

Extended Hydrologic Outlook

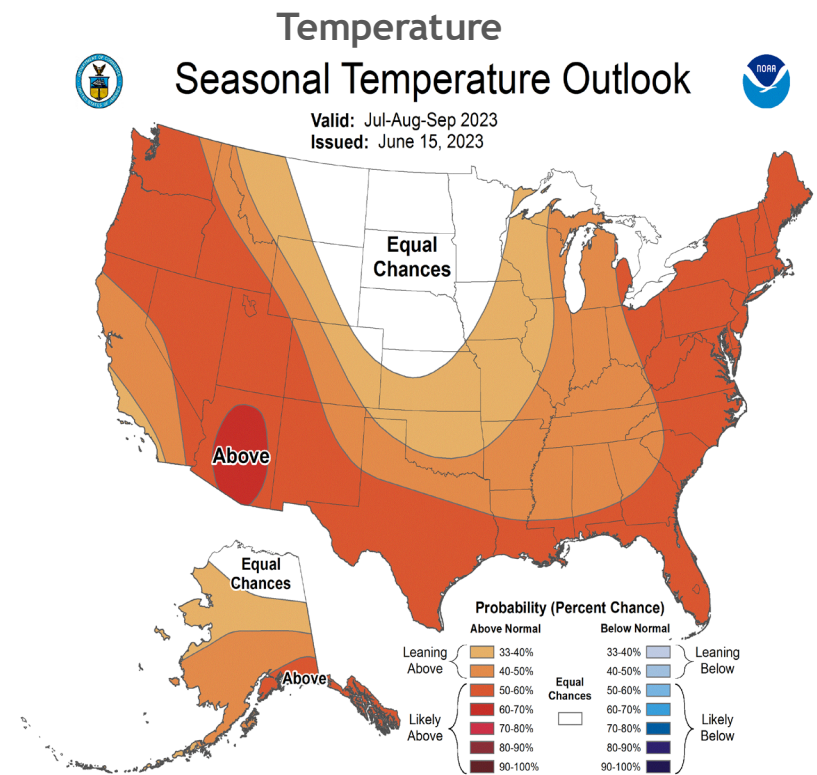
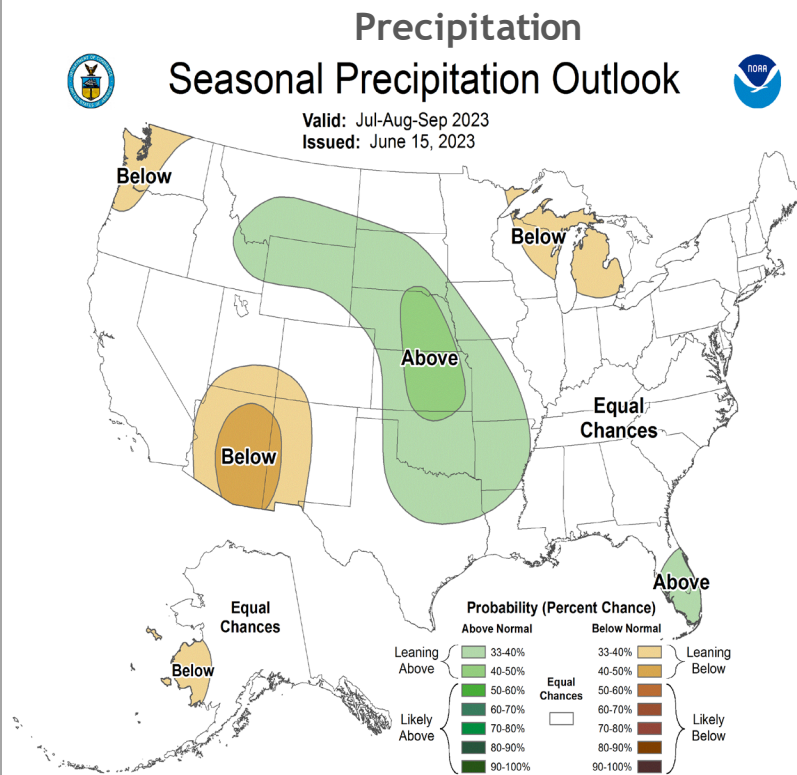
July 11, 2023

