Extended Hydrologic Outlook
August 10, 2021

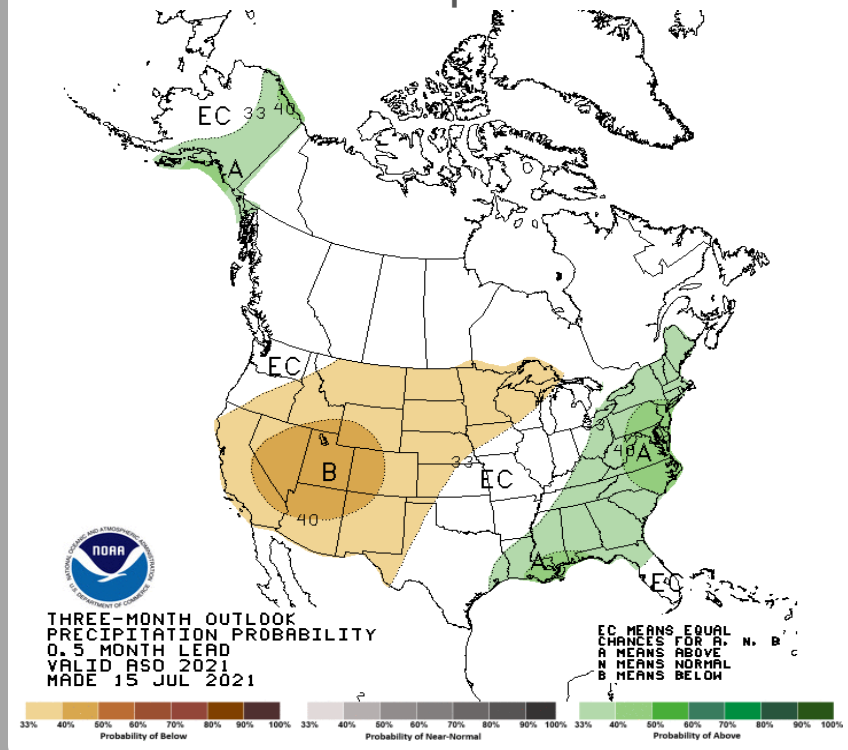
- The Climate Prediction Center (CPC) is forecasting equal chances of normal, above normal and below normal rainfall for August through October.
- ENSO-neutral is favored through summer and into fall (51% chance for the August-October season) with La Niña potentially emerging during the September-November 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
- 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

