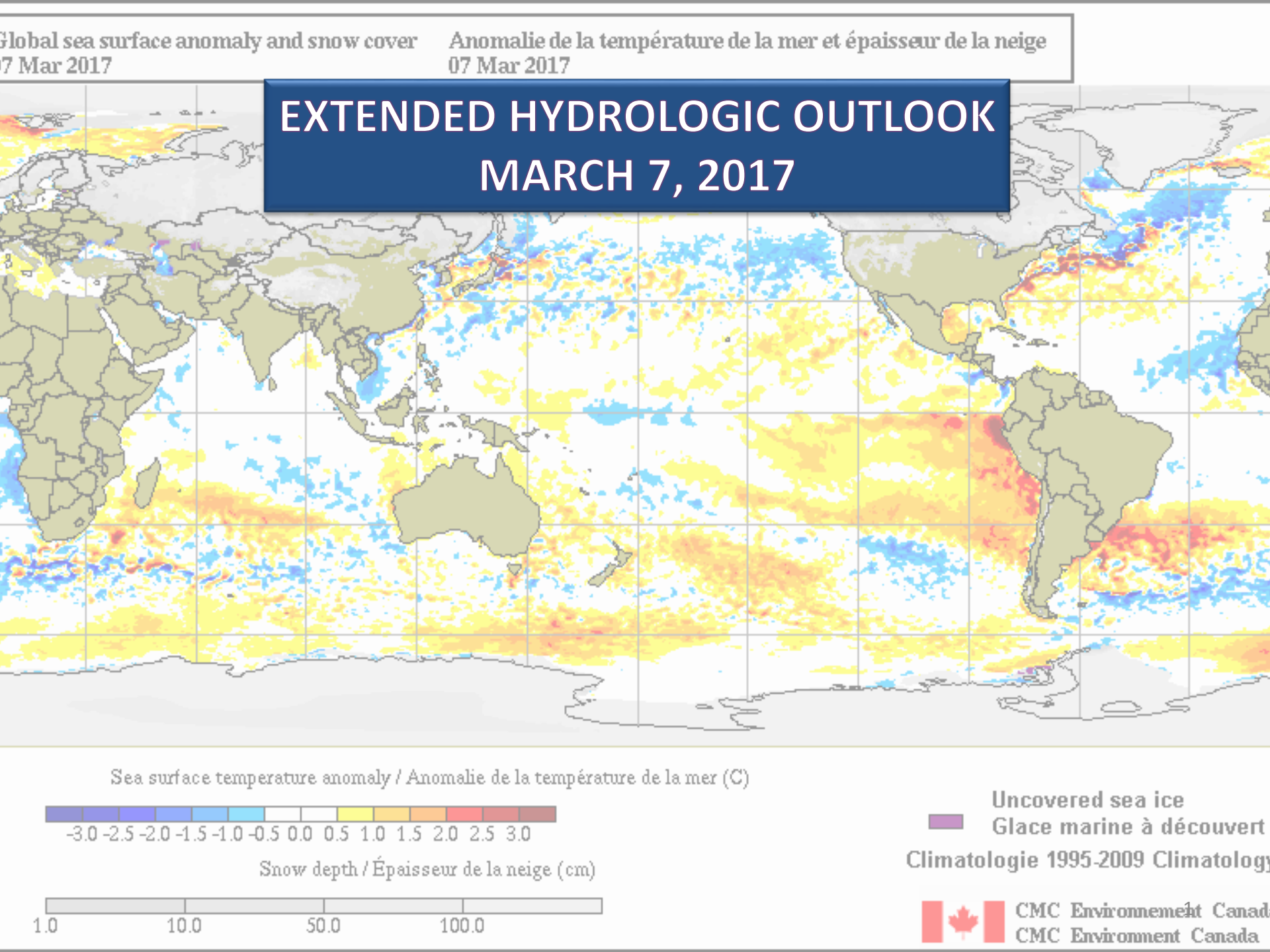

Global sea surface anomaly and snow cover
07 Mar 2017
Anomalie de la température de la mer et épaisseur de la neige
07 Mar 2017
EXTENDED HYDROLOGIC OUTLOOK
MARCH 7, 2017
Sea surface temperature anomaly / Anomalie de la température de la mer (C)
-3.0 -2.5 -2.0 -1.5 -1.0 -0.5 0.0 0.5 1.0 1.5 2.0 2.5 3.0
Snow depth / Épaisseur de la neige (cm)
1.0
10.0
50.0
100.0
Uncovered sea ice
Glace marine à découvert
Climatologie 1995-2009 Climatology
CMC Environnement Canada
CMC Environment Canada

# Summary

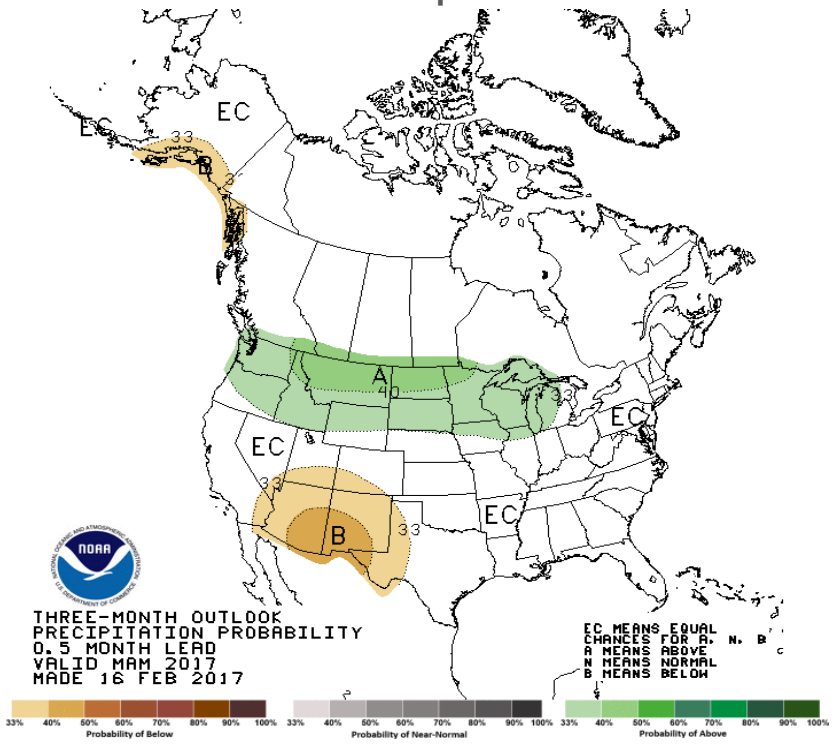
- **The Climate Prediction Center (CPC) is forecasting equal chances of above normal, normal and below normal rainfall for March through May.**
- **ENSO-neutral conditions have returned and are favored to continue through at least the spring 2017.***
- **Monitoring Atlantic Multidecadal Oscillation (AMO) index for switch to negative (cold) phase, this has the potential to contribute to a drier-than-normal 2017 wet season.**

