Great Plains and Midwest Climate Outlook
August 20, 2015

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National Drought Mitigation Center

NOAA

Regional Climate Centers

AASC
American Association of State Climatologists

General Information

- **Providing climate services to the Central Region**
  - Collaboration with Dennis Todey (South Dakota State Climatologist), Jim Angel (Illinois State Climatologist), Doug Kluck and John Eise (NOAA), State Climatologists and the Midwest Regional Climate Center, High Plains Regional Climate Center, NOAAs Climate Prediction Center, Iowa State University, National Drought Mitigation Center

- **Next Climate/Drought Outlook Webinar**
  - September 17, 2015, Laura Edwards (SDSU Extension) and Brad Rippey USDA

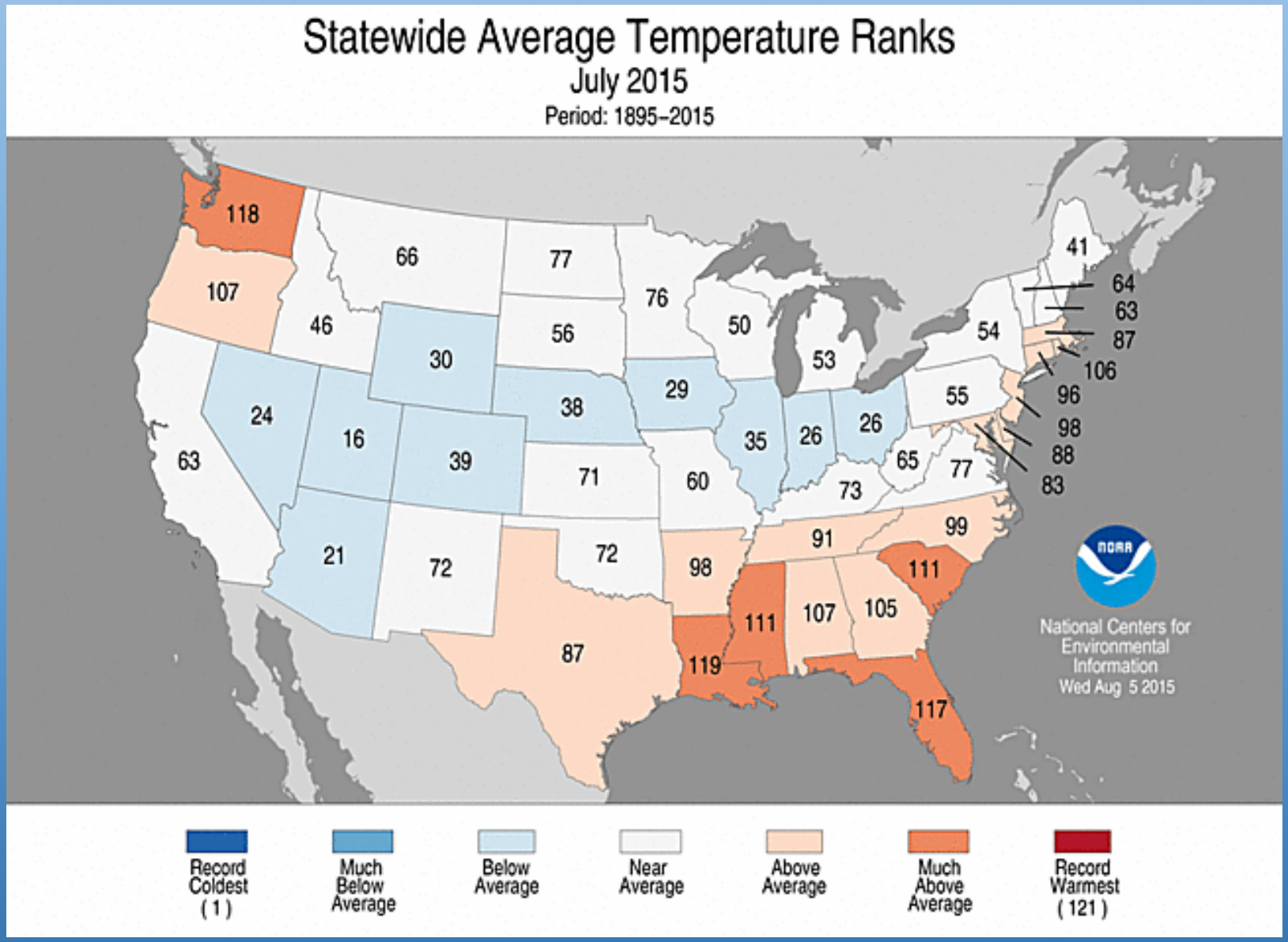
- **Access to Future Climate Webinars and Information**
- http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars

- **Past recorded presentations and slides can be found here:**
- *http://mrcc.isws.illinois.edu/webinars.htm*
- *http://www.hprcc.unl.edu/webinars.php*

