Great Plains and Midwest Climate Outlook
20 November 2014

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17 Nov. 2014, Waubay, SD

General Information

* **Providing climate services to the Central Region**
  * Collaboration Activity Between:
  * 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**
  * 18 December 2014
  * Wendy Ryan (Colorado State Climate Office)

* **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*

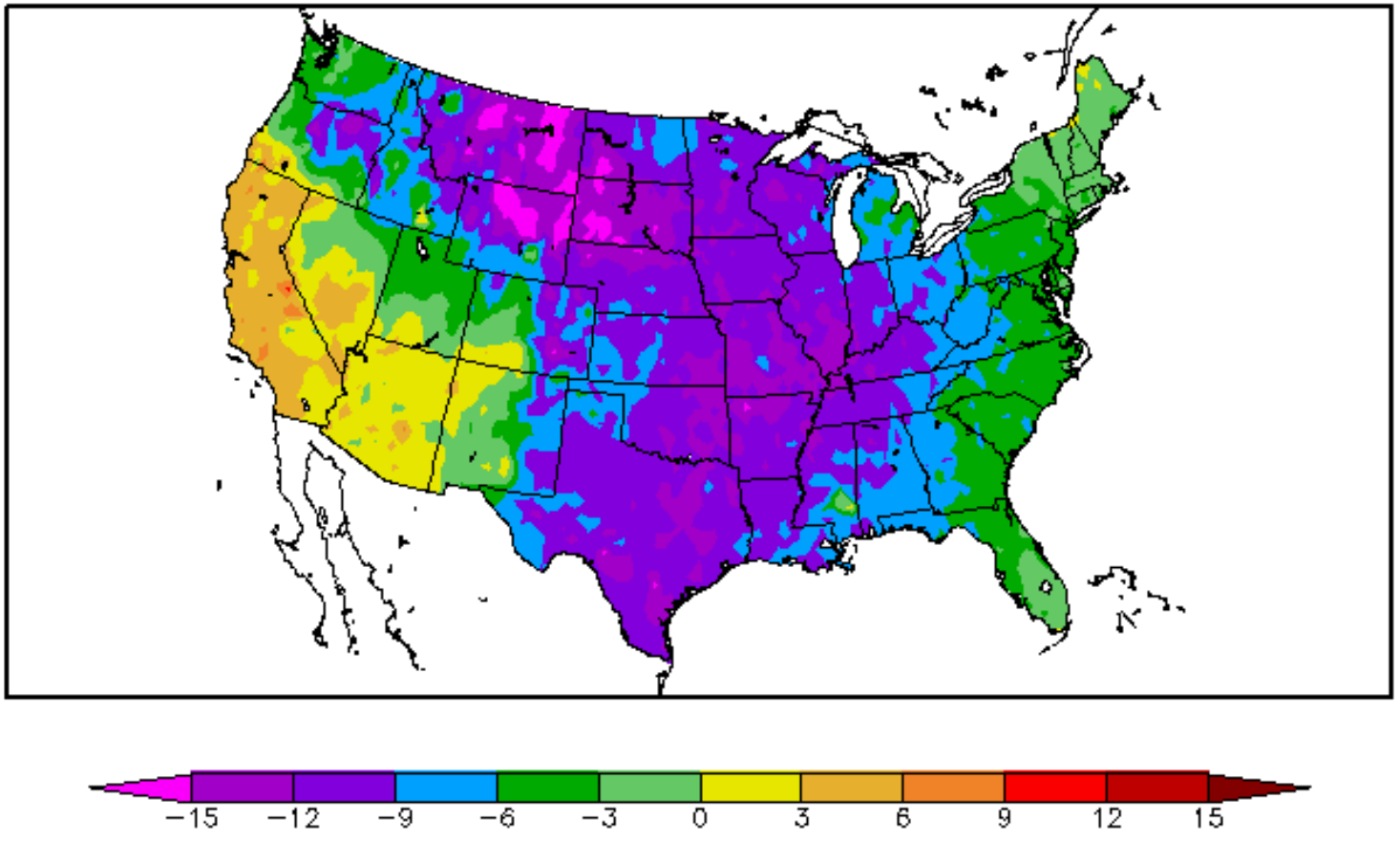
* **There will be time for questions at the end**

Agenda

* **Current conditions**
* **Impacts**
* **Outlooks**

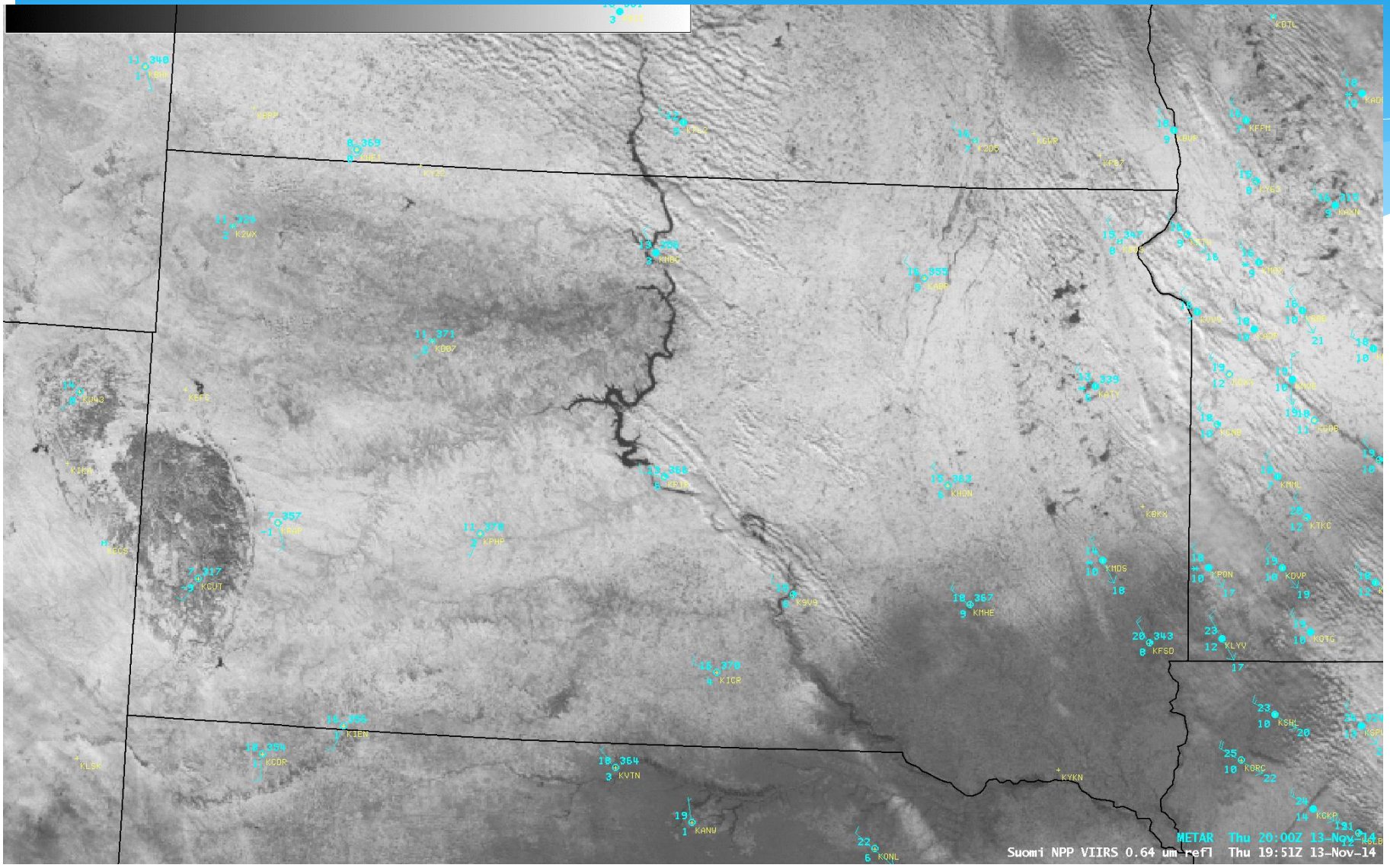
Farm Field Pennington County, MN
Agweb.com

Departure from Normal Temperature (F)
11/6/2014 – 11/19/2014



Generated 11/20/2014 at HPRCC using provisional data.

Regional Climate Centers


METAR Thu 20:00Z 13-Nov-14
Suomi NPP VIIRS 0.64 um refl Thu 19:51Z 13-Nov-14

Consecutive Hours Below Freezing

National Weather Service

Sioux Falls, SD

First Time Below 32 Degrees	Last Time Below 32 Degrees	Number of Hours
11/18/1985 3 PM	12/1/1985 12 AM	297
11/15/1900	11/25/1900	240+
11/22/1893	11/30/1893	216+
11/19/1975 10 PM	11/28/1975 9 PM	215
11/10/2014 7 AM	11/18/2014 9 PM	206*
11/22/1931	11/29/1931	192+
11/17/1921	11/24/1921	192+
11/17/1896	11/24/1896	192+

+ hourly observations not available for these dates
* current forecast has stretch ending noon Saturday at 293 hours.

Sioux City, IA

First Time Below 32 Degrees	Last Time Below 32 Degrees	Number of Hours
11/18/1985 5 PM	12/1/1985 12 AM	295
11/7/2000 1 AM	11/15/2000 6 PM	209
11/20/1975 6 AM	11/28/1975 6 PM	204
11/10/2014 4 PM	11/18/2014 9 PM	197*
11/16/1937	11/22/1937	168+
11/21/1898	11/27/1898	168+
11/12/1959 12 AM	11/18/1959 10 AM	154
11/17/1926	11/22/1926	144+

+ hourly observations not available for these dates
* current forecast has stretch ending noon Friday at 260 hours.

Record Lows 11-16 Nov.