# U. S. Seasonal Outlooks

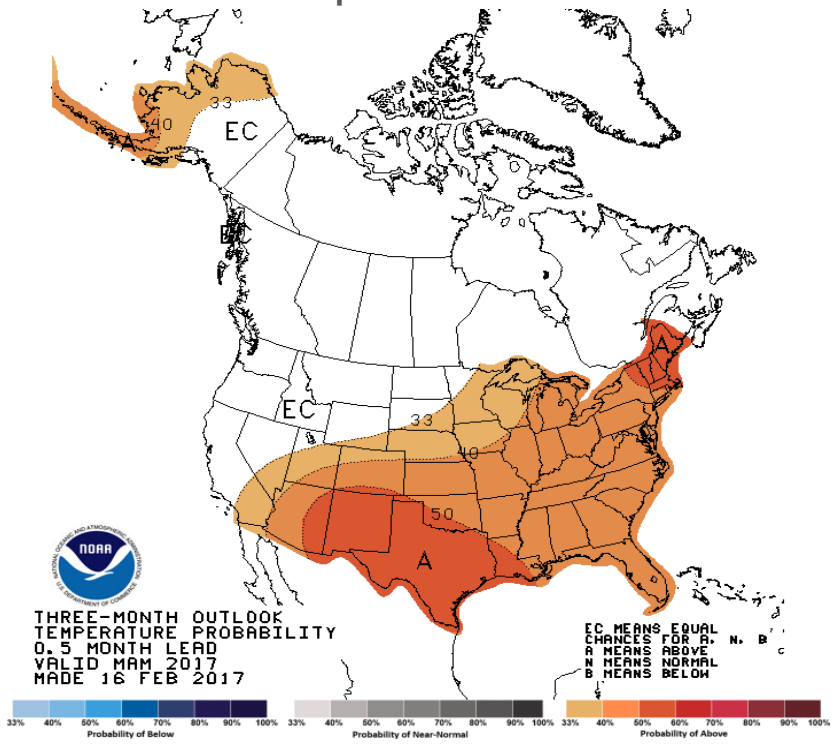
## March - May 2017

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

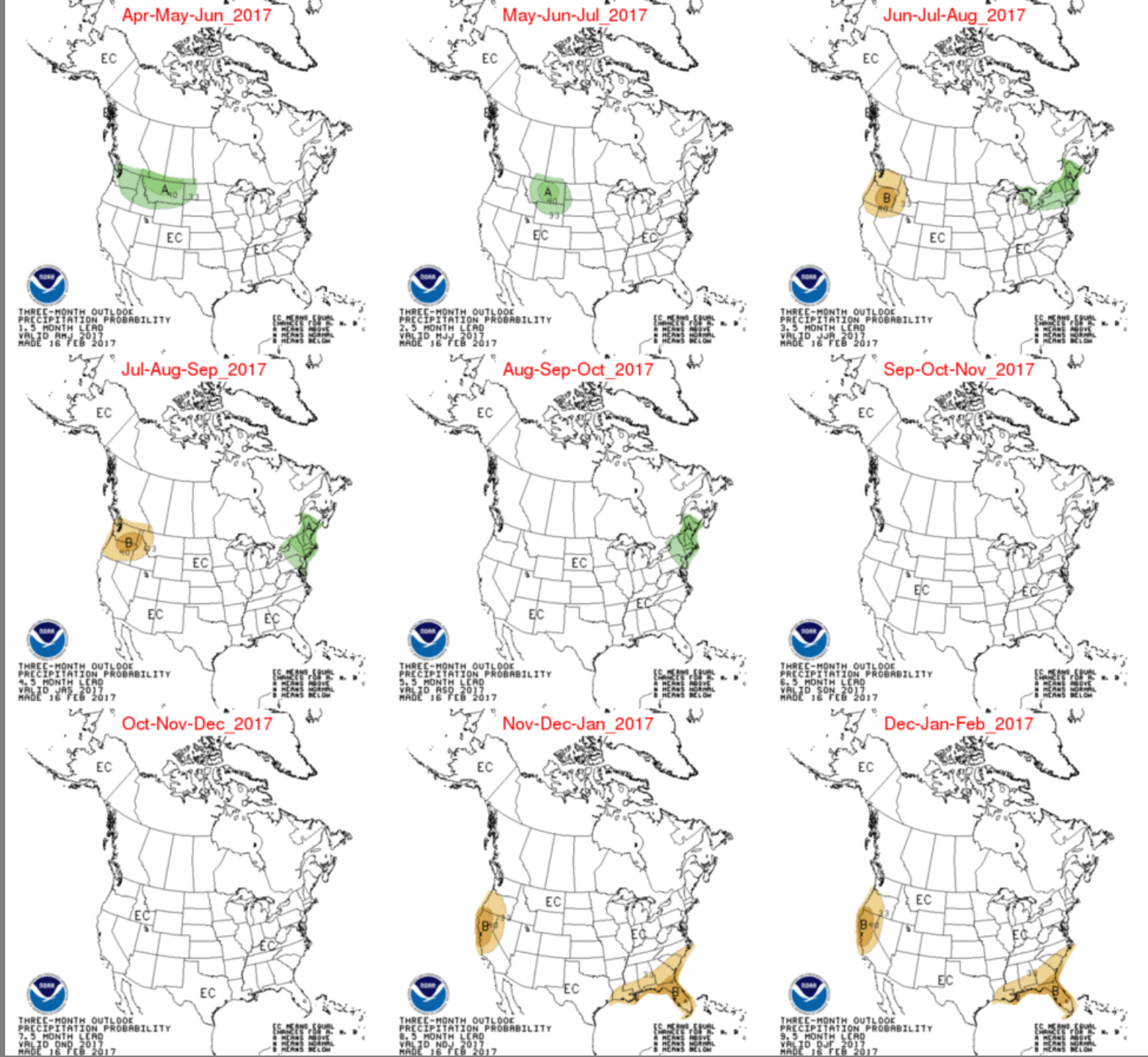
### Precipitation




### Temperature

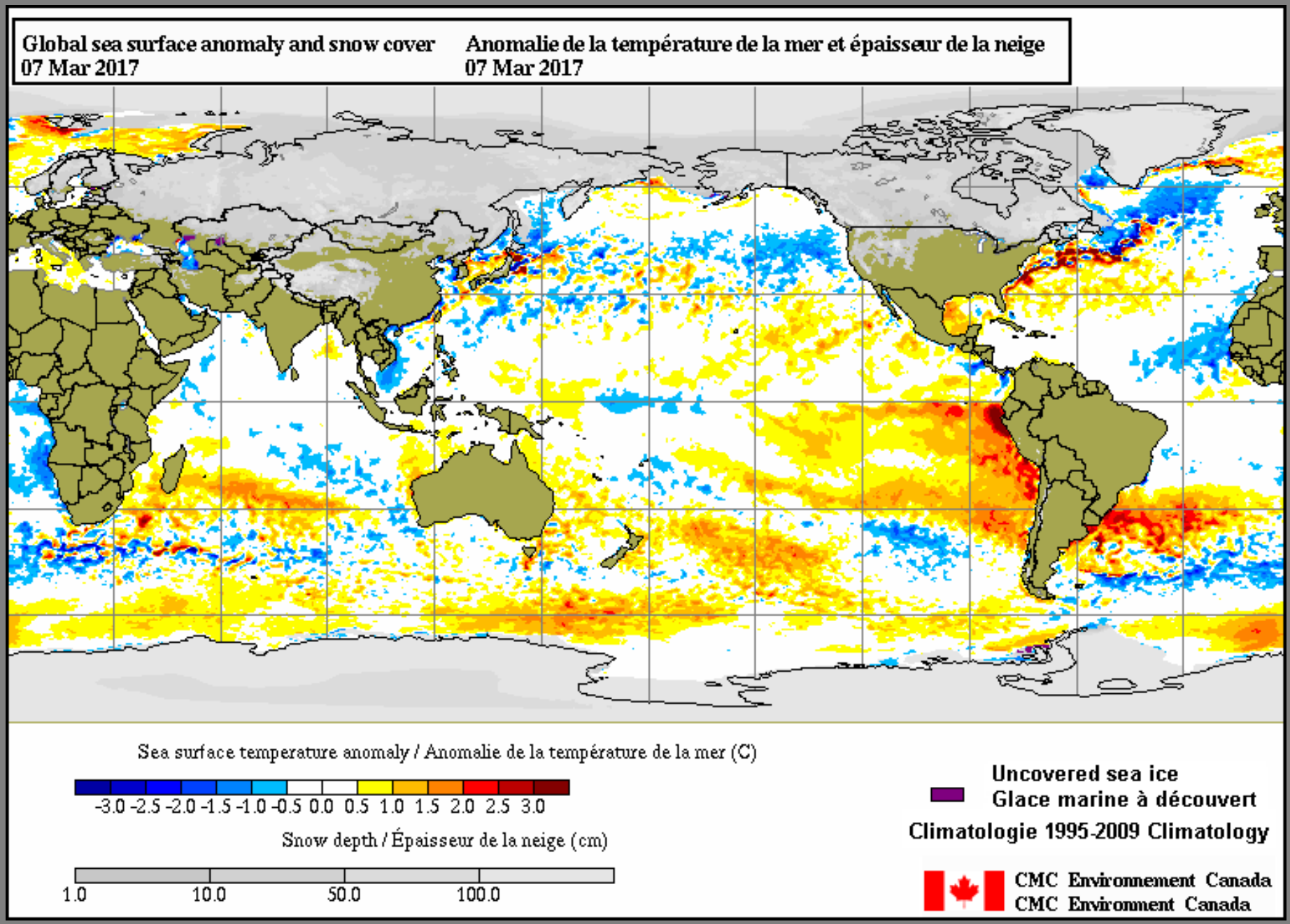



Prepared by: Climate Prediction Center / NCEP




Prepared by: Climate Prediction Center / NCEP

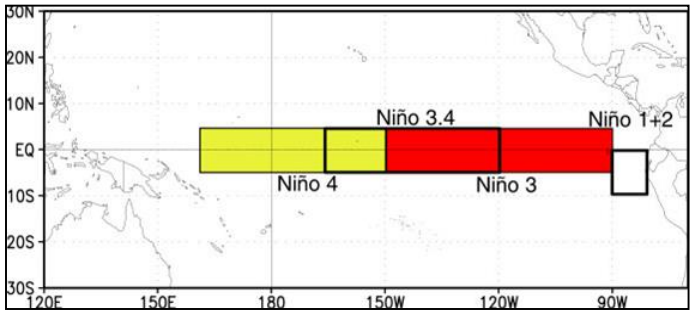
# Current Global Sea Surface Temperature Anomalies

