Extended Hydrologic Outlook
October 10, 2023

- **The Climate Prediction Center (CPC) is forecasting <u>above normal</u> rainfall for October through December.**

- **<u>El Niño conditions are observed</u> and is anticipated to continue through the winter (with greater than a 95% chance through January-March 2024).**

- **Atlantic Multidecadal Oscillation (AMO) is <u>currently in the warm phase</u>:**

  - **Average annual inflow to Lake Okeechobee is nearly 50% greater during the warm phase compared to the cold phase**
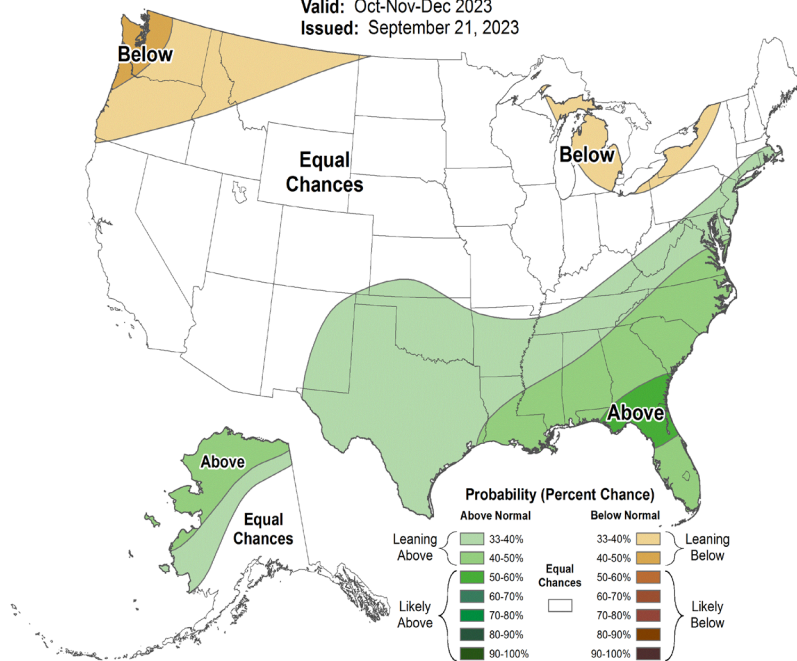
The seasonal outlooks combine the effects of long-term trends, soil moisture, and, when appropriate, ENSO.
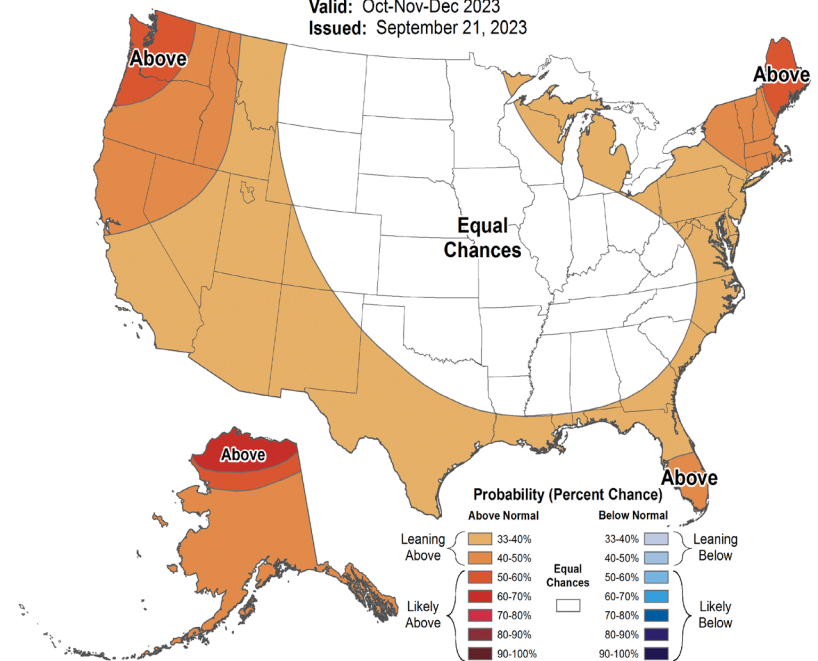
Seasonal Precipitation Outlook — Climate Prediction Center/NCEP
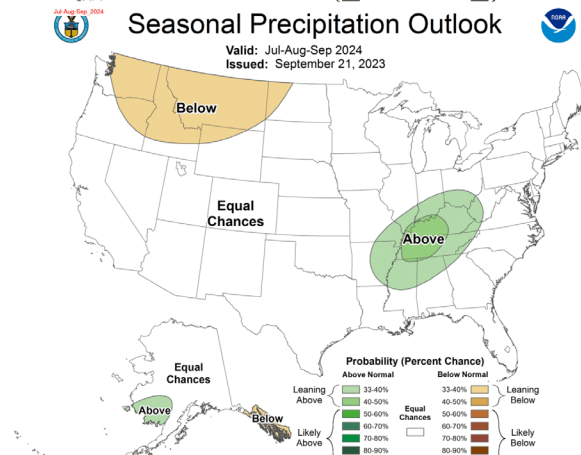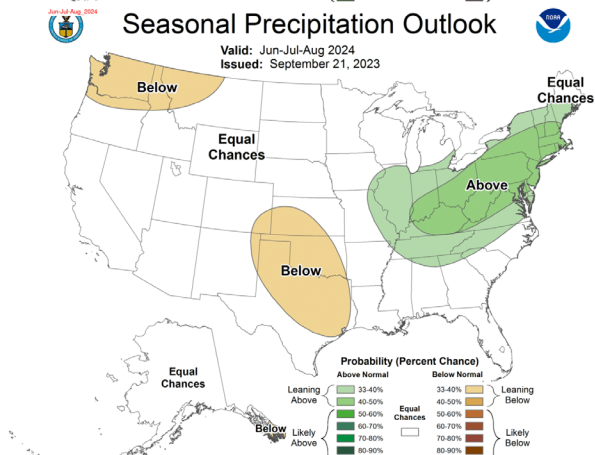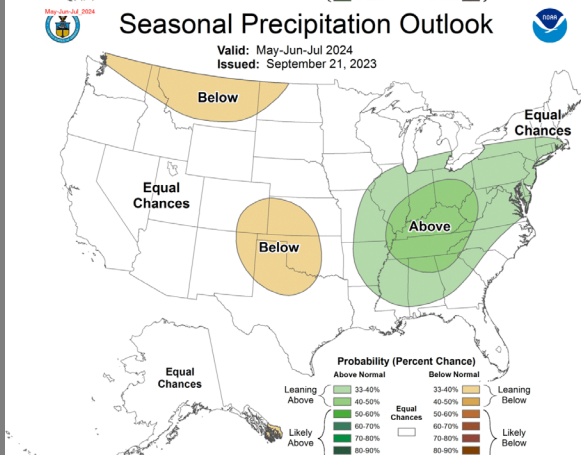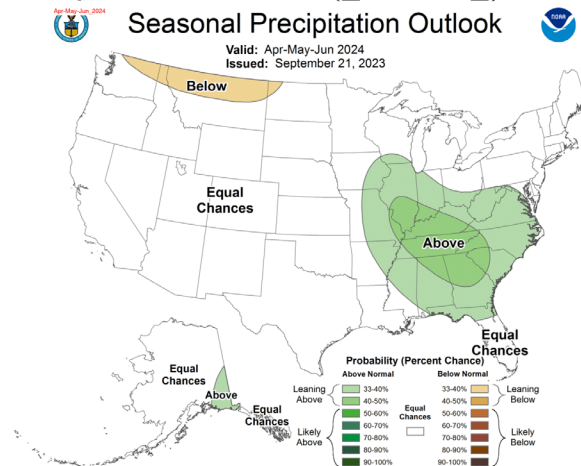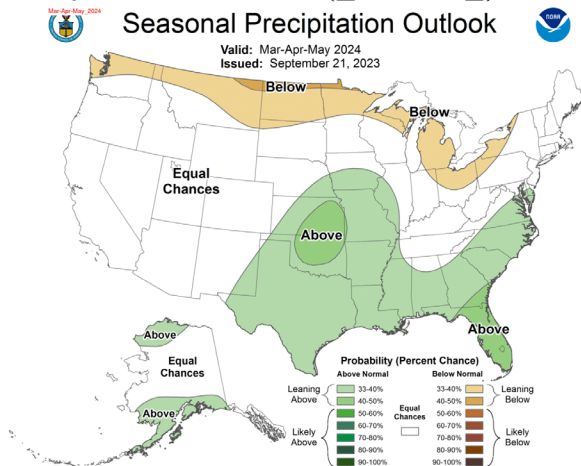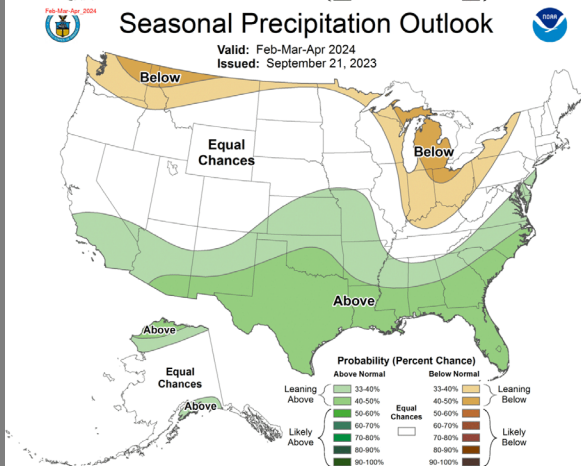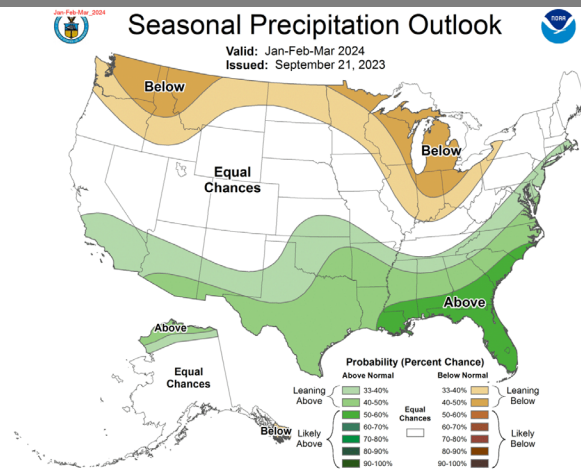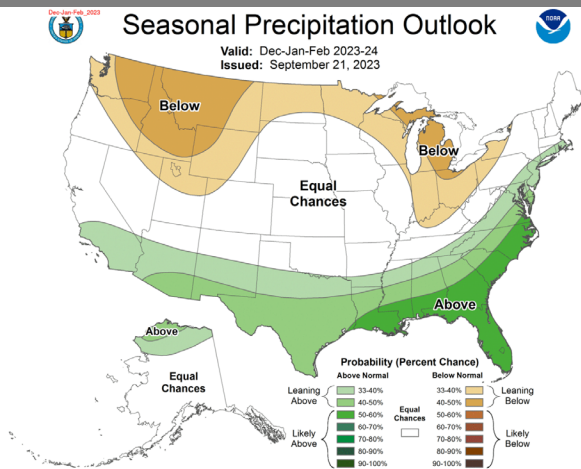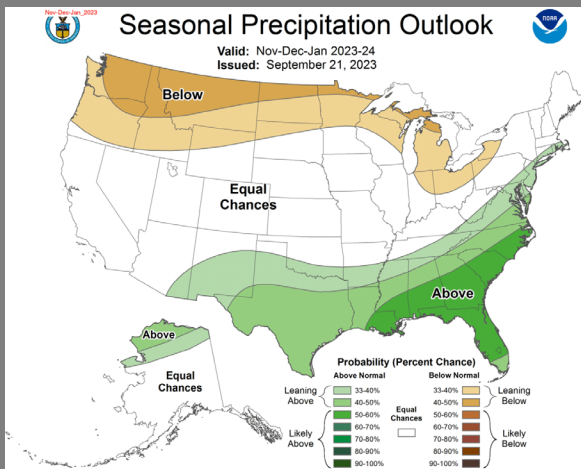
Teleconnections to South Florida

