

# 2013 NWSA Annual Meeting



# 2013 NWSA Annual Meeting

- 2013 Summer Weather Forecast
- Presented by:
- Gary Bennett – NWSA Meteorologist

# 2013 NWSA Annual Meeting

- Weather anomalies to discuss:
- **2012 Summer Fire Season – WHAT HAPPENED!**
- **2012- 2013:**
- Seasonal Snow Pack 2012-2013 and water year.
- El Nino or La Nina plus its effects.
- Seasons Past.
- 2013 Seasonal Forecast for this summer, (the way I see it.)
- Time for questions.

# 2012 Fire Season, What Happened!

- A very warm weather pattern was beginning to take shape in early June, as we were switching from a La Nina weather pattern to a Neutral ENSO weather pattern.
  - The Pacific Northwest and the western U.S. weather was rapidly changing to a warmer regime.
  - Summer monthly moisture was below average over much of the western U.S. (except SW)
  - Lightning storms, across much of the west, were persistent over the entire summer fire season.

# 2013 NWSA Annual Meeting

- What Happened cont:
- Record breaking heat across entire U.S.
  - Warmest July on record nationally.
  - Resulting in warmest 12 month period since 1895 when accurate record keeping began.
  - More than 2 million acres burned nationwide in July and 9.2 million acres due to wildfires throughout the entire fire season of 2012.



# 2013 NWSA Annual Meeting

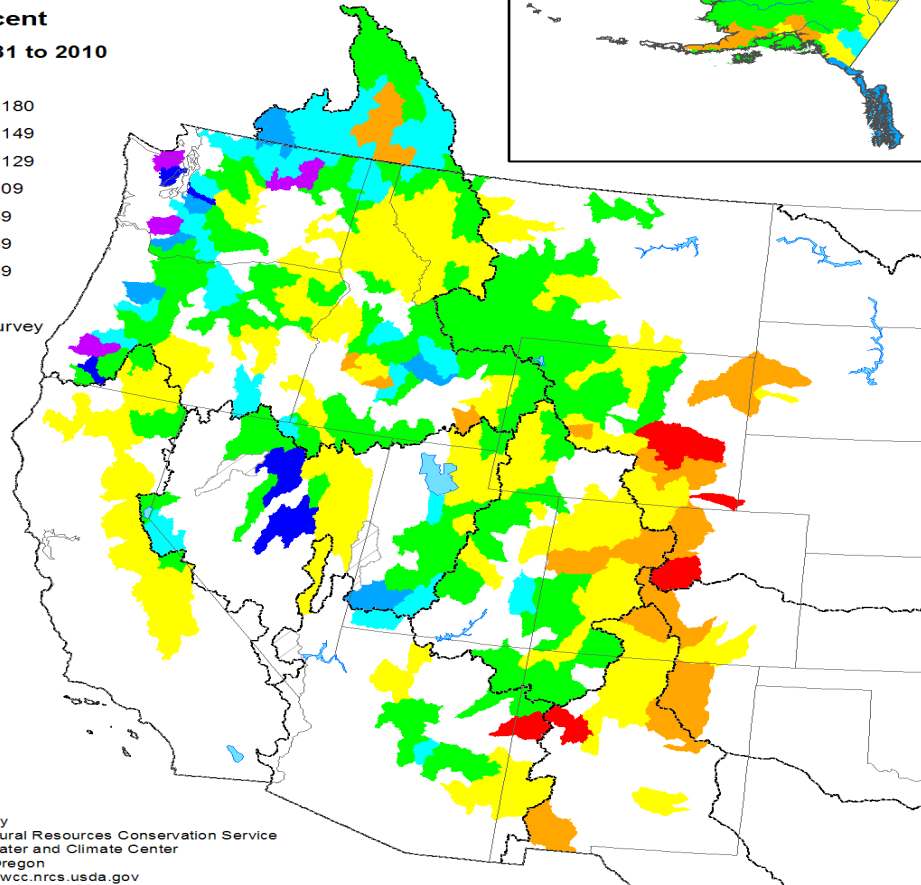
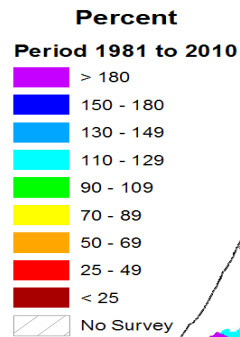
- Continued from the previous page:
- Storms of all types are getting stronger as new evidence suggests that the warming of the earth is drawing the polar jet north.
- This event will be producing warmer air south of the jet increasing the water vapor allowing the atmosphere to pump more heat into big storms.
- Some models have predicted that the “global warming” will increase the strength of storms by 2-10% .

# 2013 NWSA Annual Meeting

2013 Seasonal Snowpack and  
Precipitation % of Normal

# 2013 NWSA Annual Meeting

## Mountain Snowpack as of February 1, 2013



Prepared by  
USDA, Natural Resources Conservation Service  
National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

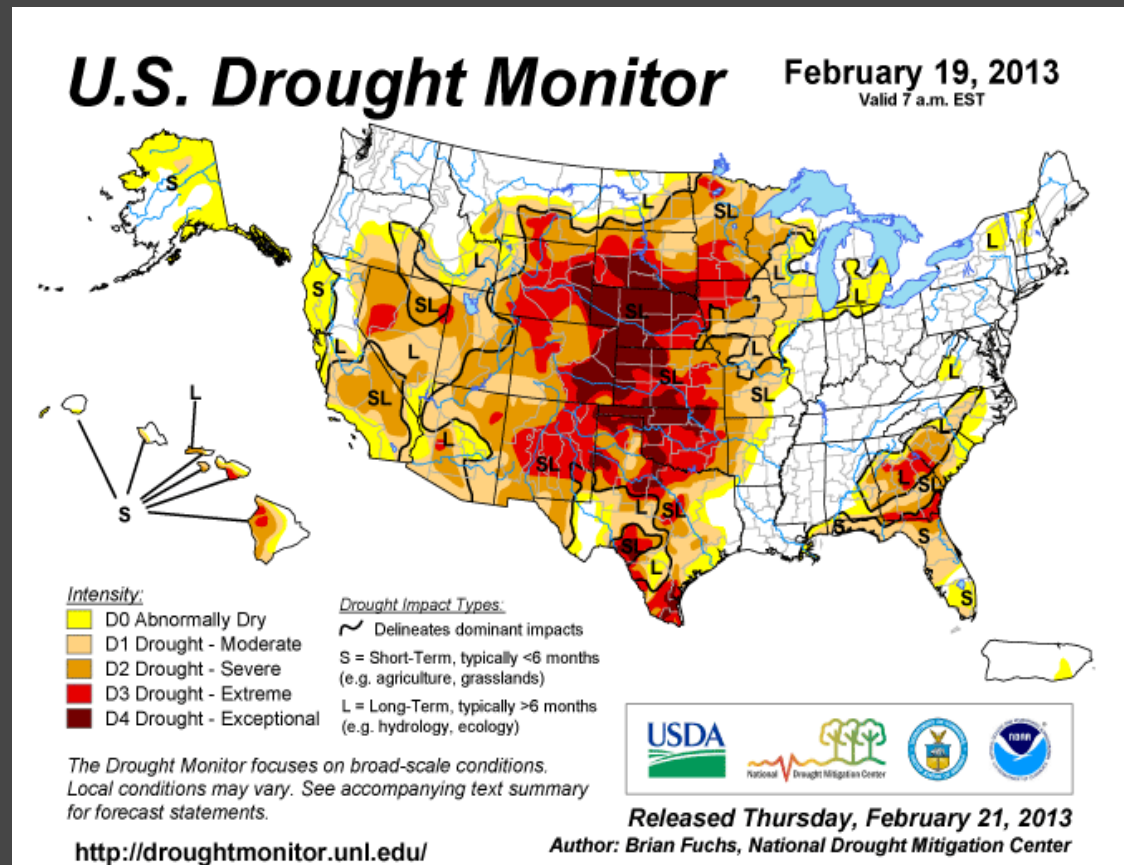


# 2013 NWSA Annual Meeting

- Snowpack % of Normal for the western U.S.
- Wash. – 110-140 mountains..70-90 elsewhere.
- Oregon – 70-120
- Idaho - 70-90
- Montana – 70-90
- CA/NV – 70-100
- AZ/NM – 25-70
- CO – 20-60 front range.. 50-100 west part
- UT – 70-110

