El Niño-Southern Oscillation (ENSO) Update

Subcommittee for Disaster Reduction

Mike Halpert
Climate Prediction Center / NCEP/ NOAA
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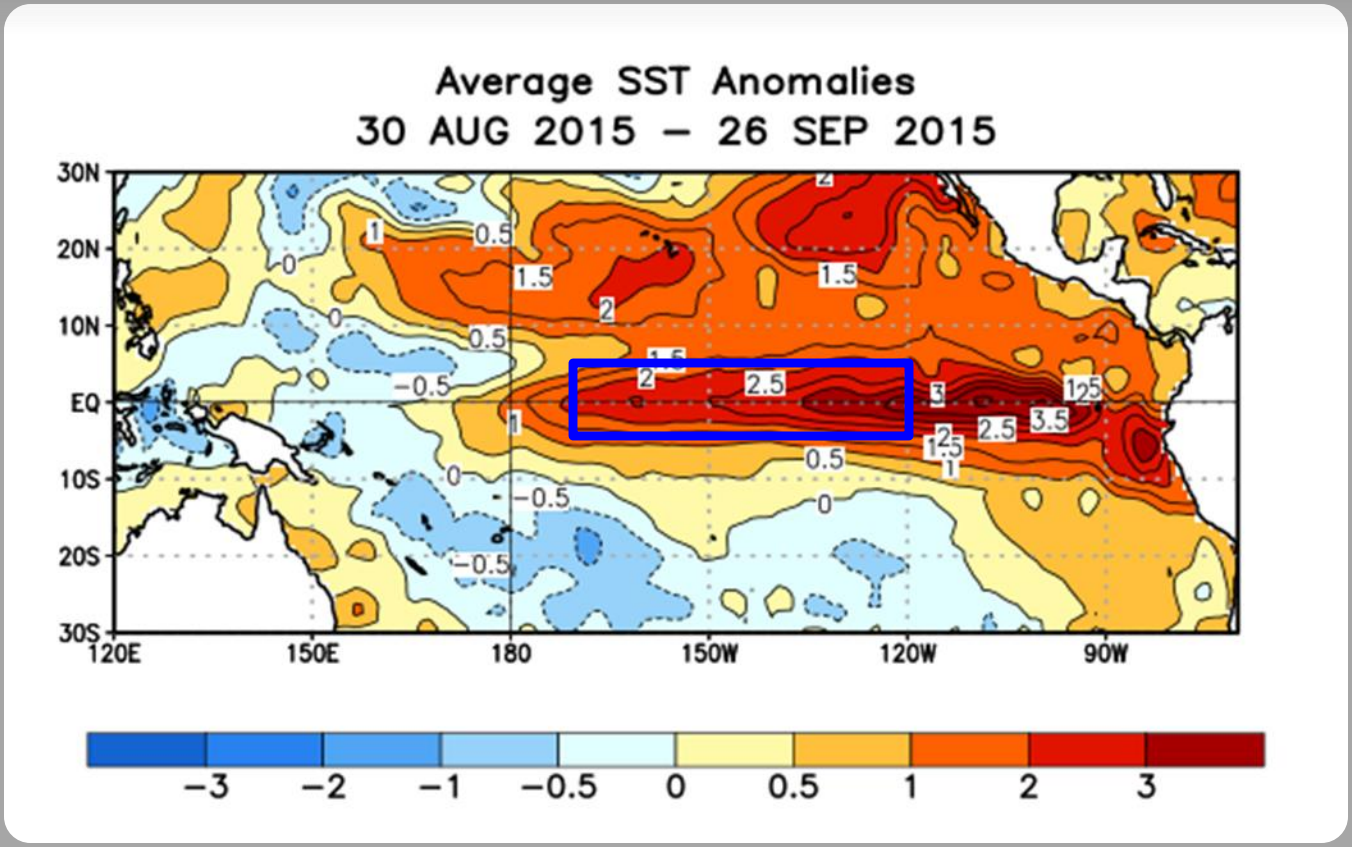
Key Messages

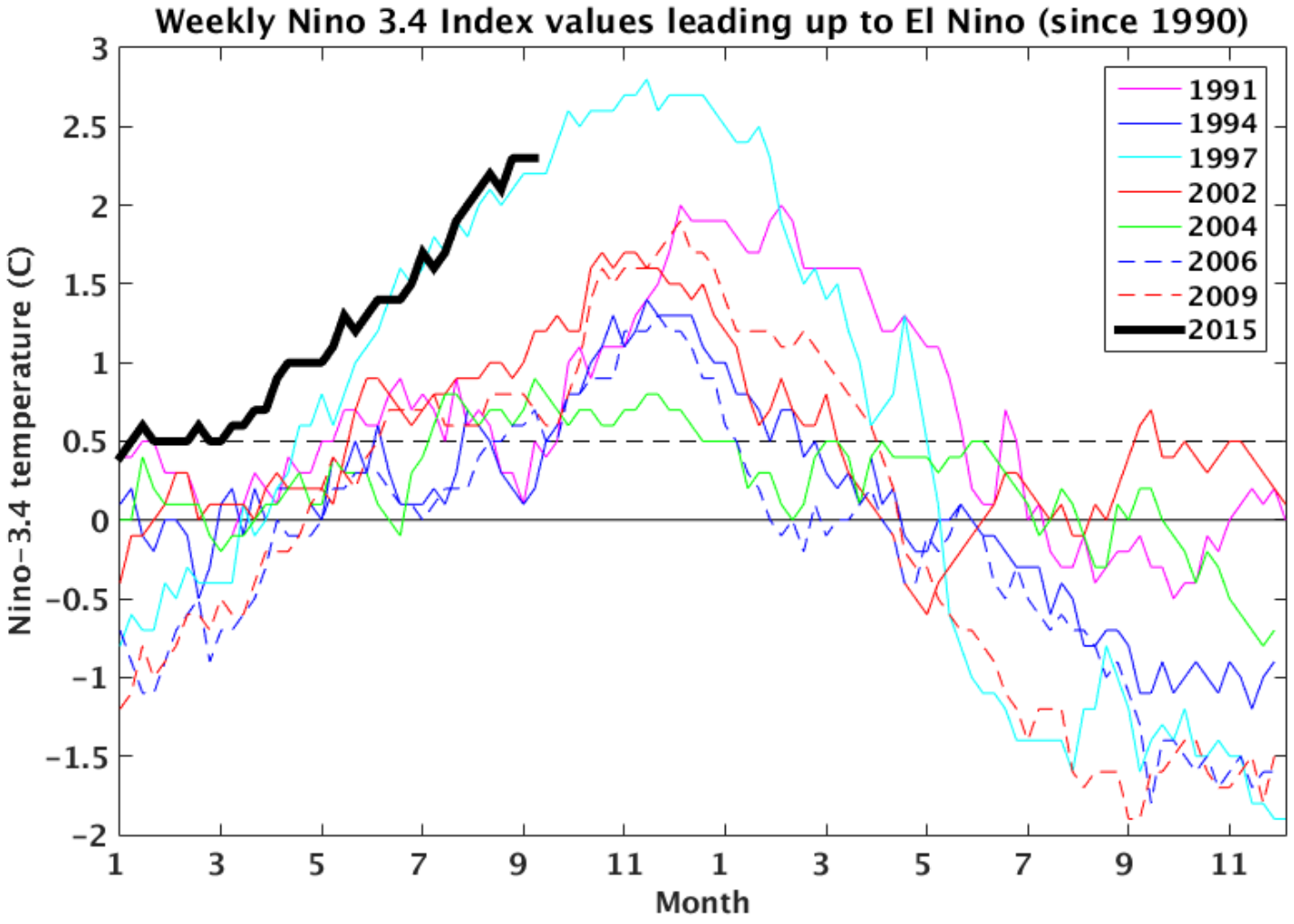
- El Niño is a large-scale climate phenomenon that is defined by changes in rainfall, pressure, and winds across the tropical Pacific Ocean.
- Different ways to measure El Niño and impacts are different depending on location and the time of year
- Some impacts are direct (adjacent warm oceans) and others are more indirect and rely on changes in the global circulation
- No two El Niño events are alike