Date Range

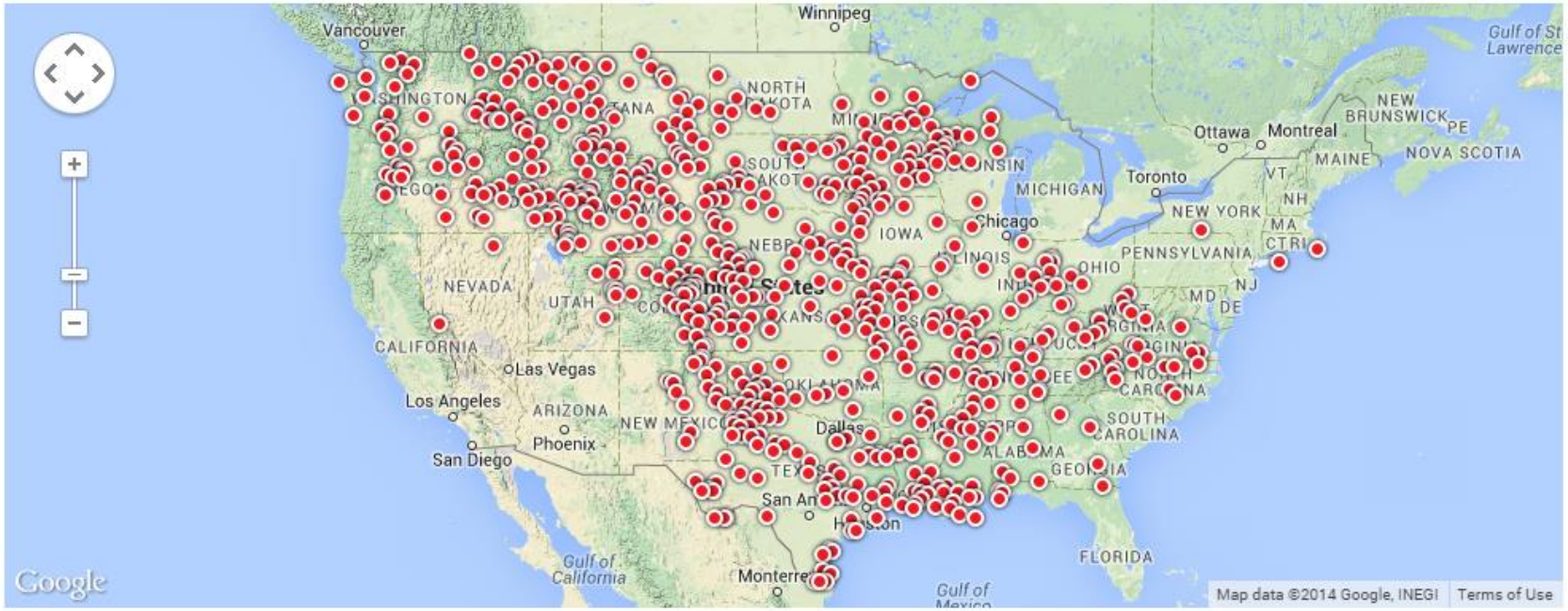
2014-11-12 to 2014-11-16

Country

United States

Show Records

1 - 1000 of 1166 >

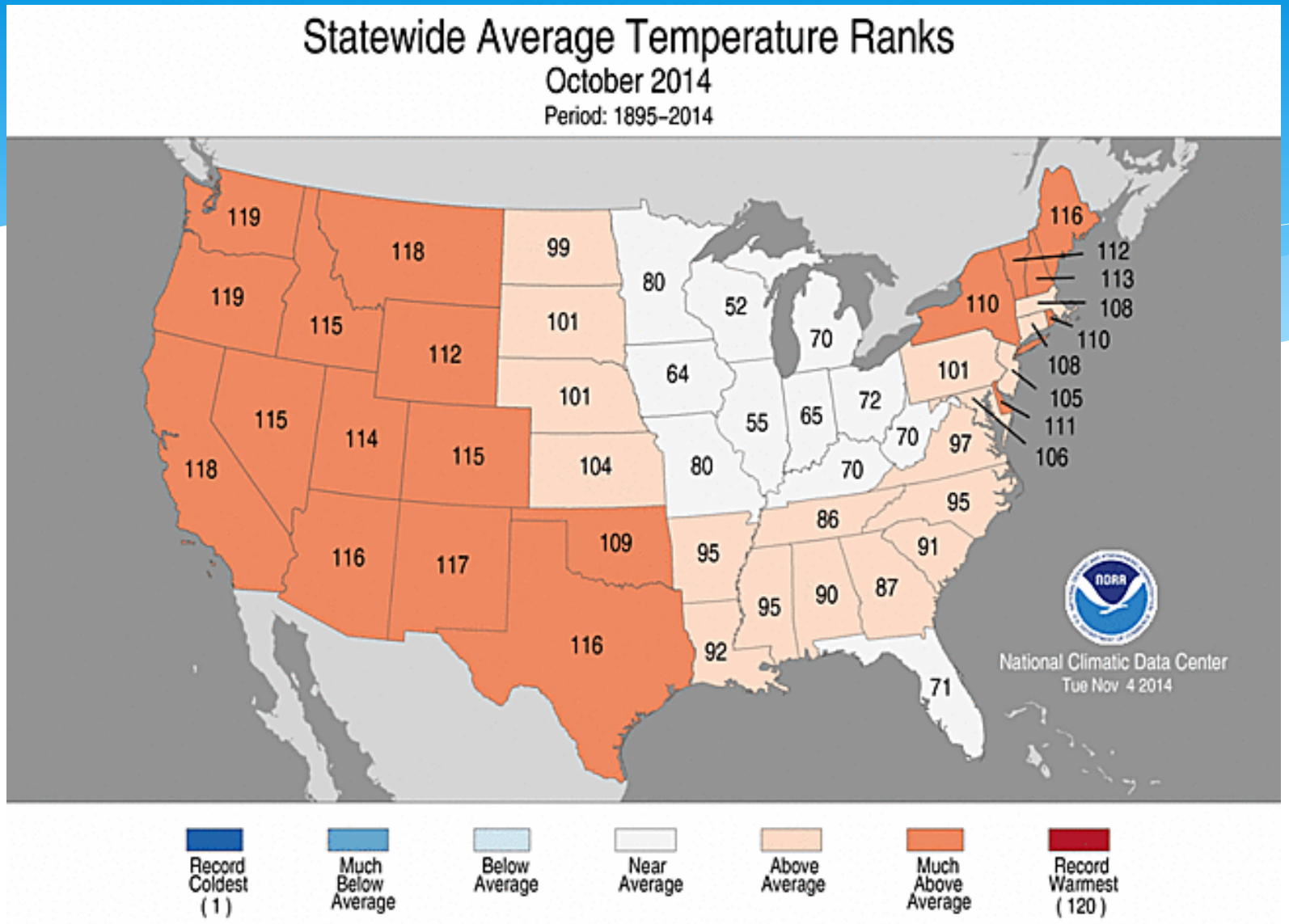


POTENTIAL	TIED	BROKEN	TOTAL
14637	219	947	1166

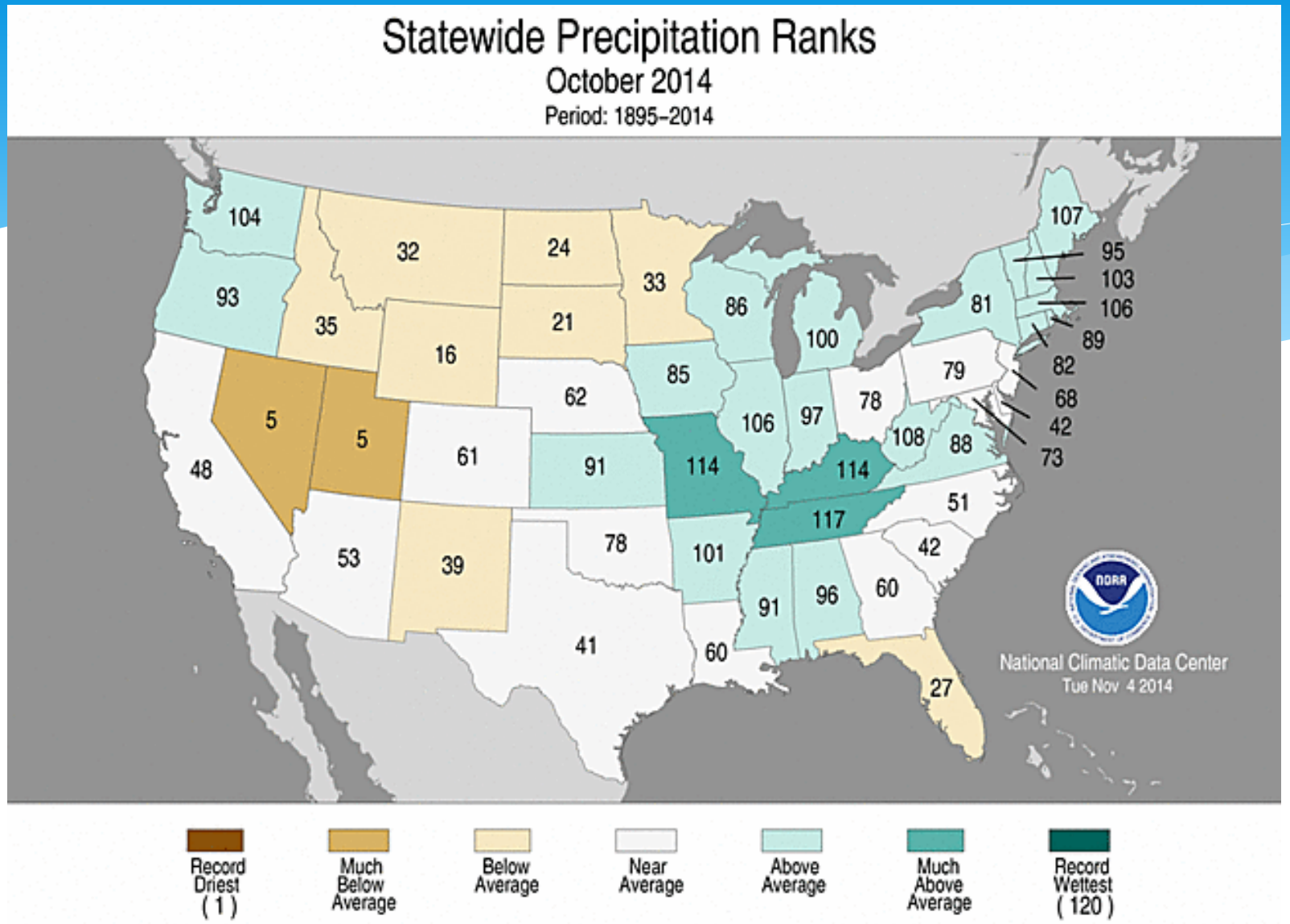
Various cold/precip. statistics

* Many top 10-15 coldest starts to November
  * Similar recent years 1985 and 2000
* Hours below freezing in November

* 11-18 Nov. Records Nationally
  * Nearly 3000 record low max temps
  * Nearly 2000 record low minimums
  * 700 Daily Snow records
  * 300 Daily precipitation records



http://www.ncdc.noaa.gov/temp-and-precip/maps.php?



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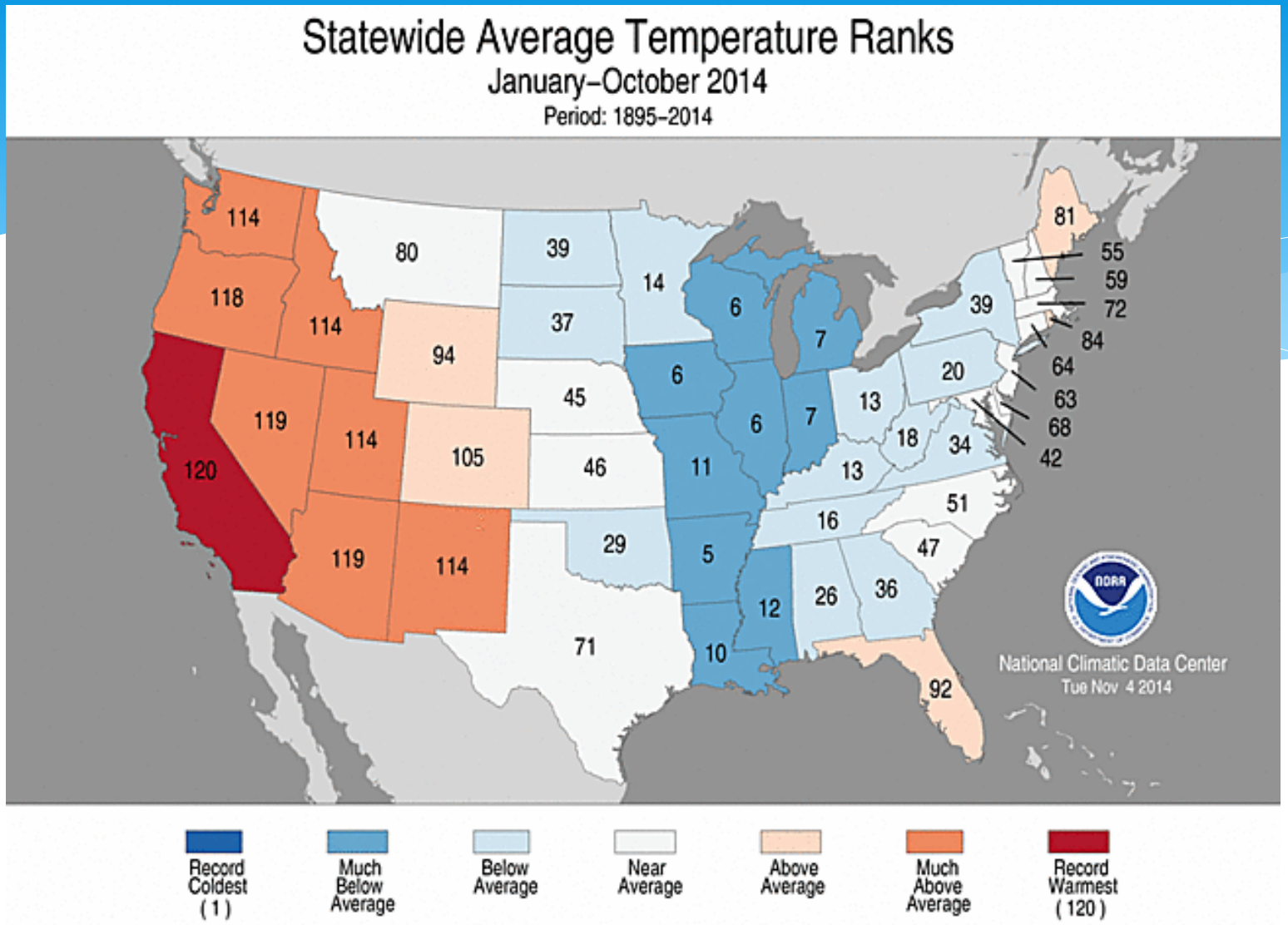
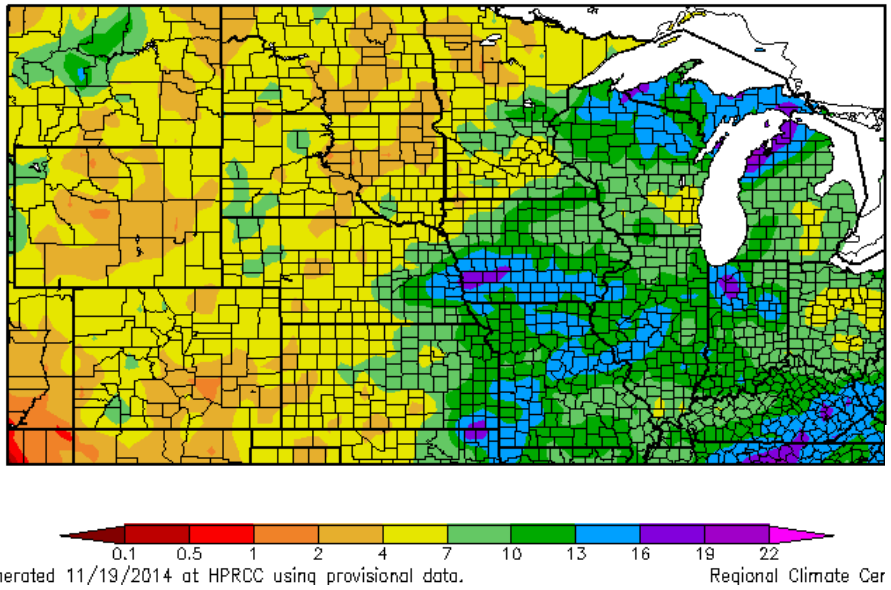


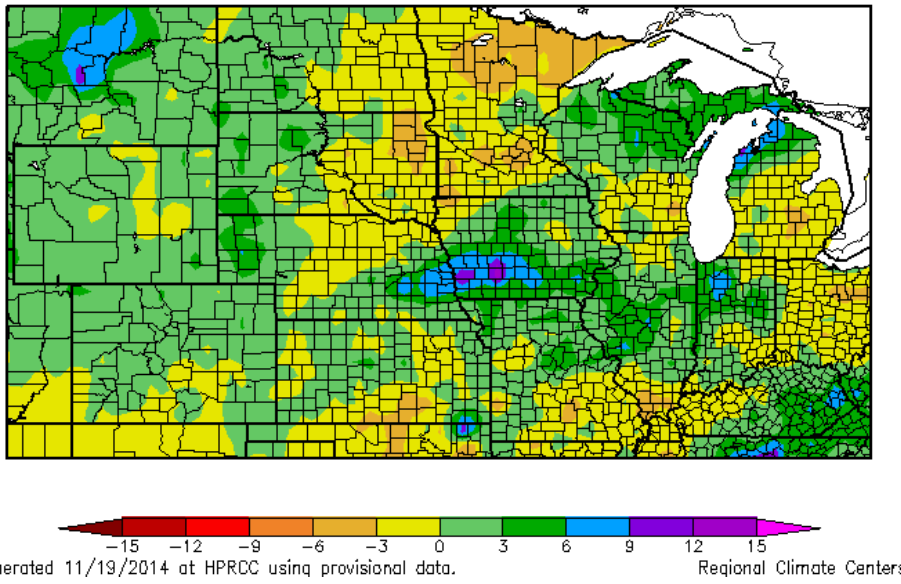
http://www.ncdc.noaa.gov/temp-and-precip/maps.php?

90-Day Precipitation

Precipitation (in)
8/21/2014 – 11/18/2014

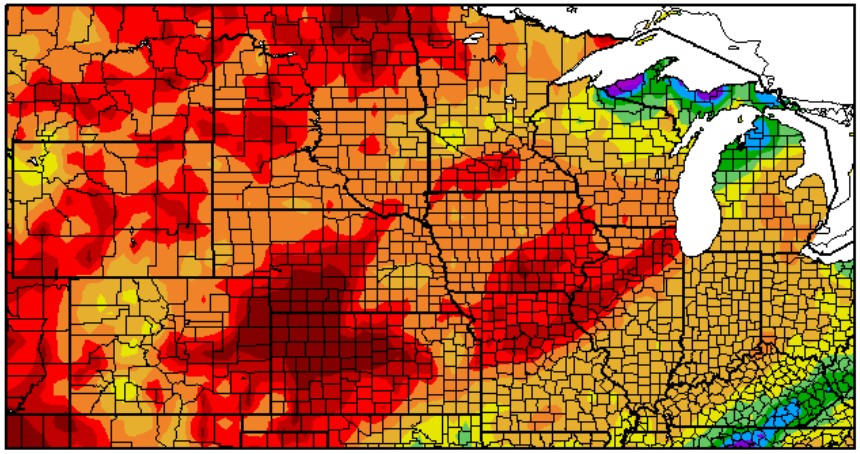


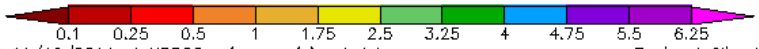
Departure from Normal Precipitation (in)
8/21/2014 – 11/18/2014



30-Day Precipitation

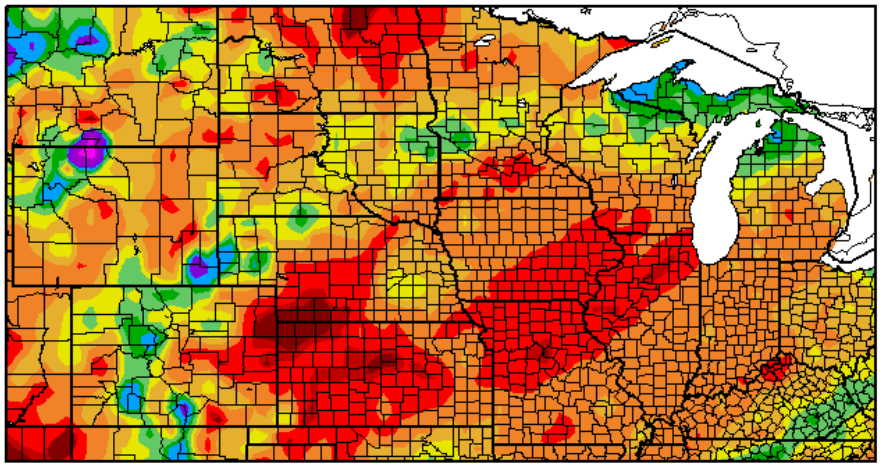
Precipitation (in)
10/20/2014 – 11/18/2014