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 (ºC) Recent Evolution

The latest weekly SST departures are:

Niño 4	1.2°C
Niño 3.4	1.5°C
Niño 3	1.9°C
Niño 1+2	2.6°C
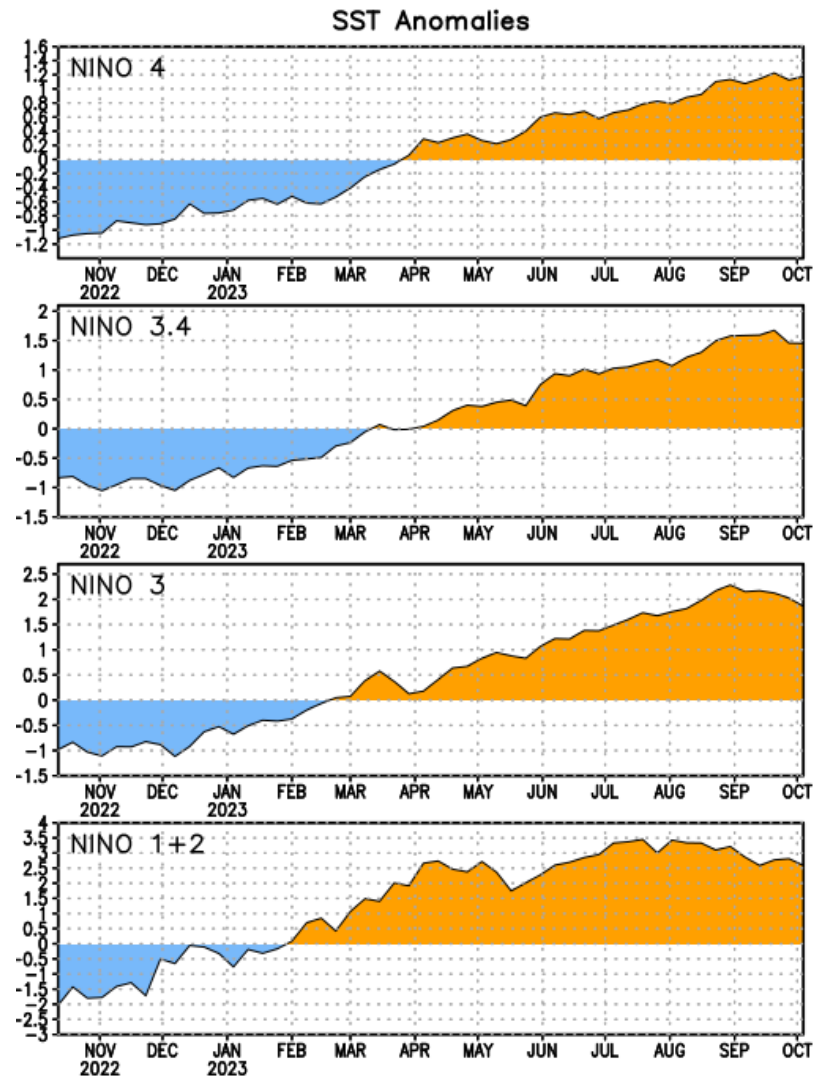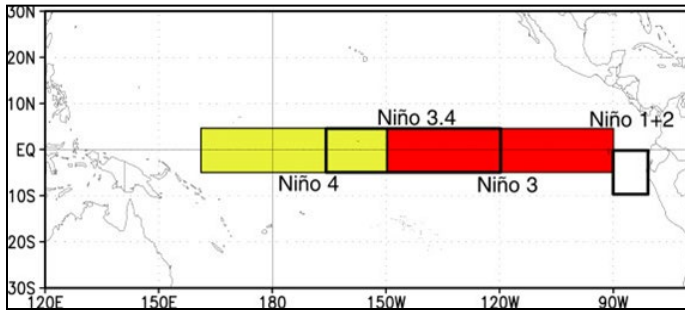
This weekly sea surface temperature data is based on OISSTv2.1 (Huang et al., 2021).