Key Messages

- A strong El Niño event is in place. Currently top 5% by a measure of the east-central Pacific Ocean sea surface temperature (SST) departures or “anomalies.”
- Greater than 95% chance that El Niño will continue through Northern Hemisphere winter 2015-16, gradually weakening during the spring.
- Expected to remain “strong” during the upcoming winter. Generally makes impacts more likely (but still never guaranteed).

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

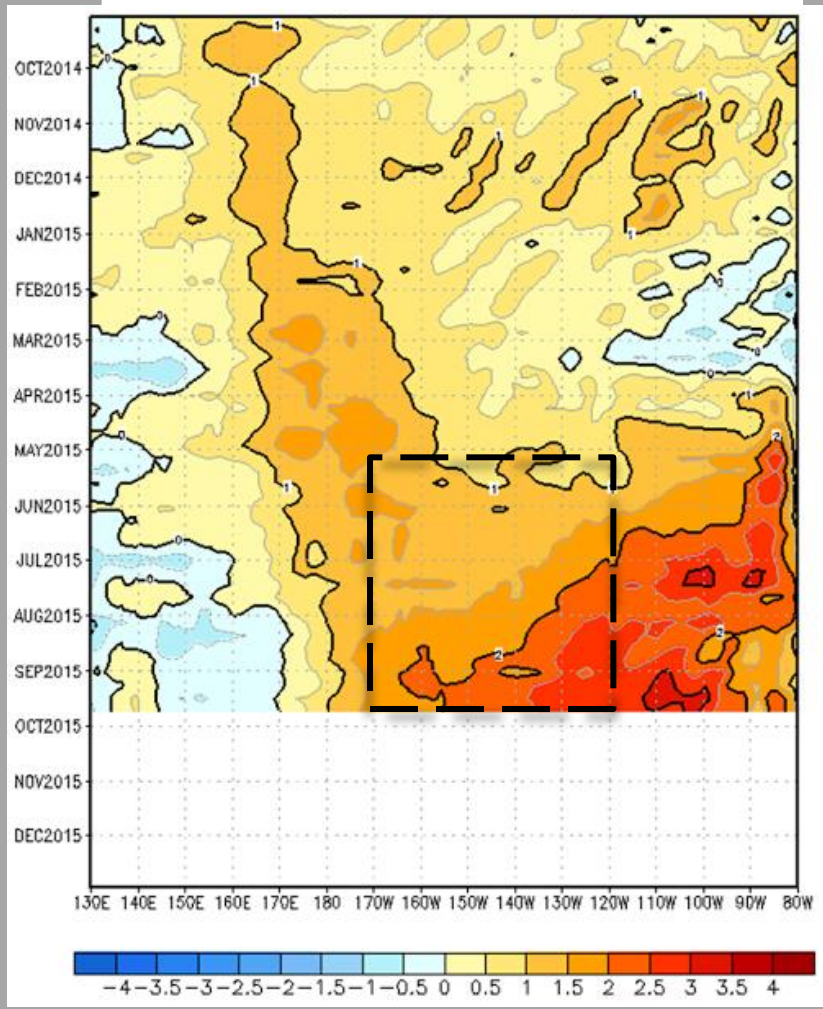




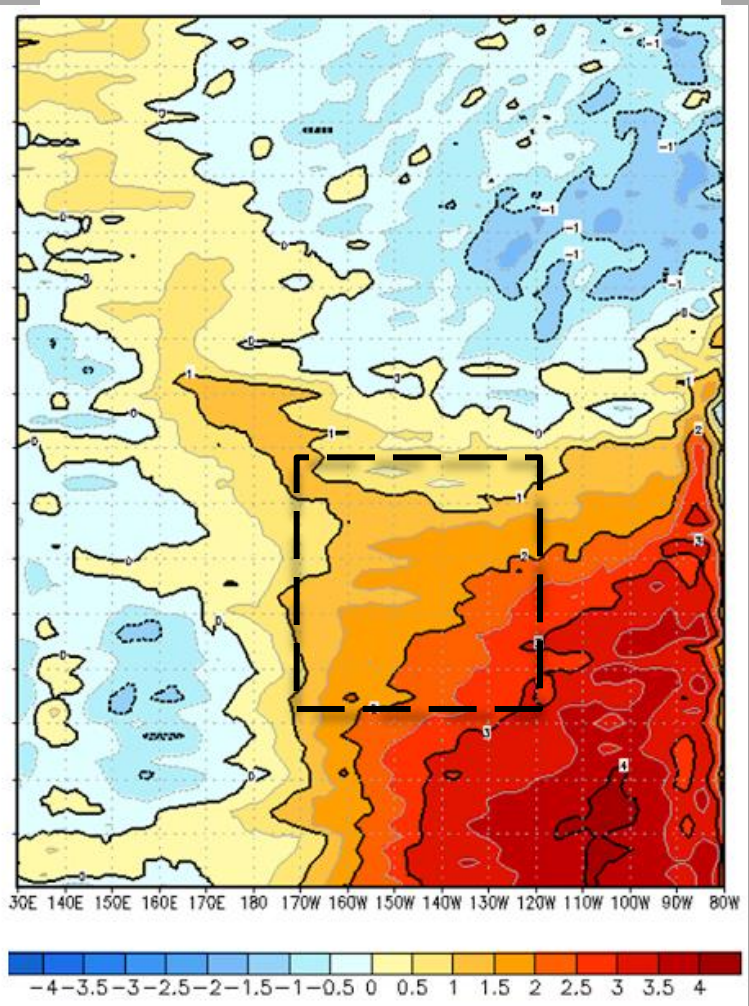
Weekly OISSTv2 data going back to 1990

Sea Surface Temperature Anomalies (°C)