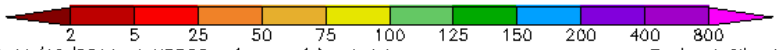




Generated 11/19/2014 at HPRCC using provisional data. Regional Climate Cen

Percent of Normal Precipitation (%)
10/20/2014 – 11/18/2014

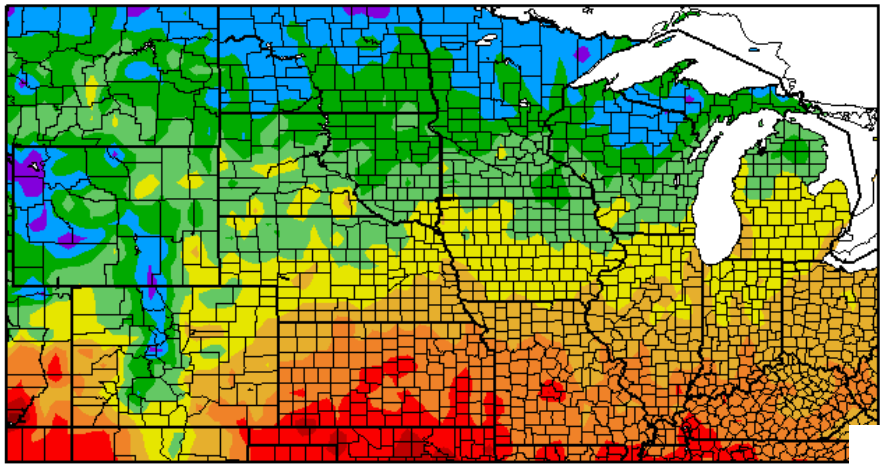


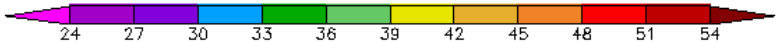


Generated 11/19/2014 at HPRCC using provisional data. Regional Climate Centers

30-Day Temperature

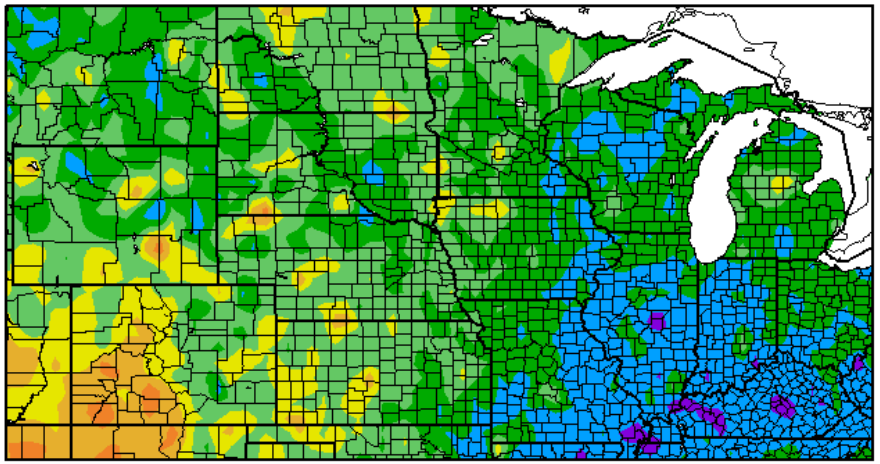
Temperature (F)
10/20/2014 – 11/18/2014





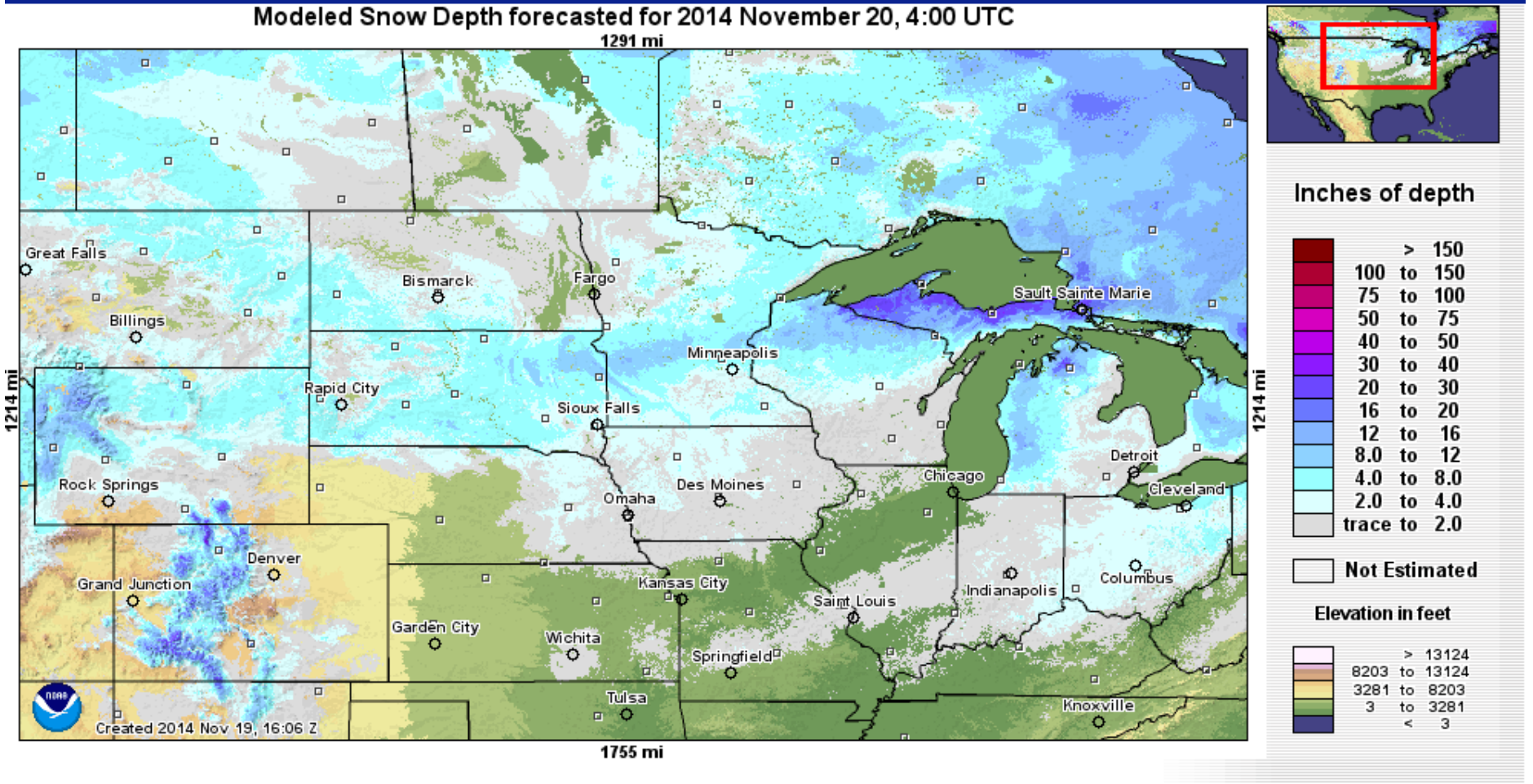
Generated 11/19/2014 at HPRCC using provisional data. Regional Climate

Departure from Normal Temperature (F)
10/20/2014 – 11/18/2014



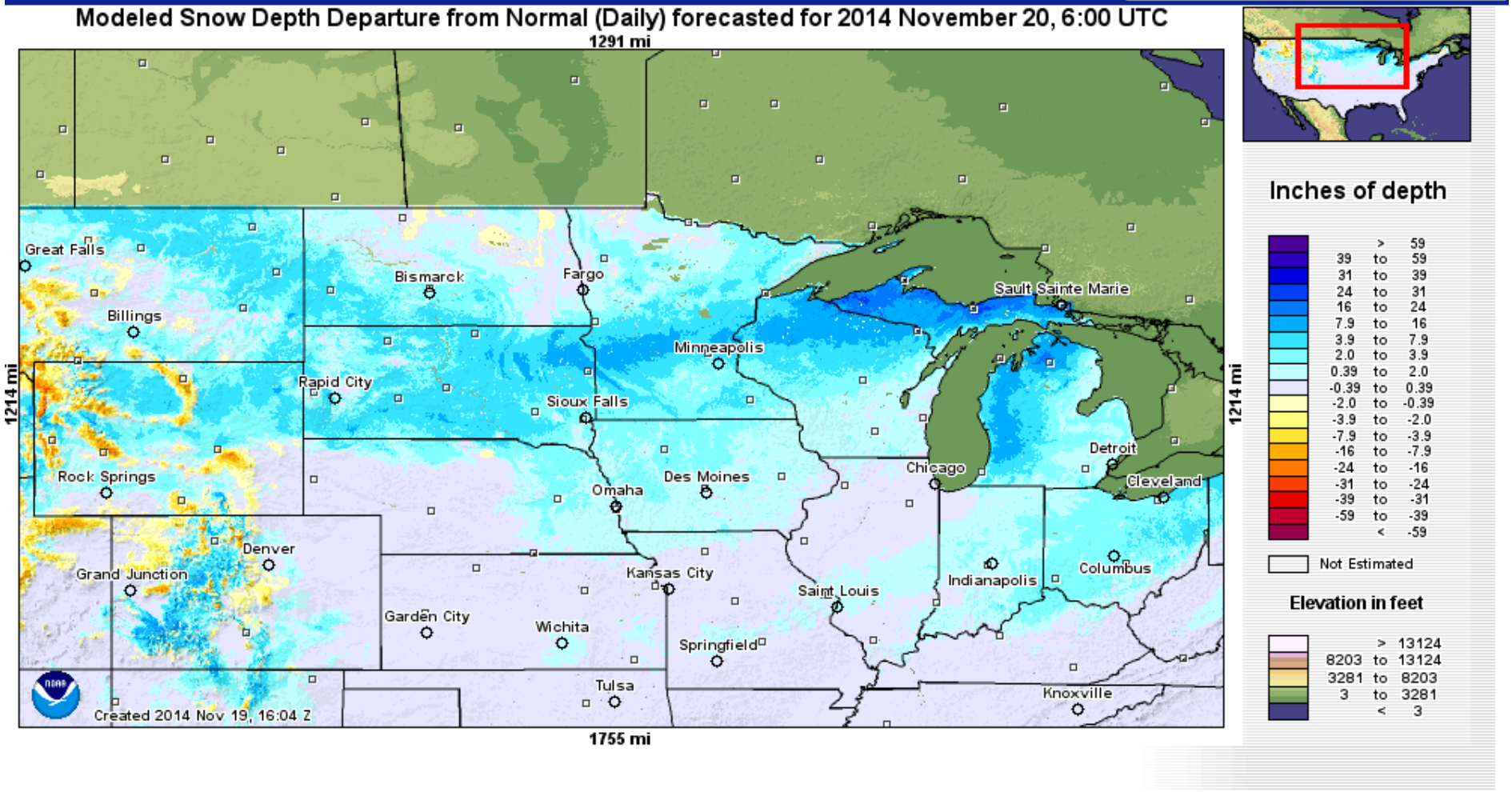
Generated 11/19/2014 at HPRCC using provisional data. Regional Climate Centers

Current North Central Snow Cover



http://http://www.nohrsc.noaa.gov/interactive/html/map.html?

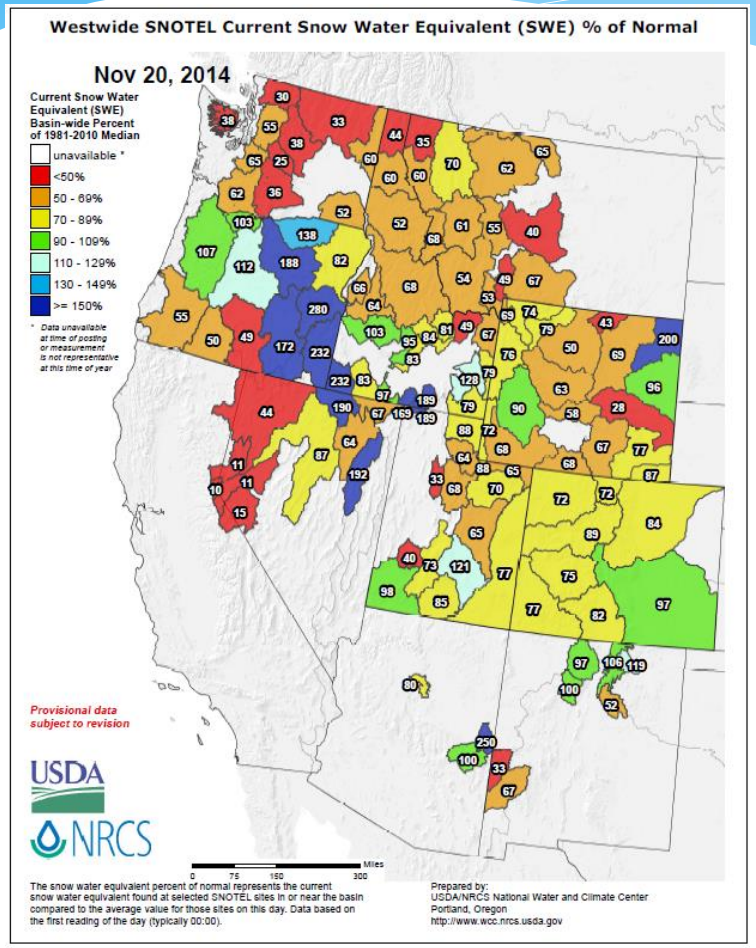
Current North Central Snow Cover (Anomaly)

