Climate Conditions and Outlook for December 2017 - February 2018

Northeast Monthly Climate Update

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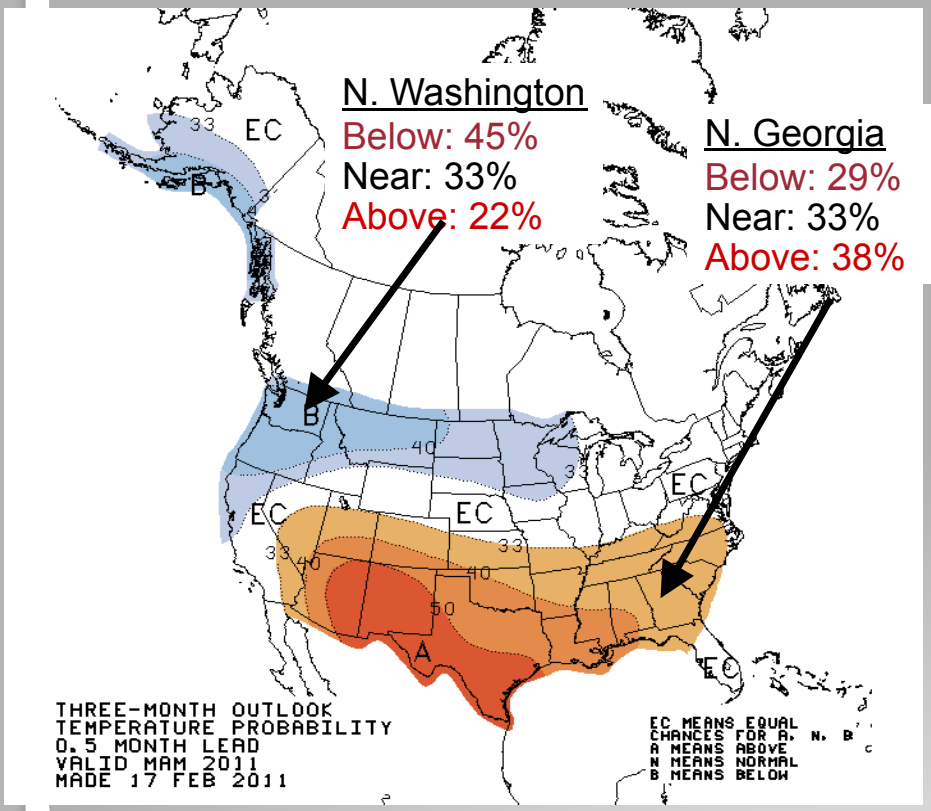
31 October 2017

Outlook Categories and Probabilities

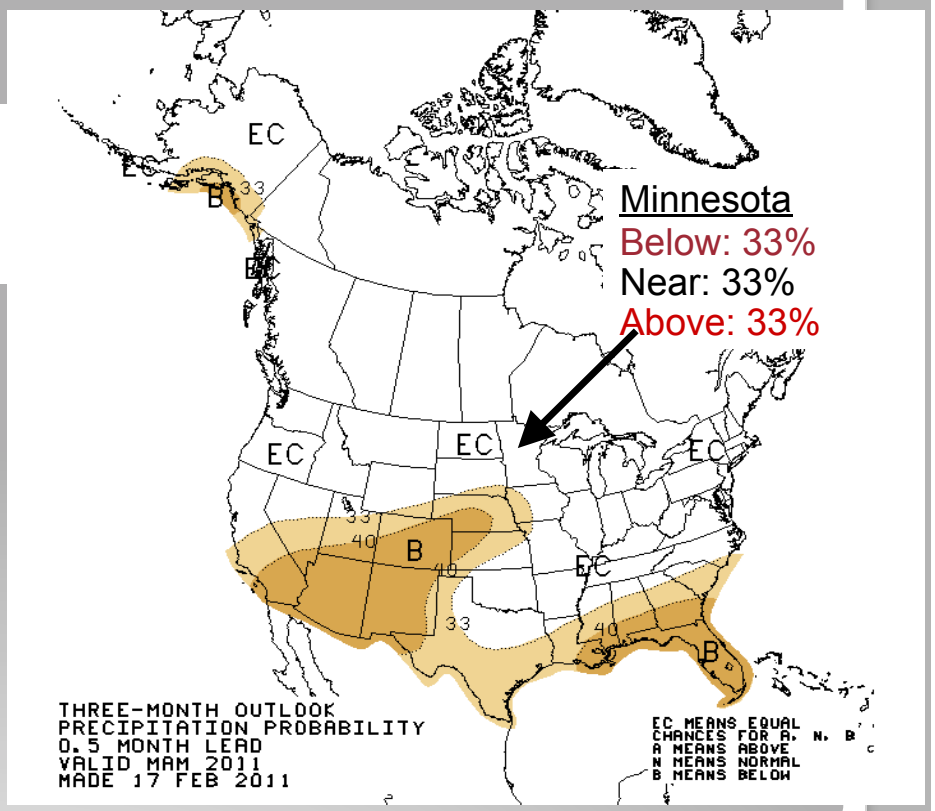
- Seasonal outlooks are prepared for average temperature and total accumulated precipitation category
- Three categories are used (terciles). These are BELOW-,NEAR- and ABOVE-normal (median), for temperature (precipitation).
- Regions where the likelihoods of the three categories are the same (33.33…% each) are designated as “EC”, for equal chances.
- In non-EC regions the labels on the contours give the probability of the dominant category.

U. S. Seasonal Outlooks Interpretation

Temperature



Precipitation



About the Seasonal Outlook

- Each month, near mid-month CPC prepares a set of 13 outlooks for 3-month "seasons" (any set of 3 adjacent months) for lead times ranging from ½ month, 1 ½ months, 2 ½ months, 3 ½ months, …, 12 ½ months.

  Final Winter Outlook: November 16

- The outlook for each successive/prior lead time overlaps the prior/successive one by 2 months. This overlap makes for a smooth variation from one map to the next.

Summary

ENSO Alert System Status: La Niña Watch

ENSO-Neutral conditions are present.*

Equatorial sea surface temperatures (SSTs) are near-to-below average across the central and eastern Pacific Ocean.

La Niña conditions are favored (~55%-65%) during the Northern Hemisphere fall and winter 2017-18.*

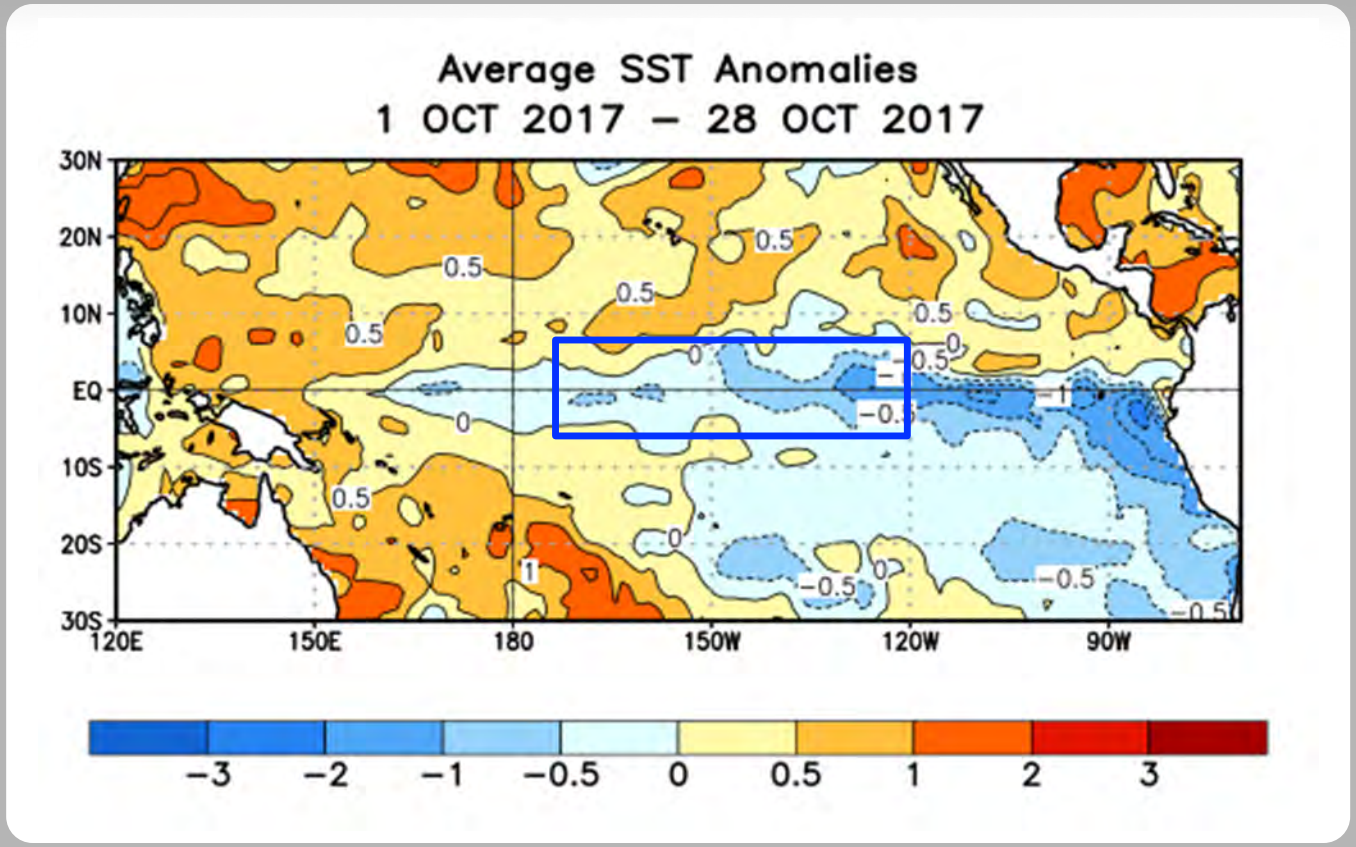
ENSO Diagnostics Discussion http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.html

ENSO Blog http://www.climate.gov/news-features/department/enso-blog

* Note: These statements are updated once a month (2nd Thursday of each month) in association with the ENSO Diagnostics Discussion, which can be found by clicking here.

