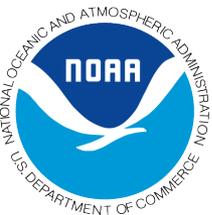


# Central Region Climate- Drought Outlook 21 November 2013

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South Dakota State Univ.  
dennis.todey@sdstate.edu  
605-688-5141



Tornado-created striations Washington, IL – Chicago Tribune

# General Information

- \* **Providing climate services to the Central Region**
  - \* Collaboration Activity Between:
    - \* State Climatologists
    - \* Doug Kluck & John Eise (NOAA)
    - \* American Association of State Climatologists
    - \* Midwest and High Plains Regional Climate Centers
    - \* National Drought Mitigation Center/USDA
- \* **Next Climate/Drought Outlook Webinar**
  - \* Dec. 19, 2013 (1 PM CDT)
- \* **Access to Future Climate Webinars and Information**
- \* <http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars>
- \* **Operator Assistance for questions at the end**

# Agenda

- \* **Historical context**
- \* **Current conditions**
- \* **Impacts**
- \* **Outlooks**

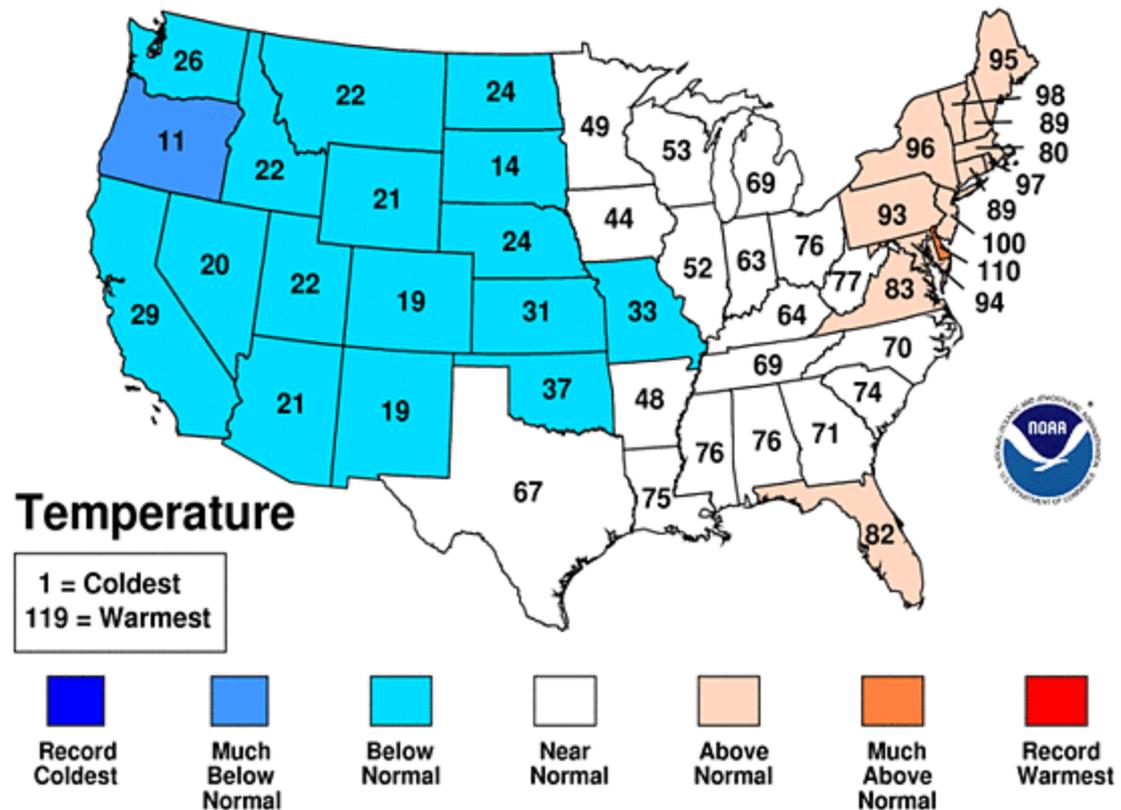
# October Temperature Recap

## October 2013 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA

The pattern shows a clear ridge – trough pattern across the country.

