Missouri Basin Climate/Drought Early Warning Webinar: El Niño

MRBIR 2015 Summer Meeting
Bismarck, ND

Allen Schlag & Doug Kluck (NOAA)
Dr. Dennis Todey (State Climatologist
South Dakota State Univ.)

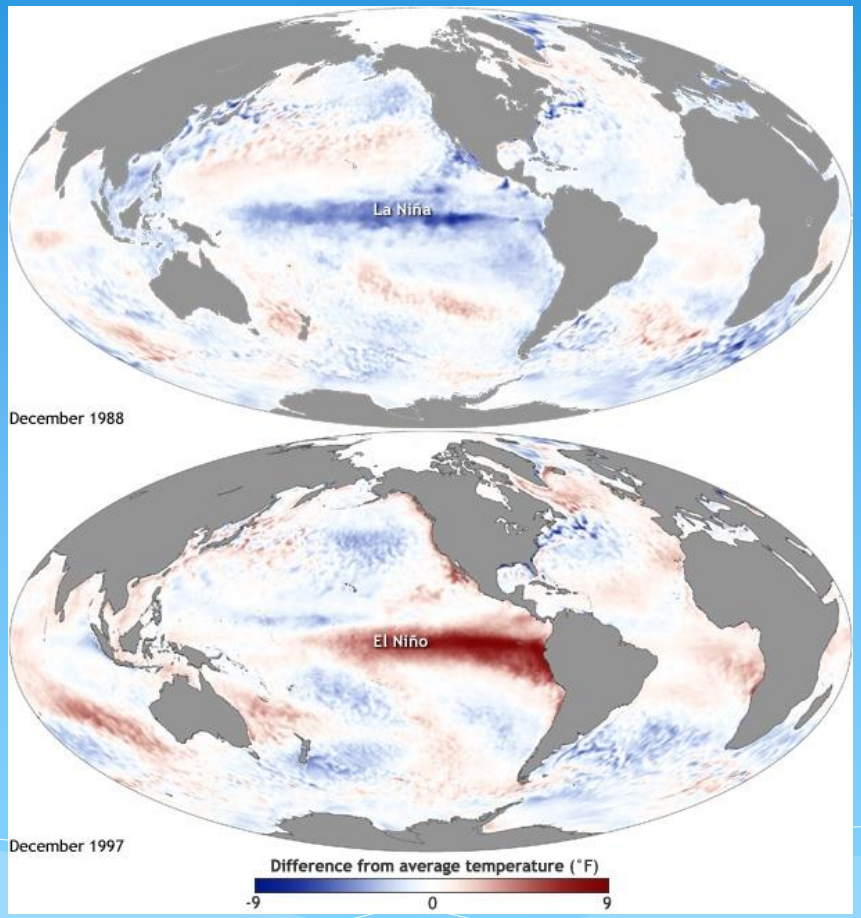
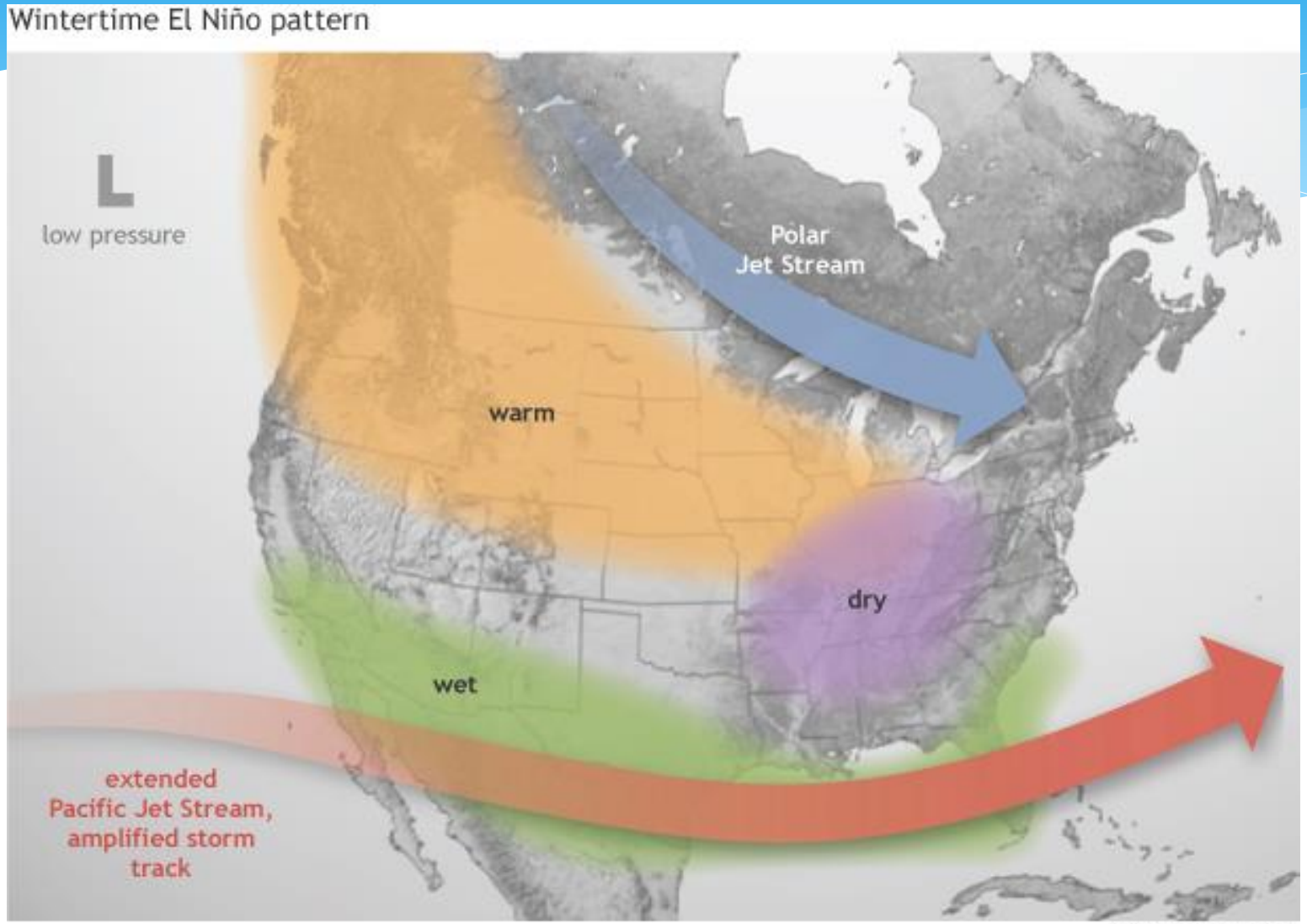