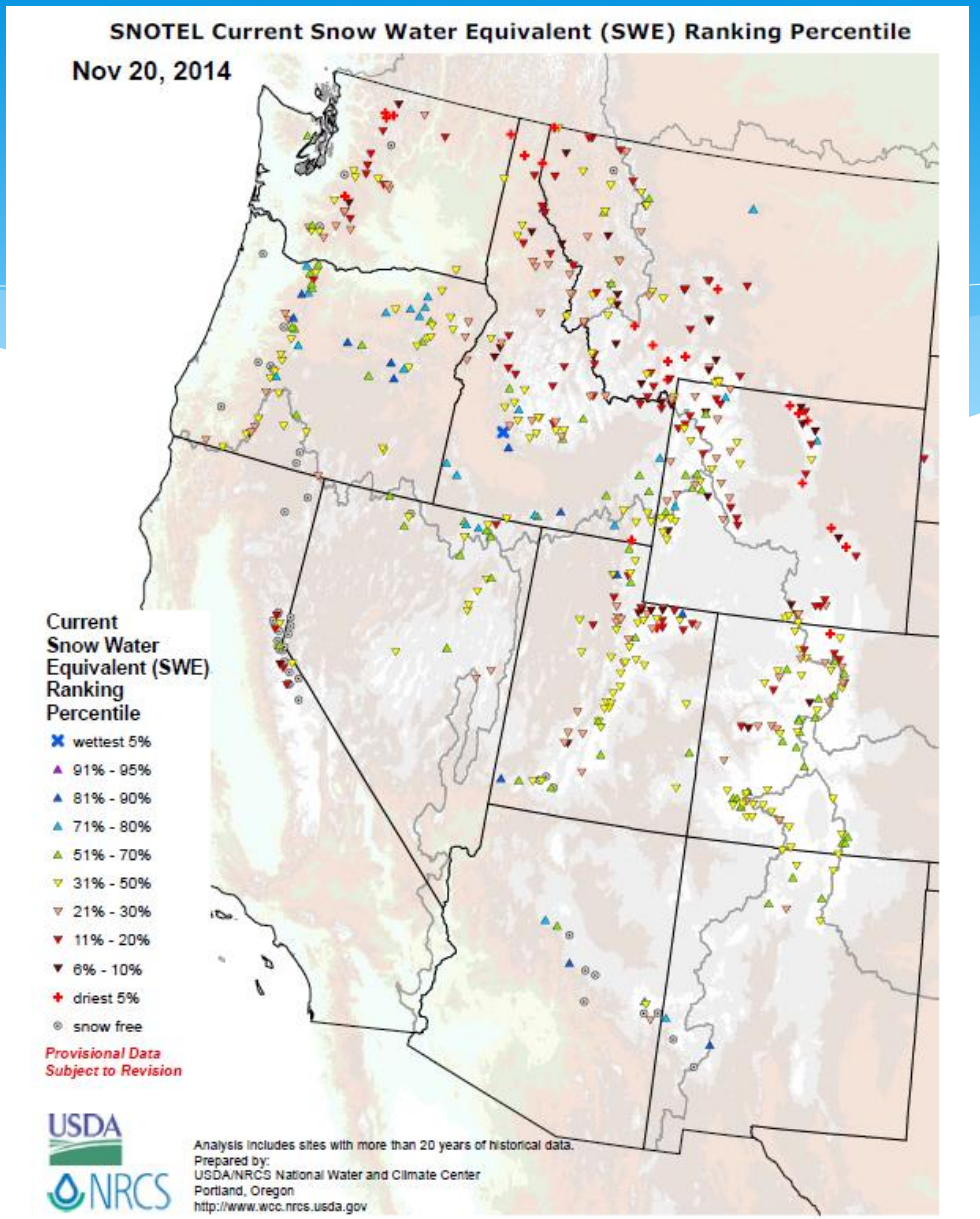


Cold Issues

* Ice Jams
* Record early closing Mississippi at Minneapolis (1969)
* Early lake ice-ins (MN, IL, Superior)

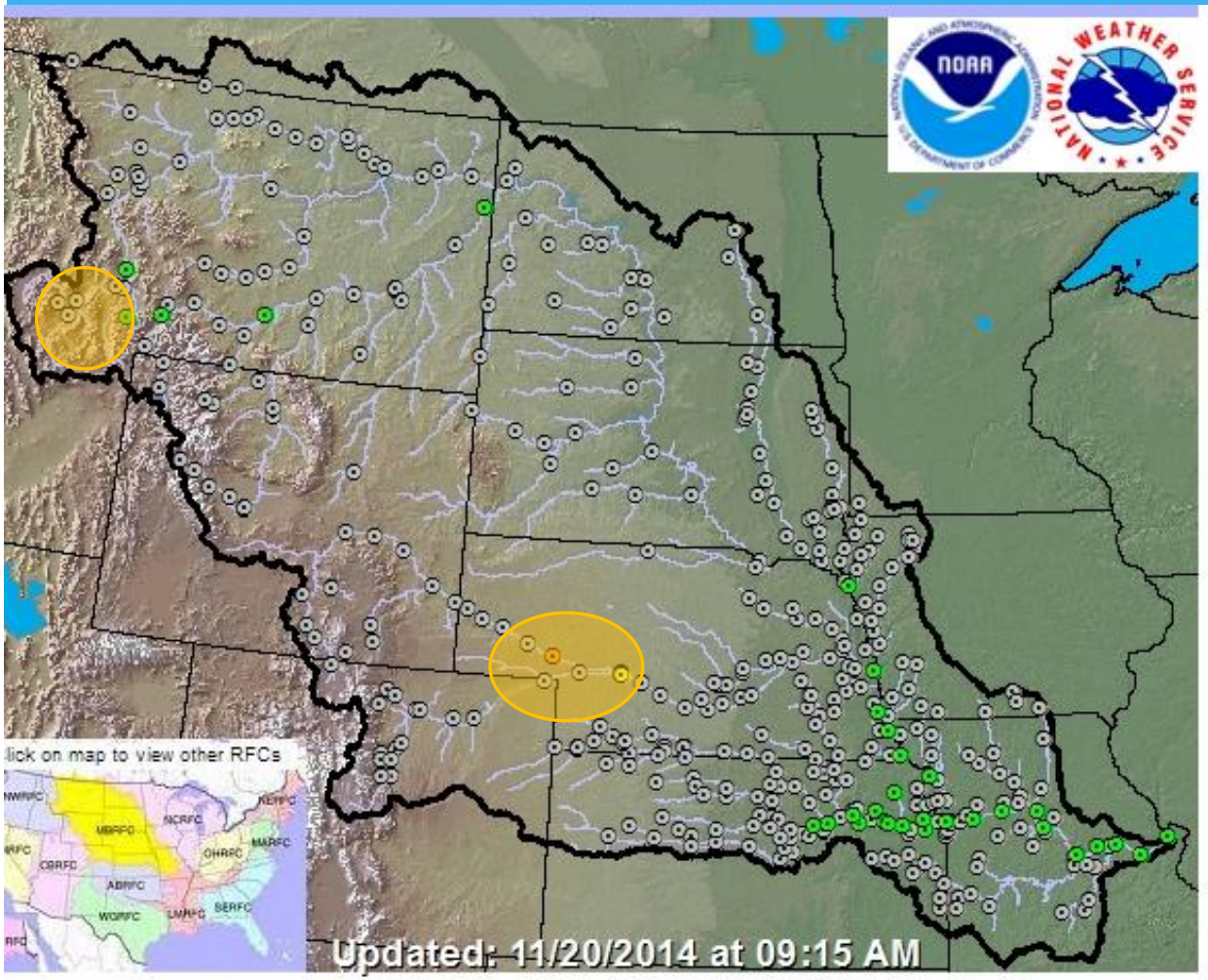
Western Snow Pack





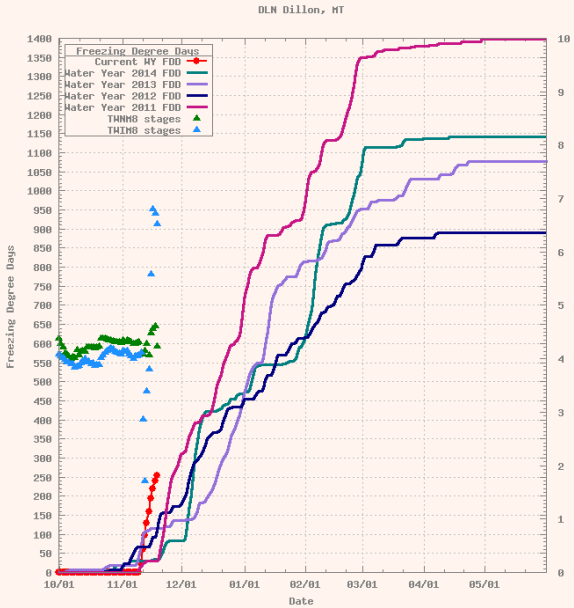
MISSOURI BASIN

KNOWN ICE JAMS



Montana: Jefferson River downstream of Twin Bridges…no flooding

Nebraska: Along lower reaches of both the North and South Platte Rivers…minor flooding



Soil moisture

* Dry certain locations eastern Dakotas and MN
* Excess still parts of MN, WI, IL maybe IA
* MT, WY, Western Dakotas wetter (fall precip)

* Not sure models handling it very well given cool summer
* Likely deeper soil moisture was not extracted
* Several places shallower depths drier

Ag Issues

General Issues

* Extreme temperature switch – livestock stress
* Early moving livestock out of corn fields
* Slowed harvest progress in snow-covered areas

* Still to wet to harvest reported (IL, MI, WI, OH?)
* Snowed in fields (MI, MN, WI)

* Places too dry for fall tillage or now frozen

* September frost

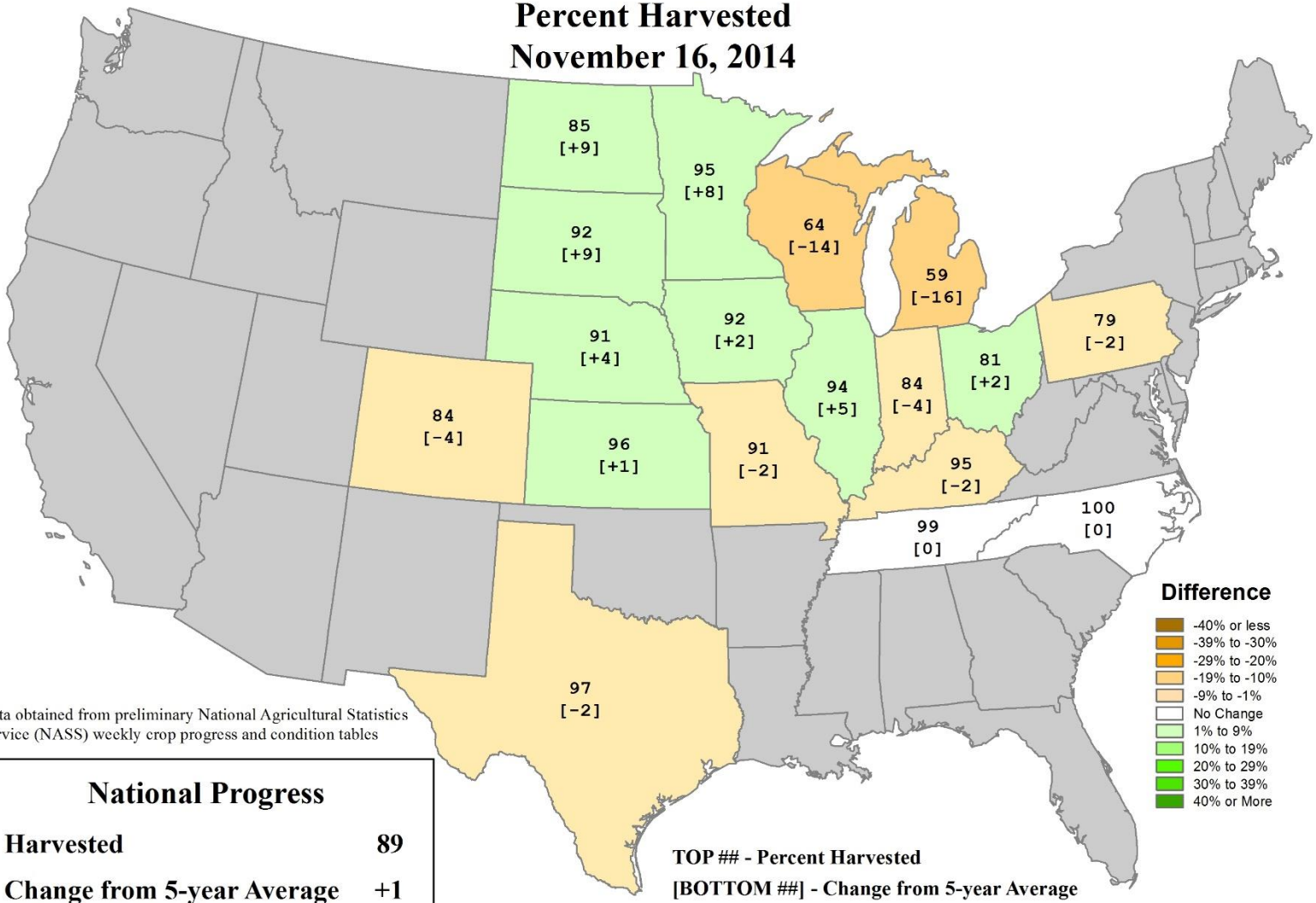
Harvest

* Corn – 89%
* Soybean – 94%
* Sorghum – 83%
* Sunflowers – 80%

* Delayed harvest (particularly corn)
  * Crop moisture
  * Lack of storage
  * Drying costs – low crop price
  * Some crop will be left in the field

U.S. Corn Progress

Percent Harvested
November 16, 2014



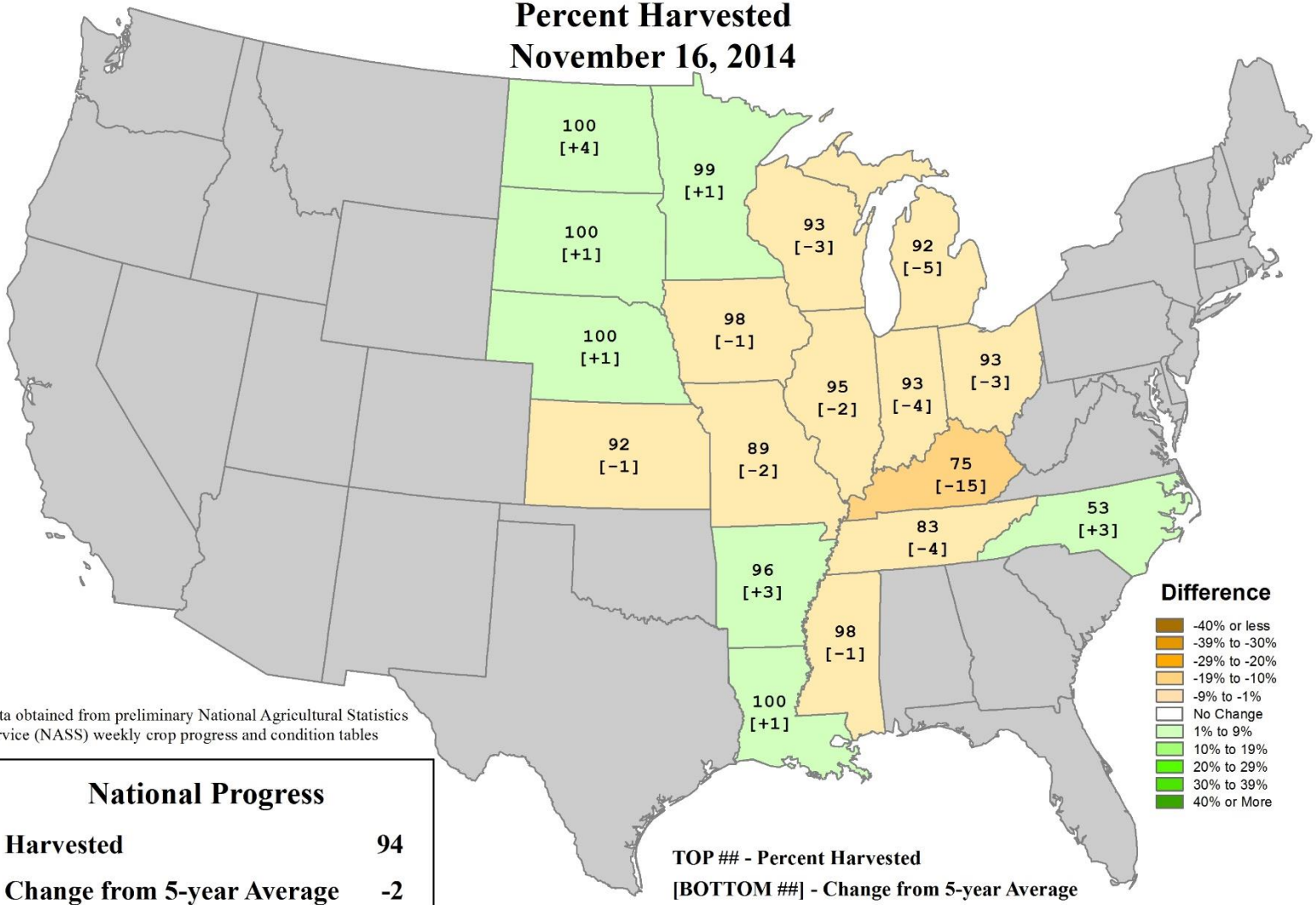
Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