Oct 2014 – Dec 2015



Oct 1996 – Dec 1997

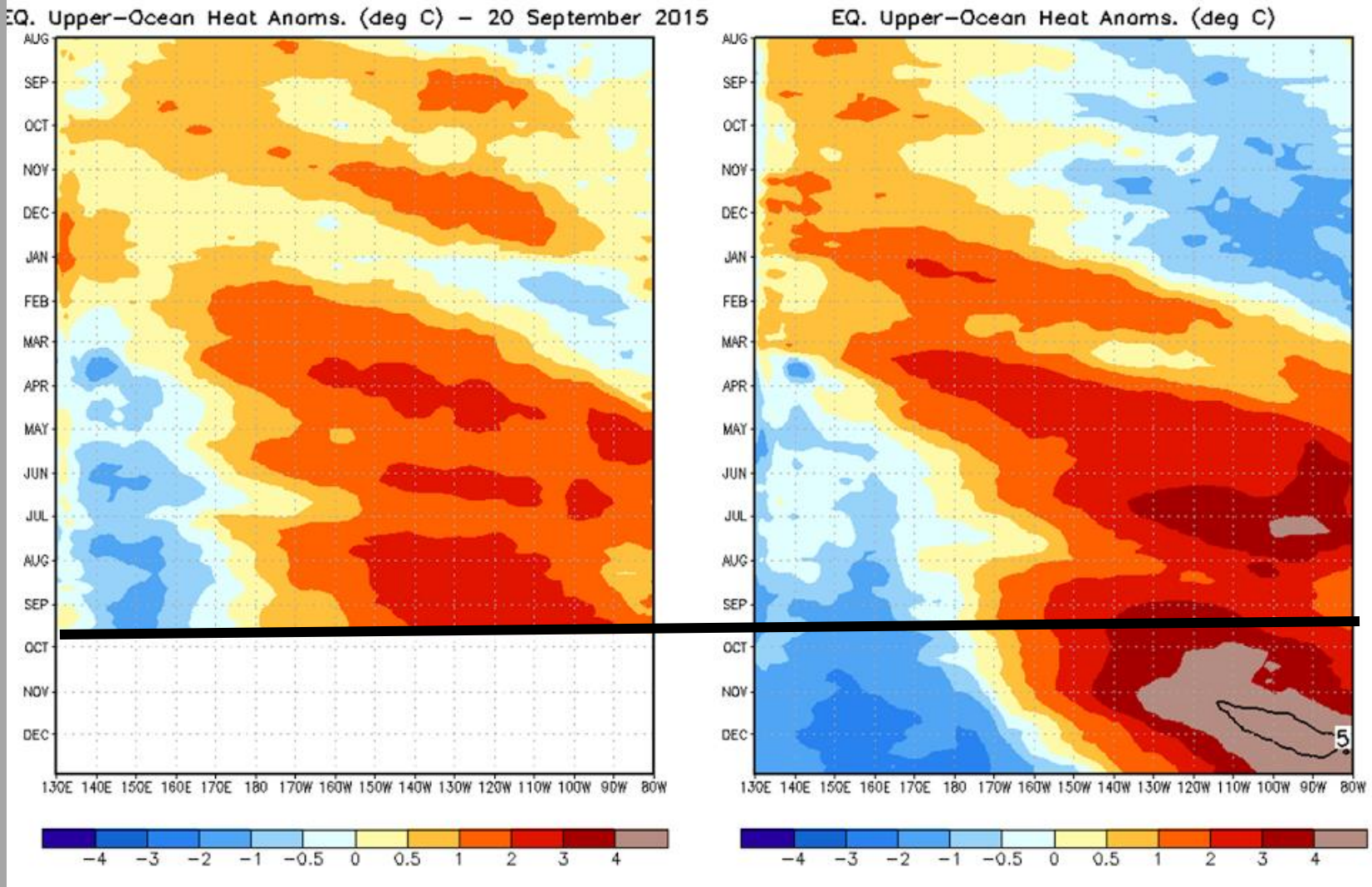


Sub-Surface Heat Anomalies (°C)

(0-300 m depth)