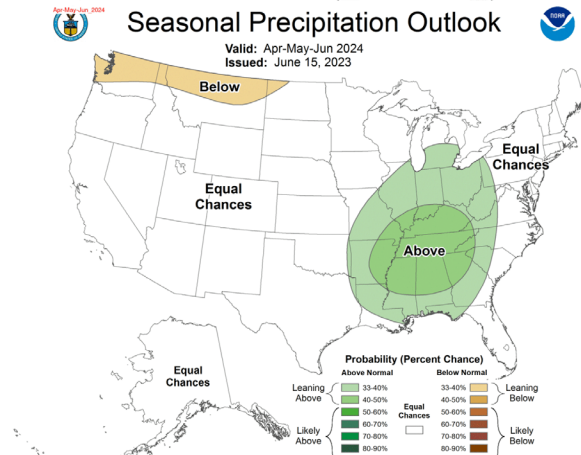
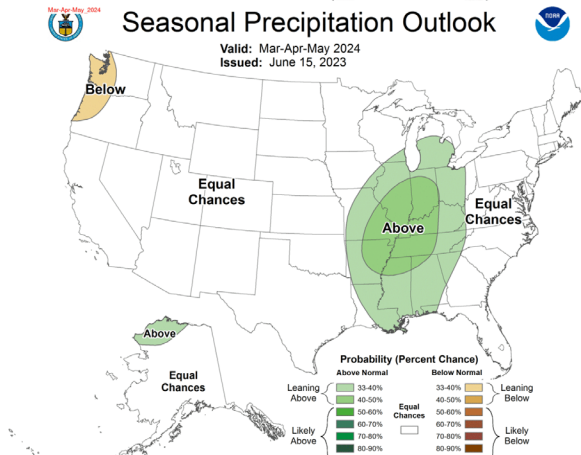
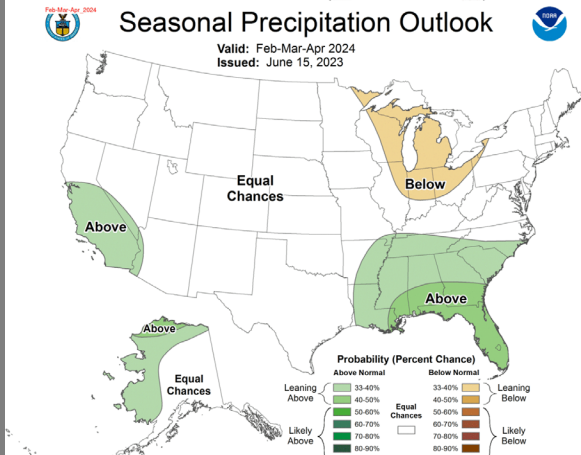
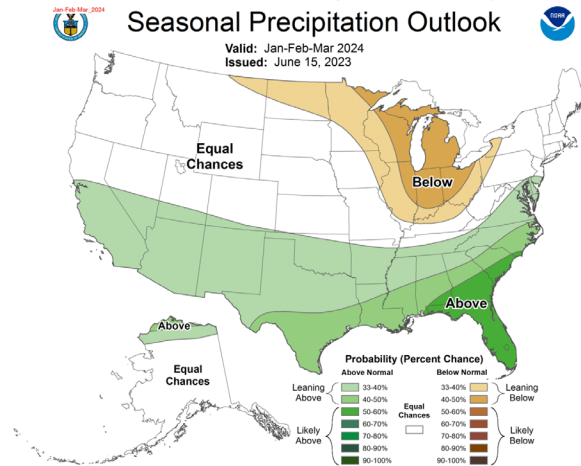
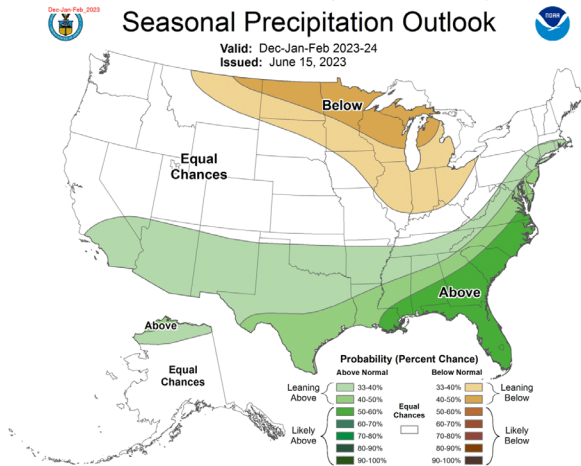
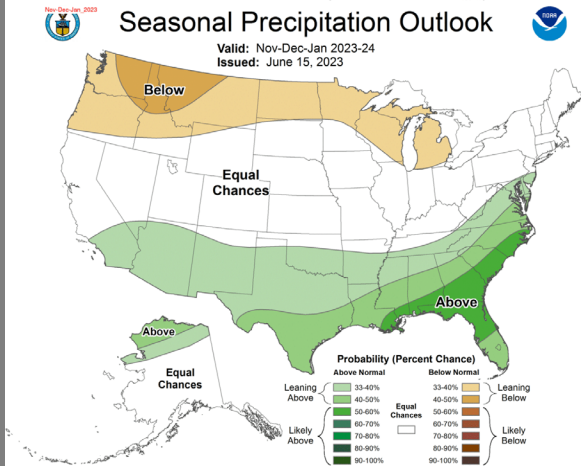
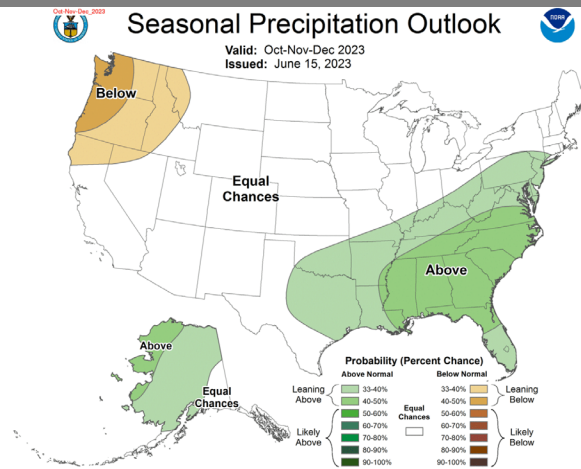
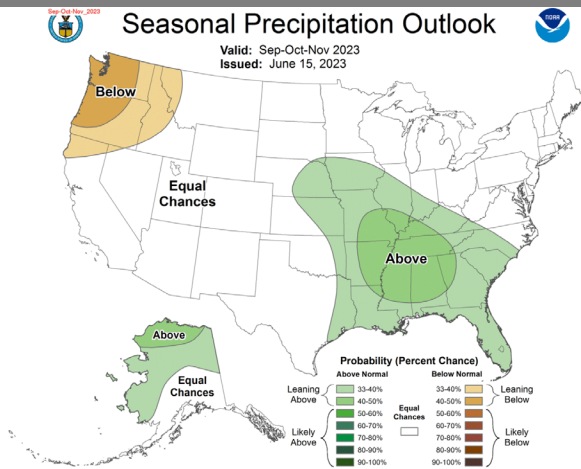
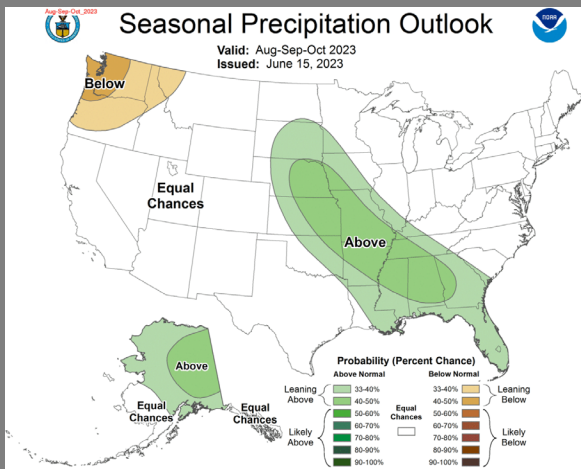
- ✓ The Climate Prediction Center (CPC) is forecasting above normal rainfall for July through September.
- ✓ El Niño conditions are present and are expected to gradually strengthen into the winter 2023-24.
- ✓ Atlantic Multidecadal Oscillation (AMO) is currently in the warm phase:
 - Average annual inflow to Lake Okeechobee is nearly 50% greater during the warm phase compared to the cold phase

U. S. Seasonal Outlooks

July - September 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

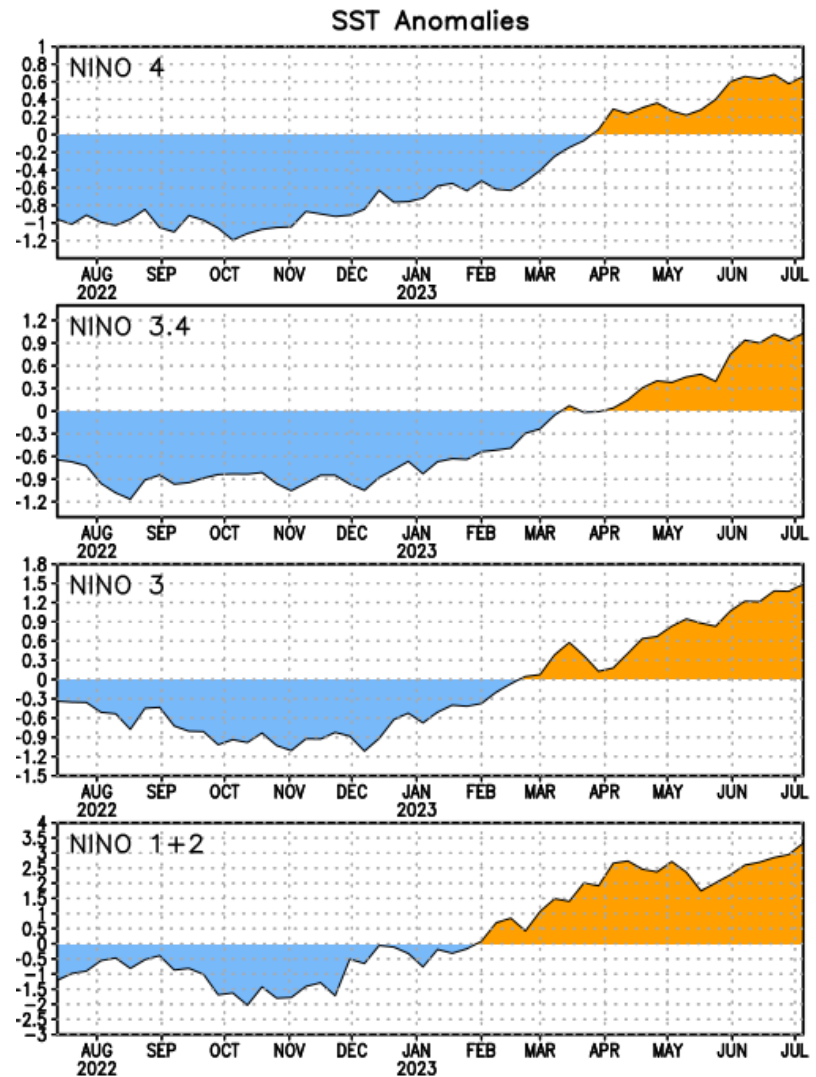
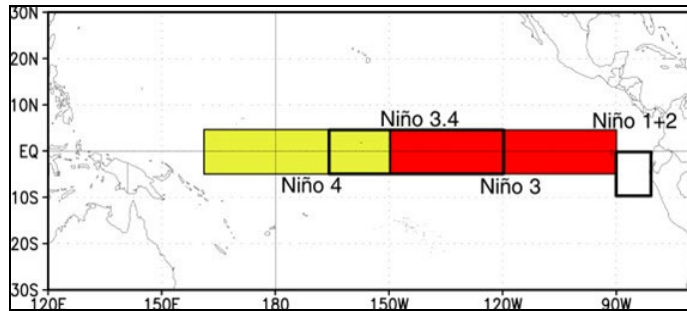
Atlantic Multidecadal Oscillation (AMO)