National Progress	
Harvested	89
Change from 5-year Average	+1

USDA Agricultural Weather Assessments
World Agricultural Outlook Board

U.S. Soybeans Progress

Percent Harvested
November 16, 2014



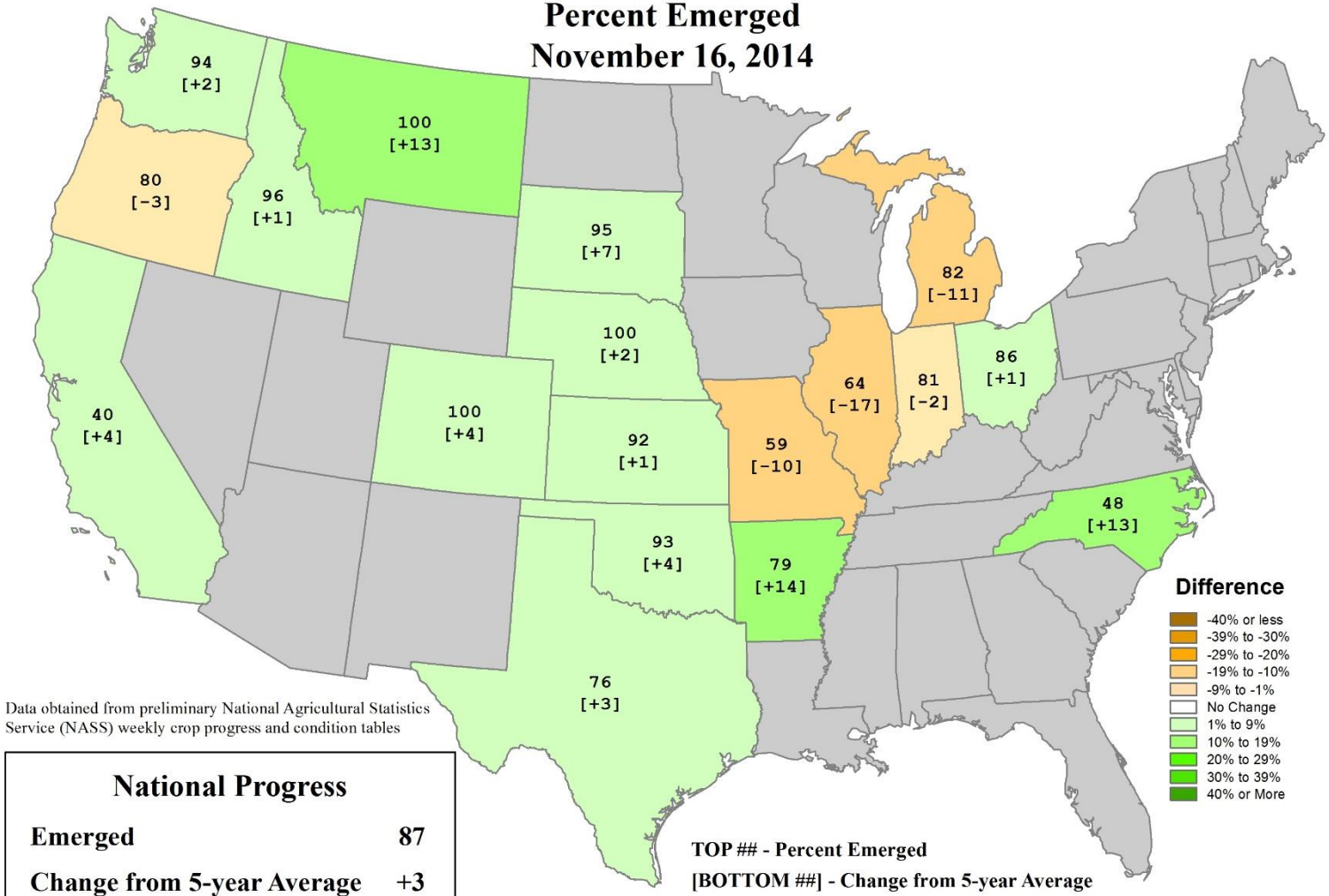
Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

National Progress	
Harvested	94
Change from 5-year Average	-2

USDA Agricultural Weather Assessments
World Agricultural Outlook Board

U.S. Winter Wheat Progress

Percent Emerged
November 16, 2014



Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

National Progress	
Emerged	87
Change from 5-year Average	+3

TOP ## - Percent Emerged
[BOTTOM ##] - Change from 5-year Average

USDA Agricultural Weather Assessments
World Agricultural Outlook Board

Winter Wheat

* Growth mostly stopped by recent extreme cold
* Questions on damage by extreme cold
  * Soil temperatures not too cold yet

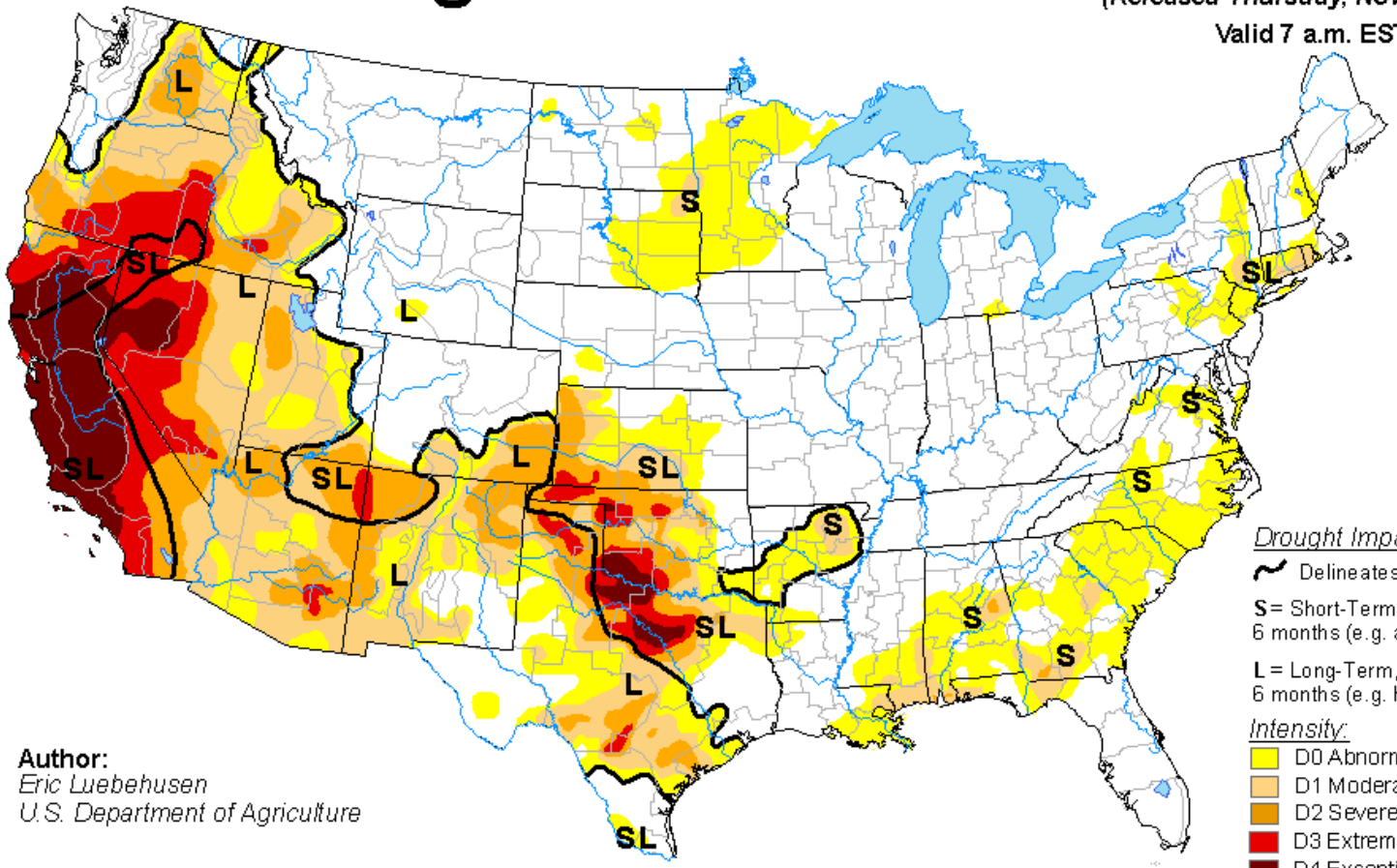
* Continuing drought issues southern areas

U.S. Drought Monitor

November 18, 2014

(Released Thursday, Nov. 20, 2014)

Valid 7 a.m. EST



Author:
Eric Luebehusen
U.S. Department of Agriculture

Drought Impact Types:

Delineates dominant impacts

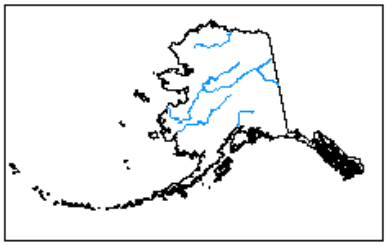
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

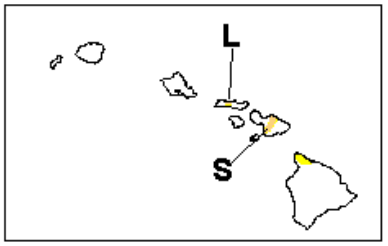
L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

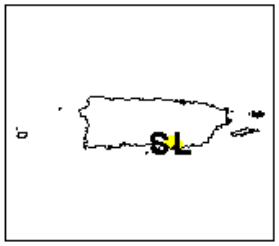
Intensity:

- 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.







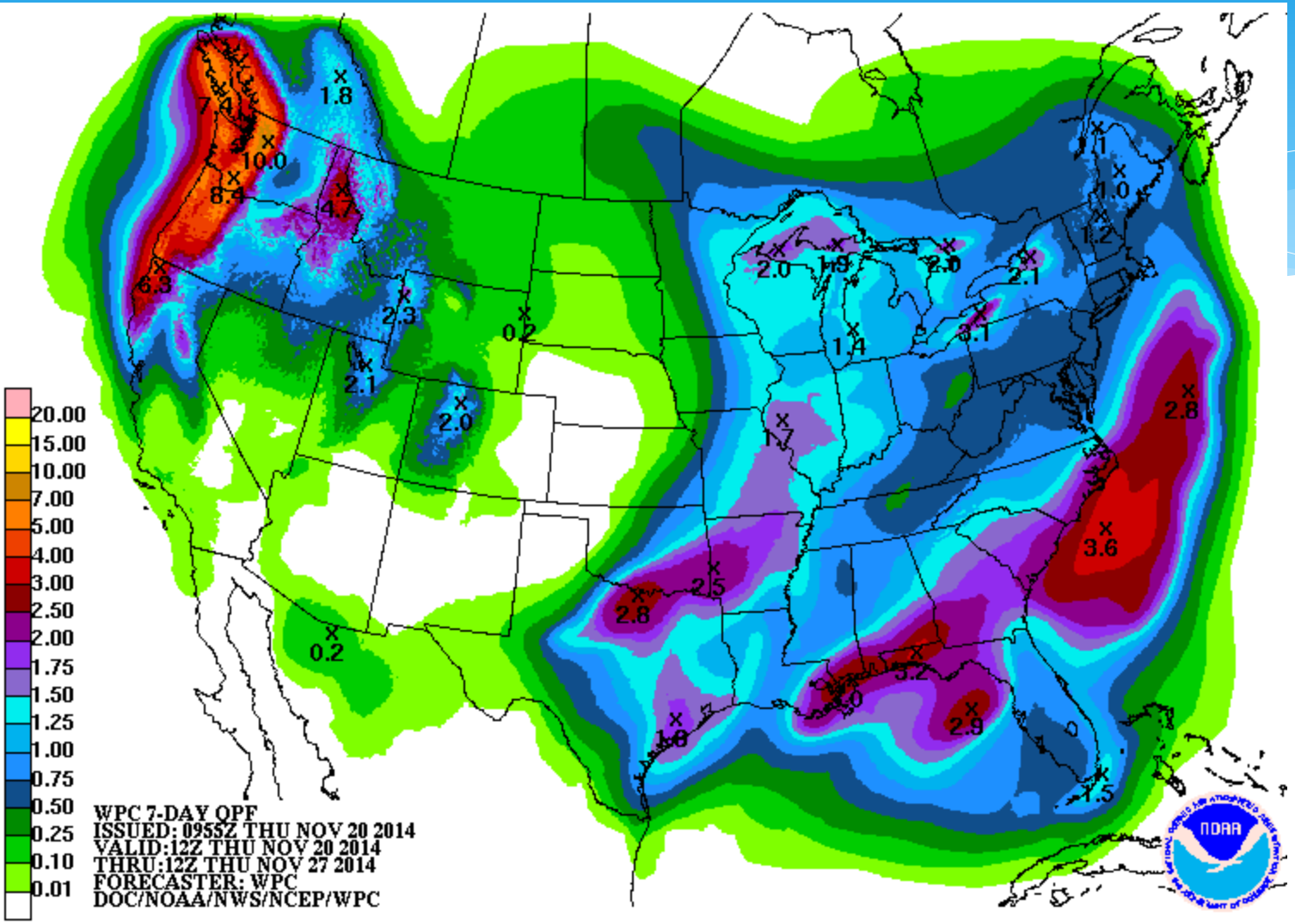
USDA National Drought Mitigation Center

http://droughtmonitor.unl.edu/

Climate Outlooks

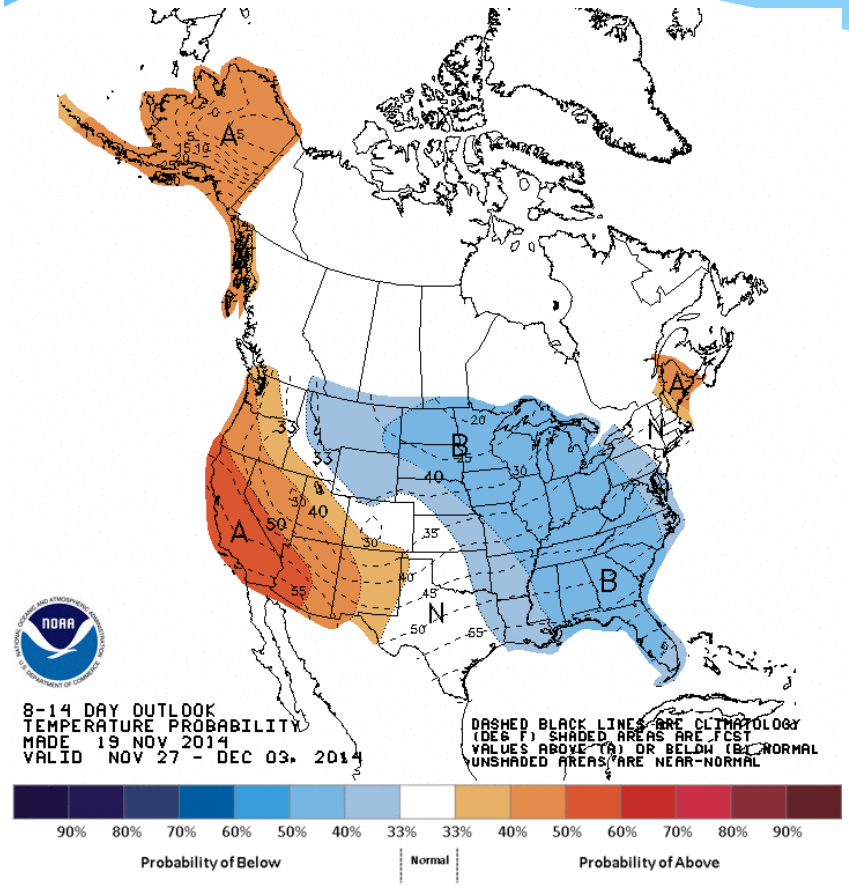
* 7-day precipitation forecast
* 8-14 day outlook
* December
* Winter (and Spring)
* Seasonal Drought Outlooks