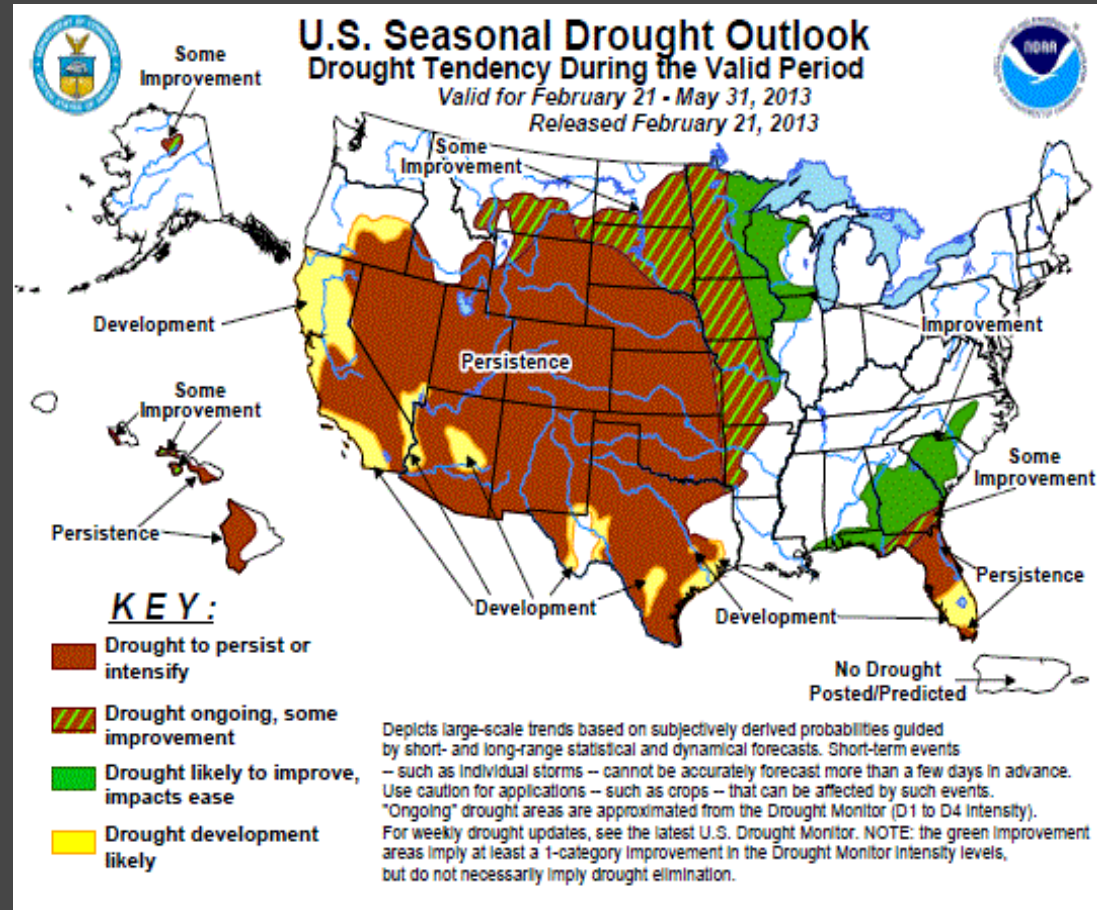
# 2013 NWSA Annual Meeting

- Drought Monitor still showing drought conditions across much of the mid-west and southeast.
- Southwest and southern CA/NV still mod-severe drought.



# 2013 NWSA Annual Meeting

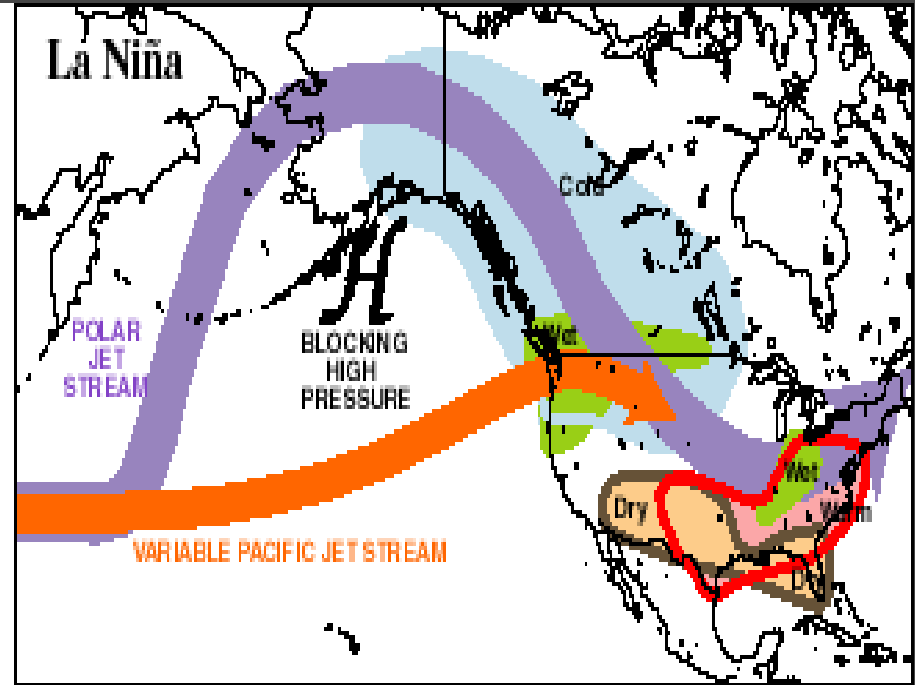
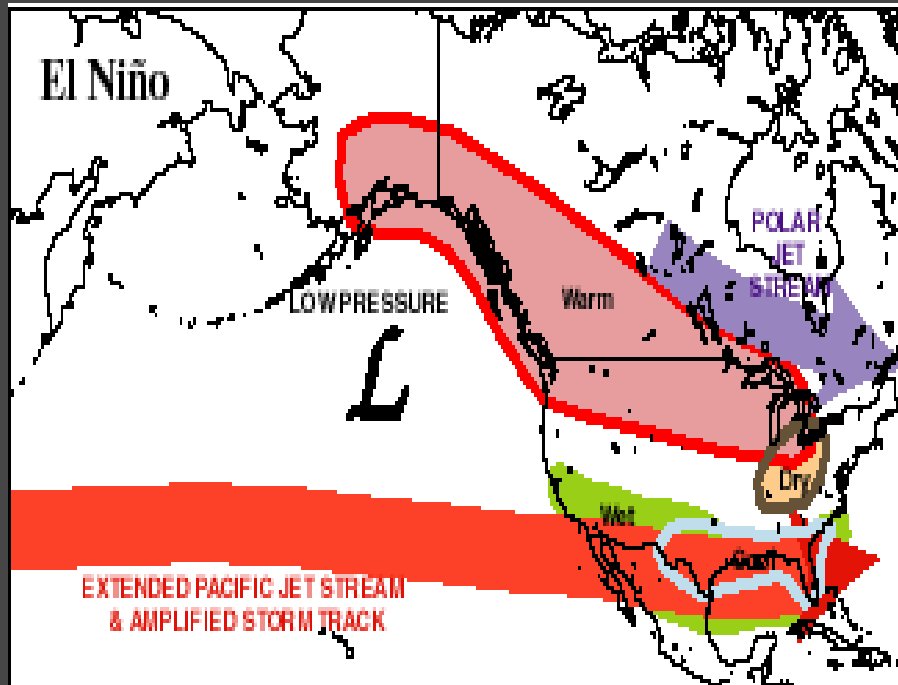
- Seasonal Drought Outlook - Through April 30, 2013
  - Persistent drought conditions across the mid-west, desert SW, southern CA, NV.
  - No changes for the Pac NW and east coast, except Florida.