SST Departures (°C) in the Tropical Pacific During the Last Four Weeks

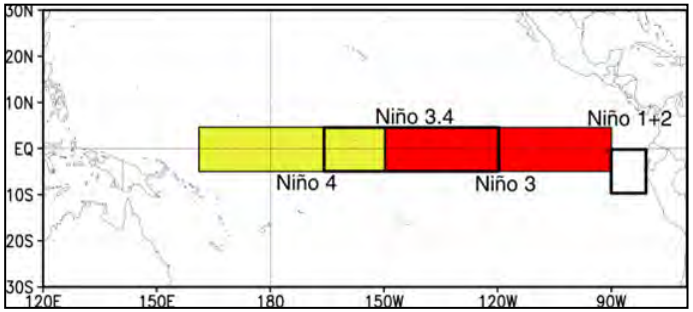
During the last four weeks, equatorial SSTs were below average across the eastern Pacific Ocean, and above average in the far western Pacific.

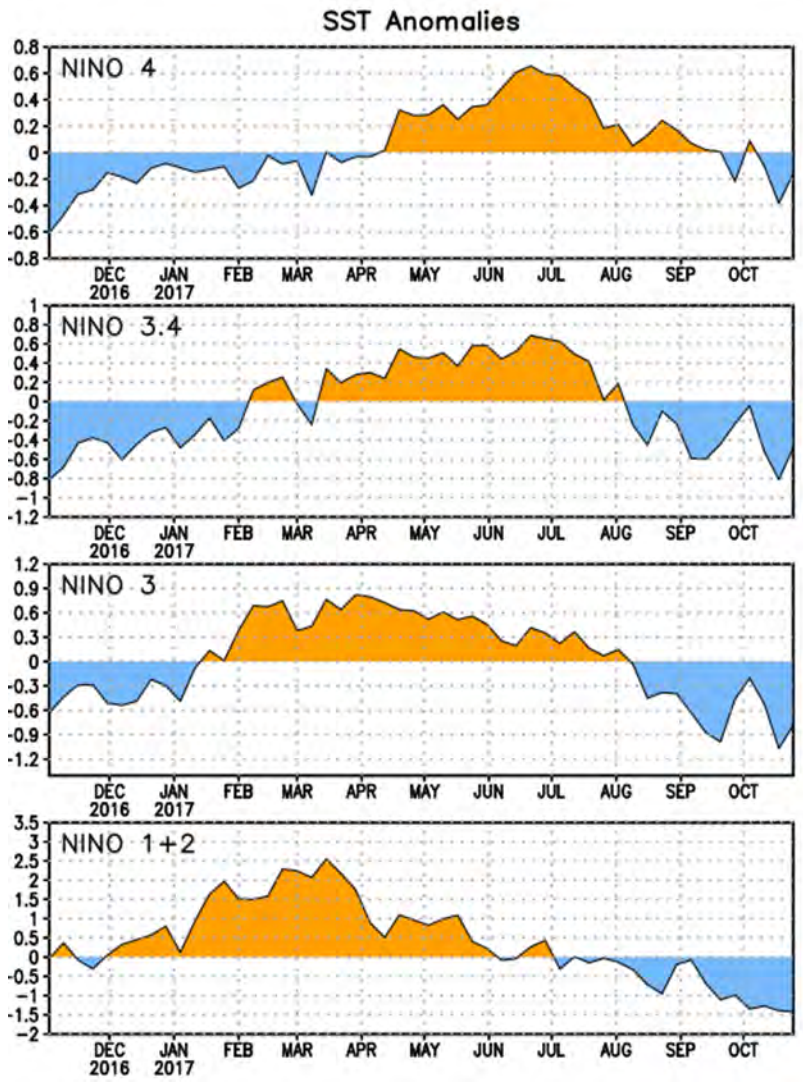


Niño Region SST Departures (ºC) Recent Evolution

The latest weekly SST departures are:

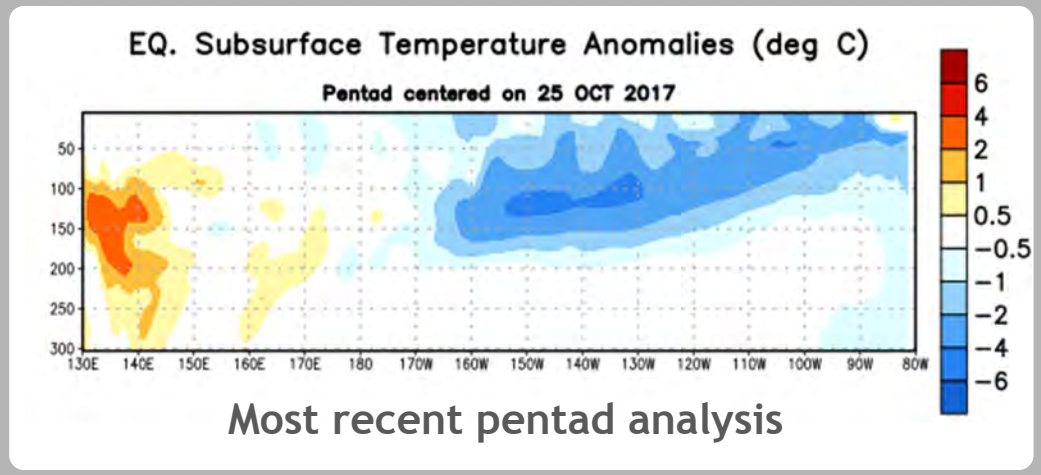
Niño 4	-0.2ºC
Niño 3.4	-0.5ºC
Niño 3	-0.8ºC
Niño 1+2	-1.4ºC





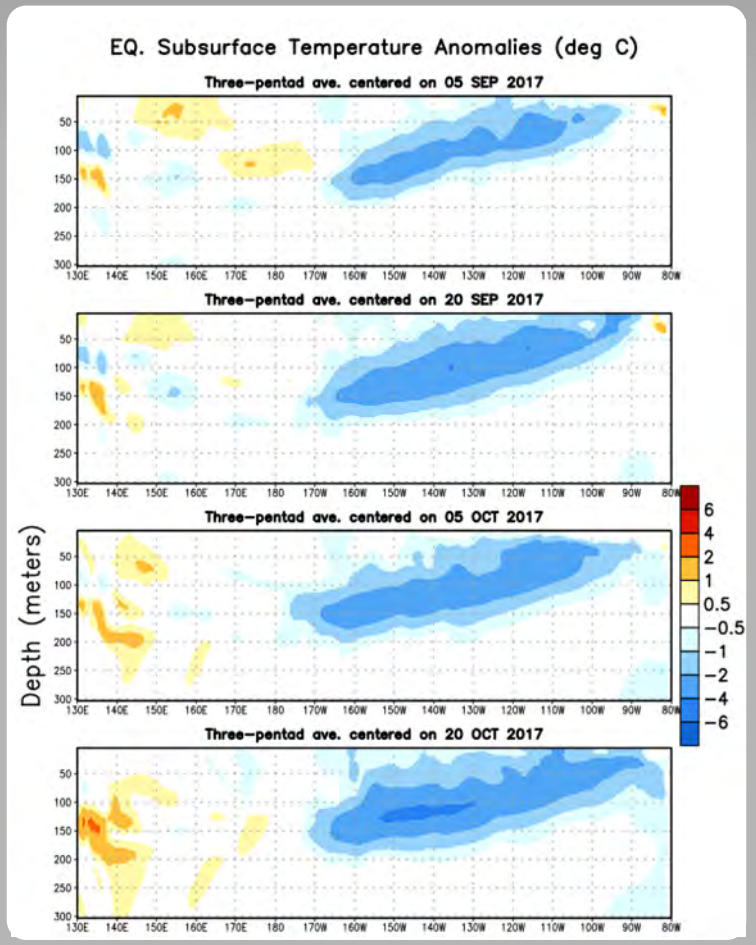
Sub-Surface Temperature Departures in the Equatorial Pacific

In the last two months, negative subsurface temperature anomalies have expanded across the Pacific Ocean.