Forecast Precipitation Amounts (7 day)

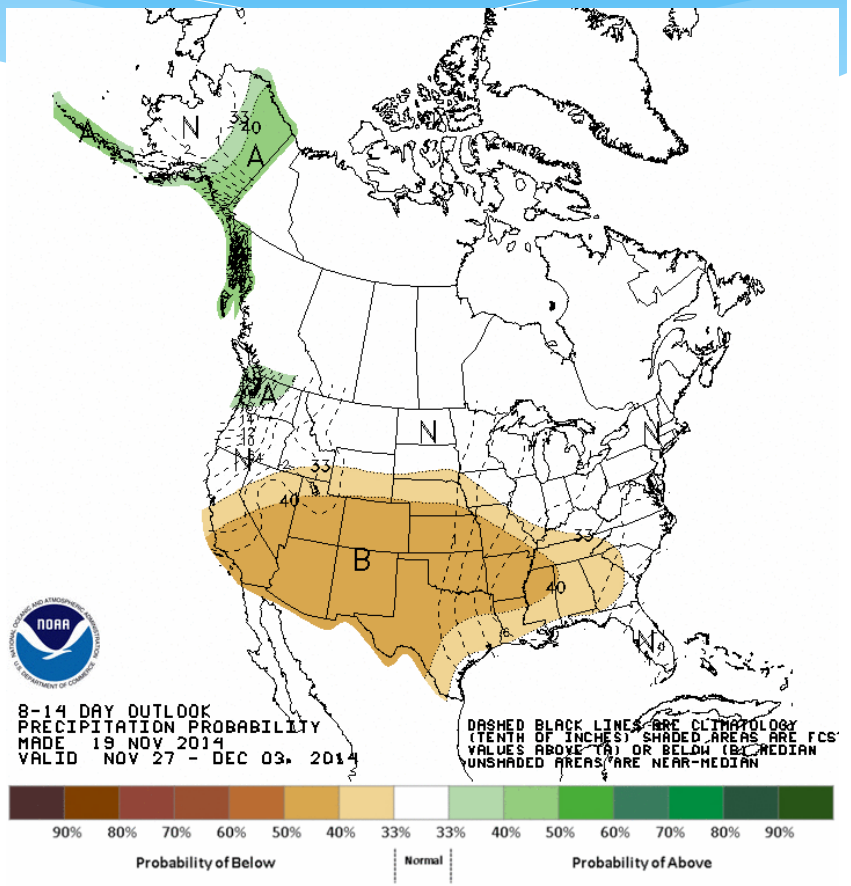


http://www.hpc.ncep.noaa.gov/qpf/p168i.gif?1416493054

Temperature and Precipitation Probabilities for 27 Nov.– 2 Dec. 2014



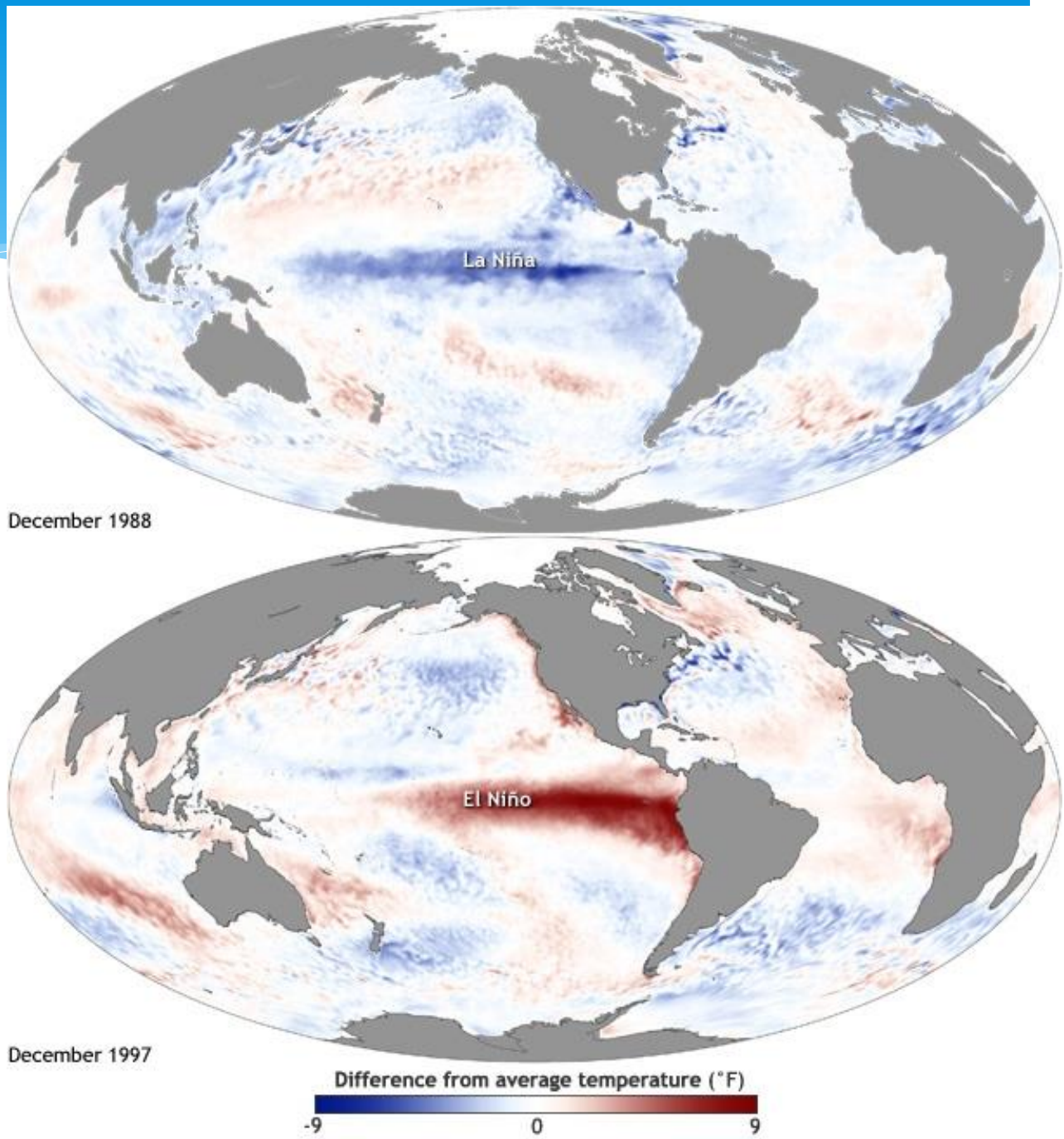
Temperature



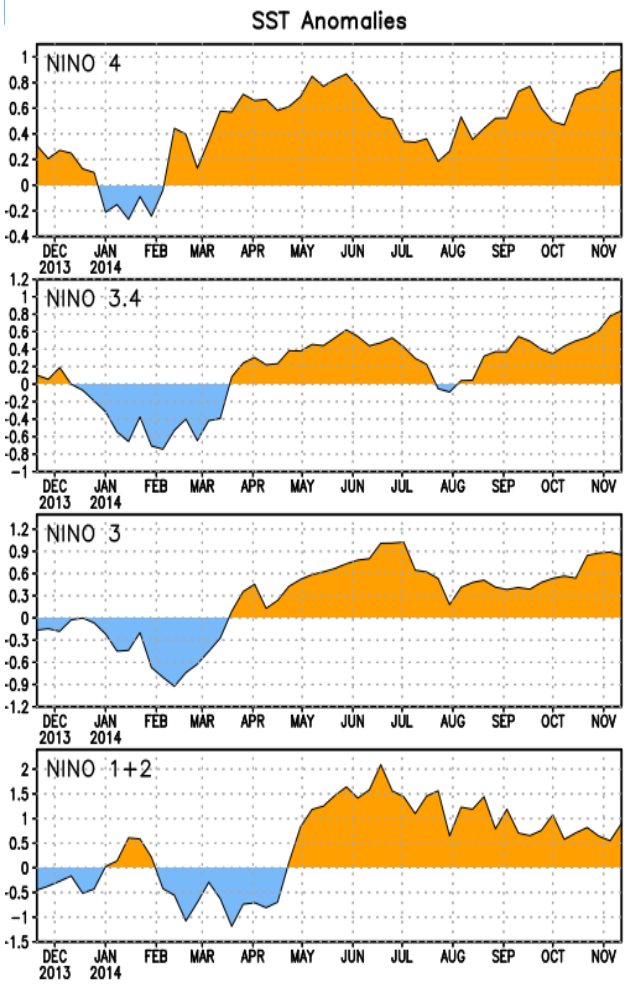
Precipitation

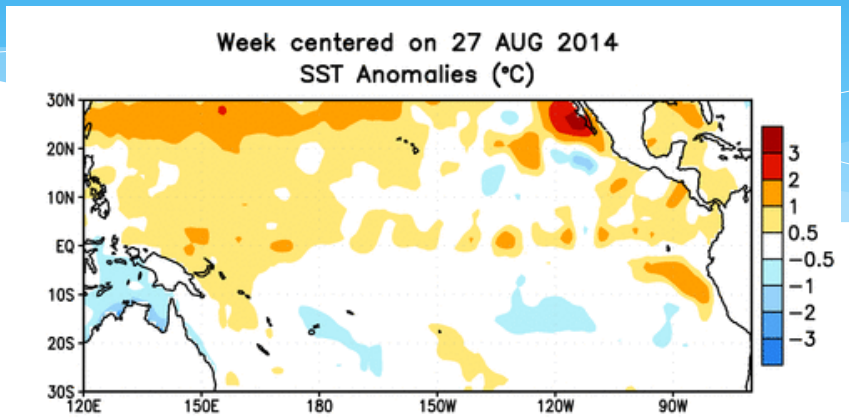
http://www.cpc.ncep.noaa.gov/

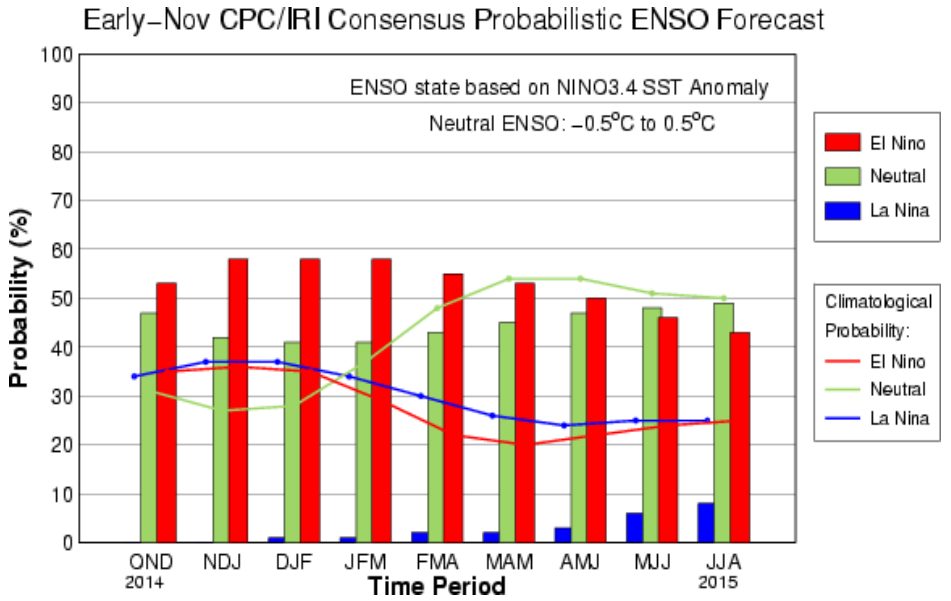
La Niña and El Niño



El Nino Status – Still Pending



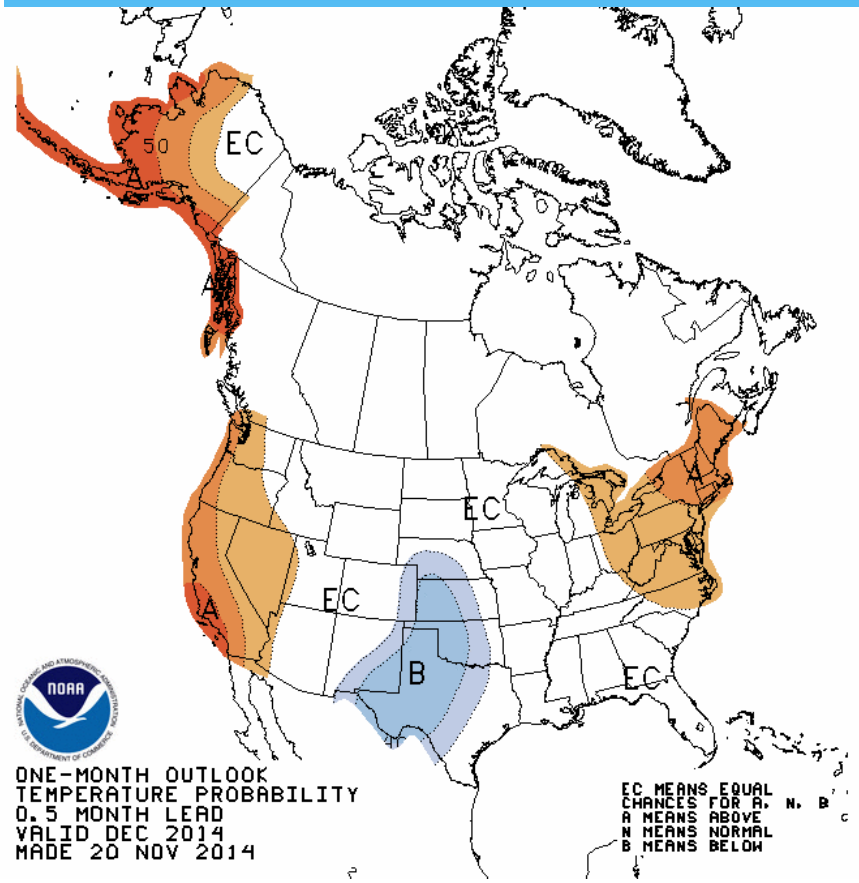




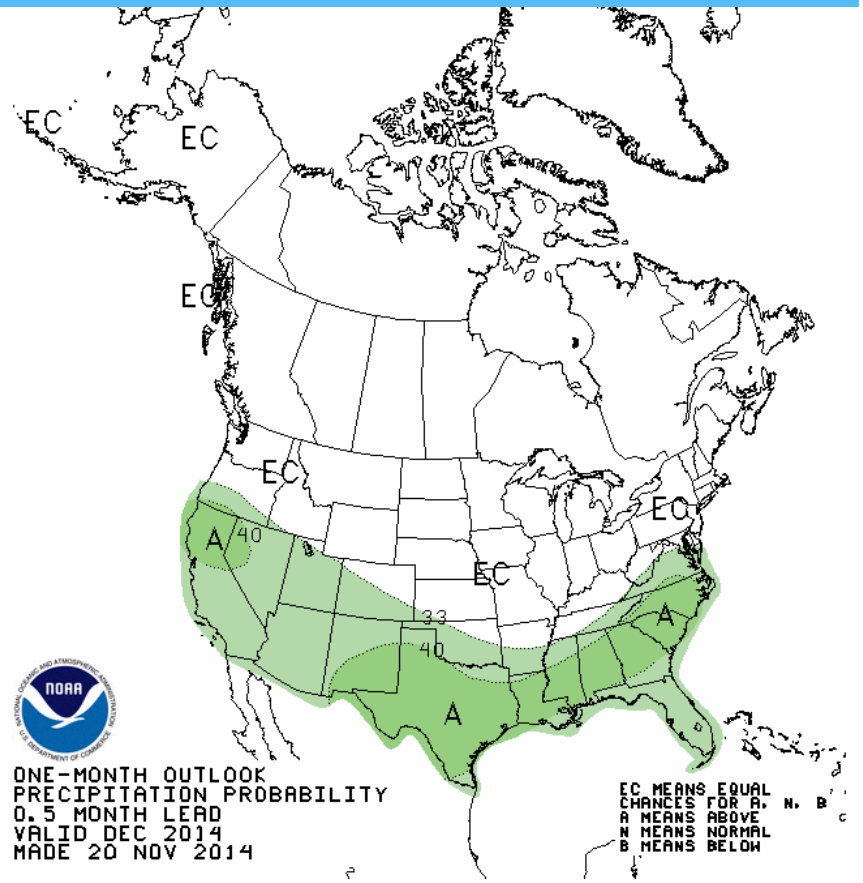
El Niño Forecast

* Right now, we are still in ENSO neutral phase.
* Chance of El Niño at 58% for this winter.
* A weak El Niño is the most likely outcome, if it even shows up.
* Parts of El Nino impacts incorporated in winter outlooks