Persistent cold across the west



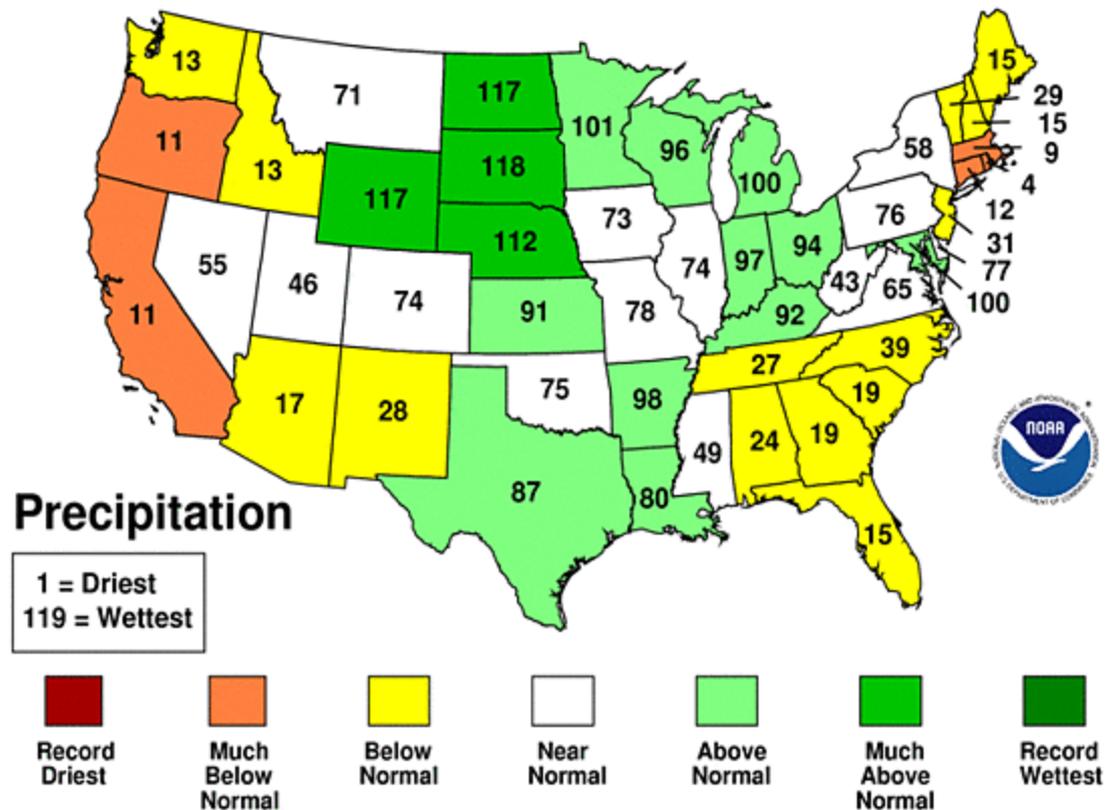
# October Precipitation Recap

## October 2013 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA

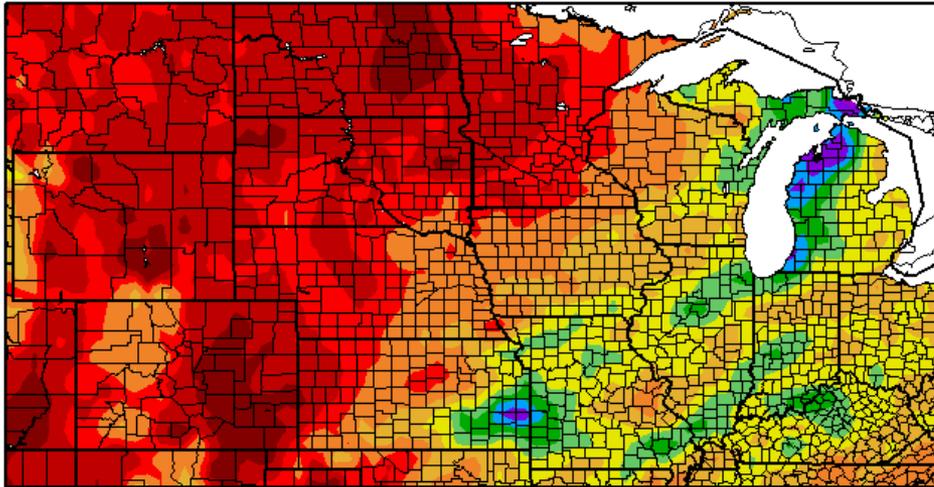
Wet middle part of the country

Blizzard and additional precipitation evident in plains.

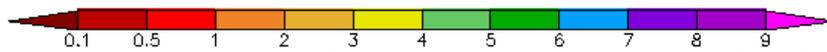


Precipitation (in)  
10/22/2013 - 11/20/2013

# Most recent 30-day precipitation



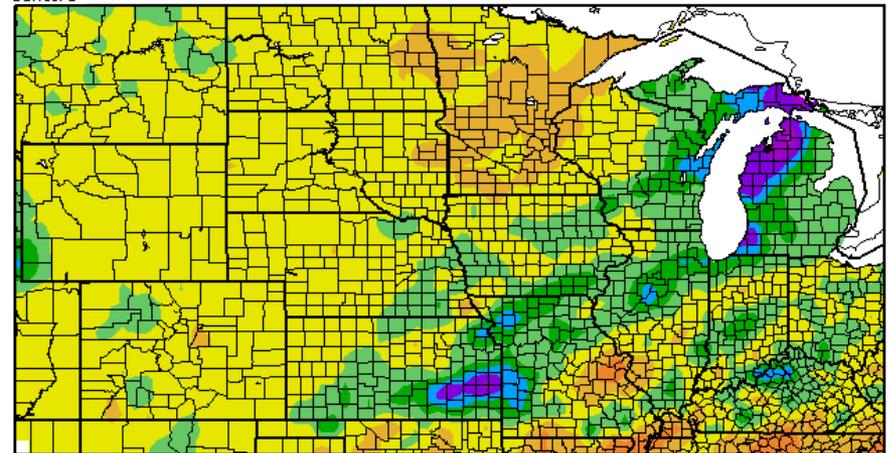
Departure from Normal Precipitation (in)  
10/22/2013 - 11/20/2013



Generated 11/21/2013 at HPRCC using provisional data.

