Extended Hydrologic Outlook
May 9, 2023

- **The Climate Prediction Center (CPC) is forecasting <u>above normal</u> rainfall for May through July.**
- **<u>ENSO-neutral</u> conditions are expected to continue through the spring, followed by a <u>62% chance of El Niño</u> developing during May-July 2023.**
- **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**

U. S. Seasonal Outlooks

May – July 2023

The seasonal outlooks combine the effects of long-term trends, soil moisture, and, when appropriate, ENSO.
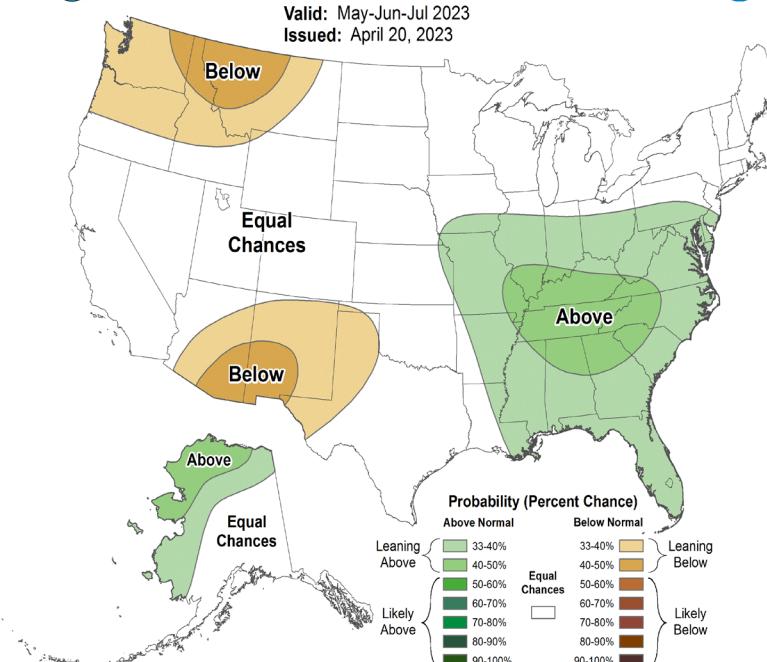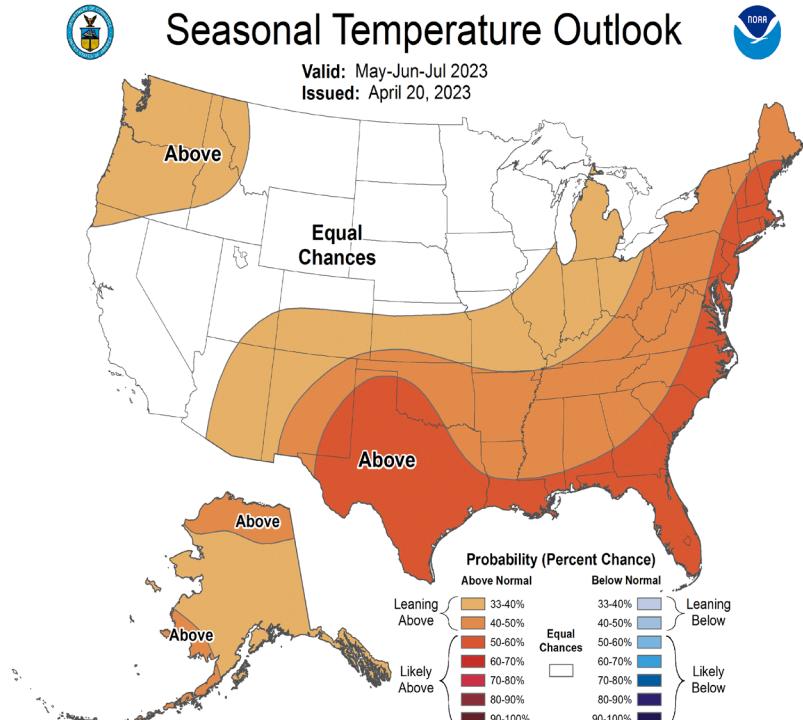
Seasonal Precipitation Outlook
**Valid:** Jun-Jul-Aug 2023
Issued: April 20, 2023

Below
Equal Chances
Above
Below
Above
Equal Chances
Equal Chances

Probability (Percent Chance)
Above Normal — Below Normal
Leaning Above — 33-40% — Leaning Below
40-50%
Equal Chances — 50-60%
60-70%
Likely Above — 70-80% — Likely Below
80-90%
90-100%
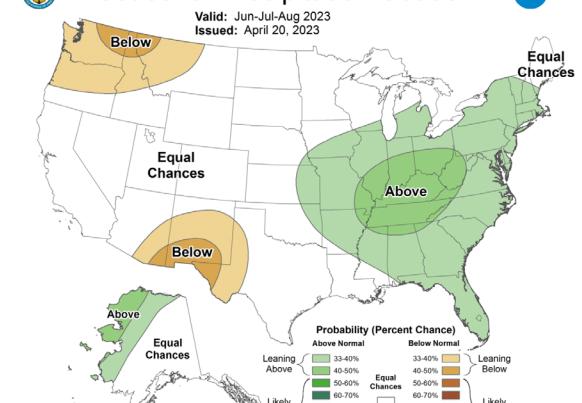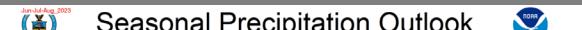
Seasonal Precipitation Outlook
Valid: Jul-Aug-Sep 2023
Issued: April 20, 2023

Below
Equal Chances
Above
Below
Above
Equal Chances
Equal Chances

Probability (Percent Chance)
Above Normal — Below Normal
Leaning Above — 33-40% — Leaning Below
40-50%
Equal Chances — 50-60%
60-70%
Likely Above — 70-80% — Likely Below
80-90%
90-100%
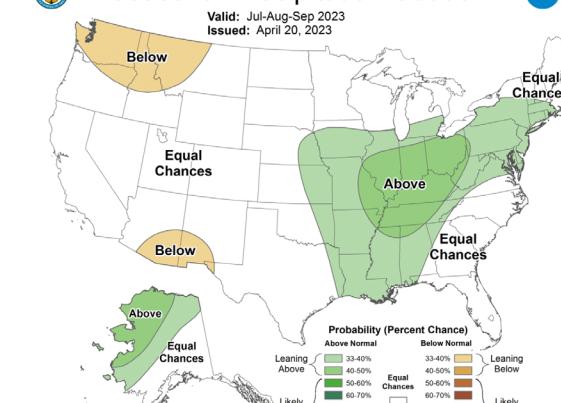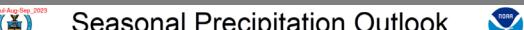
Seasonal Precipitation Outlook
Valid: Aug-Sep-Oct 2023
Issued: April 20, 2023