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

Global Tropical Moored Buoy Array Program Office, NOAA/PMEL
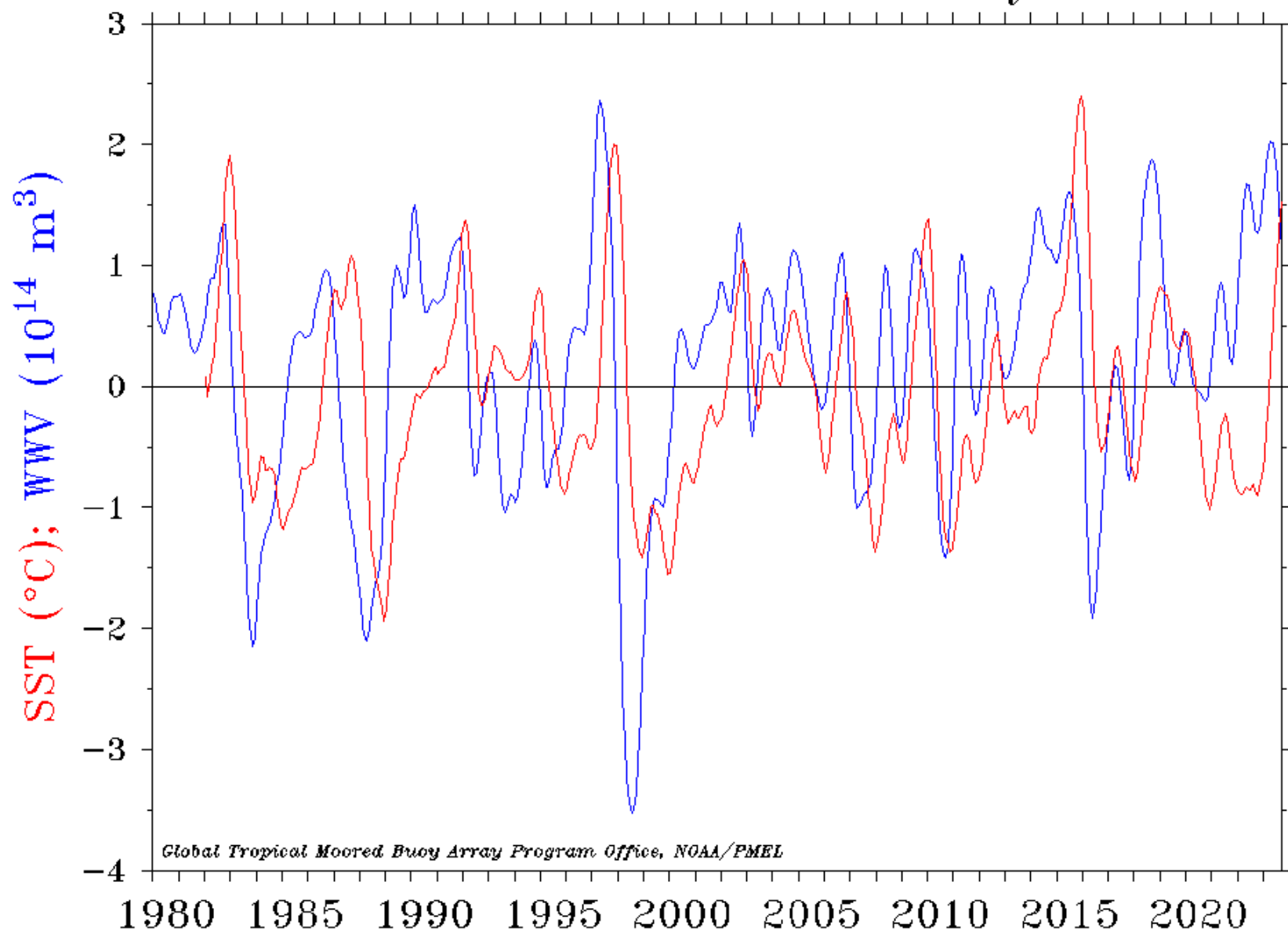
Multivariate ENSO Index Version 2
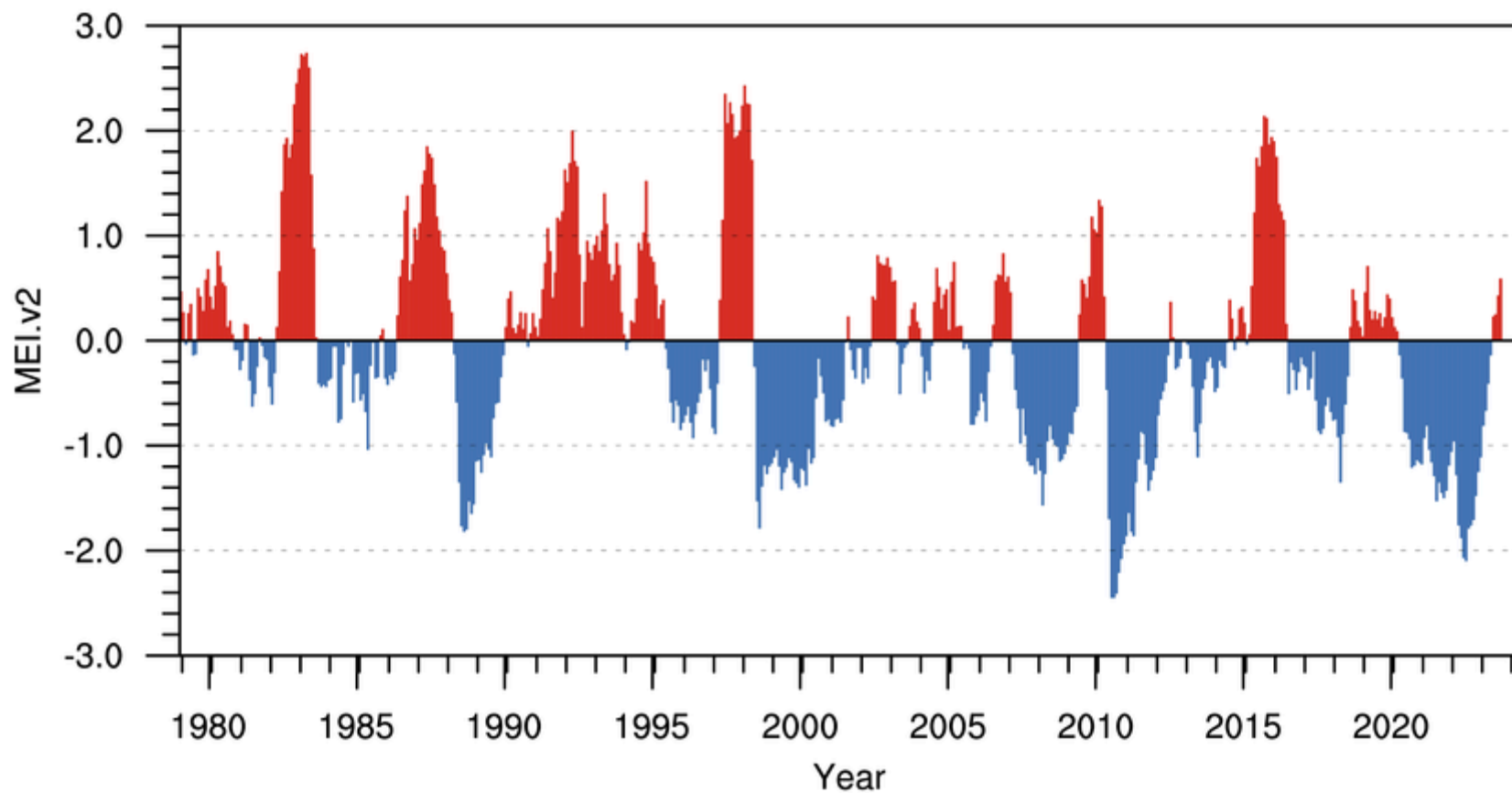
Prepared by: NOAA Physical Sciences Laboratory

