

# Extended Hydrologic Outlook

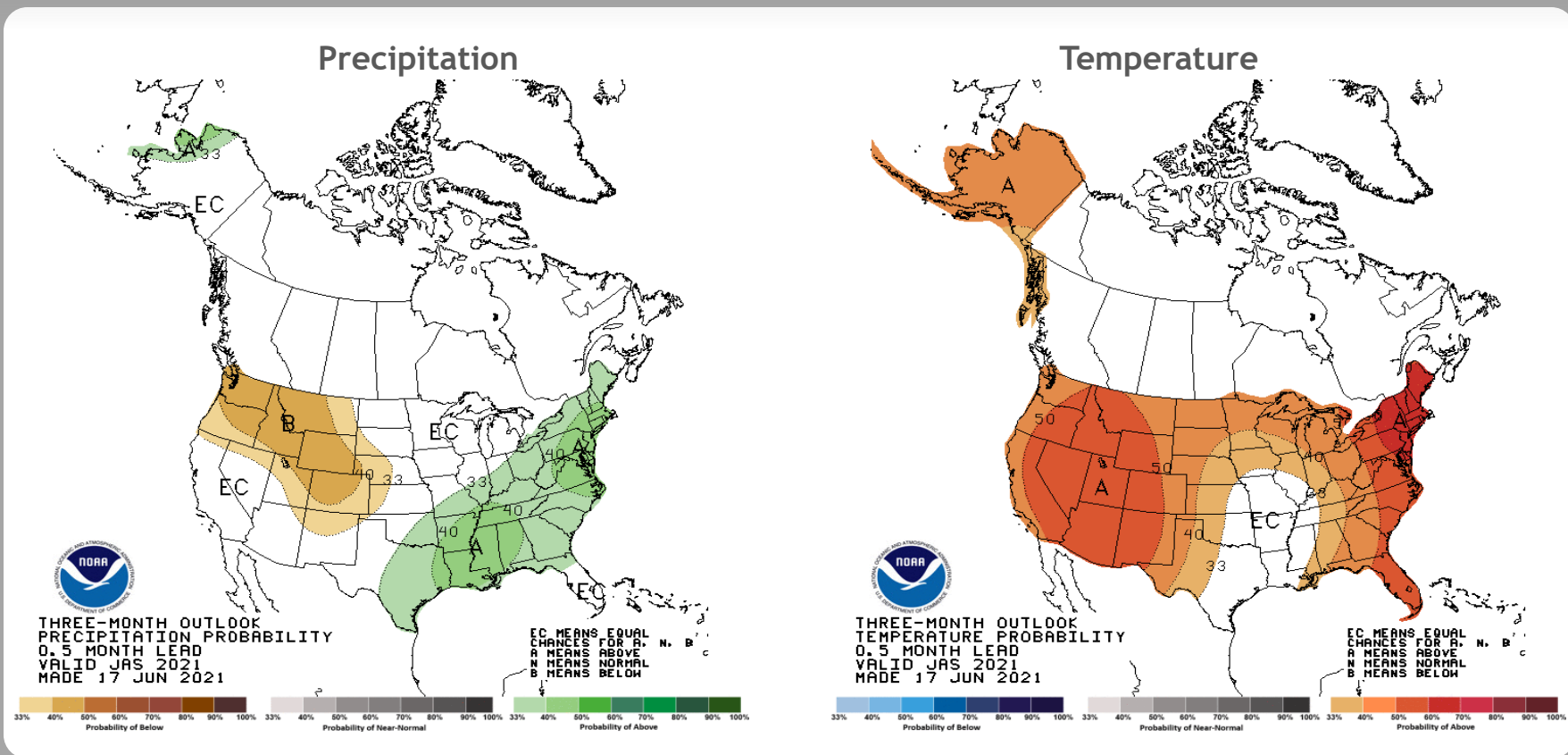
July 13, 2021

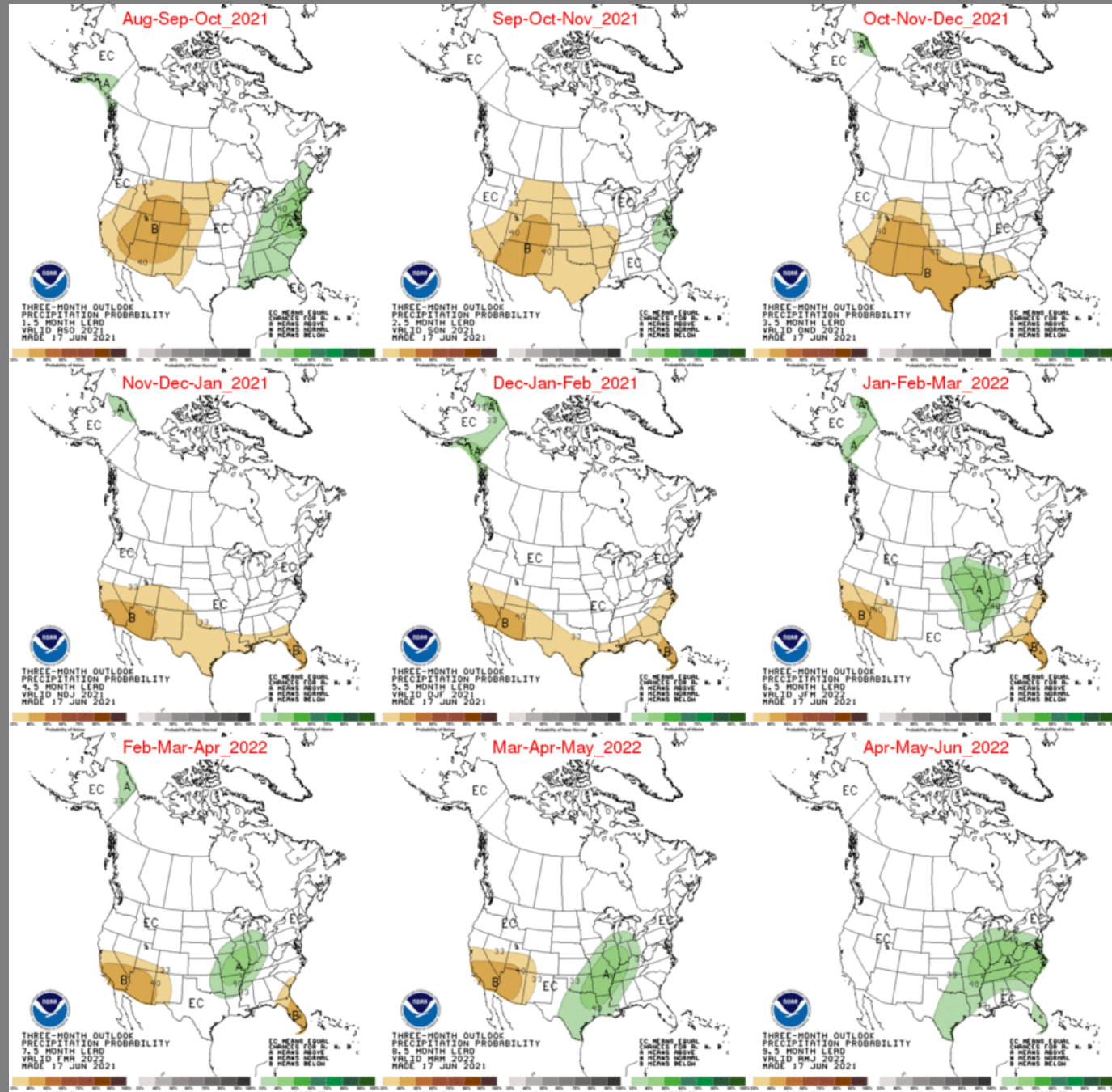
- The Climate Prediction Center (CPC) is forecasting equal chances of normal, above normal and below normal rainfall for July through September.
- ENSO-neutral is favored through the summer and into the fall (51% chance for the August-October season), with La Niña potentially emerging during the September-November season and lasting through the 2021-22 winter (66% chance during November-January).
  - El Niño has developed following a first-year La Niña only twice since 1950
  - We may see a second-year La Niña
- 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 2021