Aug 2014 – Dec 2015

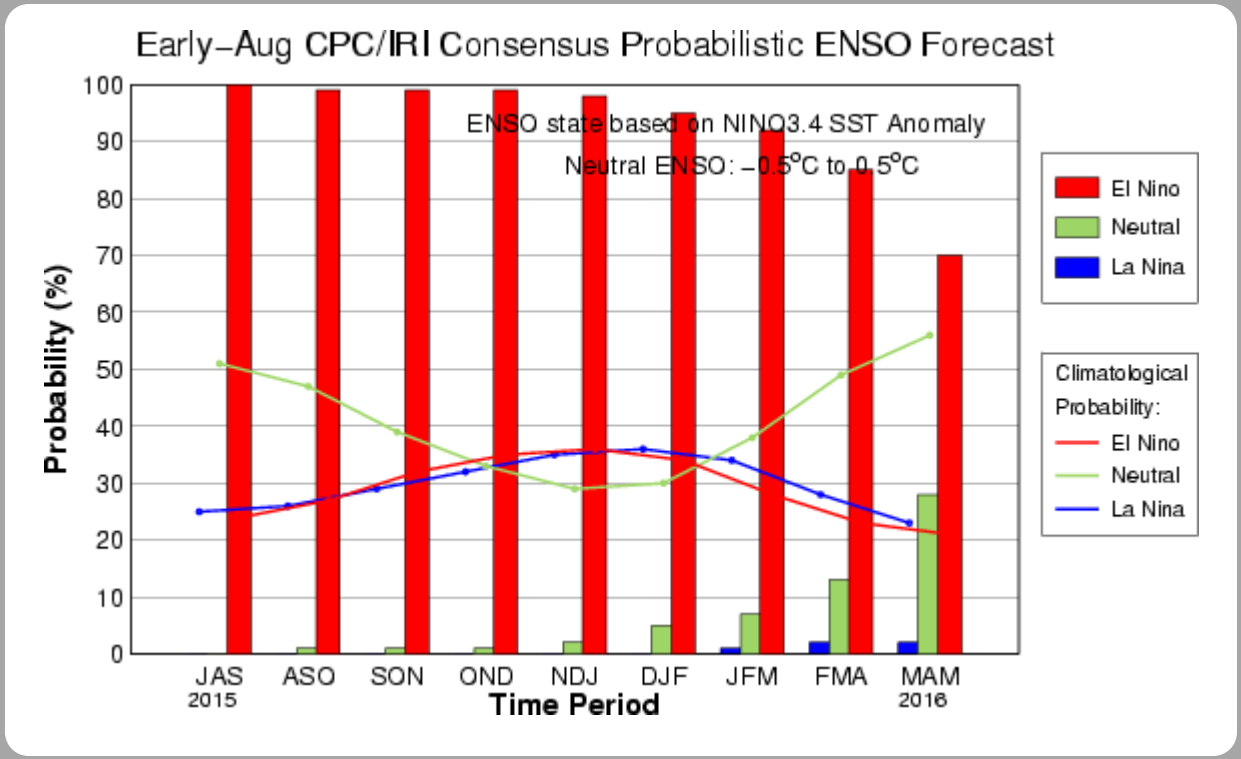
Aug 1996 – Dec 1997



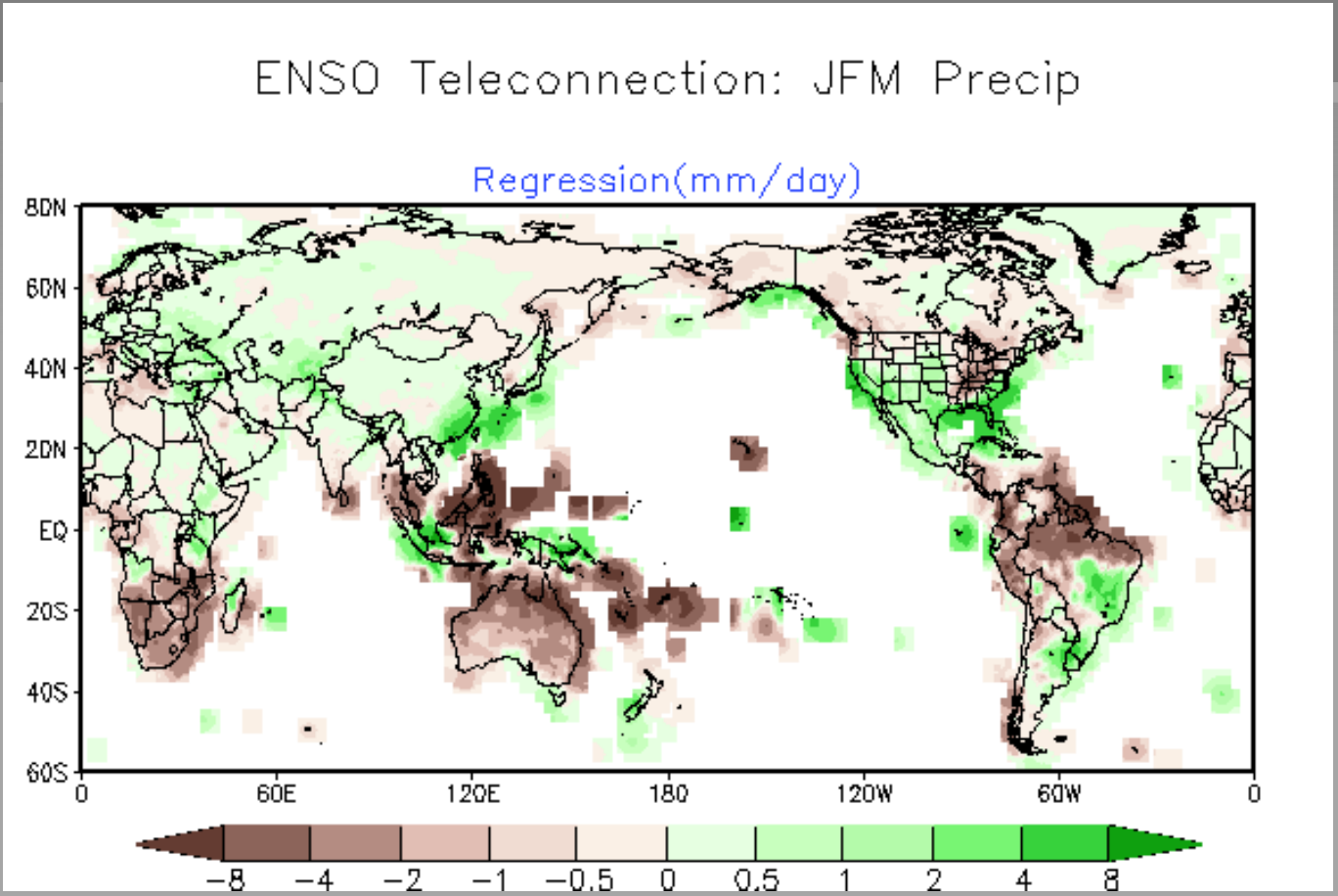
Current Niño-3.4 SST Probabilities

Updated: 13 August 2015

The chance of El Niño is greater than 90% through Northern Hemisphere winter and is near 70% through spring (MAM) 2016.