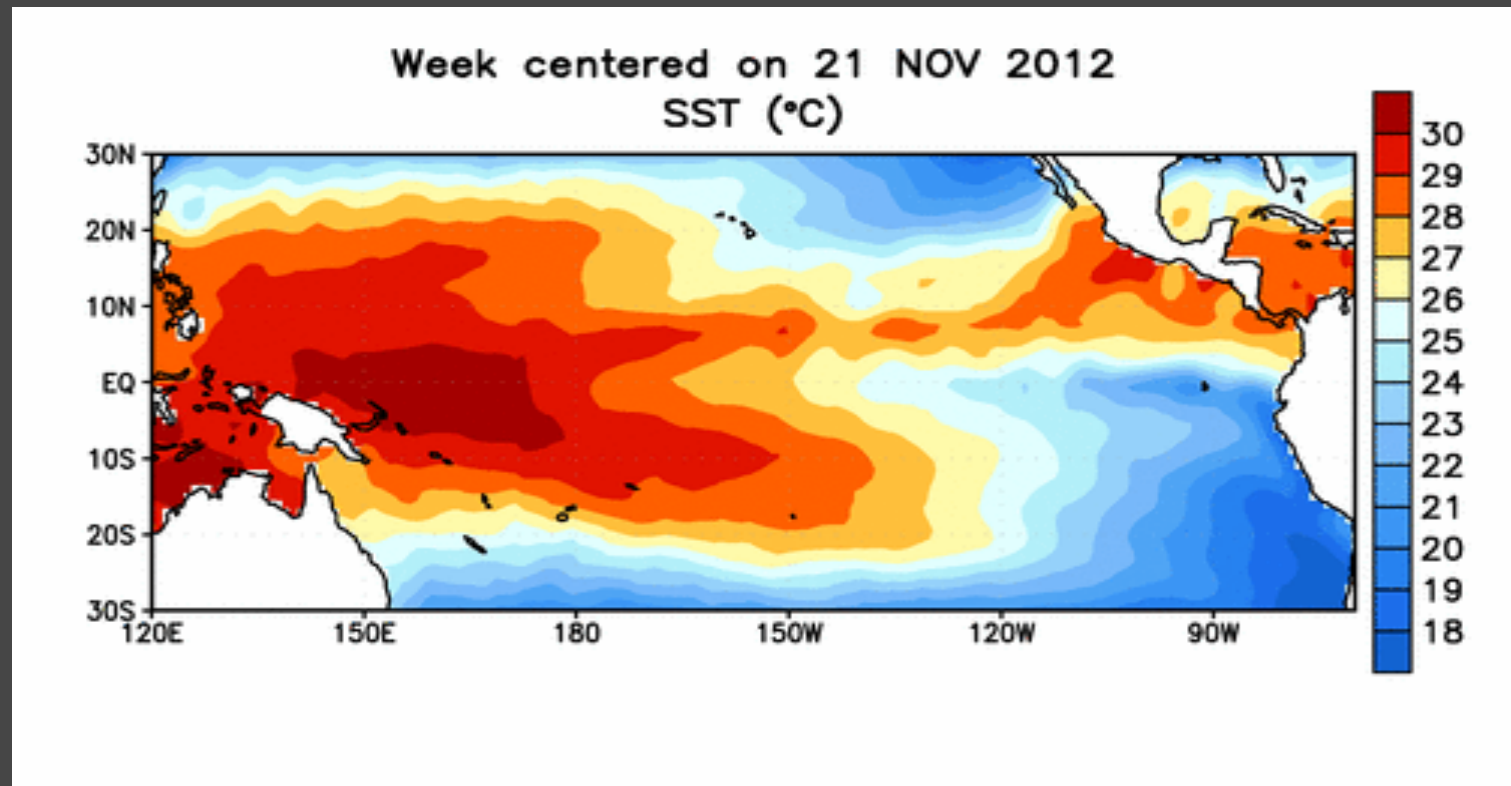
# 2013 NWSA Annual Meeting

## El Nino/La Nina Global Weather Patterns

# El Niño/La Niña effects on winter across the U.S.



# A Neutral ENSO weather pattern is still affecting much of the Northern Hemisphere



# 2013 NWSA Annual Meeting

- So what does ENSO mean to me as a Meteorologist and you as a Fire Fighter?
  - We try to correlate past fire years with this type of global weather pattern to see if we can come up with similar fire years and scenarios.
  - For 2013 summer fire season, I am looking at the fire years of 1974, 78-81,84, 92-94, 96, 01,03, 08,and 2012.
  - These were the years where ENSO was in a Neutral Phase. We expect this pattern to continue into this summer.

# 2013 NWSA Annual Meeting

- Biggest fire years with an ENSO Neutral!
- 1984 - Pac NW
- Early 1994 – All over the Western U.S.
- 2001, 2003, and 2008 - Pac NW
- 2012 – All over the U.S.
- Some ENSO Neutral years were huge fire years and others were light fire years.



# 2013 NWSA Annual Meeting

- Recent and on-going climatologic and hydrologic studies are coming up with basically the same scenario.
  - Forests and rangelands especially in the West and Southwest continue to suffer from drought stress.
  - Many forests remain under attack from various species of pests. (i.e. bug kill)
  - Finally, some studies show that wildfire will remain a problem and increase over the next 25 years.

# 2013 NWSA Annual Meeting

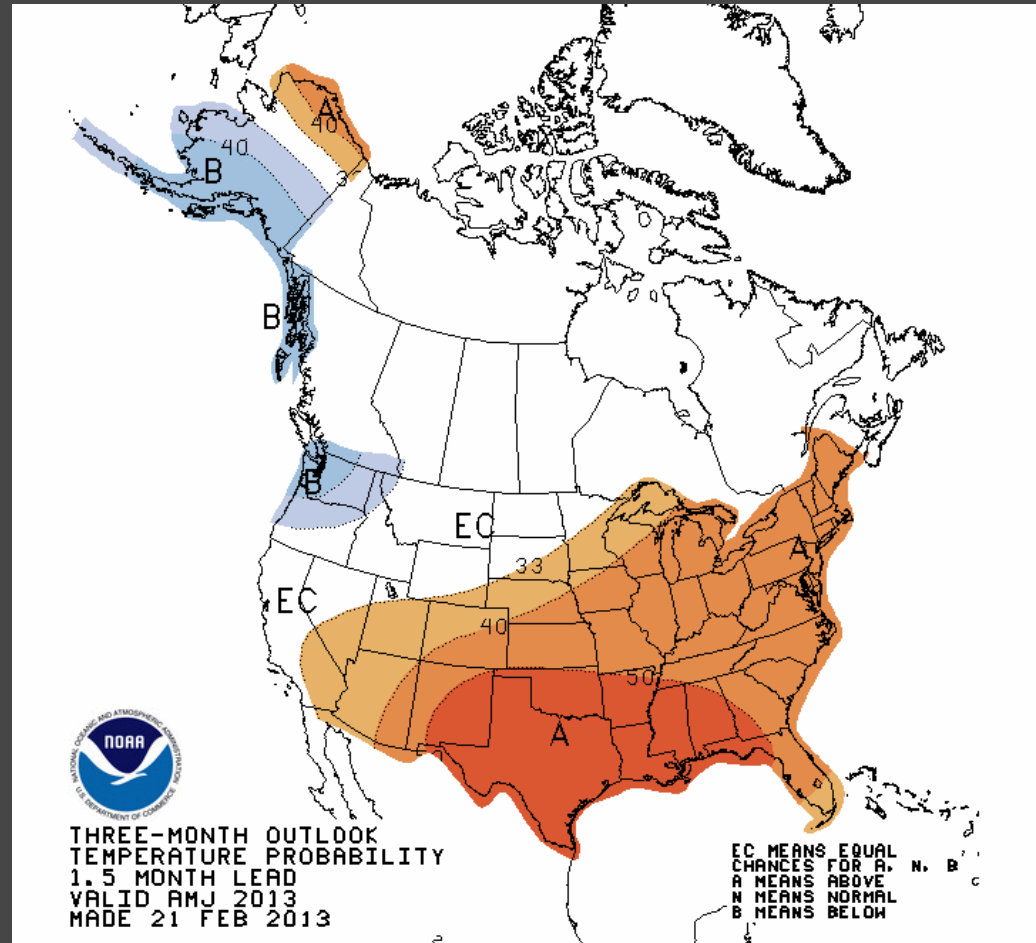
- Science and research is proving that the earth is going through a robust warming phase.
  - Therefore, warmer temperatures are being produced globally and across the U.S.
  - With the warmer air comes increased moisture as water vapor is added to the middle and lower atmosphere.
  - This will produce stronger thunderstorms and other violent weather. Where there is an absence of precipitation drought will persist.

# 2013 NWSA Annual Meeting

Seasonal Long Lead  
Outlooks and a forecast for  
the 2013 Summer Fire  
Season.

