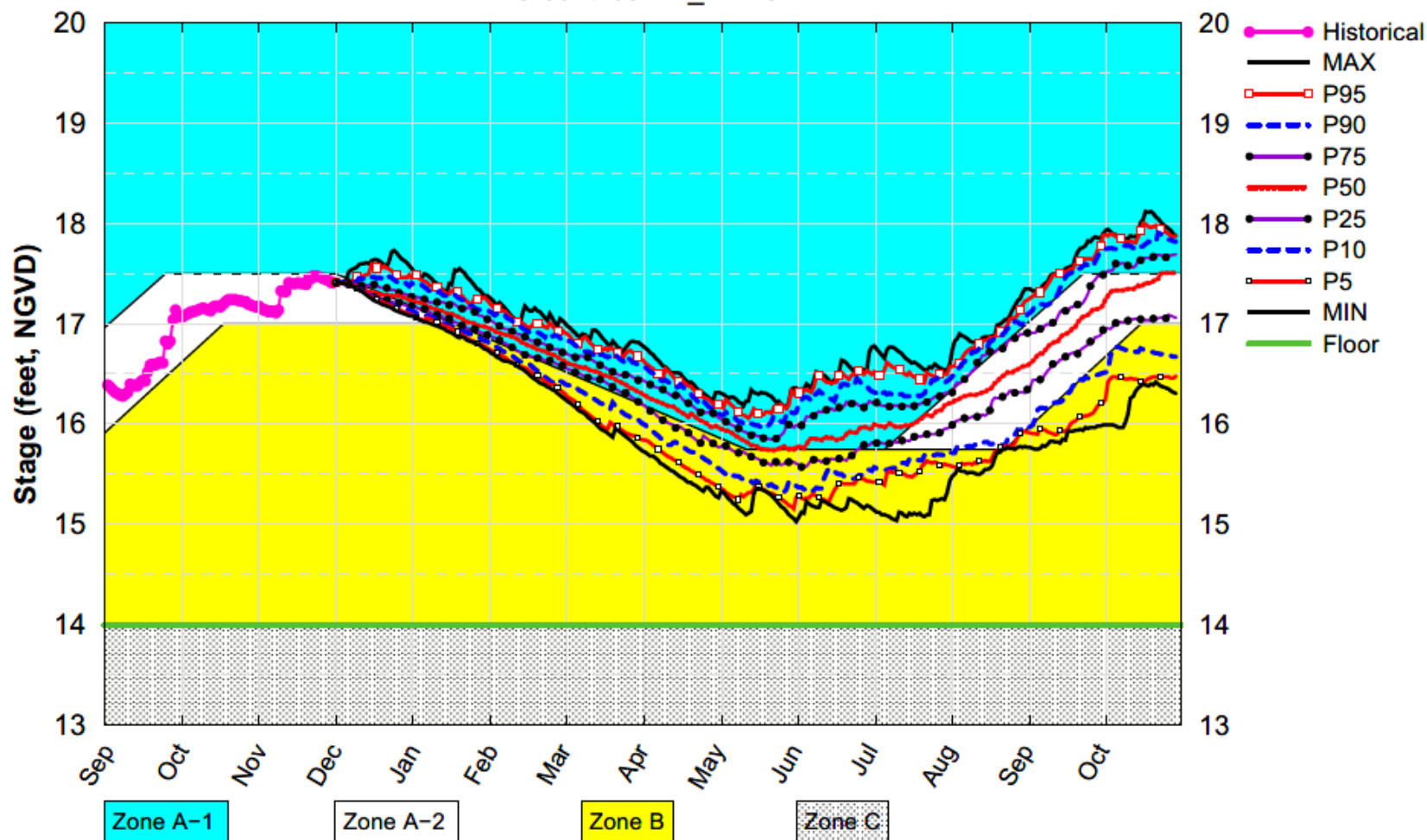
All La Nina Years Plot PA



(See assumptions on the Position Analysis Results website)