MEI.v2 Evolution of Current ENSO Event in Historical Context

Prepared by: NOAA Physical Sciences Laboratory

Pacific Decadal Oscillation
Extended Reconstructed Sea Surface Temperature (ERSST) v5 (NOAA)
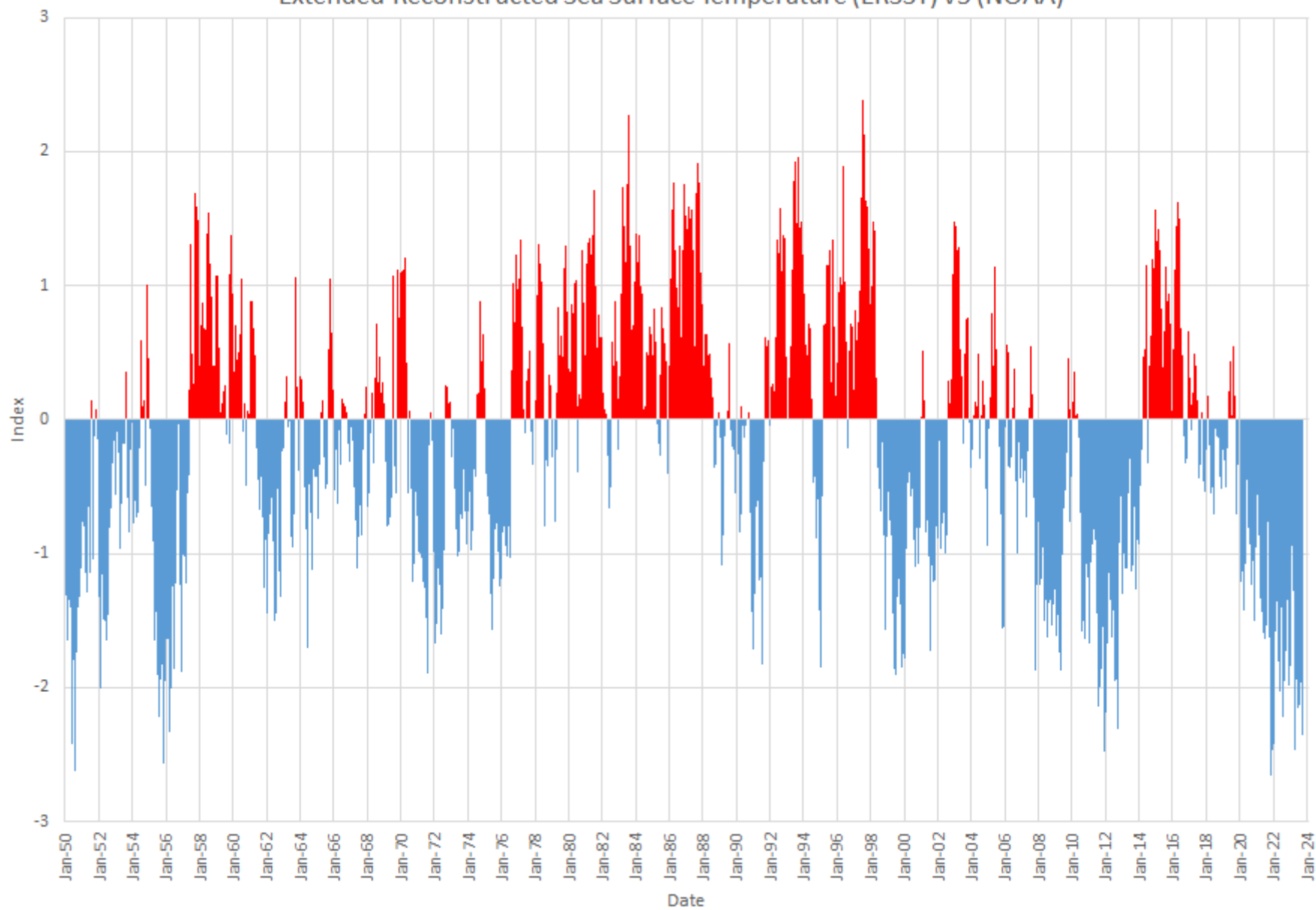
ERSST AMO (North Atlantic 0-60N SSTA) Index
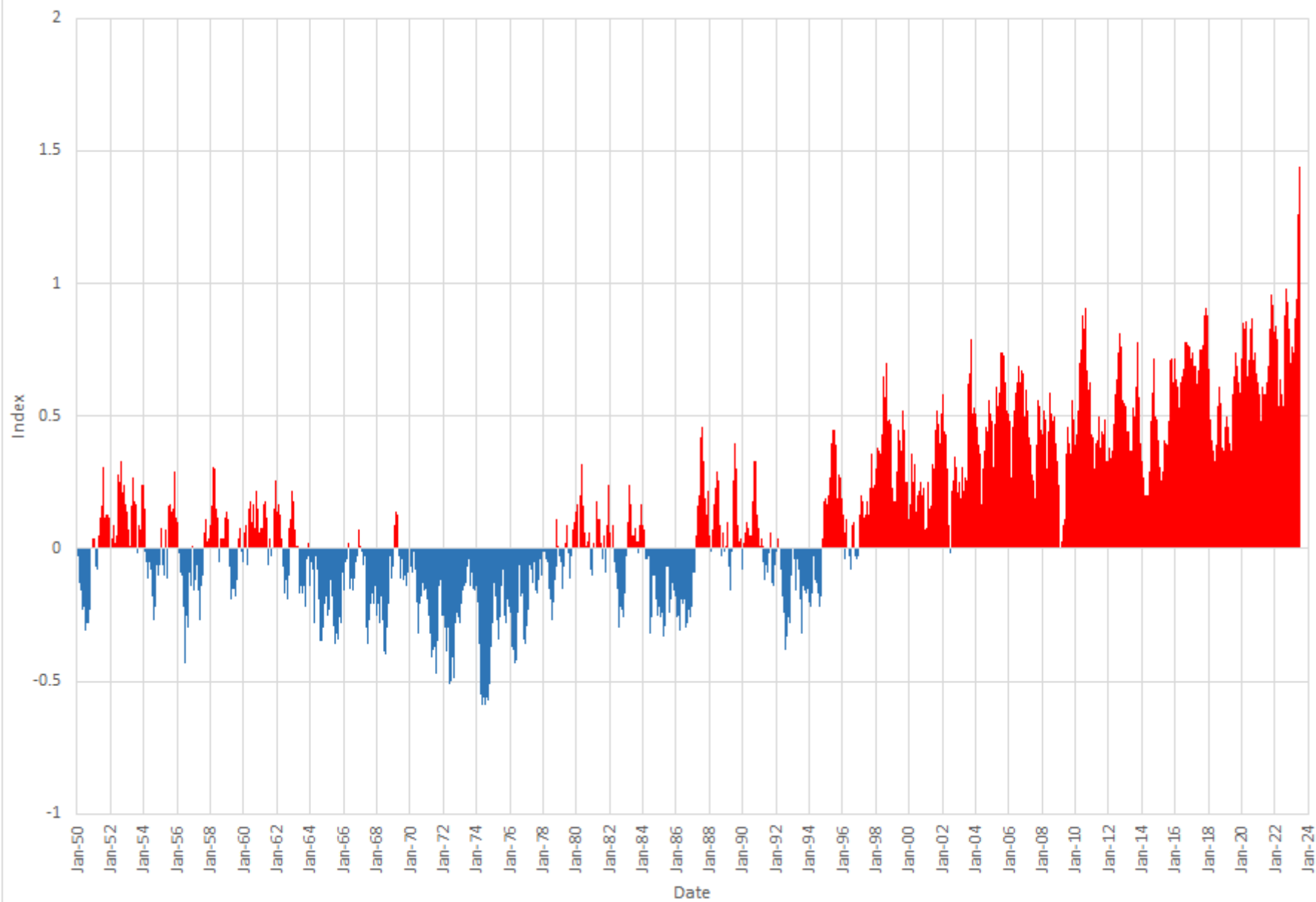
October DPA Assumptions