Below
Equal Chances
Above
Above
Equal Chances
Equal Chances

Probability (Percent Chance)
Above Normal — Below Normal
Leaning Above — 33-40% — Leaning Below
40-50%
Equal Chances — 50-60%
60-70%
Likely Above — 70-80% — Likely Below
80-90%
90-100%
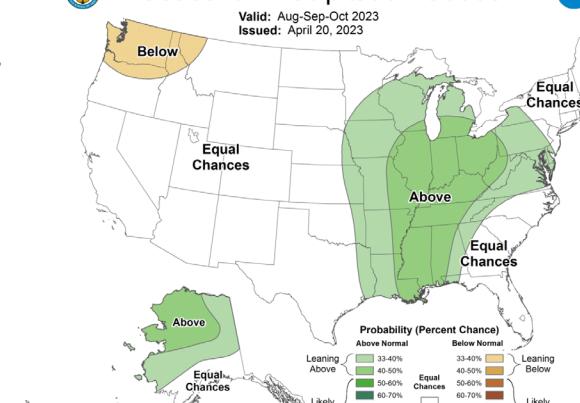
Seasonal Precipitation Outlook
Valid: Sep-Oct-Nov 2023
Issued: April 20, 2023

Below
Equal Chances
Above
Above
Equal Chances

Probability (Percent Chance)
Above Normal — Below Normal
Leaning Above — 33-40% — Leaning Below
40-50%
Equal Chances — 50-60%
60-70%
Likely Above — 70-80% — Likely Below
80-90%
90-100%

Seasonal Precipitation Outlook
Valid: Oct-Nov-Dec 2023
Issued: April 20, 2023

Below
Equal Chances
Above
Above
Equal Chances

Probability (Percent Chance)
Above Normal — Below Normal
Leaning Above — 33-40% — Leaning Below
40-50%
Equal Chances — 50-60%
60-70%
Likely Above — 70-80% — Likely Below
80-90%
90-100%

Seasonal Precipitation Outlook
Valid: Nov-Dec-Jan 2023-24
Issued: April 20, 2023

Below
Below
Equal Chances
Above
Above
Equal Chances

Probability (Percent Chance)
Above Normal — Below Normal
Leaning Above — 33-40% — Leaning Below
40-50%
Equal Chances — 50-60%
60-70%
Likely Above — 70-80% — Likely Below
80-90%
90-100%

Seasonal Precipitation Outlook
Valid: Dec-Jan-Feb 2023-24
Issued: April 20, 2023

Below
Below
Equal Chances
Above
Above
Equal Chances

Probability (Percent Chance)
Above Normal — Below Normal
Leaning Above — 33-40% — Leaning Below
40-50%
Equal Chances — 50-60%
60-70%
Likely Above — 70-80% — Likely Below
80-90%
90-100%

Seasonal Precipitation Outlook
Valid: Jan-Feb-Mar 2024
Issued: April 20, 2023

Below
Below
Equal Chances
Above
Above
Equal Chances

Probability (Percent Chance)
Above Normal — Below Normal
Leaning Above — 33-40% — Leaning Below
40-50%
Equal Chances — 50-60%
60-70%
Likely Above — 70-80% — Likely Below
80-90%
90-100%

Seasonal Precipitation Outlook
Valid: Feb-Mar-Apr 2024
Issued: April 20, 2023

Below
Equal Chances
Above
Above
Equal Chances

Probability (Percent Chance)
Above Normal — Below Normal
Leaning Above — 33-40% — Leaning Below
40-50%
Equal Chances — 50-60%
60-70%
Likely Above — 70-80% — Likely Below
80-90%
90-100%

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	0.3ºC
Niño 3.4	0.4ºC
Niño 3	0.8ºC
Niño 1+2	2.7ºC
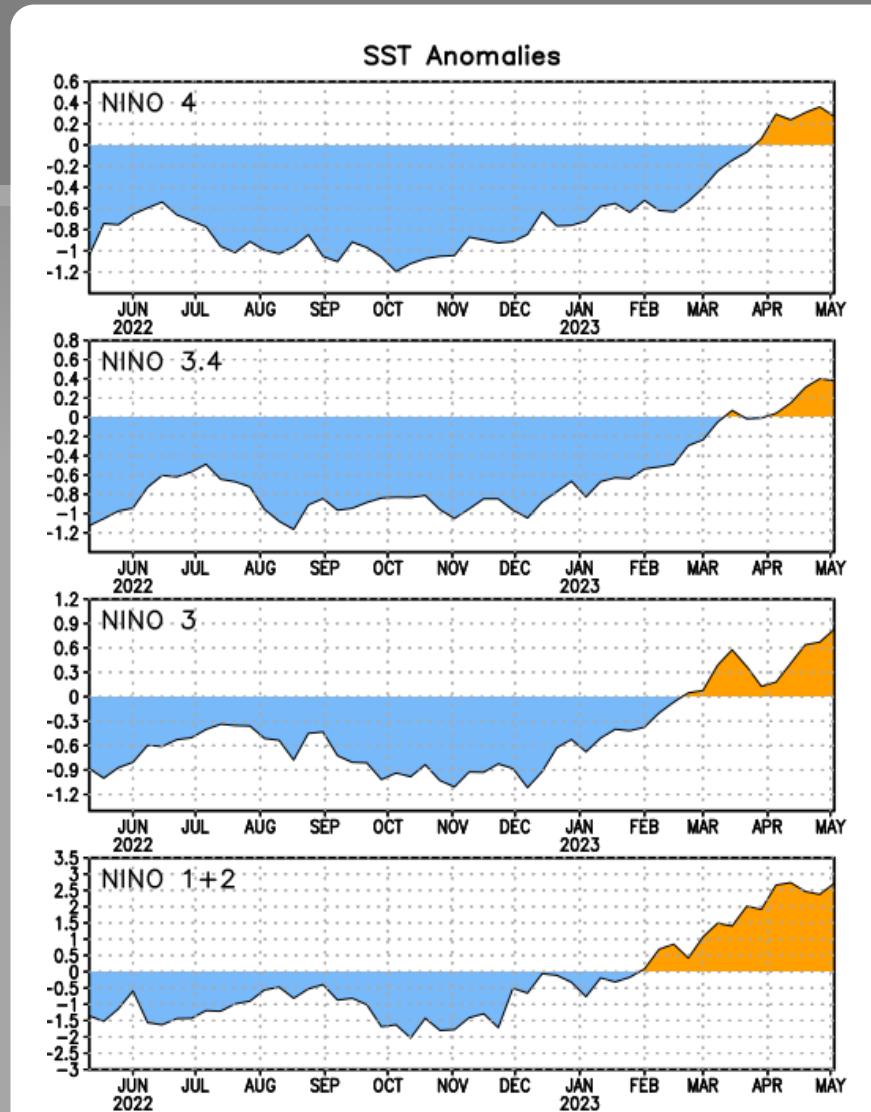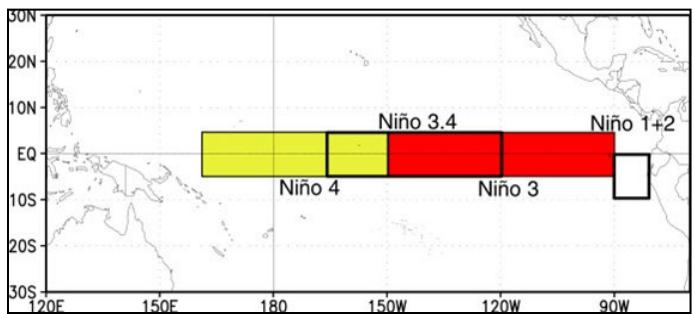
This weekly sea surface temperature data is based on OISSTv2.1 (Huang et al., 2021).