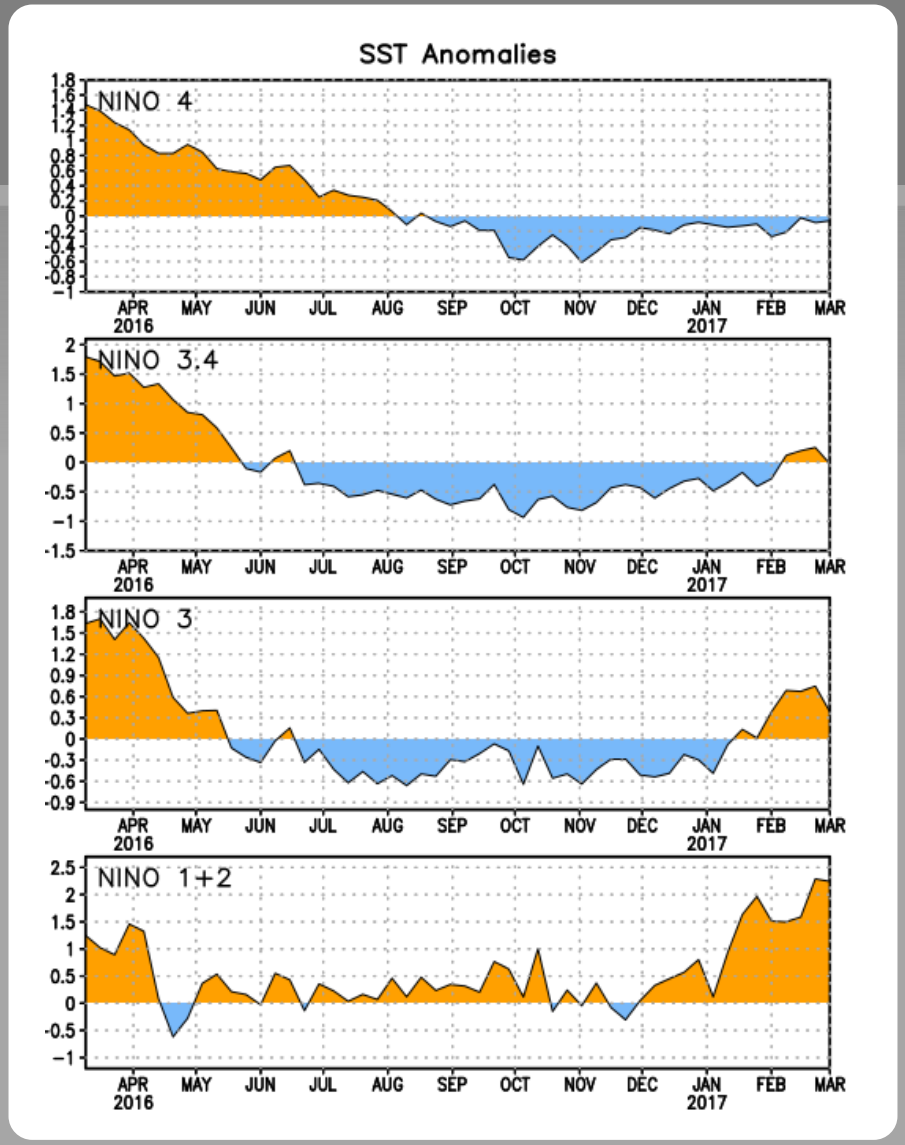


# Niño Region SST Departures (ºC) Recent Evolution

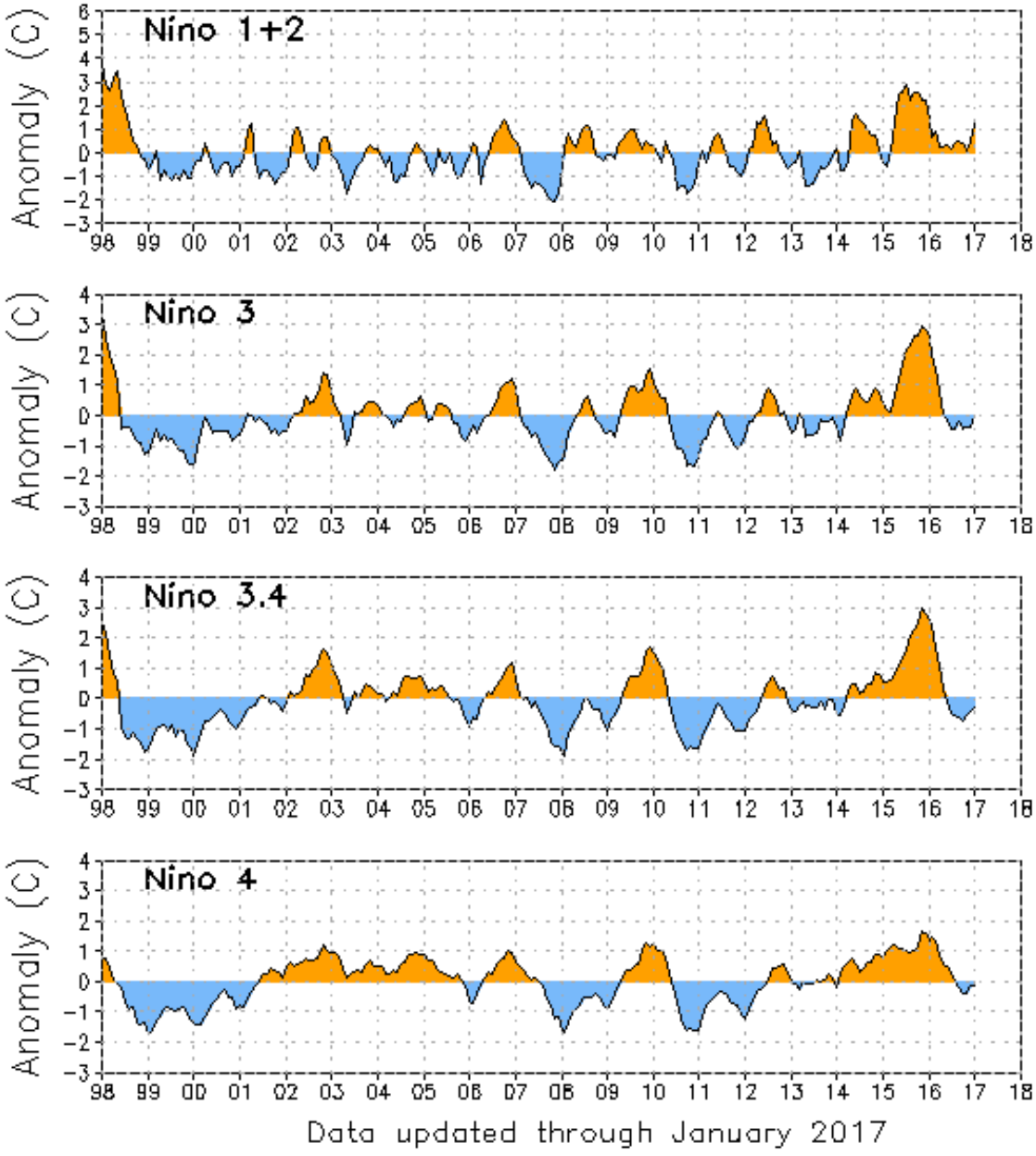
The latest weekly SST departures are:

| | |
|---|---|
| Niño 4 | -0.1ºC |
| Niño 3.4 | 0.0ºC |
| Niño 3 | 0.4ºC |
| Niño 1+2 | 2.2ºC |



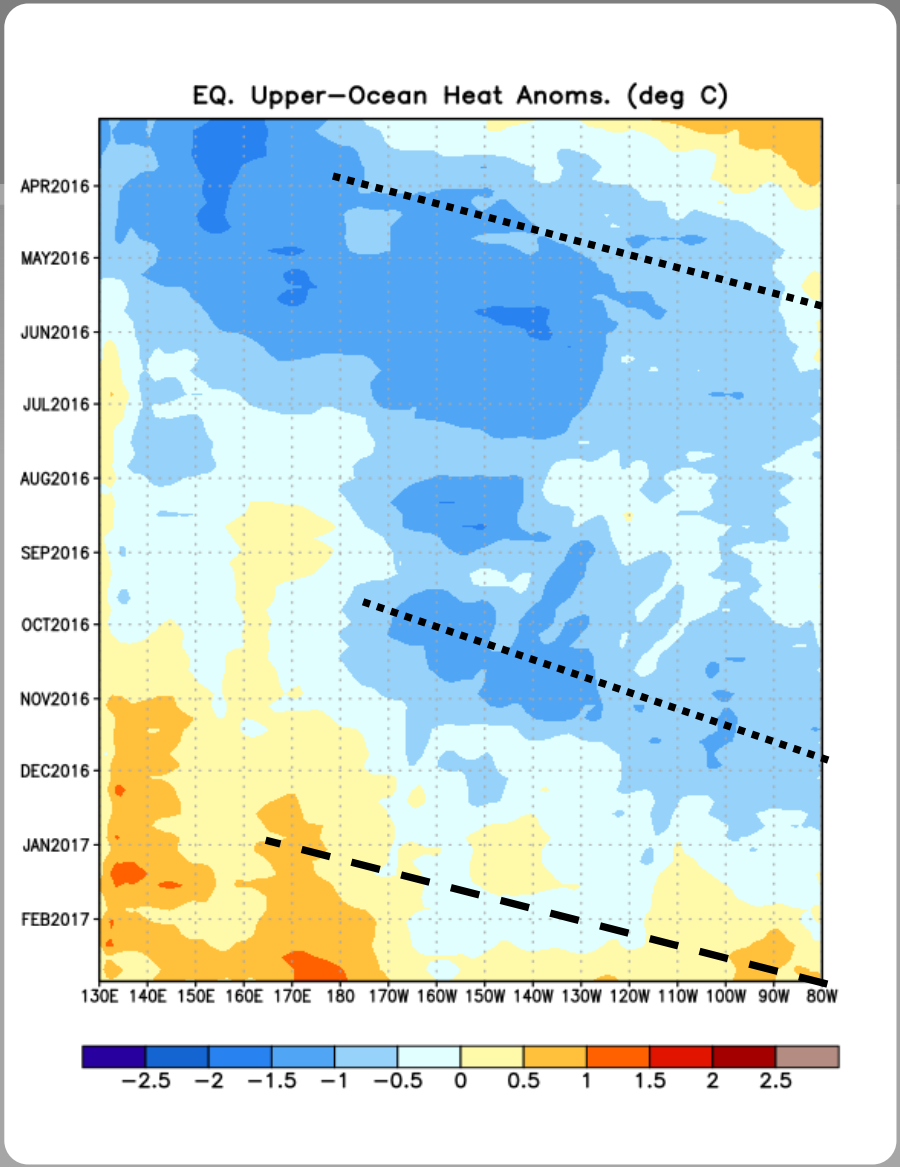

Prepared by: Climate Prediction Center / NCEP


Nino 1+2
Nino 3
Nino 3.4
Nino 4
Anomaly (C)
98 99 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18
Data updated through January 2017

# Weekly Heat Content Evolution in the Equatorial Pacific

With the passage of an upwelling equatorial oceanic Kelvin wave in March 2016, below-average subsurface temperatures extended across much of the equatorial Pacific.

