Extended Hydrologic Outlook

March 9, 2021

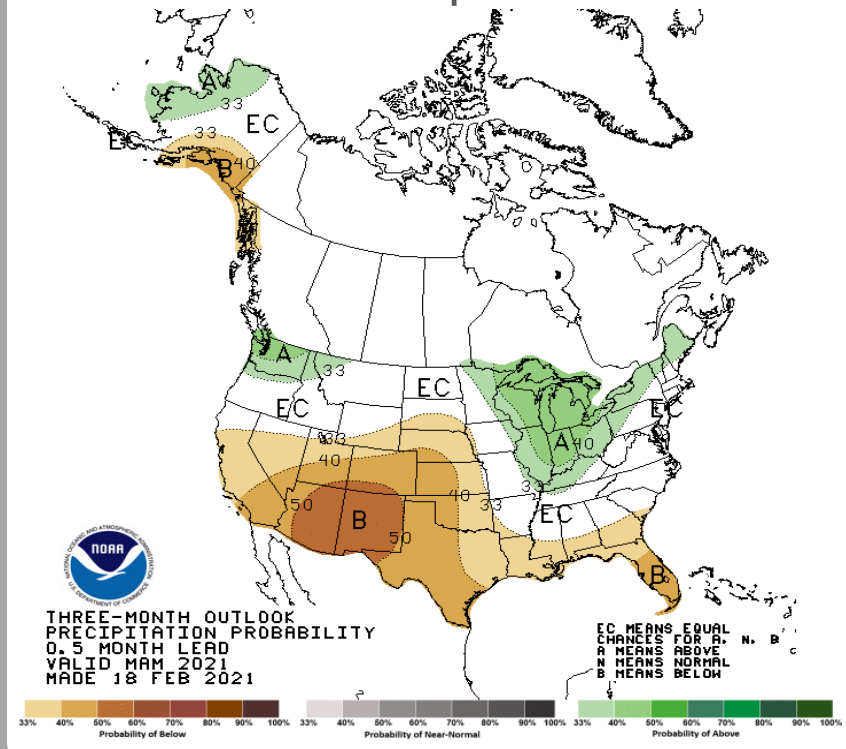
- The Climate Prediction Center (CPC) is forecasting below normal rainfall from March through May.
- La Niña is present. There is a ~60% chance of a transition from La Niña to ENSO-Neutral during spring 2021 (April-June).
- El Niño increases the chances of a wetter-than-normal dry season and decreased tropical activity, La Niña increases the chances of a drier-than-normal dry season and increased tropical activity (both have most influence November through March).
- Monitoring Atlantic Multidecadal Oscillation (AMO) which 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