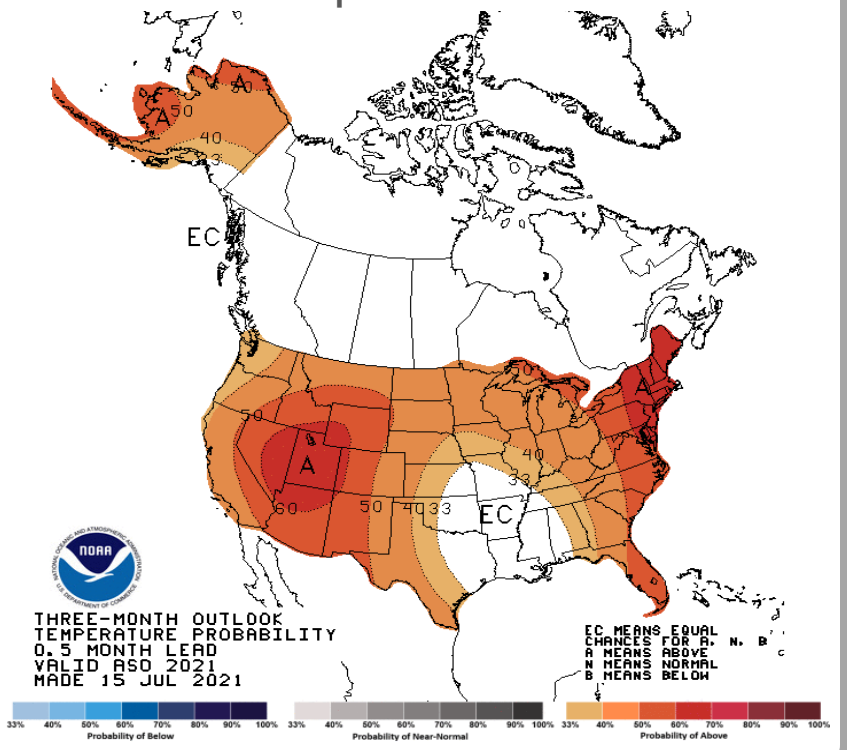
August - October 2021

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

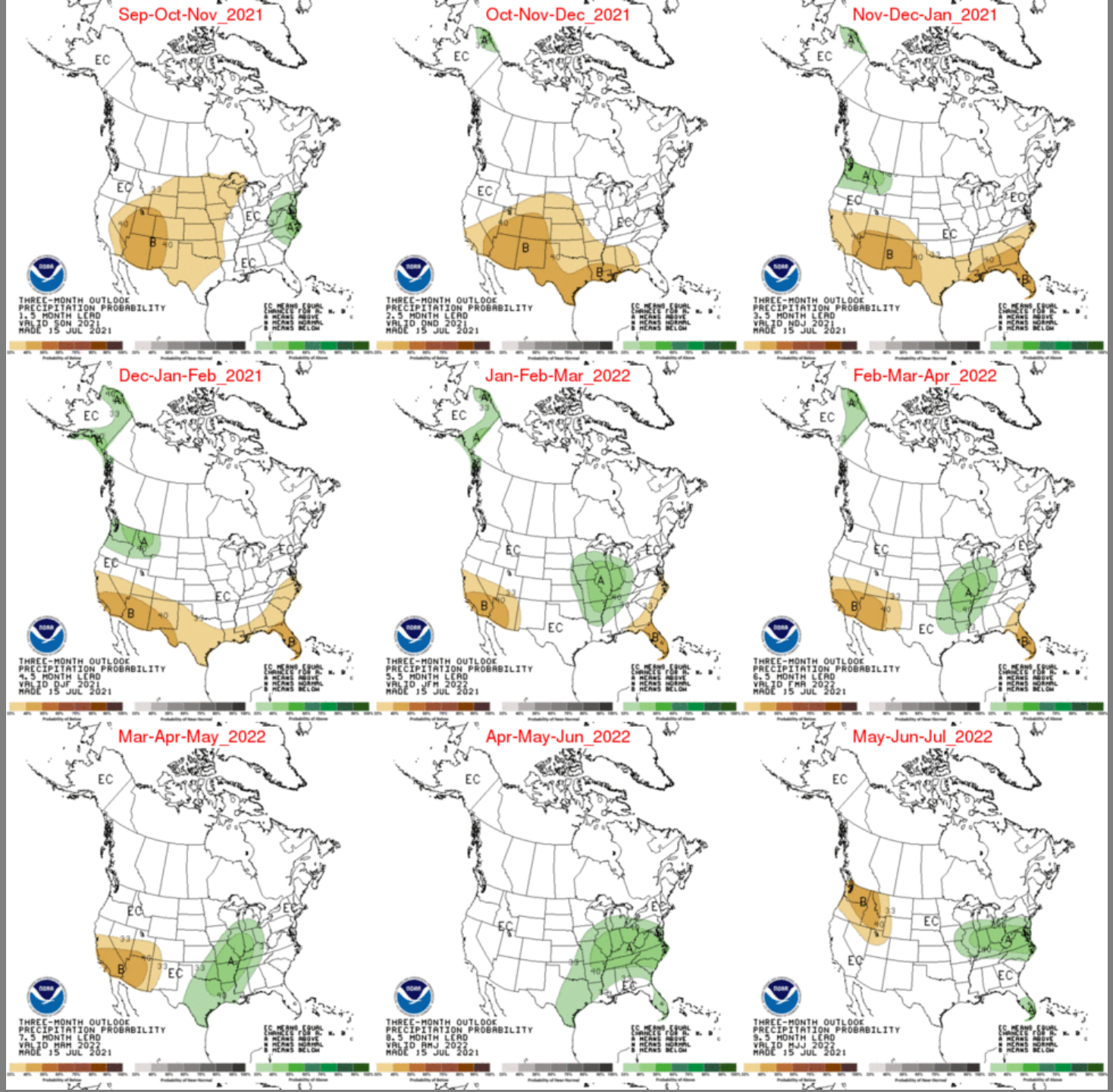
Precipitation



Temperature



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:

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**

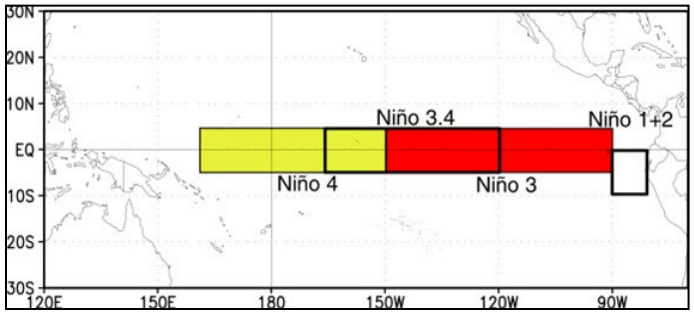
Atlantic Multidecadal Oscillation (AMO)

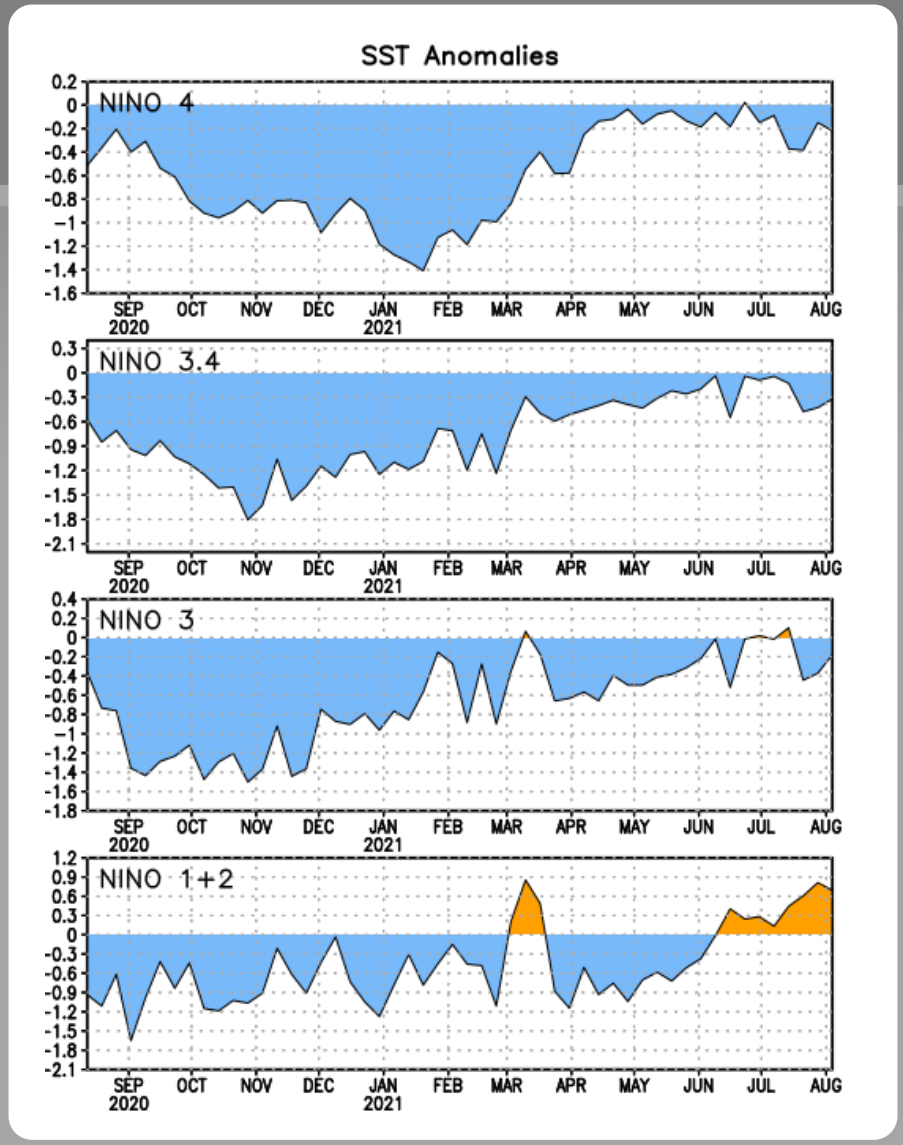
- **Average annual inflow to Lake Okeechobee is nearly 50% greater during the warm phase compared to the cold phase of the AMO, easterly flow toward south Florida affected by phase**