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 of south Florida dry season rainfall

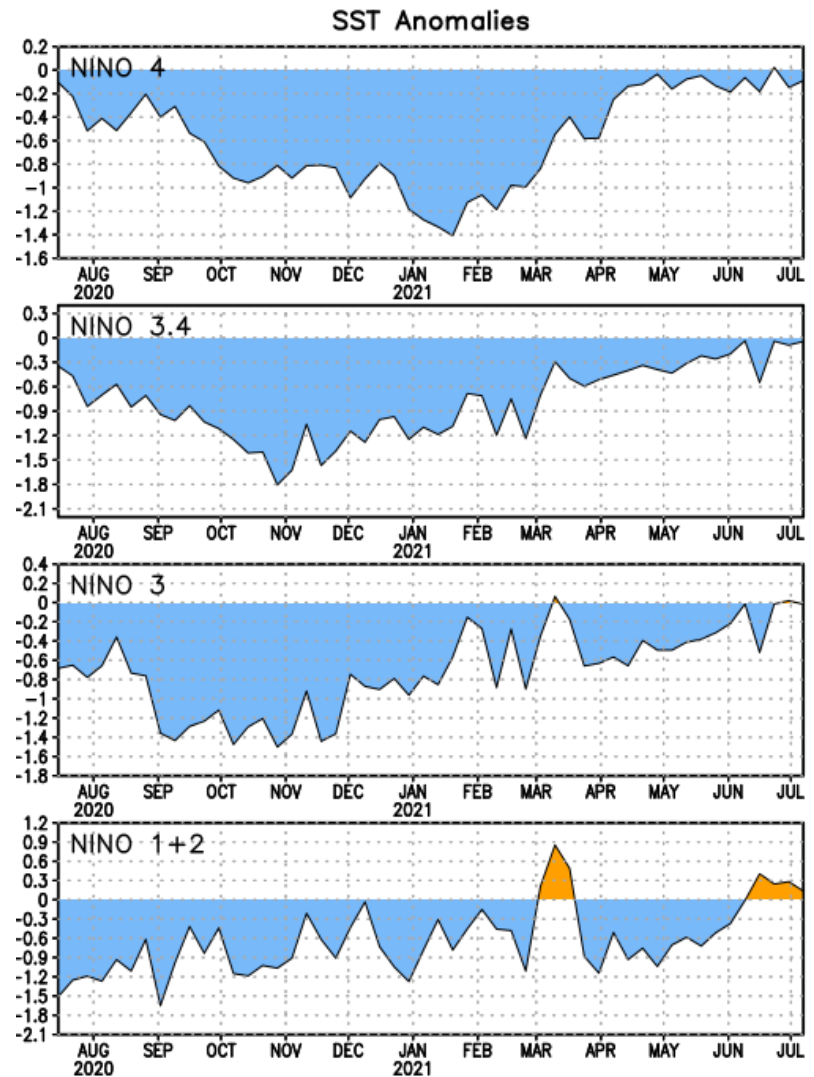
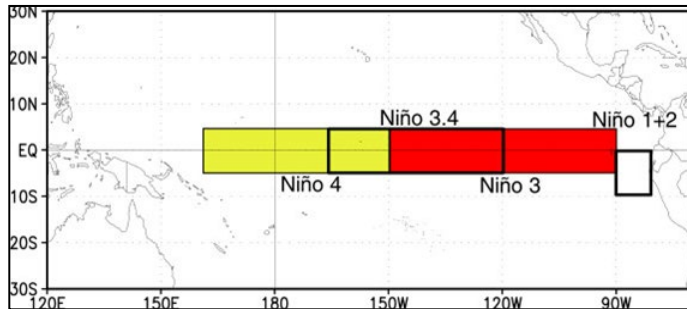
## Atlantic Multidecadal Oscillation (AMO)