Prepared by: Climate Prediction Center/NCEP

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
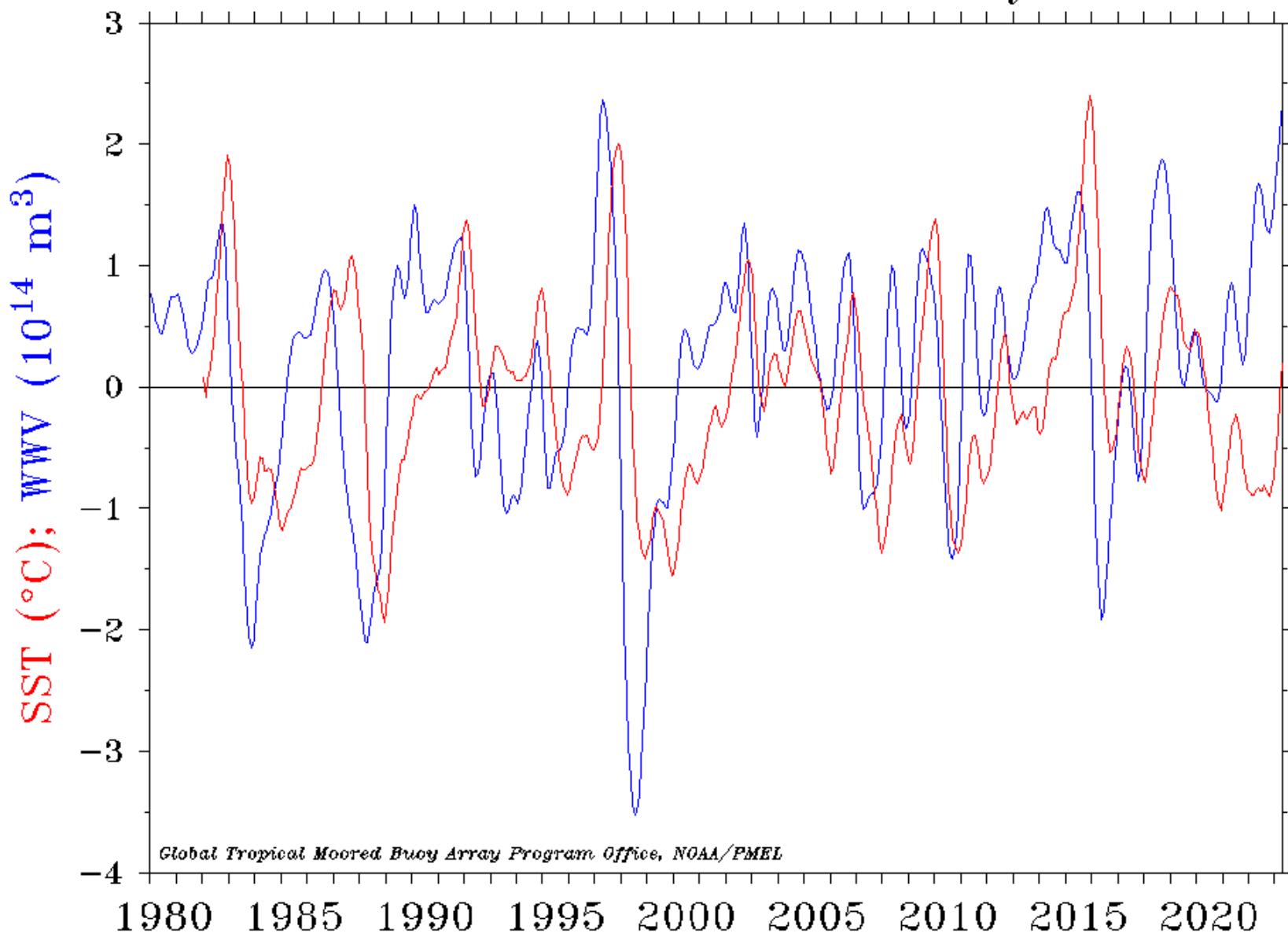
Multivariate ENSO Index Version 2