Regional Climate Centers

**Dry west - wetter east**



Generated 11/21/2013 at HPRCC using provisional data.

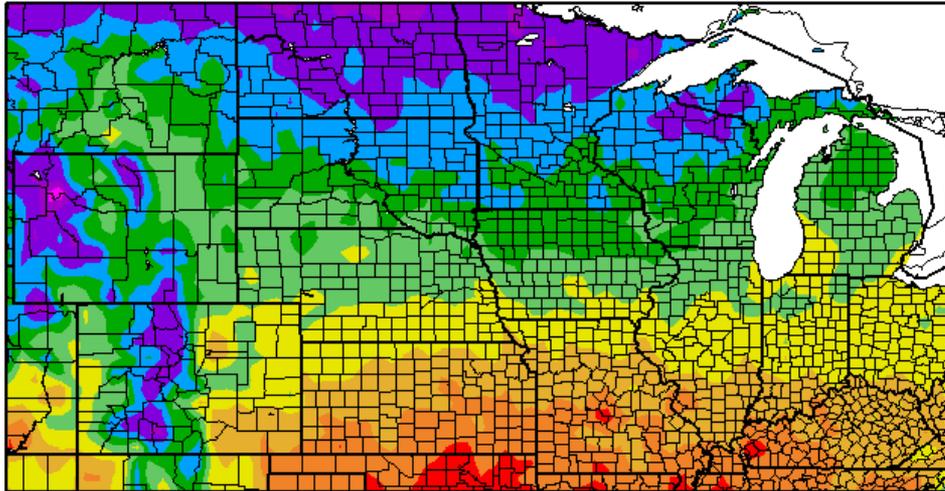
Regional Climate Centers

<http://www.hprcc.unl.edu/maps/current/>

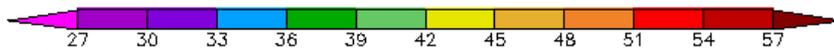
**HPRCC - Regional Climate Centers**

Temperature (F)  
10/22/2013 – 11/20/2013

# Most recent 30-day temperatures



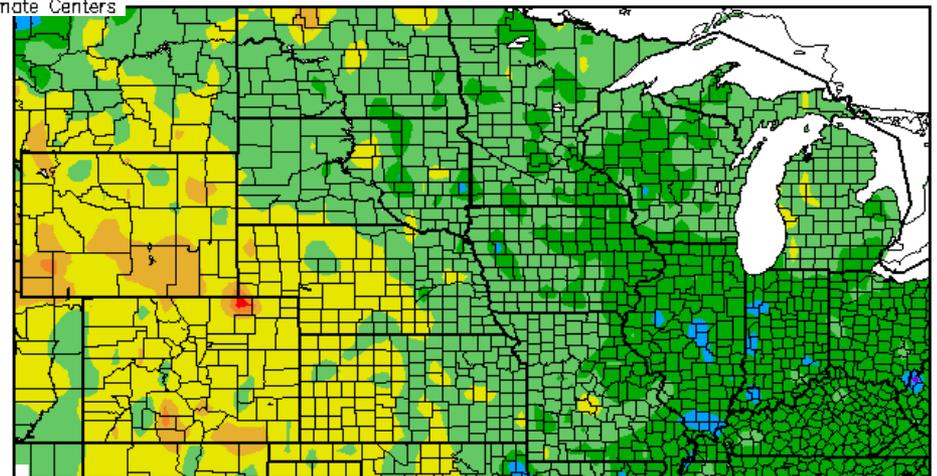
Departure from Normal Temperature (F)  
10/22/2013 – 11/20/2013



Generated 11/21/2013 at HPRCC using provisional data.