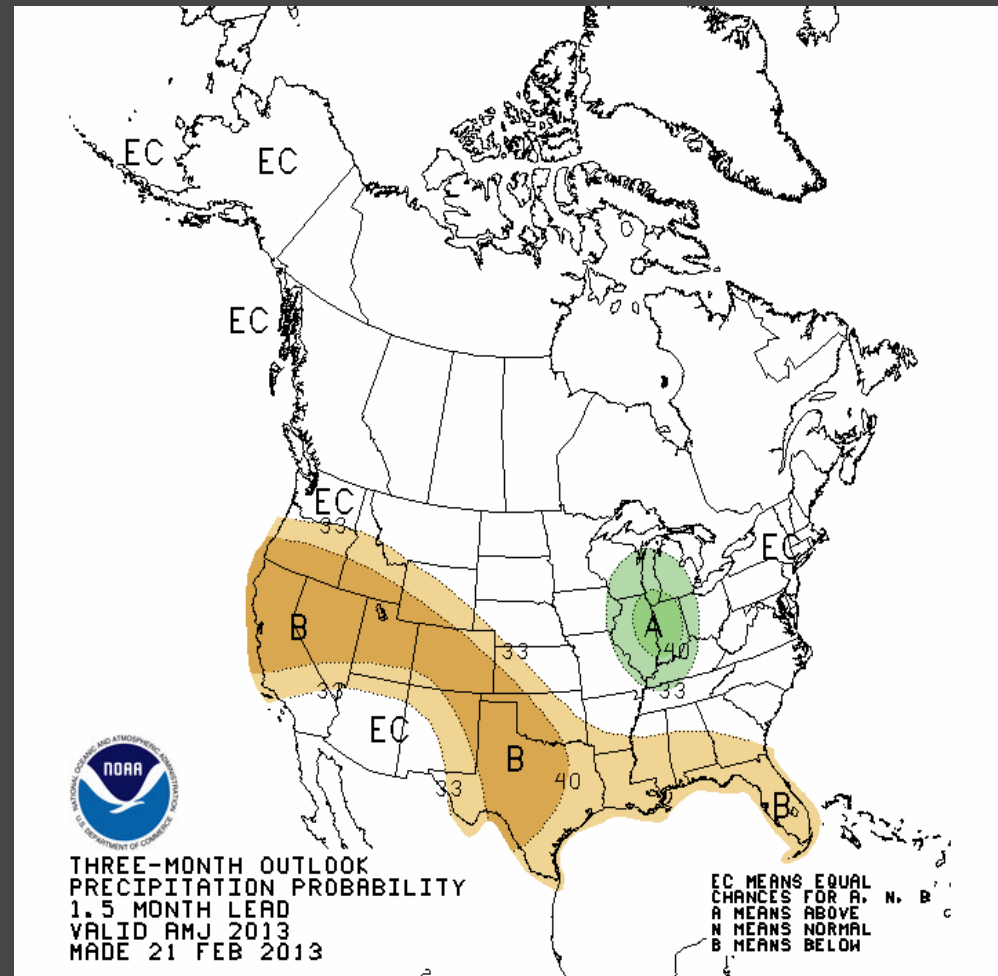
# 2013 NWSA Annual Meeting

- AMJ still shows a strong Above average temperature anomaly over the southern and eastern part of the U.S.
- The desert Southwest also shows an Above average temperature.
- The Pacific NW and Alaska are Below average.



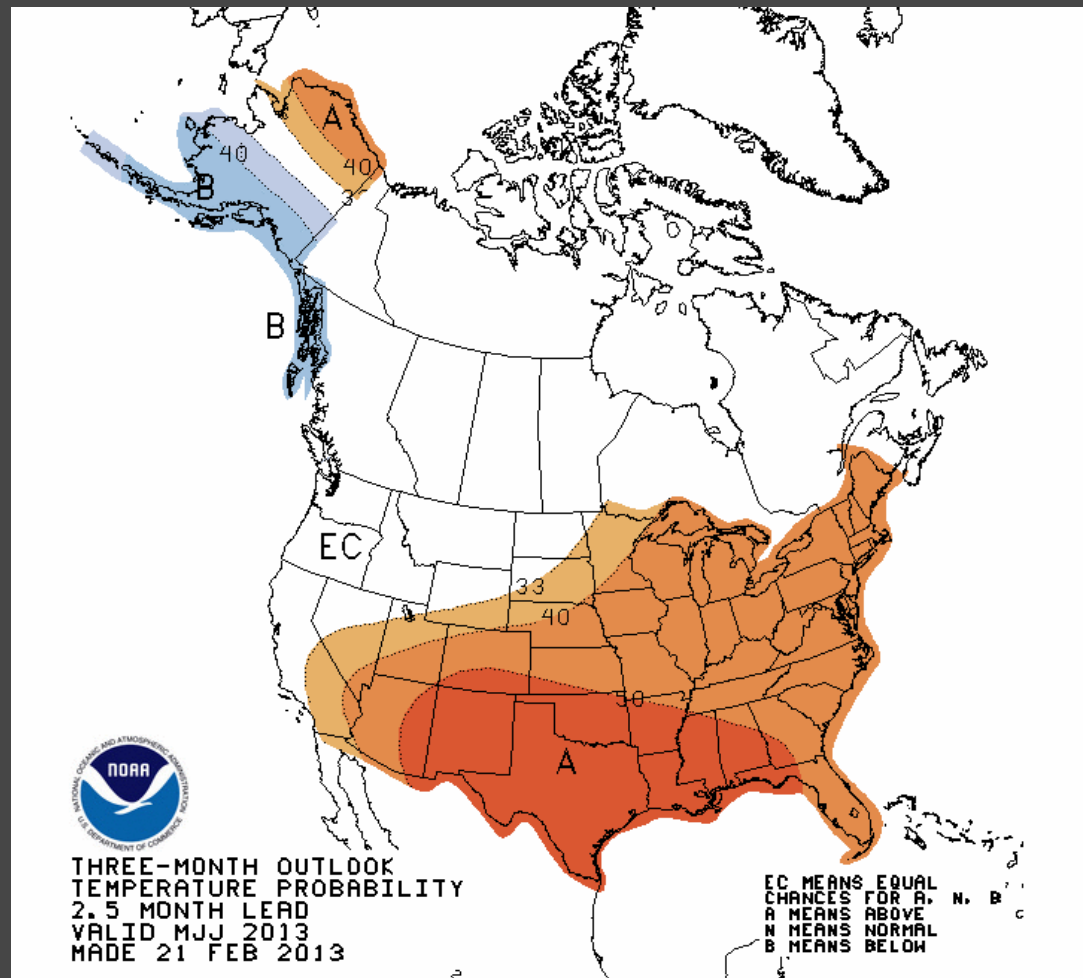
# 2013 NWSA Annual Meeting

- The AMJ precipitation graphic shows drier conditions over the southern Pacific NW, east into Texas and into the South.
- Above average over the upper mid west.
- The EC over AZ and NM looks to be an early monsoon signature.



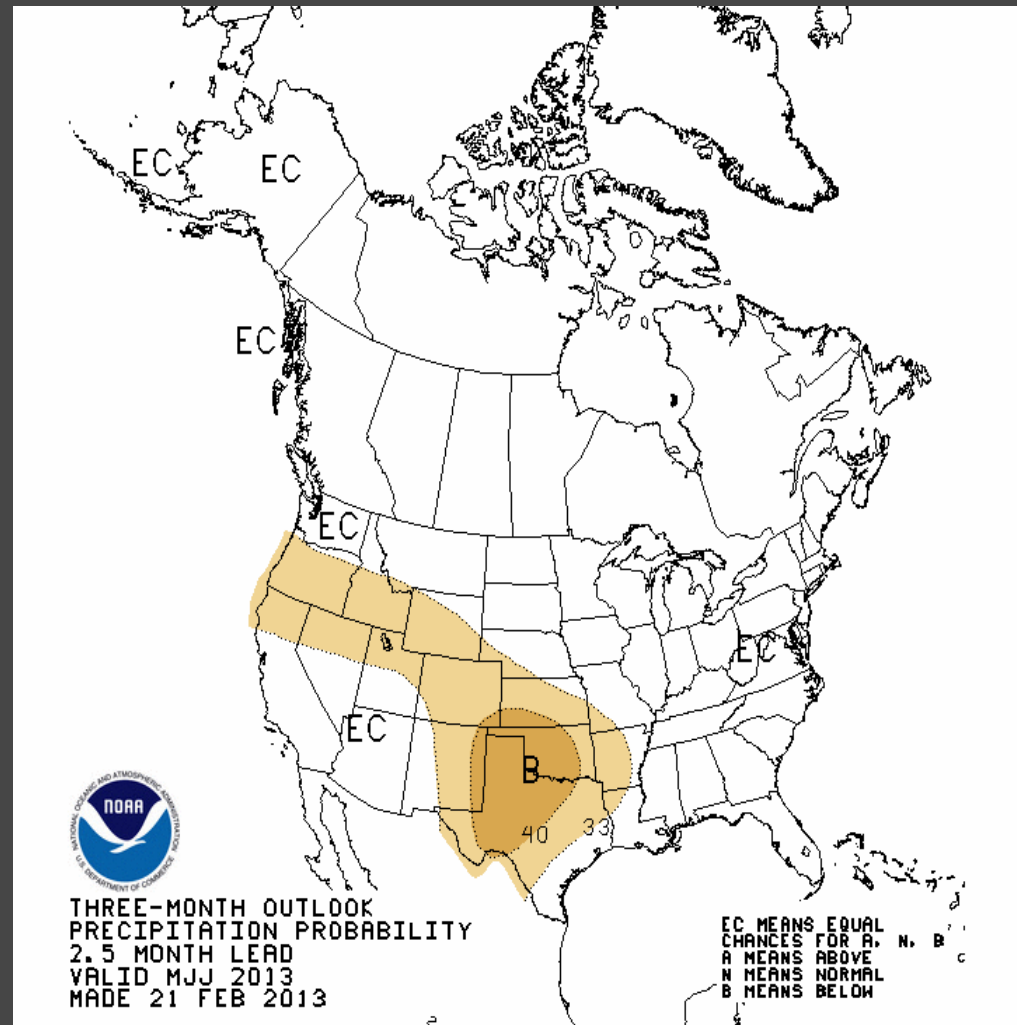
# 2013 NWSA Annual Meeting

- MJJ Temperature forecast still reflects the warm temperature bias over much of the U.S.
- EC over the Pac NW, Nevada and No. Cal.