Prepared by: NOAA Physical Sciences Laboratory
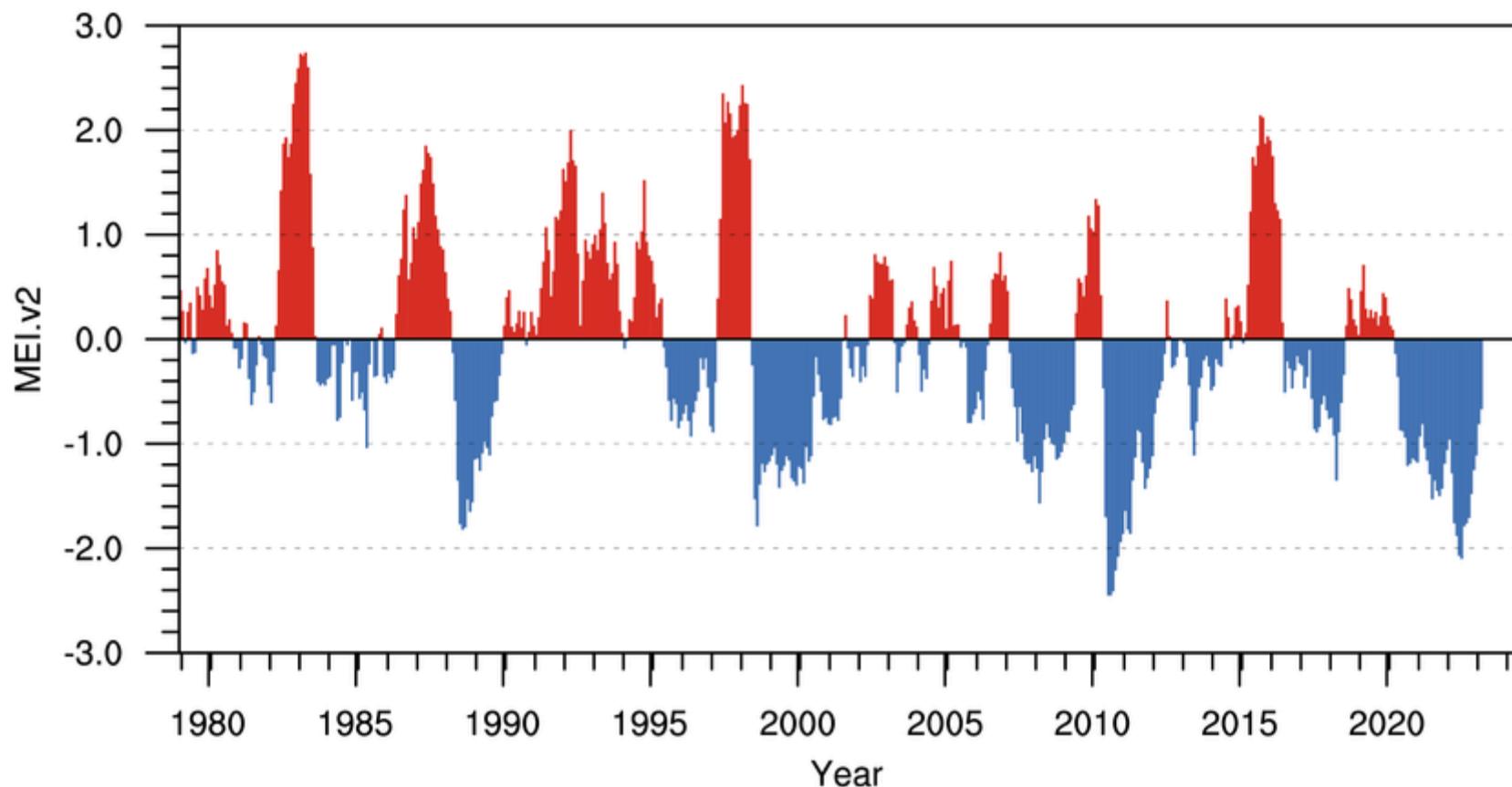
MEI.v2 Evolution of Current ENSO Event in Historical Context