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

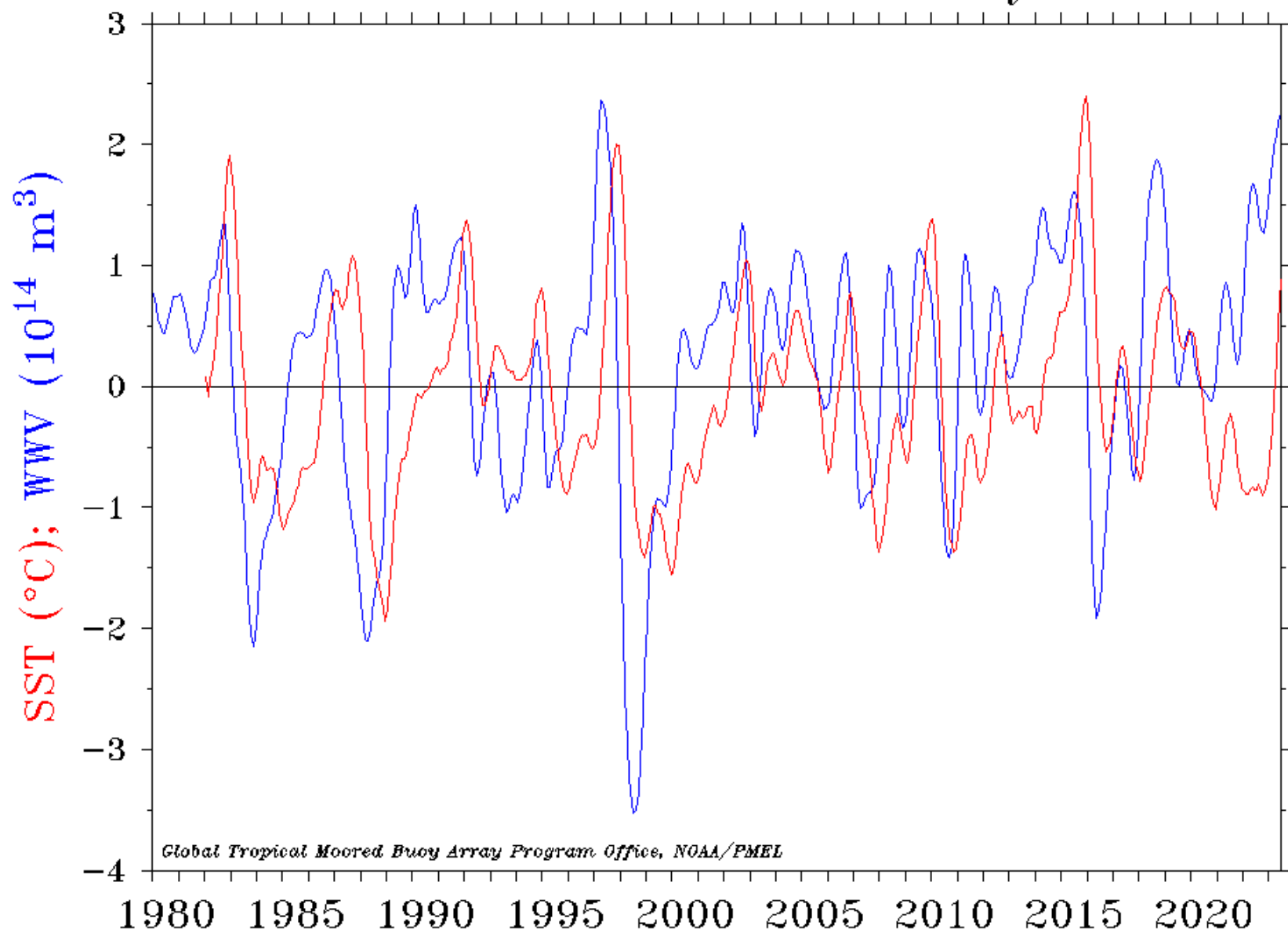
The latest weekly SST departures are:

Niño 4	0.7°C
Niño 3.4	1.0°C
Niño 3	1.5°C
Niño 1+2	3.3°C

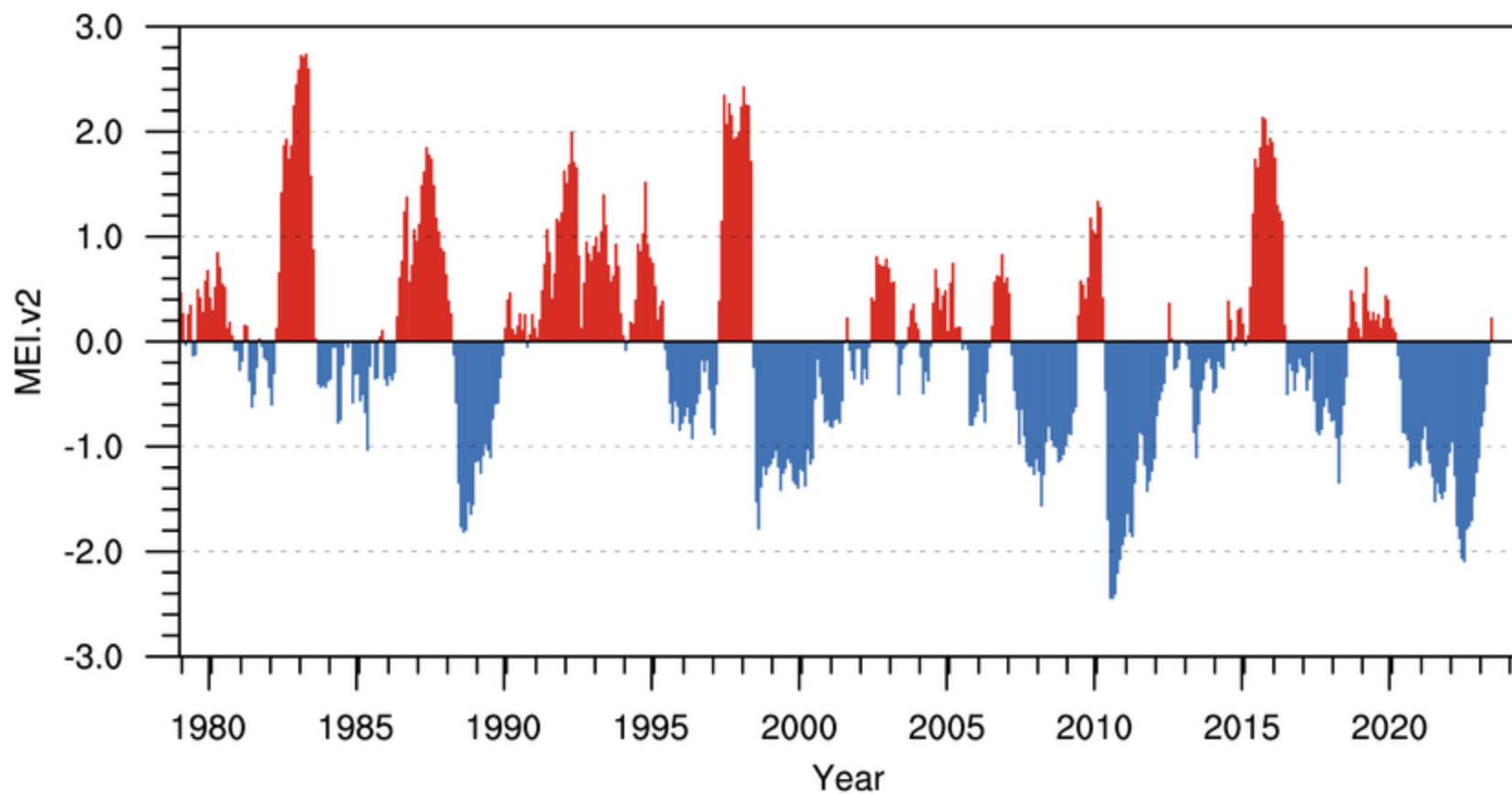


This weekly sea surface temperature data is based on OISSTv2.1 (Huang et al., 2021).