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

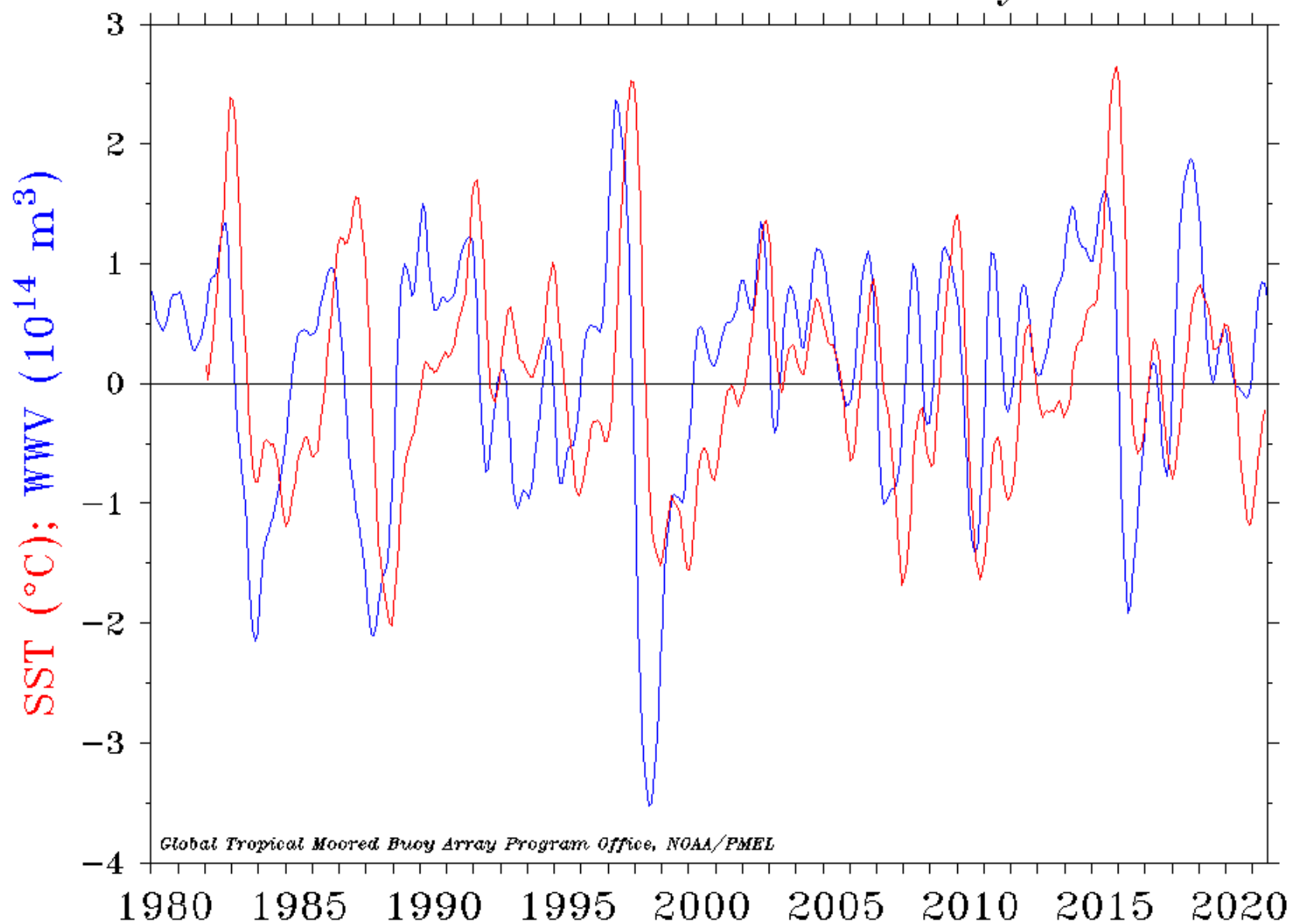
# Niño Region SST Departures (°C) Recent Evolution

The latest weekly SST departures are:

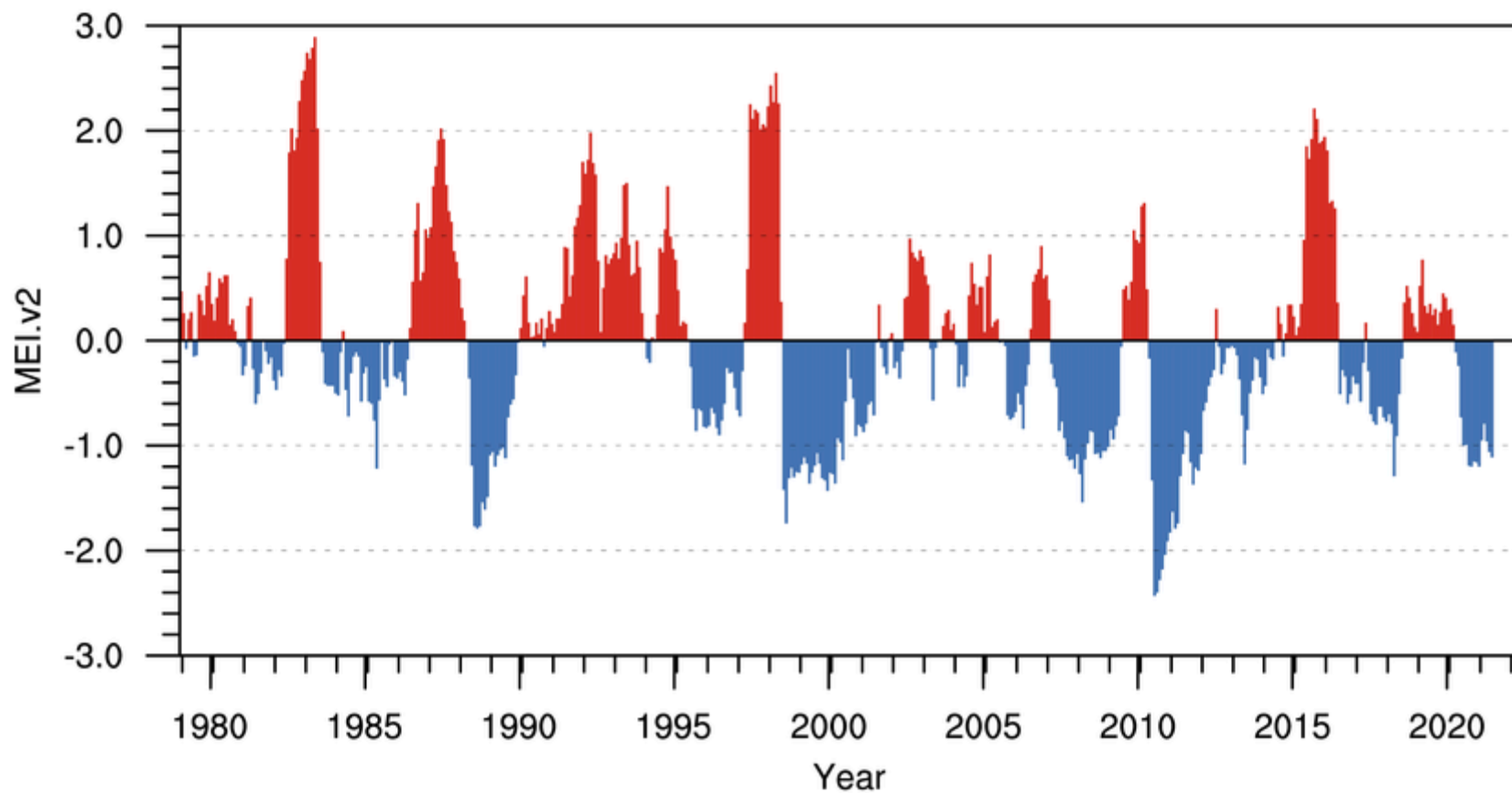
Niño 4	-0.1°C
Niño 3.4	0.0°C
Niño 3	0.0°C
Niño 1+2	0.1°C