Prepared by: NOAA Physical Sciences Laboratory
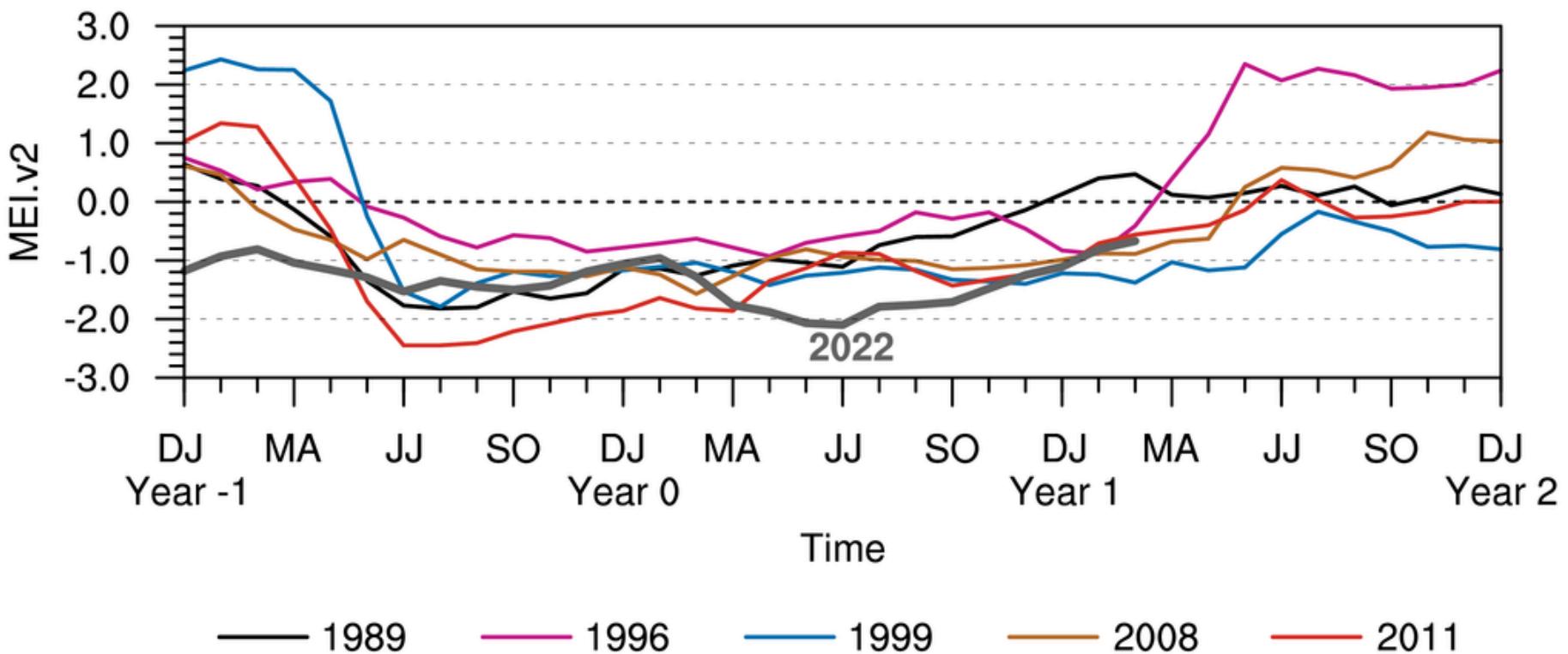
Pacific Decadal Oscillation
Extended Reconstructed Sea Surface Temperature (ERSST) v5 (NOAA)
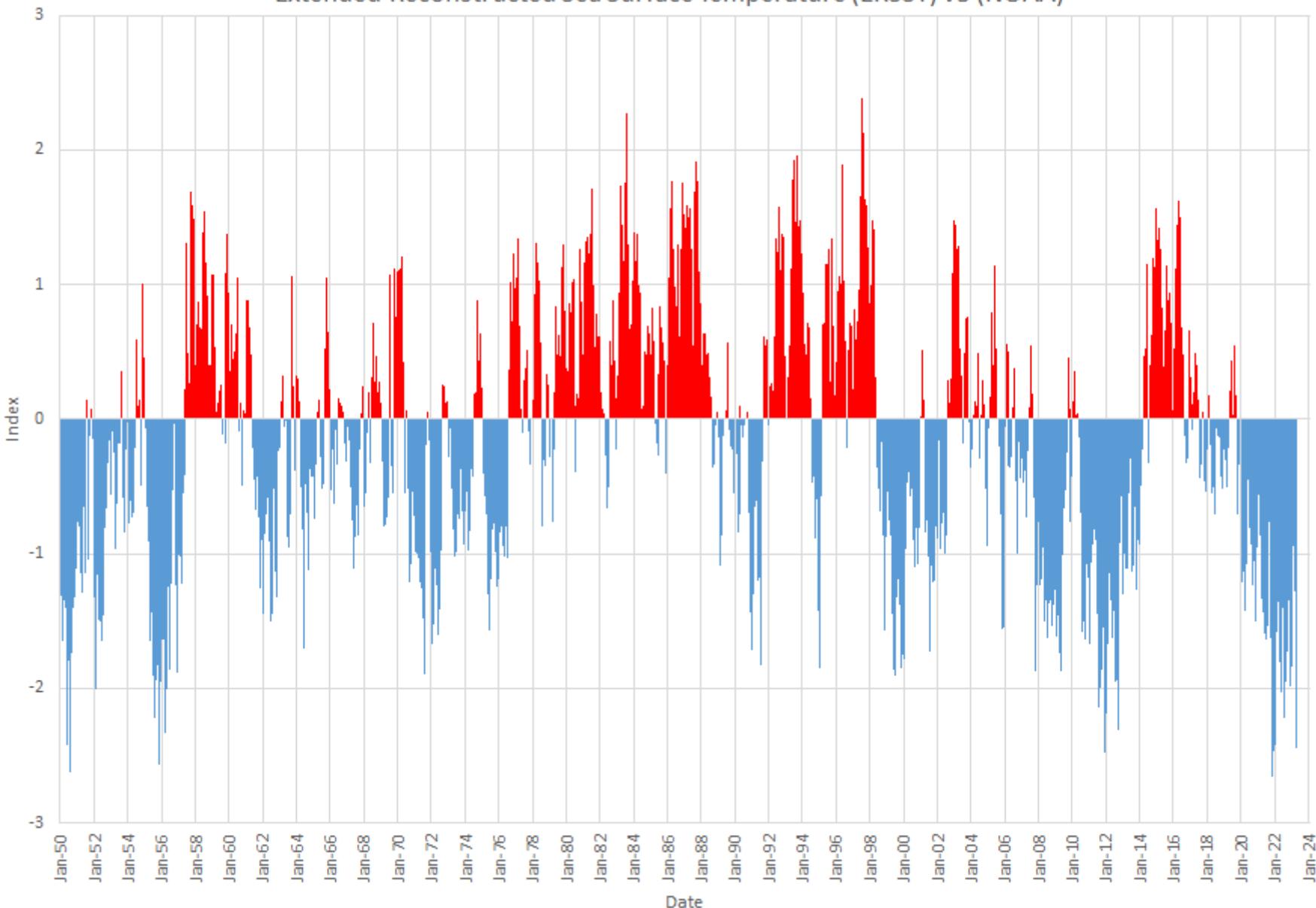
Index of the North Atlantic Temperatures (AMO) from Kaplan Extended SST V2 (NOAA)
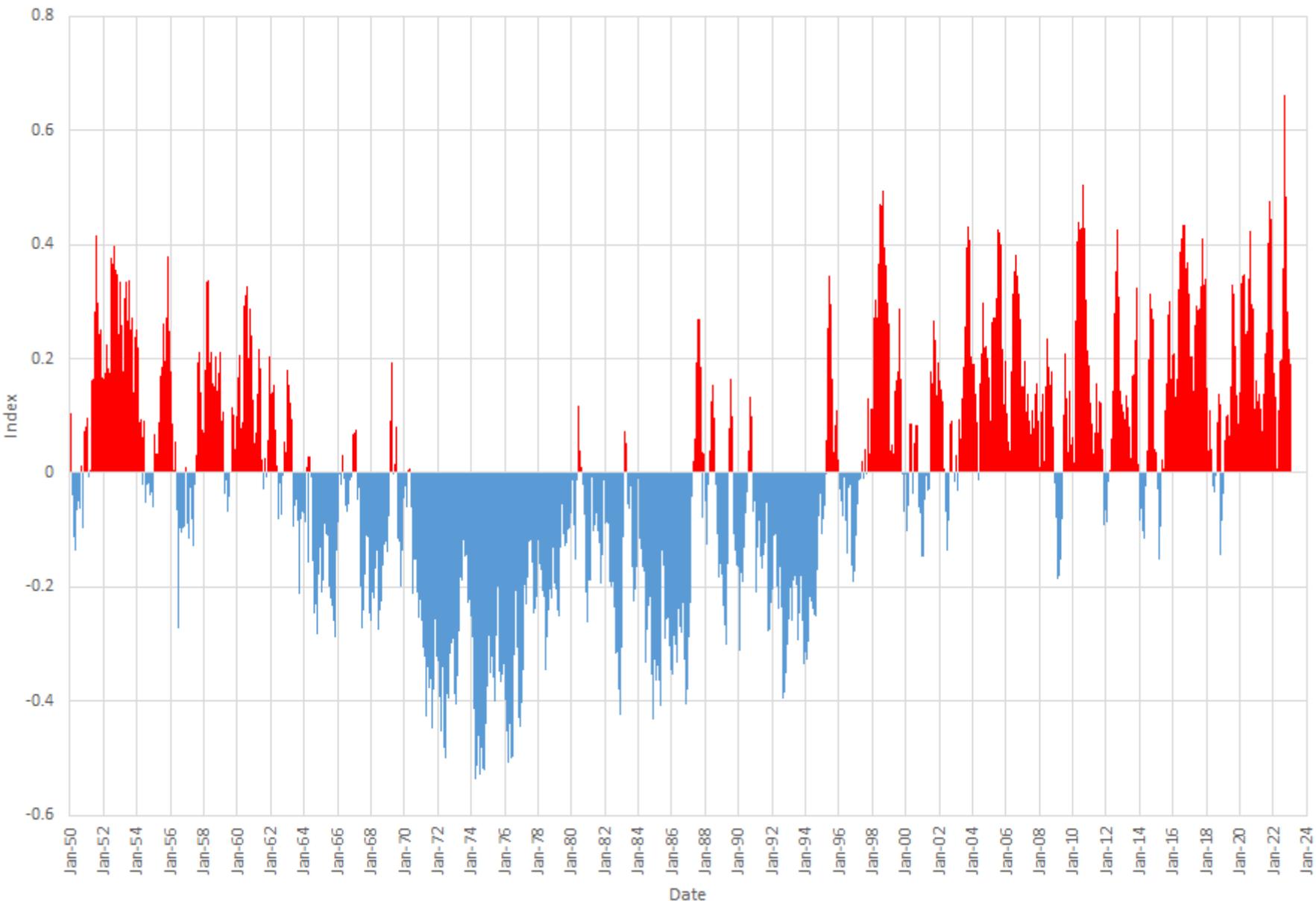
May DPA Assumptions