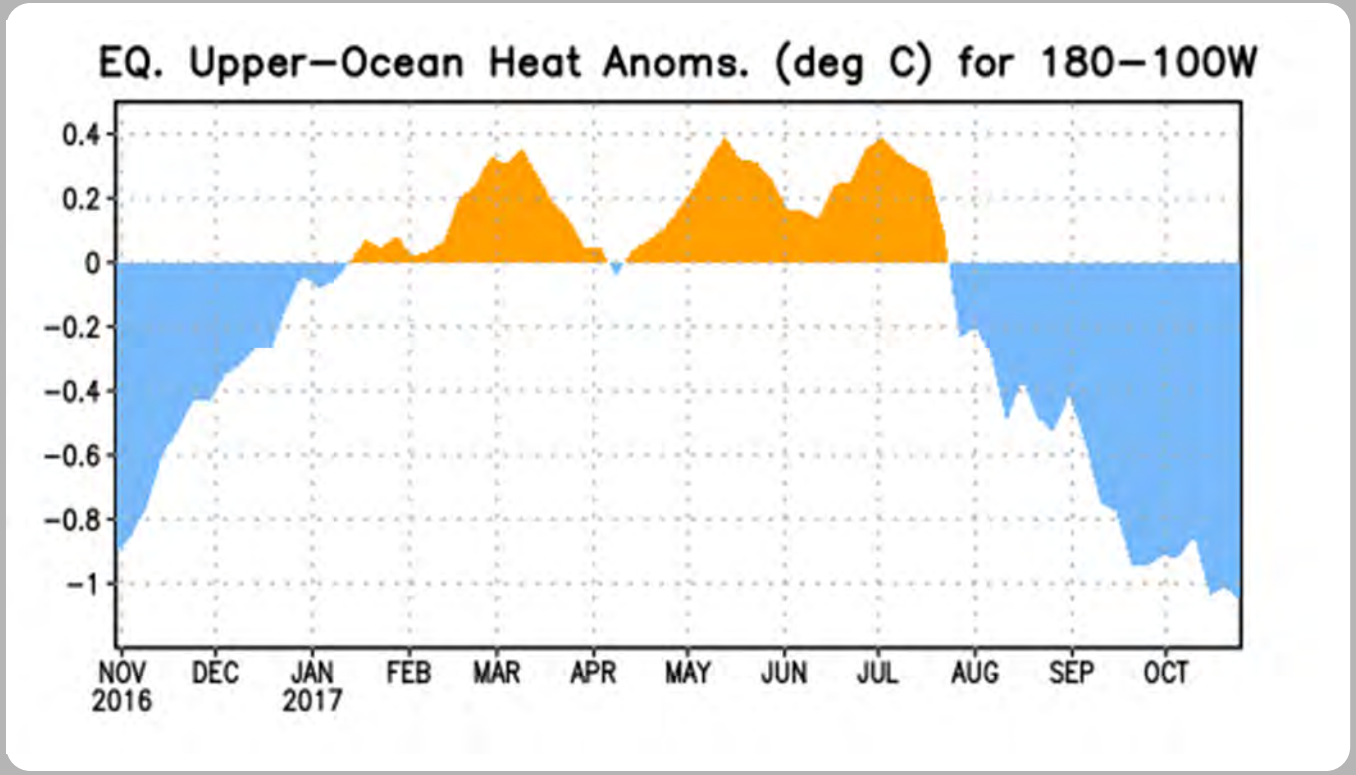
Most recent pentad analysis

Recently, the strongest negative anomalies are between 170°W-80°W.



Central and Eastern Pacific Upper-Ocean (0-300 m) Weekly Average Temperature Anomalies

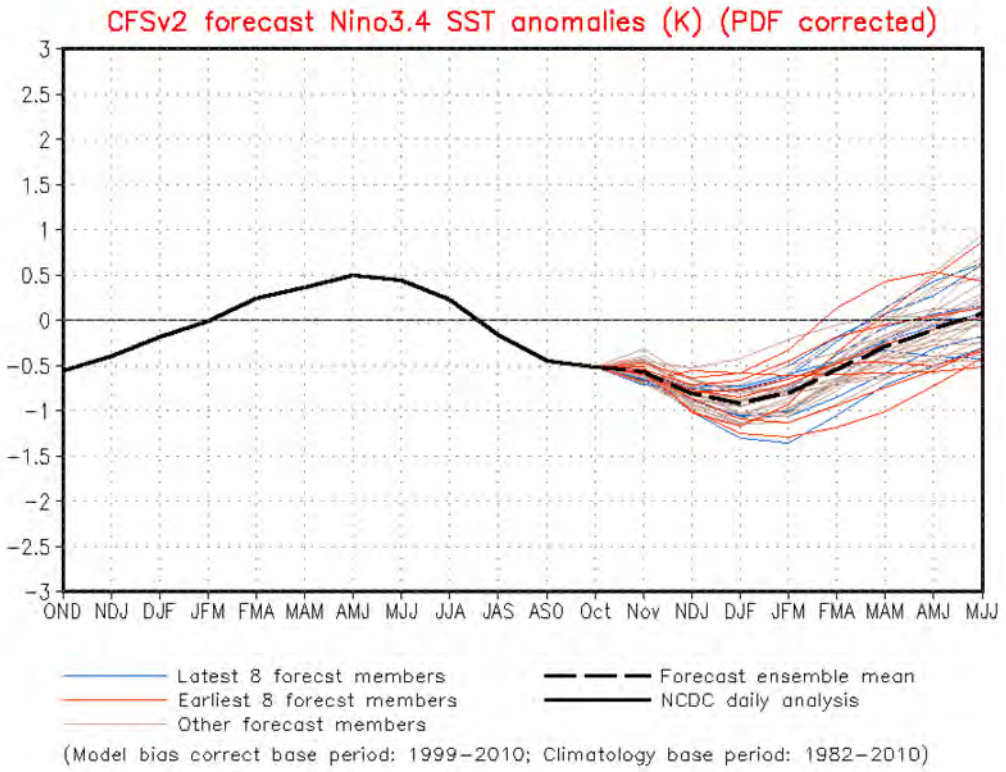
Negative subsurface temperature anomalies were present through December 2016. Positive anomalies were present from mid-January through March 2017 before weakening to near zero. Starting in mid-April and mid-June, positive anomalies strengthened before tapering off again. Since mid-July, anomalies have decreased and are negative.

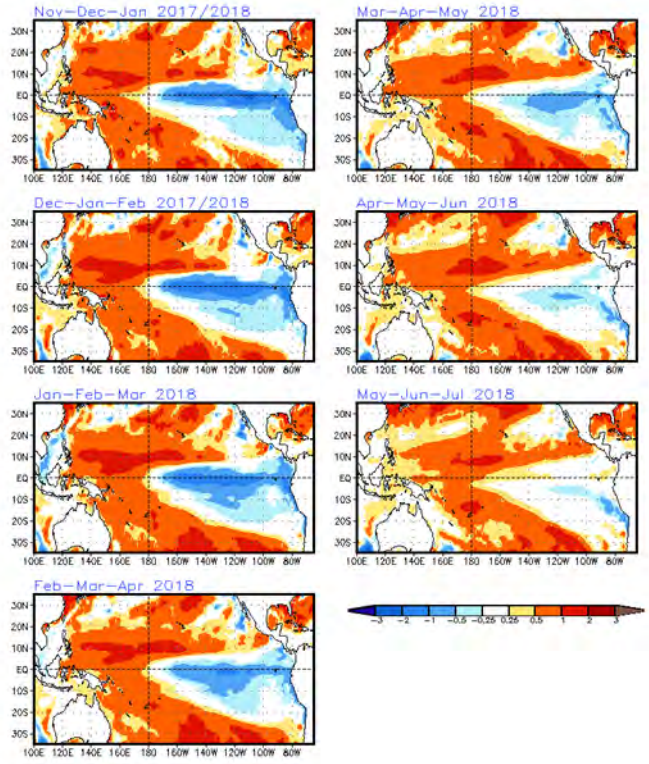


SST Outlook: NCEP CFS.v2 Forecast (PDF corrected)

Issued: 30 October 2017

The CFS.v2 ensemble mean (black dashed line) favors La Niña during the Northern Hemisphere fall and winter 2017-18.