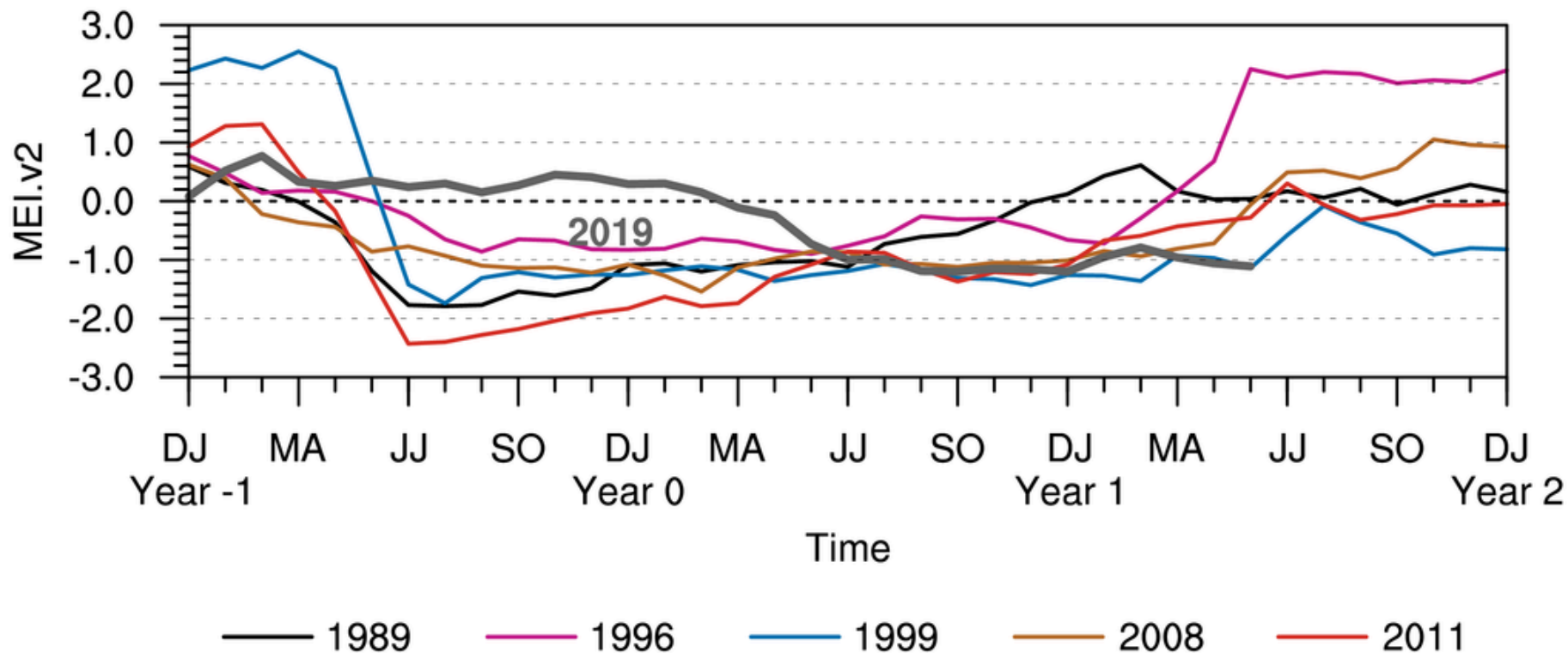
# Warm Water Volume (5°N–5°S, 120°E–80°W) and NINO 3.4 SST Anomaly