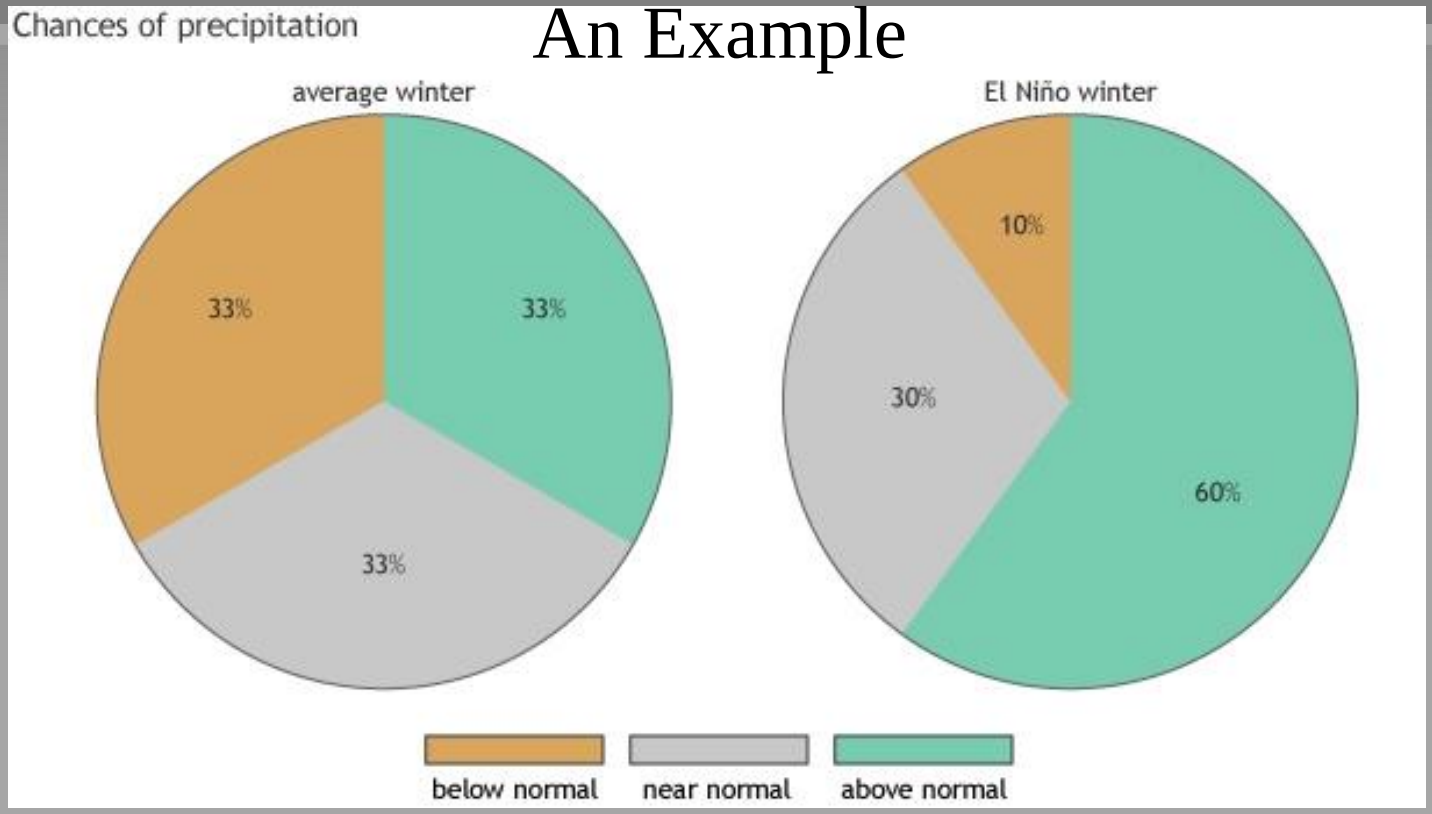


Typical January-March Precipitation Departures Associated with El Niño



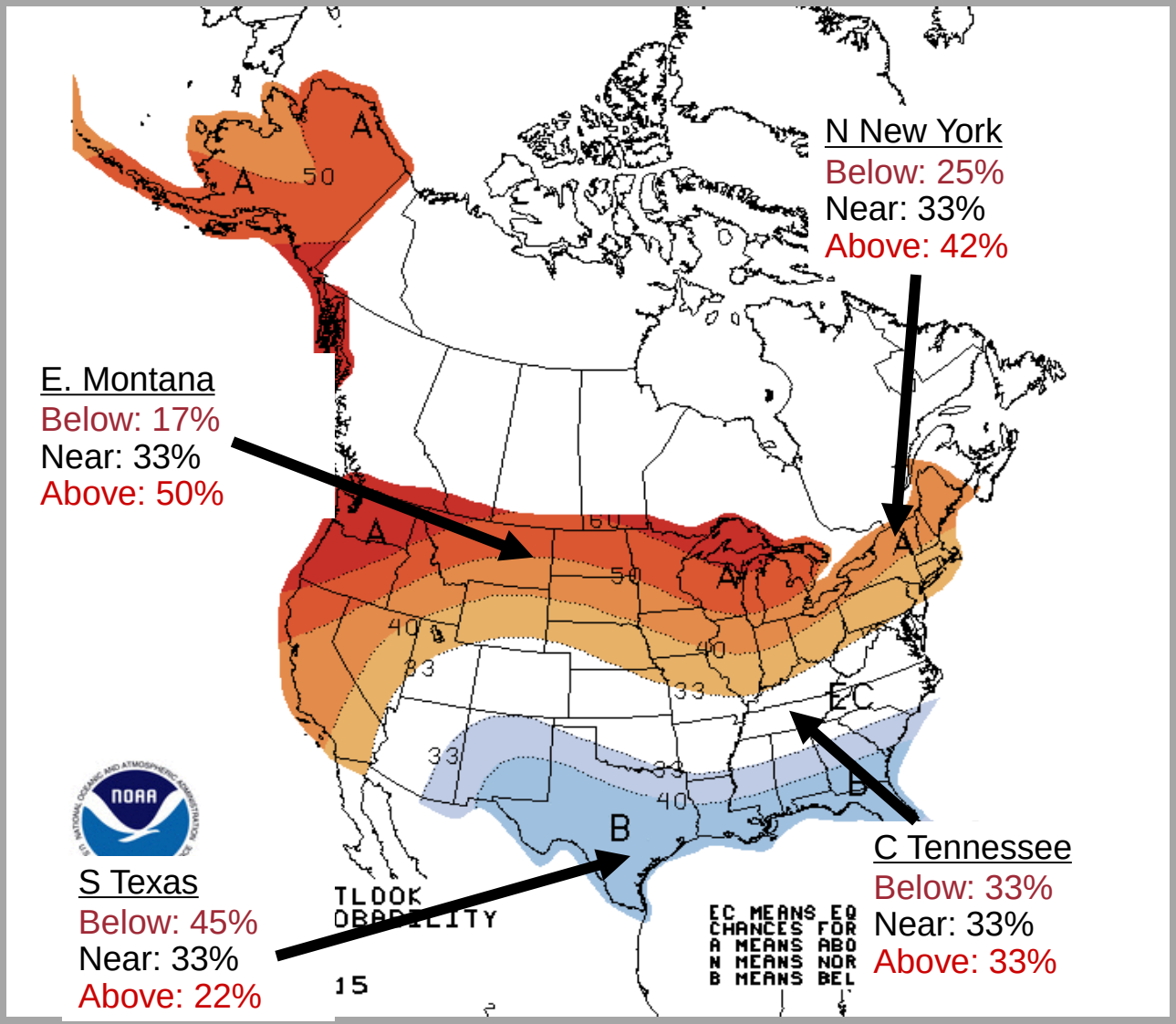
Note: Dataset is very coarse and only gives a general idea of impacts.

El Niño changes the odds for certain impacts.
The % shift tends to be larger for stronger El Niño events.