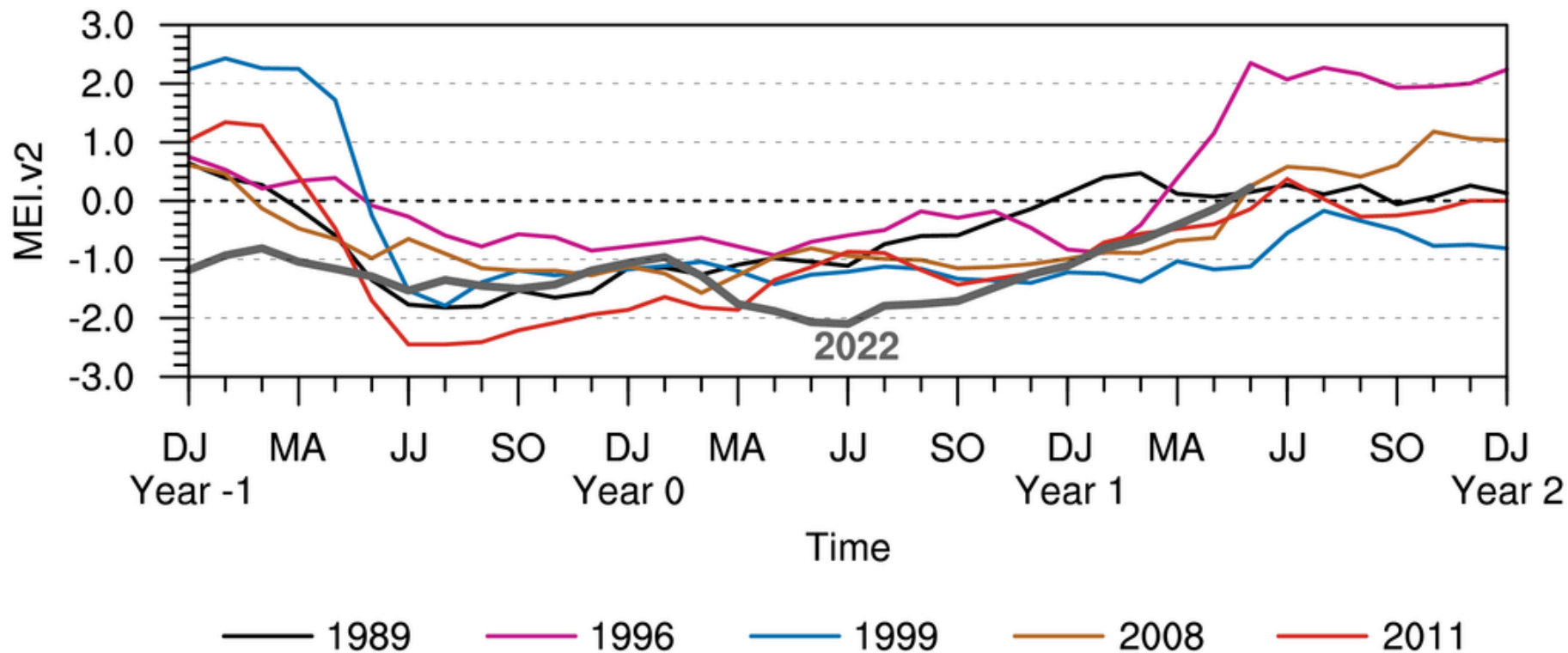
Warm Water Volume (5°N – 5°S , 120°E – 80°W) and NINO 3.4 SST Anomaly