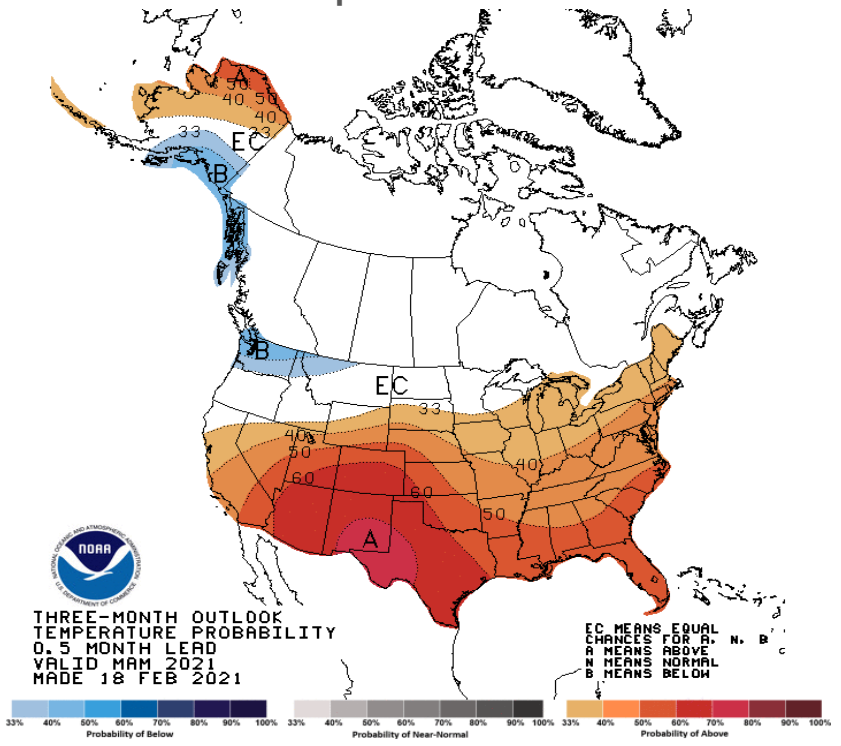
March - May 2021

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

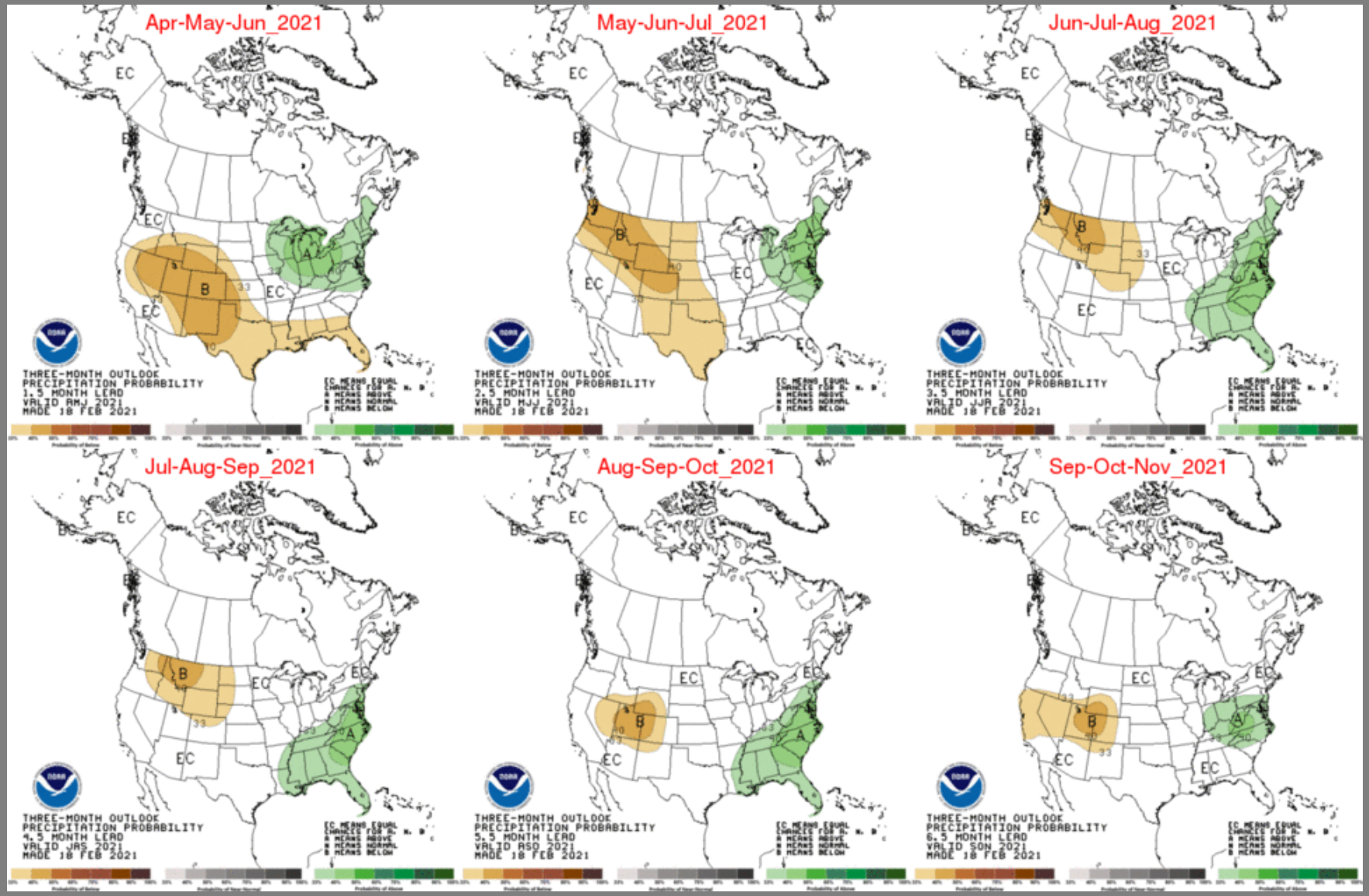
Precipitation



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:

<u>El Niño Southern Oscillation (ENSO)</u>

South Florida dry season (November through May) rainfall is positively correlated with El Niño which has a frequency that ranges between 3 to 7 years while rainfall is negatively correlated with La Niña November through March with a potential increase in tropical rainfall during La Niña

<u>Pacific Decadal Oscillation (PDO)</u>

Increases variations of south Florida dry season rainfall

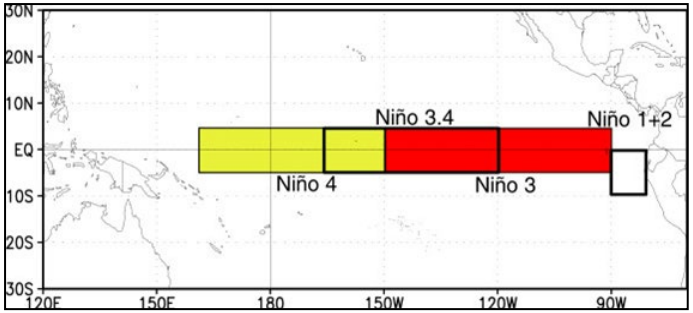
<u>Atlantic Multidecadal Oscillation (AMO)</u>

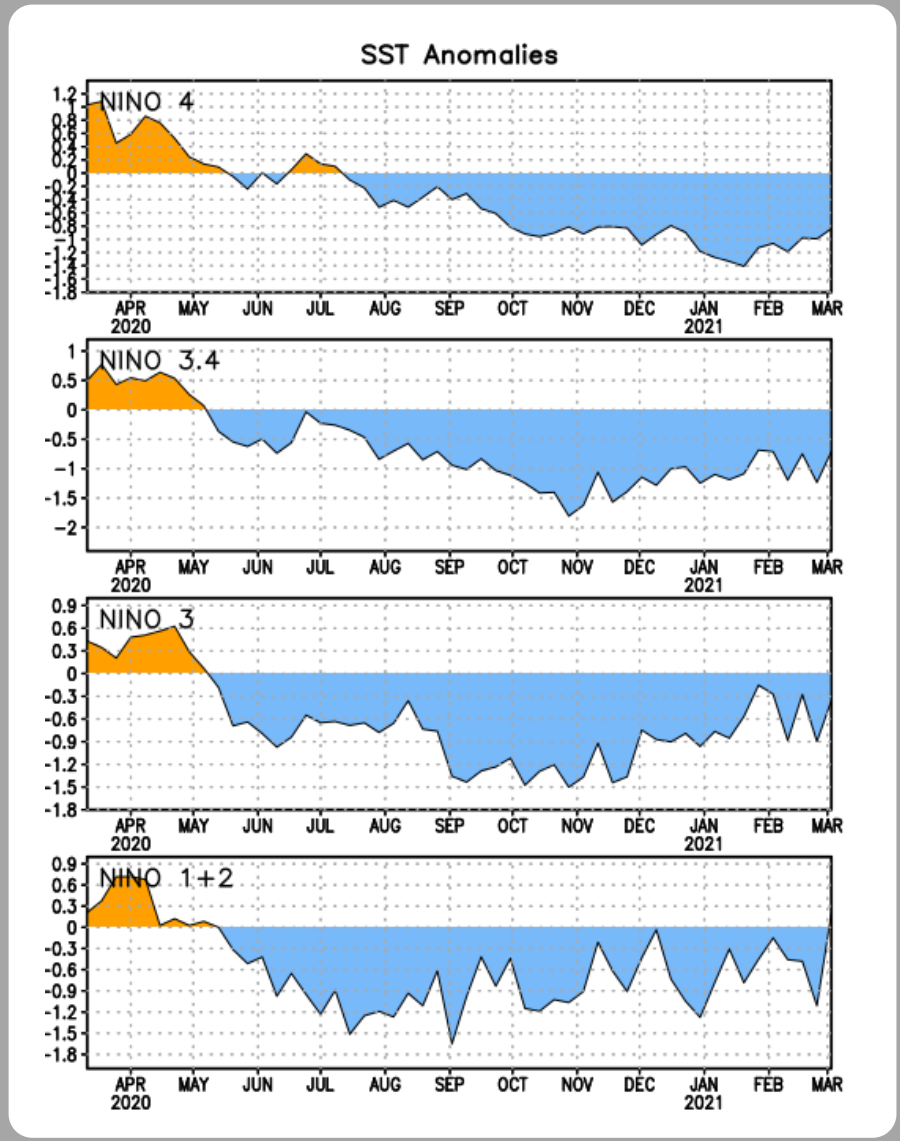
Average annual inflow to Lake Okeechobee is nearly 50% greater during the warm phase compared to the cold phase of the AMO, easterly flow toward south Florida affected by phase