## Multivariate ENSO Index Version 2



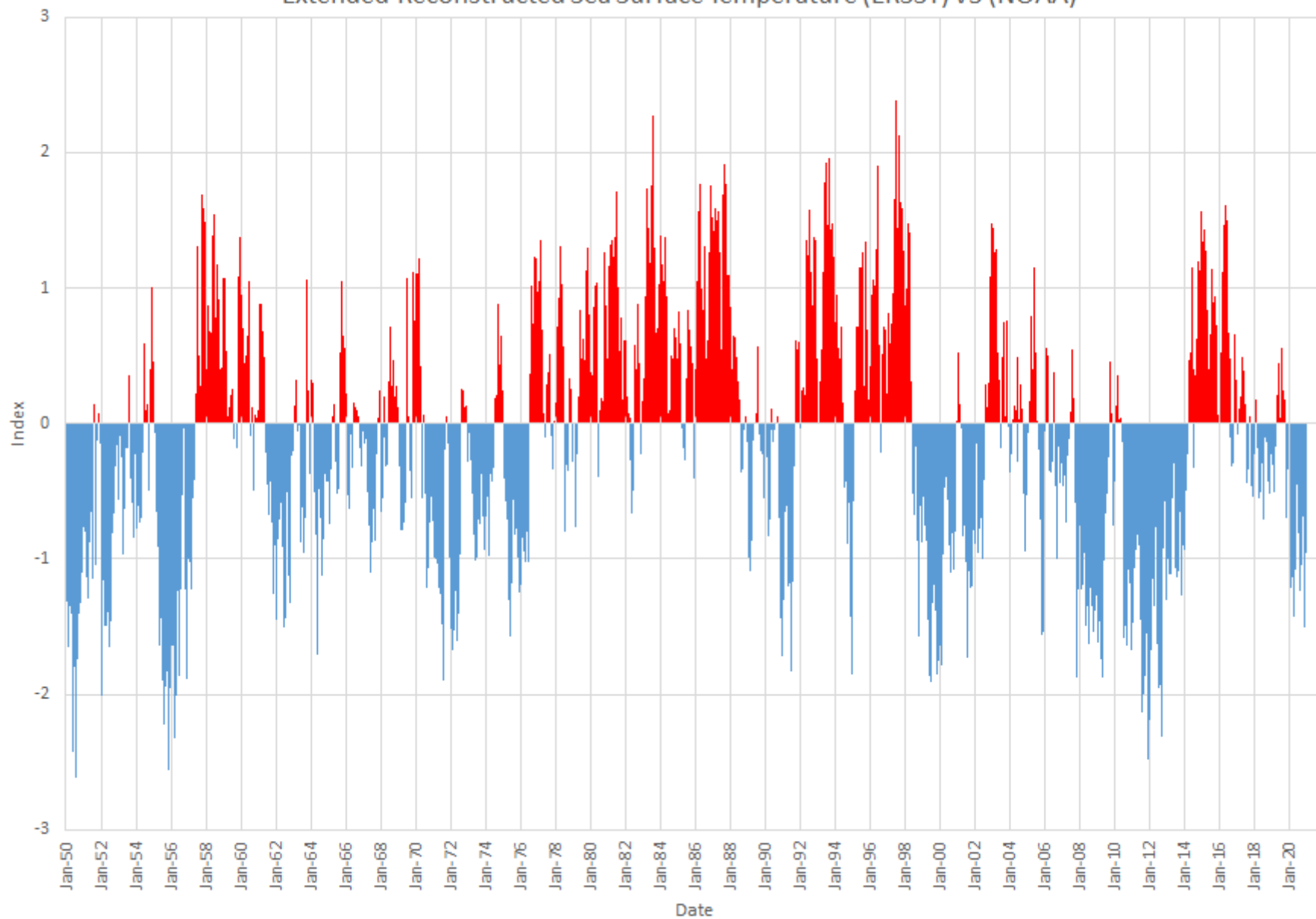
## MEI.v2 Evolution of Current ENSO Event in Historical Context