- **The October 1, 2023 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)**

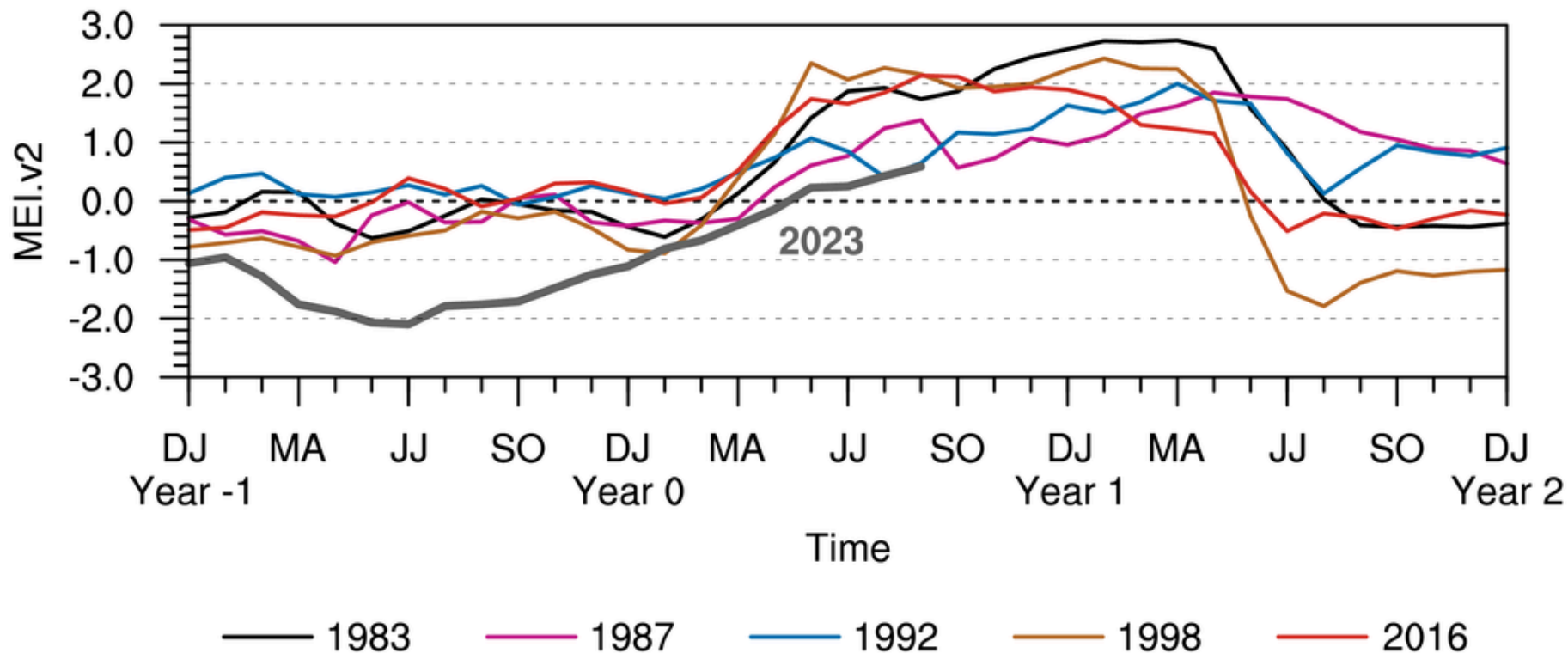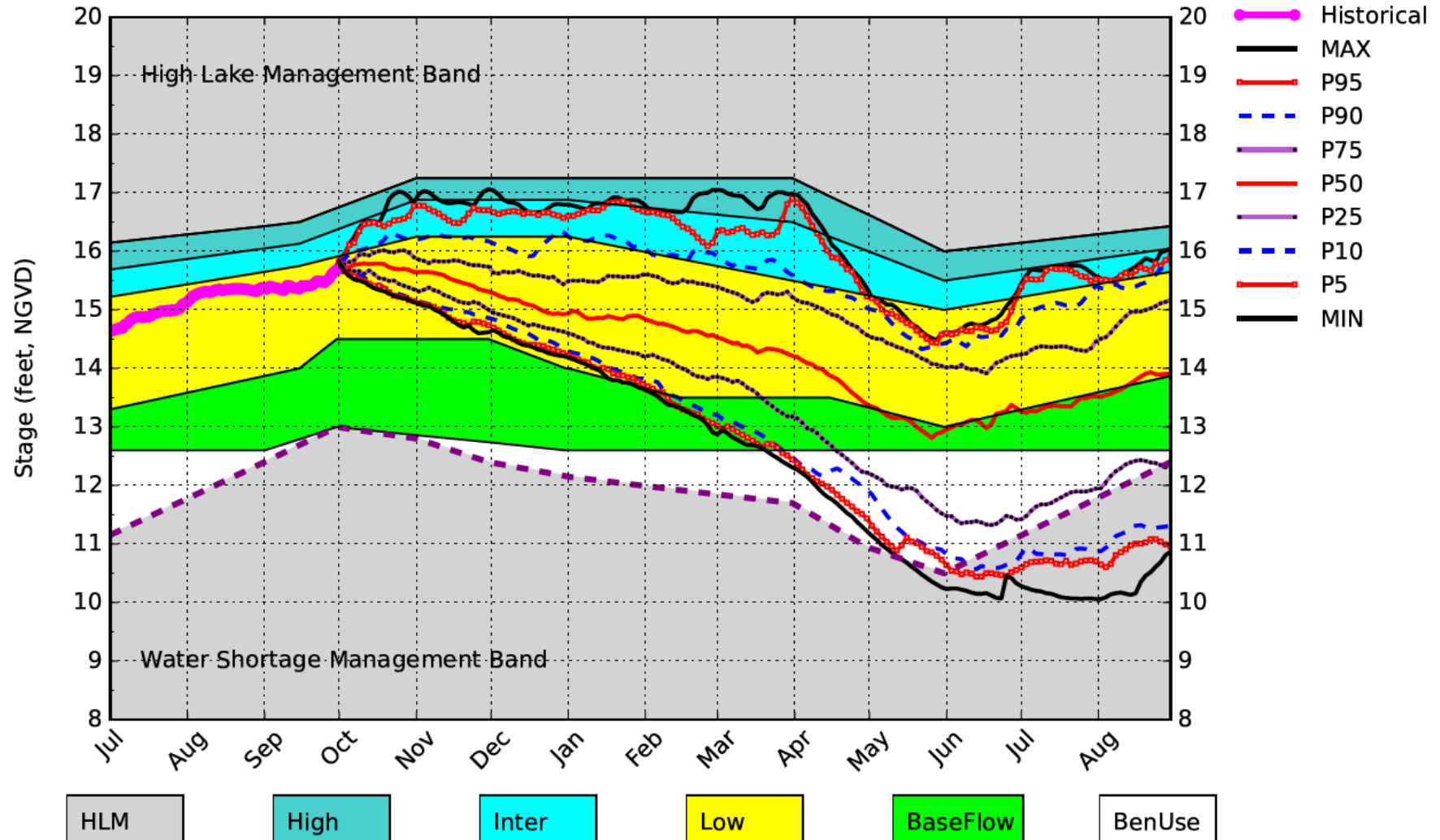- **The October 1, 2023 DPA resets the initial stages for Lake Okeechobee (LOK) and the Water Conservation Areas (WCAs) on September 1st of each year of the DPA simulation and conditions the simulation to real time data during September to achieve real time stages on October 1st for LOK and WCAs.**