Niño Region SST Departures (ºC) Recent Evolution

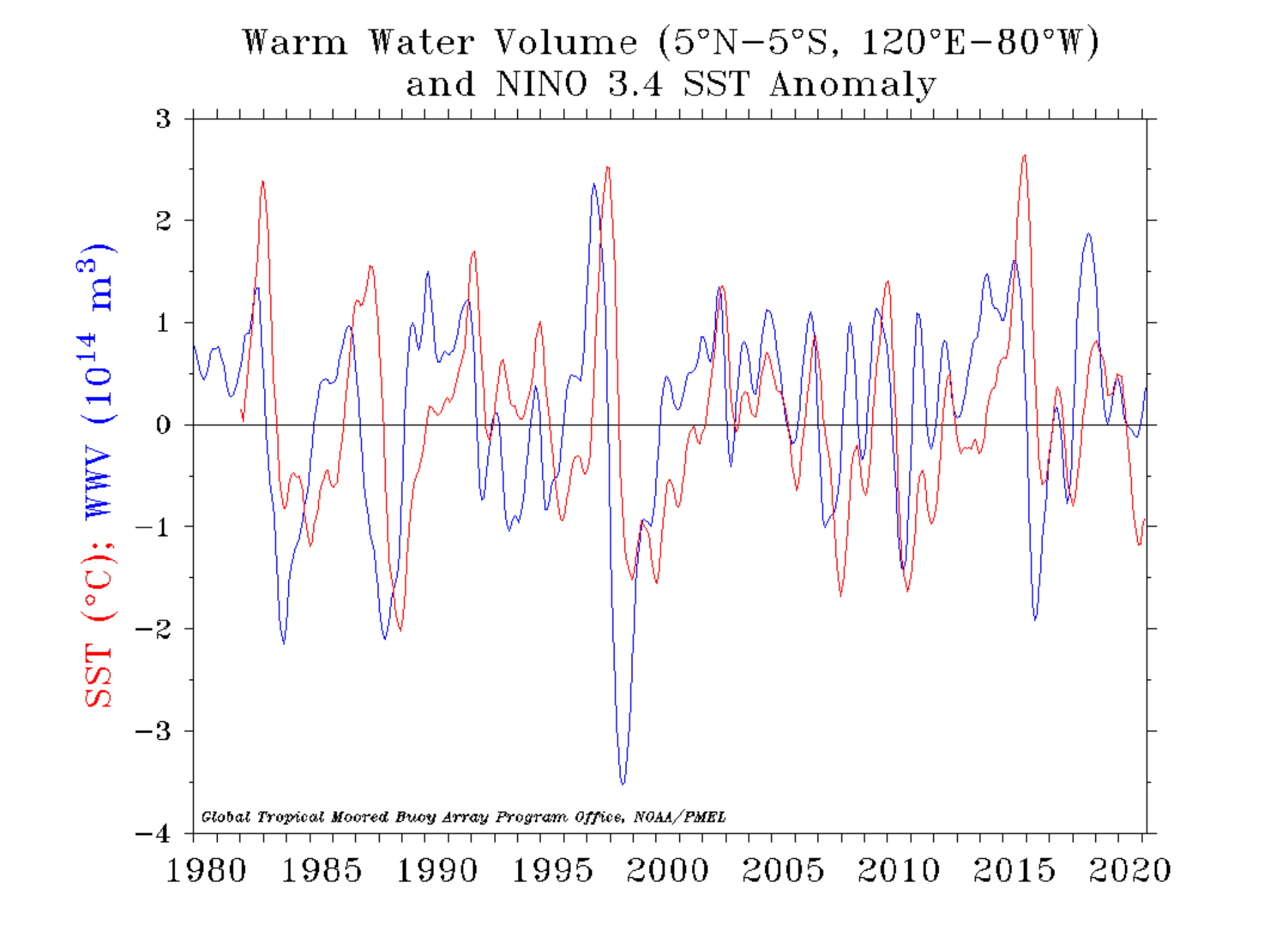
The latest weekly SST departures are:

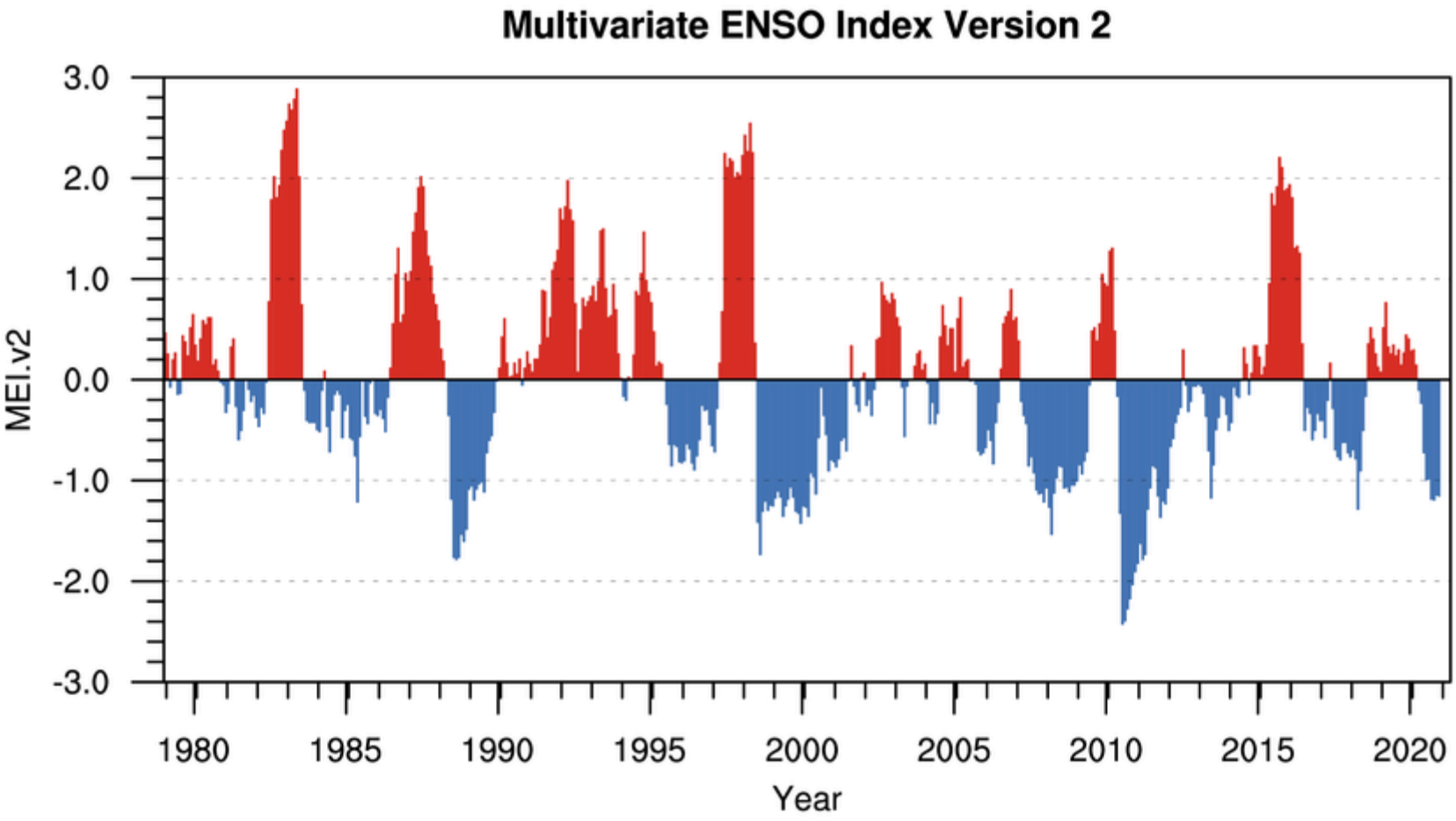
Niño 4	-0.8ºC
Niño 3.4	-0.7ºC
Niño 3	-0.4ºC
Niño 1+2	0.2ºC