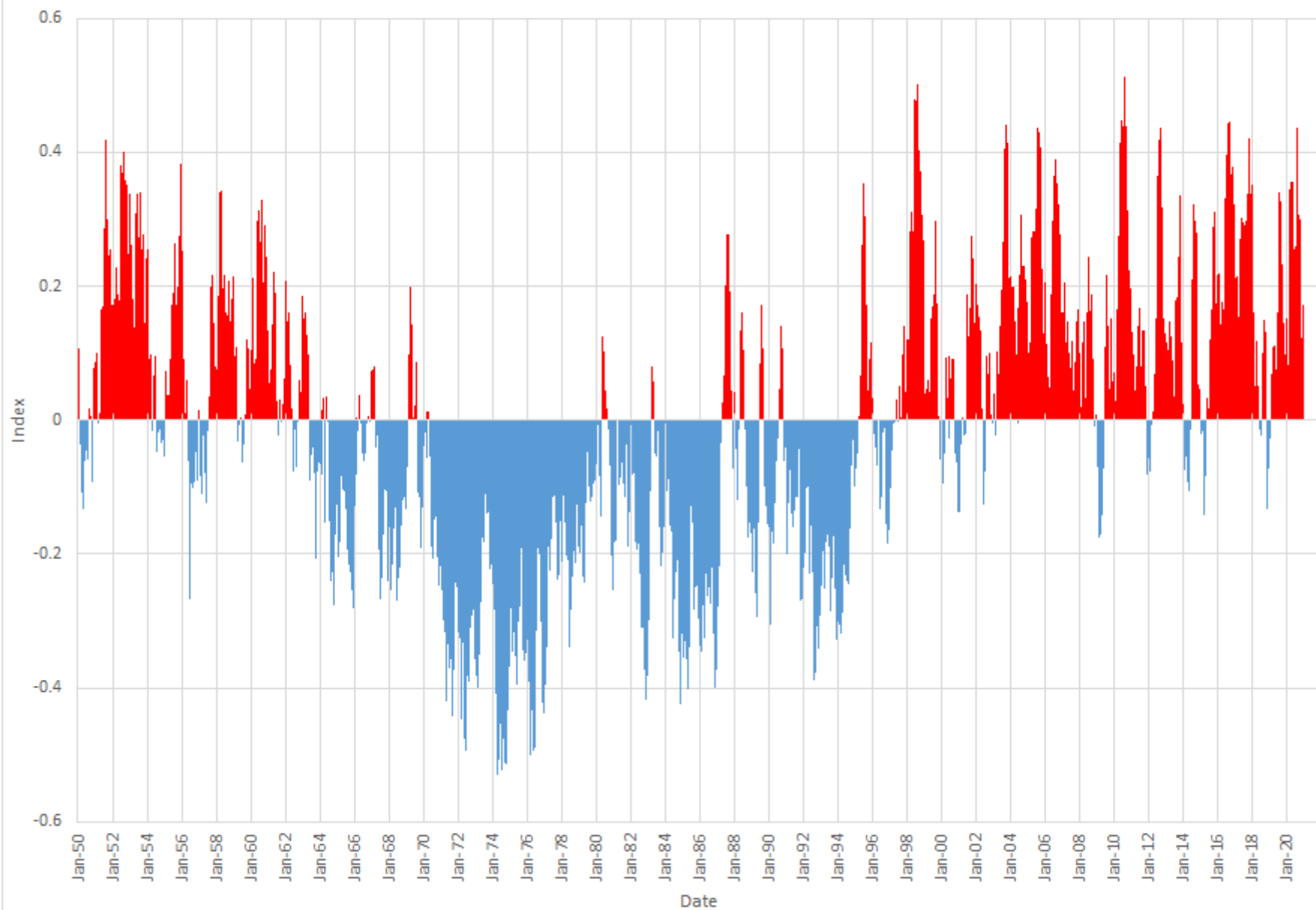


# Pacific Decadal Oscillation

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



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

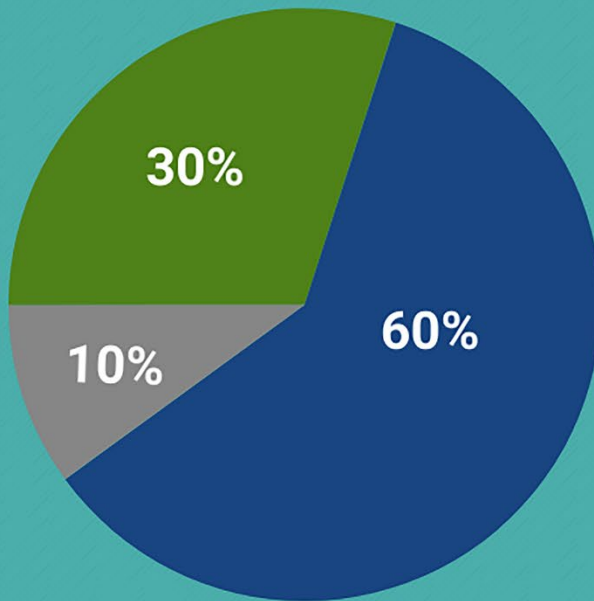


# 2021 Tropical Outlooks





# 2021 Atlantic Hurricane Season Outlook



■ Above-normal ■ Near-normal ■ Below-normal season

Season probability

**Named storms**  
13-20

**Hurricanes**  
6-10

**Major hurricanes**  
3-5

## ATLANTIC BASIN SEASONAL HURRICANE FORECAST FOR 2021

Forecast Parameter and 1991-2020 Average (in parentheses)	Issue Date 8 April 2021	Issue Date 3 June 2021	Issue Date 8 July 2021	Observed Thru 7 July 2021	Remainder of Season Forecast
Named Storms (NS) (14.4)	17	18	20*	5	15
Named Storm Days (NSD) (69.4)	80	80	90	12	78
Hurricanes (H) (7.2)	8	8	9	1	8
Hurricane Days (HD) (27.0)	35	35	40	1.5	38.5
Major Hurricanes (MH) (3.2)	4	4	4	0	4
Major Hurricane Days (MHD) (7.4)	9	9	9	0	9
Accumulated Cyclone Energy (ACE) (123)	150	150	160	12	148
Net Tropical Cyclone Activity (NTC) (135%)	160	160	170	16	154

\*Total forecast includes Ana, Bill, Claudette, Danny and Elsa which have formed in the Atlantic as of July 7th.

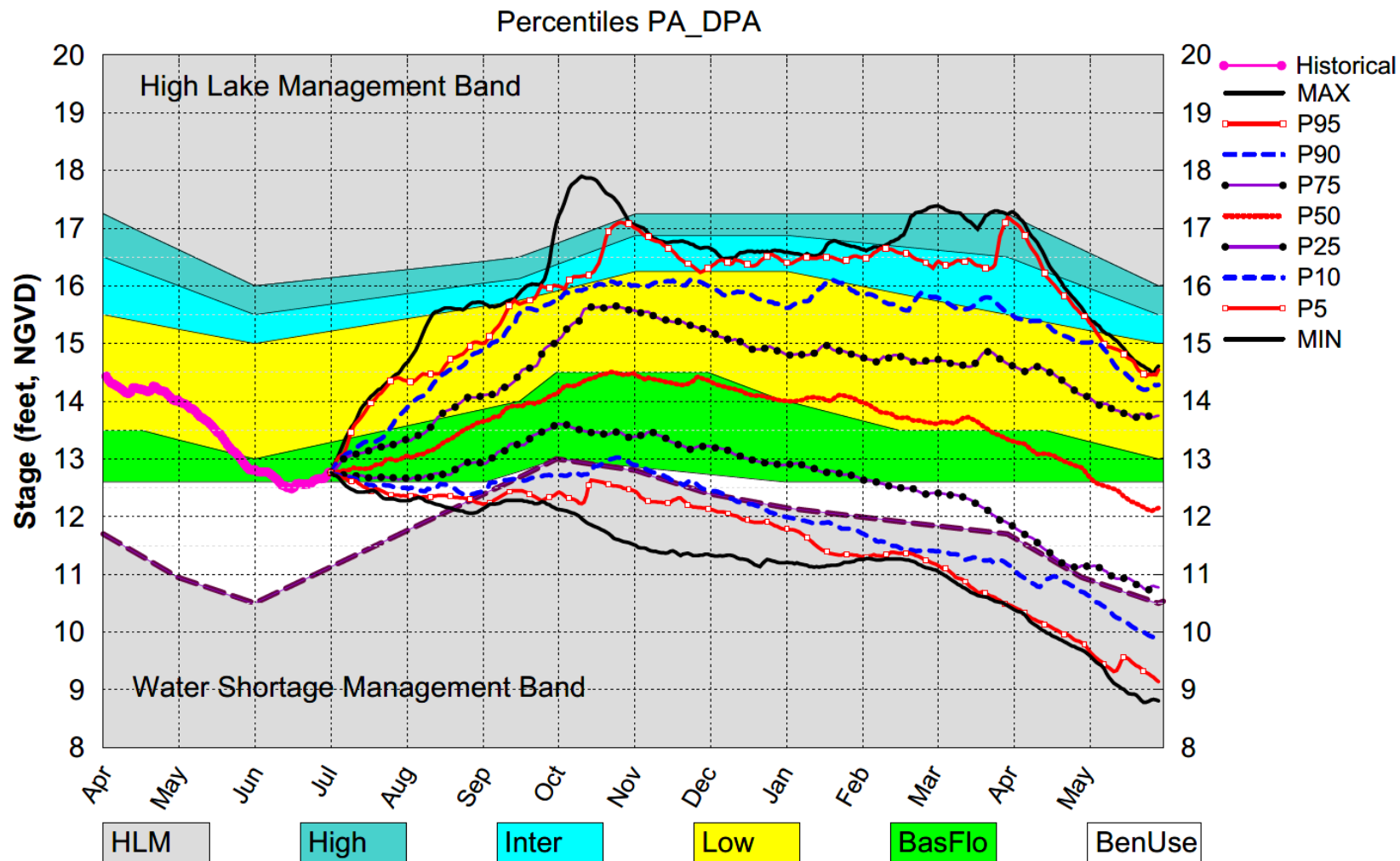
- Anticipate above-average activity
- ENSO-neutral expected to persist for next several months
- Sea surface temperatures averaged across most of the tropical Atlantic are now near to slightly above normal
- Most of the subtropical North Atlantic remains warmer than normal

*Updated: July 8, next update August 5*

# July DPA Assumptions

- The July 1, 2021 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, 2021 DPA resets the initial stages for Lake Okeechobee (LOK) and the Water Conservation Areas (WCAs) on June 1<sup>st</sup> of each year of the DPA simulation and conditions the simulation to real time data during June to achieve real time stages on July 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.