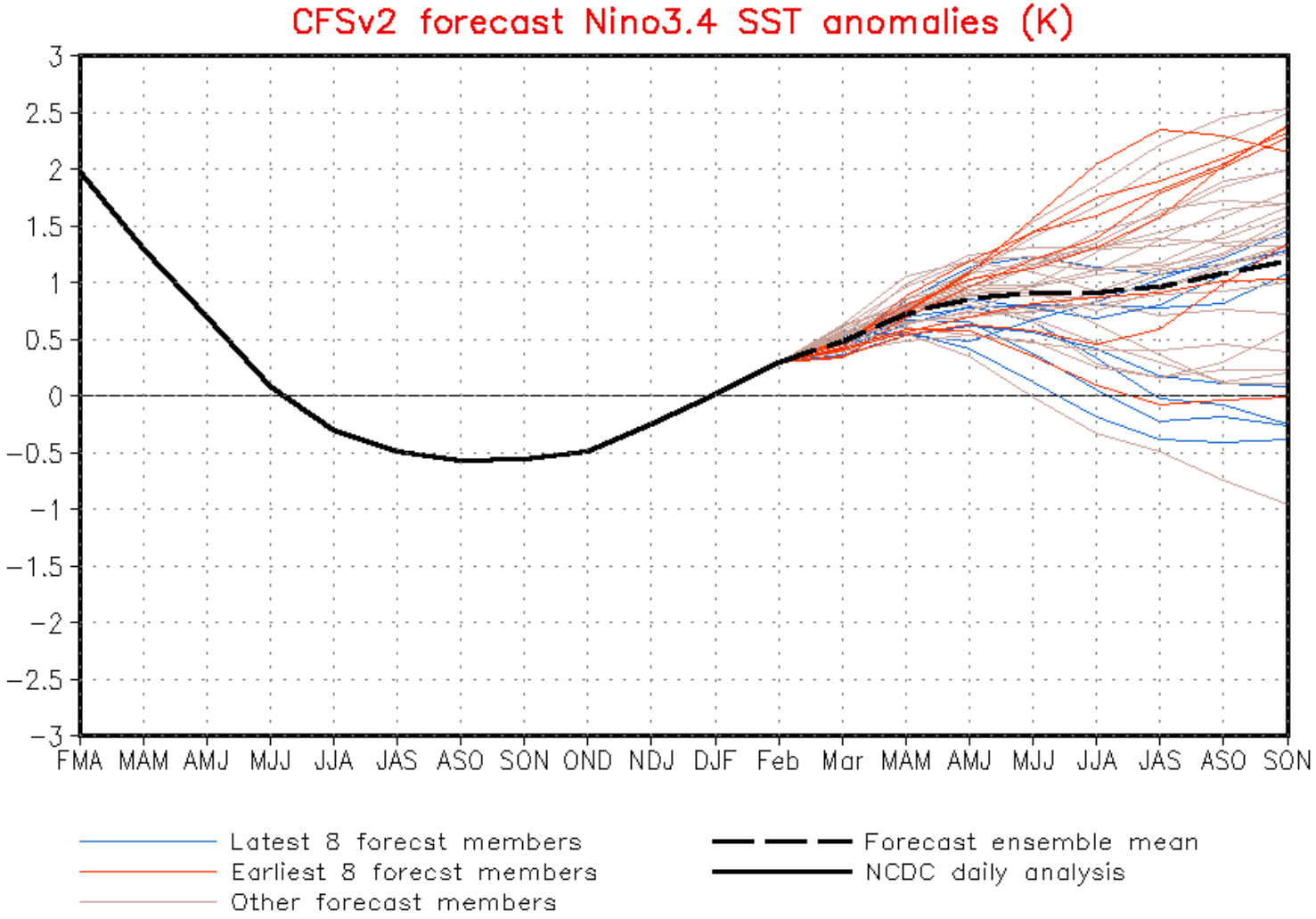
Since December 2016, weakly positive subsurface temperature anomalies have expanded into the eastern Pacific Ocean.




Equatorial oceanic Kelvin waves have alternating warm and cold phases. The warm phase is indicated by dashed lines. Down-welling and warming occur in the leading portion of a Kelvin wave, and up-welling and cooling occur in the trailing portion.

NWS/NCEP/CPC

Last update: Tue Mar 7 2017
Initial conditions: 24Feb2017–5Mar2017



# IRI/CPC Pacific Niño 3.4 SST Model Outlook

Dynamical models favor El Niño during the early Northern Hemisphere summer 2017, while Statistical models favor ENSO-neutral through the Northern Hemisphere autumn 2017.

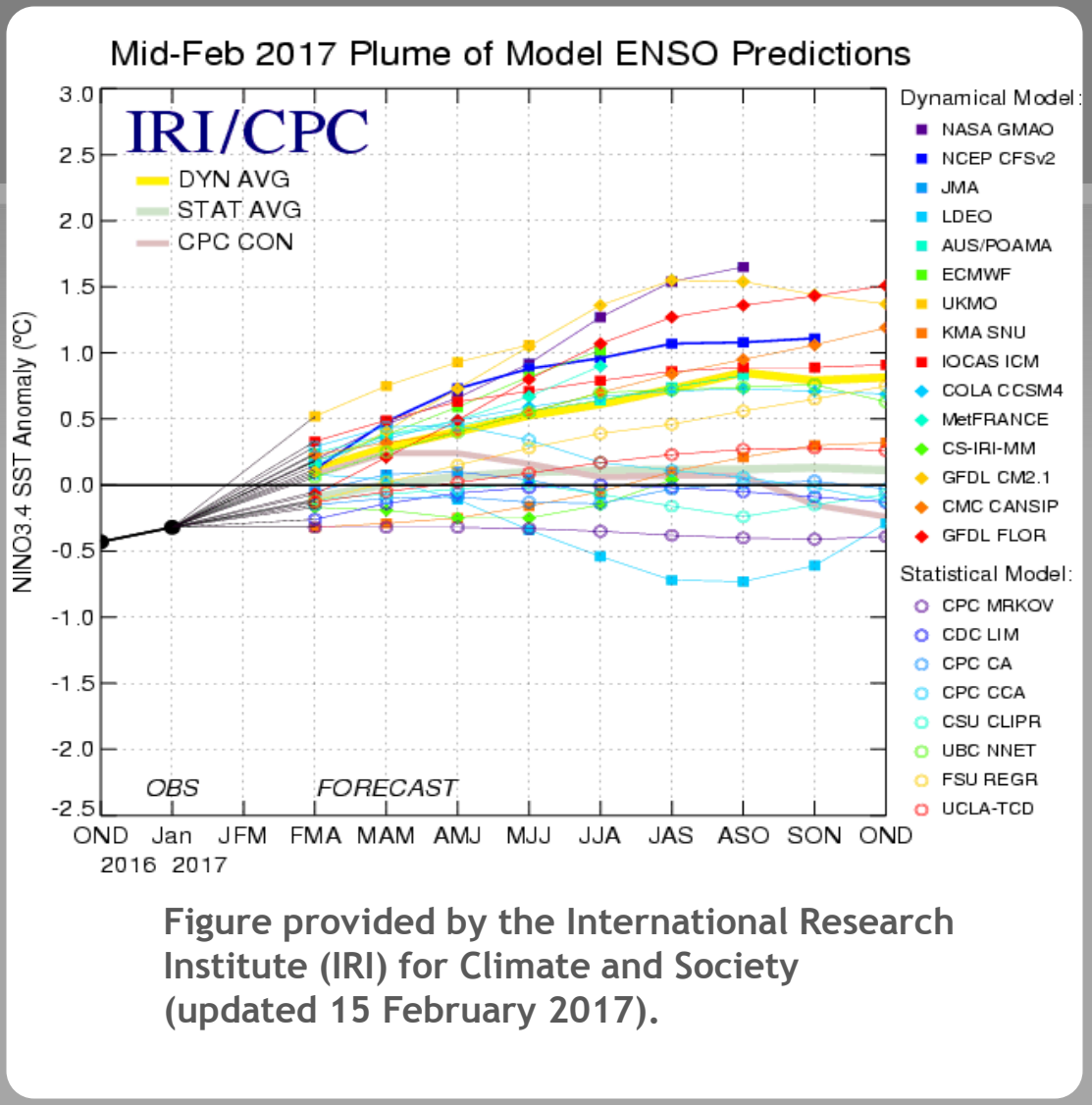



Figure provided by the International Research Institute (IRI) for Climate and Society (updated 15 February 2017).