Niño Region SST Departures (ºC) Recent Evolution

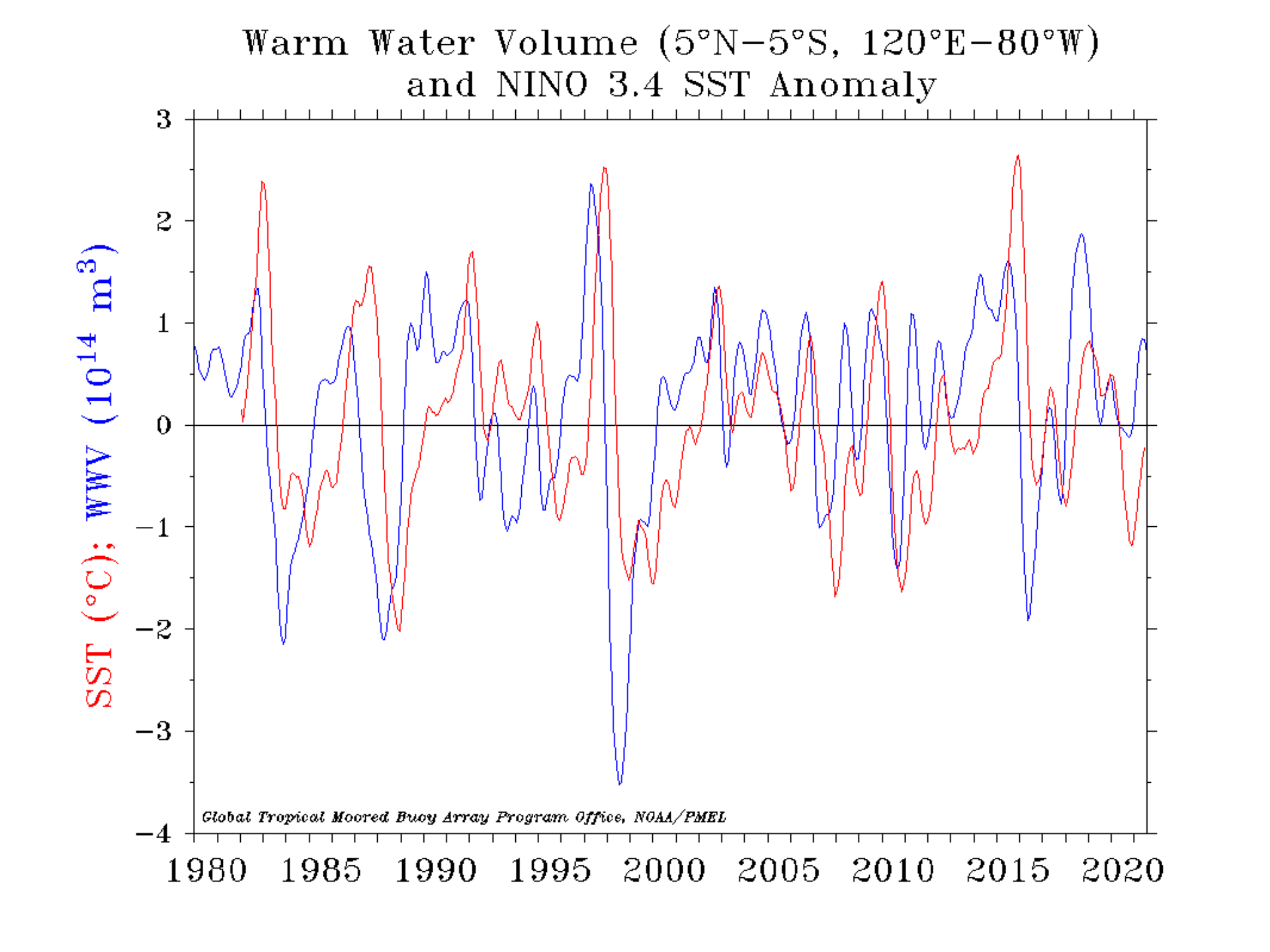
The latest weekly SST departures are:

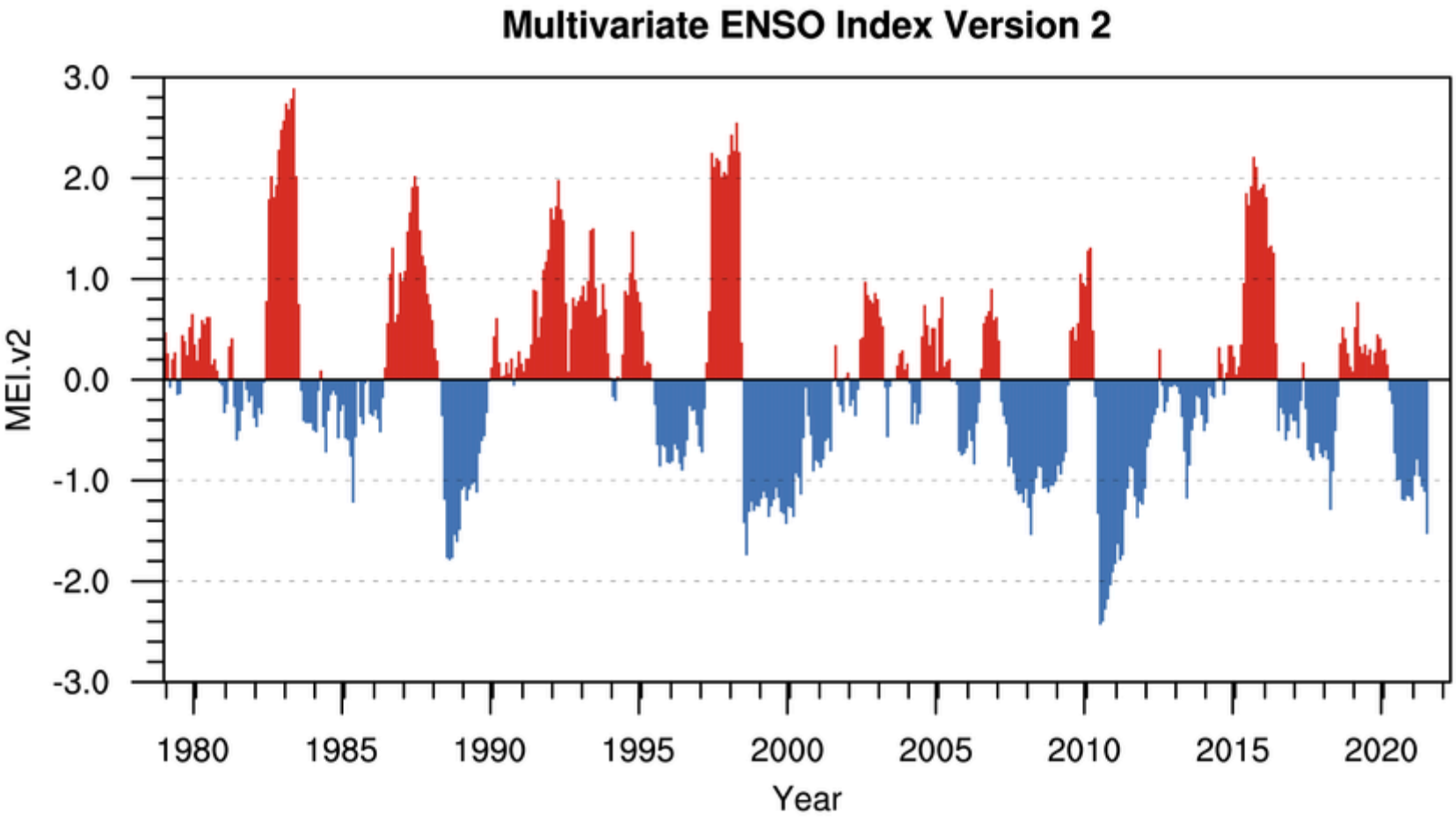
Niño 4	-0.2ºC
Niño 3.4	-0.3ºC
Niño 3	-0.2ºC
Niño 1+2	0.7ºC