Regional Climate Centers

**Cooler east – warm southwest**



<http://www.hprcc.unl.edu/maps/current/>

**HPRCC – Regional Climate Centers**

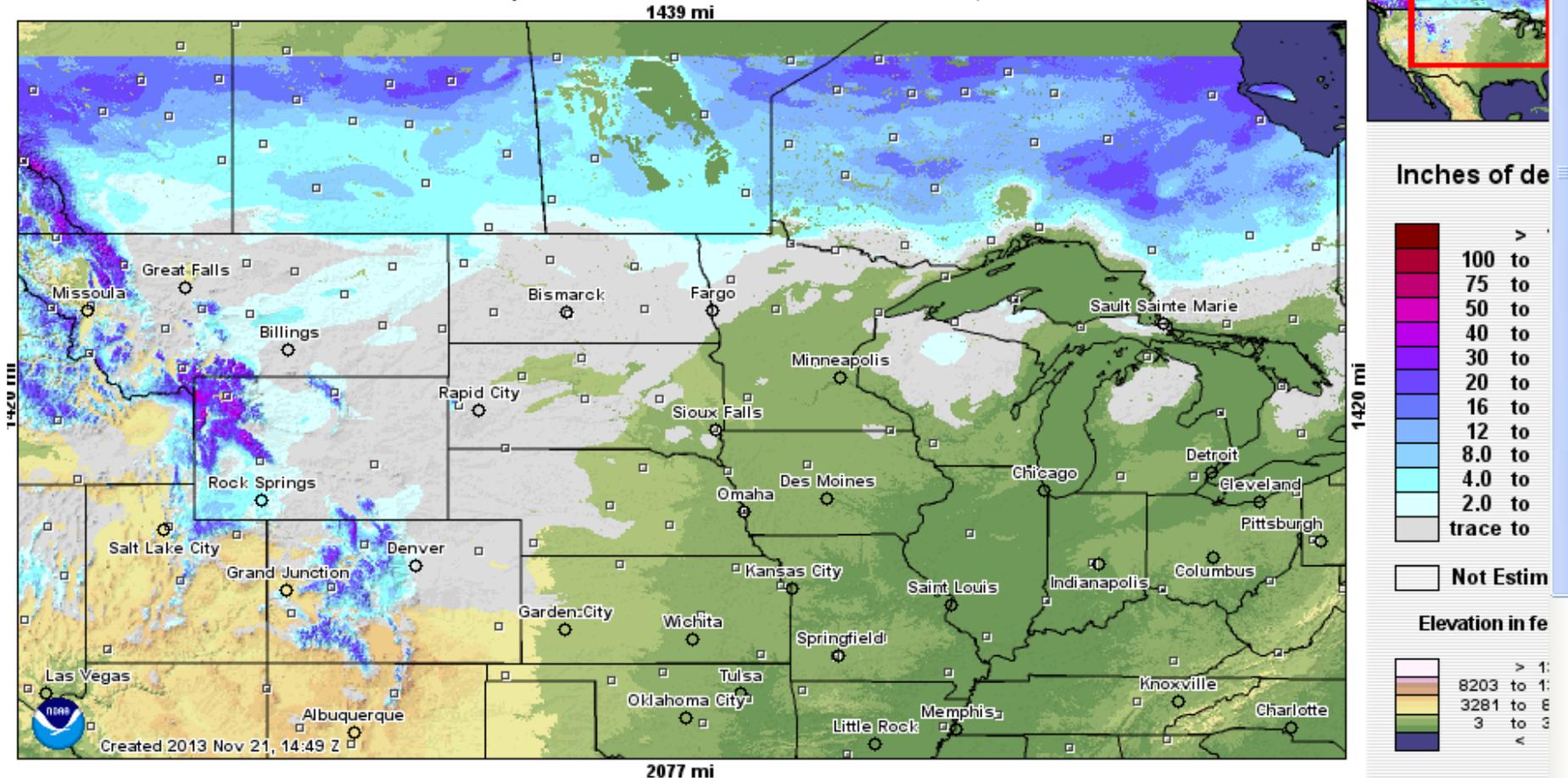


Generated 11/21/2013 at HPRCC using provisional data.

Regional Climate Centers

# Snow cover

Modeled Snow Depth forecasted for 2013 November 21, 12:00 Z



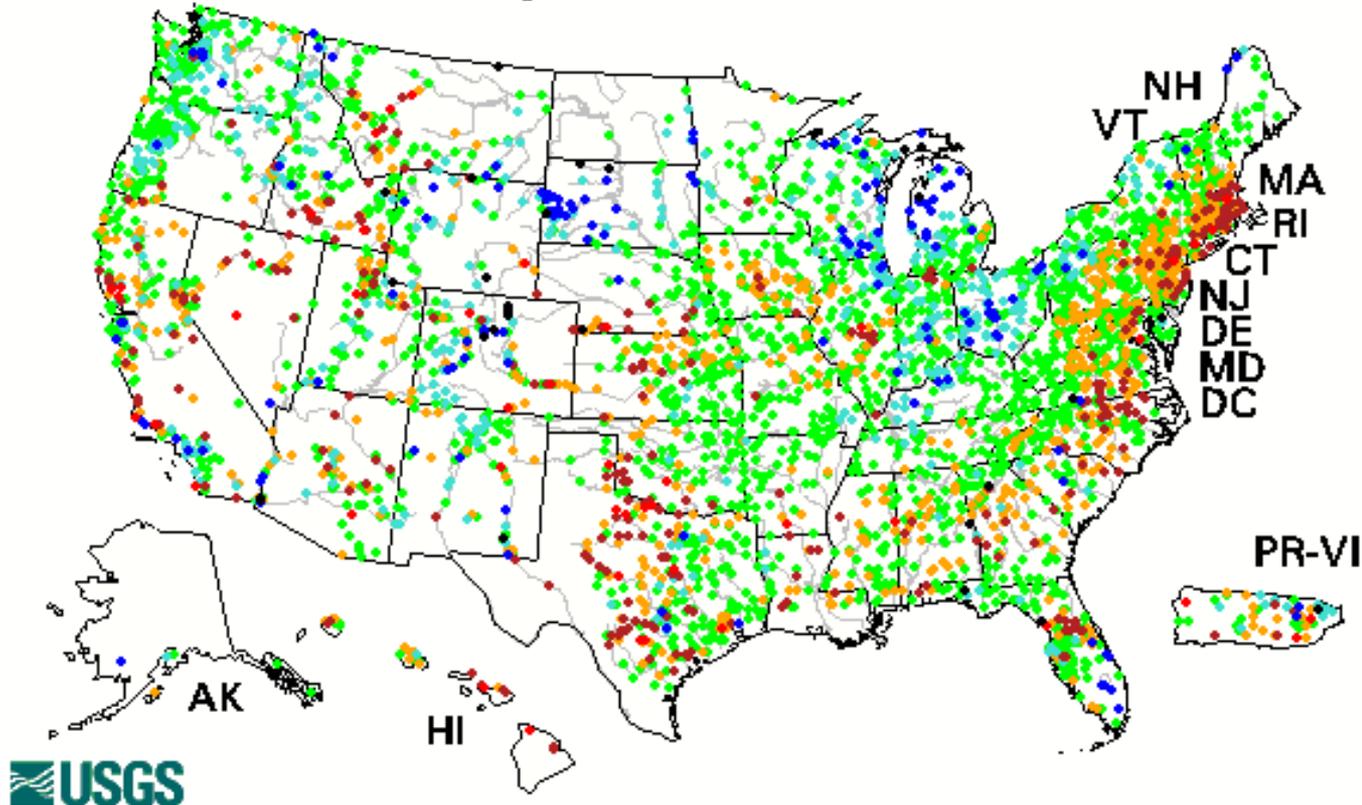
<http://www.nohrsc.noaa.gov/interactive/html/map.html?>