Multivariate ENSO Index Version 2

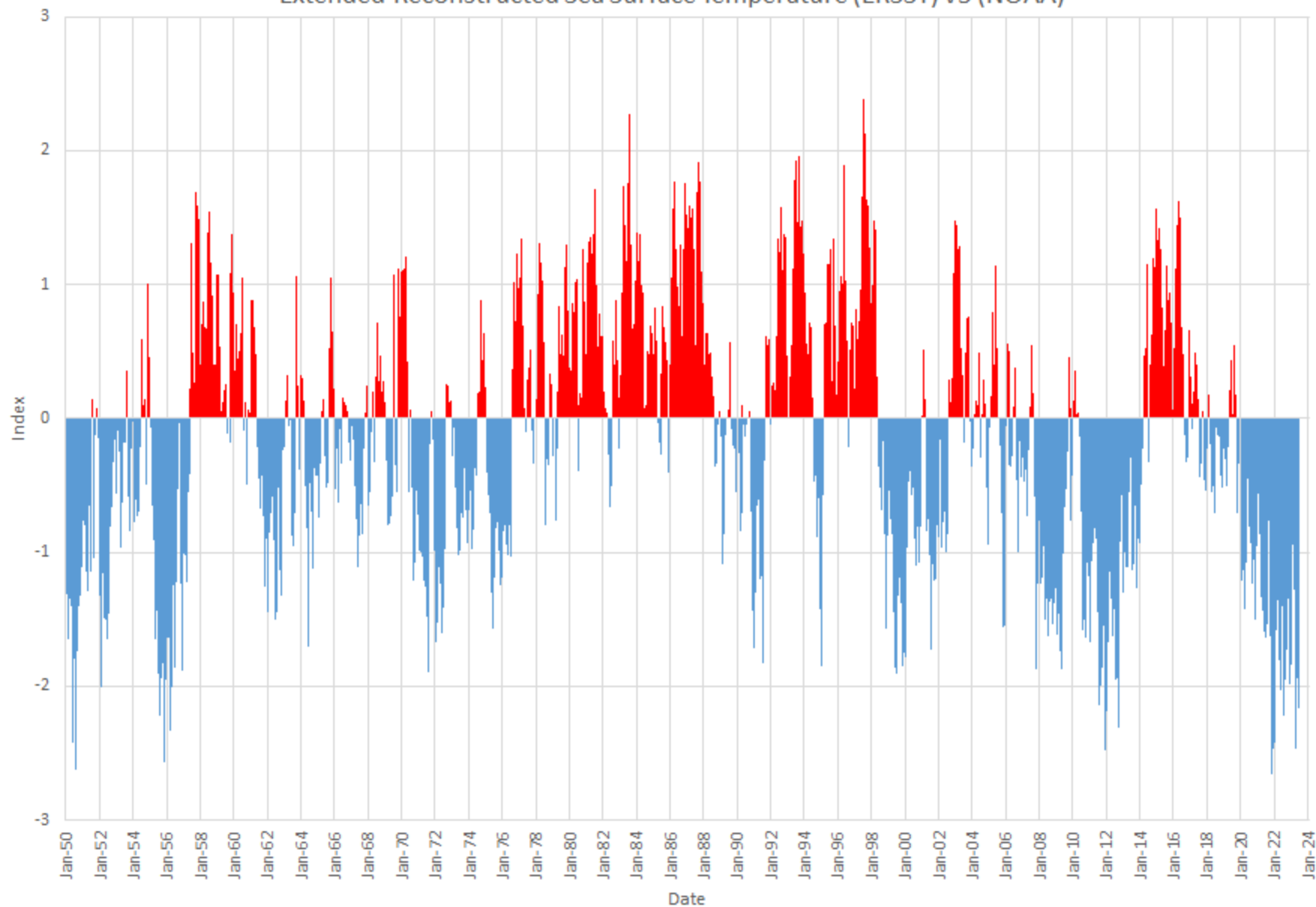


MEI.v2 Evolution of Current ENSO Event in Historical Context

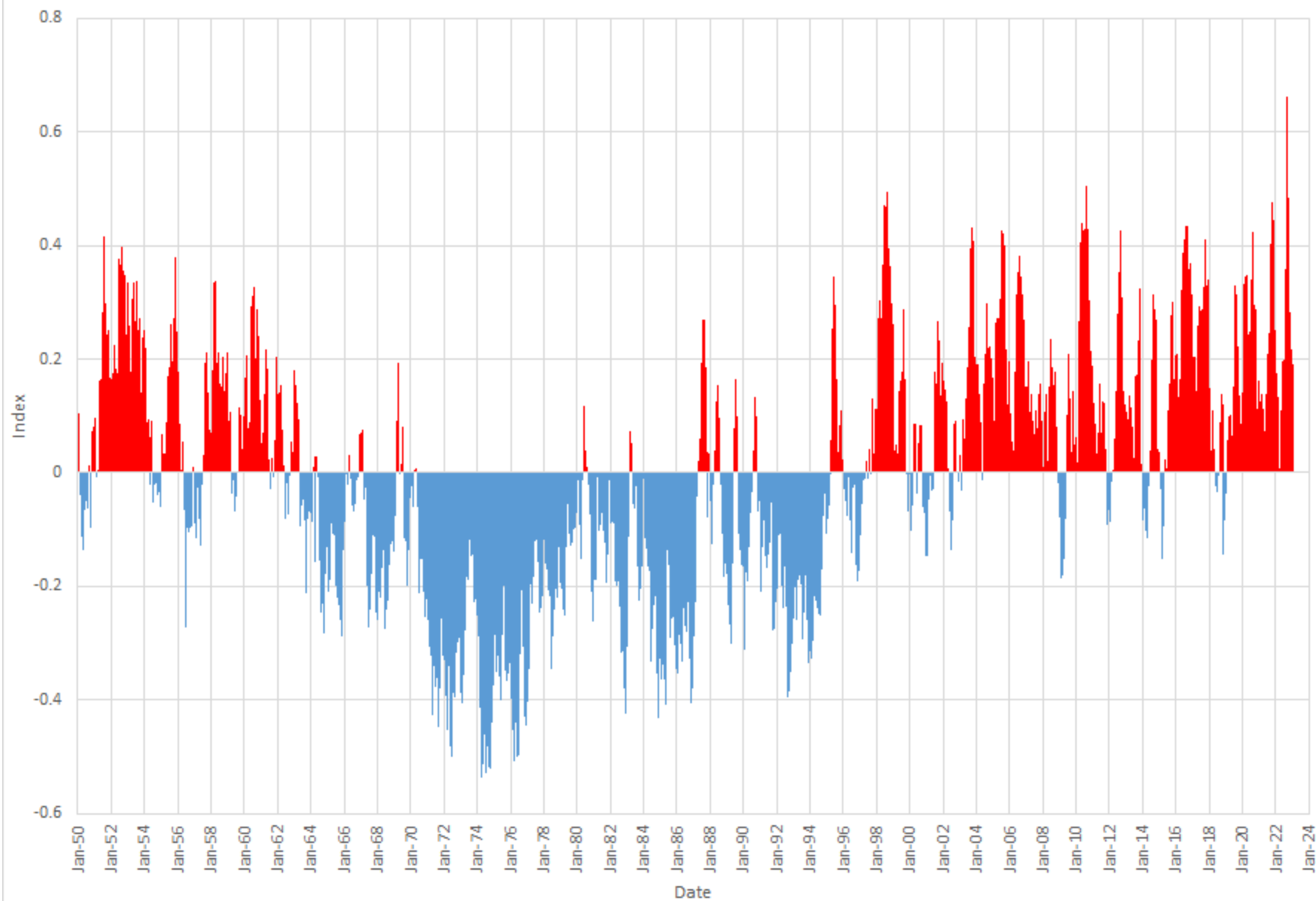


Pacific Decadal Oscillation

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



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

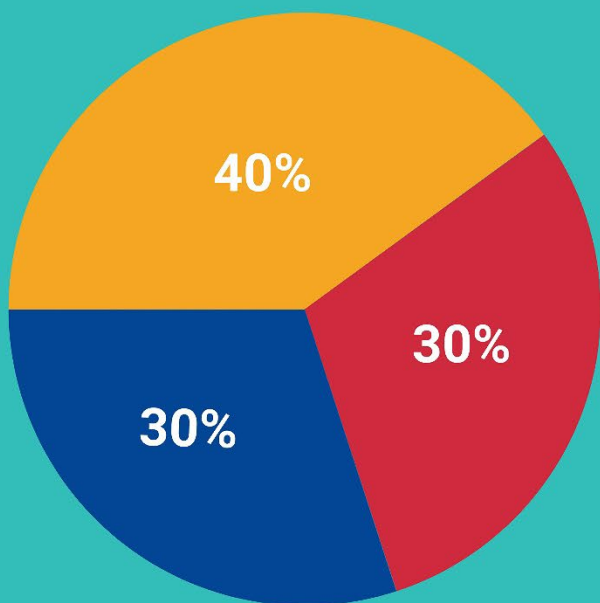


2023 Tropical Outlook





2023 Atlantic Hurricane Season Outlook



■ Above normal ■ Near normal ■ Below normal

Season probability

Named storms

12 - 17

Hurricanes

5 - 9

Major hurricanes

1 - 4

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

May 2023

ATLANTIC BASIN SEASONAL HURRICANE FORECAST FOR 2023

Forecast Parameter and 1991-2020 Average (in parentheses)	Issue Date 13 April 2023	Issue Date 1 June 2023	Issue Date 6 July 2023	Observed Thru 5 July 2023	Remainder of Season Forecast
Named Storms (NS) (14.4)	13	15	18	4	14
Named Storm Days (NSD) (69.4)	55	60	90	11.50	78.50
Hurricanes (H) (7.2)	6	7	9	0	9
Hurricane Days (HD) (27.0)	25	30	35	0	35
Major Hurricanes (MH) (3.2)	2	3	4	0	4
Major Hurricane Days (MHD) (7.4)	5	7	9	0	9
Accumulated Cyclone Energy (ACE) (123)	100	125	160	10	150
ACE West of 60°W (73)	55	70	82	4	78
Net Tropical Cyclone Activity (NTC) (135%)	105	135	170	11	159

*Forecast includes the unnamed subtropical storm in January and Tropical Storms Arlene, Bret and Cindy in June.