- **There will be time for questions at the end**

Agenda

- July 2015
- Current conditions
- Impacts
- El Niño
- Outlooks

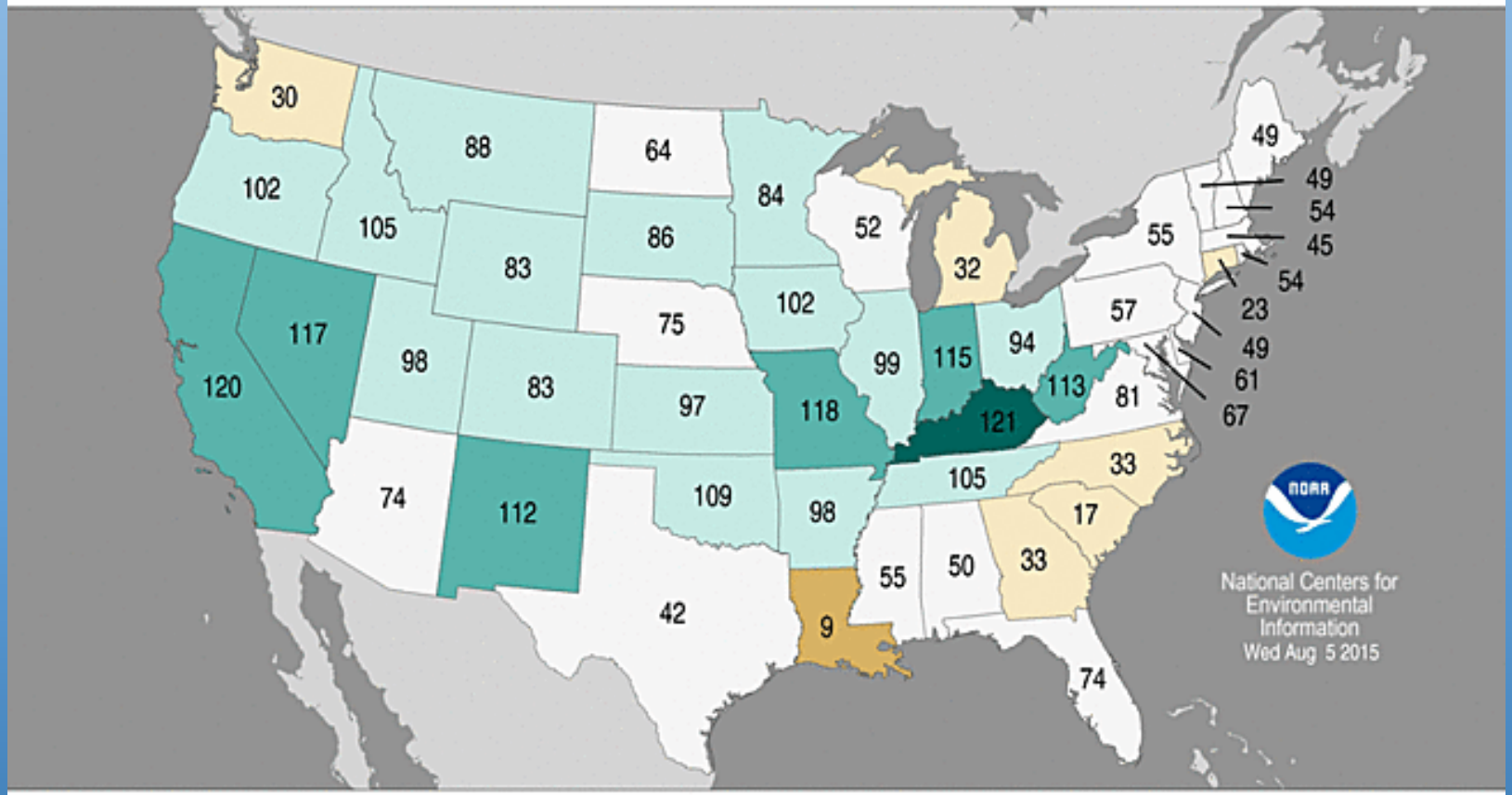


http://www.ncdc.noaa.gov/sotc/

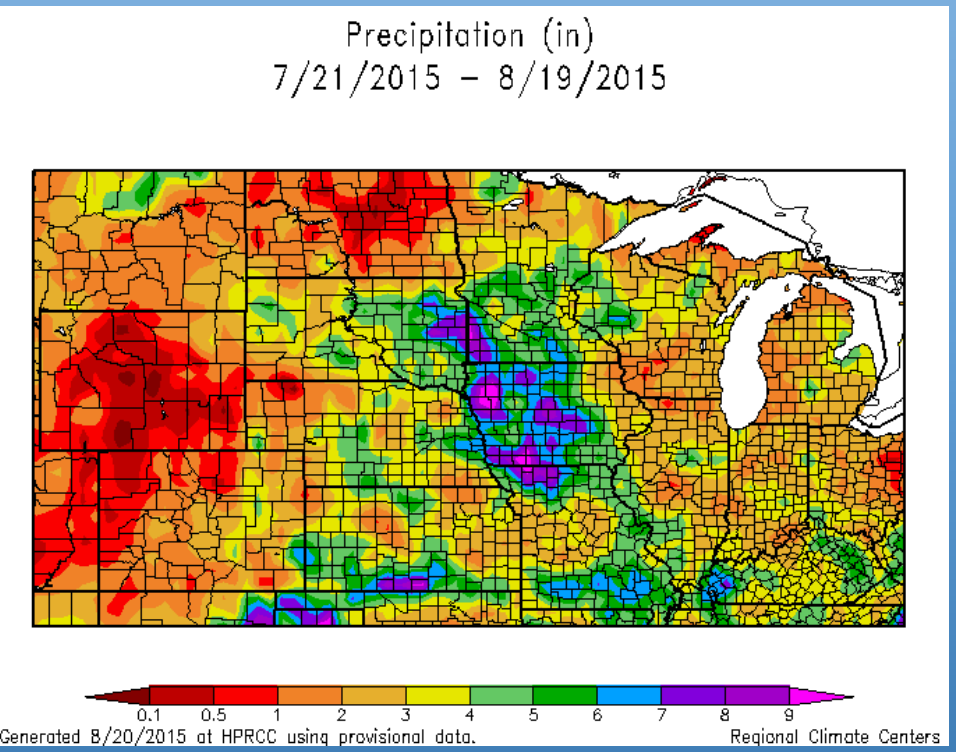
Statewide Precipitation Ranks

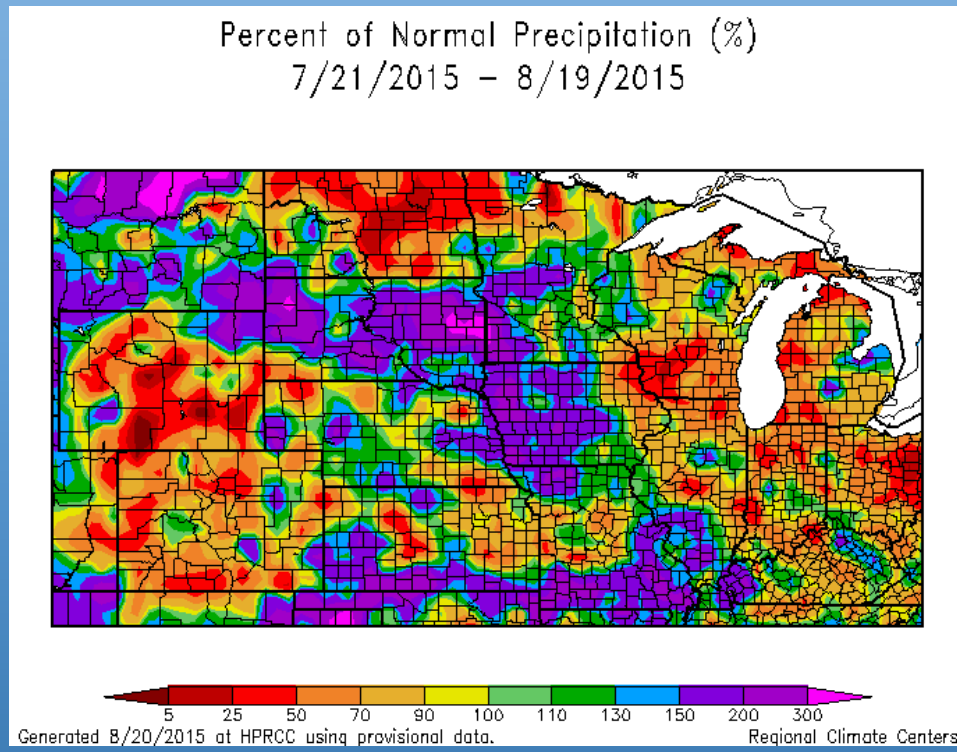
July 2015

Period: 1895–2015

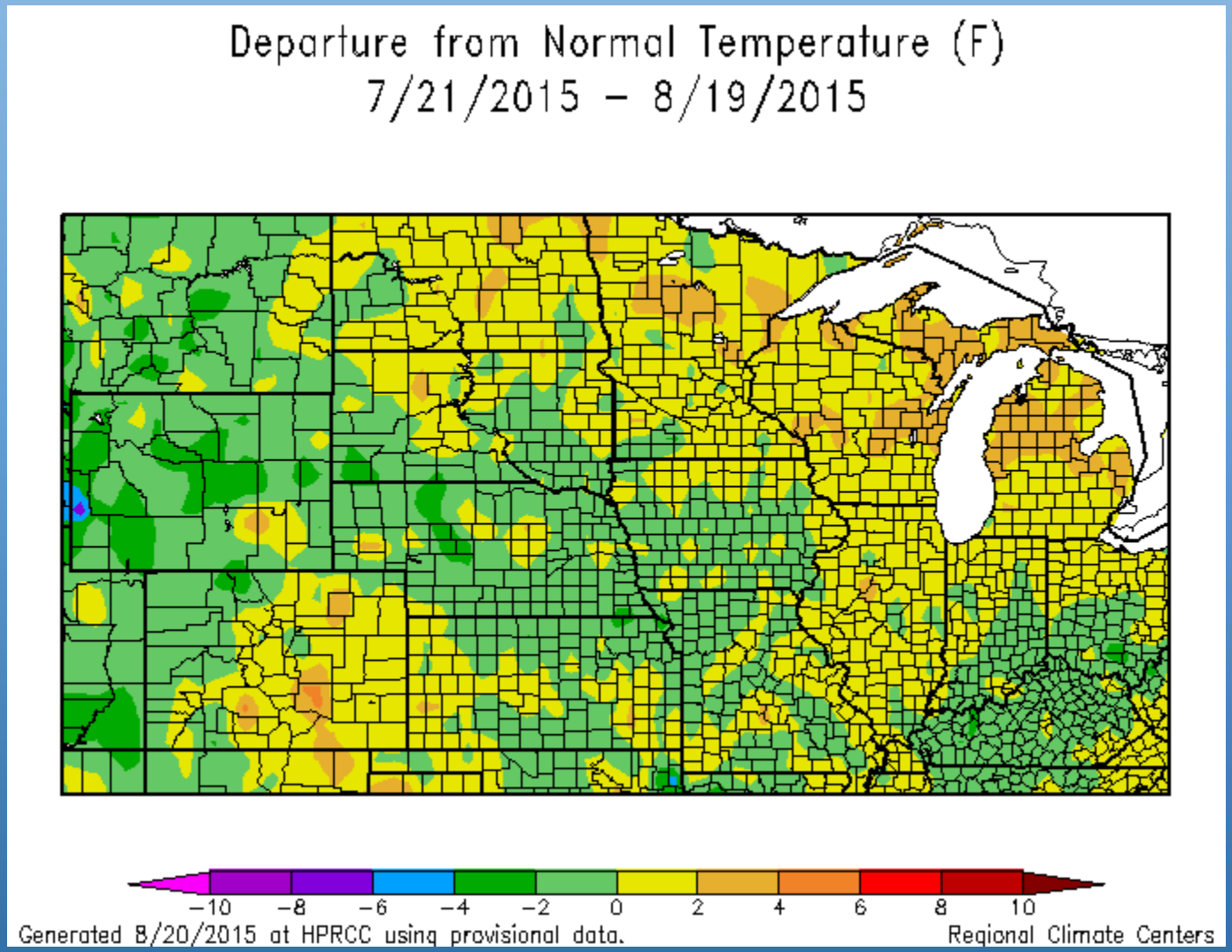


30-Day Precipitation

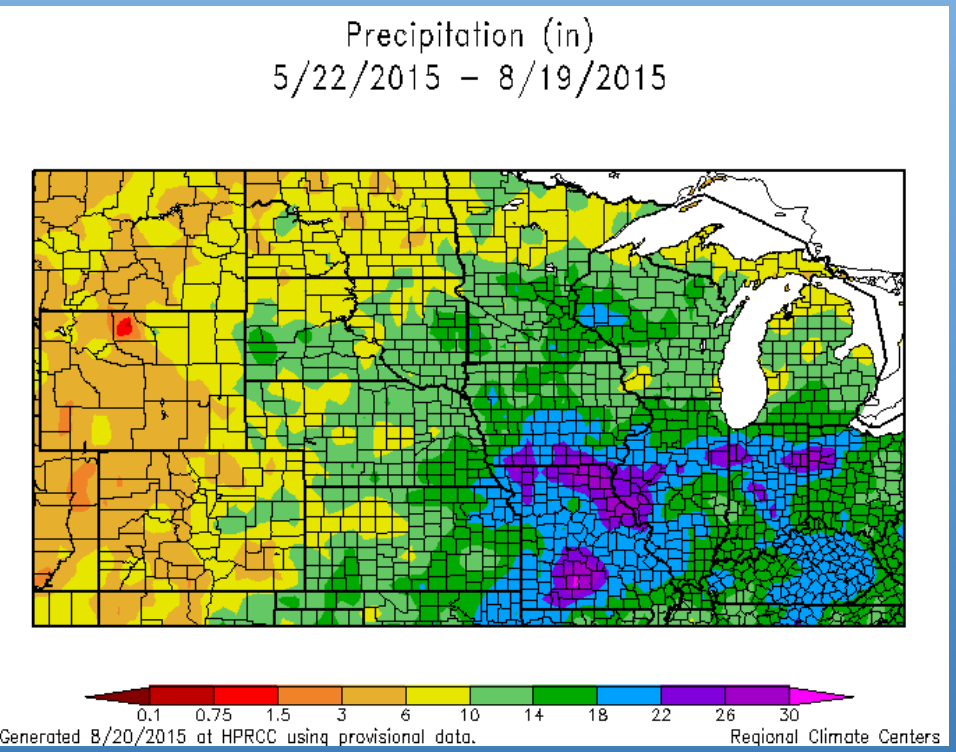


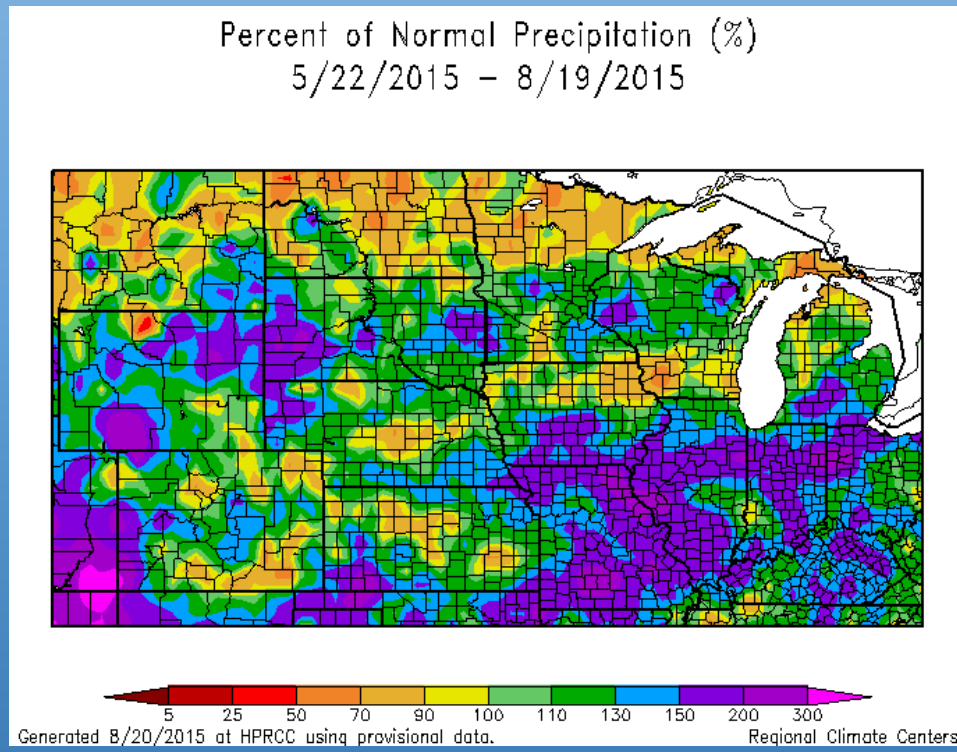


30-Day Temperature Departure

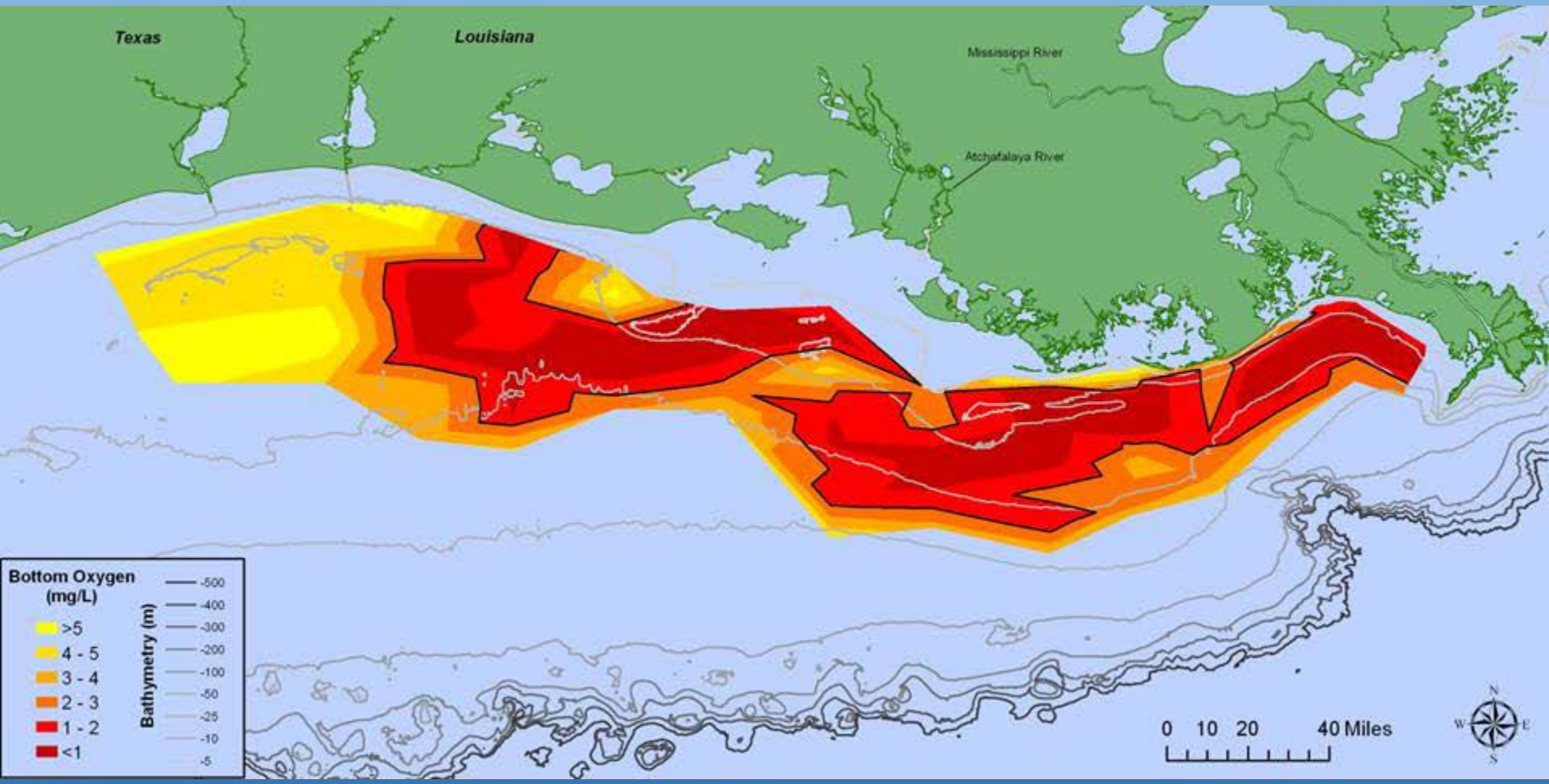


90-Day Precipitation





Result of June Rains - Gulf of Mexico Hypoxia

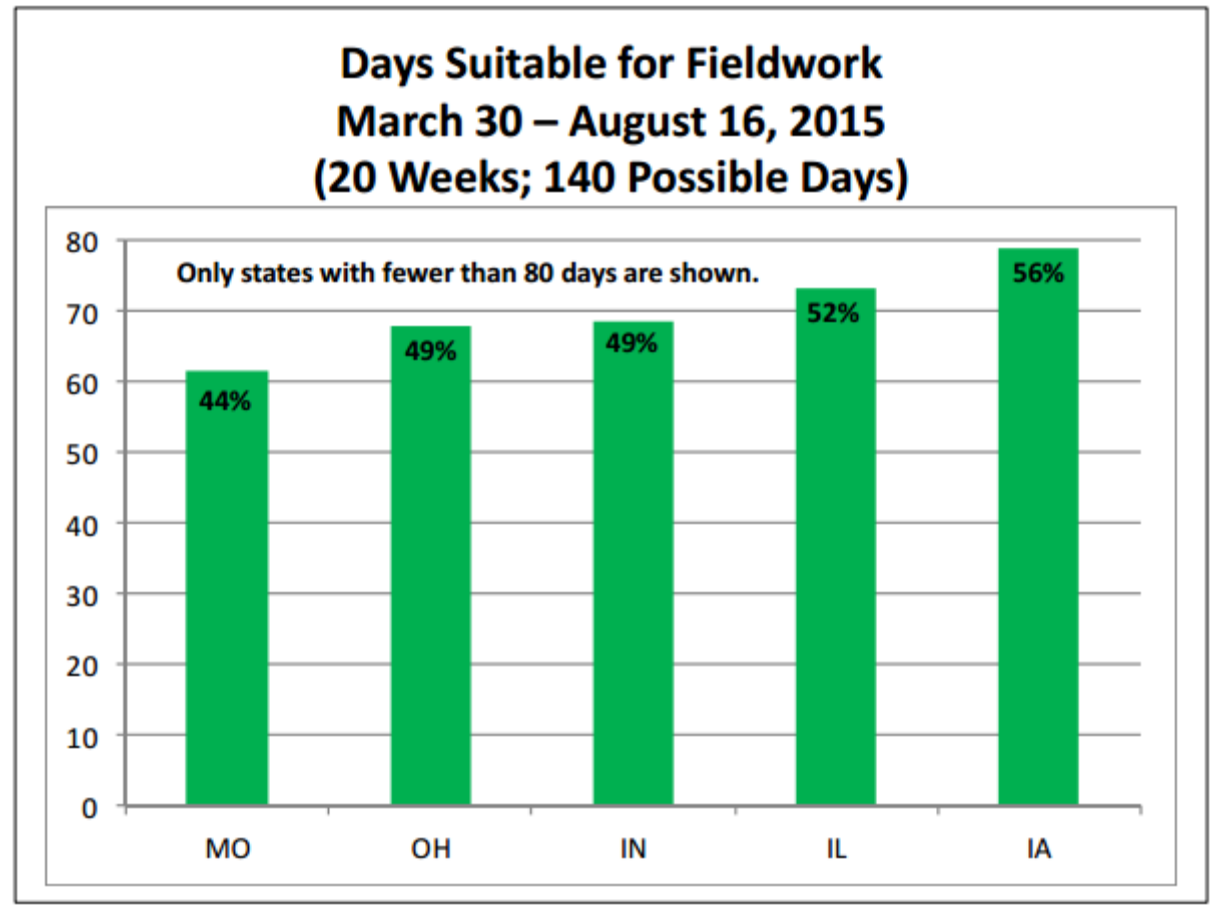


NOAA press release: 6,500 square miles and 1,000 square miles above average

Result of Heavy Rains - Lake Erie Algae Bloom in August 2015

Source: http://earthobservatory.nasa.gov/

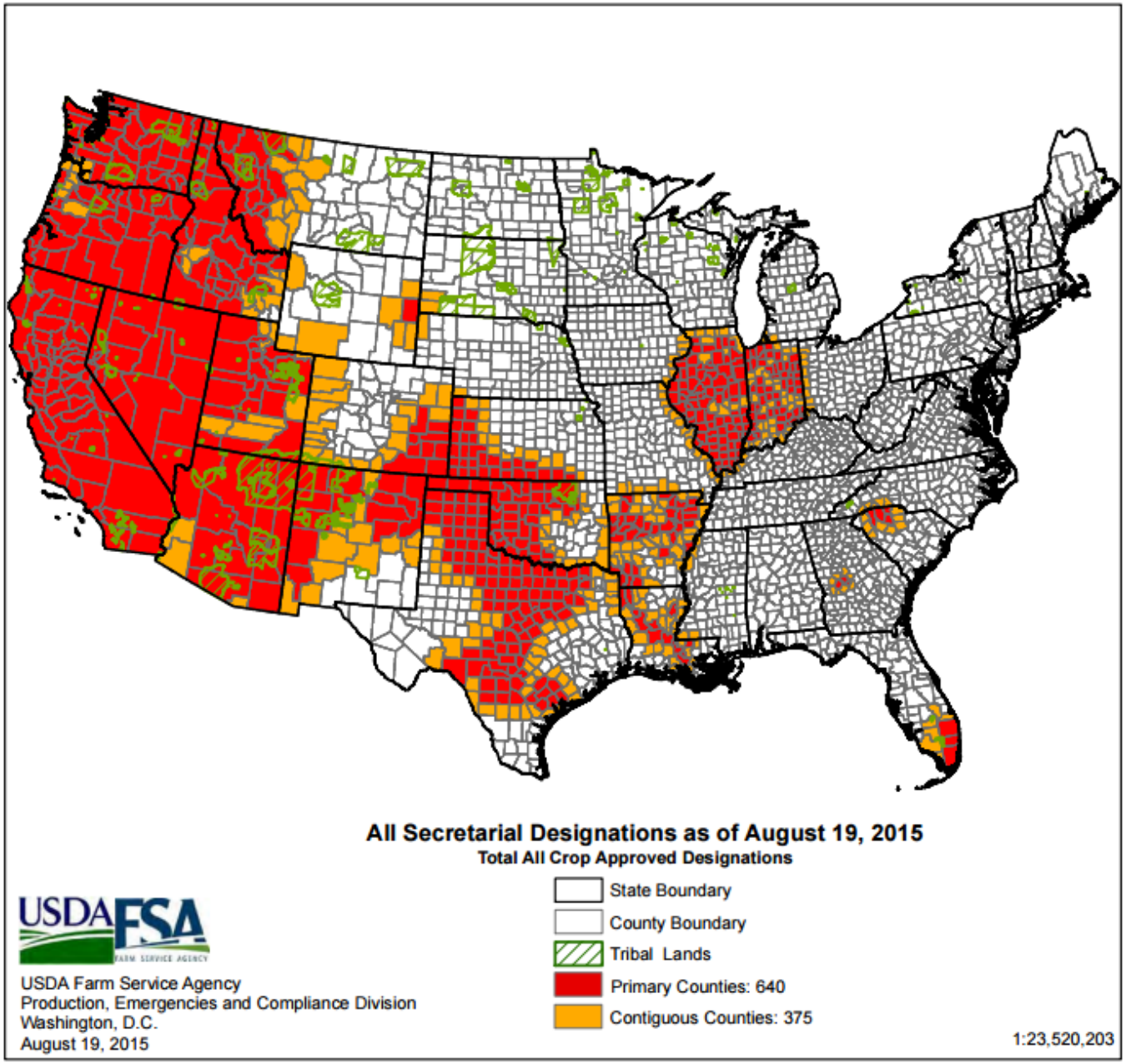
Days Suitable for Fieldwork - USDA

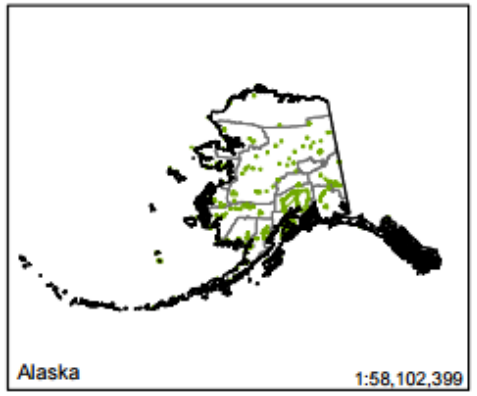


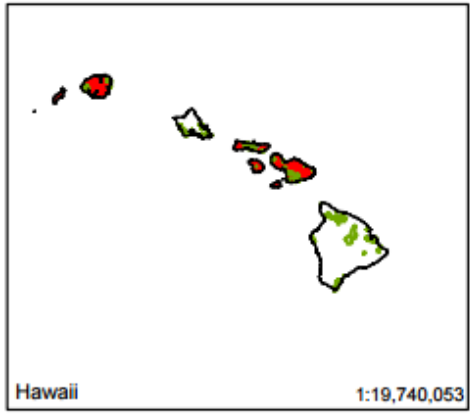