- The May 1, 2022 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 May 1, 2022 DPA resets the initial stages for Lake Okeechobee (LOK) and the Water Conservation Areas (WCAs) on April 1st of each year of the DPA simulation and conditions the simulation to real time data during April to achieve real time stages on May 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 May 2023 Position Analysis
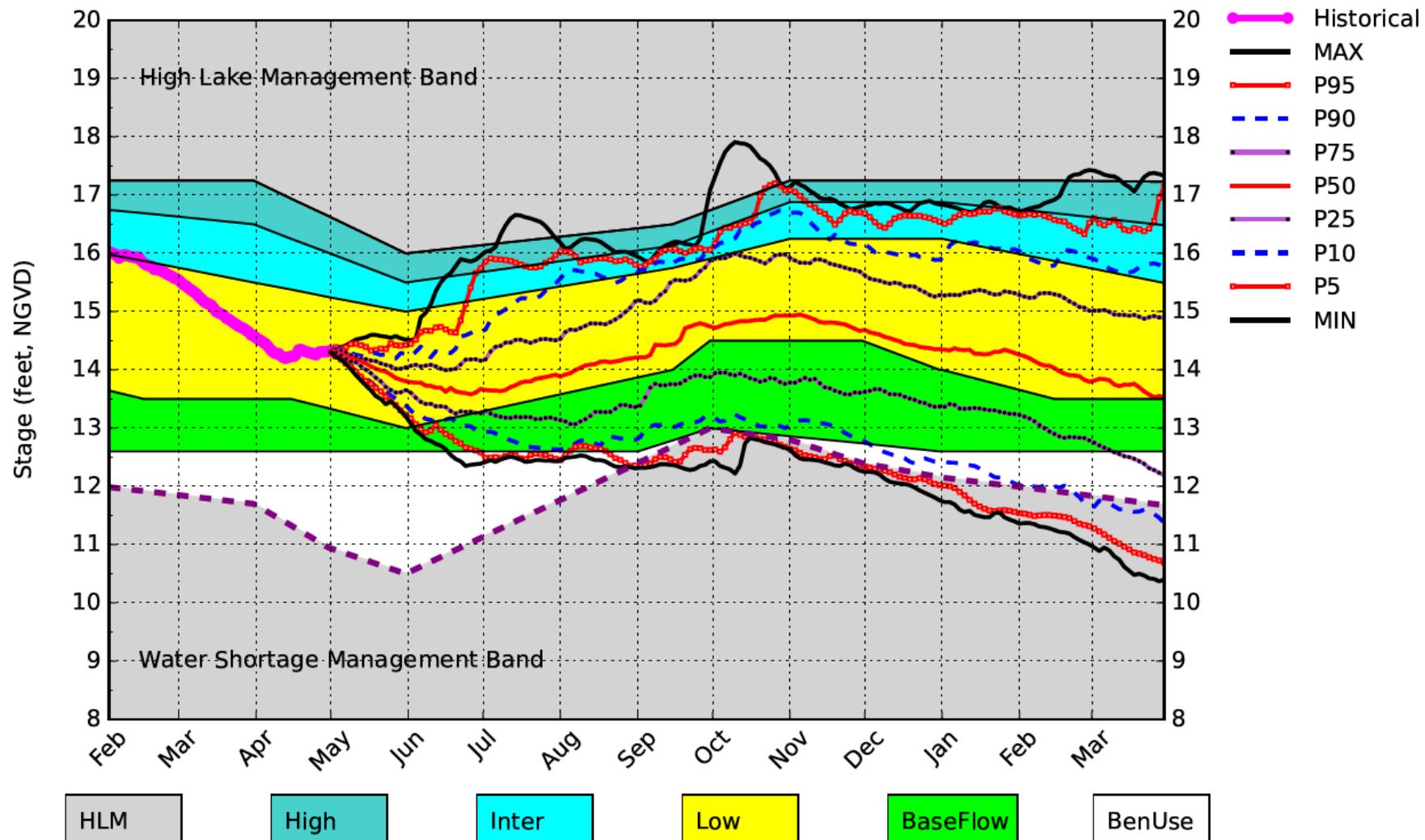
Percentiles PA

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

Y-axis: Stage (feet, NGVD), from 8 to 20

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

Band labels: High Lake Management Band, Water Shortage Management Band

Band legend: HLM, High, Inter, Low, BaseFlow, BenUse

(See assumptions on the Position Analysis Results website)