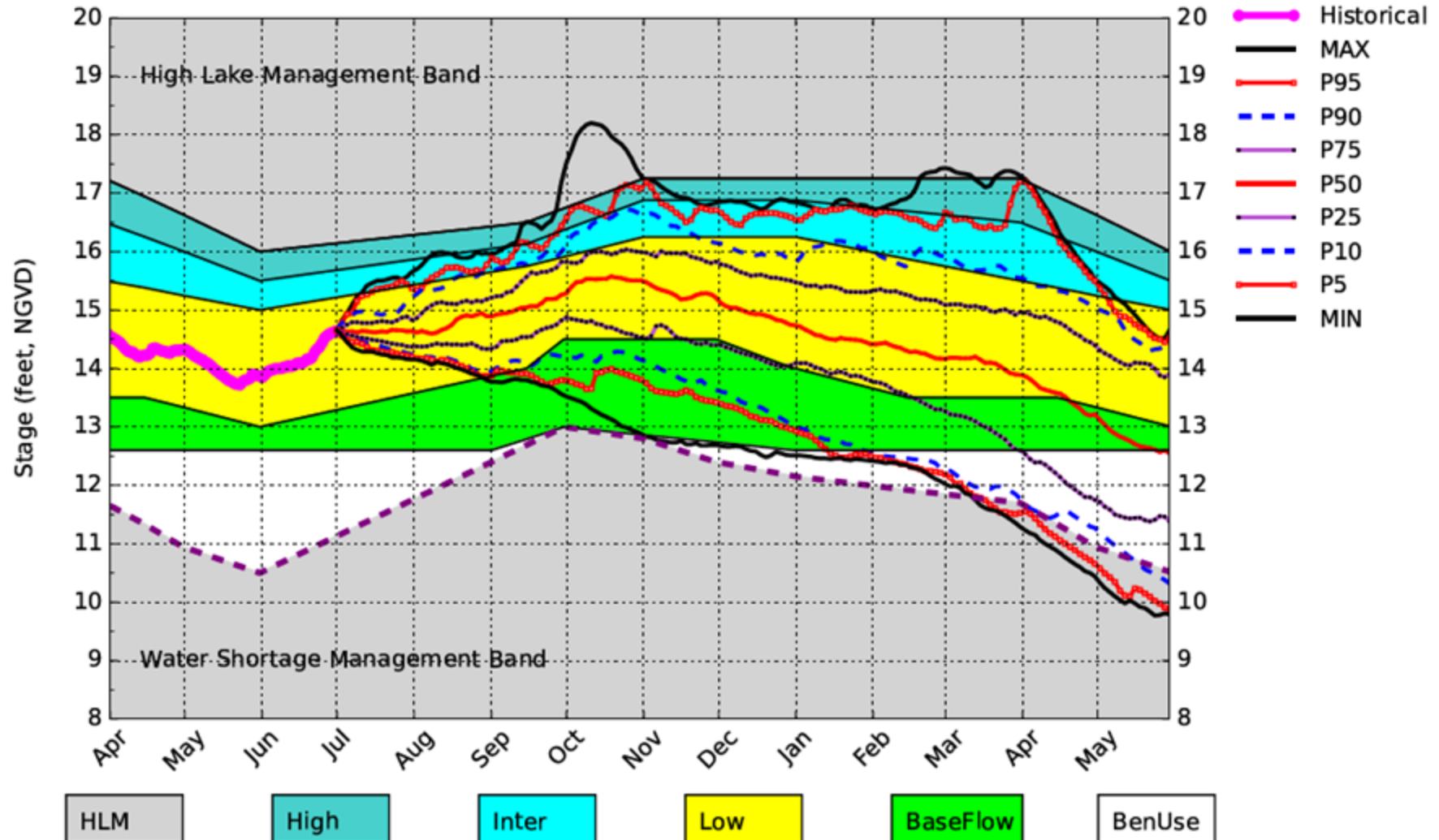
- Above-average activity anticipated
- Subtropical Atlantic now has record warm sea surface temperatures
- El Niño increases vertical wind shear in the Caribbean and tropical Atlantic, but the extreme anomalous warmth in the tropical and subtropical Atlantic may counteract some of the typical El Niño-driven increase in vertical wind shear

July DPA Assumptions

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

Lake Okeechobee SFWMM July 2023 Position Analysis

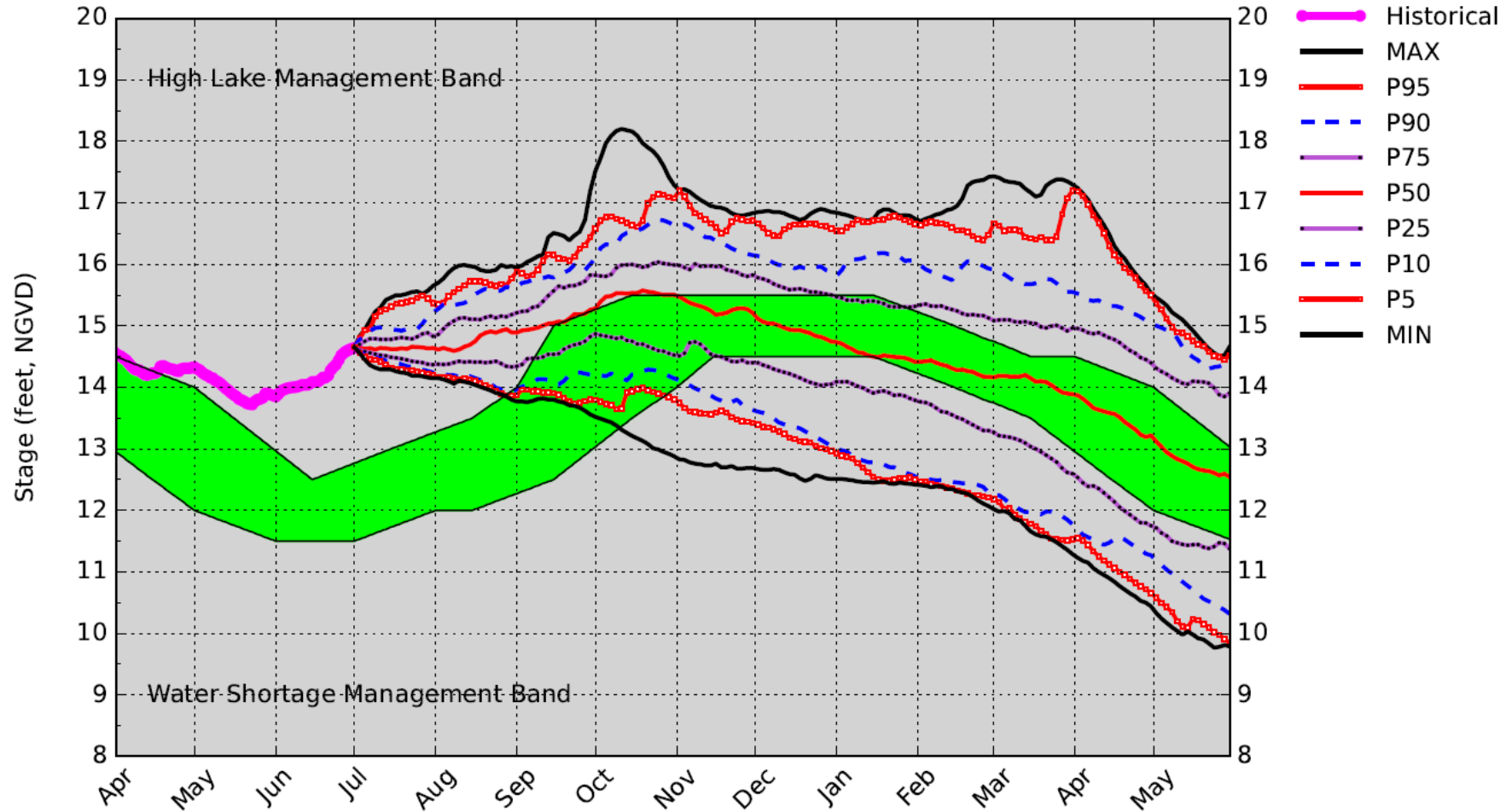
Percentiles PA



(See assumptions on the Position Analysis Results website)