# Precipitation-Temperature

- \* Many records broken for October precipitation and snow
- \* Most of northwestern SD stations in top three precipitation totals
- \* Lemmon, SD 33.34 Inches (beat previous record by nearly 8 inches)

# 7-Day Average Streamflow

Thursday, November 21, 2013 10:00ET



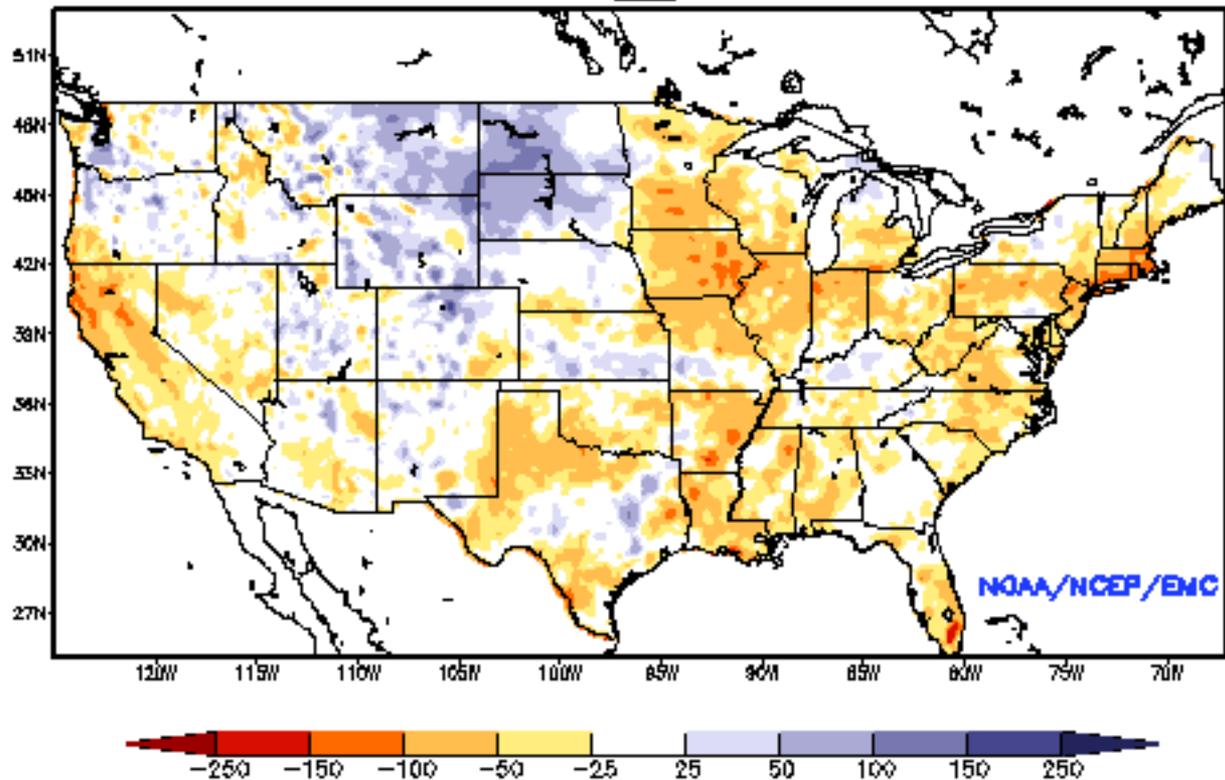
Thursday, 21 Nov. 2013

Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

[http://waterwatch.usgs.gov/?id=ww\\_current](http://waterwatch.usgs.gov/?id=ww_current)