05/08/23 14:21:14

Lake Okeechobee SFWMM May 2023 Position Analysis

Percentiles PA

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

High Lake Management Band

Water Shortage Management Band

Stage (feet, NGVD)

(See assumptions on the Position Analysis Results website)

05/09/23 08:43:25
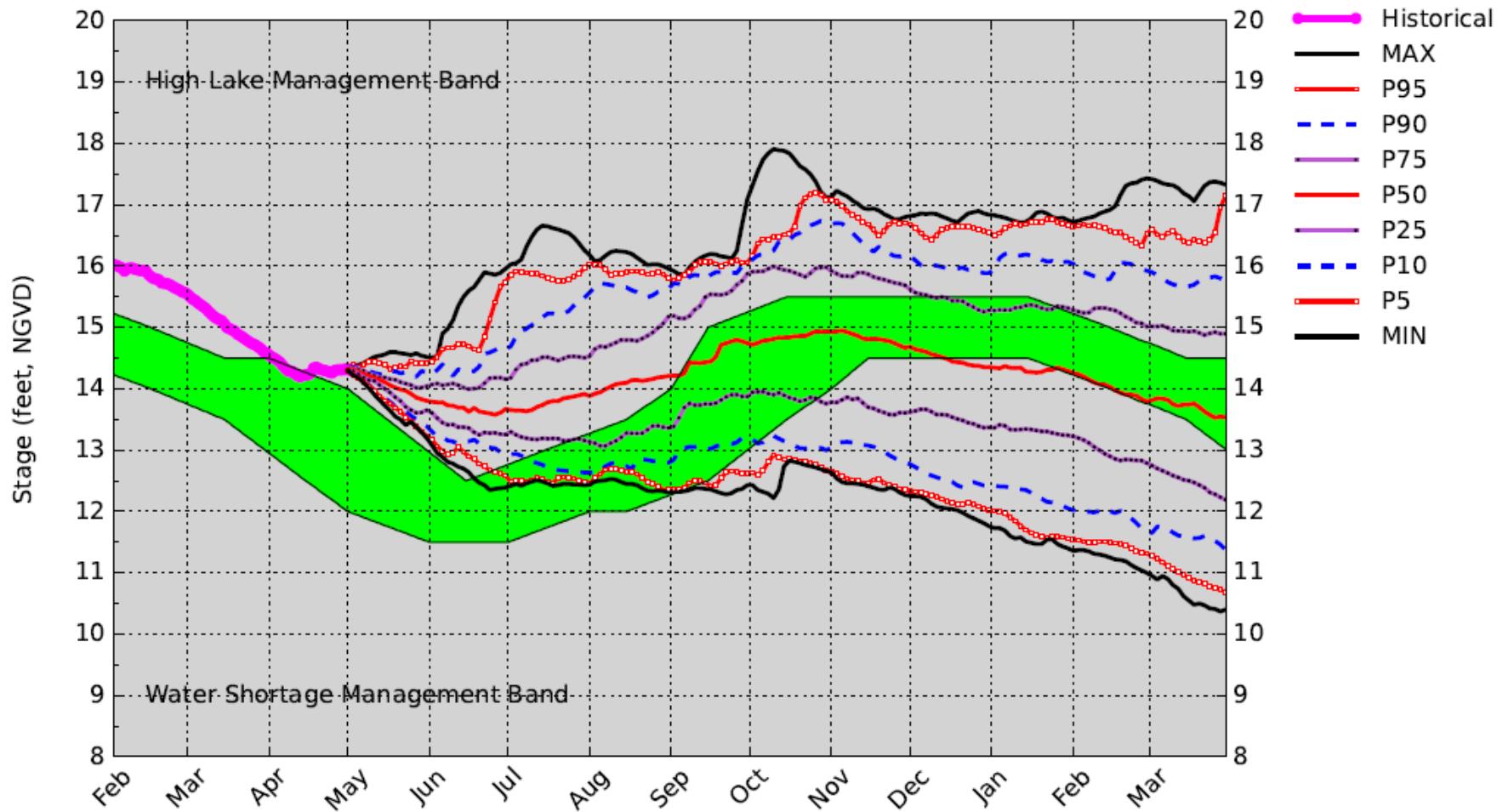
Lake Okeechobee SFWMM May 2023 Position Analysis

All Enso Neutral Years Plot PA
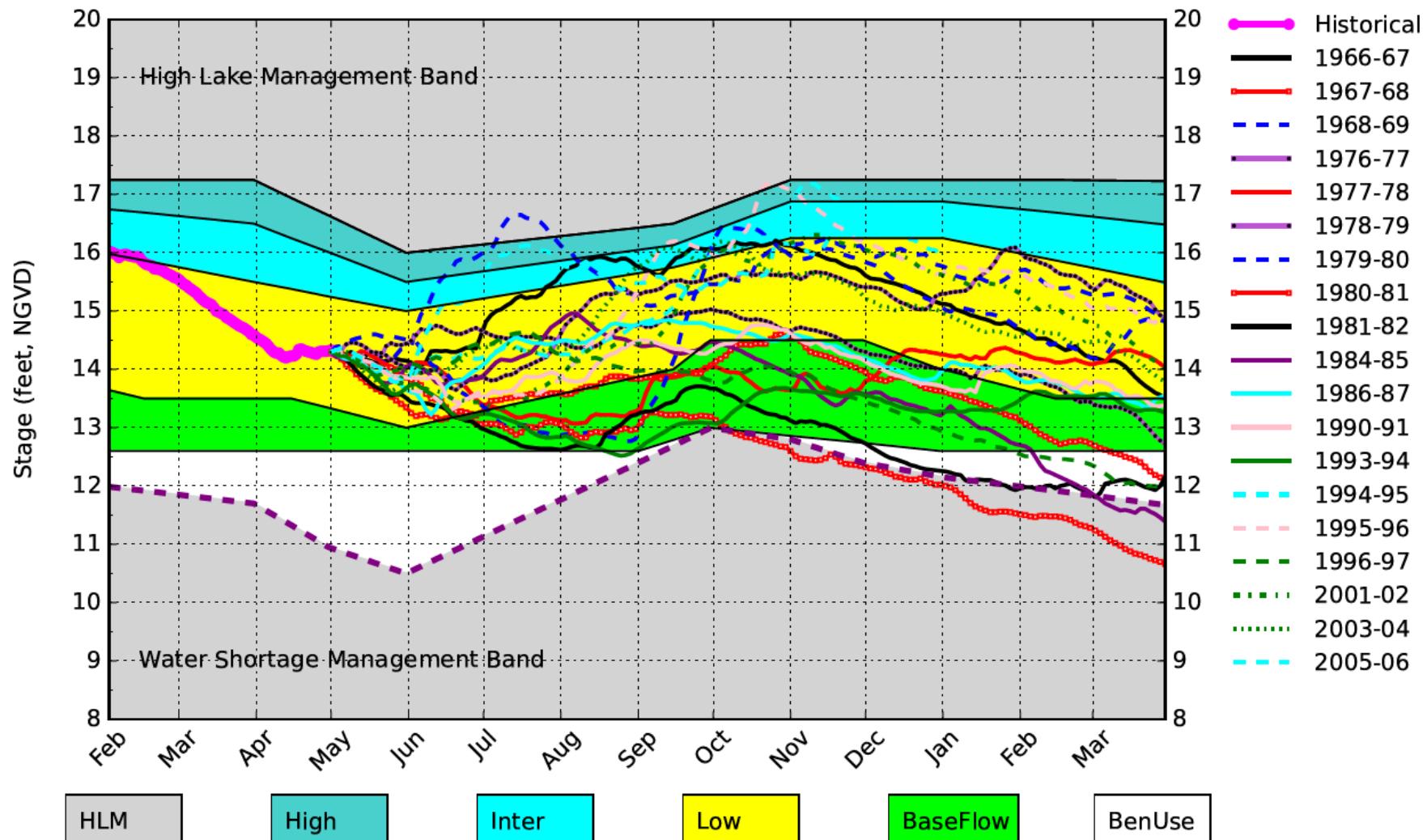
Legend:
- Historical
- 1966-67
- 1967-68
- 1968-69
- 1976-77
- 1977-78
- 1978-79
- 1979-80
- 1980-81
- 1981-82
- 1984-85
- 1986-87
- 1990-91
- 1993-94
- 1994-95
- 1995-96
- 1996-97
- 2001-02
- 2003-04
- 2005-06