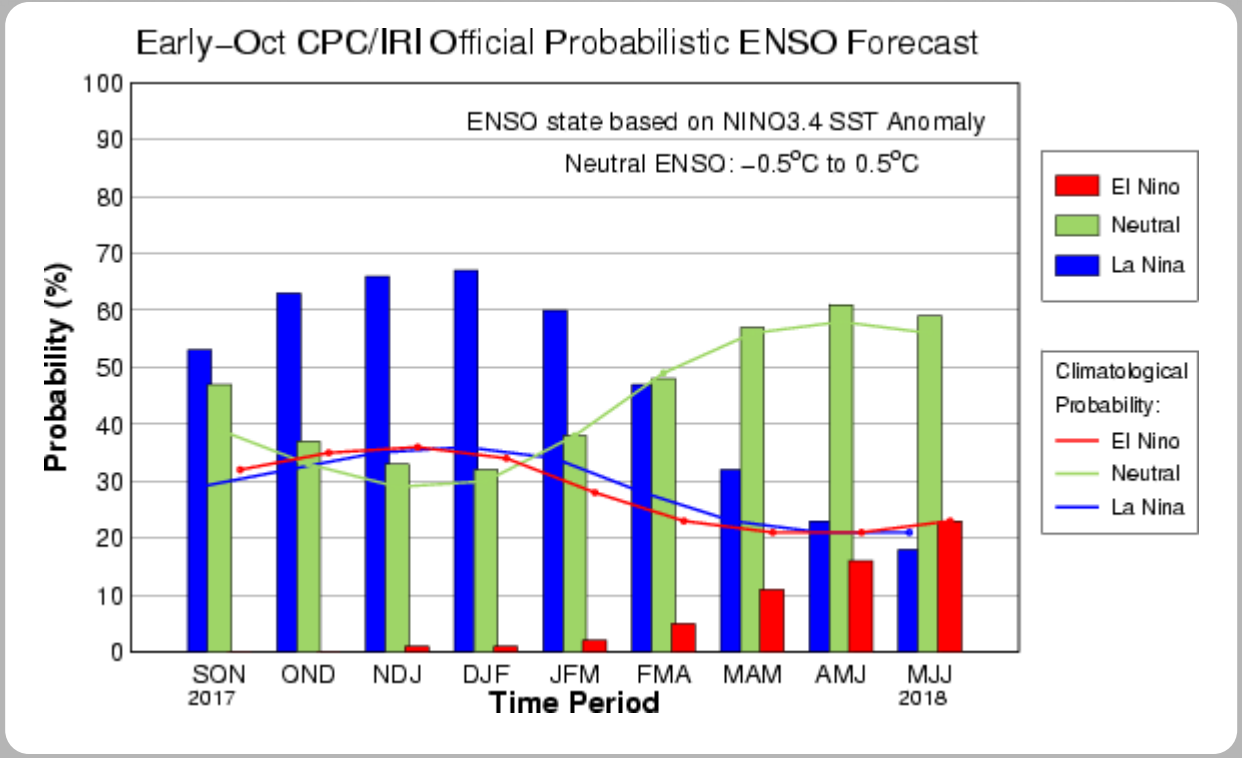




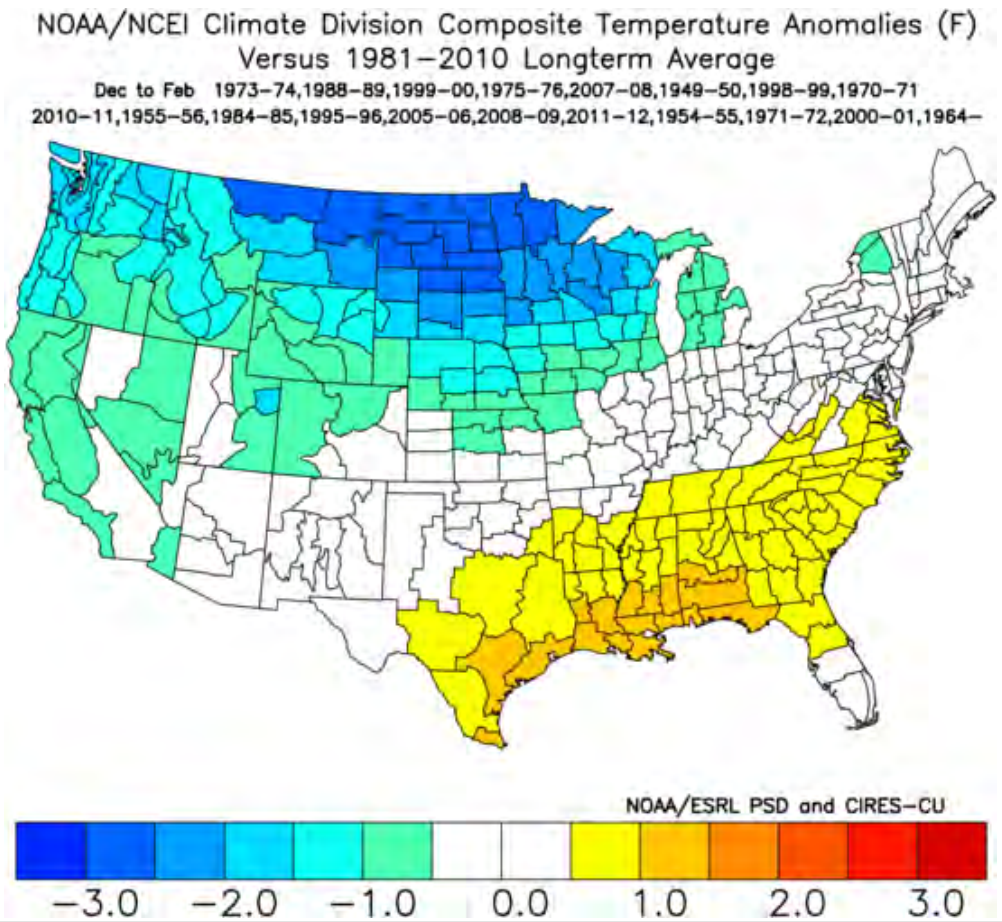
CPC/IRI Probabilistic ENSO Outlook

Updated: 12 October 2017

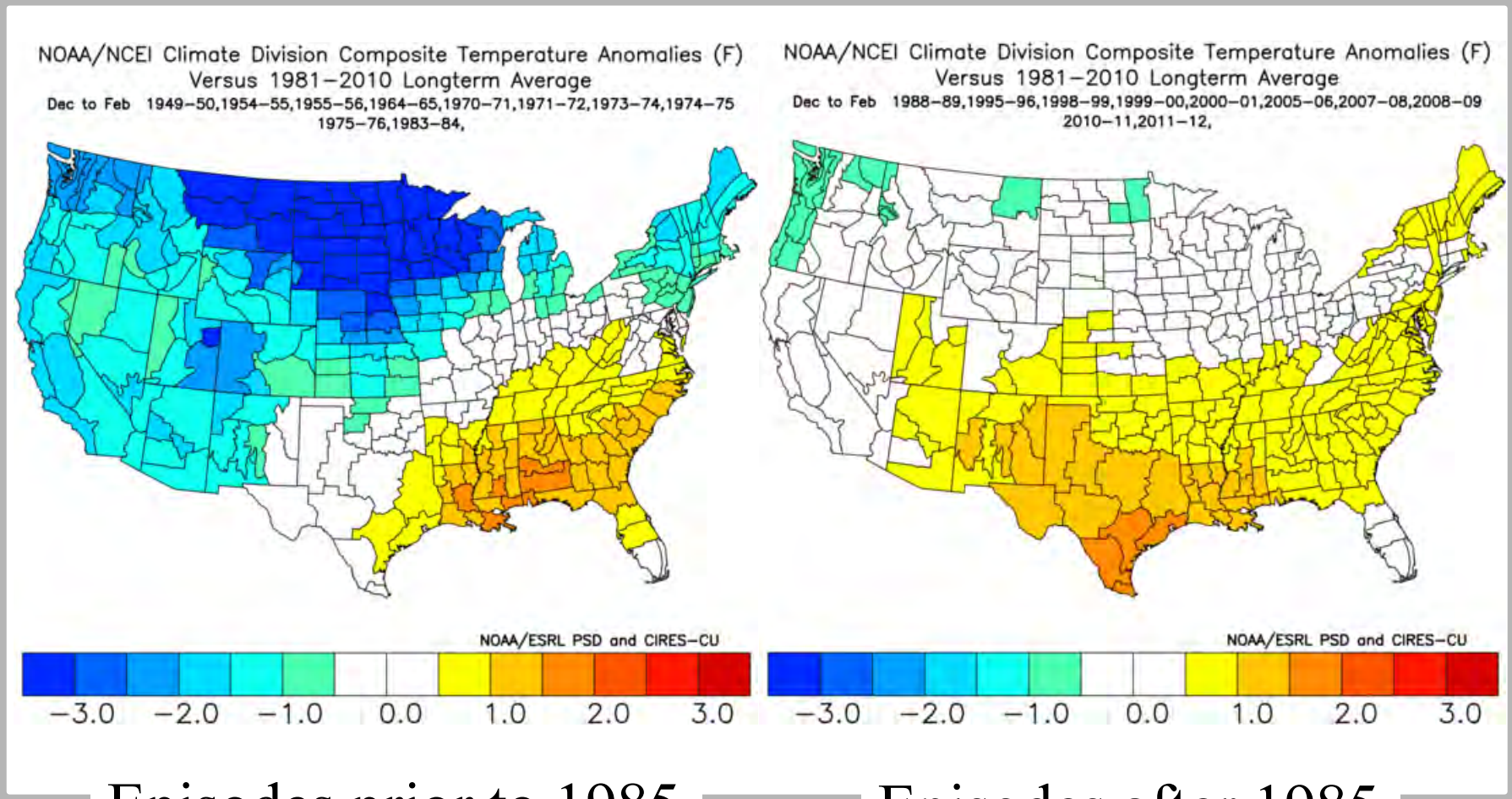
La Niña is favored (~55%-65%) during the Northern Hemisphere fall and winter 2017-18.