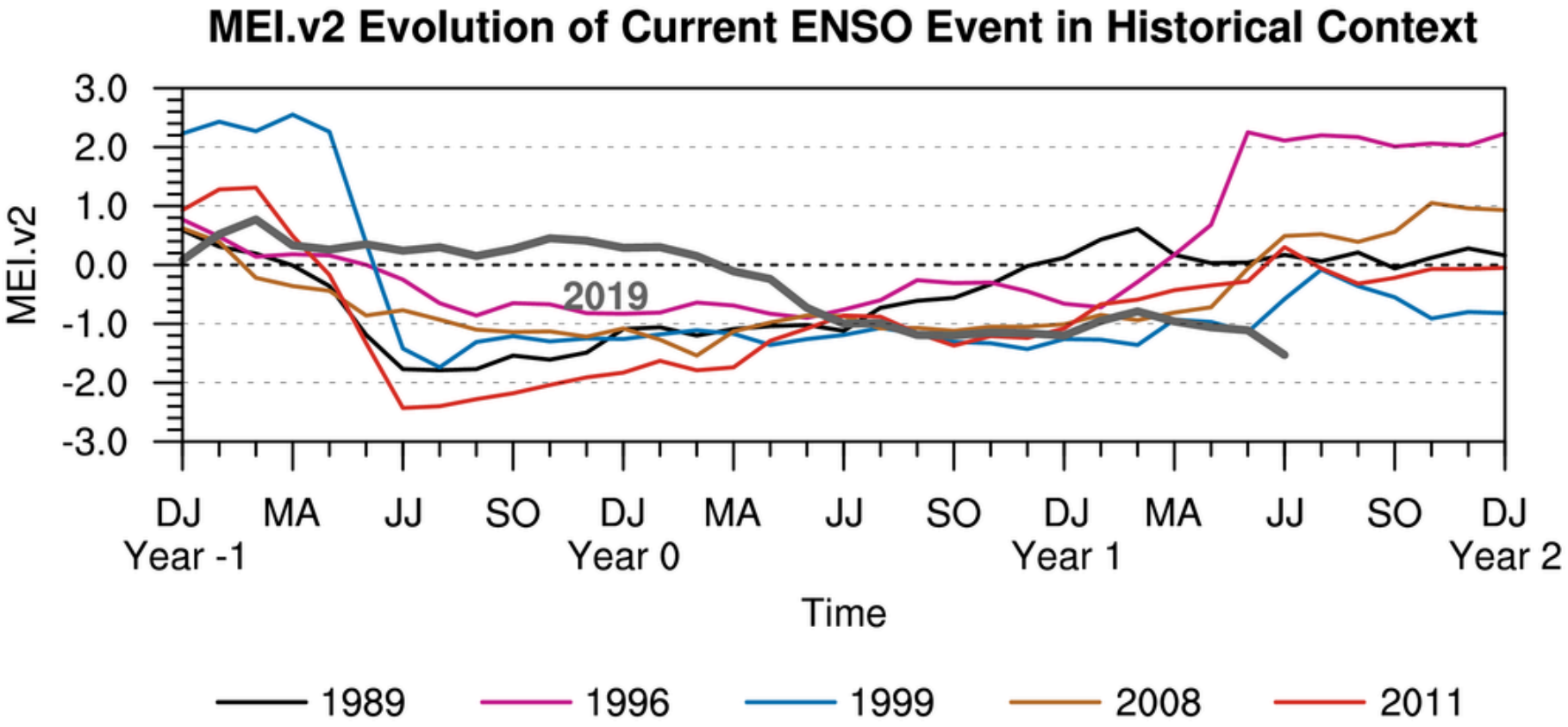


Prepared by: Climate Prediction Center/NCEP

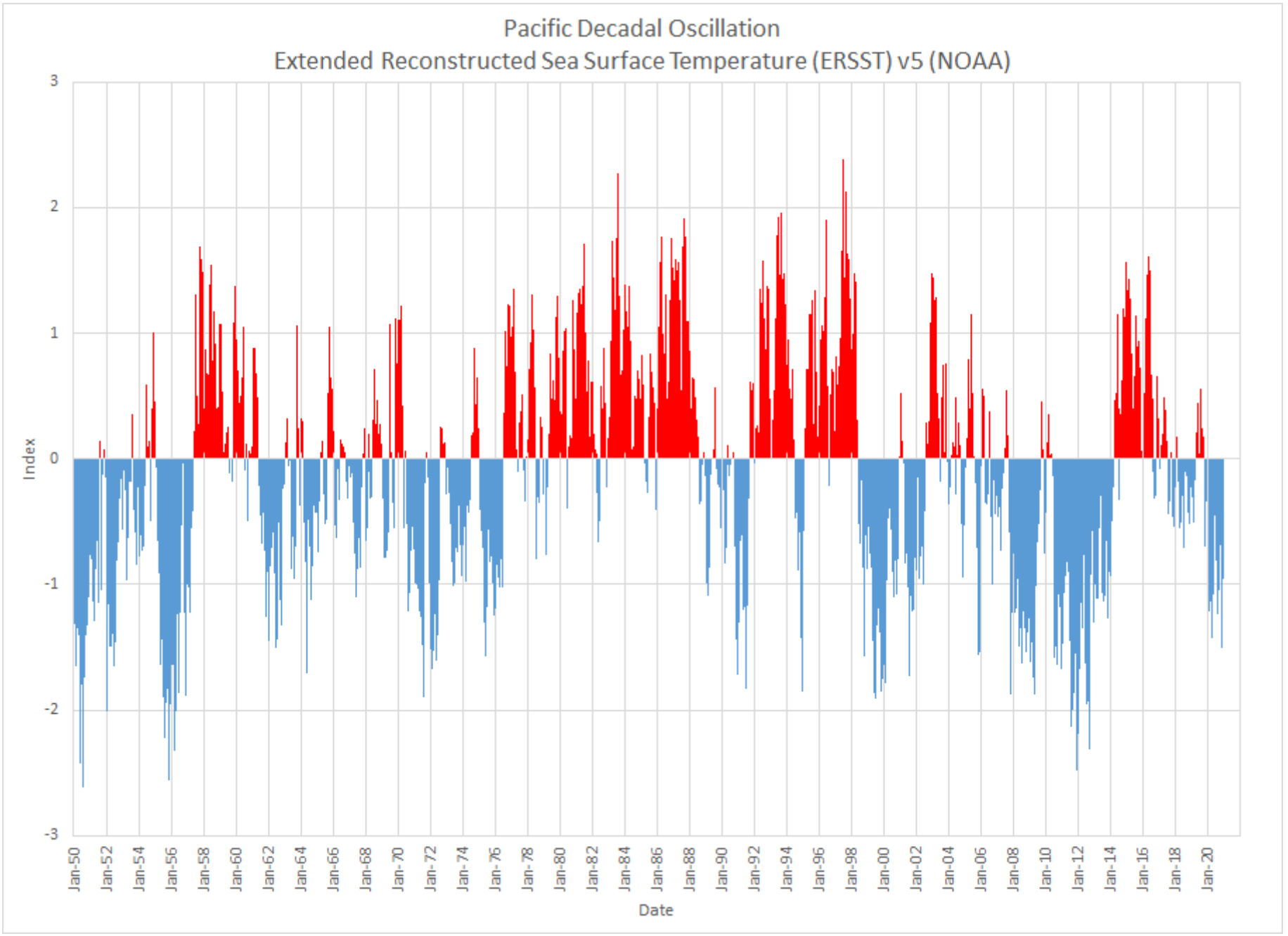

Warm Water Volume (5°N–5°S, 120°E–80°W)
and NINO 3.4 SST Anomaly
SST (°C); WWV (10^{14} m^3)
3
2
1
0
−1
−2
−3
−4
1980
1985
1990
1995
2000
2005
2010
2015
2020
Global Tropical Moored Buoy Array Program Office, NOAA/PMEL

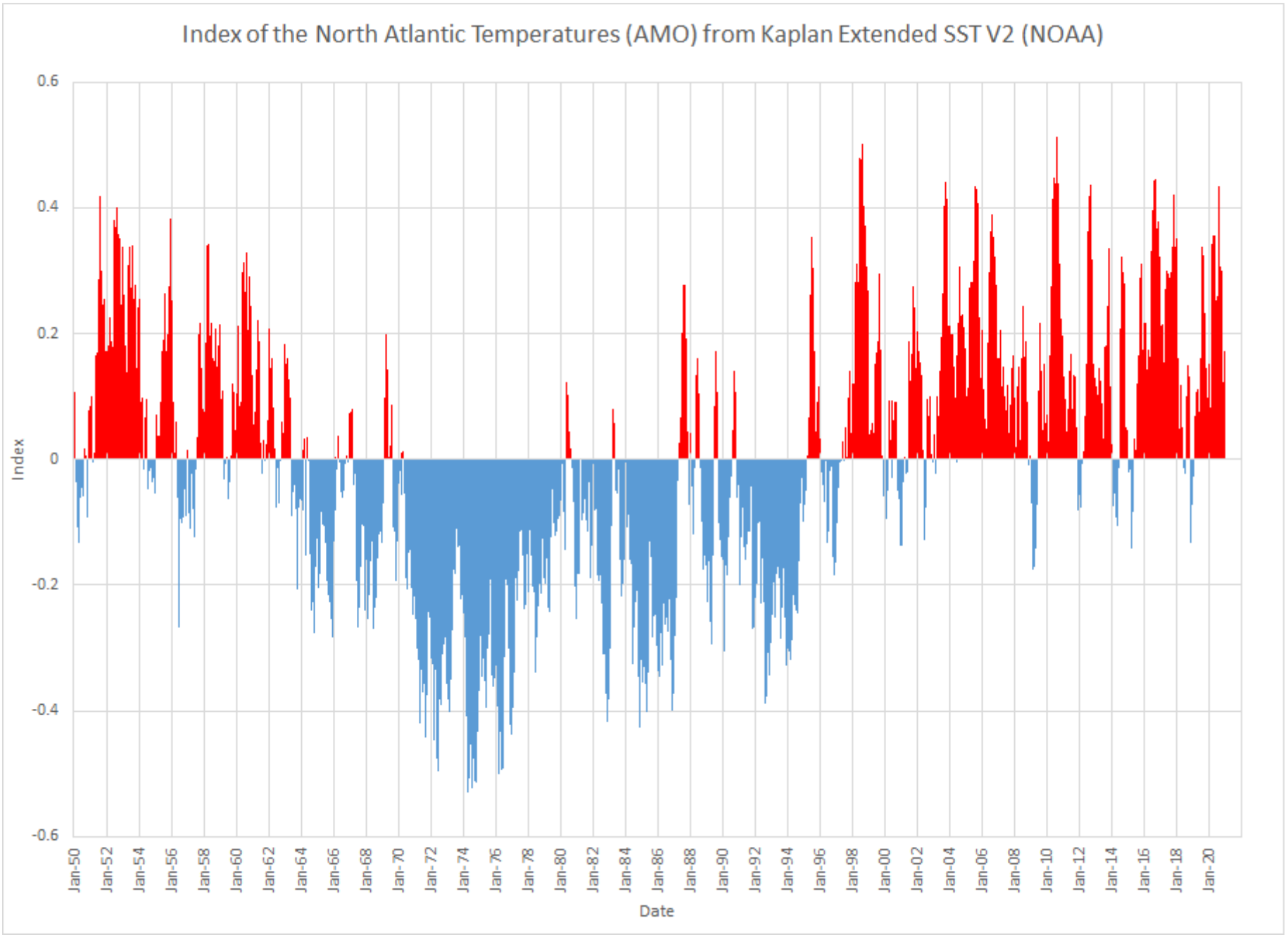


Prepared by: NOAA Physical Sciences Laboratory



Prepared by: NOAA Physical Sciences Laboratory


Pacific Decadal Oscillation
Extended Reconstructed Sea Surface Temperature (ERSST) v5 (NOAA)
Index
3
2
1
0
-1
-2
-3
Jan-50
Jan-52
Jan-54
Jan-56
Jan-58
Jan-60
Jan-62
Jan-64
Jan-66
Jan-68
Jan-70
Jan-72
Jan-74
Jan-76
Jan-78
Jan-80
Jan-82
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Jan-16
Jan-18
Jan-20
Date