- **The Lake Okeechobee operations follow the Lake Okeechobee 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.**

- **Full LORS 2008 releases are modeled as specified in the regulation schedule.**

Lake Okeechobee SFWMM October 2023 Position Analysis

Percentiles PA

Legend:
- Historical
- MAX
- P95
- P90
- P75
- P50
- P25
- P10
- P5
- MIN

Bands: HLM | High | Inter | Low | BaseFlow | BenUse

High Lake Management Band

Water Shortage Management Band

Stage (feet, NGVD)

(See assumptions on the Position Analysis Results website)

10/05/23 13:09:16

Lake Okeechobee SFWMM October 2023 Position Analysis

Percentiles PA

Legend:
- Historical (magenta)
- MAX (black)
- P95 (red)
- P90 (blue dashed)
- P75 (purple)
- P50 (red)
- P25 (purple)
- P10 (blue dashed)
- P5 (red)
- MIN (black)

High Lake Management Band

Water Shortage Management Band

Y-axis: Stage (feet, NGVD)

X-axis: Jul, Aug, Sep, Oct, Nov, Dec, Jan, Feb, Mar, Apr, May, Jun, Jul, Aug

(See assumptions on the Position Analysis Results website)

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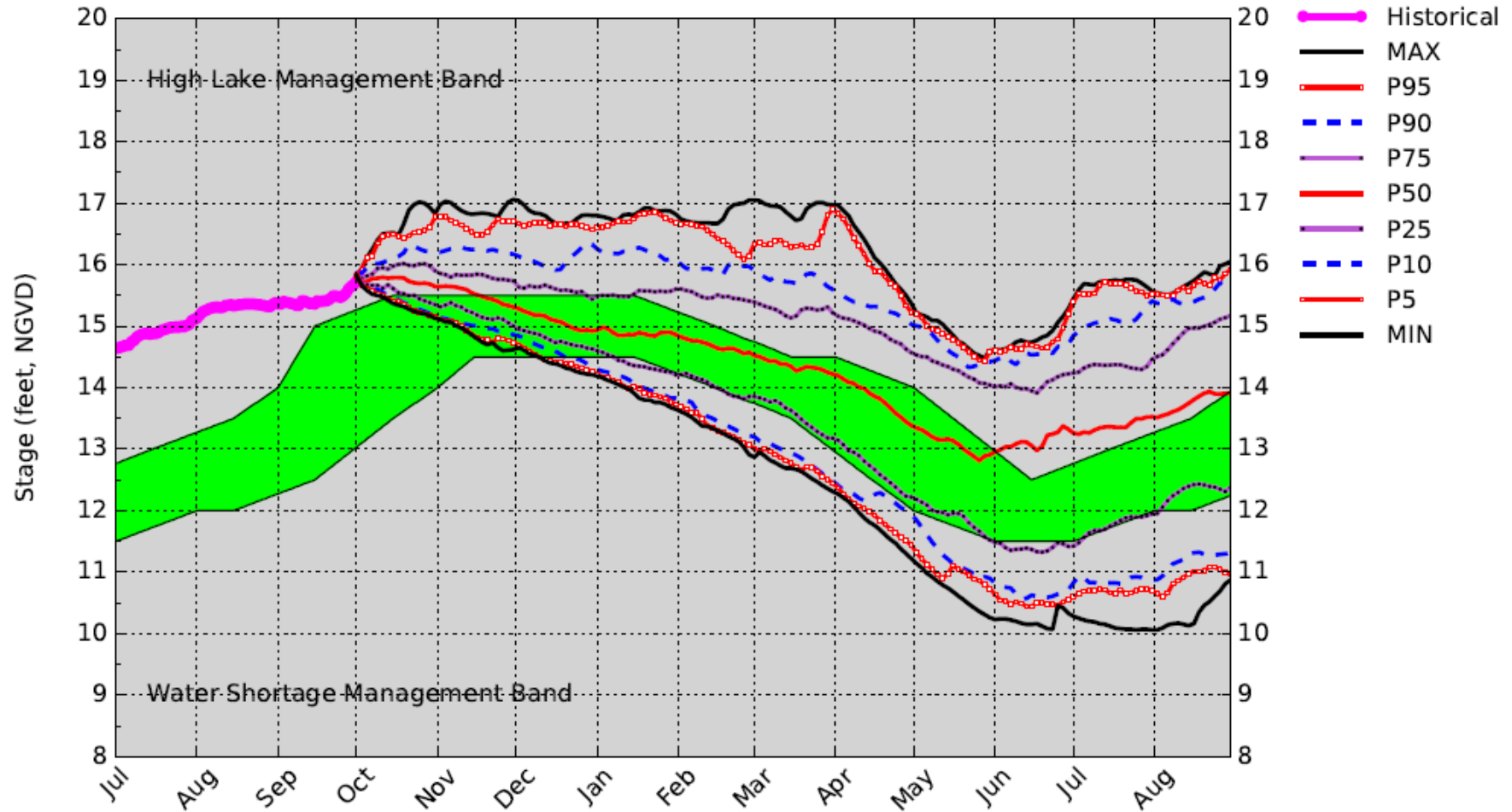
Lake Okeechobee SFWMM October 2023 Position Analysis