http://www.usda.gov/oce/weather/pubs/Weekly/Wwcb/wwcb.pdf

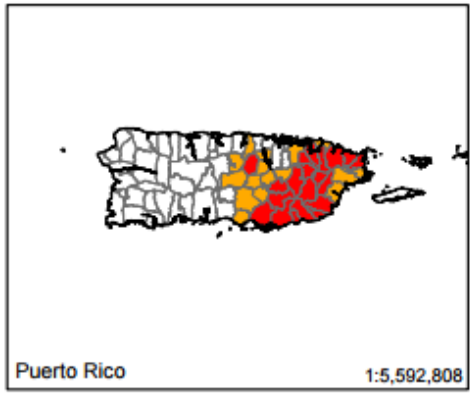
Secretarial Disaster Designations - CY 2015

Primary and Contiguous Counties Designated for 2015 Crop Disaster Losses



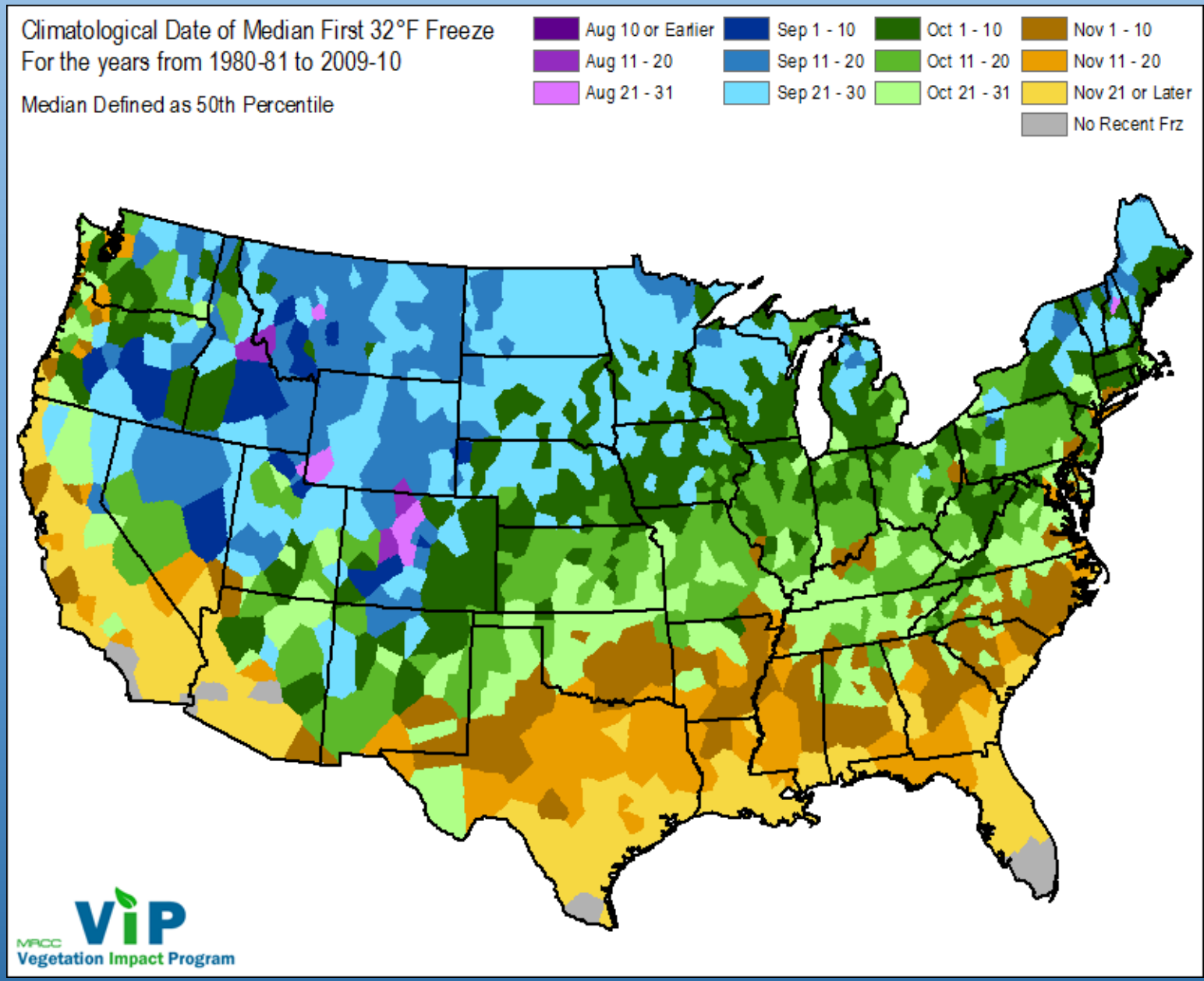






USDA FSA

USDA Farm Service Agency
Production, Emergencies and Compliance Division
Washington, D.C.
August 19, 2015


Climatological Date of Median First 32°F Freeze
For the years from 1980-81 to 2009-10
Median Defined as 50th Percentile
Aug 10 or Earlier
Aug 11 - 20
Aug 21 - 31
Sep 1 - 10
Sep 11 - 20
Sep 21 - 30
Oct 1 - 10
Oct 11 - 20
Oct 21 - 31
Nov 1 - 10
Nov 11 - 20
Nov 21 or Later
No Recent Frz
MRCC
VIP
Vegetation Impact Program

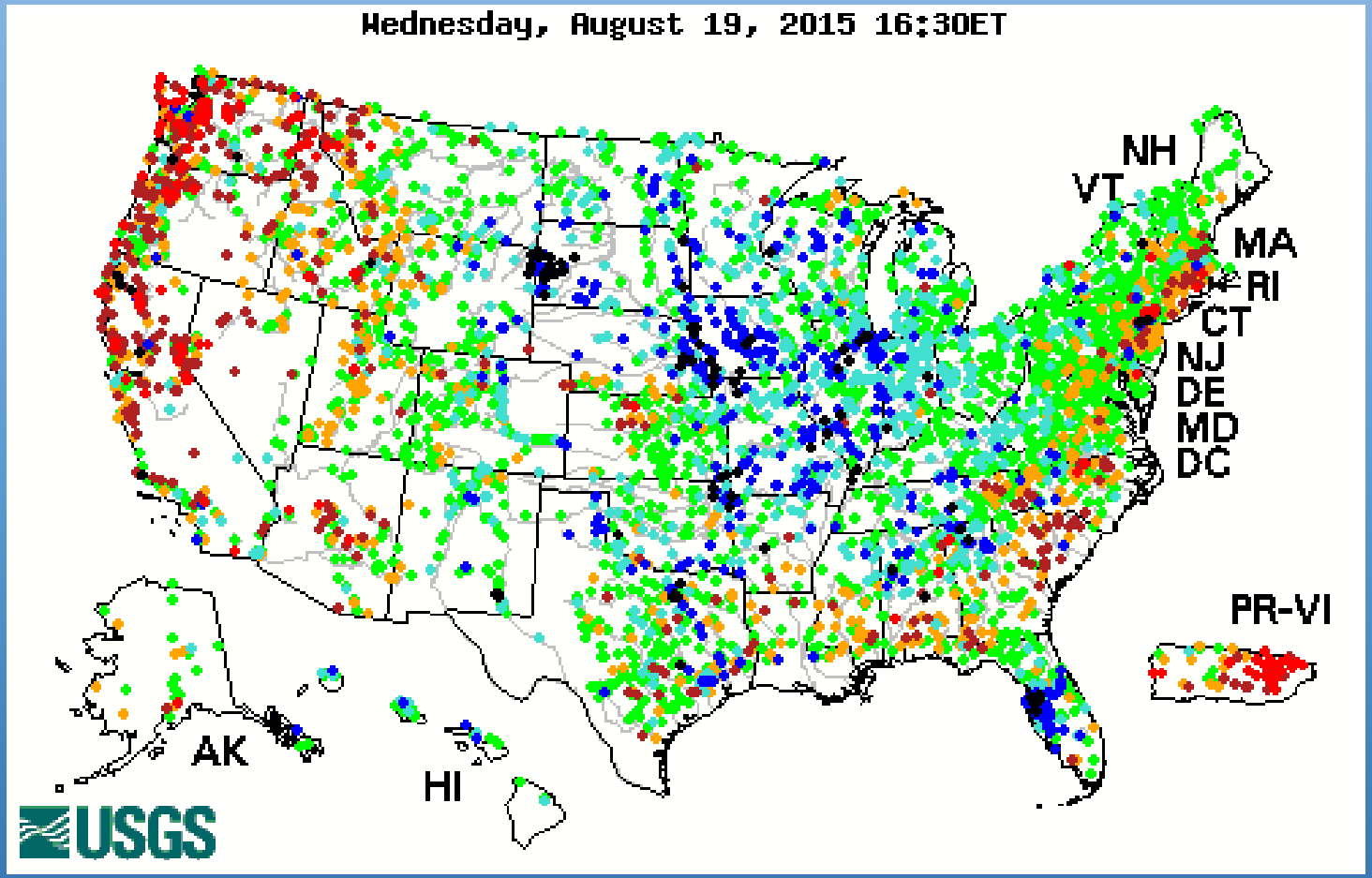
Agriculture Issues

- Prevented Planting, especially soybeans
- Delayed planting
- Slow development
- Poor root development, limiting water and nutrient uptake
- Uneven yield within fields due to drainage
- Concern of a wet fall in areas where soils are unusually wet
- Concern of an early frost

And Yet ….