# Soil Moisture and Recovery

Ensemble-Mean - Current Total Column Soil Moisture Anomaly (mm)  
NCEP NLDAS Products \_\_\_ Valid: NOV 16, 2013

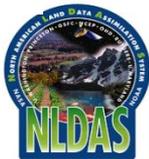


Wet area in the  
Plains

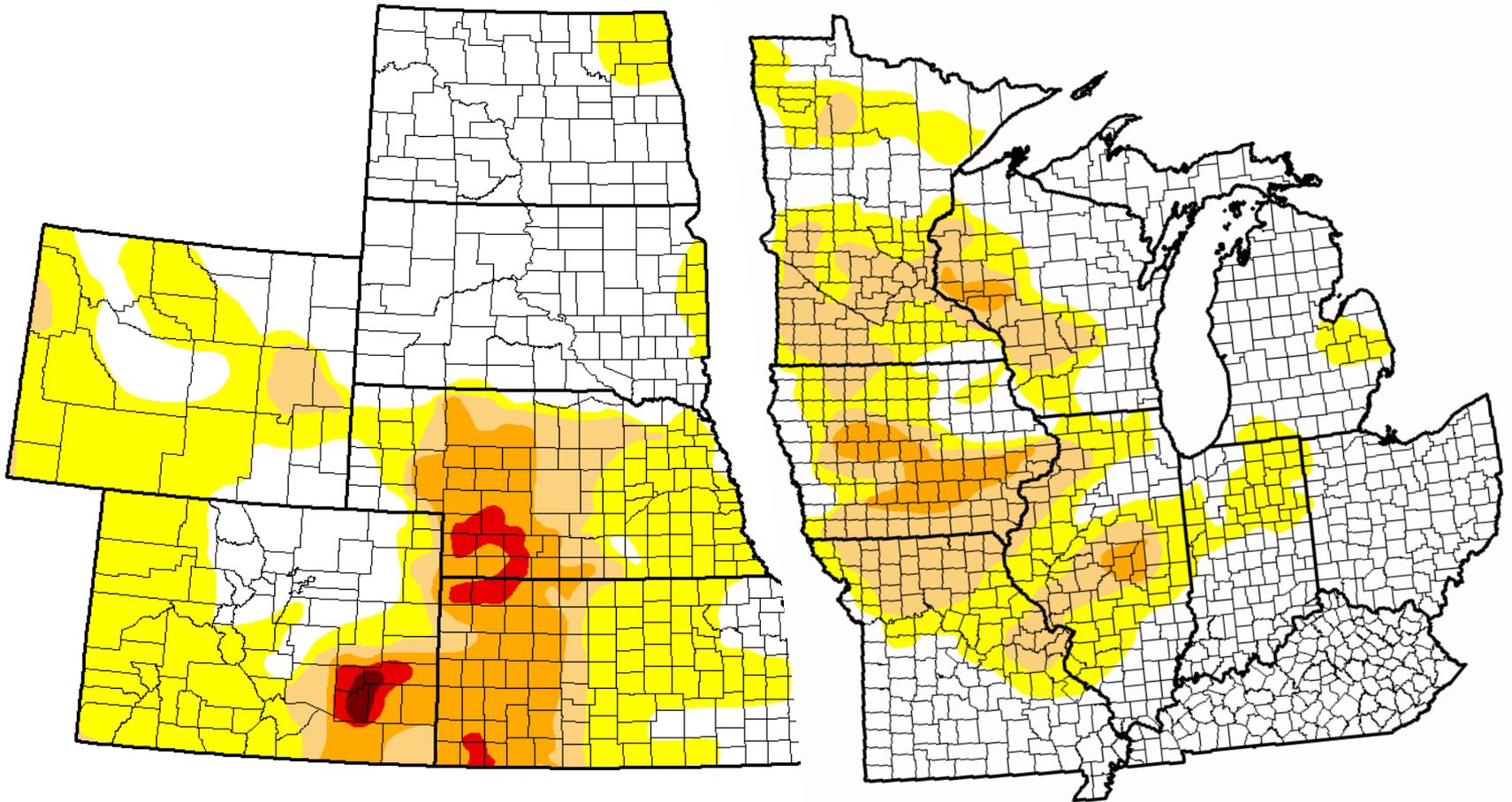
Lesser soil moisture  
recharge Corn Belt