All El Nino Years Plot PA

Legend:
- Historical (magenta)
- 1965-66
- 1968-69
- 1969-70
- 1972-73
- 1976-77
- 1977-78
- 1979-80
- 1982-83
- 1986-87
- 1987-88
- 1991-92
- 1994-95
- 1997-98
- 2002-03
- 2004-05

High Lake Management Band

Water Shortage Management Band

Stage (feet, NGVD)

HLM | High | Inter | Low | BaseFlow | BenUse

(See assumptions on the Position Analysis Results website)

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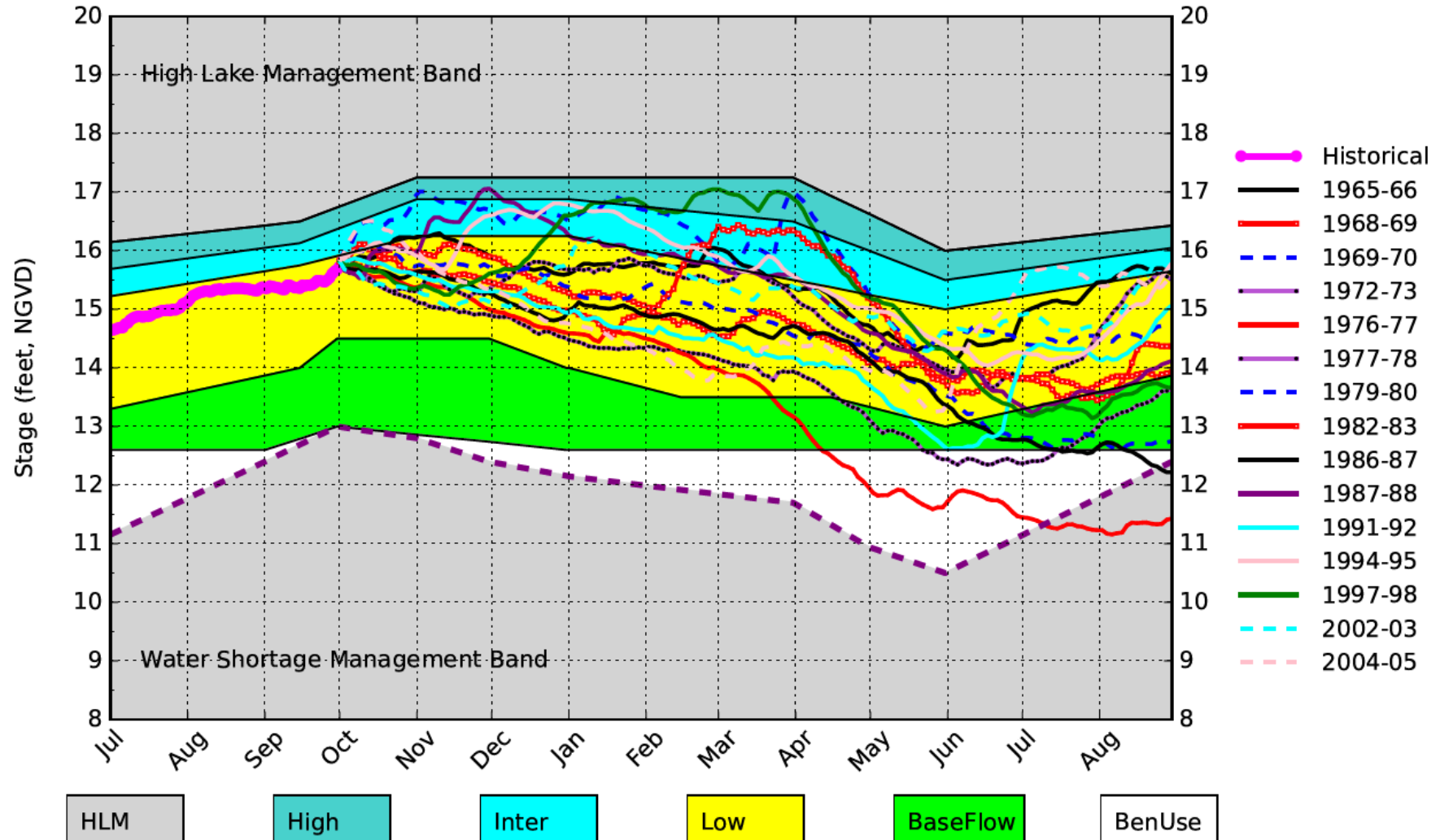
WCA1 SFWMM October 2023 Position Analysis

Percentiles PA

Stage (feet, NGVD)