- 10% of Corn Crop rated poor to very poor
- US corn yield: 168.8 bu/acre, down 2.2 bu/acre from 2014
- 11% of Soybean Crop rated poor to very poor
- US soybean yield: 46.9 bu/acre, down 0.9 bu/acre from 2014
- Winter wheat yield: 43.2 bu/acre, up 0.6 from 2014
- Numbers from the August USDA report and posted in the *Weekly Weather and Crop Bulletin*

Stream Flow - USGS



http://waterdata.usgs.gov/nwis/rt

Great Lakes Water Levels

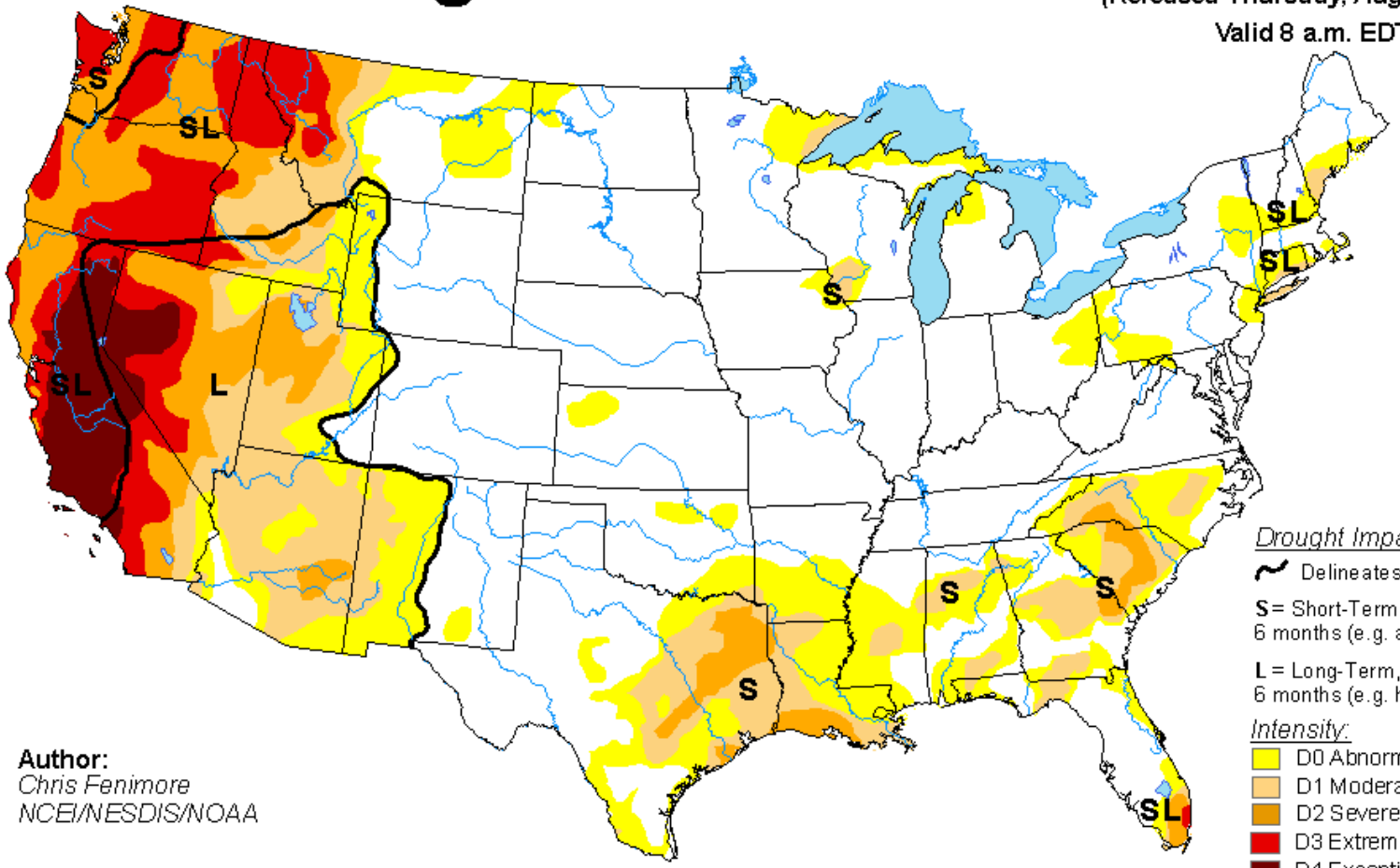
Lake	Departure from long-term average for August
Lake Superior	+6 inches
Lakes Michigan and Huron	+7 inches
Lake St. Clair	+15 inches
Lake Erie	+16 inches
Lake Ontario	+9 inches

U.S. Drought Monitor

August 18, 2015

(Released Thursday, Aug. 20, 2015)

Valid 8 a.m. EDT



Author:
Chris Fenimore
NCEI/NESDIS/NOAA

Drought Impact Types:

Delineates dominant impacts

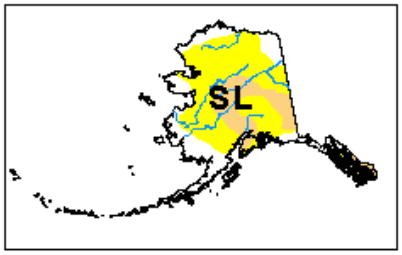
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

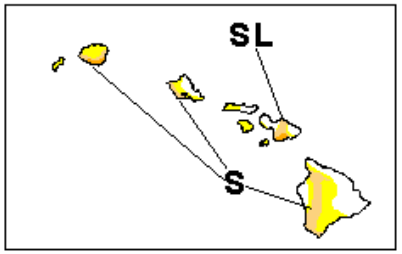
L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

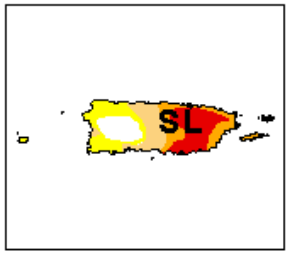
Intensity:

- 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.







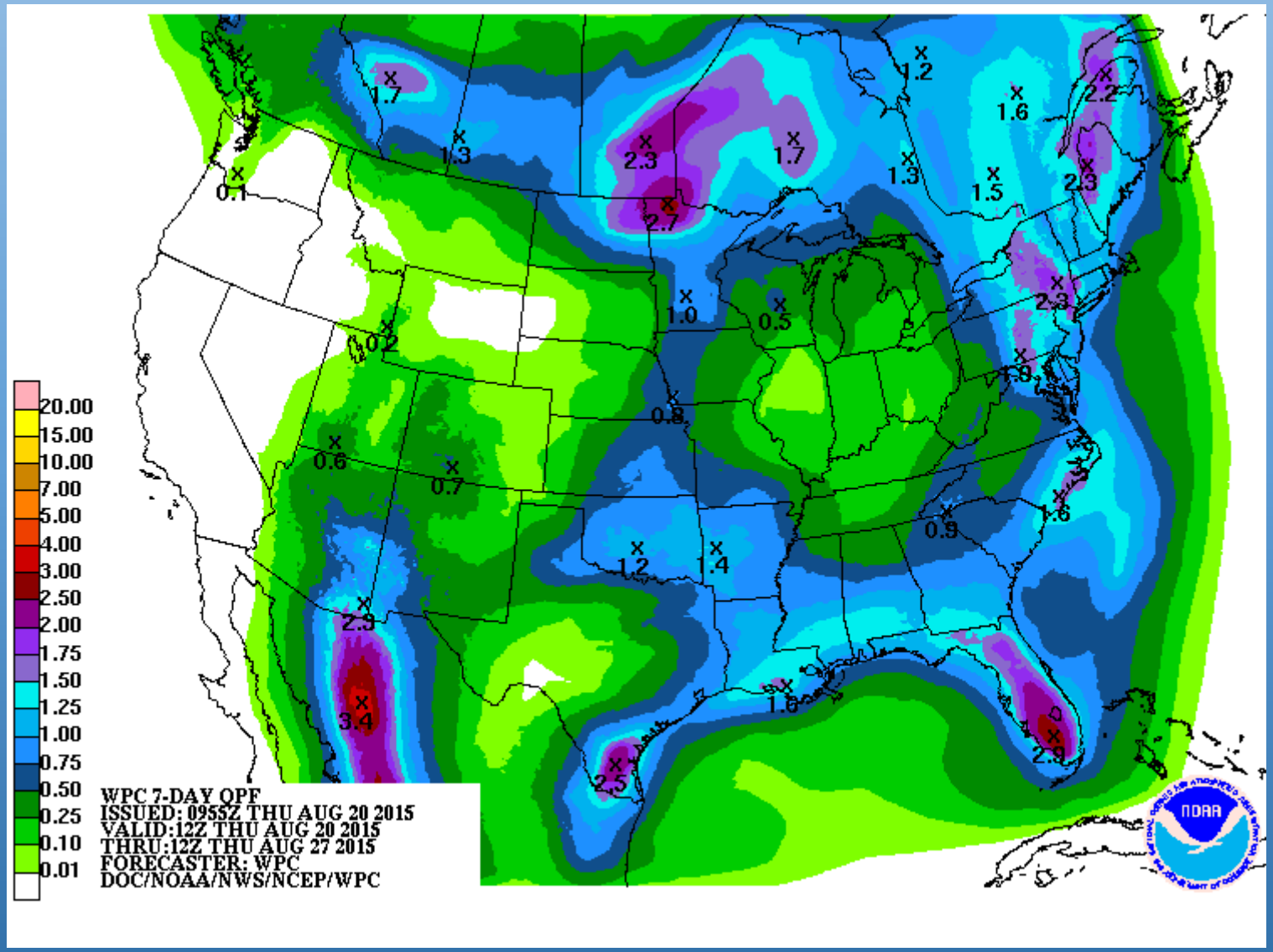
USDA National Drought Mitigation Center

http://droughtmonitor.unl.edu/

Climate Outlooks

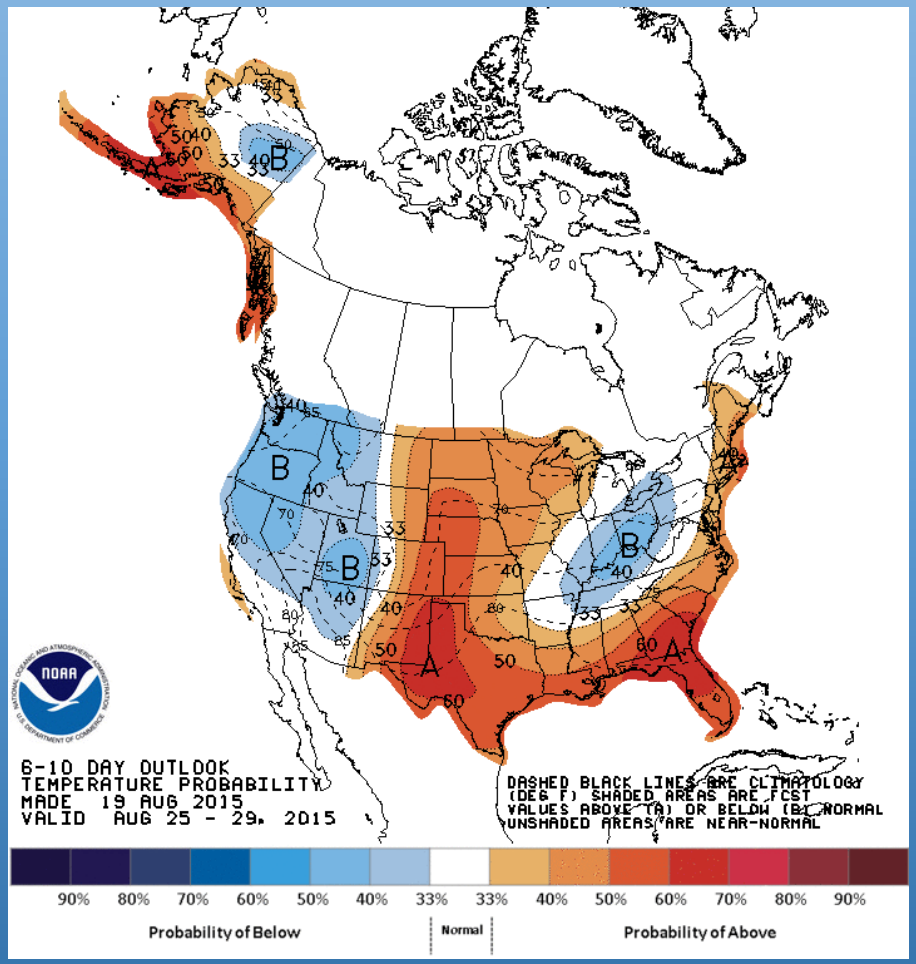
- 7-day precipitation forecast
- 6-10, 8-14 day outlook
- September
- Fall, Winter, Spring
- Drought Outlook

Forecast Precipitation Amounts (7 day)