Soil Moisture Anomaly in millimeters

<http://www.emc.ncep.noaa.gov/mmb/nldas/drought/>



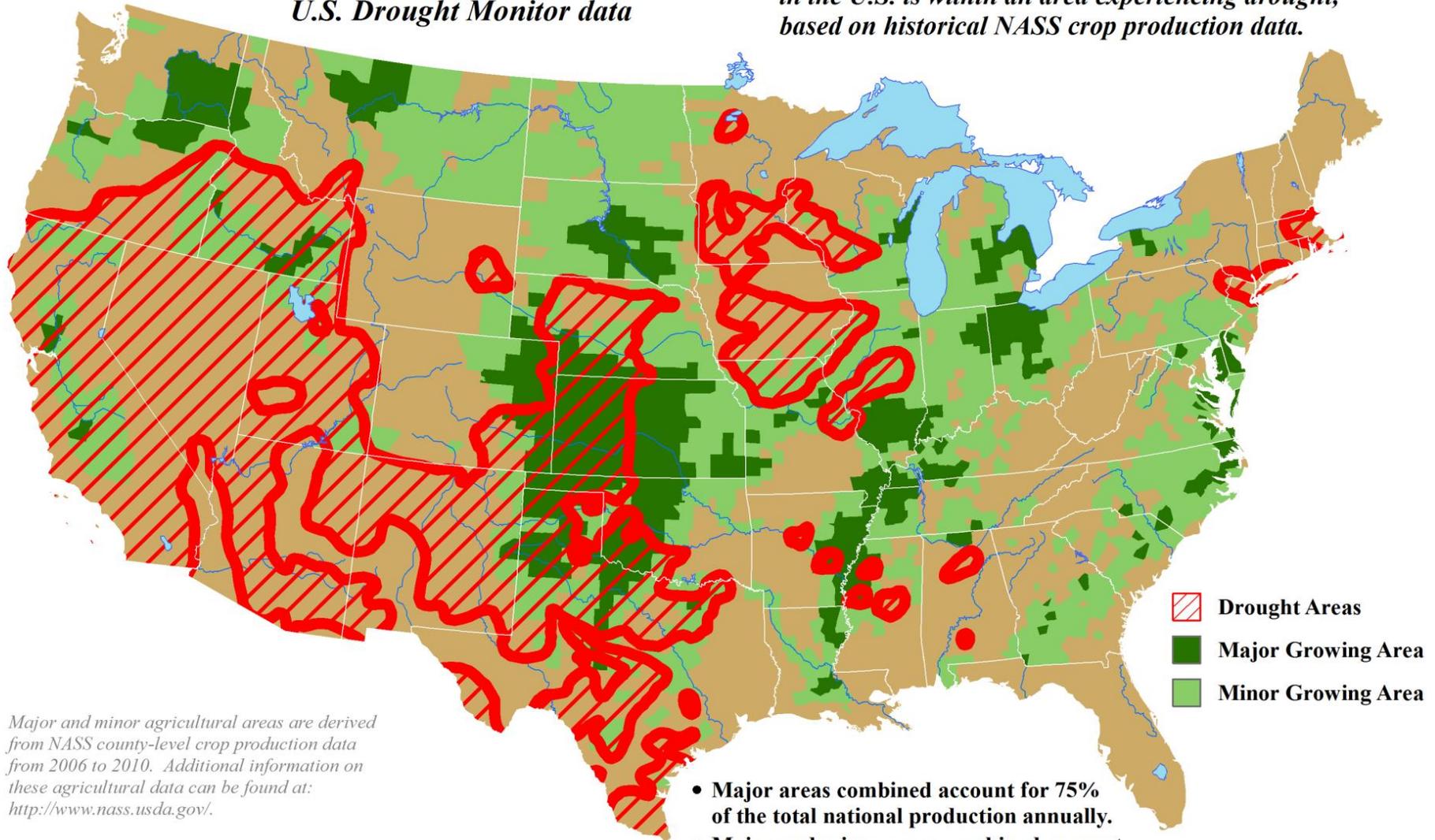
# US Drought Monitor



# U.S. Winter Wheat Areas Experiencing Drought

Reflects *November 12, 2013*  
U.S. Drought Monitor data

Approximately **30%** of the winter wheat grown in the U.S. is within an area experiencing drought, based on historical NASS crop production data.



Major and minor agricultural areas are derived from NASS county-level crop production data from 2006 to 2010. Additional information on these agricultural data can be found at: <http://www.nass.usda.gov/>.