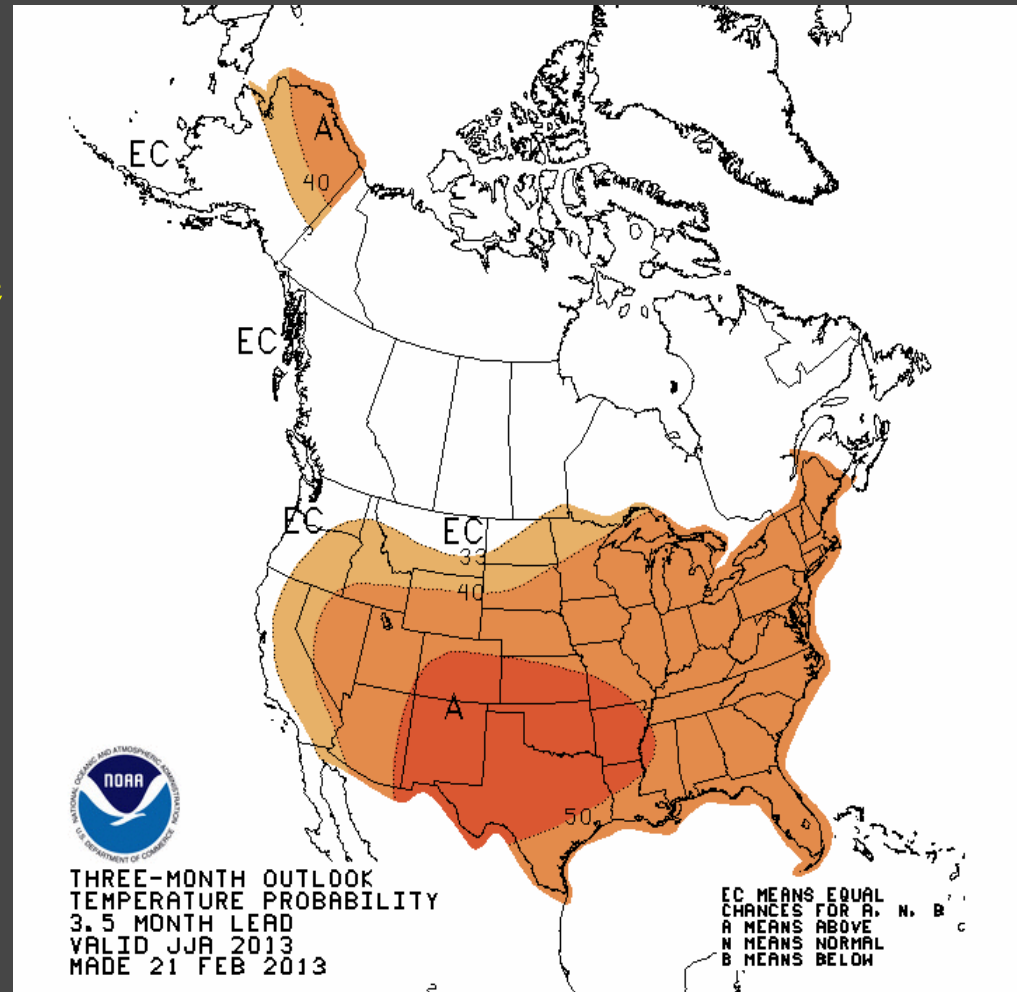
# 2013 NWSA Annual Meeting

- MJJ precipitation chart is still showing the EC over the northern tier states and east.
- A narrow band of Below average precipitation sweeps across southern Pac NW and northern Cal. towards a Below anomaly over the Texas Panhandle.
- Rest of US remains EC.



# 2013 NWSA Annual Meeting

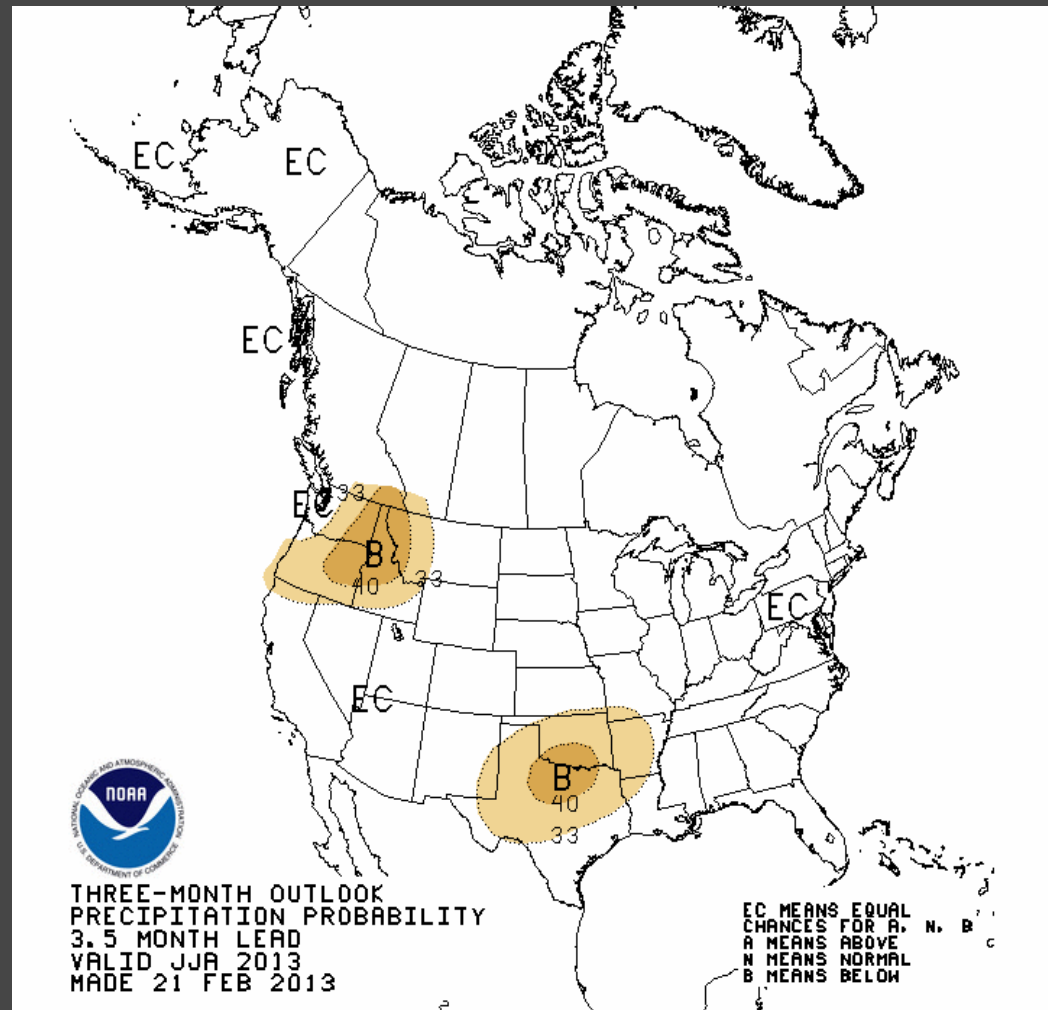
- The JJA SLLO for temperature now shows most of the U.S. dominated by the Above average temperature anomaly.
- Highest Above average anomaly is centered over New Mexico, Texas, and Oklahoma.
- Good monsoon Traj.