December Temperature and Precipitation Probabilities



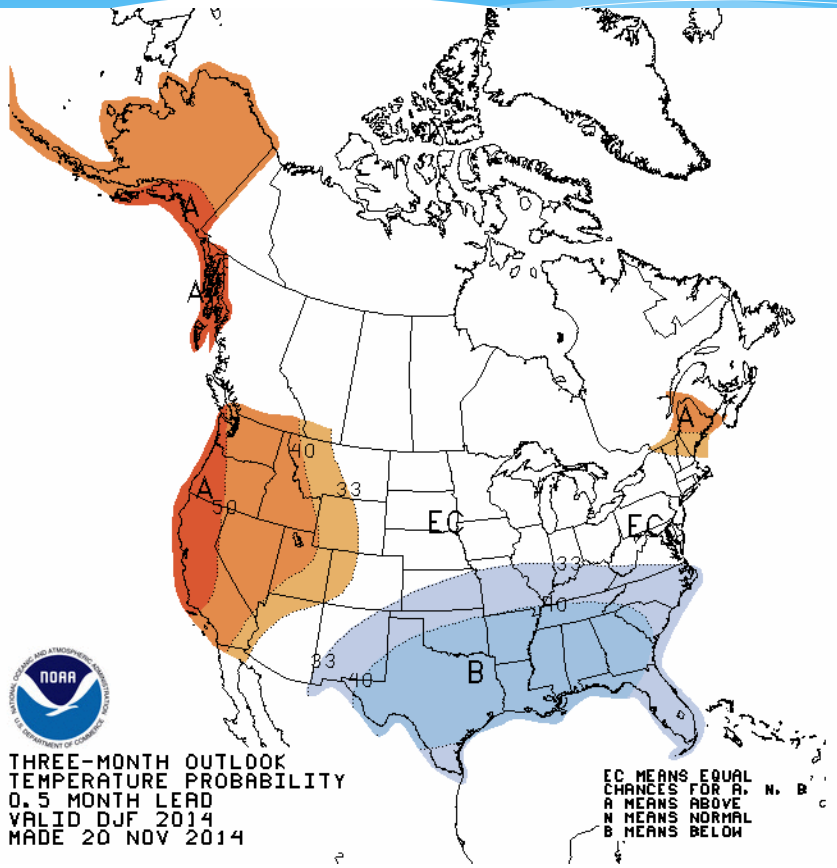
Temperature



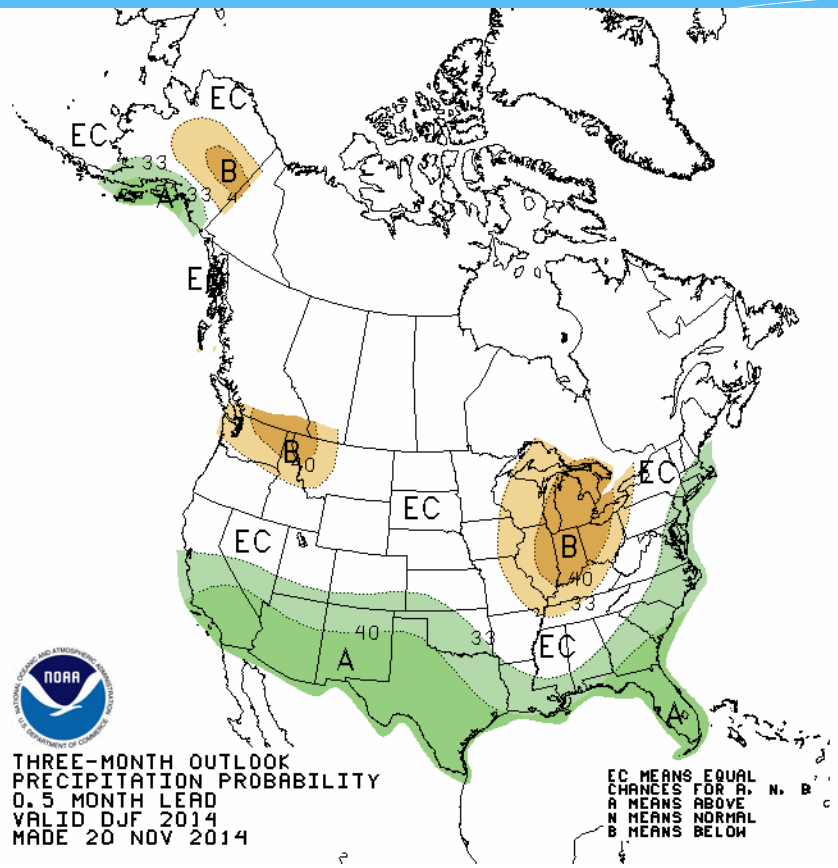
Precipitation

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

3 Month Temperature and Precipitation Probabilities (December - February)

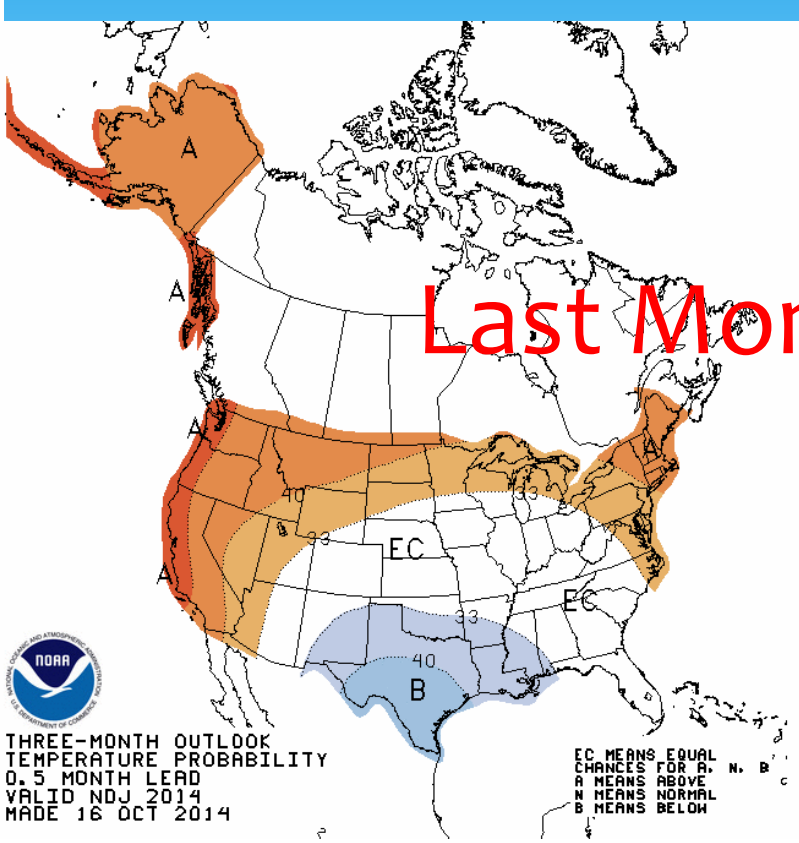


Temperature

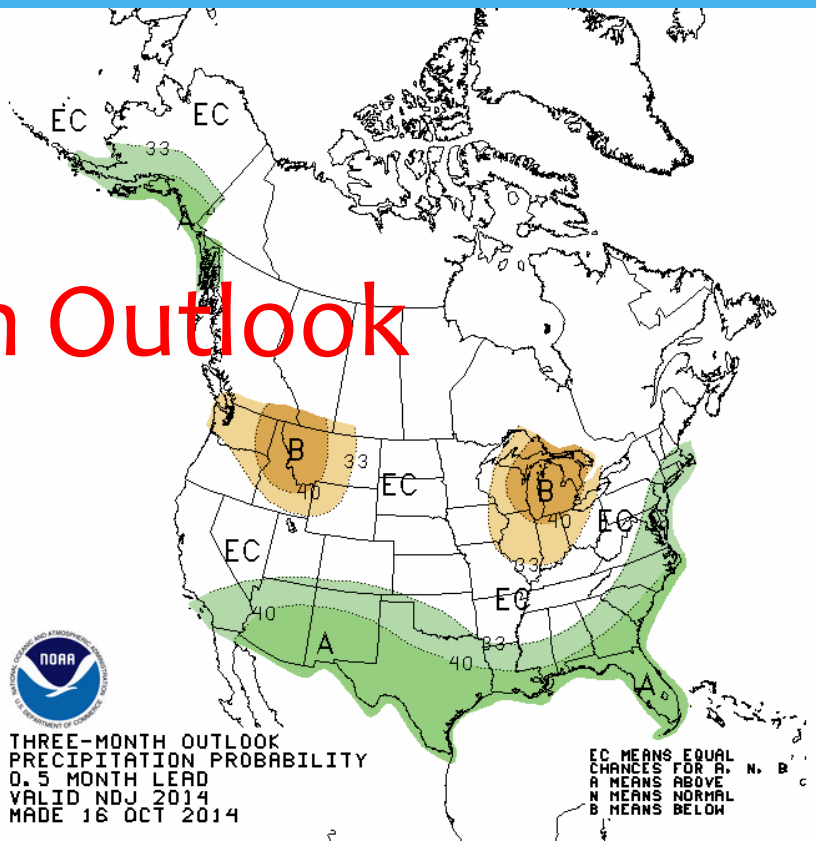


Precipitation

3 Month Temperature and Precipitation Probabilities (Dec – Feb.)

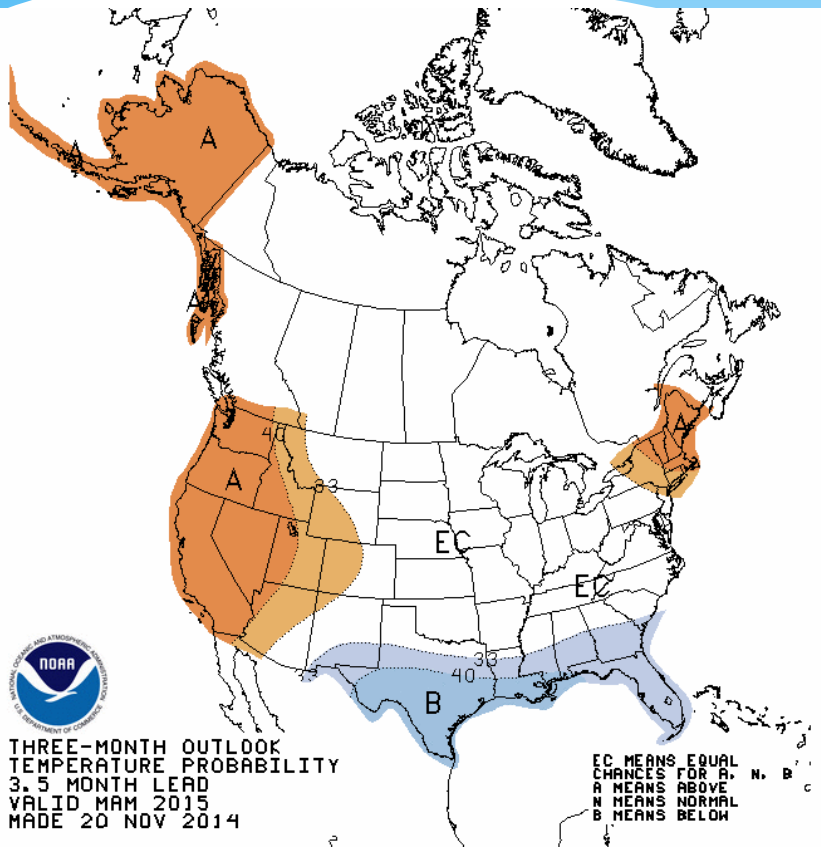


Last Month Outlook

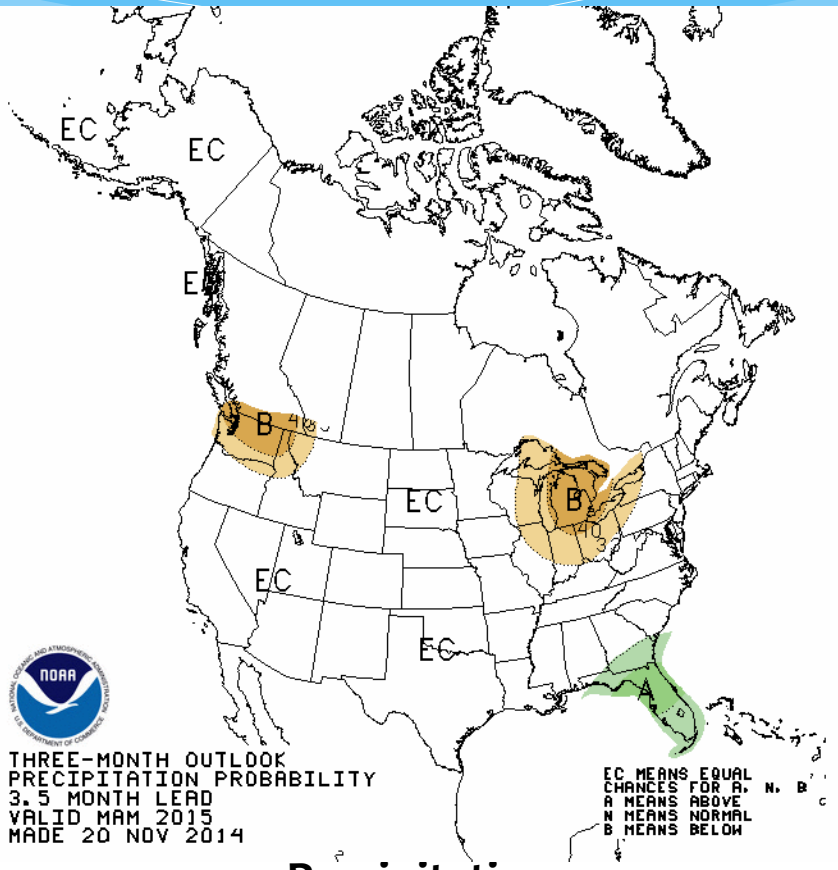


http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1

3 Month Temperature and Precipitation Probabilities (March - May)

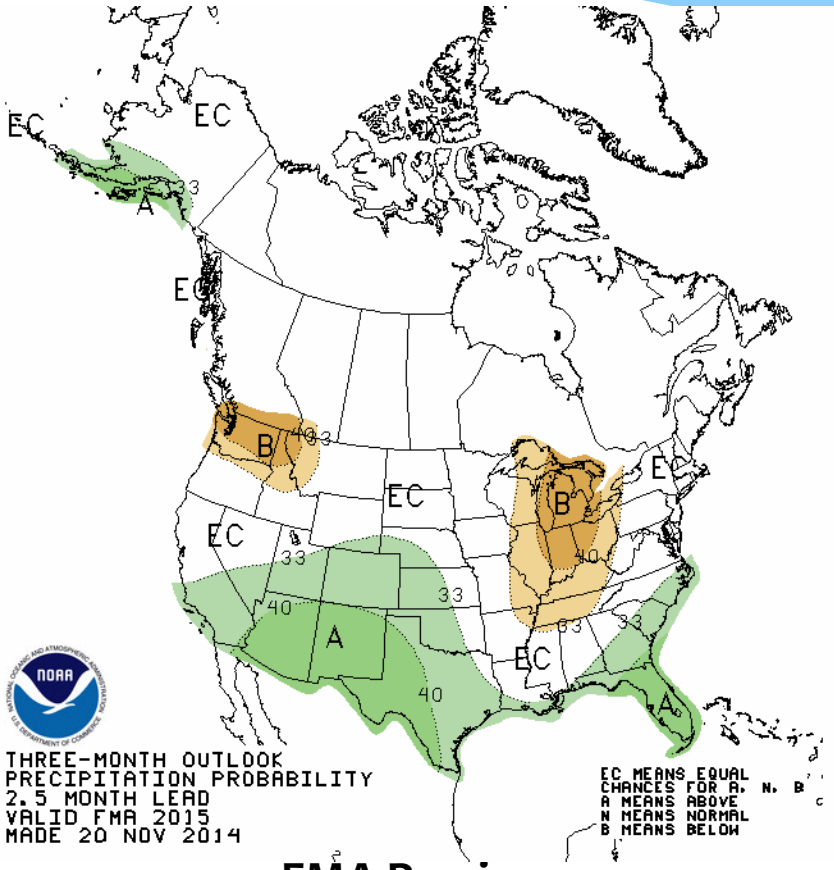


Temperature

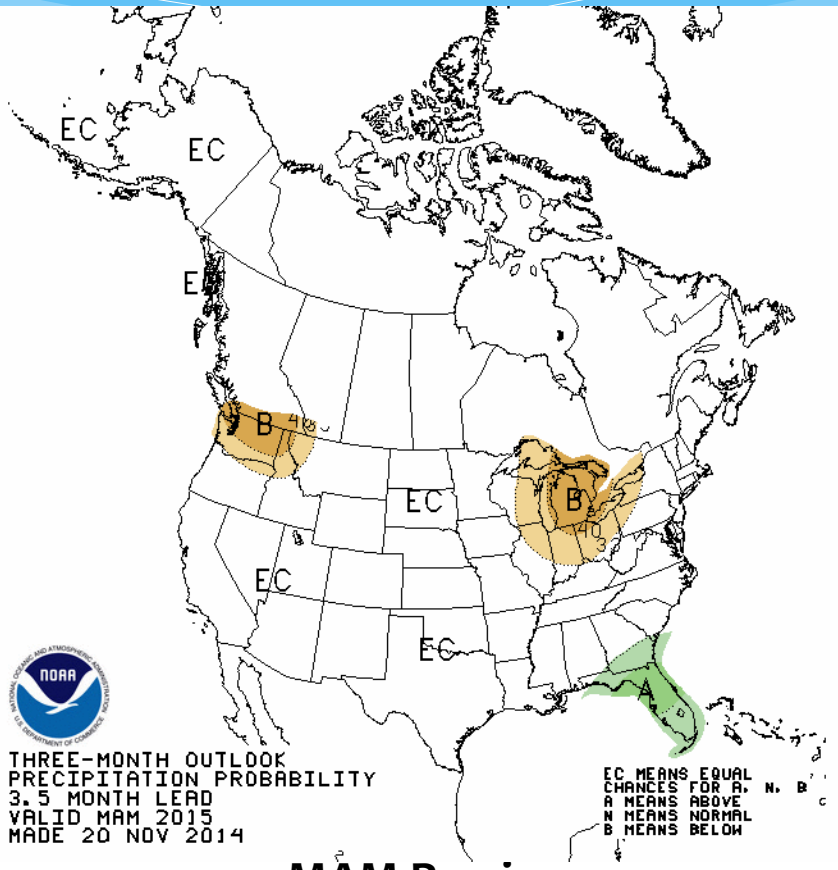


Precipitation

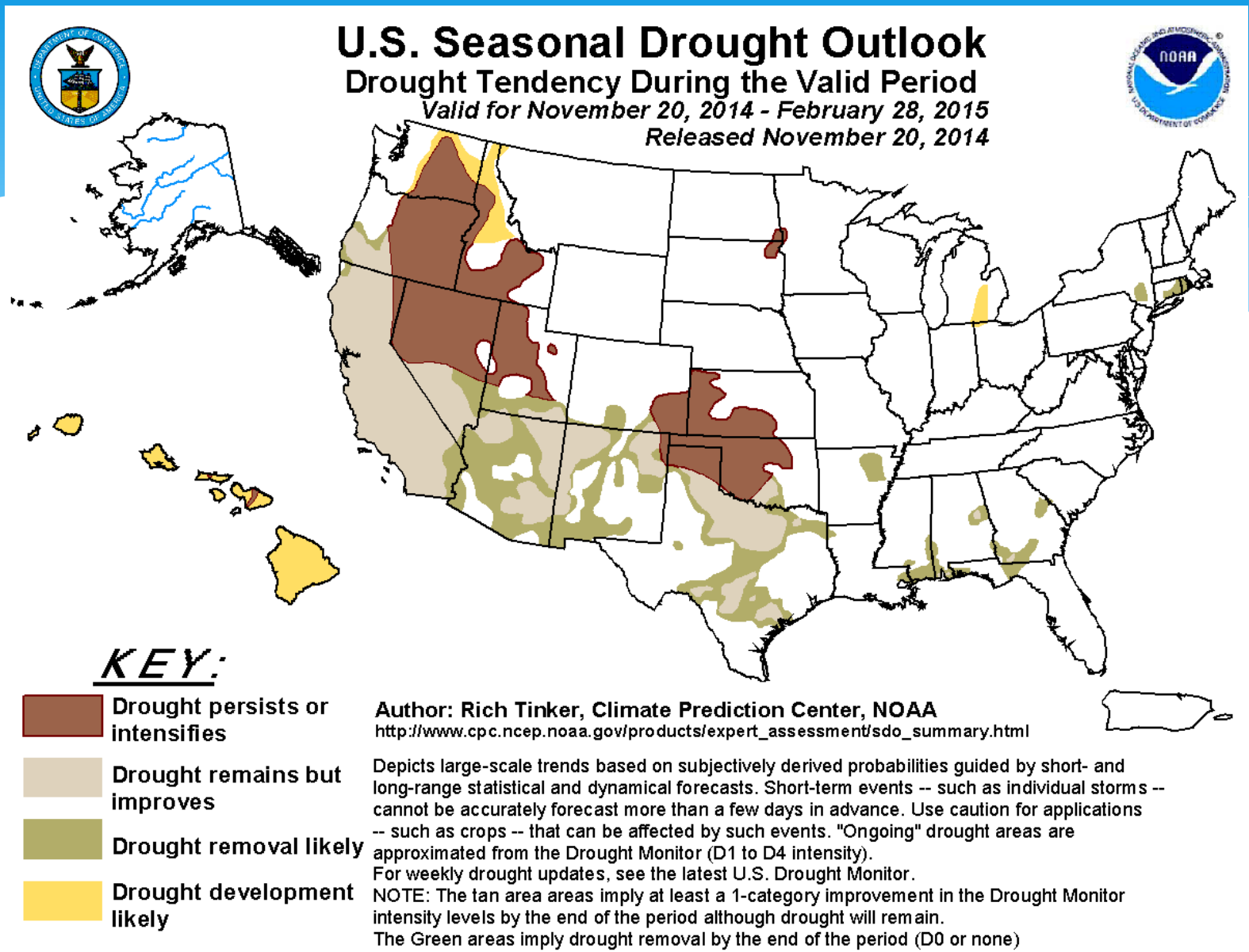
3 Month Precipitation Probabilities (FMA and MAM)



FMA Precip.



MAM Precip.



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

Summary

* **Recent Conditions**
  * Warm fall gave way to cold very quickly over the last couple weeks setting many records
  * Dry conditions in the northern plains – wetter western northern plains. Mixed elsewhere
  * Harvest proceeded well given conditions
  * Some concern on winter wheat with the rapid shift to cold

Summary

* **Outlooks**