Photo taken Feb 19, 20

Sea Surface Temperatures – 1988 La Niña and 1998 El Niño

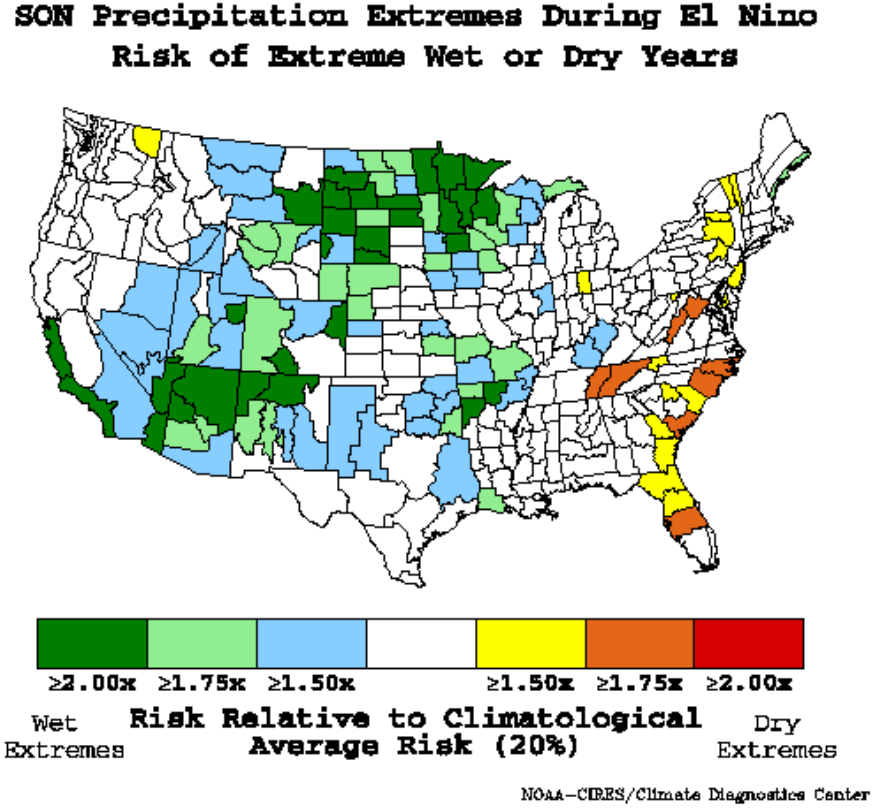
El Nino – Generalized Image

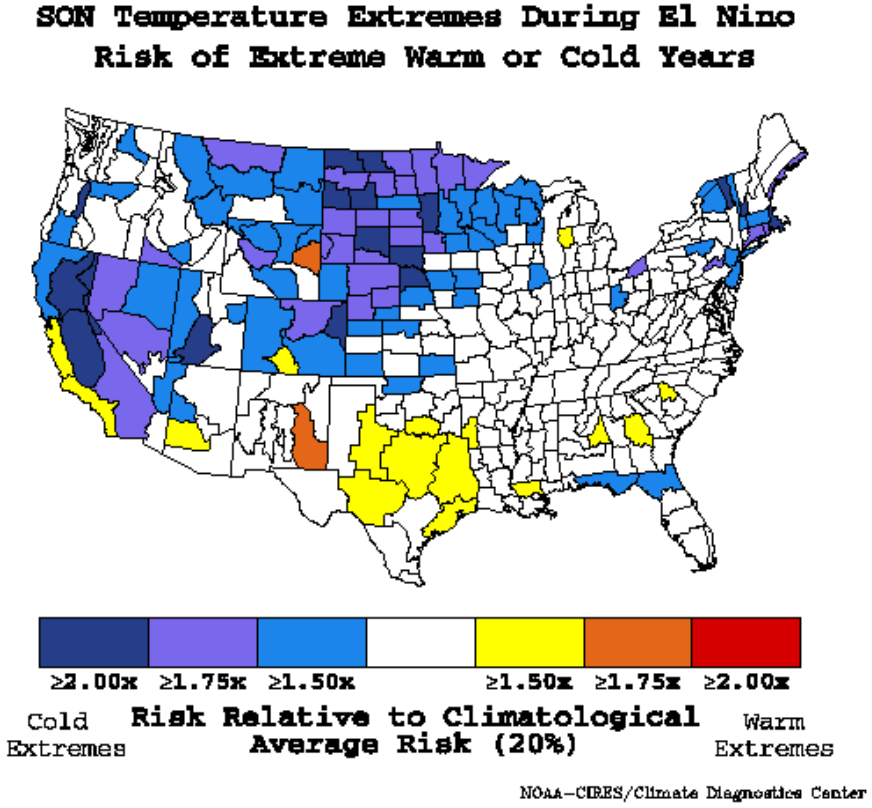


El Nino Extreme Potentials