# WCA1 SFWMM December 2022 Position Analysis

Percentiles PA\_DPA5

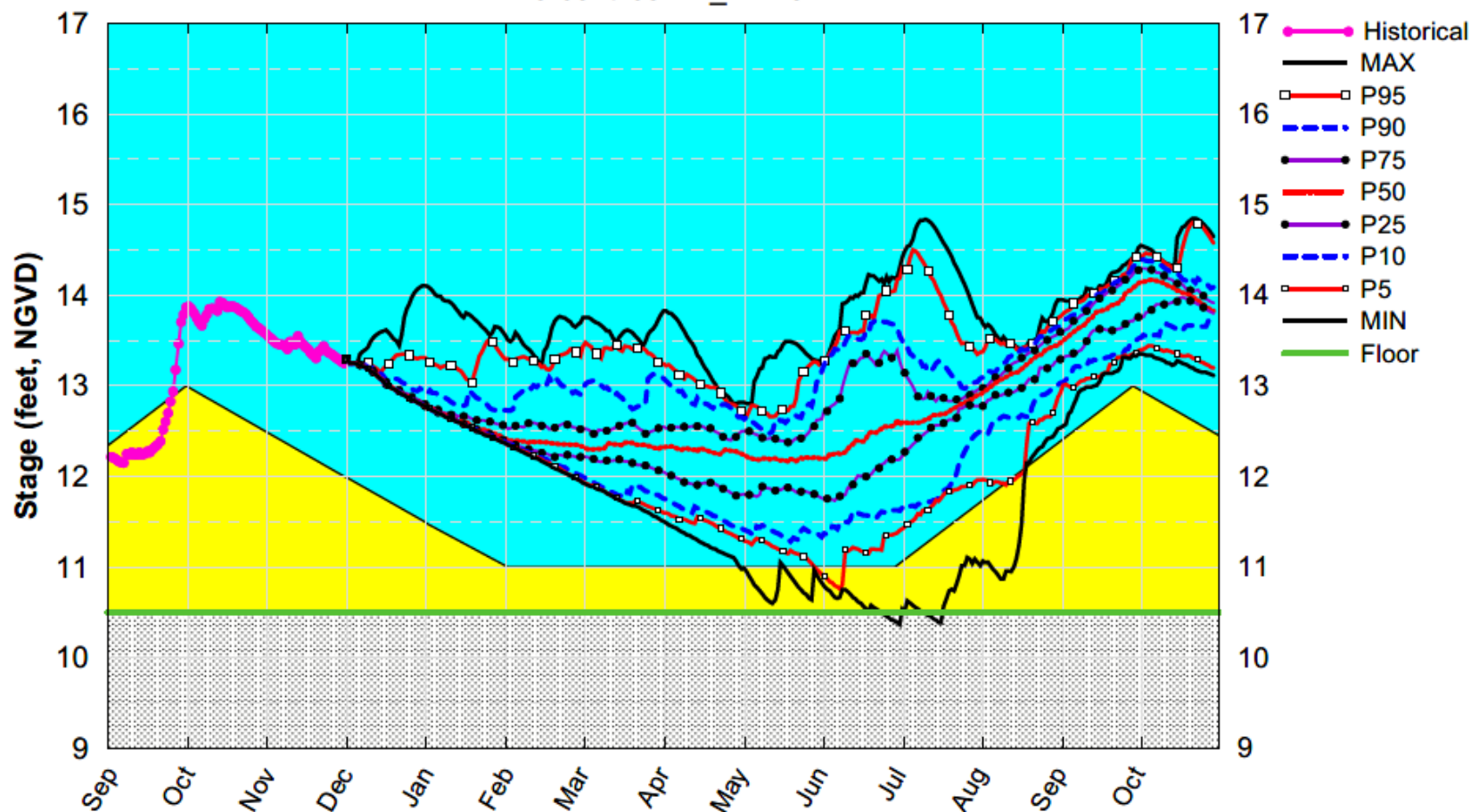


(See assumptions on the Position Analysis Results website)