Prepared by: Climate Prediction Center / NCEP

# Historical El Niño and La Niña Episodes Based on the ONI computed using ERSST.v4

Recent Pacific warm (red) and cold (blue) periods based on a threshold of +/- 0.5 °C for the Oceanic Nino Index (ONI) [3 month running mean of ERSST.v4 SST anomalies in the Nino 3.4 region (5N-5S, 120-170W)]. For historical purposes, periods of below and above normal SSTs are colored in blue and red when the threshold is met for a minimum of 5 consecutive over-lapping seasons.

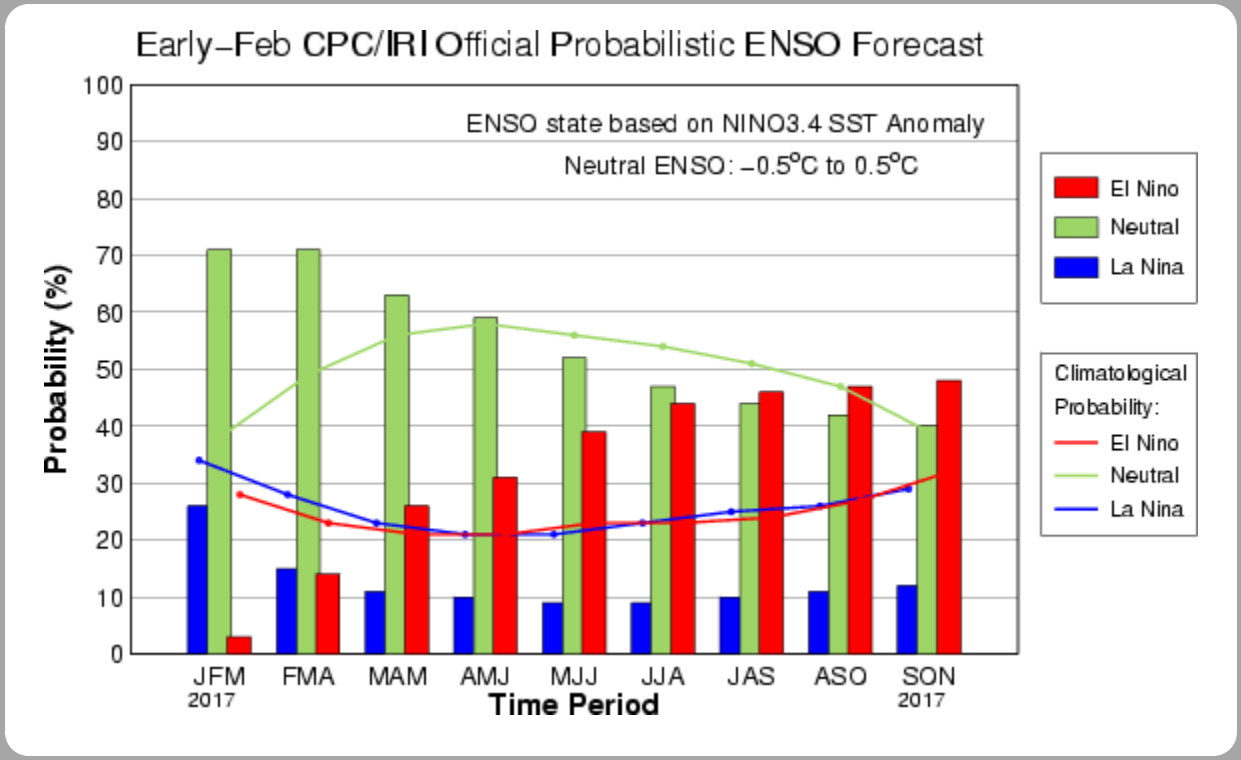
The ONI is one measure of the El Niño-Southern Oscillation, and other indices can confirm whether features consistent with a coupled ocean-atmosphere phenomenon accompanied these periods. The complete table going back to DJF 1950 can be found here.

| Year | DJF | JFM | FMA | MAM | AMJ | MJJ | JJA | JAS | ASO | SON | OND | NDJ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 | 0.7 | 0.6 | 0.5 | 0.5 | 0.3 | 0.2 | 0.0 | -0.1 | 0.0 | -0.2 | -0.5 | -0.7 |
| 2006 | -0.7 | -0.6 | -0.4 | -0.2 | 0.0 | 0.0 | 0.1 | 0.3 | 0.5 | 0.7 | 0.9 | 0.9 |
| 2007 | 0.7 | 0.4 | 0.1 | -0.1 | -0.2 | -0.3 | -0.4 | -0.6 | -0.9 | -1.1 | -1.3 | -1.3 |
| 2008 | -1.4 | -1.3 | -1.1 | -0.9 | -0.7 | -0.5 | -0.4 | -0.3 | -0.3 | -0.4 | -0.6 | -0.7 |
| 2009 | -0.7 | -0.6 | -0.4 | -0.1 | 0.2 | 0.4 | 0.5 | 0.5 | 0.6 | 0.9 | 1.1 | 1.3 |
| 2010 | 1.3 | 1.2 | 0.9 | 0.5 | 0.0 | -0.4 | -0.9 | -1.2 | -1.4 | -1.5 | -1.4 | -1.4 |
| 2011 | -1.3 | -1.0 | -0.7 | -0.5 | -0.4 | -0.3 | -0.3 | -0.6 | -0.8 | -0.9 | -1.0 | -0.9 |
| 2012 | -0.7 | -0.5 | -0.4 | -0.4 | -0.3 | -0.1 | 0.1 | 0.3 | 0.3 | 0.3 | 0.1 | -0.2 |
| 2013 | -0.4 | -0.4 | -0.3 | -0.2 | -0.2 | -0.2 | -0.3 | -0.3 | -0.2 | -0.3 | -0.3 | -0.3 |
| 2014 | -0.5 | -0.5 | -0.4 | -0.2 | -0.1 | 0.0 | -0.1 | 0.0 | 0.1 | 0.4 | 0.5 | 0.6 |
| 2015 | 0.6 | 0.5 | 0.6 | 0.7 | 0.8 | 1.0 | 1.2 | 1.4 | 1.7 | 2.0 | 2.2 | 2.3 |
| 2016 | 2.2 | 2.0 | 1.6 | 1.1 | 0.6 | 0.1 | -0.3 | -0.6 | -0.8 | -0.8 | -0.8 | -0.7 |
| 2017 | -0.4 | | | | | | | | | | | |