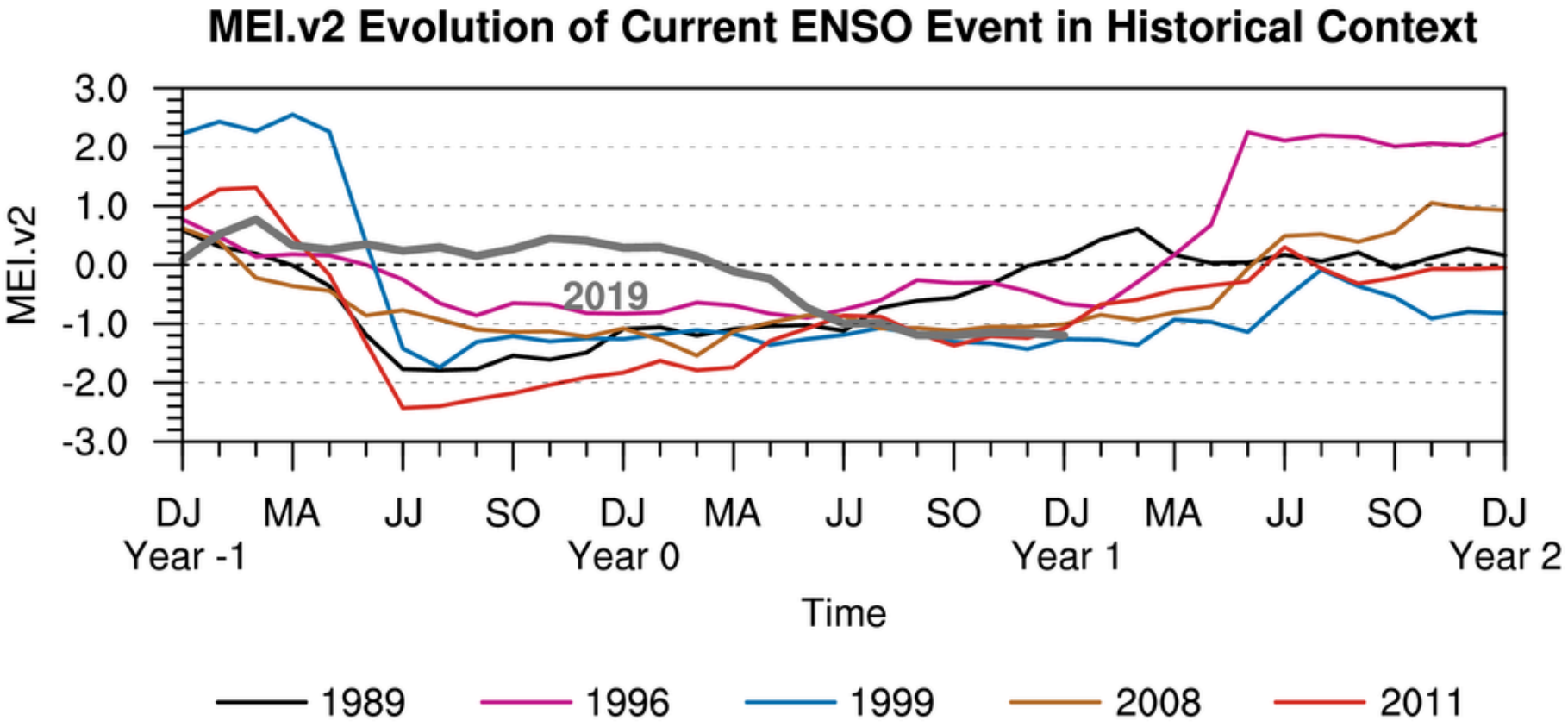


Prepared by: Climate Prediction Center/NCEP

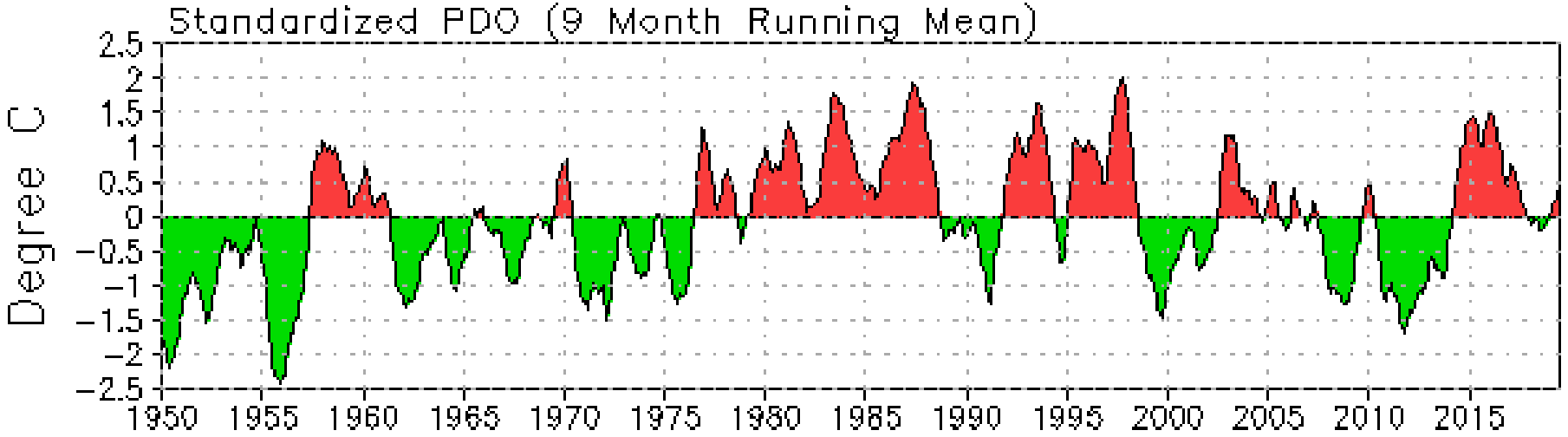

Warm Water Volume (5°N–5°S, 120°E–80°W)
and NINO 3.4 SST Anomaly
SST (°C); WWV (10^{14} m^3)
3
2
1
0
−1
−2
−3
−4
1980
1985
1990
1995
2000
2005
2010
2015
2020
Global Tropical Moored Buoy Array Program Office, NOAA/PMEL