# WCA2A SFWMM December 2022 Position Analysis

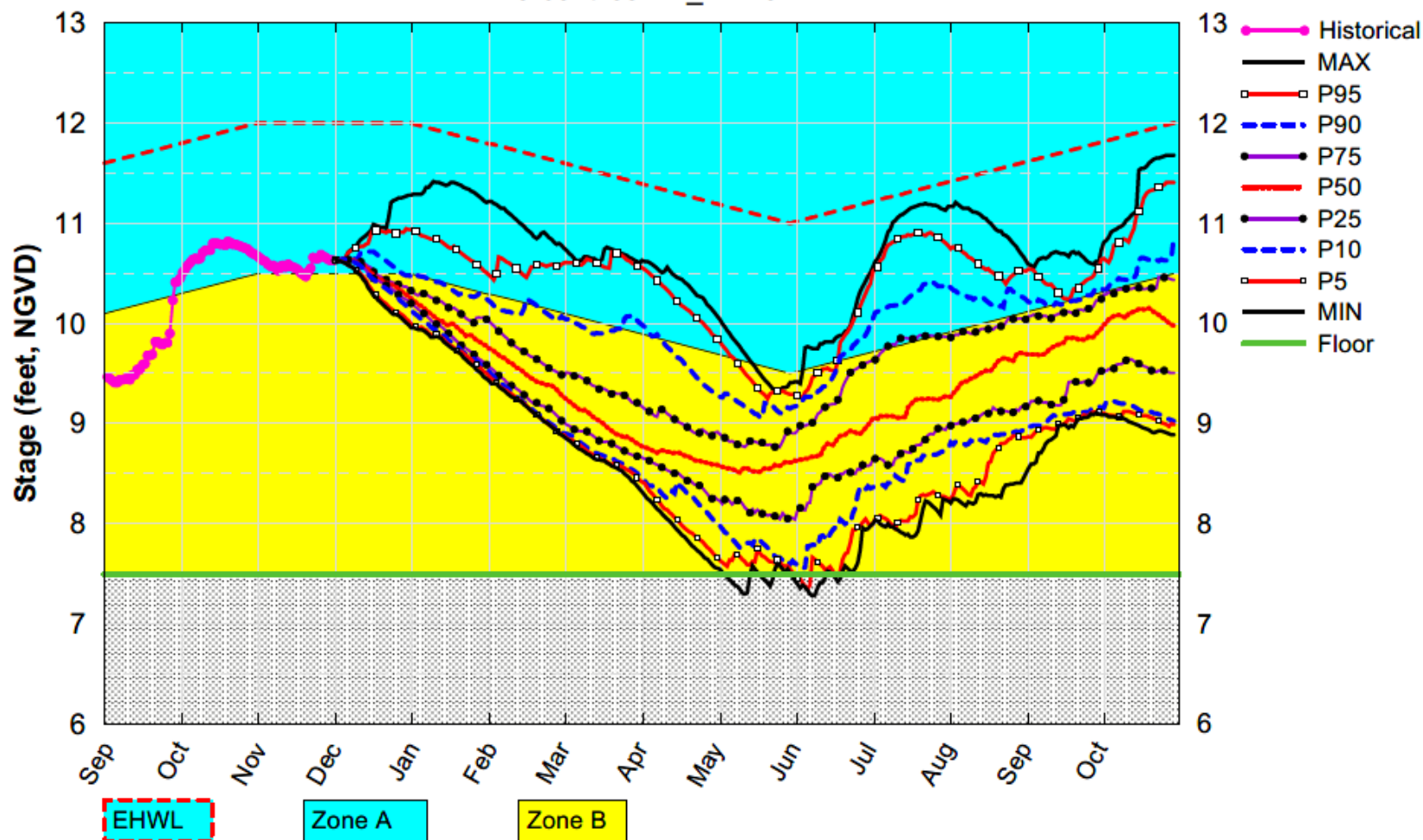
Percentiles PA\_DPA5



(See assumptions on the Position Analysis Results website)

# WCA3A SFWMM December 2022 Position Analysis

Percentiles PA\_DPA5



(See assumptions on the Position Analysis Results website)