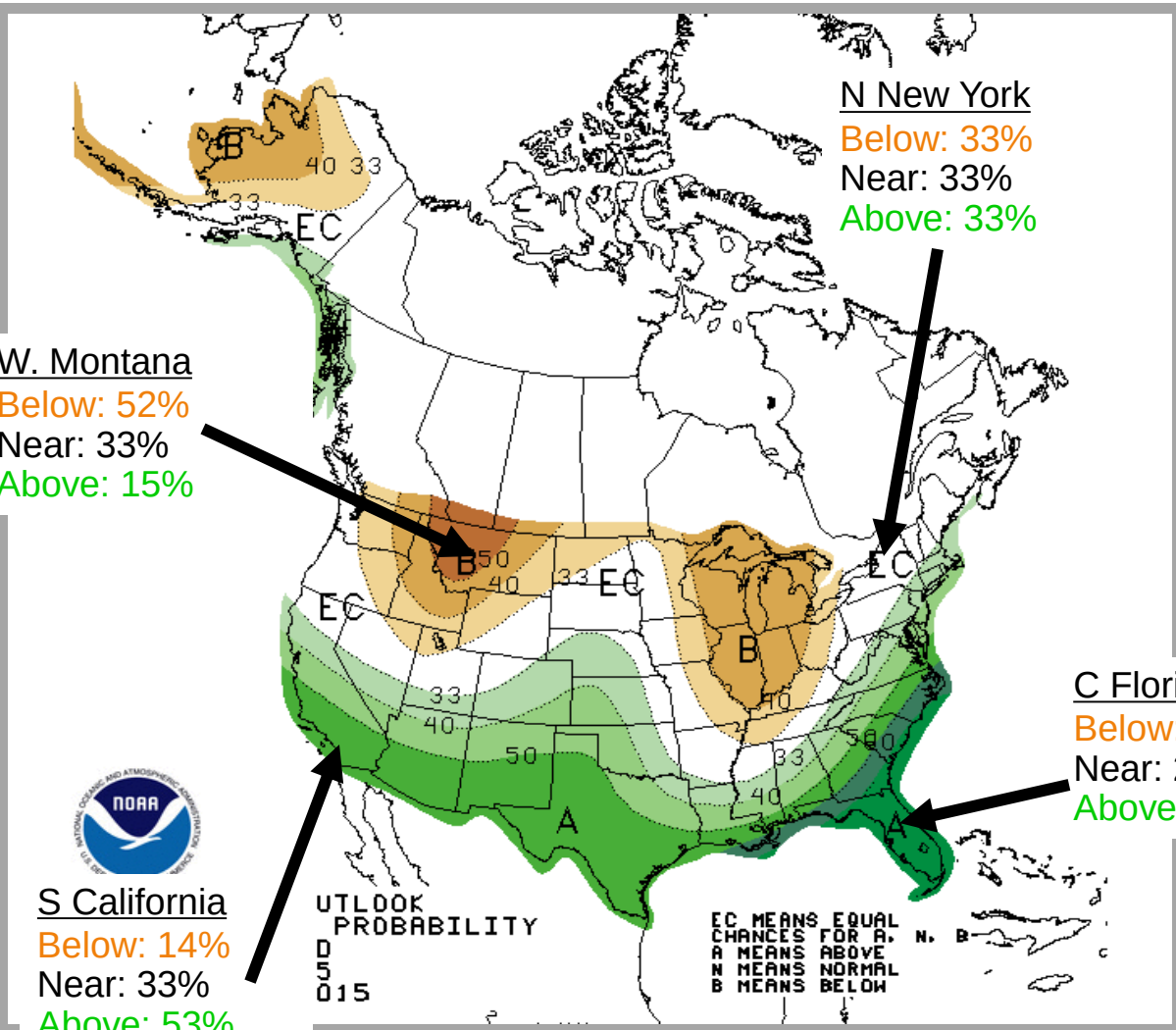


… but, impacts are never guaranteed in seasonal climate prediction because there are unpredictable elements that influence the result.

December 2015 – February 2016 Temperature Outlook



December 2015 – February 2016 Precipitation Outlook



N New York
Below: 33%
Near: 33%
Above: 33%

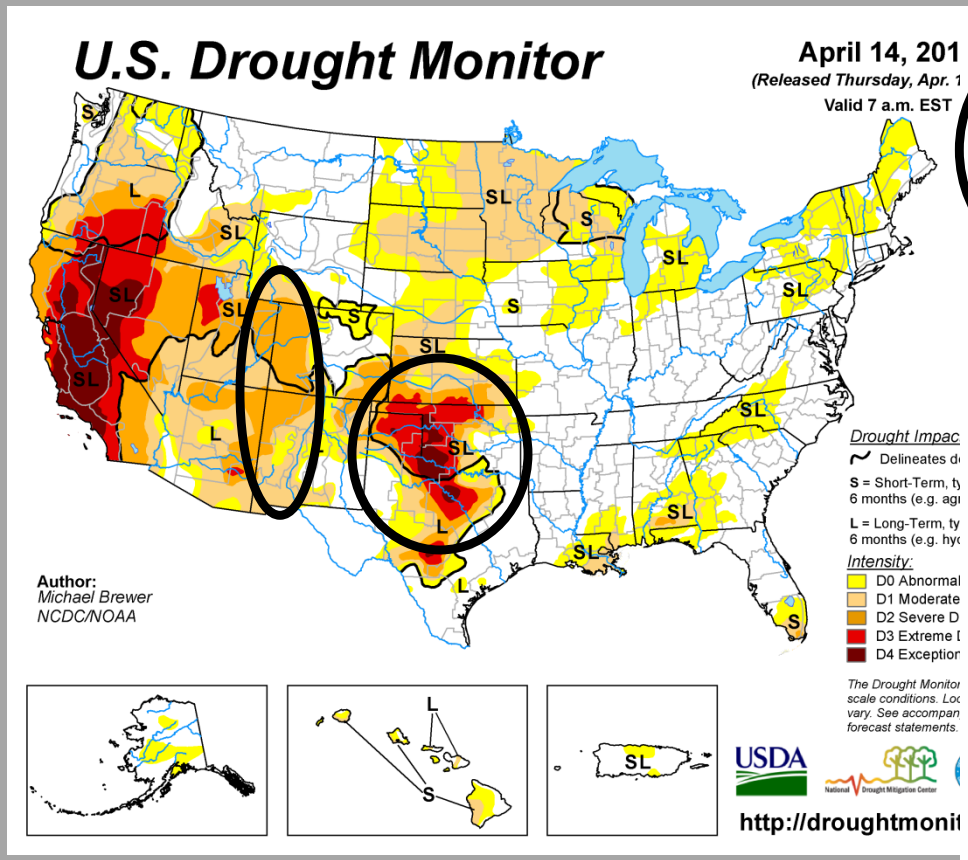
W. Montana
Below: 52%
Near: 33%
Above: 15%