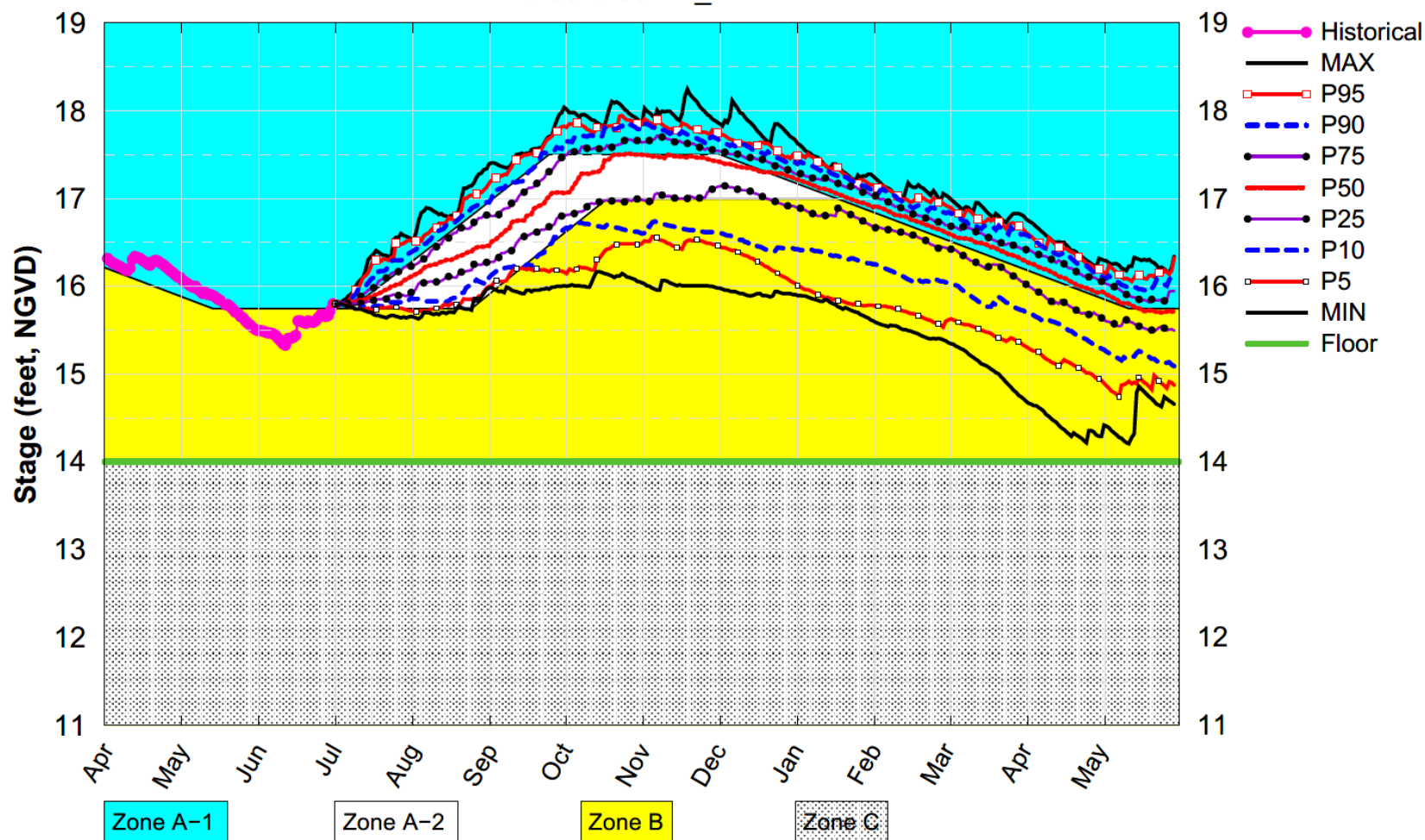
# Lake Okeechobee SFWMM July 2021 Position Analysis



(See assumptions on the Position Analysis Results website)