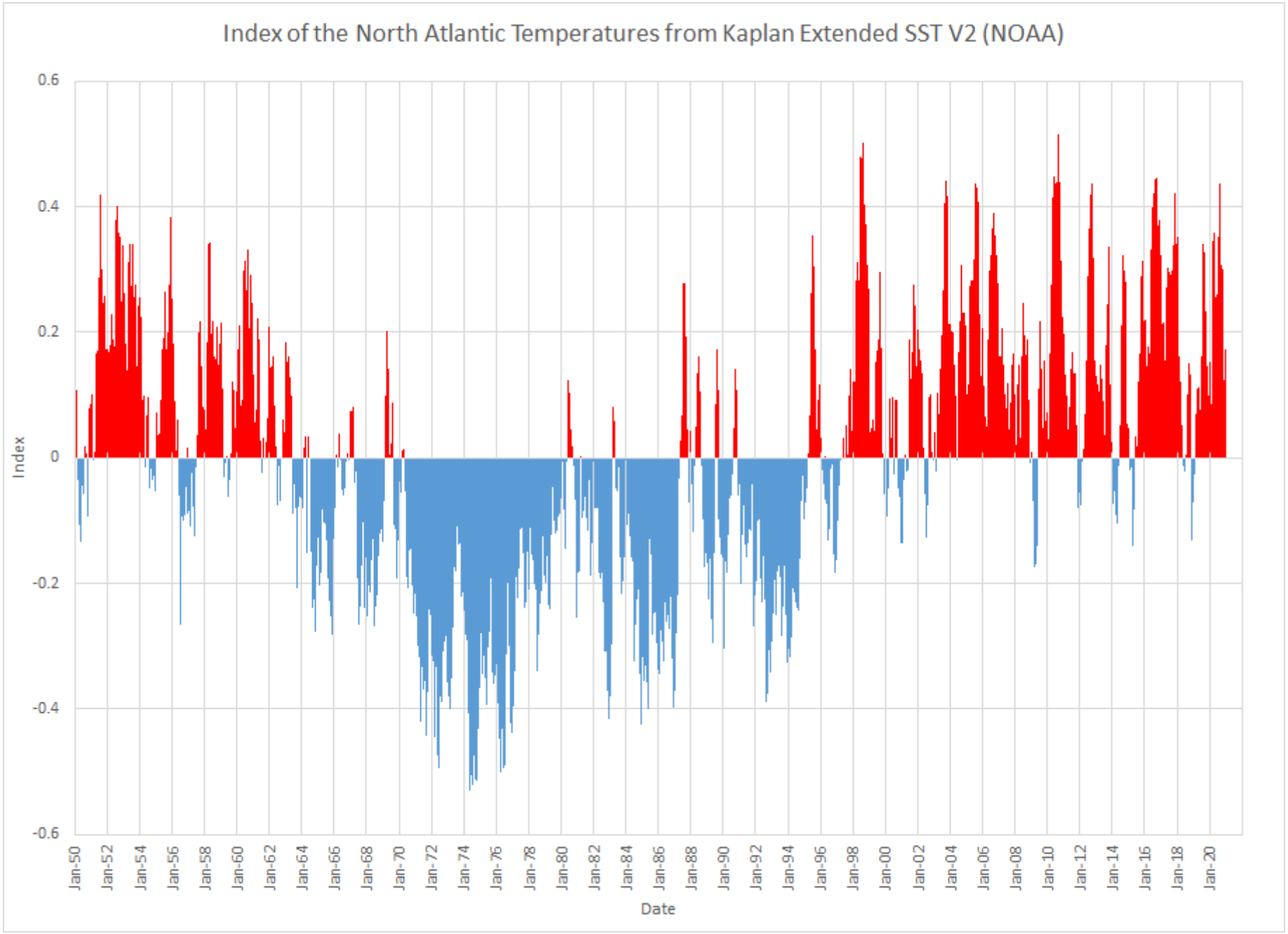


Prepared by: NOAA Physical Sciences Laboratory



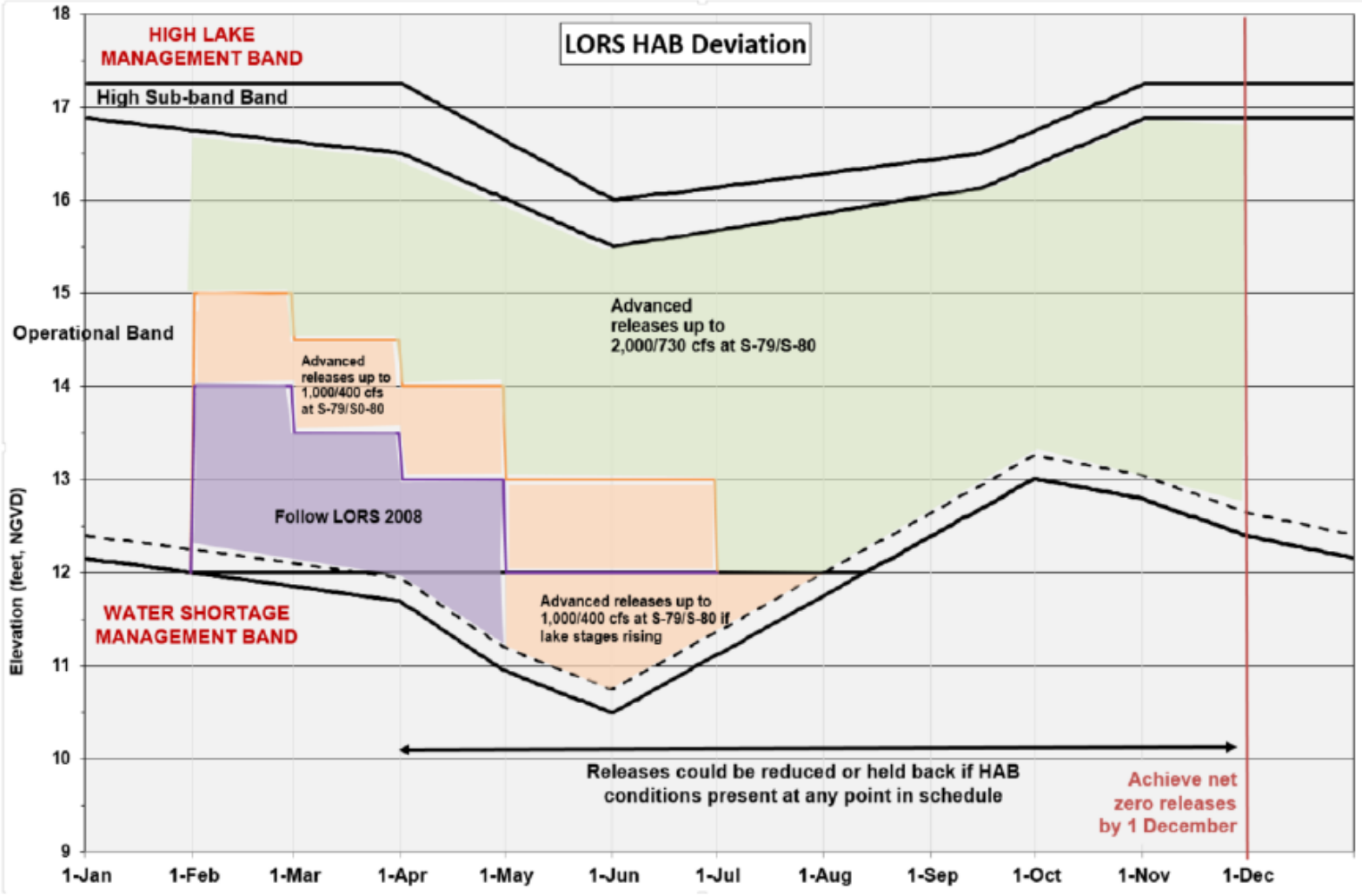
Prepared by: NOAA Physical Sciences Laboratory


Standardized PDO (9 Month Running Mean)
Degree C
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015


Index of the North Atlantic Temperatures 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
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

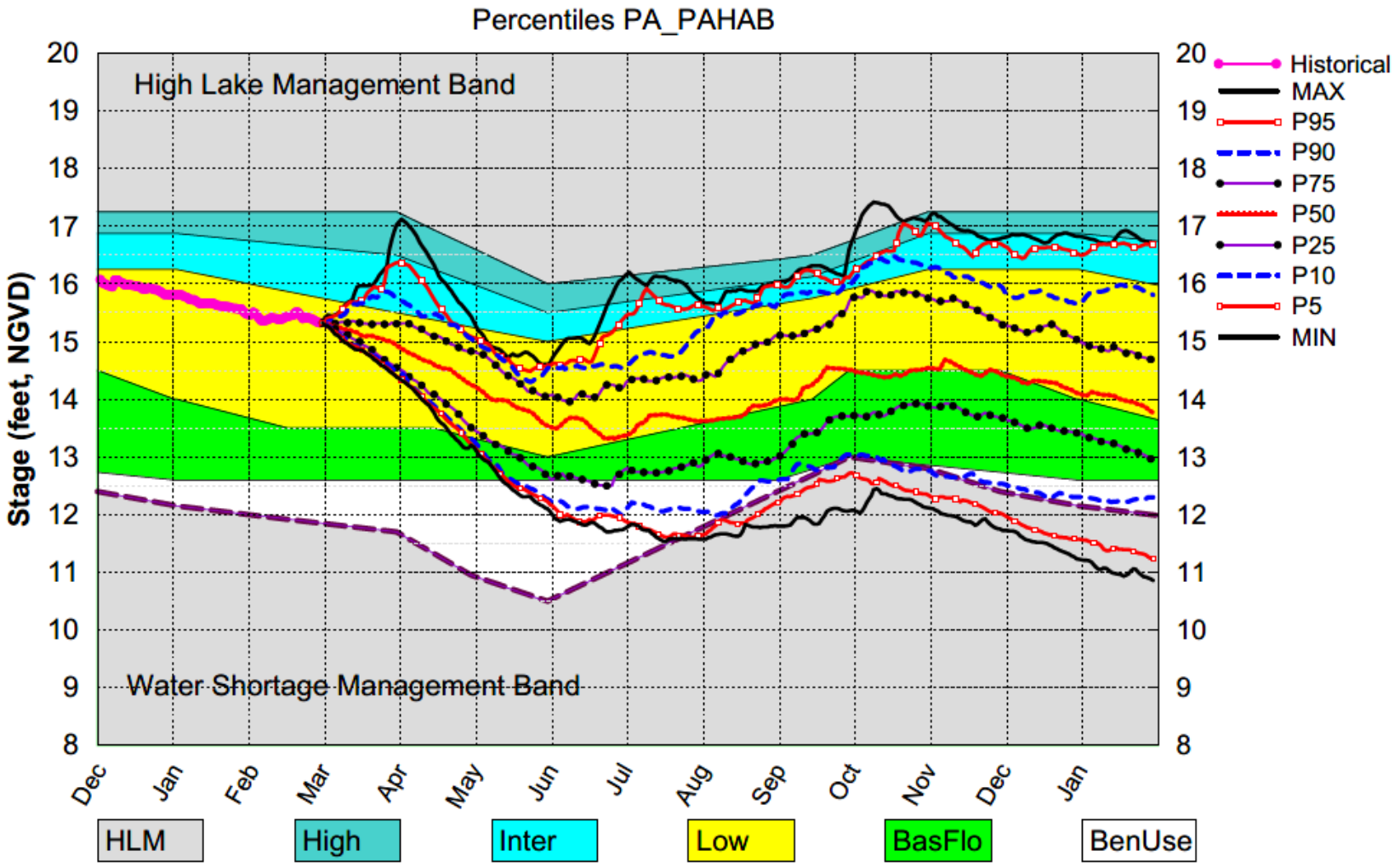
March DPA Assumptions

- The March 1, 2021 DPA is an approximation of the USACE Lake Okeechobee Harmful Algal Bloom (HAB) deviation and attempts to balance releases during the wet season
- Adaptive Protocols releases to the estuaries have been increased:
  - Caloosahatchee Estuary release increased from 650 cfs to 2000 cfs
  - St. Lucie Estuary release increased from 0 cfs to 500 cfs
- This simulation approximates the HAB deviation by modifying releases when the LORS 2008 Part D falls in one of the Base Flow Boxes
- https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll11/id/4641
- https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll7/id/15970