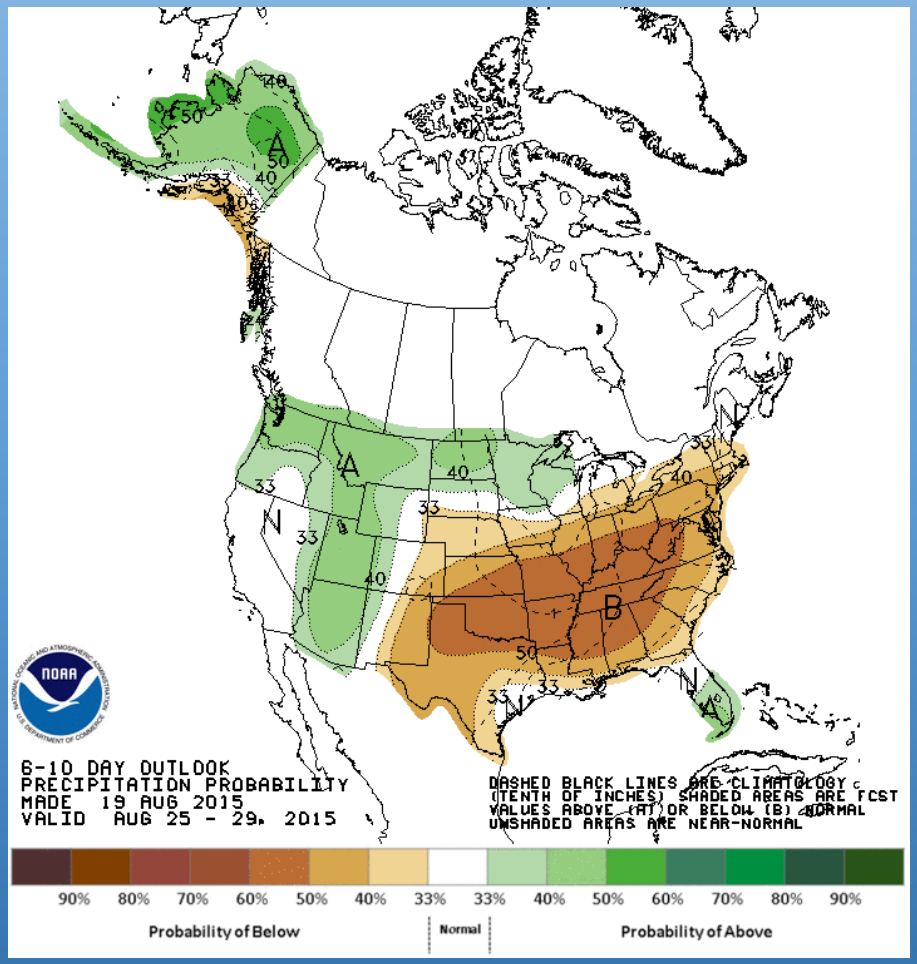


http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml

6-10 Day Forecast for Aug 25 – 29, 2015



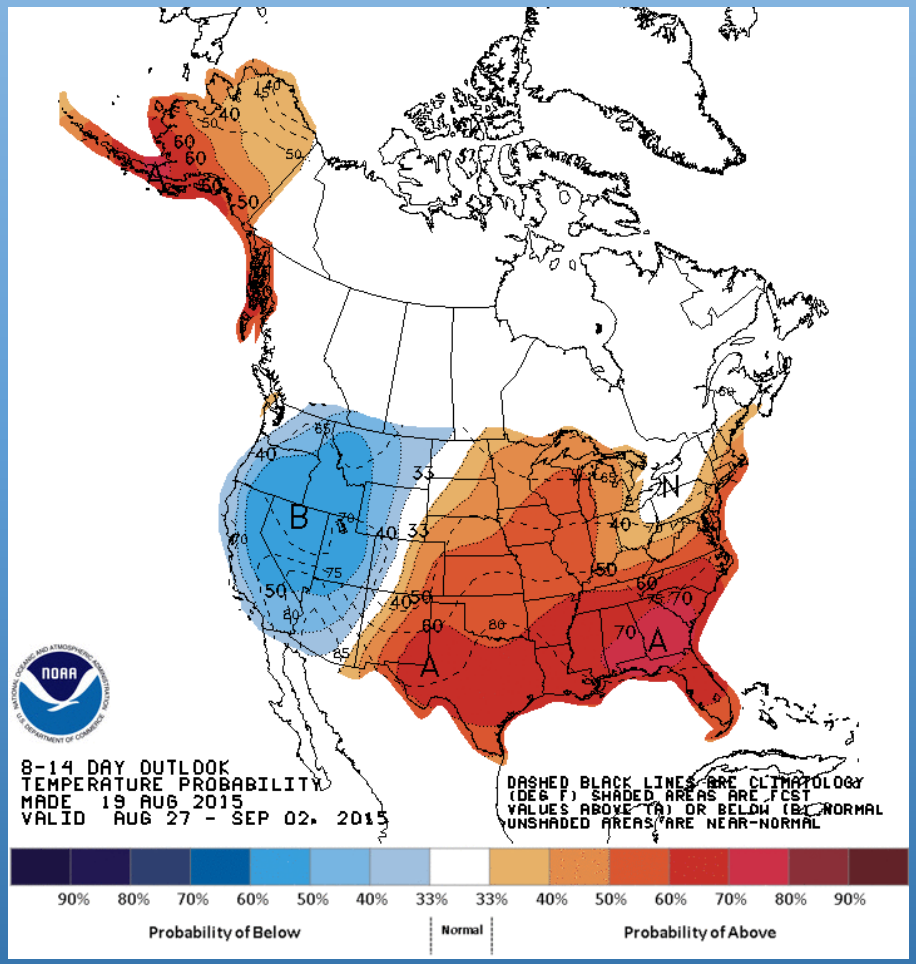
Temperature



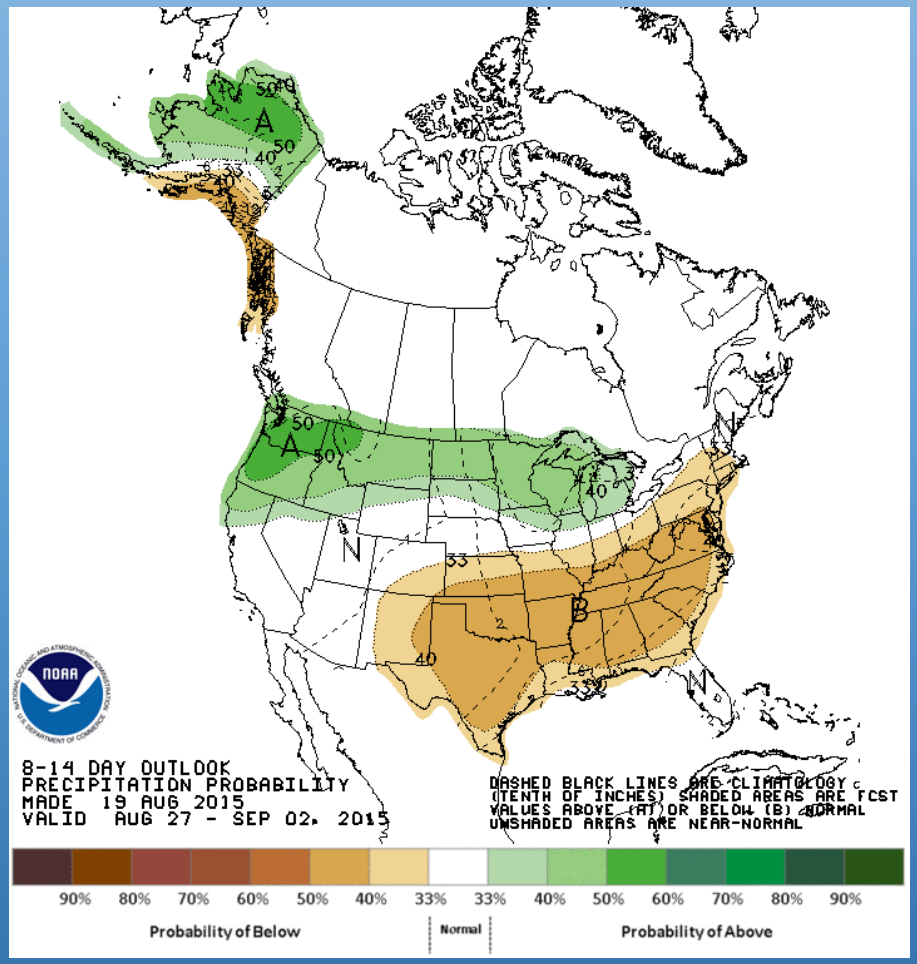
Precipitation

http://www.cpc.ncep.noaa.gov/

8-14 Day Forecast for Aug 27 – Sep 02, 2015



Temperature

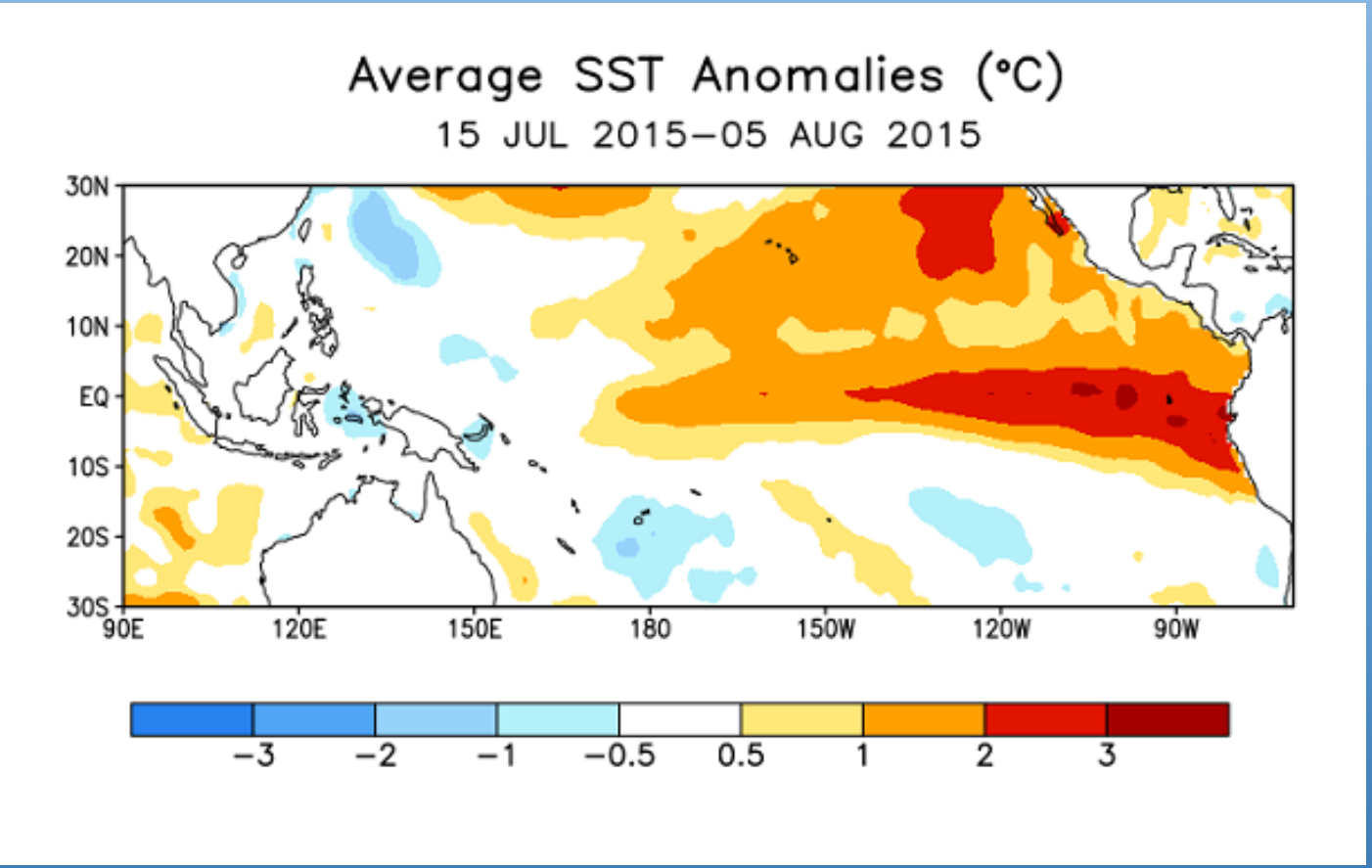


Precipitation

El Niño

- Warmer waters in the eastern Pacific Ocean
- Life-cycle:
  - Starts spring/summer
  - Fully developed fall and winter
  - Fades by next spring/summer

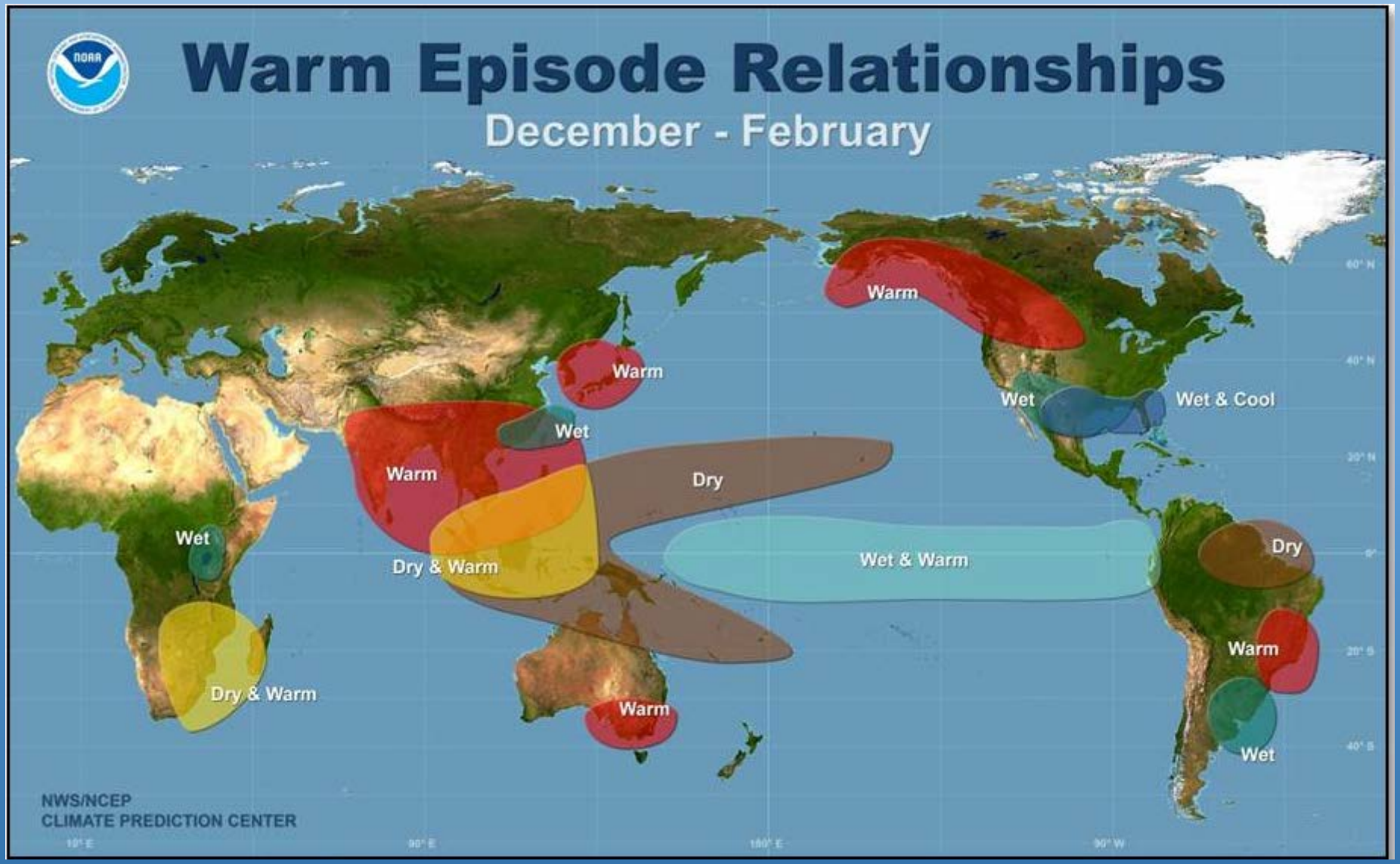
Climate.gov – ENSO Blog



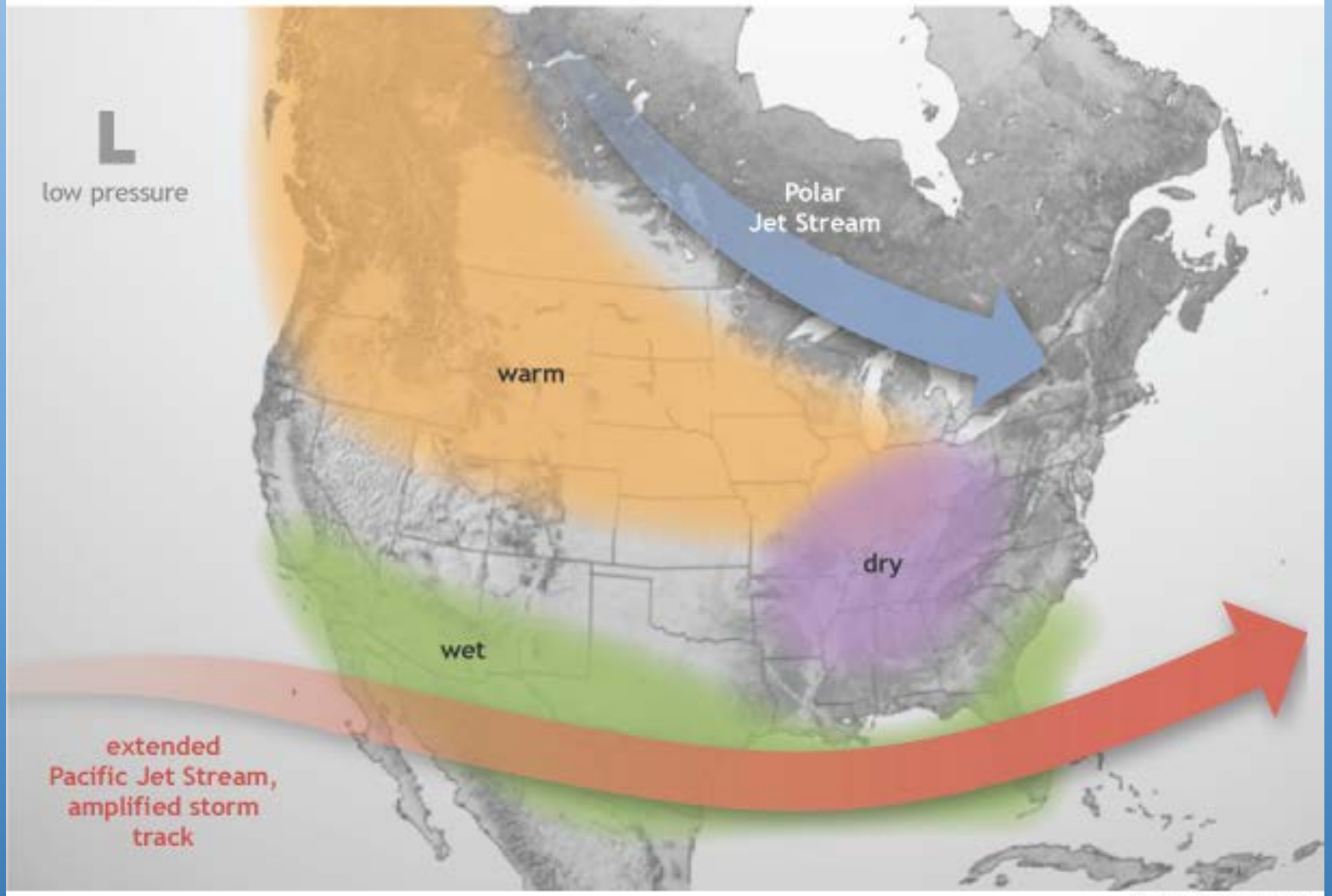
https://www.climate.gov/news-features/department/8443/all