* Likelihood of extreme events – precip or temp in highest/lowest 20% of years.
* http://www.esrl.noaa.gov/psd/enso/climaterisks/

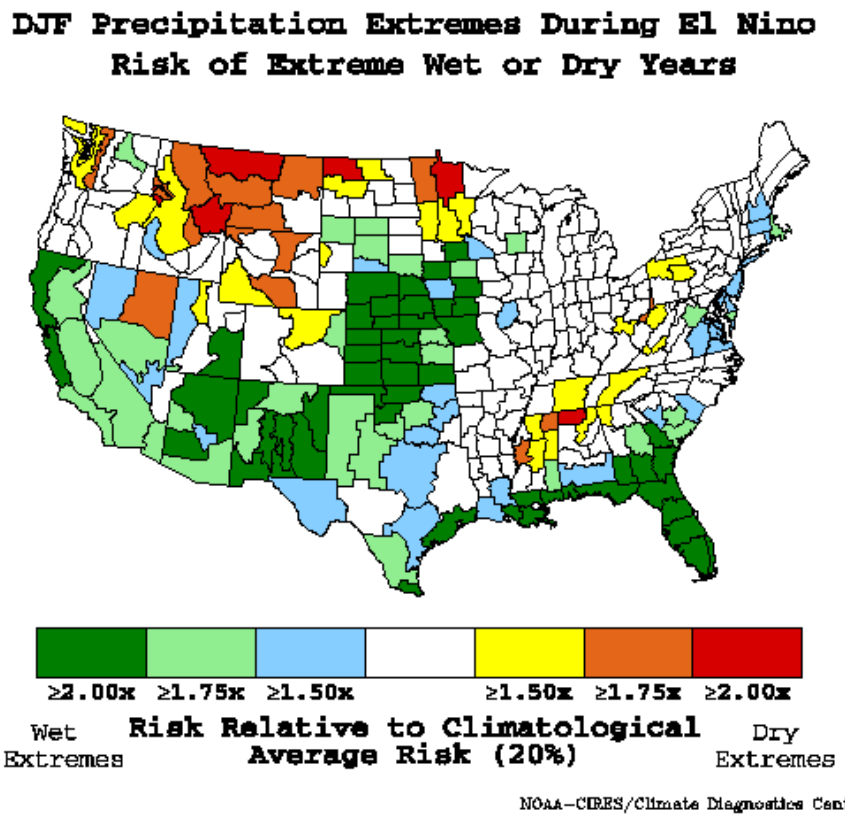
Fall (Sep – Nov) Precipitation and Temperature Extremes