POC: Savannah Lacy

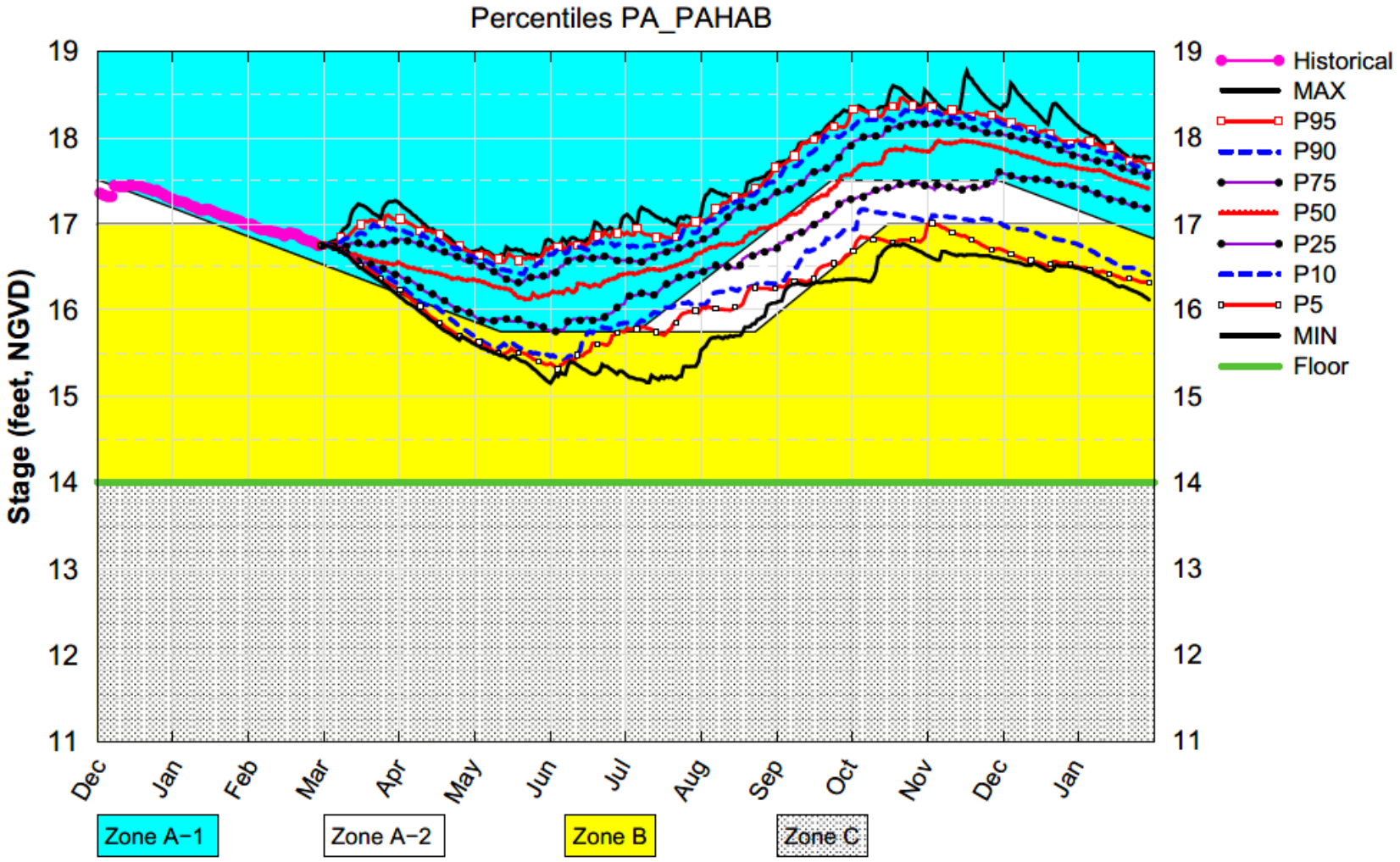
Lake Okeechobee SFWMM Mar 2021 Position Analysis



(See assumptions on the Position Analysis Results website)

Mon Mar 8 11:14:30 2021

WCA1 SFWMM Mar 2021 Position Analysis



(See assumptions on the Position Analysis Results website)