# WCA1 SFWMM July 2021 Position Analysis

Percentiles PA\_DPA

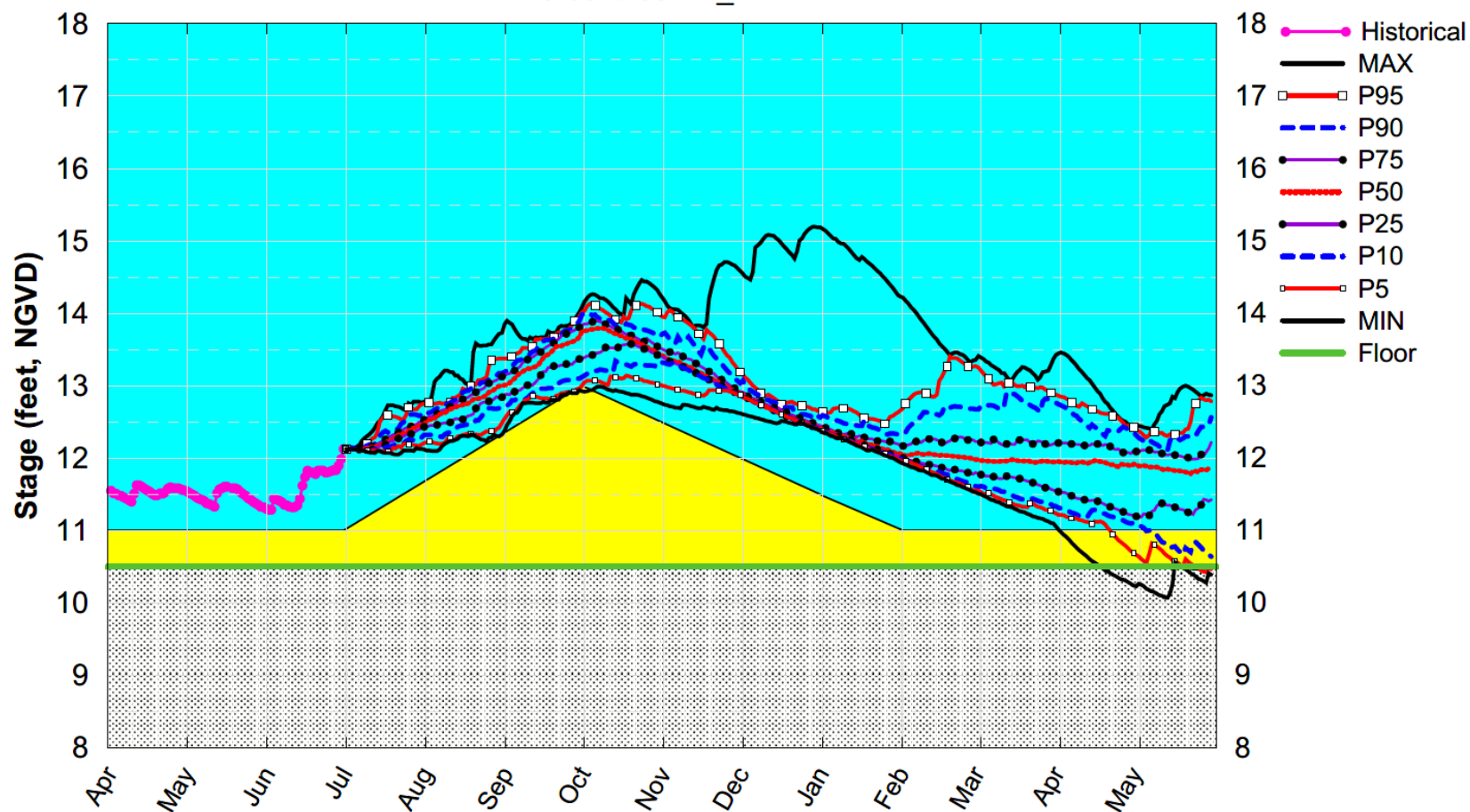


(See assumptions on the Position Analysis Results website)



# WCA2A SFWMM July 2021 Position Analysis

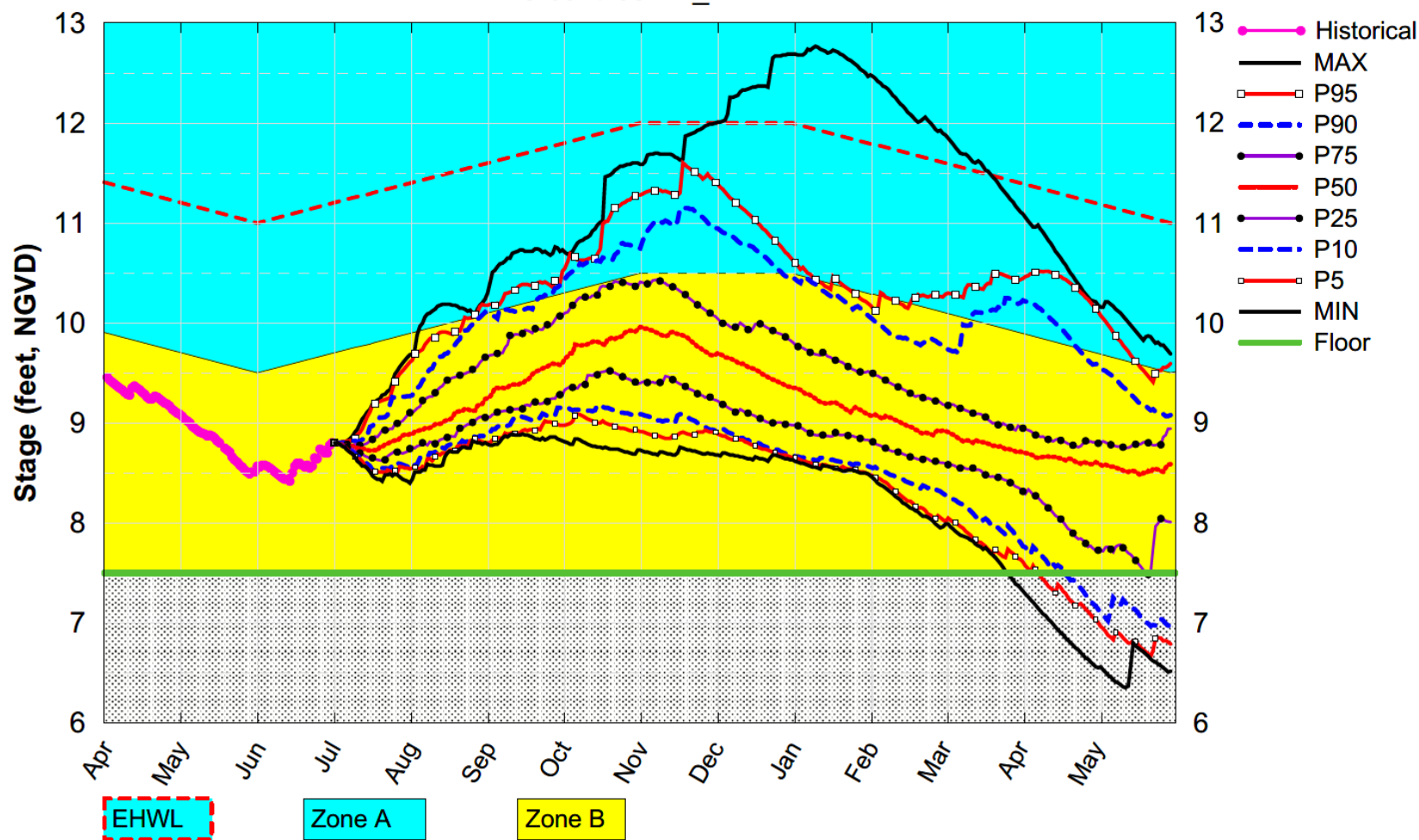
Percentiles PA\_DPA



(See assumptions on the Position Analysis Results website)

# WCA3A SFWMM July 2021 Position Analysis

Percentiles PA\_DPA



(See assumptions on the Position Analysis Results website)