# CPC/IRI Probabilistic ENSO Outlook

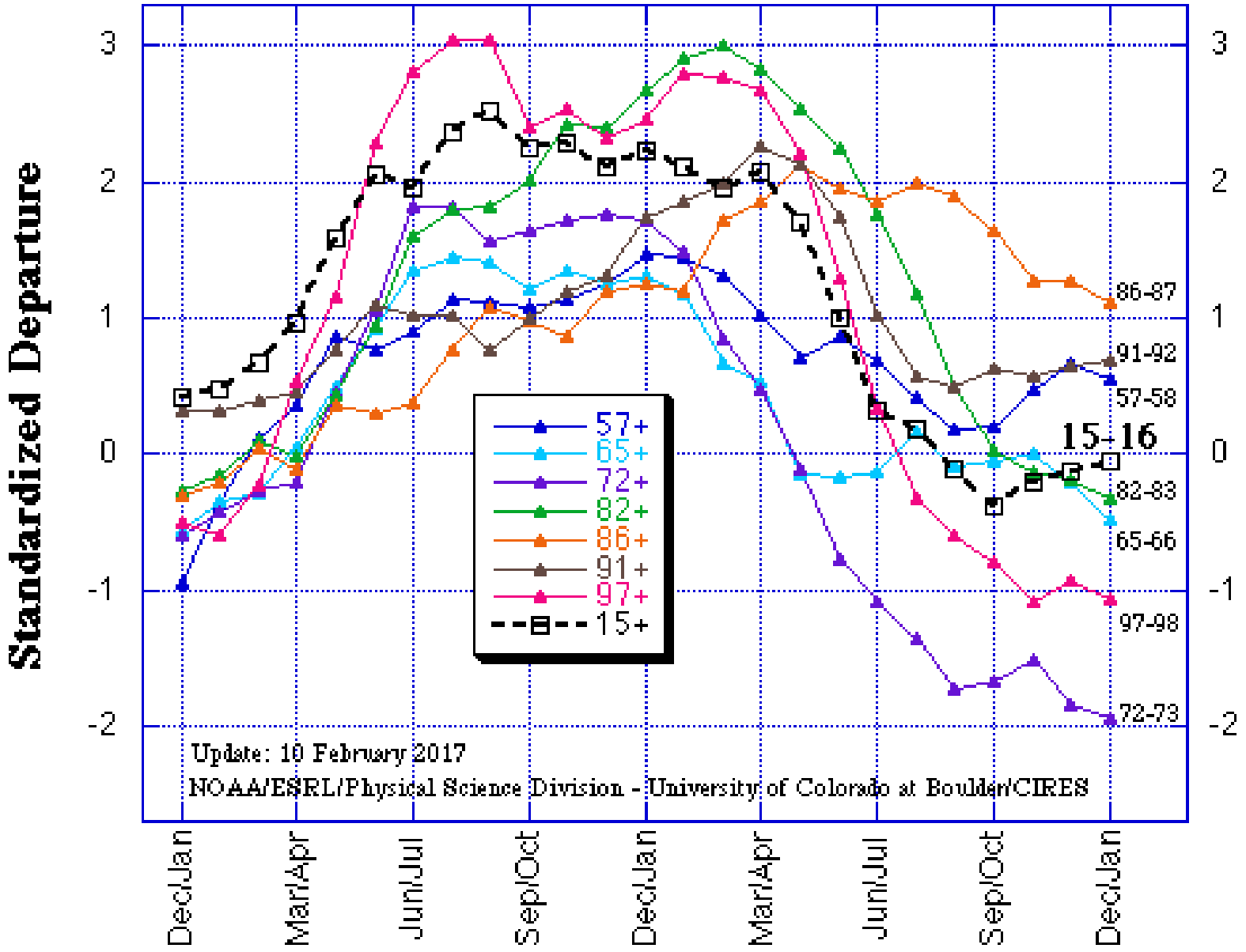
## Updated: 9 February 2017

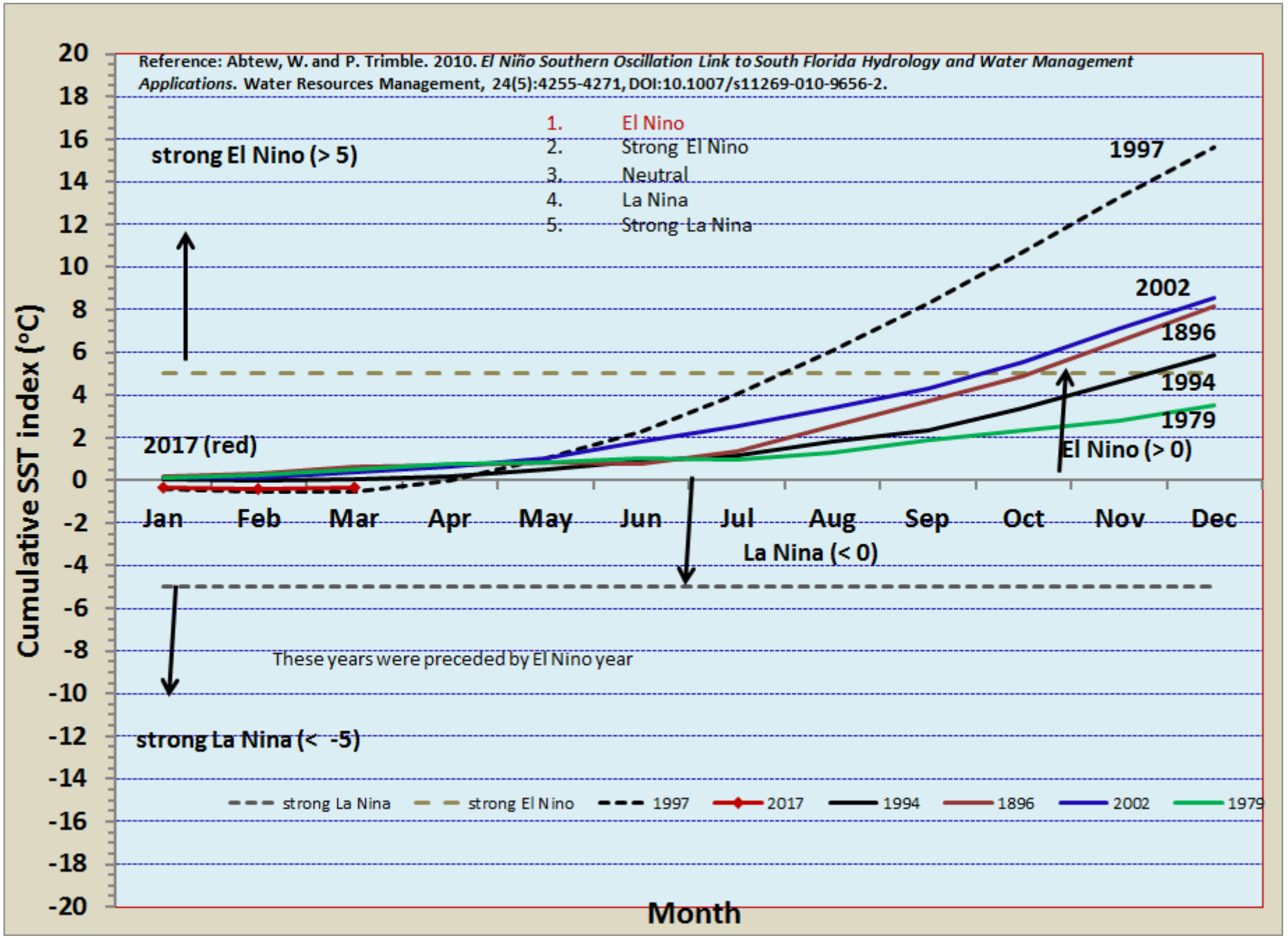
**ENSO-neutral is favored through mid-2017, with a slight tilt toward El Niño (~50%) by September-October-November (SON) 2017.**