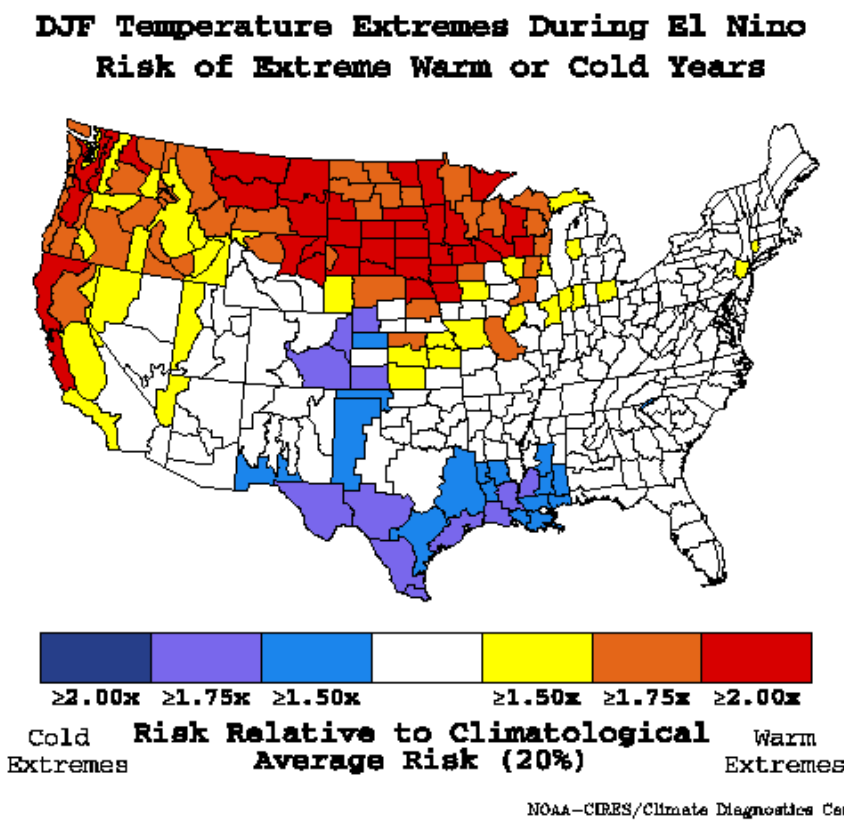




http://www.esrl.noaa.gov/psd/enso/climaterisks/

Winter (Dec - Feb) Precipitation and Temperature Extremes





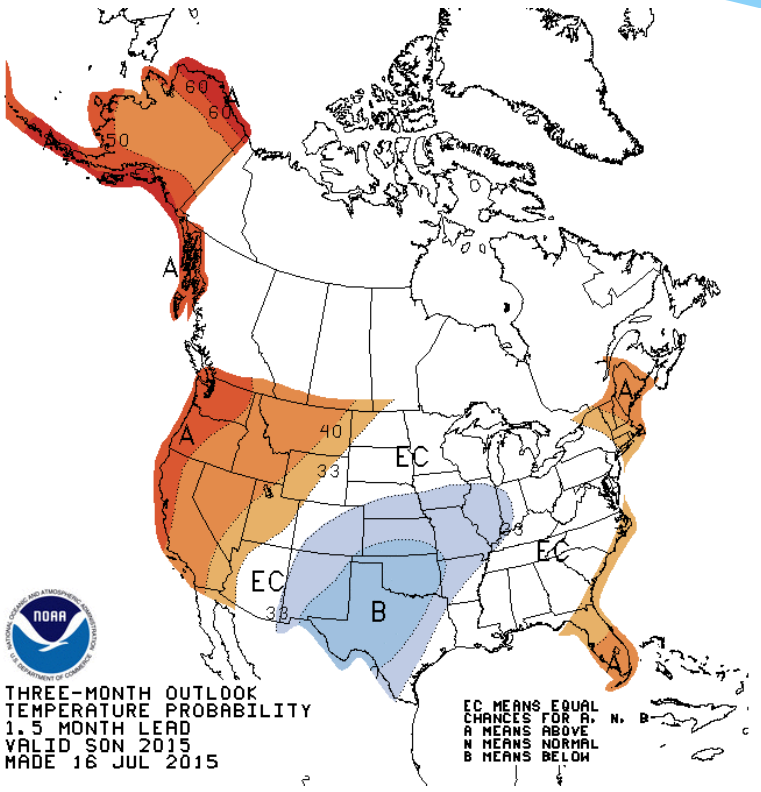
http://www.esrl.noaa.gov/psd/enso/climaterisks/

Climate Outlooks

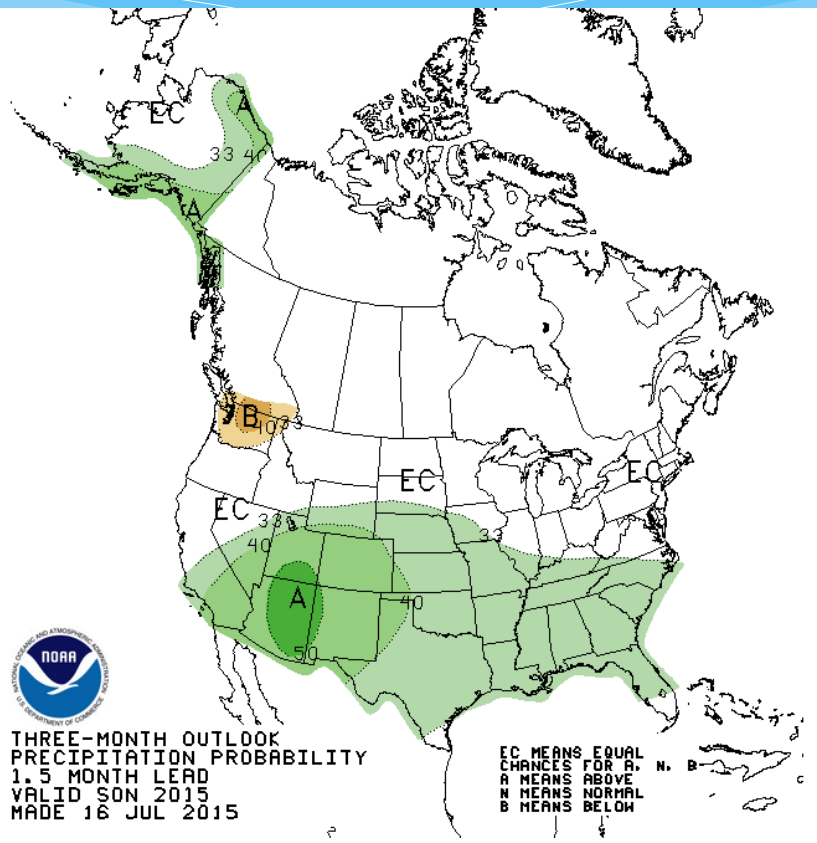
* **Fall and Winter Outlooks**
* **Seasonal Drought Outlooks**