C Florida
Below: 3%
Near: 23%
Above: 74%

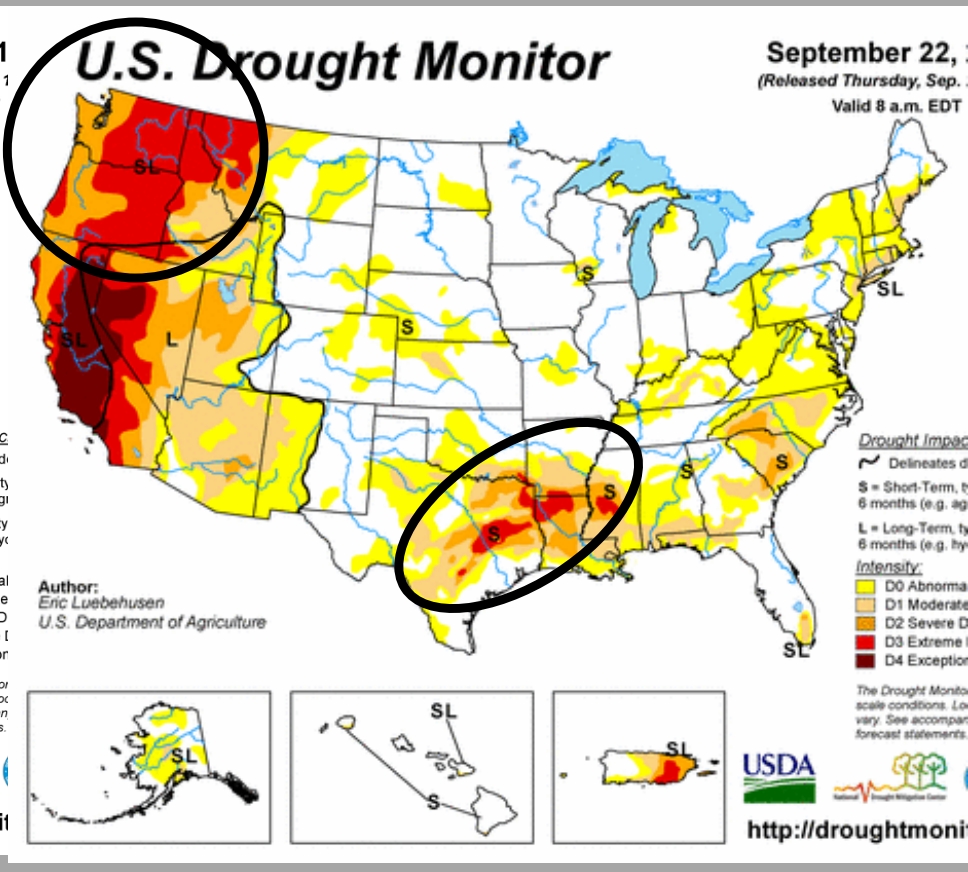
S California
Below: 14%
Near: 33%
Above: 53%

U. S. Drought Monitor

April 14, 2015



September 22, 2015



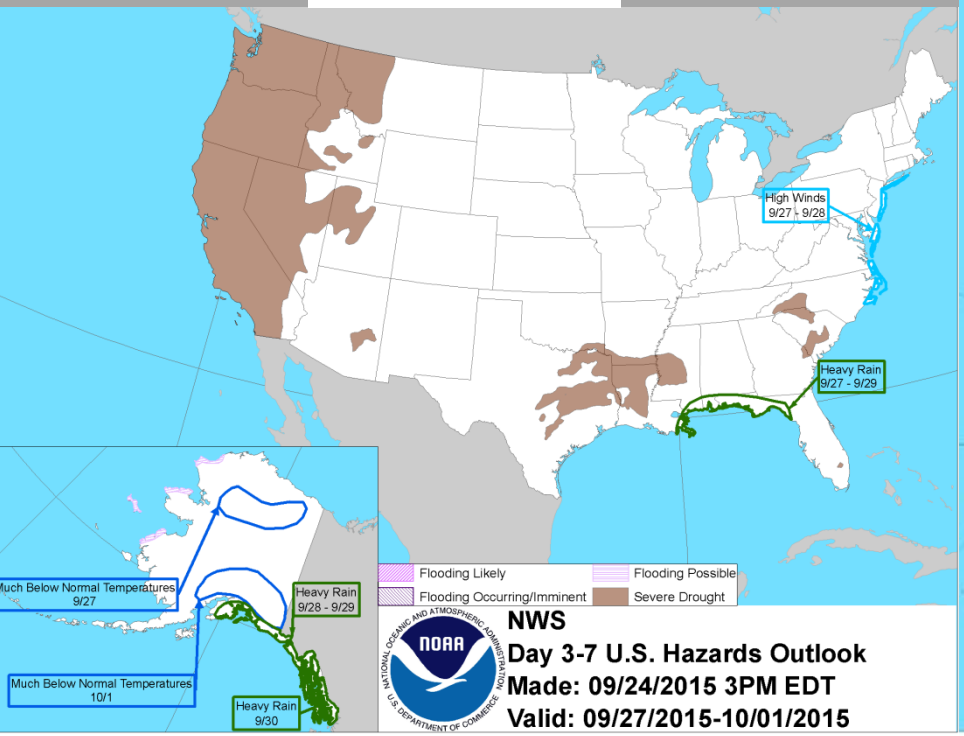
Flooding and Landslides

- Forecasts of flooding and landslides months in advance are beyond the state of science.
- These will result from high-impact weather events.
- Strong El Niño conditions elevate the risk for these types of extreme events (i.e. 82/83 and 97/98 both featured numerous occurrences).
- Dry antecedent conditions and wildfires and wildfires also elevate the risk.