El Niño

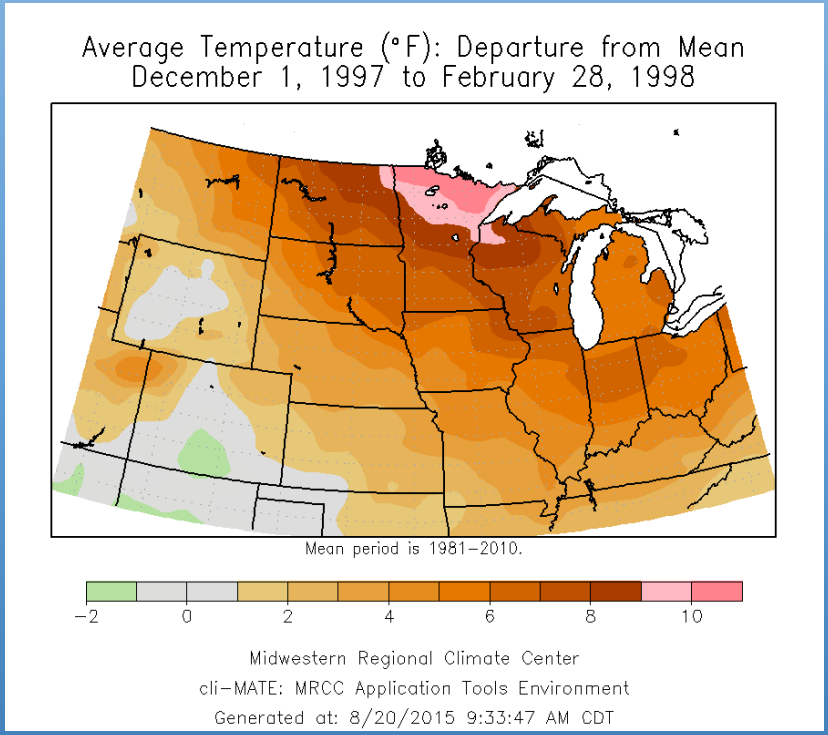
- El Niño – Ongoing
- >90 % chance of continuing this winter
- 85 % chance of staying next spring


Warm Episode Relationships
December - February
Warm
Warm
Wet
Wet & Cool
Wet
Warm
Dry
Wet
Dry & Warm
Wet & Warm
Dry
Warm
Dry & Warm
Warm
Wet
NWS/NCEP
CLIMATE PREDICTION CENTER

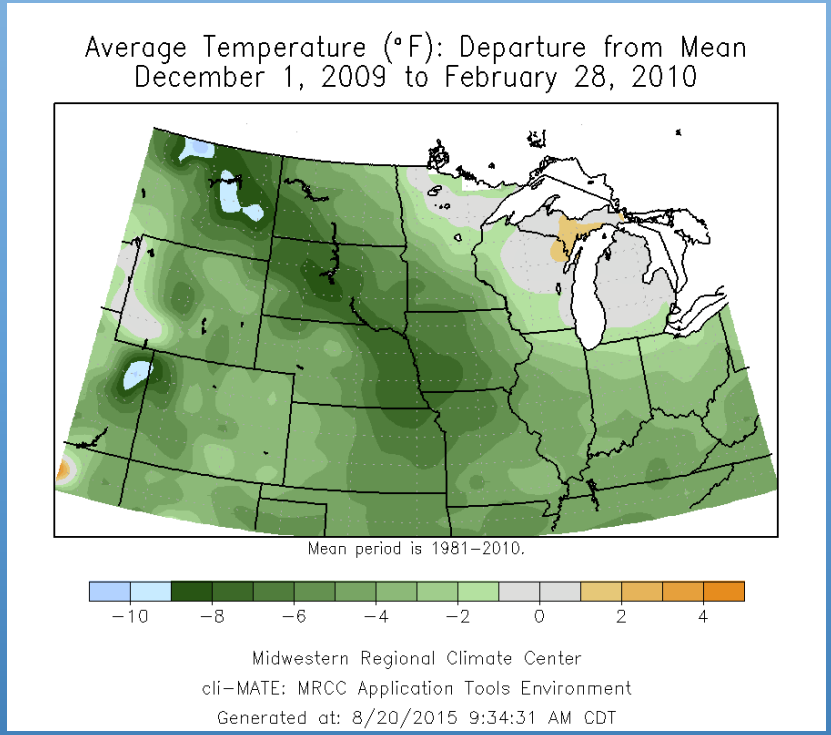
Wintertime El Niño pattern



No two El Niño's are the same - even strong events can differ. That is why we use phrases like "tendency", "tilts the odds", or "increases the chances"

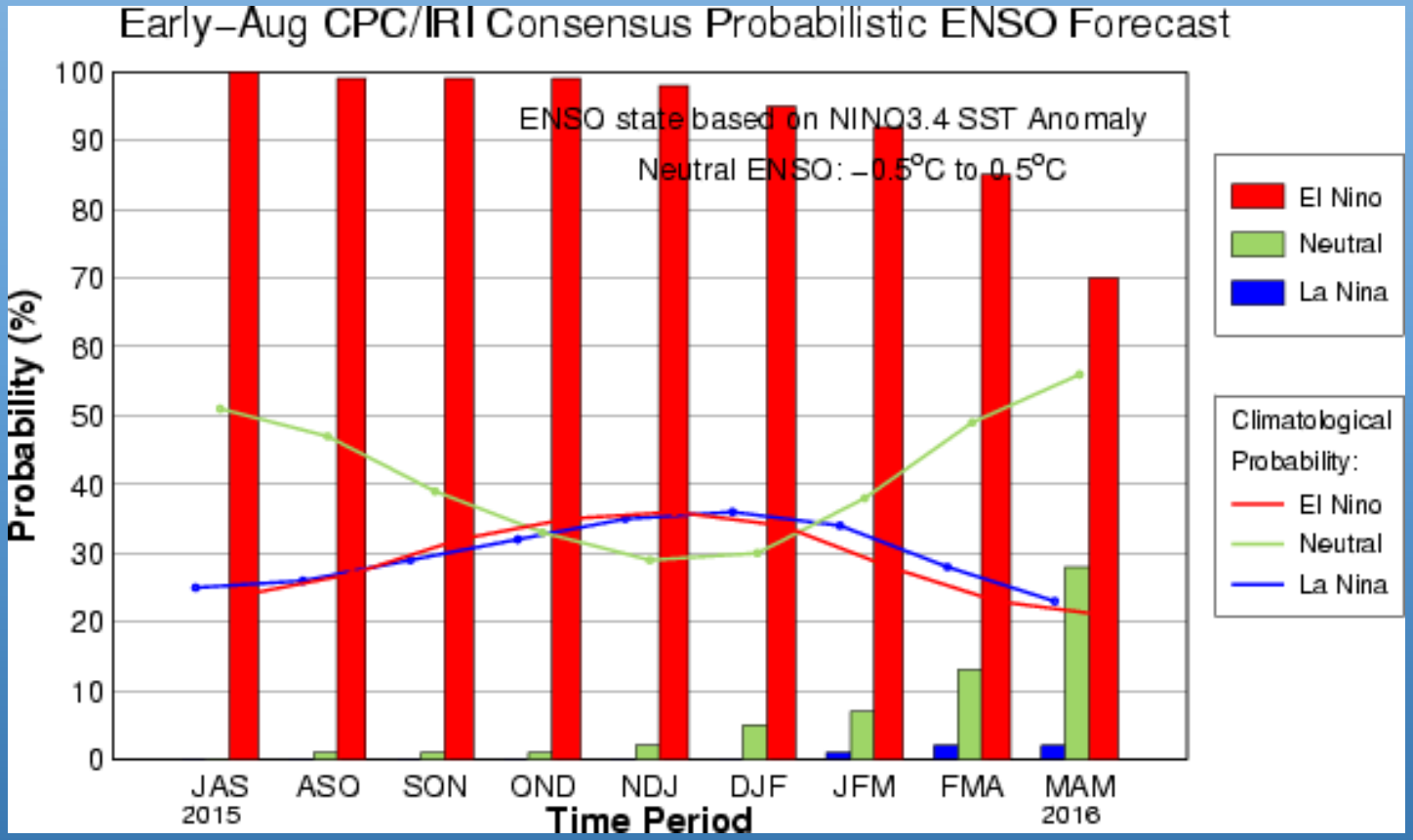


1997-98 El Niño, Warm Winter

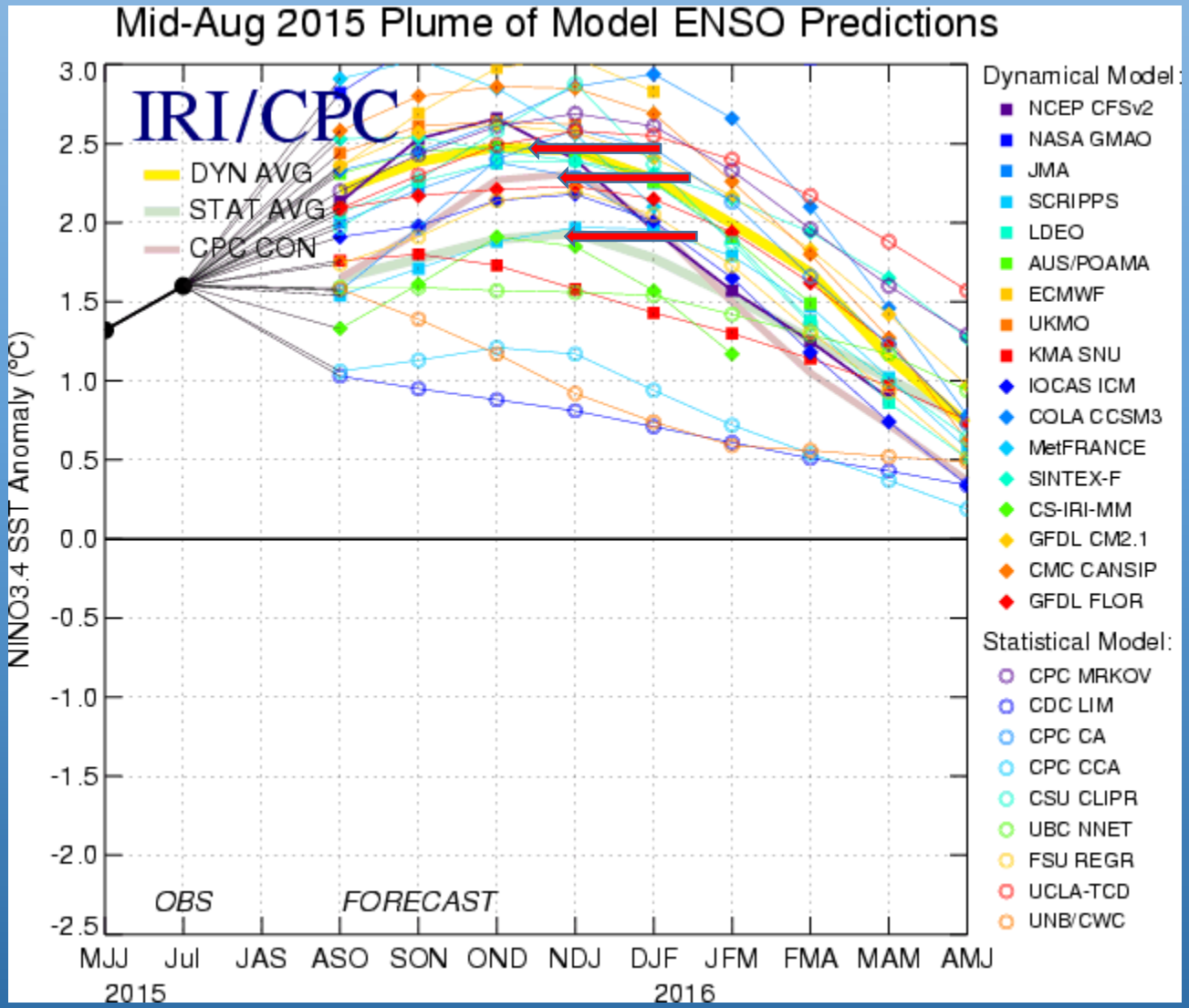


2009-10 El Niño, Cold Winter

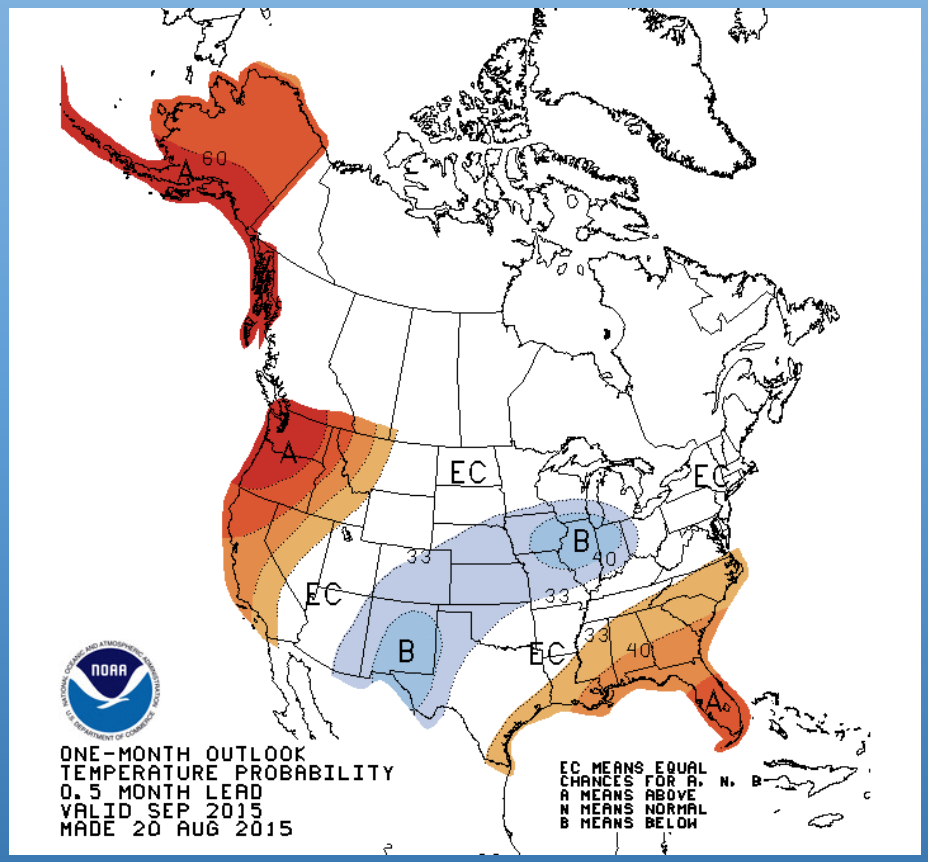
ENSO Forecast (CPC/IRI)