Temperature anomalies during La Niña Episodes
21 Member Composite



Temperature anomalies during La Niña Episodes

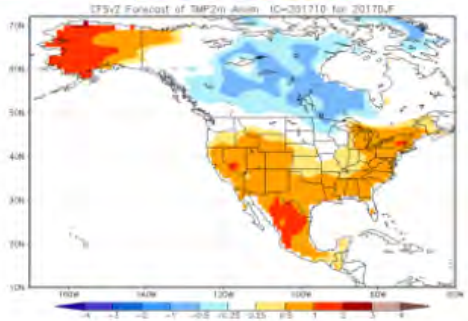


Episodes prior to 1985

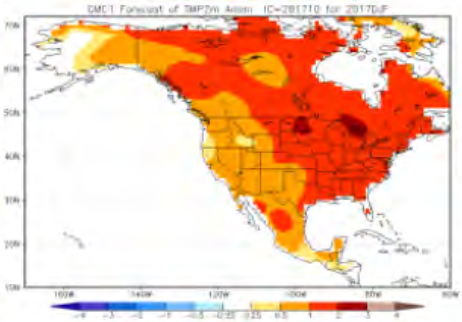
Episodes after 1985

Individual NMME Model Forecasts DJF

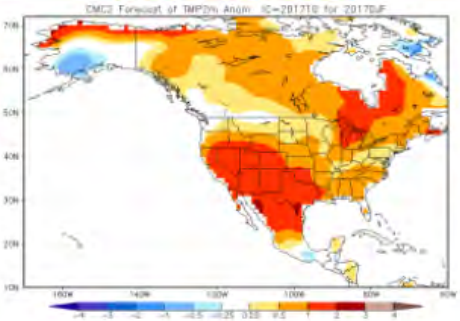
NCEP CFSv2



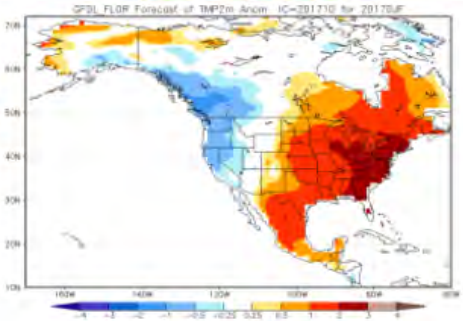
CMC1 CanCM3



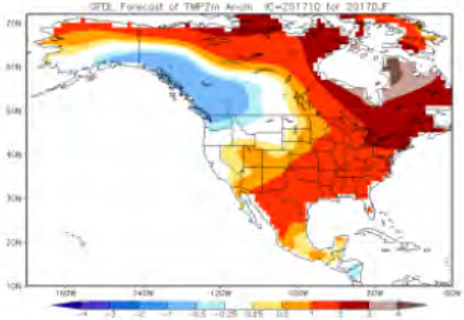
CMC2 CanCM4



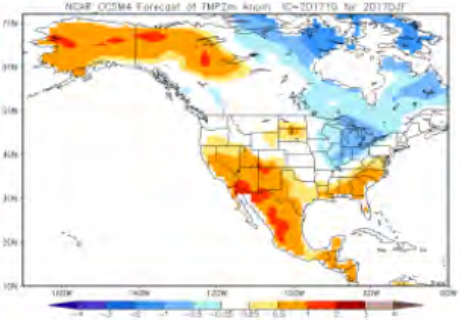
GFDL FLOR



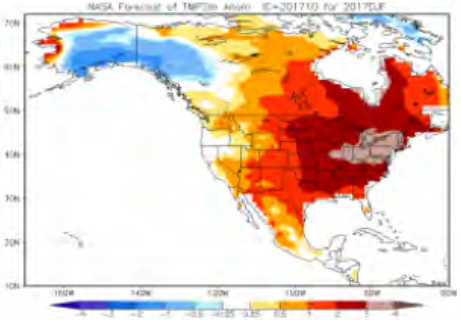
GFDL CM2.1



NCAR CCSM4



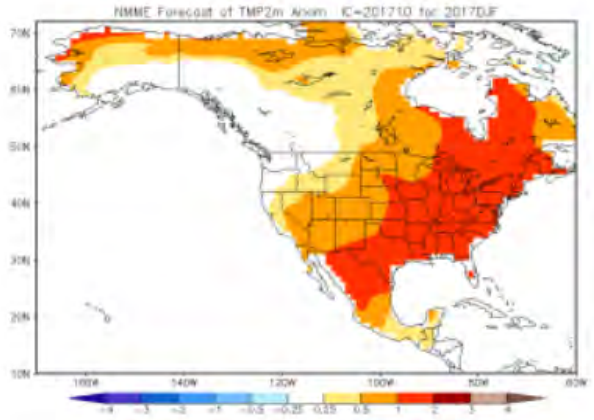
NASA GEOS5



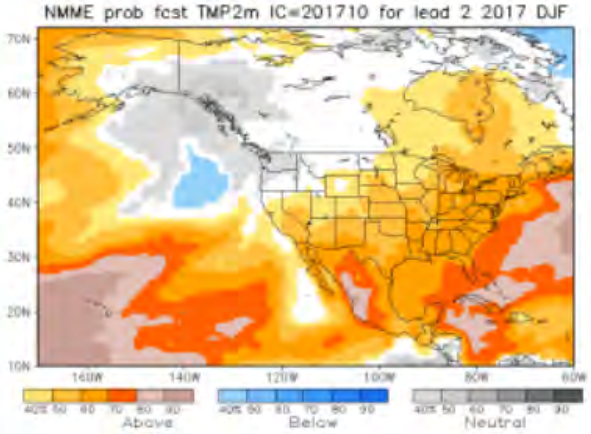
Forecast updated Oct. 8, 2017

National Multi-Model Ensemble

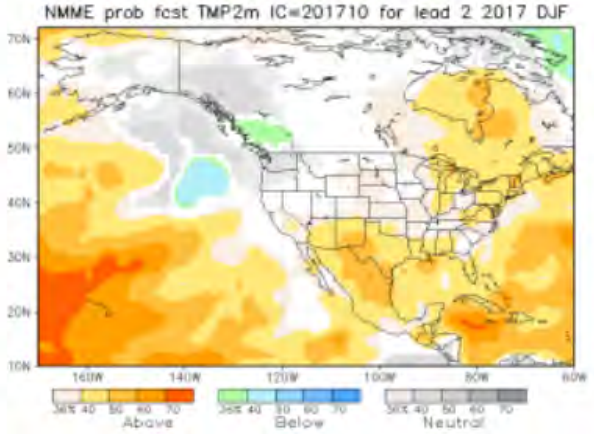