3 Month Temperature and Precipitation Probabilities

(Sept. – Nov.)



Temperature

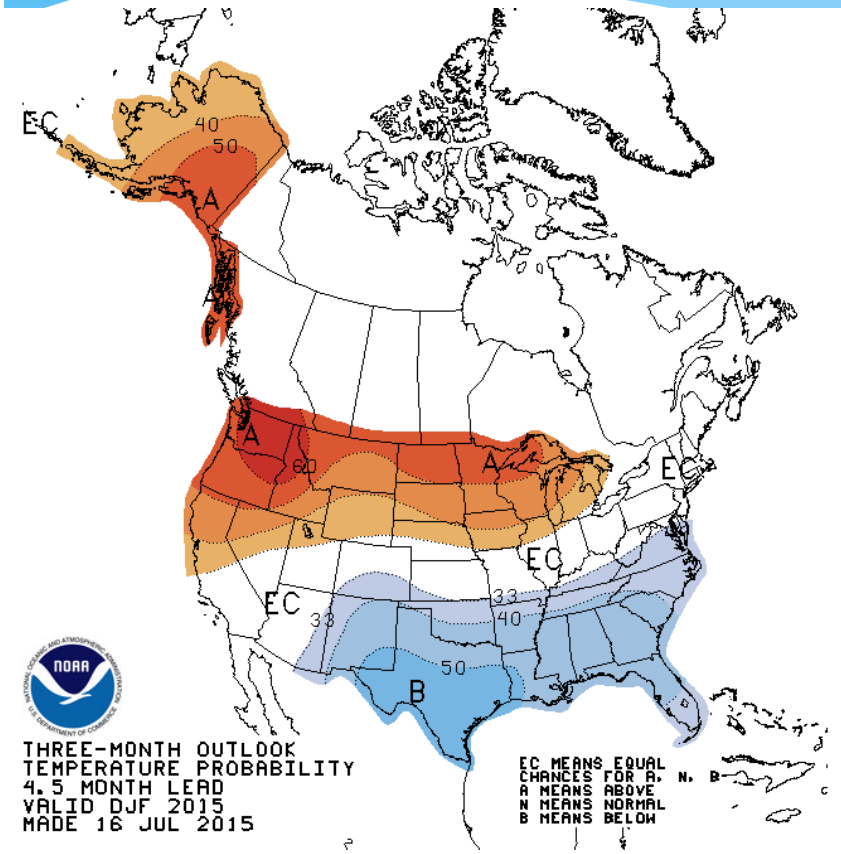


Precipitation

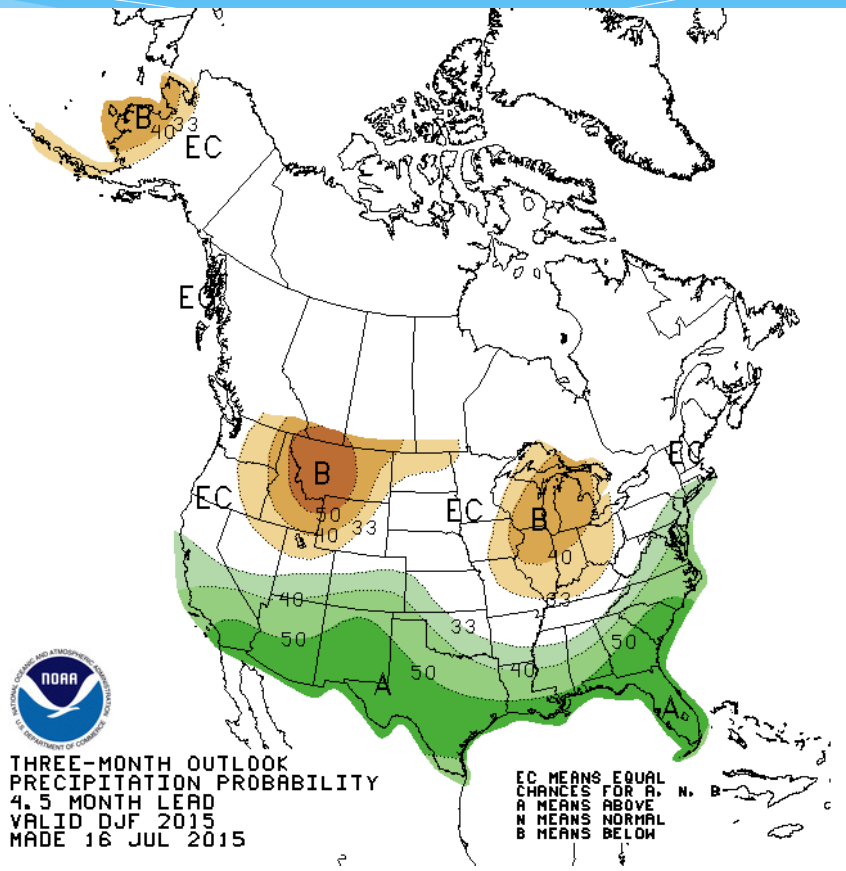
http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1