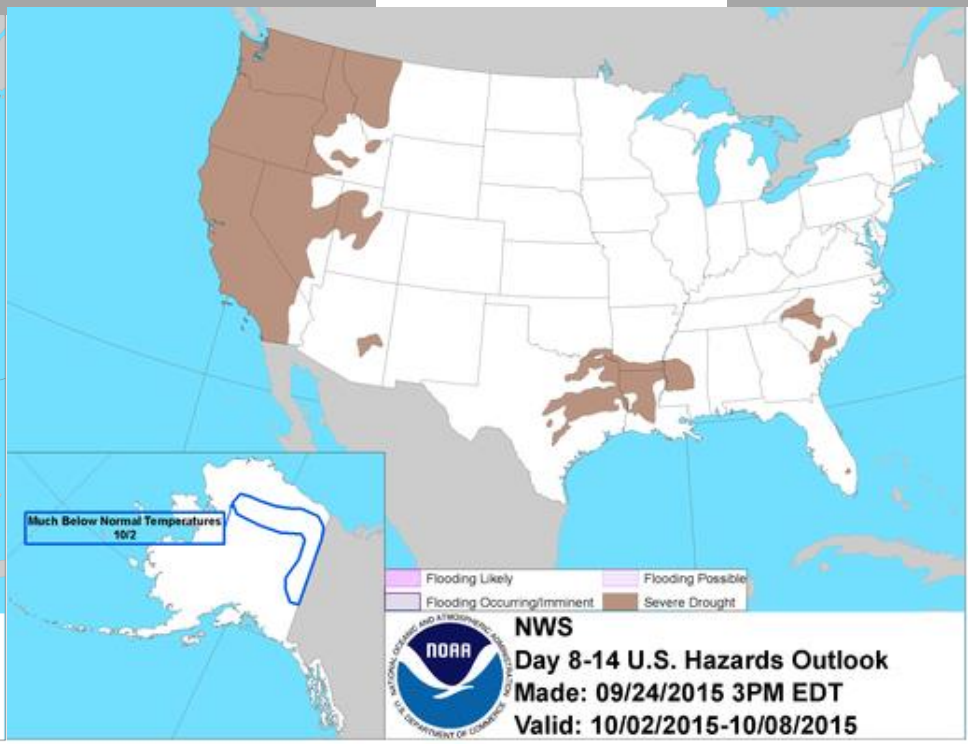
Other CPC Products
Sub-seasonal

Hazards Outlooks

Days 3-7



Days 8-14



Other CPC Products
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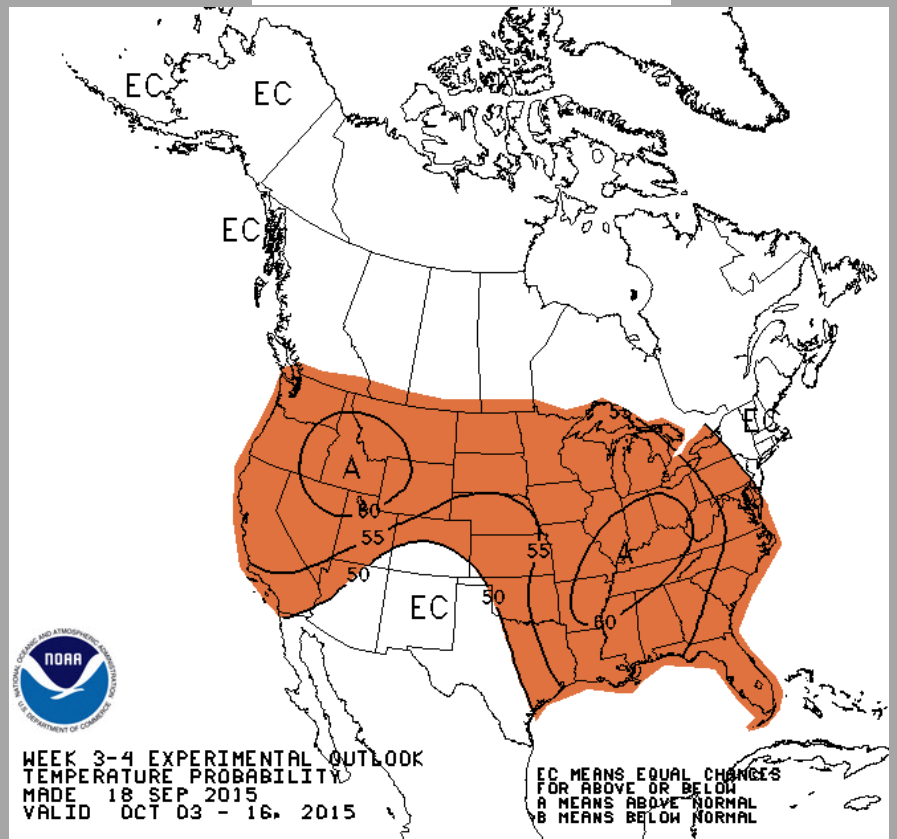
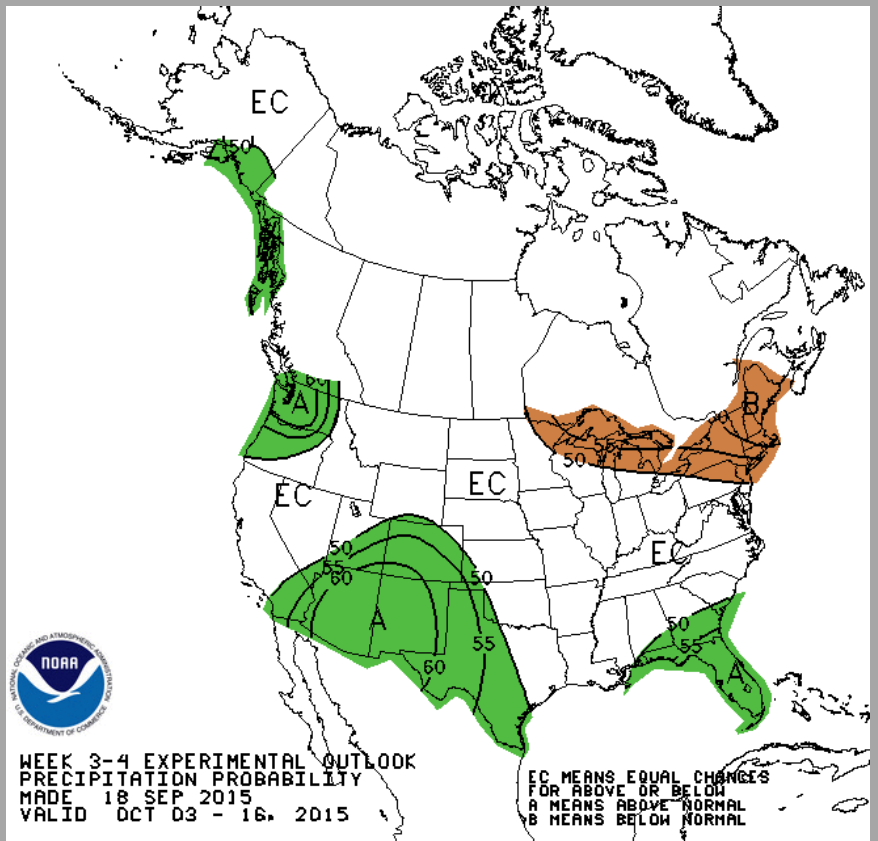
Week 3-4 Outlook

Temperature



Precipitation



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