Legend:
- Historical
- MAX
- P95
- P90
- P75
- P50
- P25
- P10
- P5
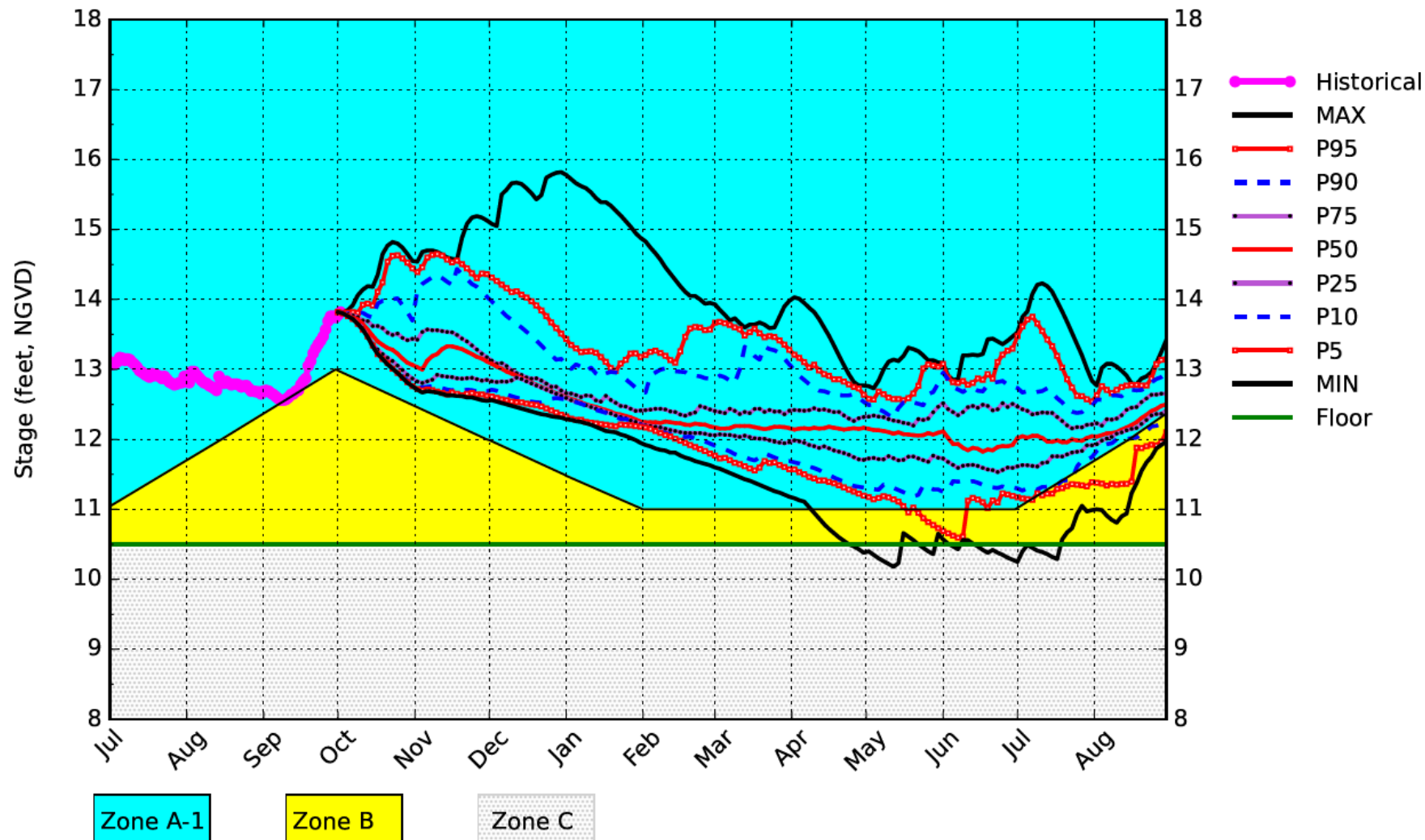- MIN
- Floor

Zone A-1   Zone A-2   Zone B   Zone C

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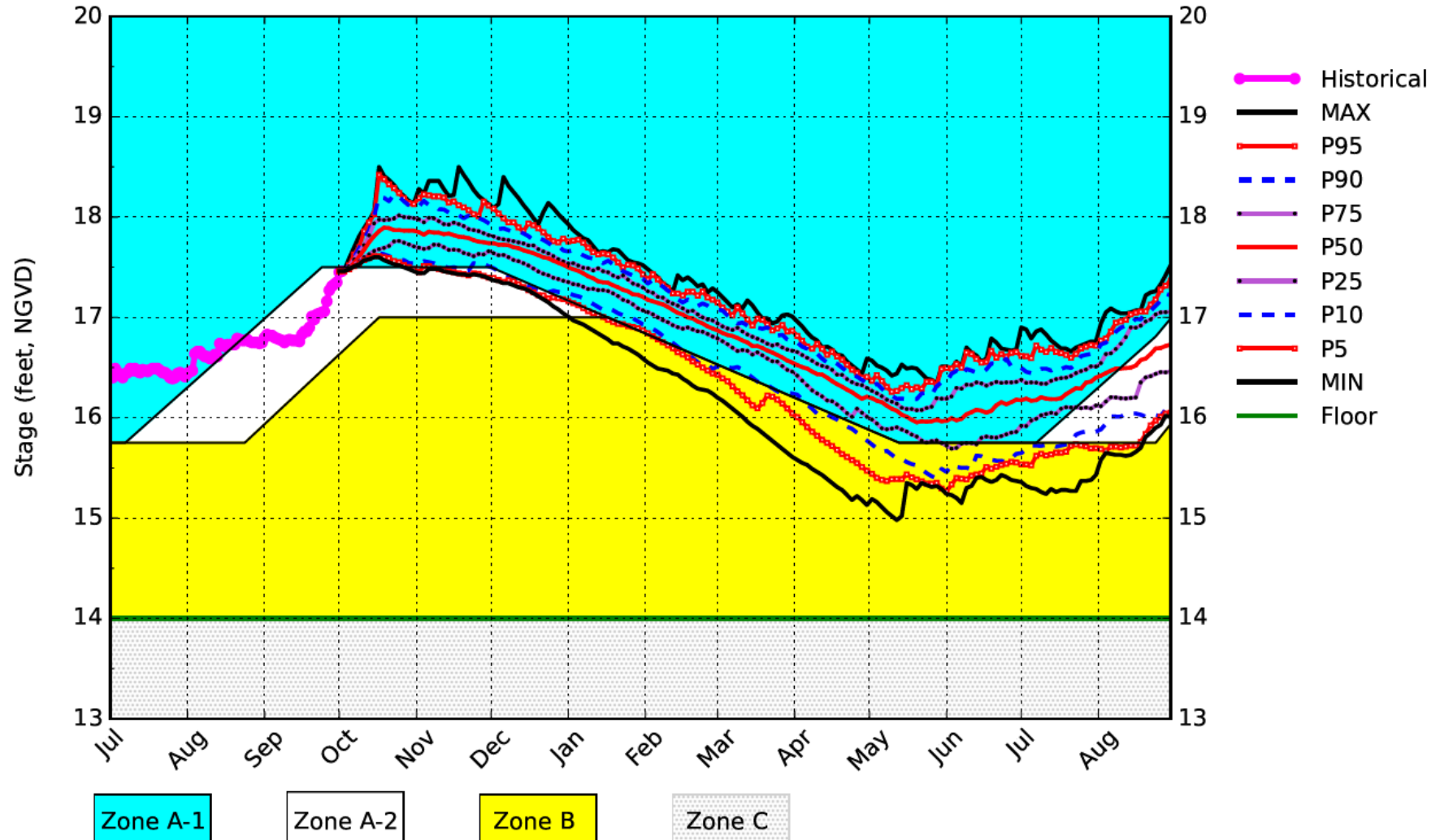
(See assumptions on the Position Analysis Results website)

WCA2A SFWMM October 2023 Position Analysis

Percentiles PA

Legend:
- Historical
- MAX
- P95
- P90
- P75
- P50
- P25
- P10
- P5
- MIN
- Floor

Zone A-1 Zone B Zone C

(See assumptions on the Position Analysis Results website)

10/05/23 13:09:20

WCA3A SFWMM October 2023 Position Analysis
Percentiles PA