Lake Okeechobee SFWMM July 2023 Position Analysis

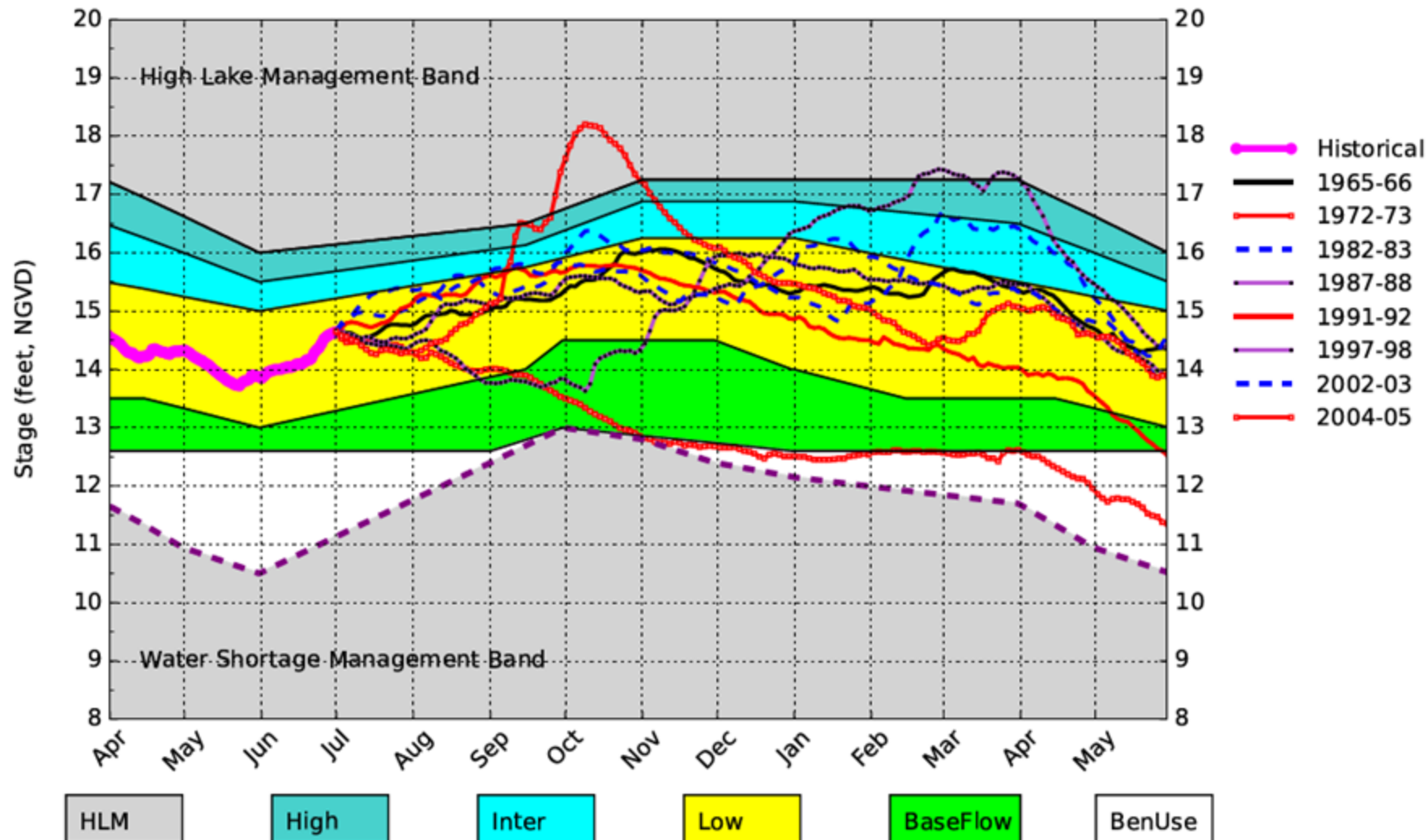
Percentiles PA



(See assumptions on the Position Analysis Results website)

Lake Okeechobee SFWMM July 2023 Position Analysis

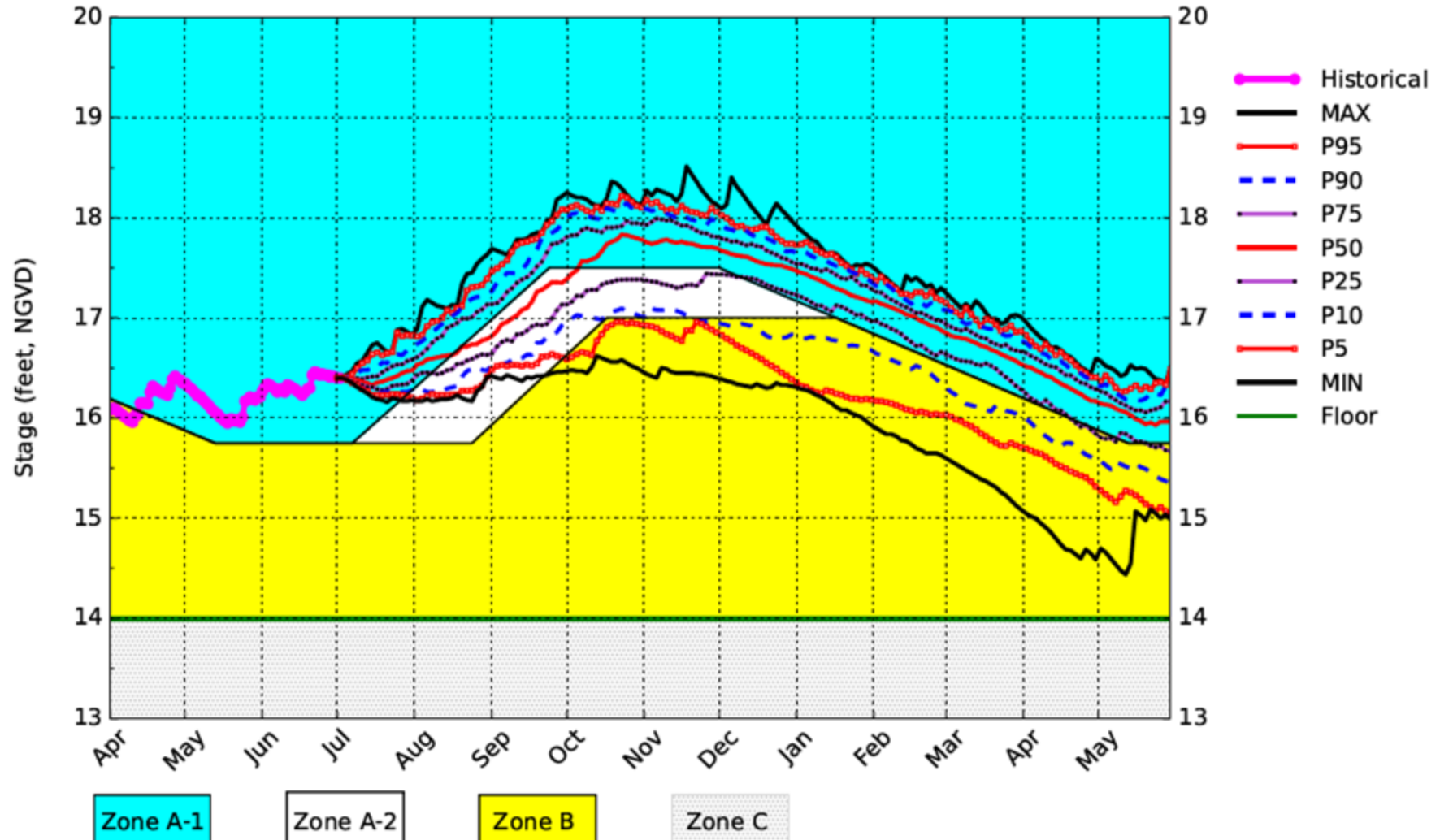
All El Nino Years Plot PA



(See assumptions on the Position Analysis Results website)