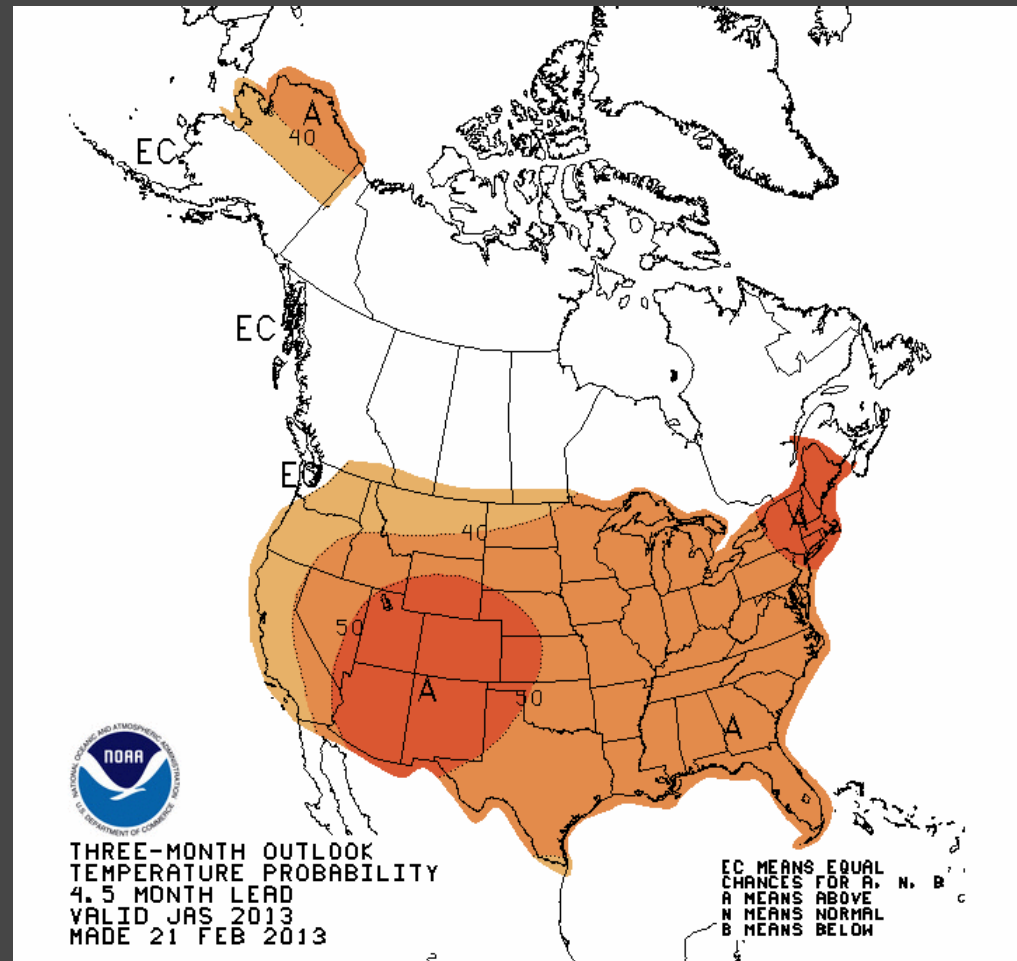
# 2013 NWSA Annual Meeting

- The JJA precipitation anomaly puts the Below normal area over much of the Pacific NW and over Texas and Oklahoma.
- All other areas are showing up as Equal Chances (EC)



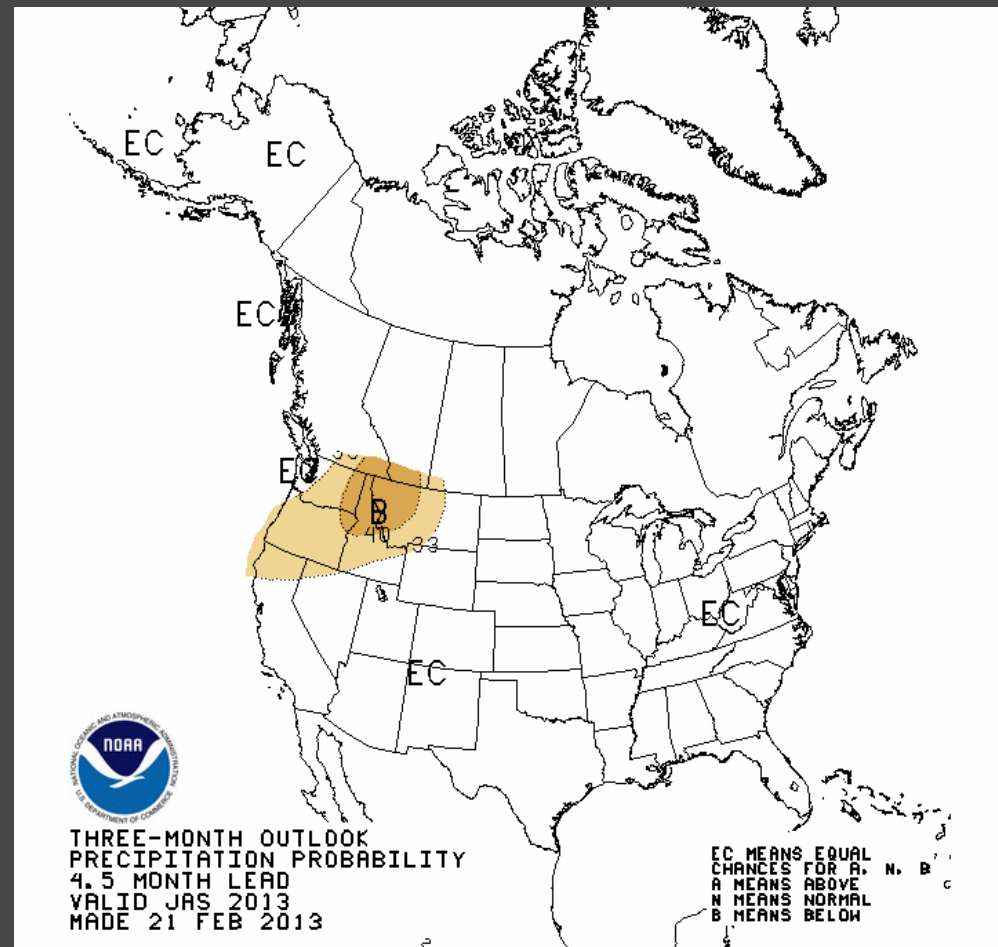
# 2013 NWSA Annual Meeting

- The JAS temperature anomaly has now expanded to cover nearly the entire U.S.
- The strongest area of Above average is positioned near the 4 corners.



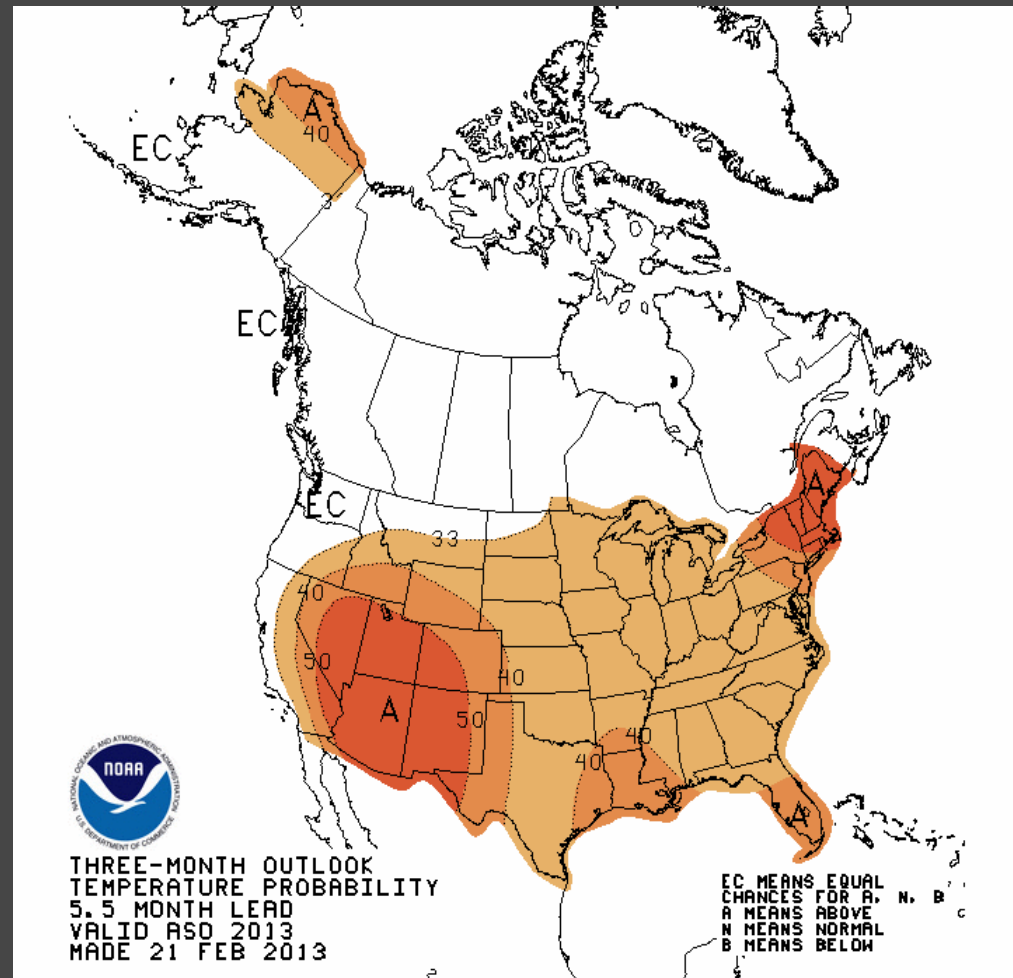
# 2013 NWSA Annual Meeting

- The JAS precipitation graphic still has a Below average precipitation anomaly over the NW.
- All else is EC.