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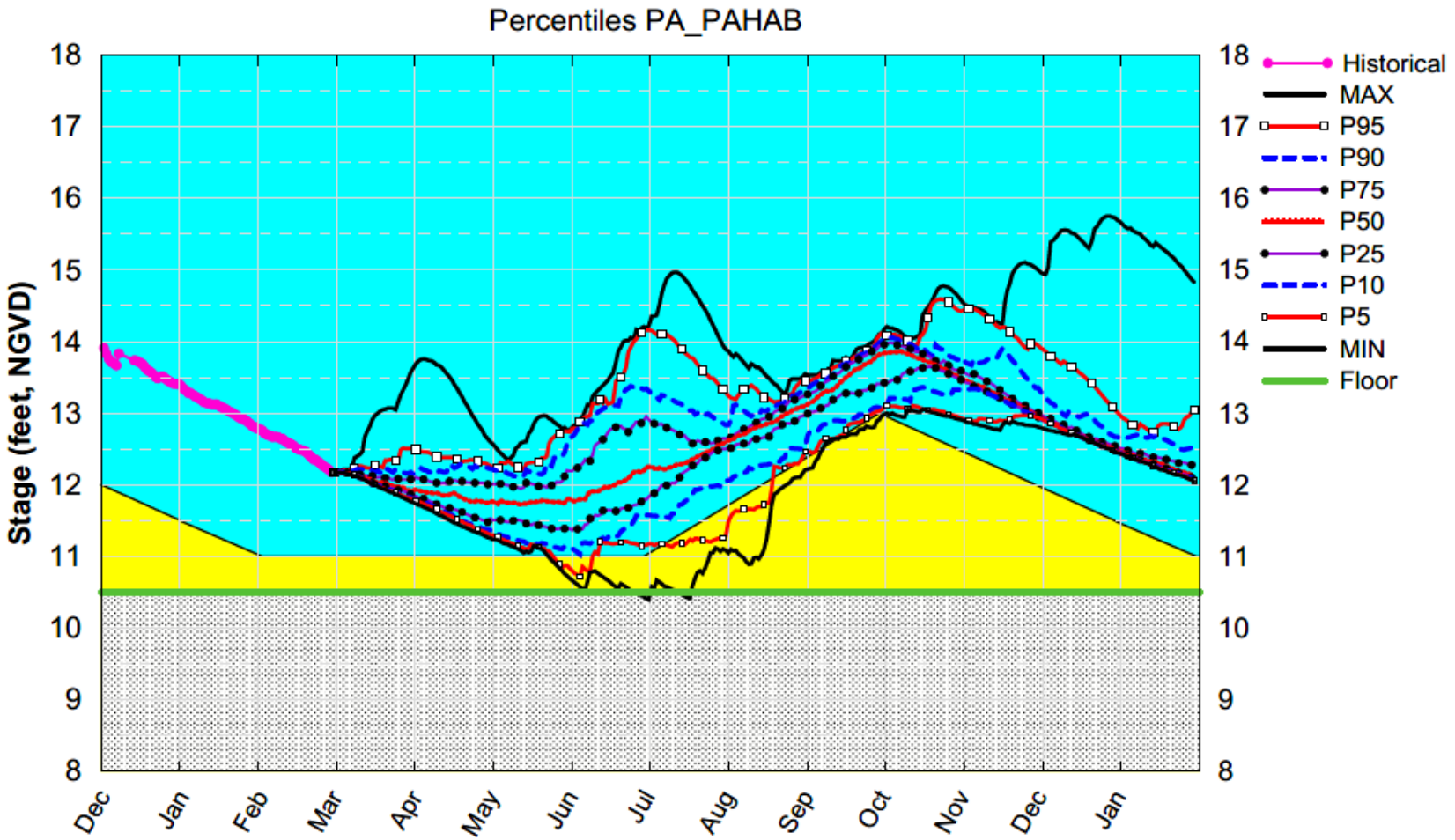
WCA2A SFWMM Mar 2021 Position Analysis



(See assumptions on the Position Analysis Results website)

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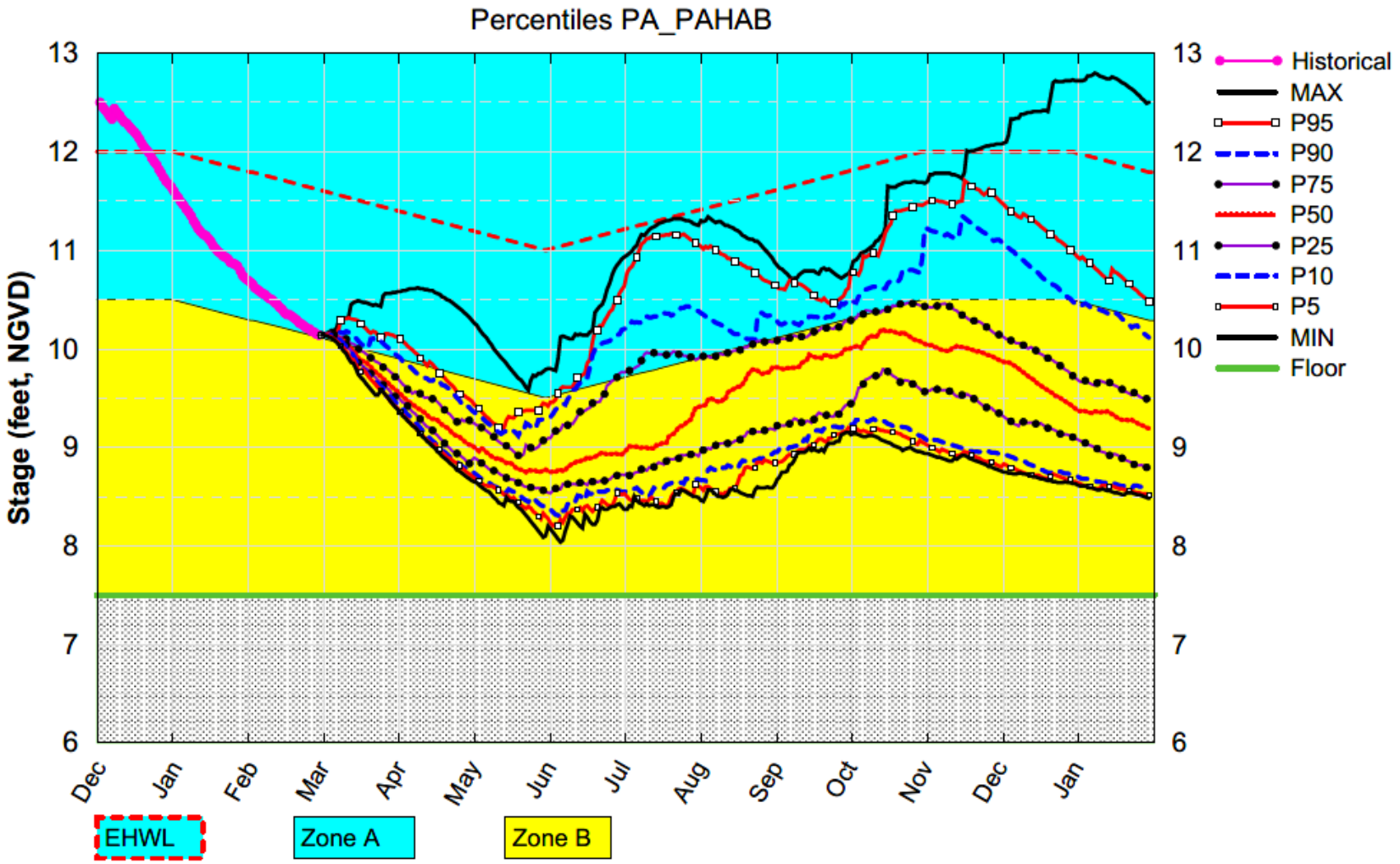
WCA3A SFWMM Mar 2021 Position Analysis



(See assumptions on the Position Analysis Results website)

Mon Mar 8 11:14:45 2021