Index of the North Atlantic Temperatures (AMO) from Kaplan Extended SST V2 (NOAA)
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
Index
Jan-50
Jan-52
Jan-54
Jan-56
Jan-58
Jan-60
Jan-62
Jan-64
Jan-66
Jan-68
Jan-70
Jan-72
Jan-74
Jan-76
Jan-78
Jan-80
Jan-82
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
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Jan-00
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Jan-04
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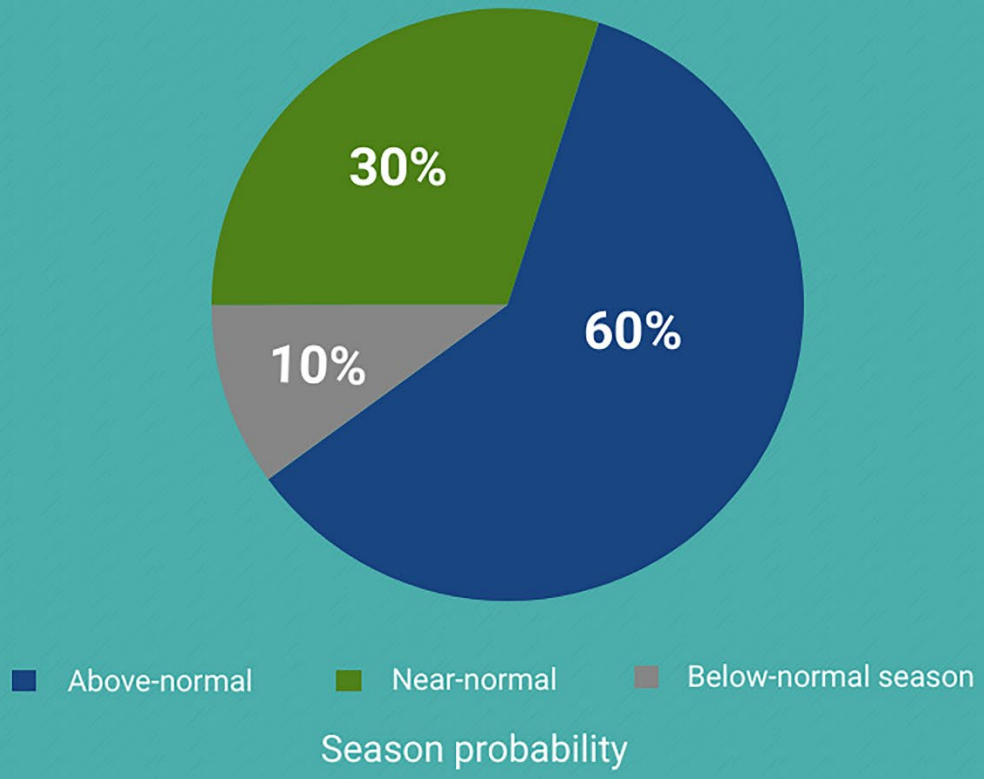
Jan-16
Jan-18
Jan-20
Date

2021 Tropical Outlooks

2021 Atlantic Hurricane Season Outlook



Named storms
13-20

Hurricanes
6-10

Major hurricanes
3-5

NOAA

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

May 2021

Source: NOAA National Hurricane Center

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	Issue Date 5 August 2021	Observed Thru 4 August 2021	Remainder of Season Forecast
Named Storms (NS) (14.4)	17	18	20	18*	5	13
Named Storm Days (NSD) (69.4)	80	80	90	80	13.75	66.25
Hurricanes (H) (7.2)	8	8	9	8	1	7
Hurricane Days (HD) (27.0)	35	35	40	35	1.5	33.5
Major Hurricanes (MH) (3.2)	4	4	4	4	0	4
Major Hurricane Days (MHD) (7.4)	9	9	9	9	0	9
Accumulated Cyclone Energy (ACE) (123)	150	150	160	150	13	137
Net Tropical Cyclone Activity (NTC) (135%)	160	160	170	160	17	143

*Total forecast includes Ana, Bill, Claudette, Danny and Elsa which have formed in the Atlantic as of August 4th.

- Anticipate above-average activity, slight decrease in forecast
- ENSO cool neutral expected to persist and potentially transition to La Niña (this could minimize vertical wind shear and aid in storm formation)
- Sea surface temperatures averaged across most of the tropical Atlantic are now warmer than normal