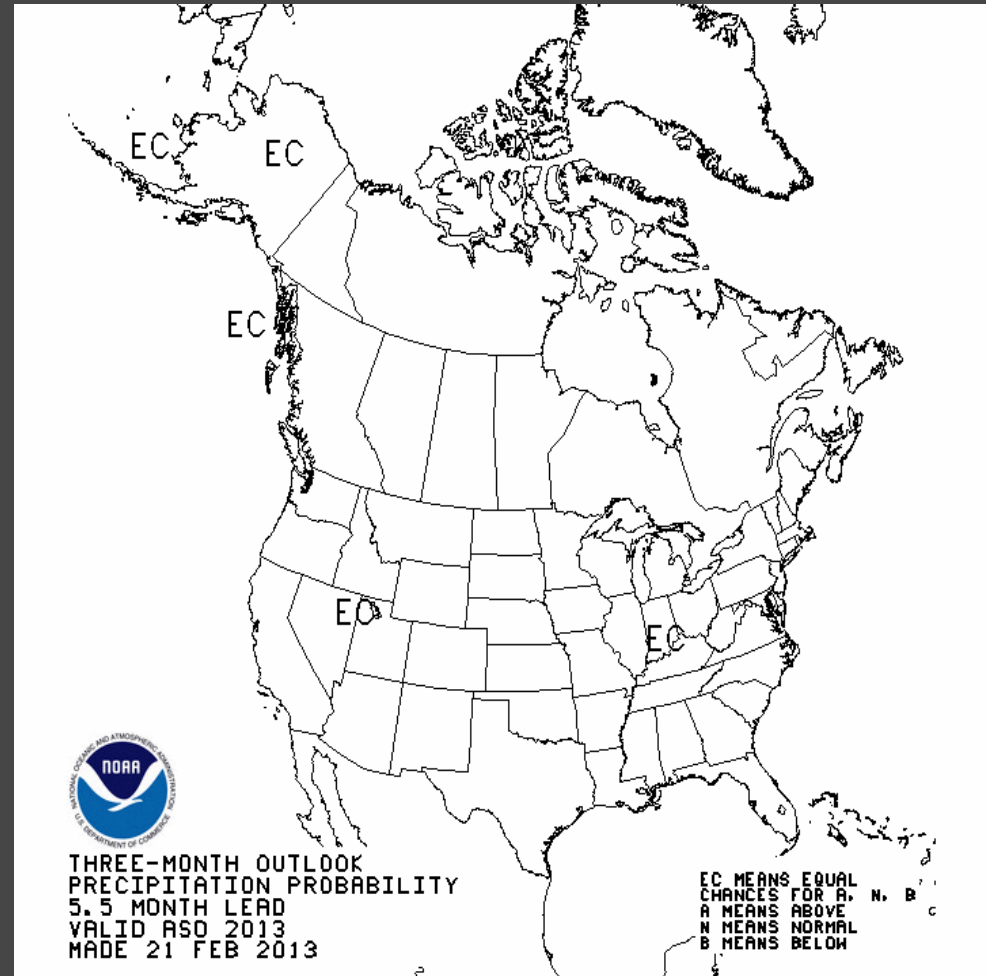
# 2013 NWSA Annual Meeting

- As we move into ASO the Above average temperature anomaly begins to show signs of shrinking away from the Pac NW.
- We still have an above average anomaly now over Arizona.



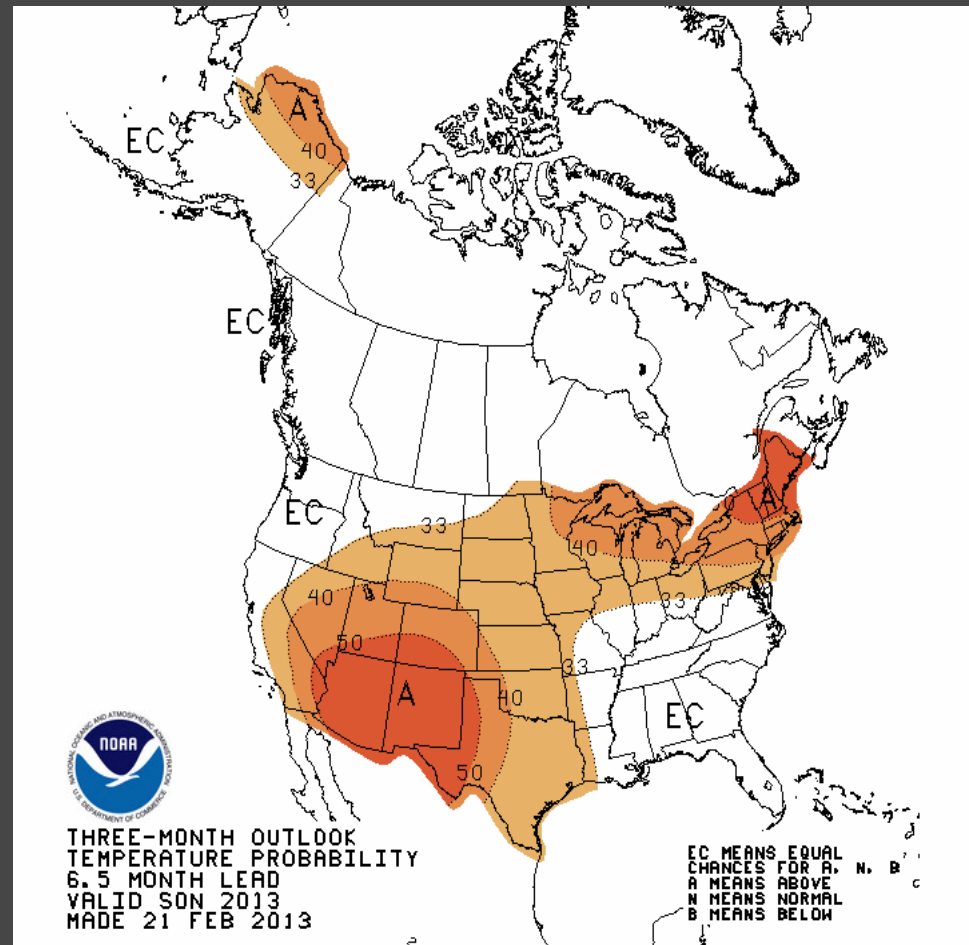
# 2013 NWSA Annual Meeting

- There is no Below or Above average signature for this 3 month period. All areas are EC.
- This is rather usual for a neutral ENSO pattern.