NMME



Prob fcst



PAC calib. prob fcst

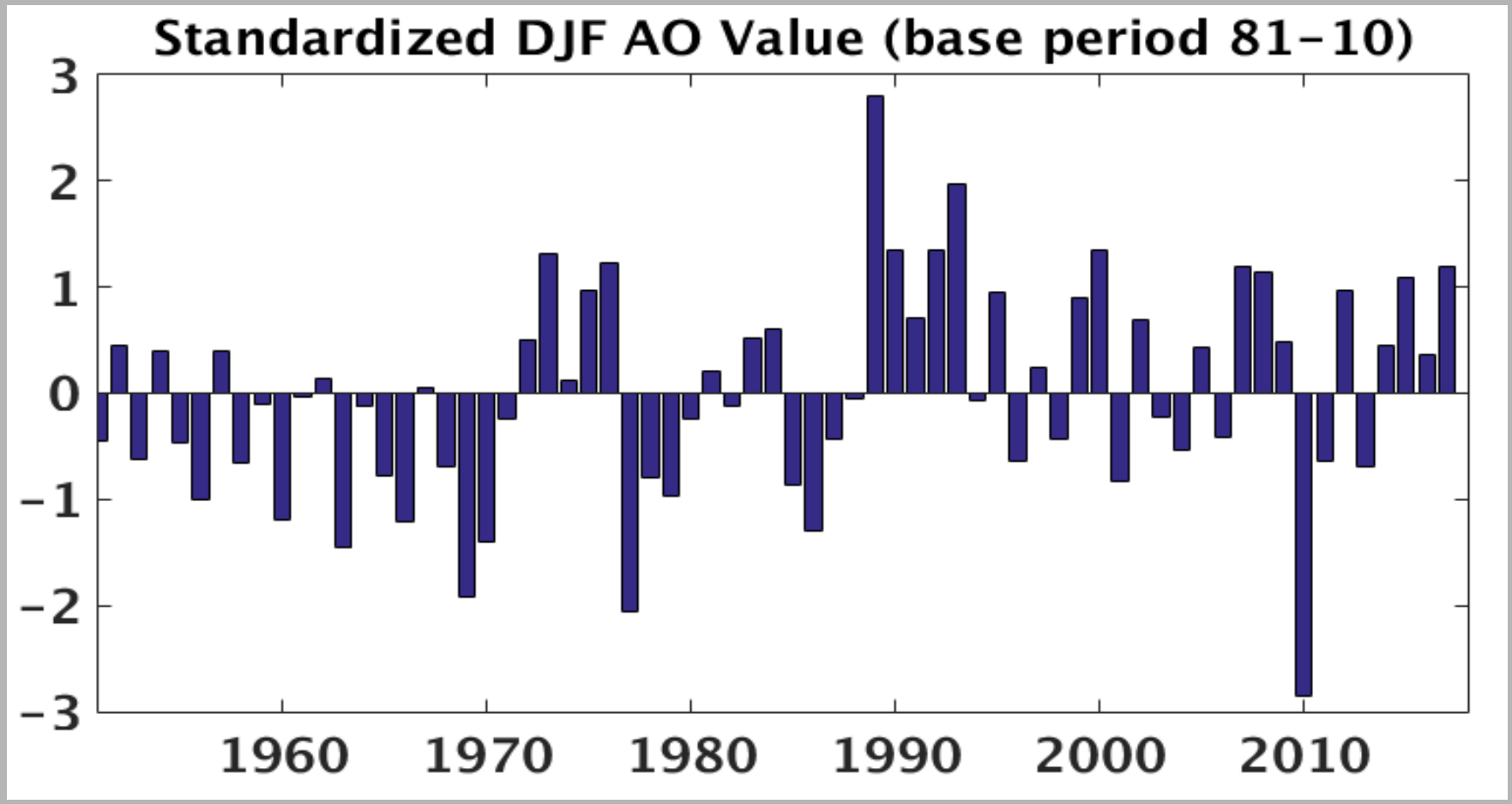


Forecast updated Oct. 8, 2017

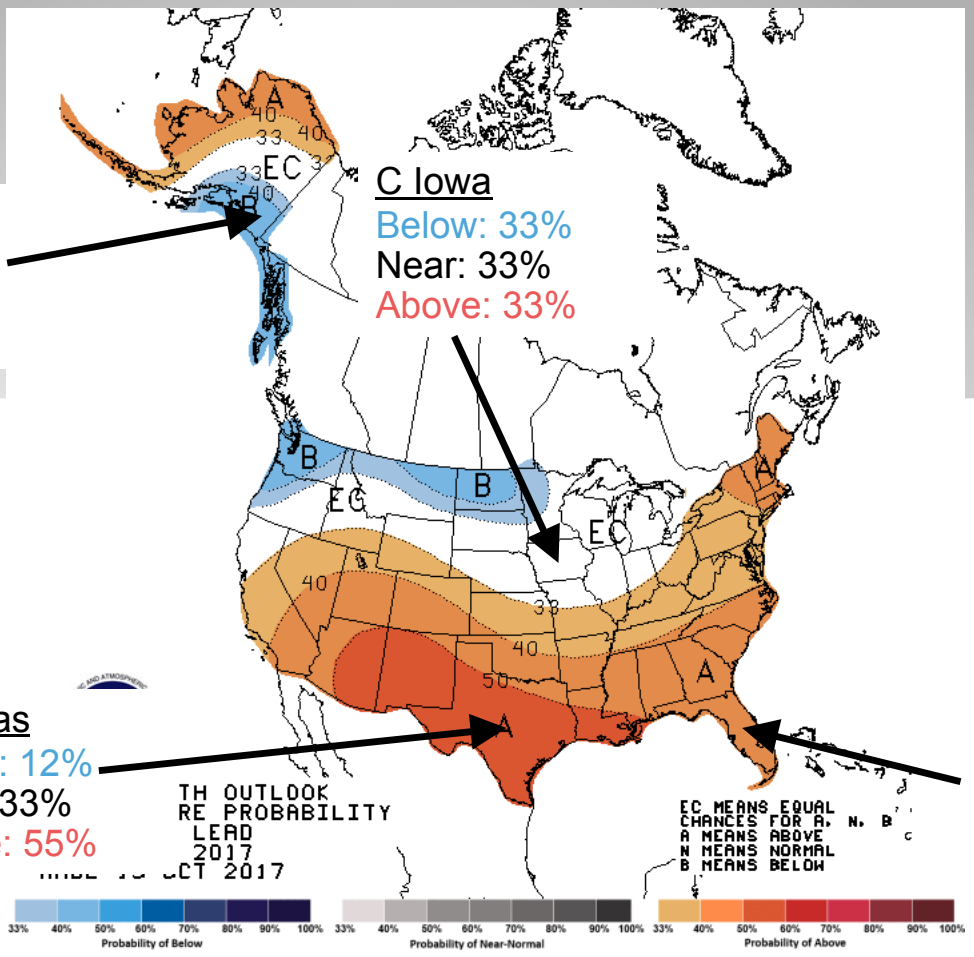
NORTH ATLANTIC OSCILLATION/ ARCTIC OSCILLATION

- A major source of intraseasonal variability over the U. S., Atlantic and Europe during winter.
- Modulates the circulation pattern over the high latitudes thereby regulating the number and intensity of significant weather events affecting the U.S., such as cold air outbreaks.
- Currently there is no reliable capability to forecast the seasonal phase.

NH Winter Arctic Oscillation (AO)



December 2017 – February 2018 Temperature Outlook



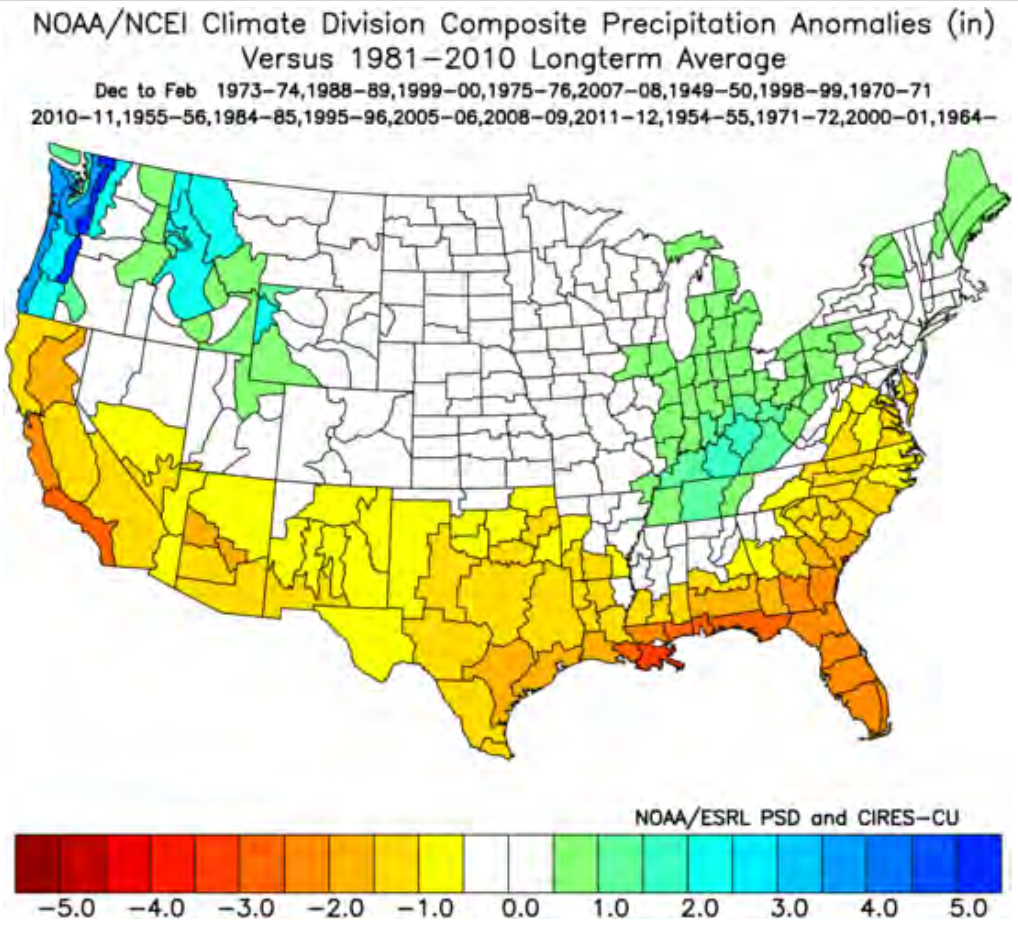
S. Alaska
Below: 42%
Near: 33%
Above: 25%