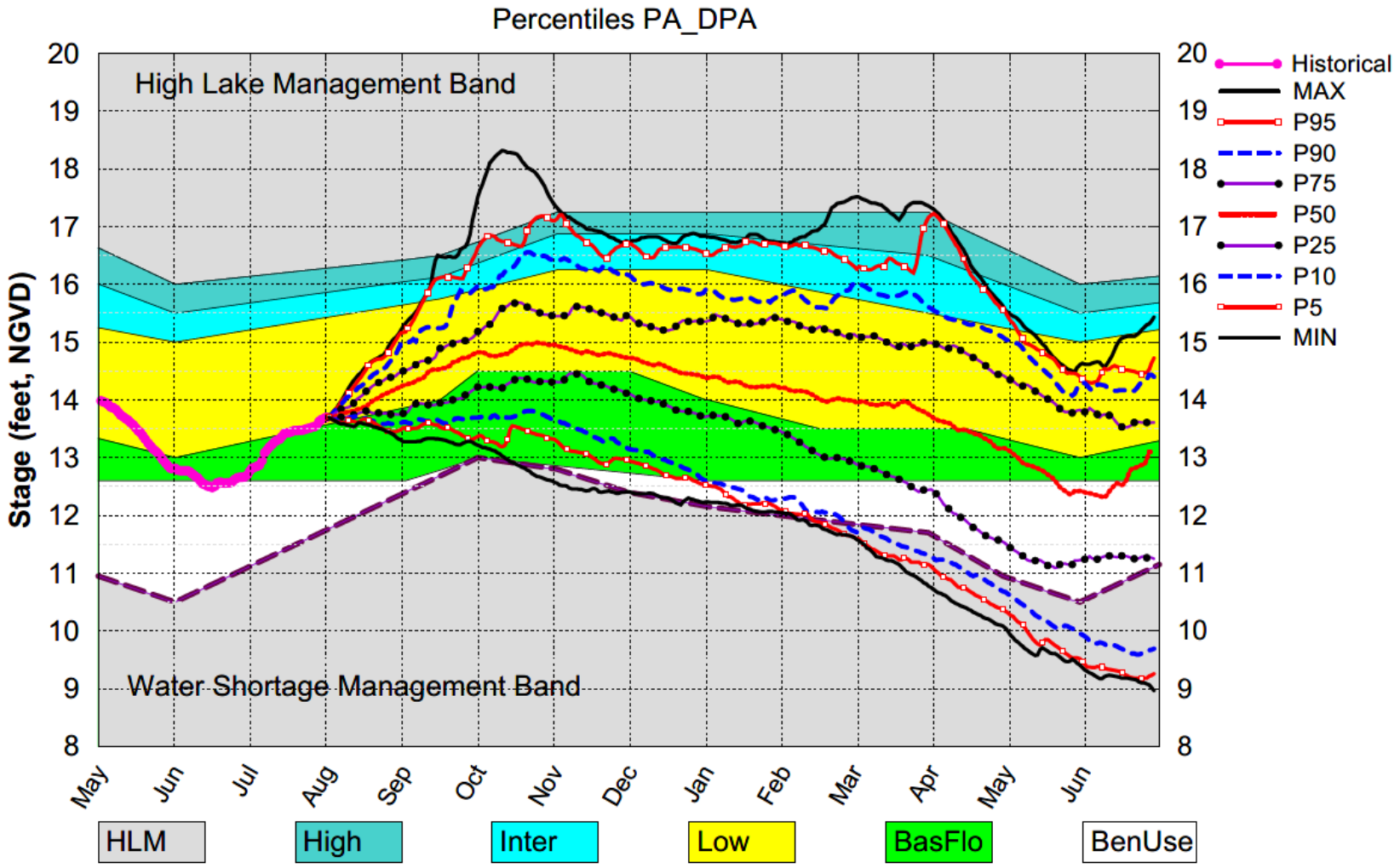
Updated: August 5

Source: Colorado State University (Tropical Meteorology Project)

August DPA Assumptions

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

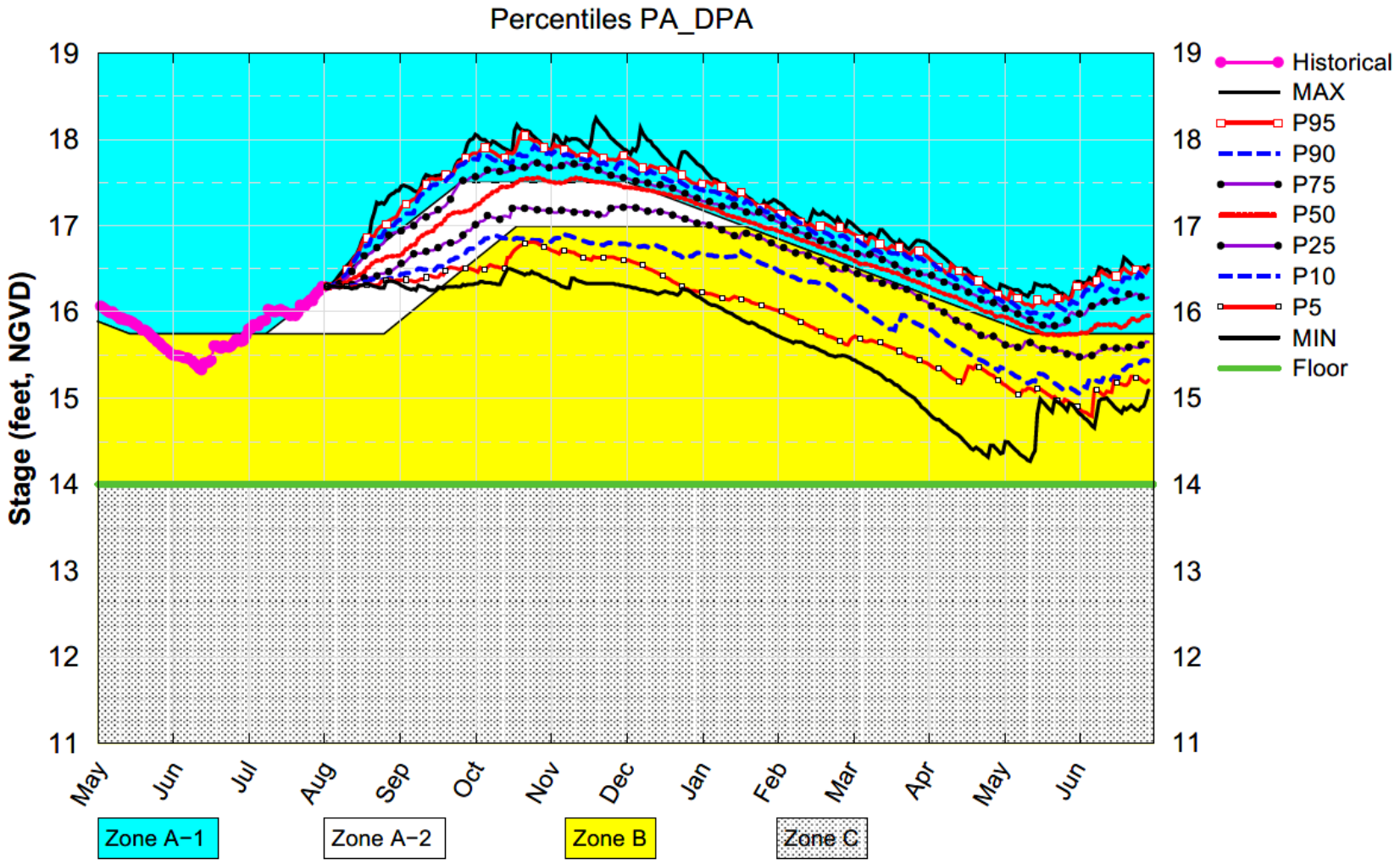
Lake Okeechobee SFWMM Aug 2021 Position Analysis



(See assumptions on the Position Analysis Results website)

Tue Aug 3 13:38:26 2021

WCA1 SFWMM Aug 2021 Position Analysis



(See assumptions on the Position Analysis Results website)