3 Month Temperature and Precipitation Probabilities

(December - February)



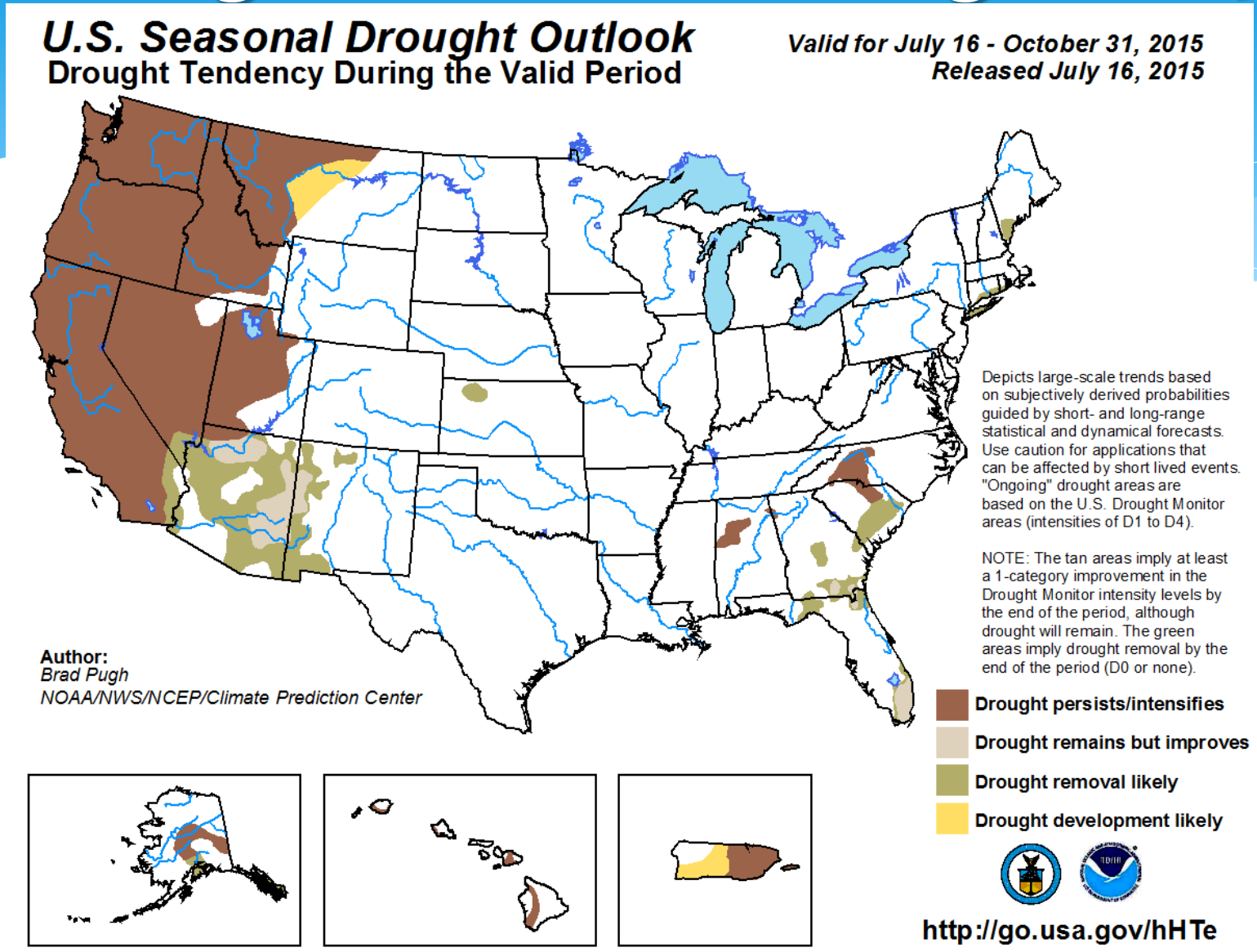
Temperature



Precipitation

http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1

Drought Outlook through Oct 31



http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.gif/

Summary - Conditions

* El Niño current and strengthening
* Some current impacts
* Very likely to impact winter across nation

* Mixed Temp. and Precip. currently from some places quite wet to fairly dry
* Drought in western MT
* Current ag conditions generally OK

Summary - Outlooks

* Wetter conditions more likely in the fall central and southern plains
* Could extend further north (composites and models)
* Winter likely warmer northern areas of basin
* Dry quite likely MT/parts WY
* Less snow accumulation mountains/plains