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)

05/08/23 14:21:18

WCA1 SFWMM May 2023 Position Analysis

Percentiles PA

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

Stage (feet, NGVD)
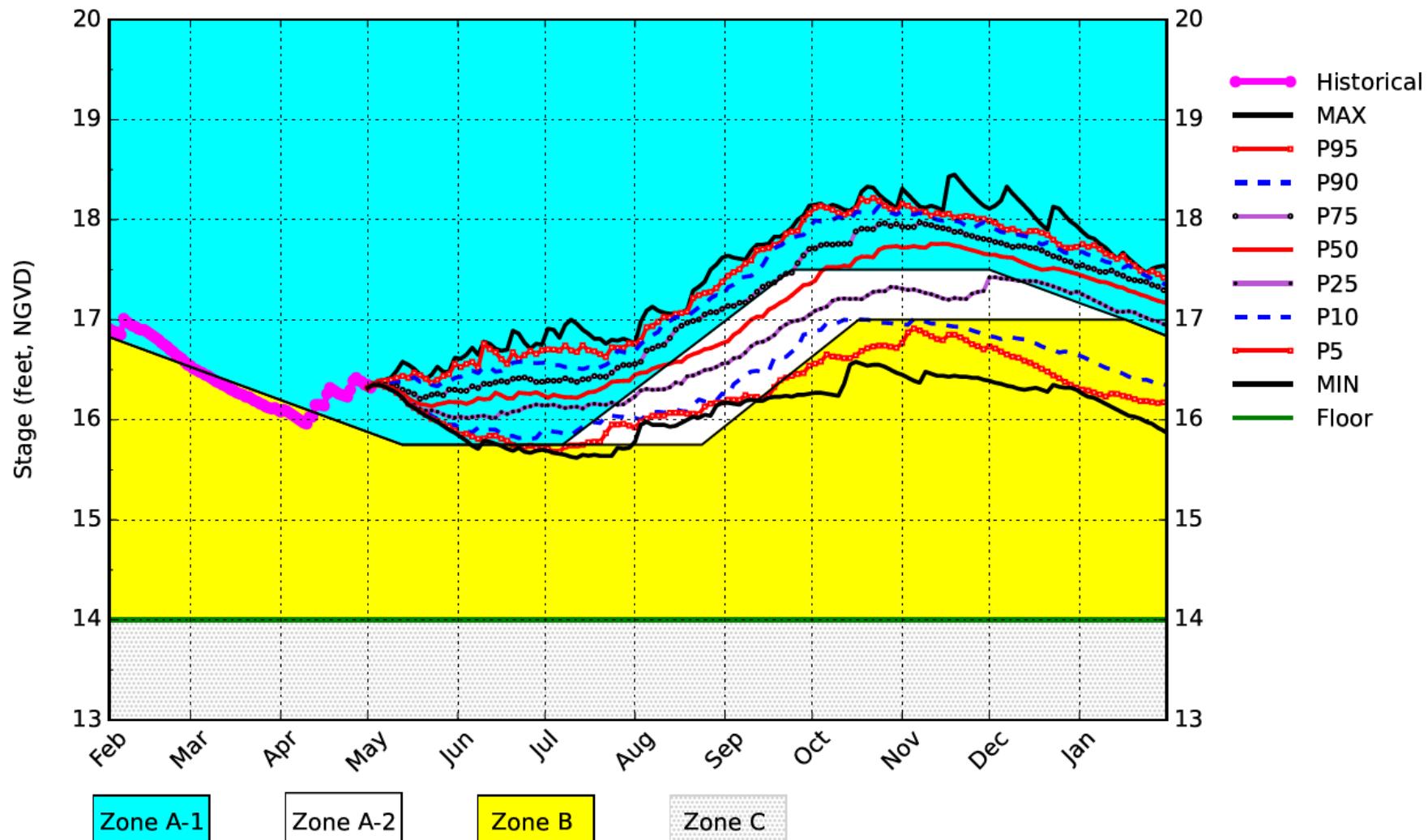
Zone A-1 Zone A-2 Zone B Zone C

(See assumptions on the Position Analysis Results website)

05/05/23 12:02:00

WCA2A SFWMM May 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)
- Floor (green)

Zone A-1   Zone B   Zone C

(See assumptions on the Position Analysis Results website)

05/05/23 12:02:01

WCA3A SFWMM May 2023 Position Analysis

Percentiles PA

05/05/23 12:02:01

(See assumptions on the Position Analysis Results website)