C Iowa
Below: 33%
Near: 33%
Above: 33%

C Texas
Below: 12%
Near: 33%
Above: 55%

C. Florida
Below: 22%
Near: 33%
Above: 45%

Precipitation anomalies during La Niña Episodes
21 Member Composite



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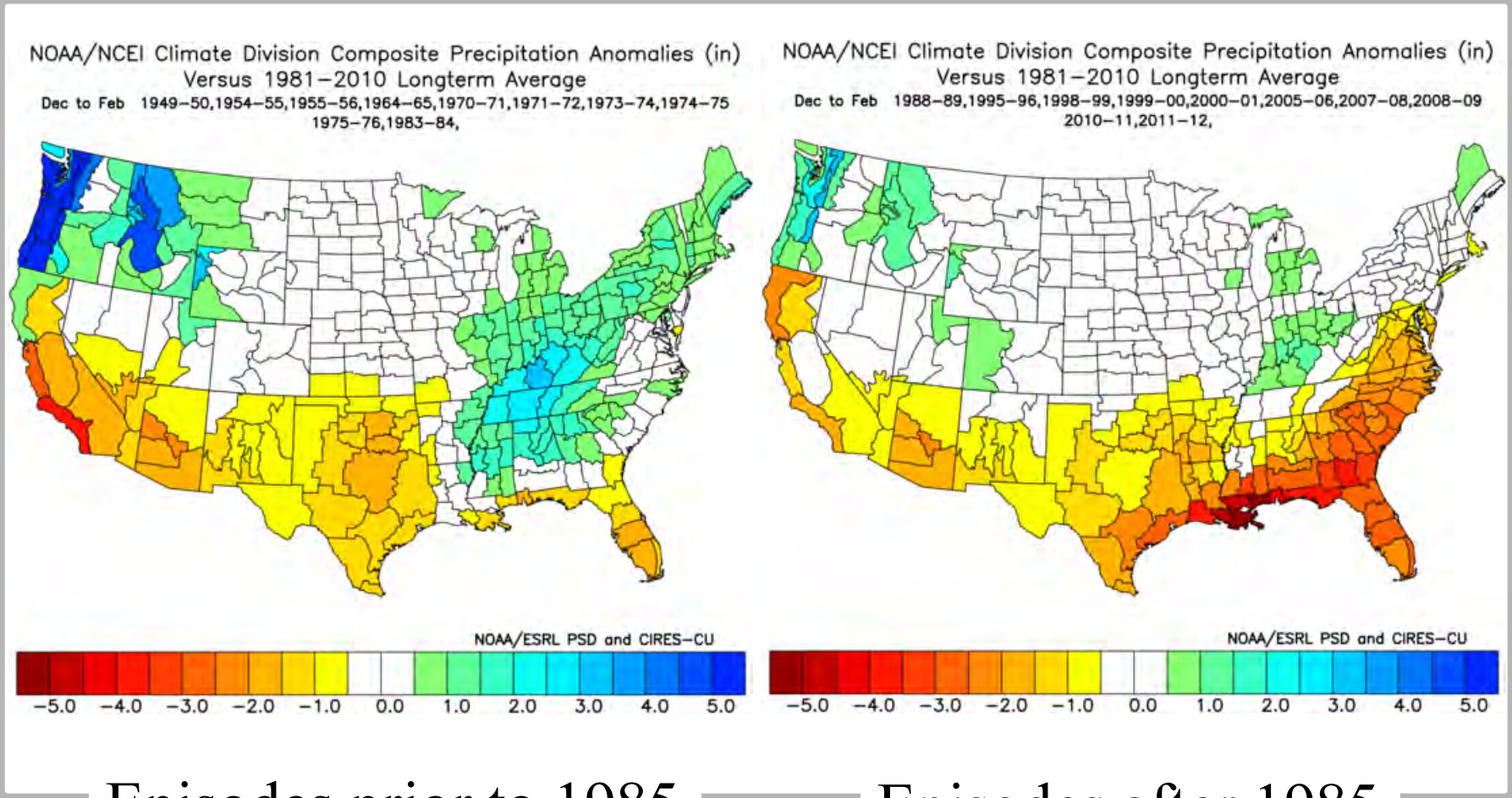
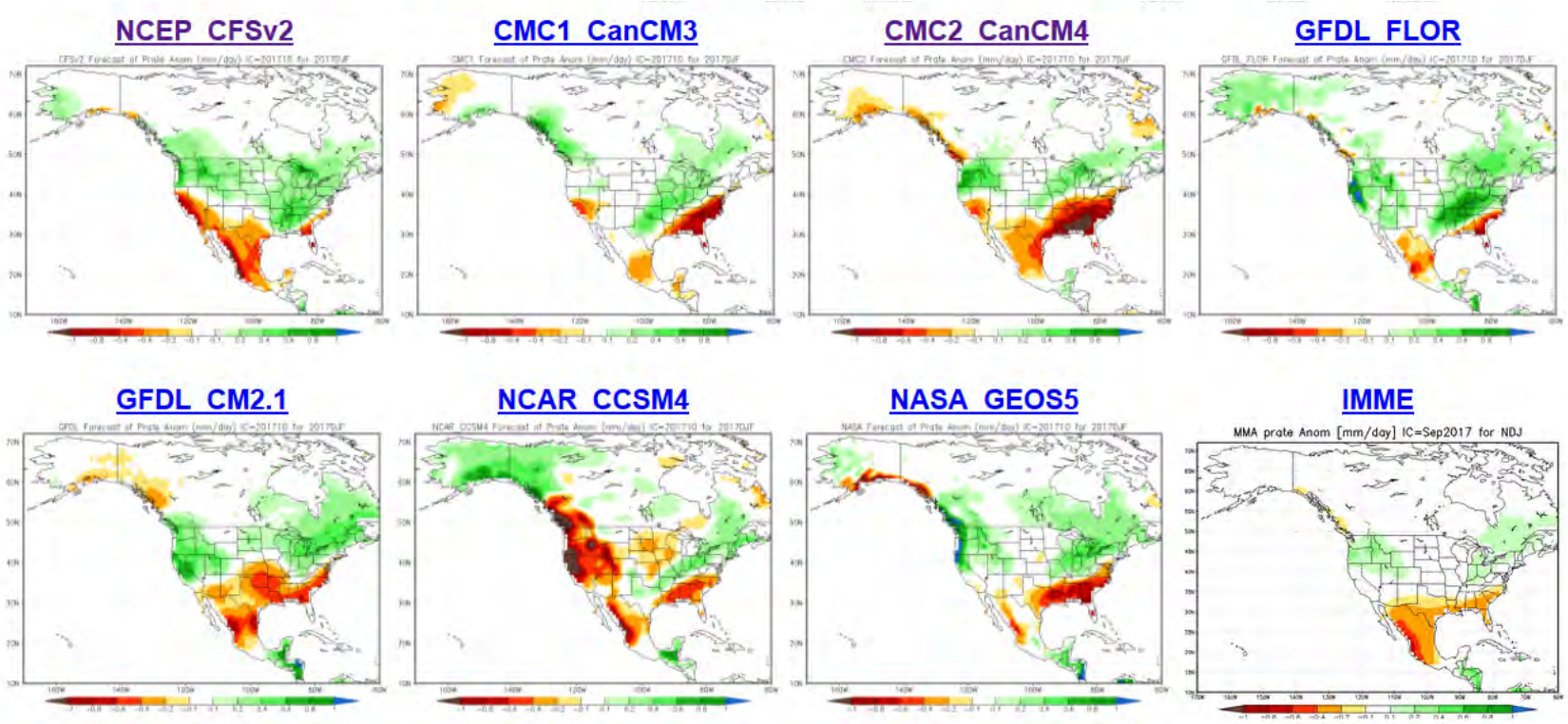