Ag Issues

* Currently no major wetness issues (a few minor ones) – some dryness issues in the Missouri Basin
* Crop development generally OK – rangeland OK
* Fall Wetness could lead to delayed harvest – if very wet
* Warmer winter – winter wheat?
* Rangeland
* Spring – question mark on shift out of El Niño

Upper Missouri Basin Impacts

* Water/Missouri River (snowpack, plains & mountains)
* Agriculture
* Fire
* Energy
* Municipal Costs (storm costs)

In Closing

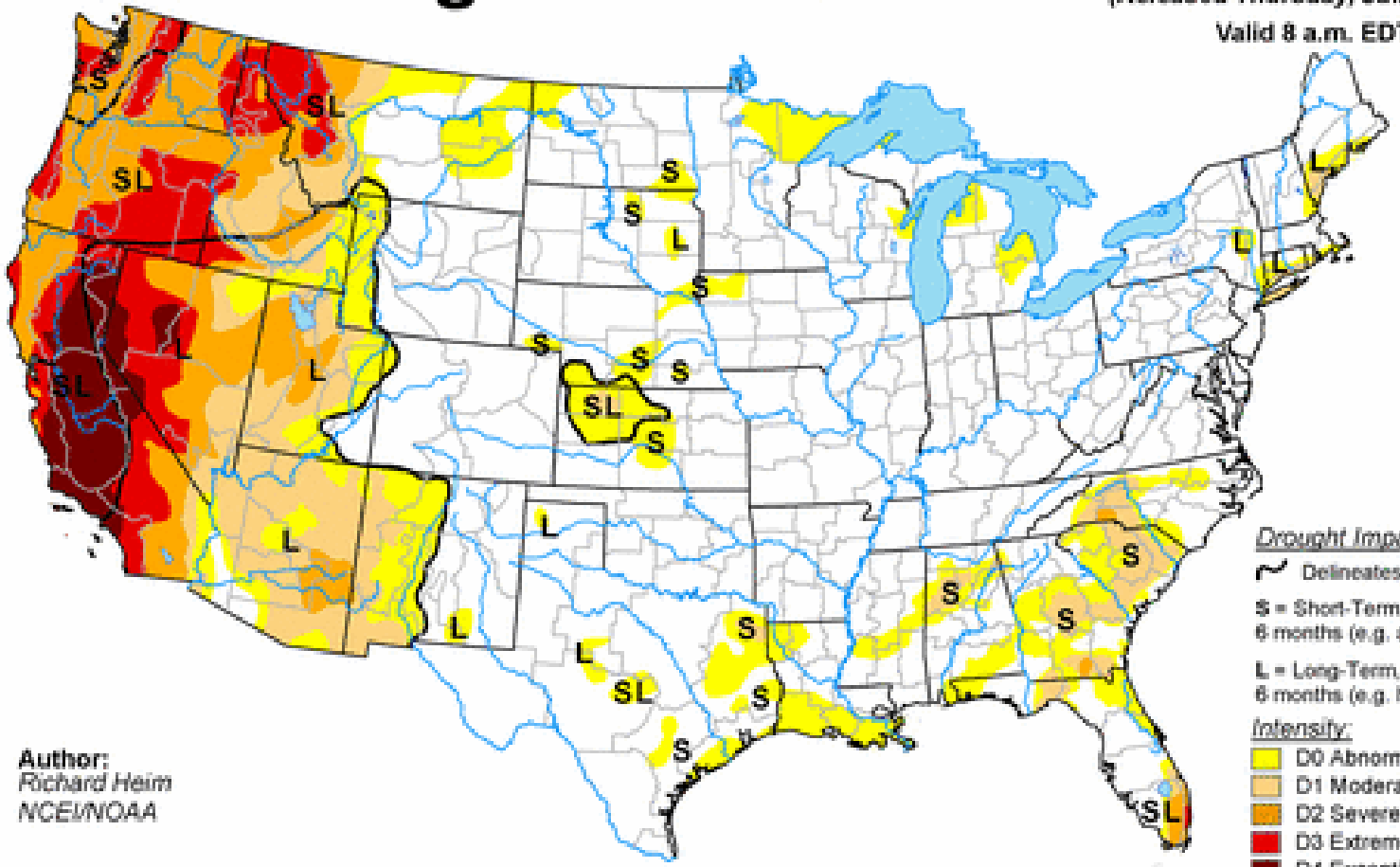
* Probabilities, not absolutes
* Potential pitfalls include AO, PDO, to name a couple

U.S. Drought Monitor

July 28, 2015

(Released Thursday, Jul. 30, 2015)

Valid 8 a.m. EDT



Author:
Richard Heim
NCEI/NOAA

Drought Impact Types:

Delineates dominant impacts

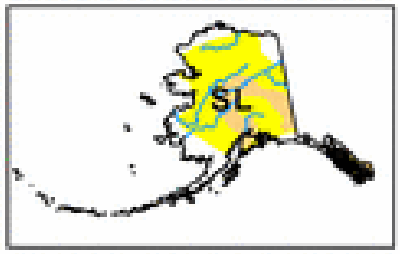
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