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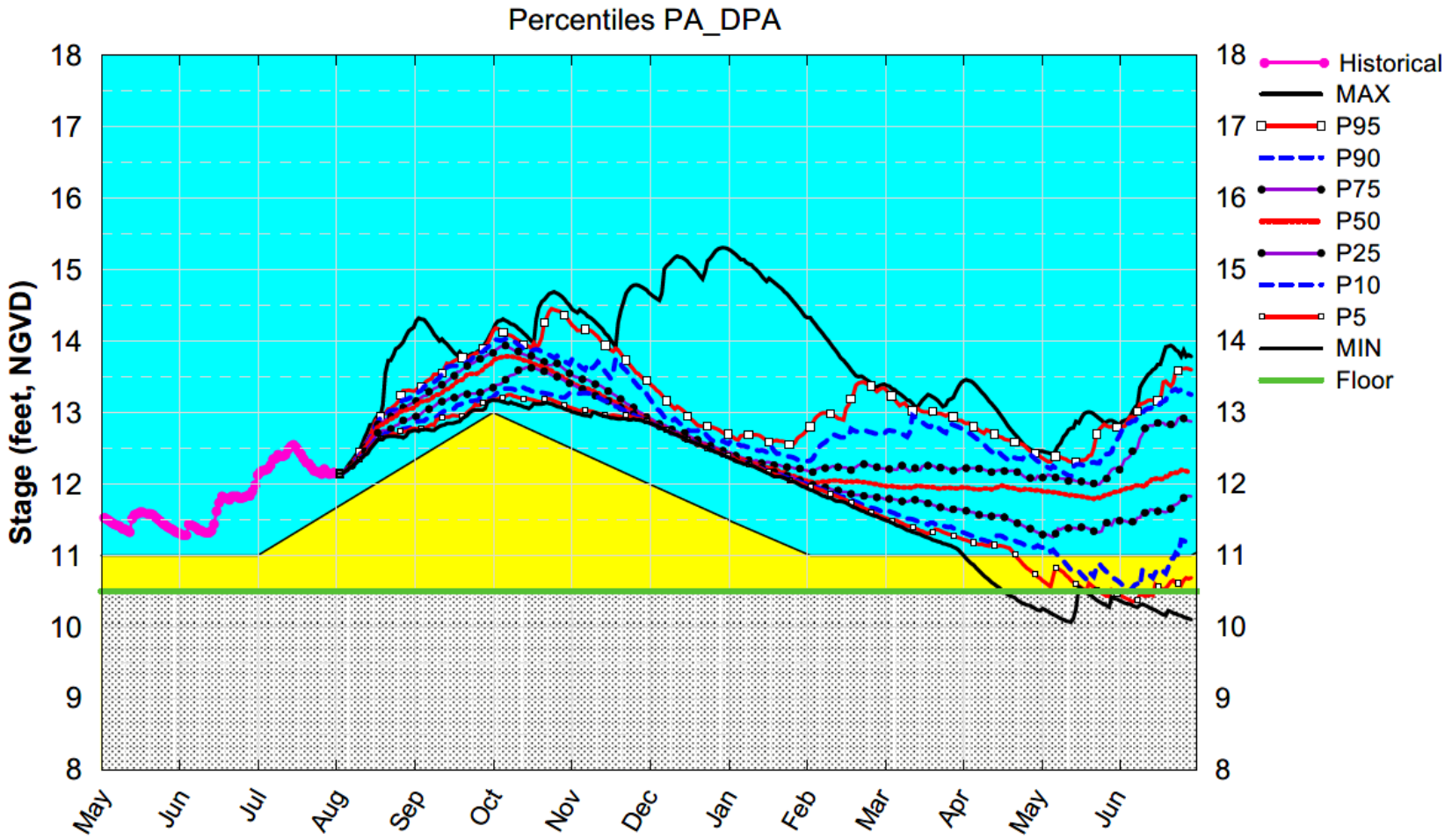
WCA2A SFWMM Aug 2021 Position Analysis



(See assumptions on the Position Analysis Results website)

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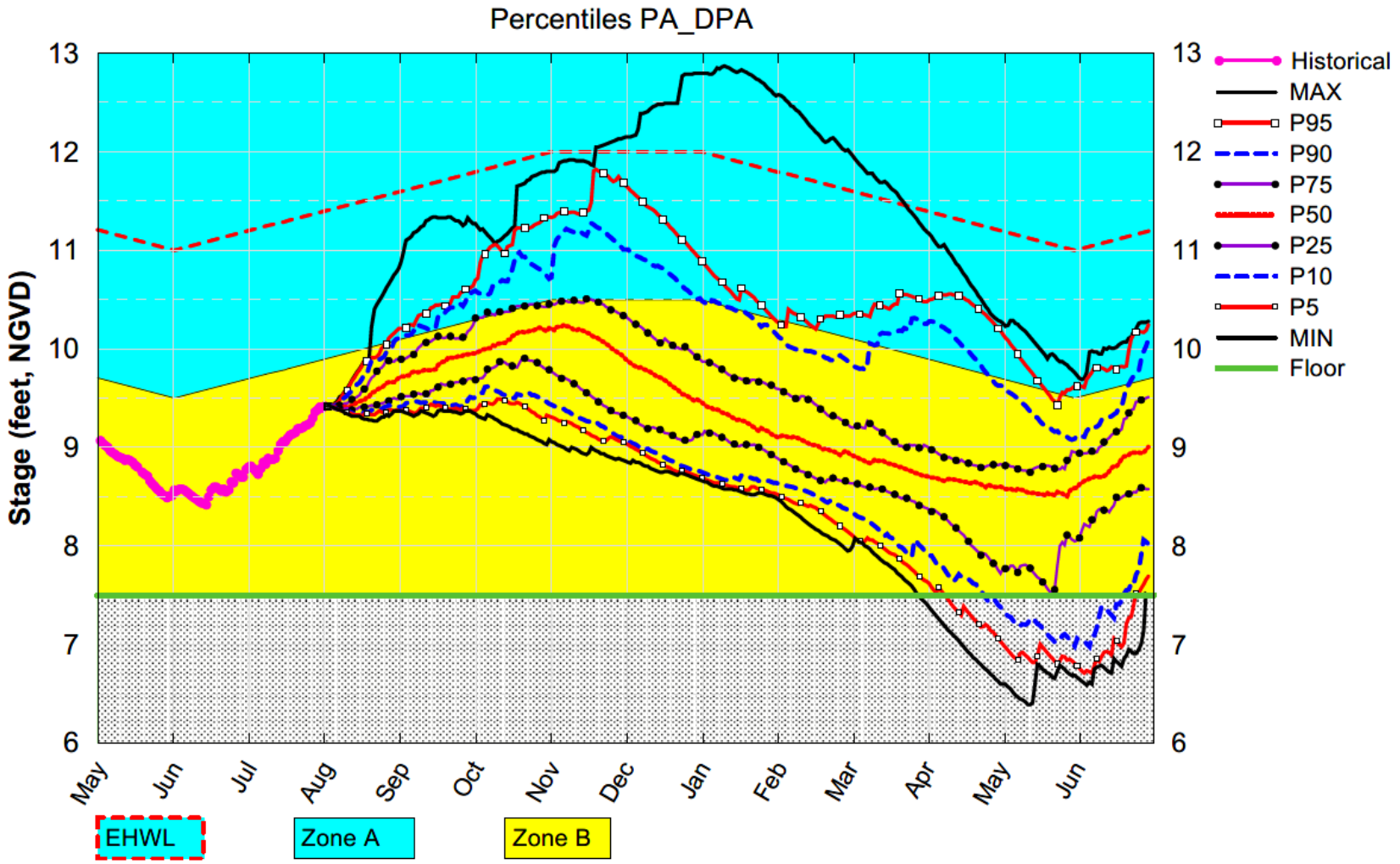

(See assumptions on the Position Analysis Results website)

Tue Aug 3 13:38:40 2021