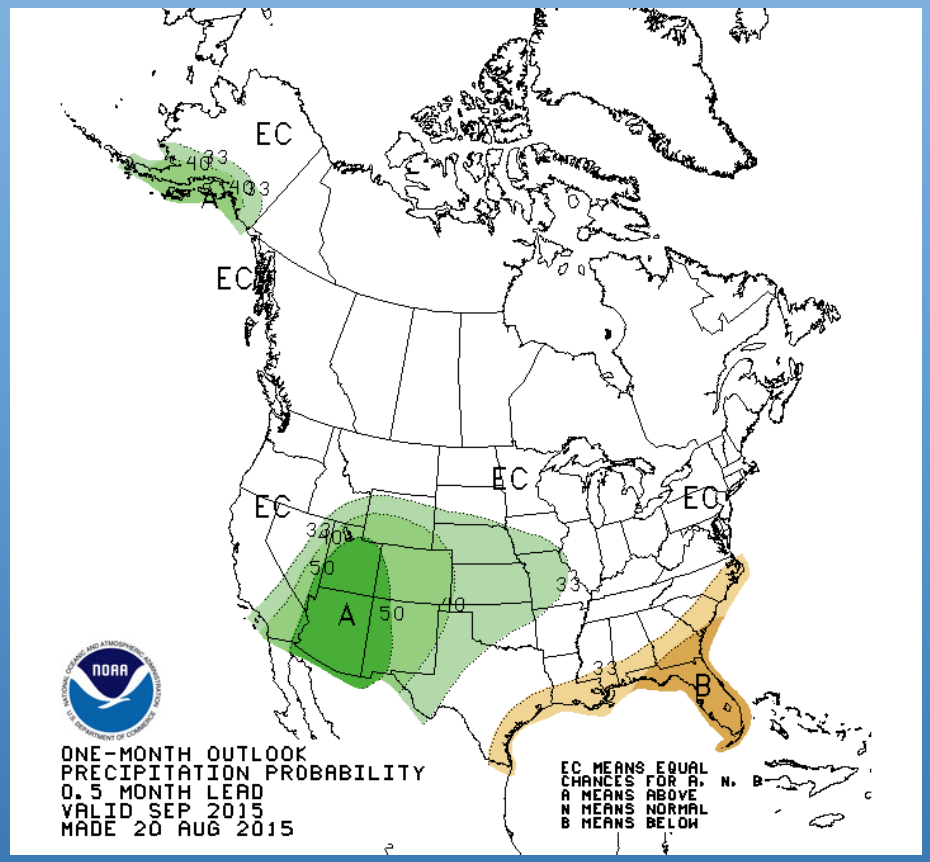
Forecast Plume for ENSO



September Outlook



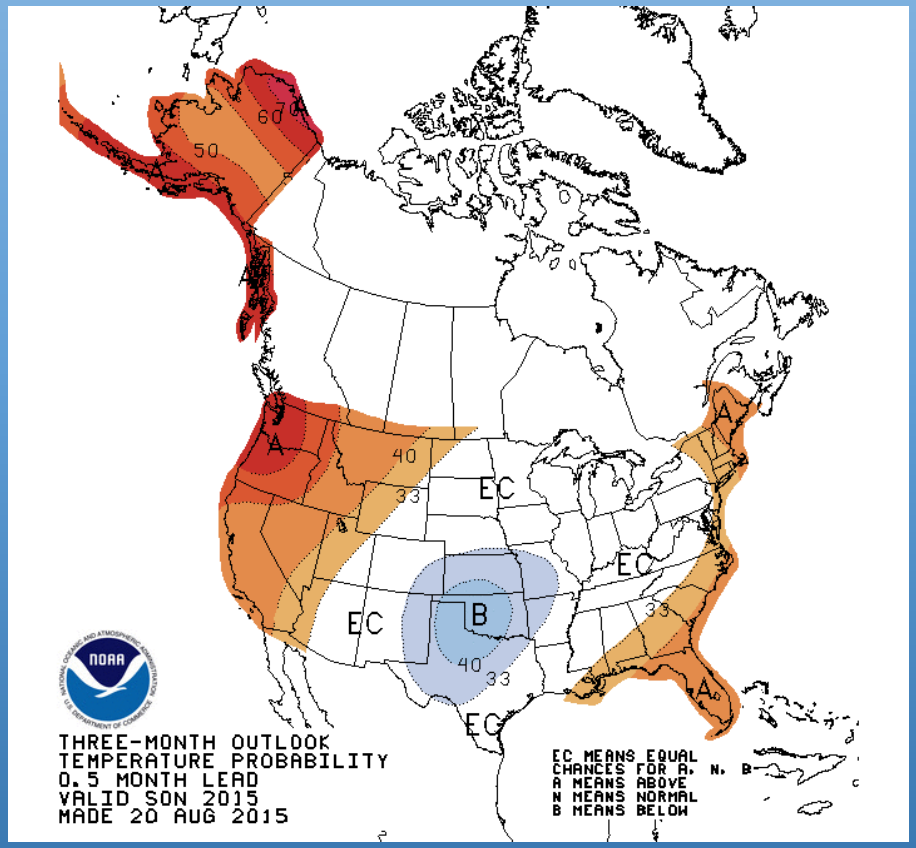
Temperature



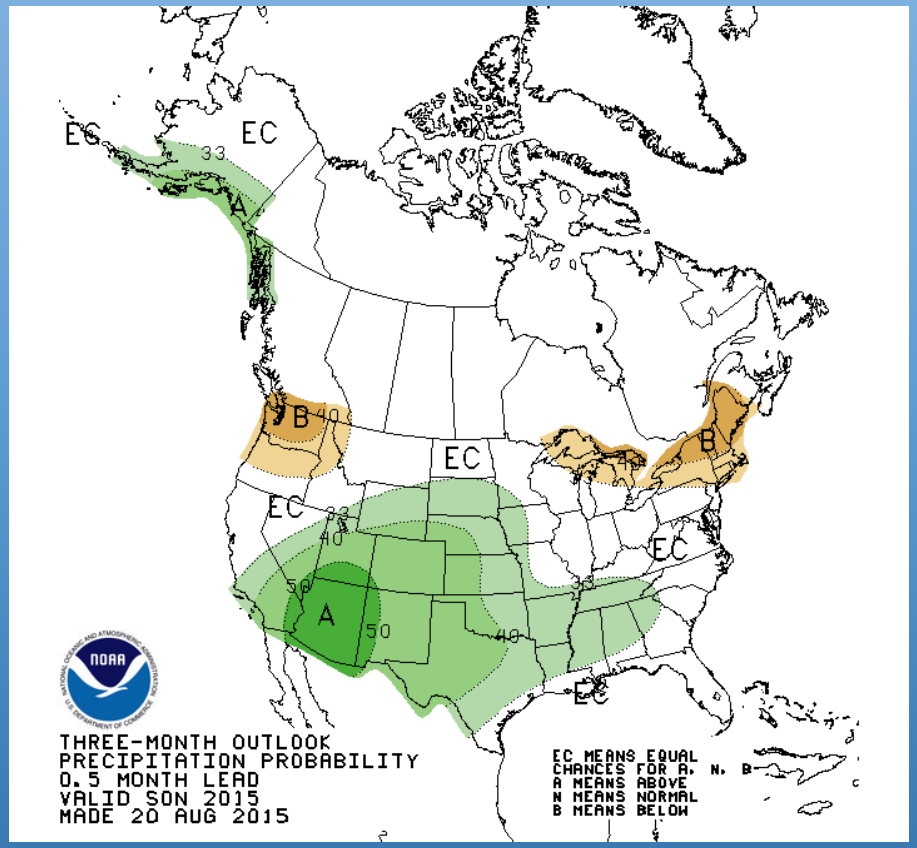
Precipitation

http://www.cpc.ncep.noaa.gov/

September - November Outlook

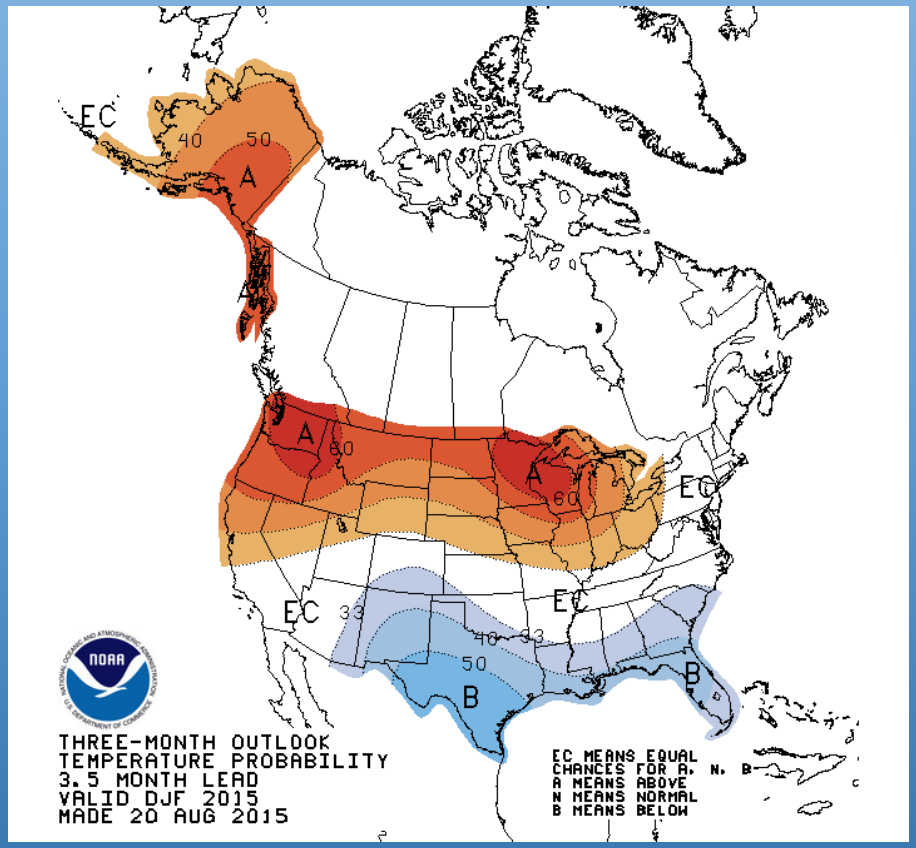


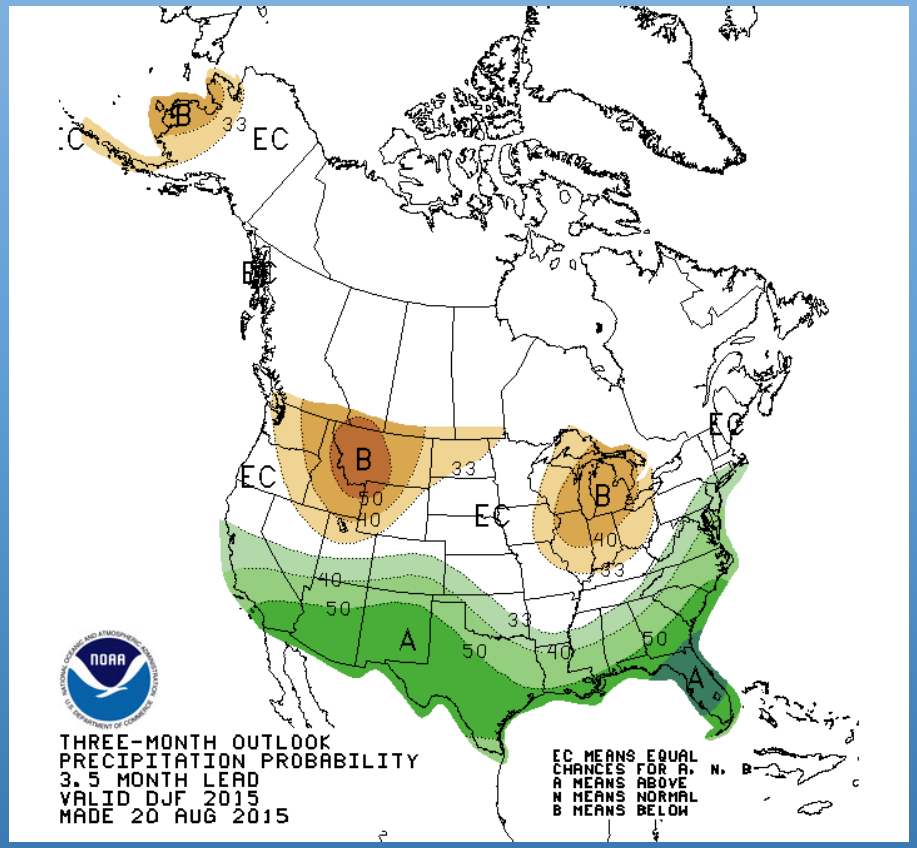
Temperature



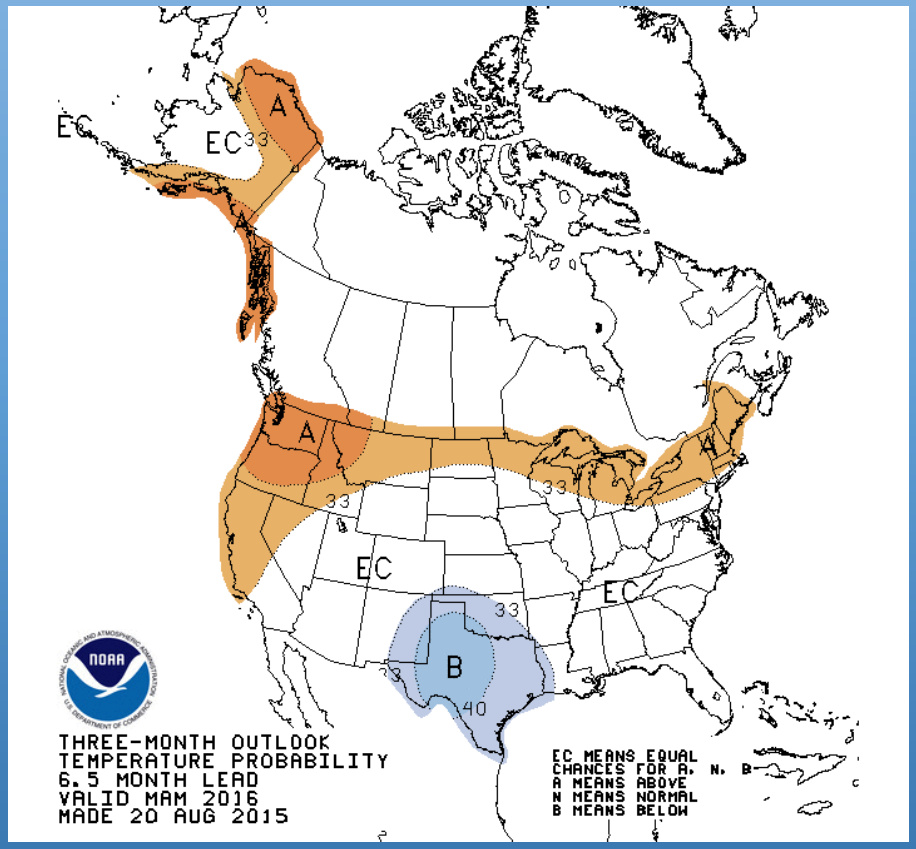
Precipitation

December – February Outlook

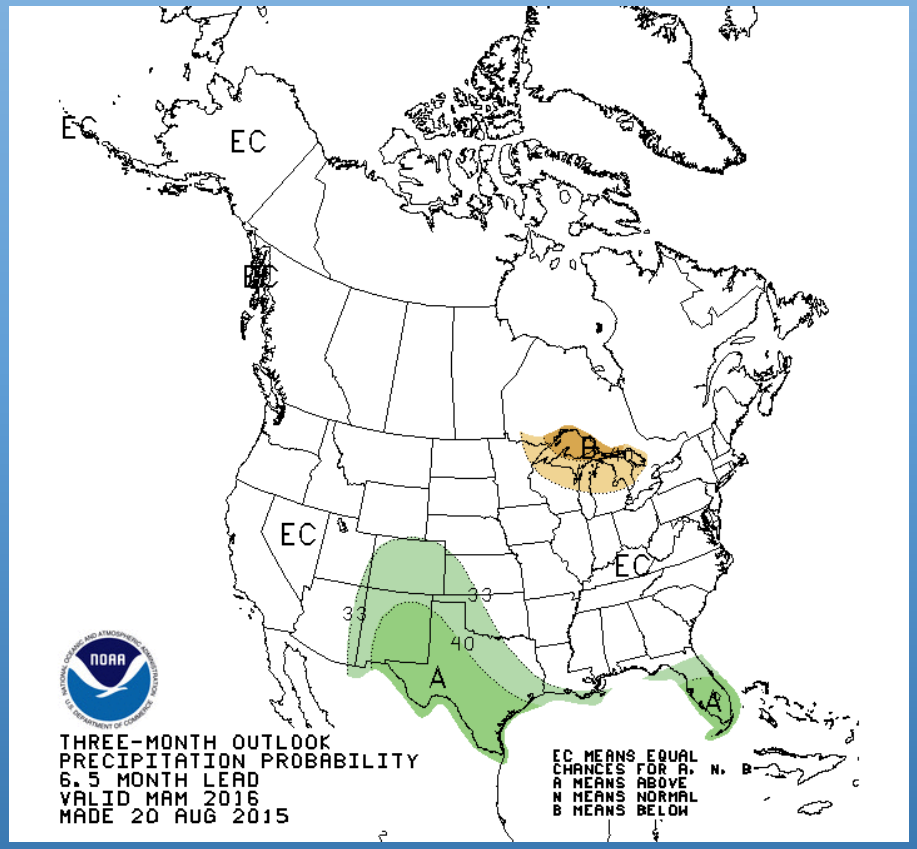




March – May Outlook

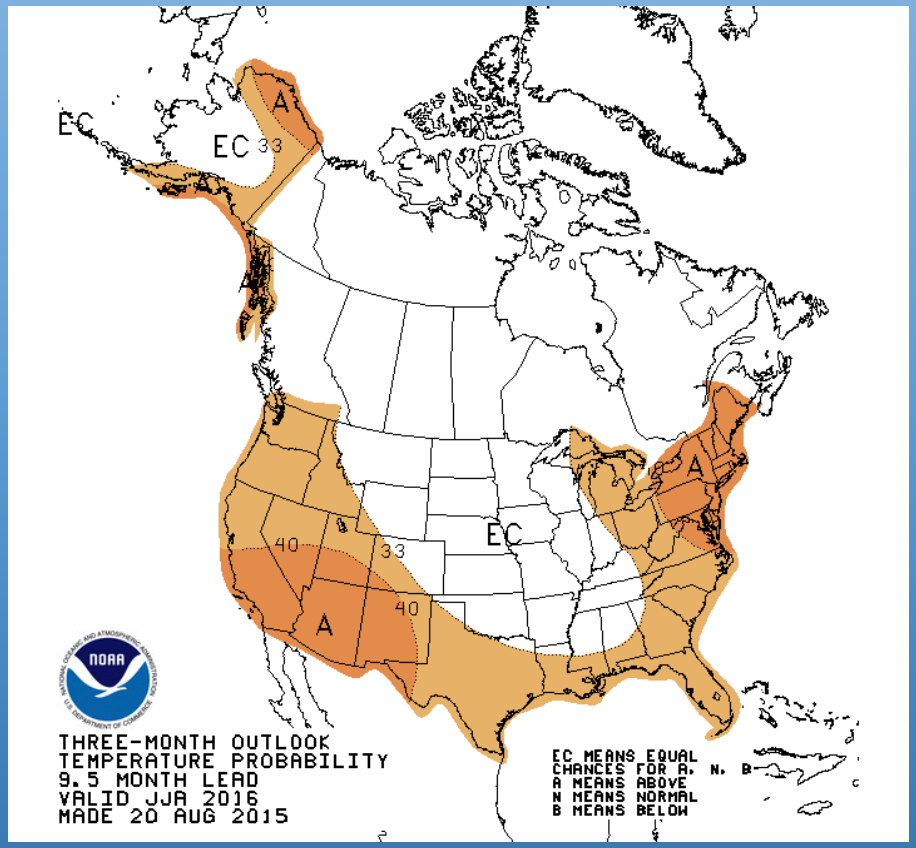


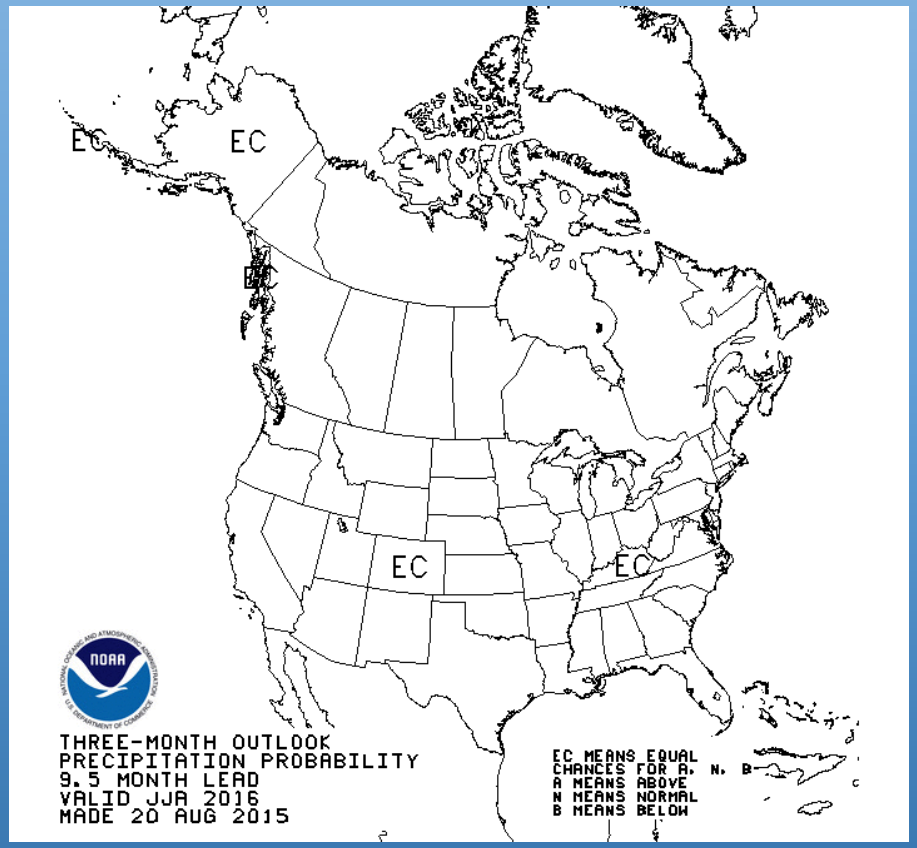
Temperature



Precipitation

June – August Outlook

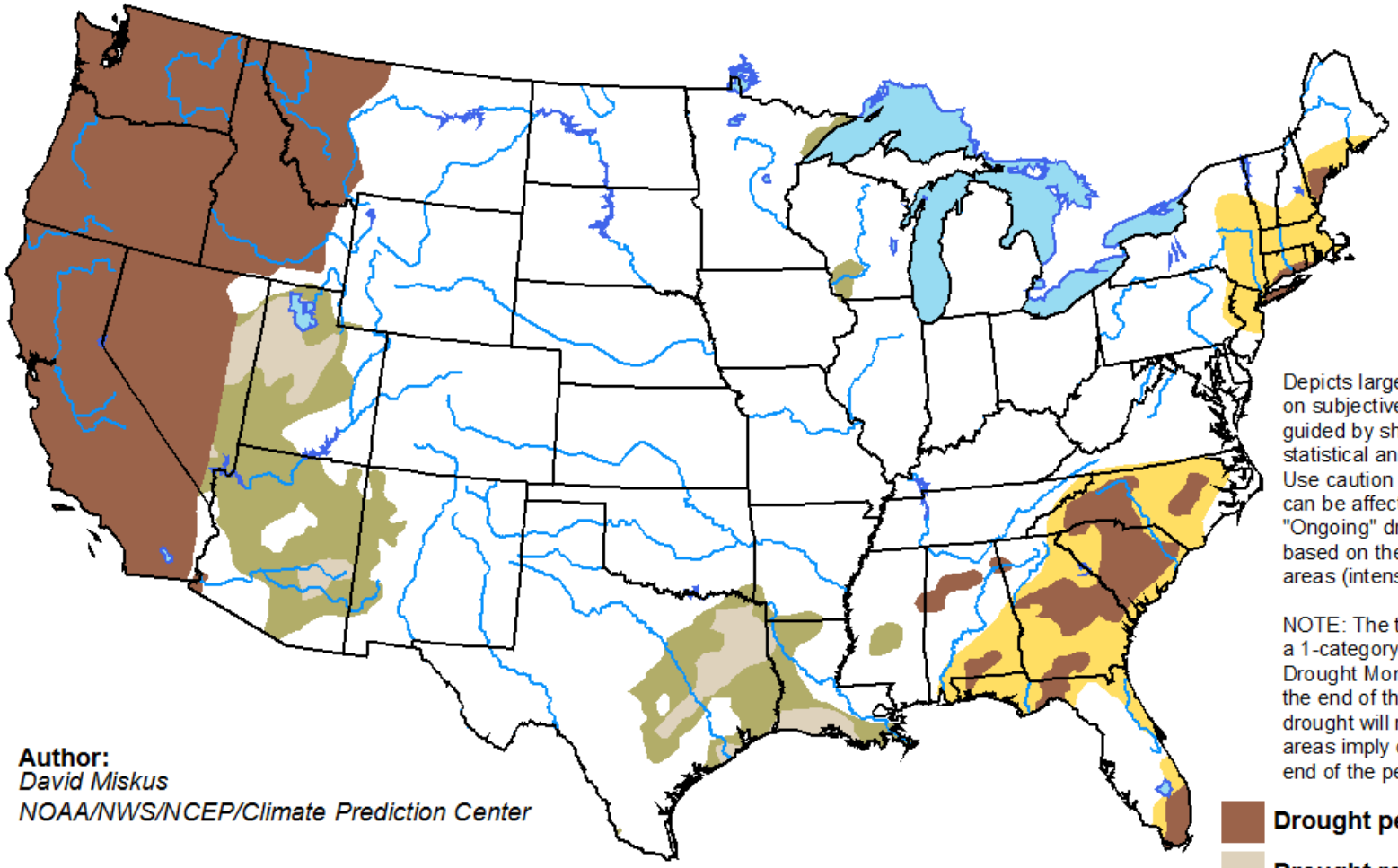


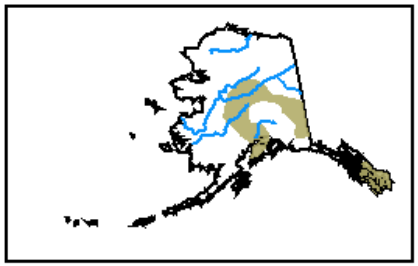


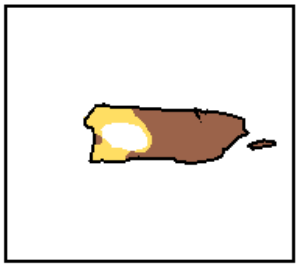
U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for August 20 - November 30, 2015
Released August 20, 2015







Author:
David Miskus
NOAA/NWS/NCEP/Climate Prediction Center

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/intensifies

Drought remains but improves

Drought removal likely

Drought development likely

http://go.usa.gov/hHTe

Summary – Current Conditions

- Frequent, heavy rains in spring and summer have had a negative impact on agriculture with prevented planting, delayed planting, shallow roots, etc.
- Increased spring runoff has produced water quality issues on Lake Erie and the Gulf of Mexico.

Summary - Forecast

- El Niño
- Fall – increased chance of cooler, wetter than average conditions in the southwest portion of the central US
- Winter – increased chance of warmer than average conditions across most of the central US. Potential dry areas centered on Montana and the Great Lakes.

Further Information - Partners

- **Today's and Past Recorded Presentations and :**
  - *http://mrcc.isws.illinois.edu/webinars.htm*
  - *http://www.hprcc.unl.edu*
- NOAA's National Climatic Data Center: www.ncdc.noaa.gov
  - ➢ Monthly climate reports (U.S. & Global): www.ncdc.noaa.gov/sotc/
- NOAA's Climate Prediction Center: www.cpc.ncep.noaa.gov
- Climate Portal: www.climate.gov
- U.S. Drought Portal: www.drought.gov
- National Drought Mitigation Center: http://drought.unl.edu/
- State climatologists
  - http://www.stateclimate.org
- Regional climate centers
  - http://mrcc.isws.illinois.edu
  - http://www.hprcc.unl.edu

Thank You and Questions?

- Questions:
  - **Climate:**
  - Jim Angel: jimangel@Illinois.edu, 217-333-0729
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