  * Chance of El Nino 58% this fall and winter. Pieces still included in outlooks. Less impact expected
  * Winter drier likely over Great Lakes – little information elsewhere. Small potential for wetness central Plains late winter
  * Cooler temps more likely further south, equal chances elsewhere
  * November cold – statistically says nothing about the rest of winter

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:**
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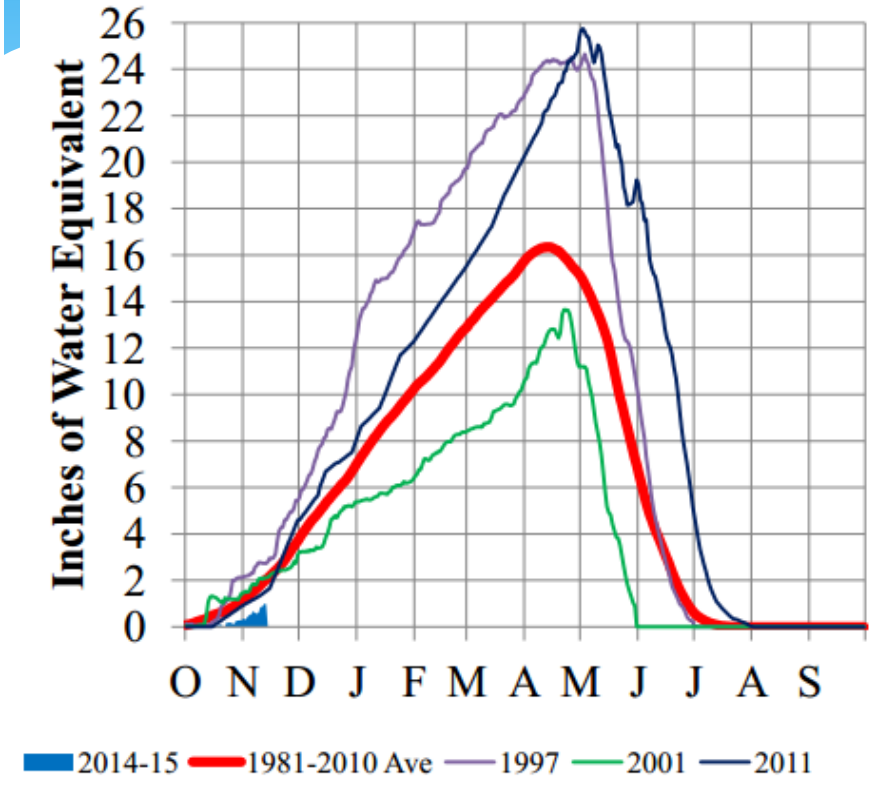
  * Mike Timlin: mtimlin@illinois.edu; 217-333-8506
  * Natalie Umphlett: numphlett2@unl.edu ; 402 472-6764
  * Brian Fuchs: bfuchs2@unl.edu 402 472-6775

  * **Weather:**
  * crhroc@noaa.gov

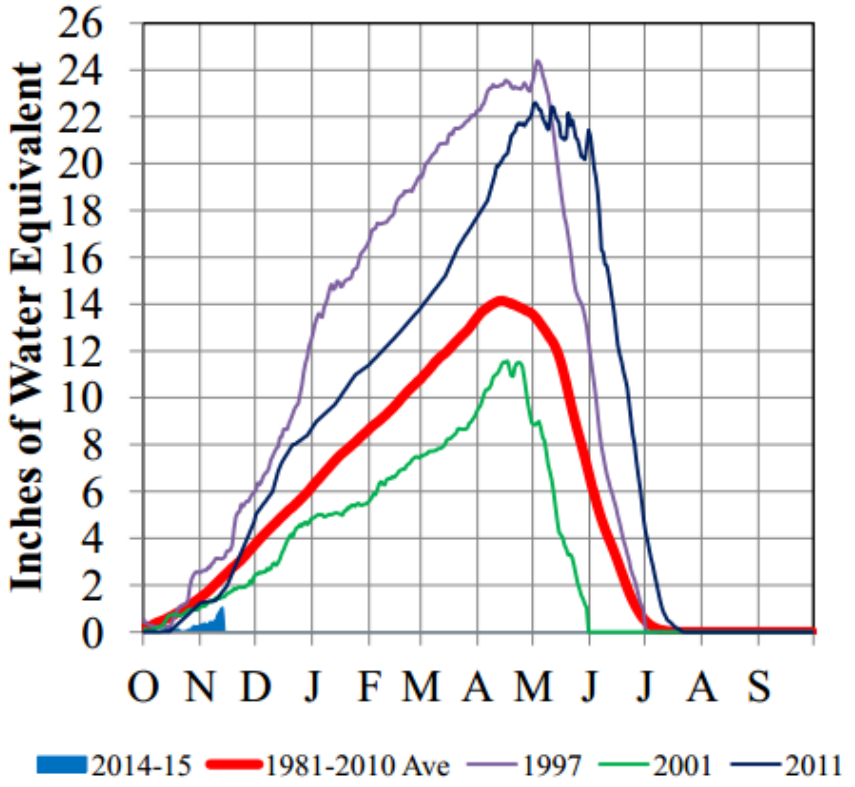
Missouri River Basin – Mountain Snowpack Water Content
2014-2015 with comparison plots from 1997*, 2001*, and 2011

November 13, 2014

Total above Fort Peck



Total Fort Peck to Garrison



The Missouri River basin mountain snowpack normally peaks near April 15. By November 15, normally 4% of the peak has accumulated. On November 13, 2014 the mountain snowpack SWE in the "Total above Fort Peck" reach is currently 1.0", 47% of average. The mountain snowpack SWE in the "Total Fort Peck to Garrison" reach is currently 1.0", 43% of average.

*Generally considered the high and low year of the last 20-year period.

Provisional data. Subject to revision.