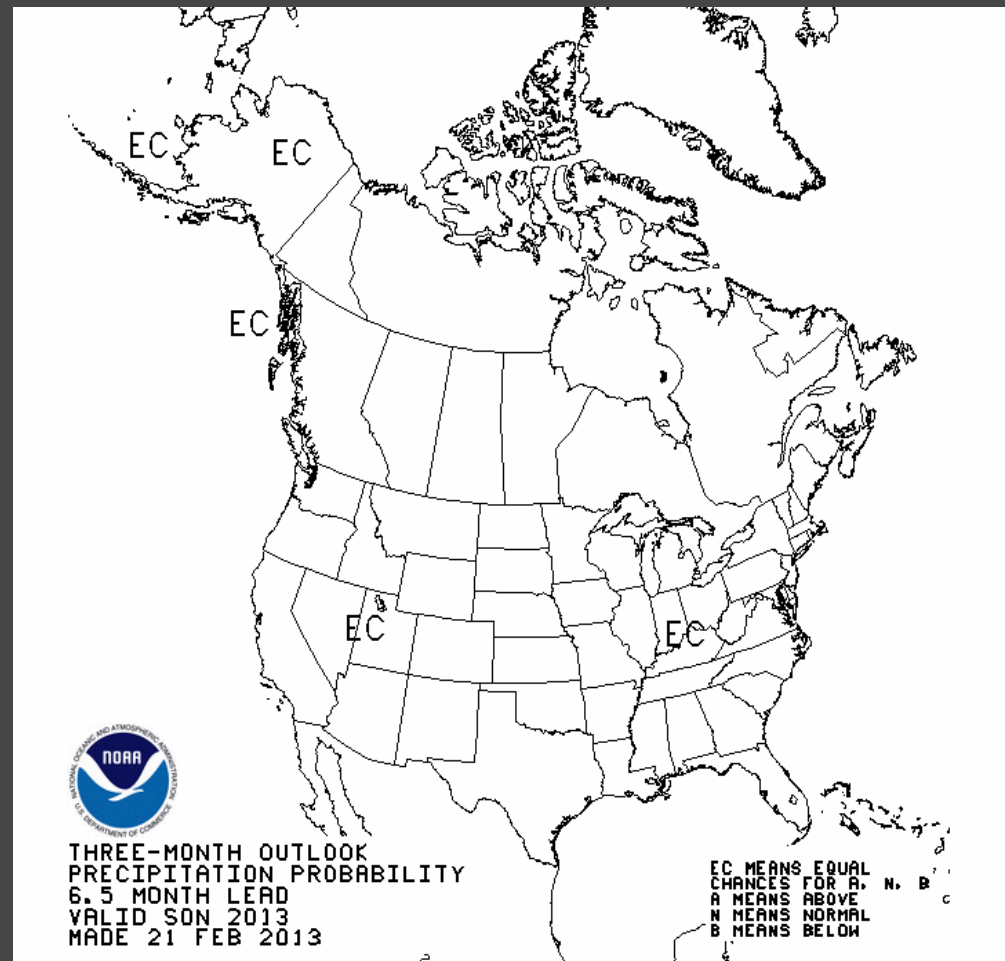
# 2013 NWSA Annual Meeting

- The Above average anomaly continues to recede south during the fall months of SON.
- We still have a Above average anomaly over Arizona and New Mexico that includes the intermountain west and upper mid-West.



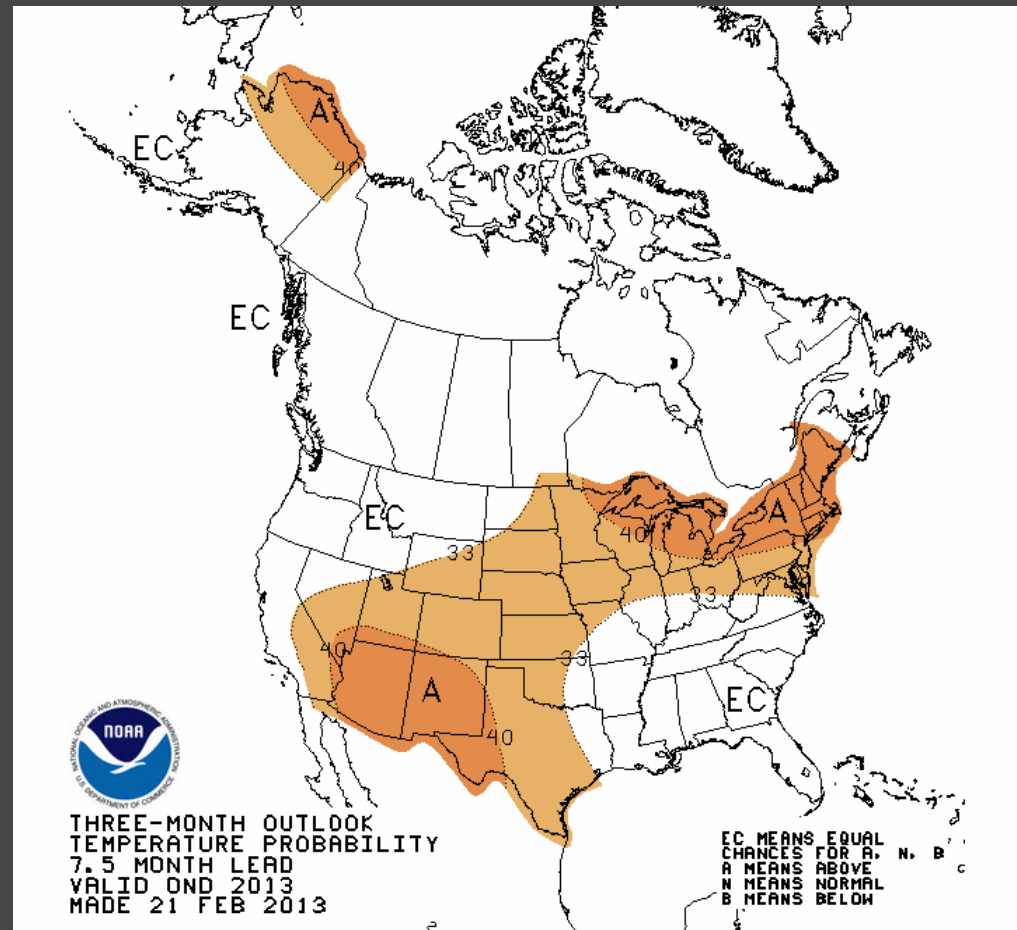
# 2013 NWSA Annual Meeting

- The SON precipitation anomaly now is using climatology as all of the US is still EC.



# 2013 NWSA Annual Meeting

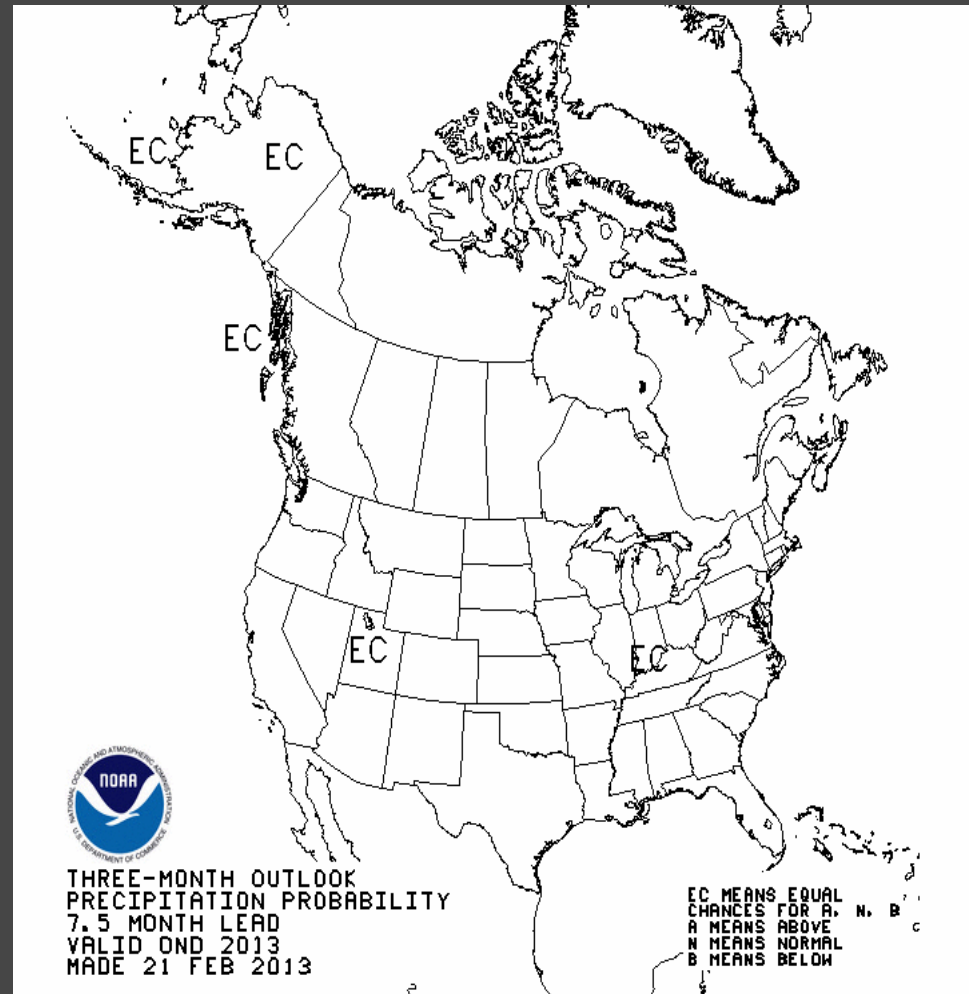
- There is not much change from the previous SLLO of SON.
- An Above average anomaly remains strong over the Desert SW and stretches northeast into the upper mid-West and Northeastern U.S.





# 2013 NWSA Annual Meeting

- Climatology is now driving the precipitation side of the model.
- Again Equal Chances of A, B, or N. through late Fall and early Winter.



Please..Be safe this coming  
fire season.

Questions and/or  
Comments anyone?