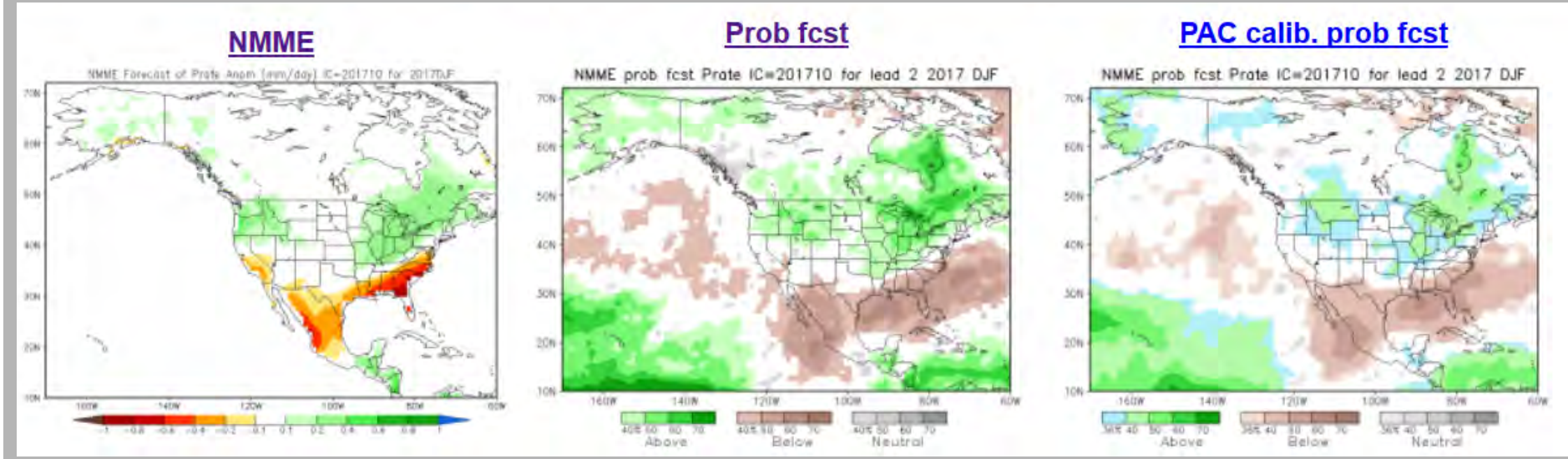
Episodes prior to 1985

Episodes after 1985

Individual NMME Model Forecasts DJF 2017

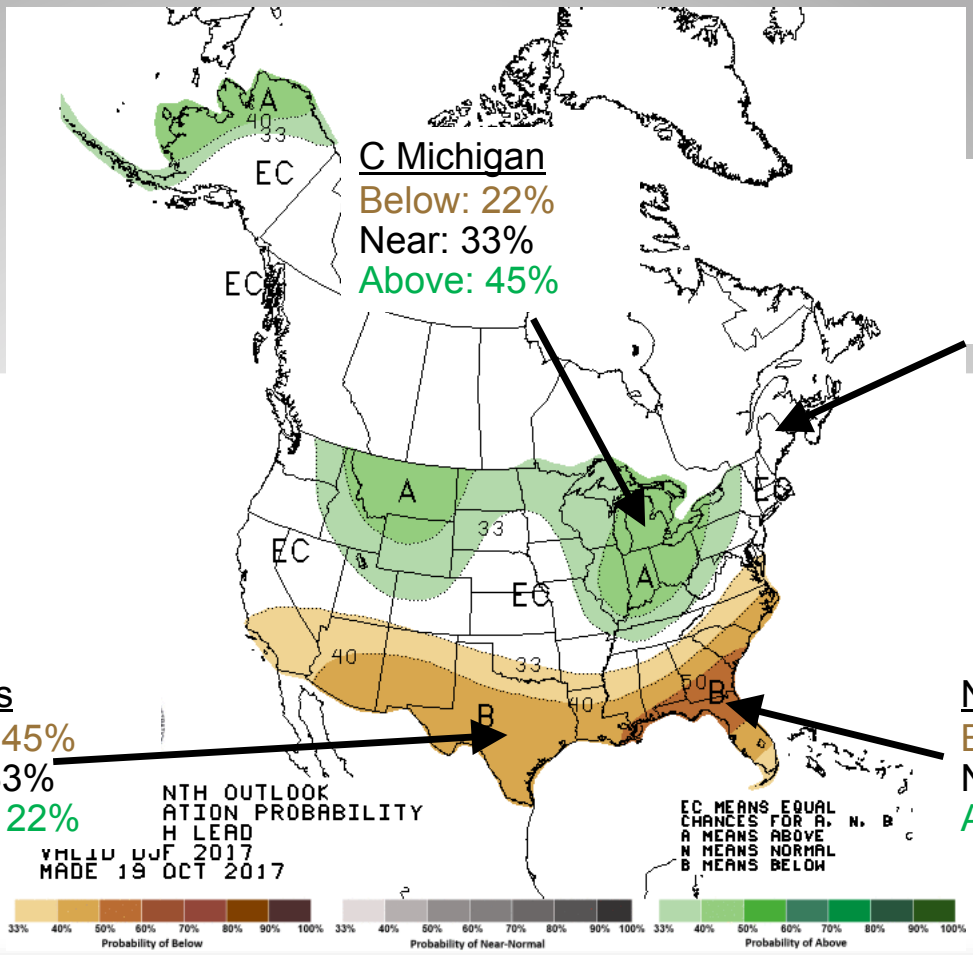


North American Multi-Model Ensemble



Forecast updated Oct. 8, 2017

December 2017 – February 2018 Precipitation Outlook



C Michigan
Below: 22%
Near: 33%
Above: 45%

N. Maine
Below: 33%
Near: 33%
Above: 33%

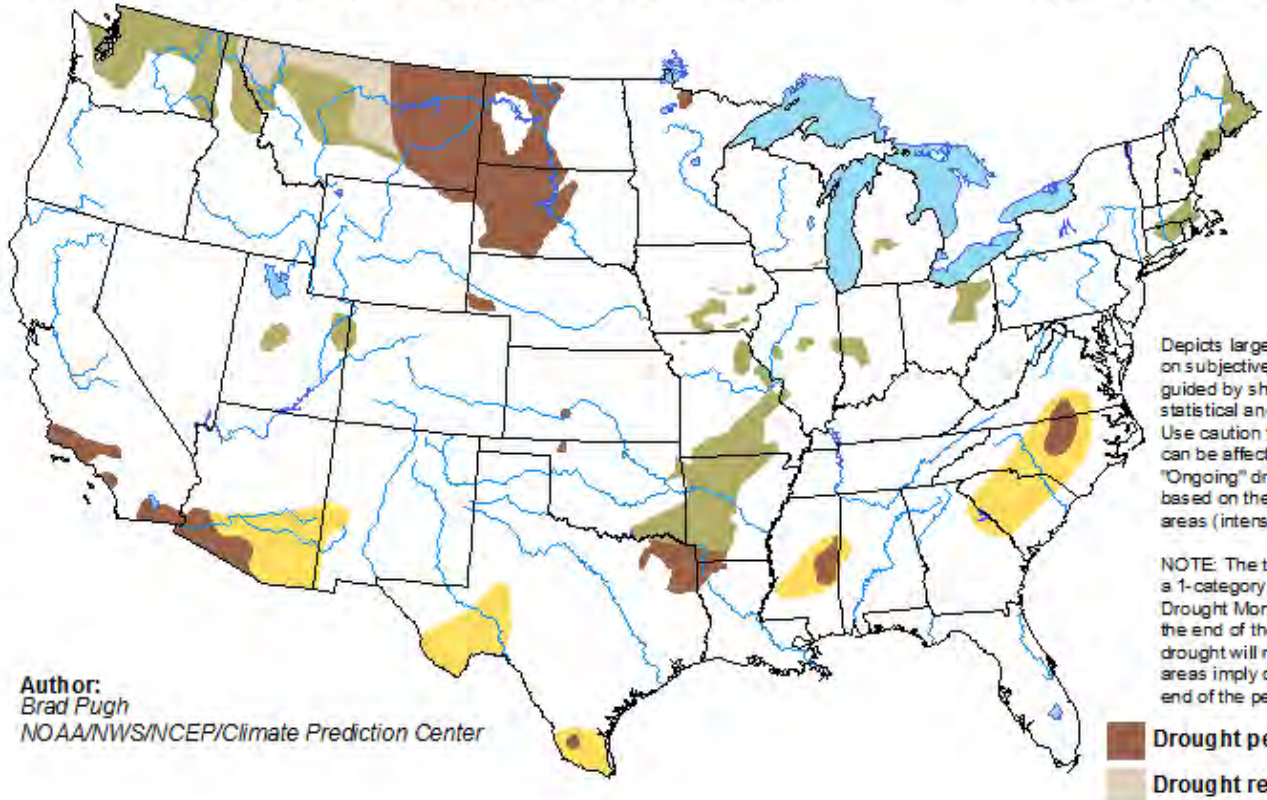
C Texas
Below: 45%
Near: 33%
Above: 22%

N. Florida
Below: 53%
Near: 33%
Above: 14%

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for October 19 - January 31, 2018
Released October 19, 2017

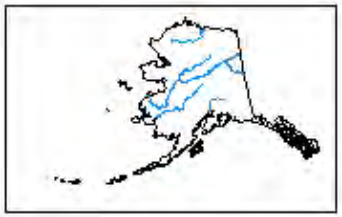


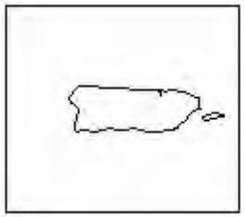
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Drought persists
Drought remains but improves
Drought removal likely
Drought development likely

Author:
Brad Pugh
NOAA/NWS/NCEP/Climate Prediction Center



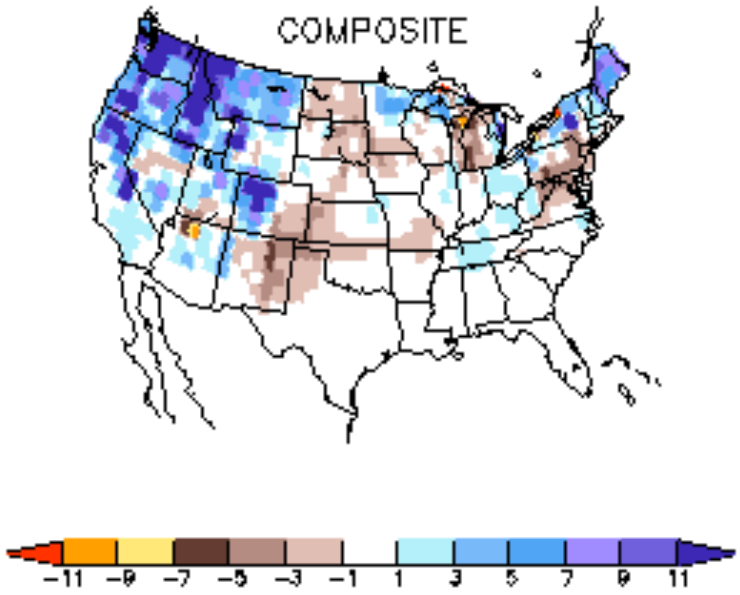


http://go.usa.gov/3eZ73

DJF LA NINA SNOW ANOMALIES (IN)
AND FREQUENCY OF OCCURRENCE (%)

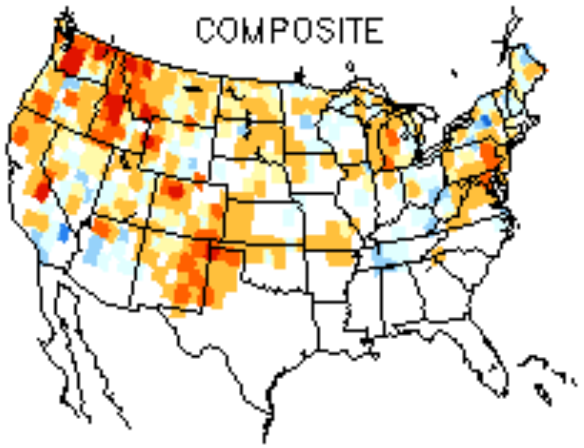
ANOMALIES

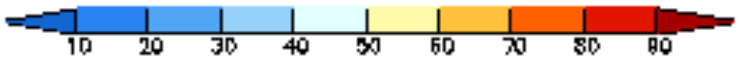
COMPOSITE



FREQUENCY

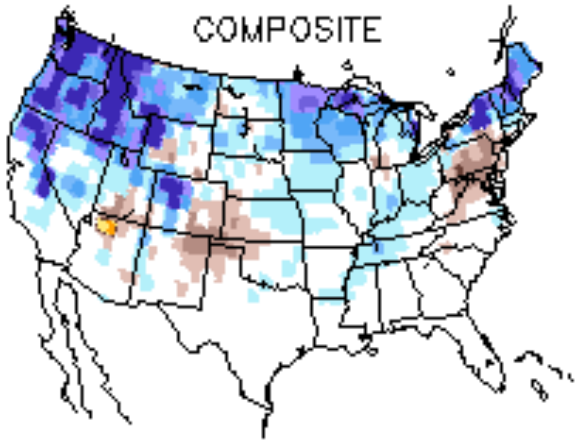
COMPOSITE

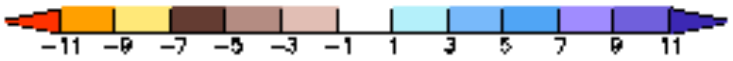




JFM LA NINA SNOW ANOMALIES (IN)
AND FREQUENCY OF OCCURRENCE (%)

ANOMALIES





FREQUENCY