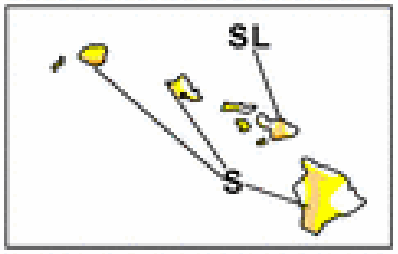
L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

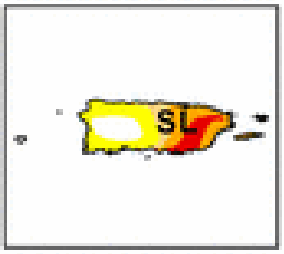
Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



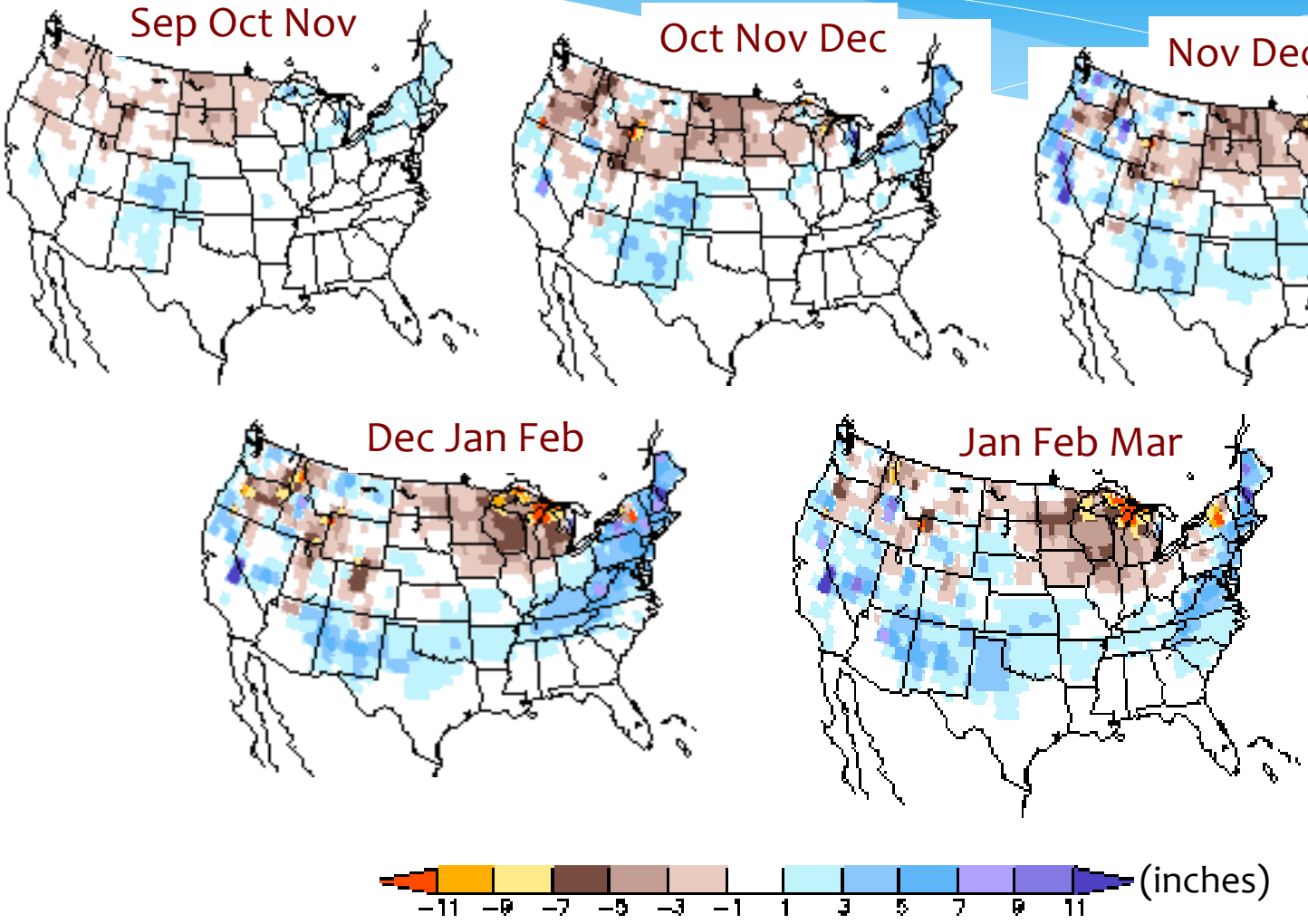




USDA

http://droughtmonitor.unl.edu/

Snow under El Niño (1950-2014)



- Potential for below average snowpack and snow cover on the ground in much of the North Central region during El Niño

http://www.cpc.ncep.noaa.gov/products/precip/CWlink/ENSO/composites/EC_ENS_index.shtml

Fire Issues

* Complicated issues – what is the problem this year?
  * Dry surfaces
  * Less snow
  * Wet fall?
* Affected by fall pcp
* Open winter likely plains quite likely
* Likely location specific