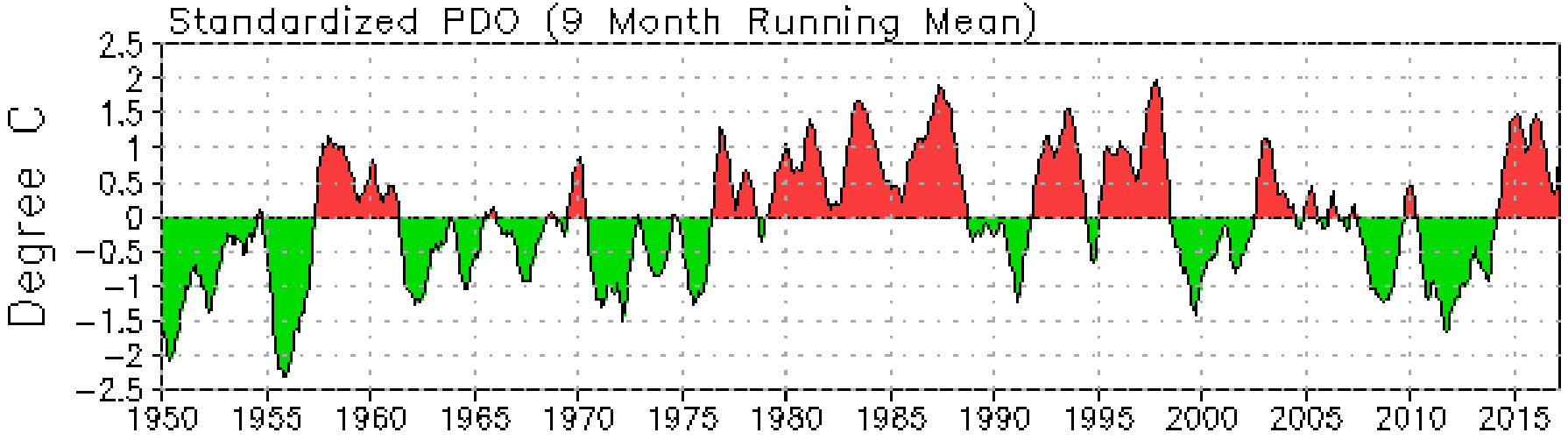

Prepared by: Climate Prediction Center / IRI

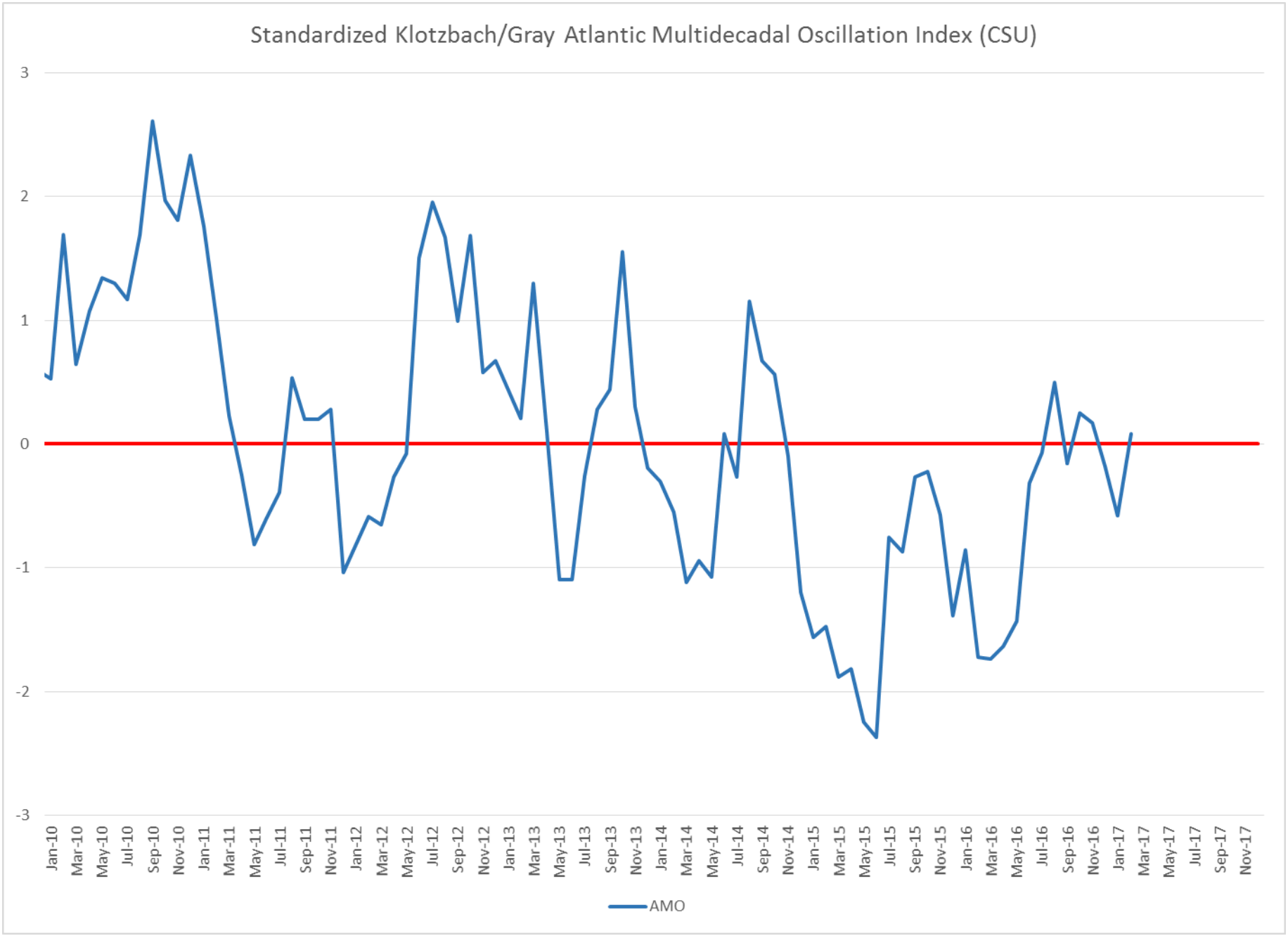
# Multivariate ENSO Index (MEI) for the seven strongest El Niño events since 1950 vs. 2015-16






Source: Wossenu Abtew (SFWMD)


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


Standardized Klotzbach/Gray Atlantic Multidecadal Oscillation Index (CSU)
3
2
1
0
-1
-2
-3
Jan-10
Mar-10
May-10
Jul-10
Sep-10
Nov-10
Jan-11
Mar-11
May-11
Jul-11
Sep-11
Nov-11
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15
May-15
Jul-15
Sep-15
Nov-15
Jan-16
Mar-16
May-16
Jul-16
Sep-16
Nov-16
Jan-17
Mar-17
May-17
Jul-17
Sep-17
Nov-17
AMO