WCA1 SFWMM July 2023 Position Analysis

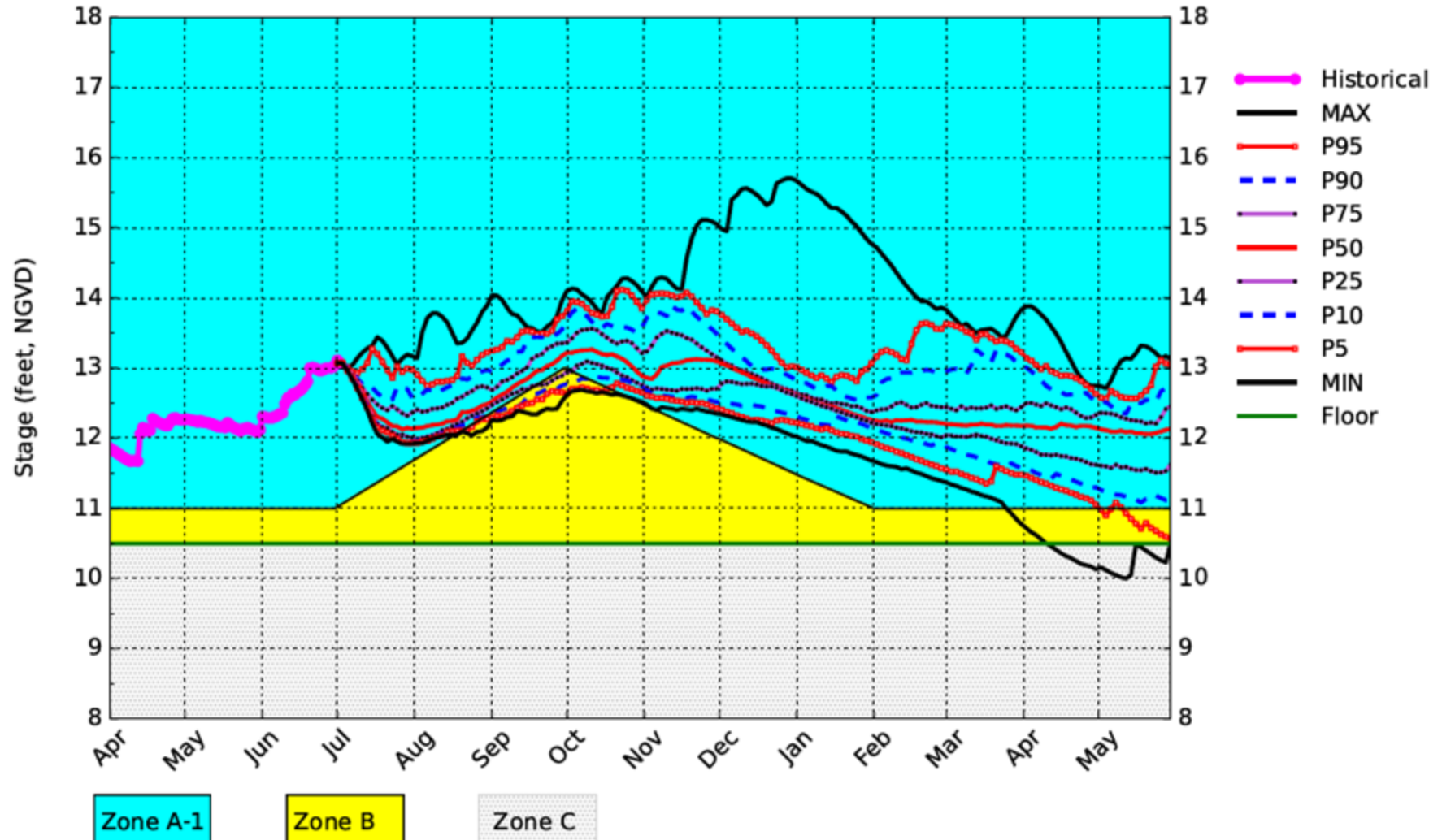
Percentiles PA



(See assumptions on the Position Analysis Results website)

WCA2A SFWMM July 2023 Position Analysis

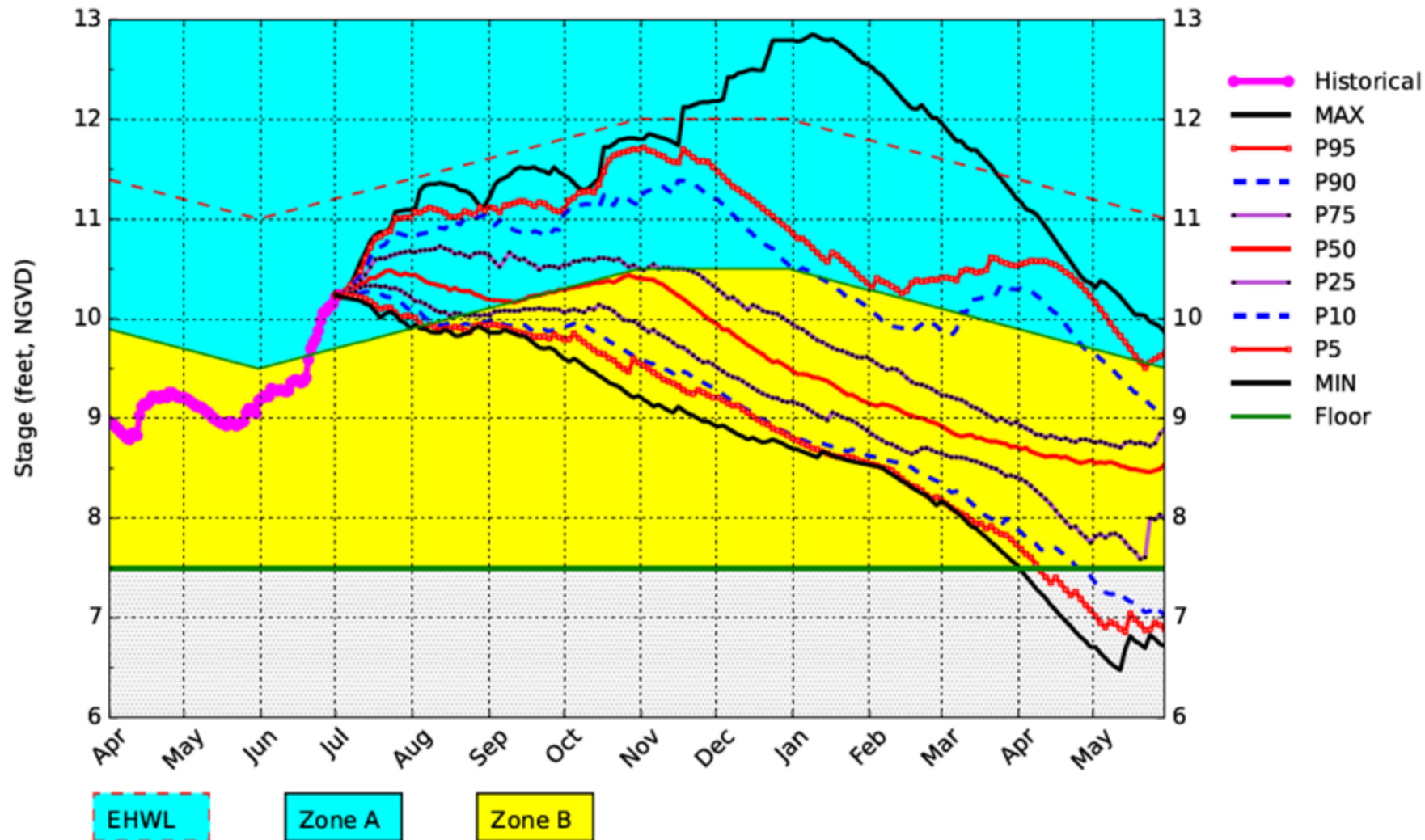
Percentiles PA



(See assumptions on the Position Analysis Results website)

WCA3A SFWMM July 2023 Position Analysis

Percentiles PA



(See assumptions on the Position Analysis Results website)