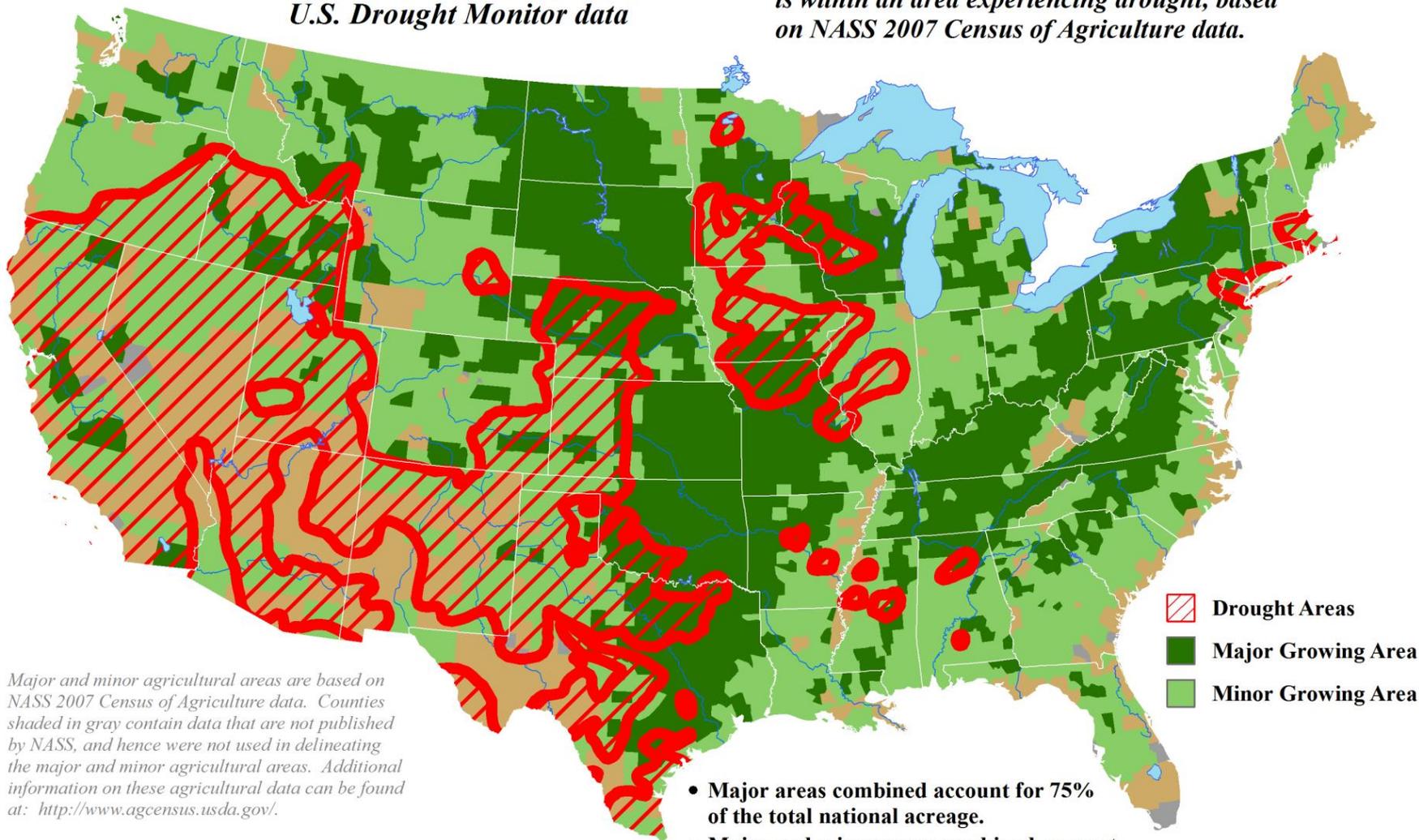
Mapped drought areas are derived from the U.S. Drought Monitor product and do not depict the intensity of drought in any particular location. More information on the Drought Monitor can be found at: <http://droughtmonitor.unl.edu/>.

- Major areas combined account for 75% of the total national production annually.
- Major and minor areas combined account for 99% of the total national production annually.

# U.S. Hay Areas Experiencing Drought

Reflects November 12, 2013  
U.S. Drought Monitor data

Approximately **22%** of the domestic hay acreage is within an area experiencing drought, based on NASS 2007 Census of Agriculture data.



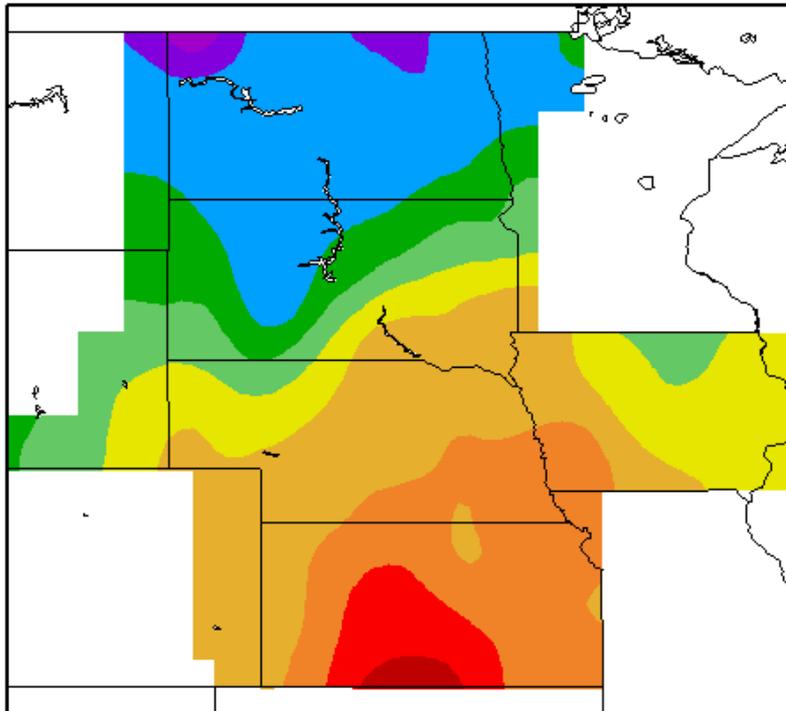
Major and minor agricultural areas are based on NASS 2007 Census of Agriculture data. Counties shaded in gray contain data that are not published by NASS, and hence were not used in delineating the major and minor agricultural areas. Additional information on these agricultural data can be found at: <http://www.agcensus.usda.gov/>.

Mapped drought areas are derived from the U.S. Drought Monitor product and do not depict the intensity of drought in any particular location. More information on the Drought Monitor can be found at: <http://droughtmonitor.unl.edu/>.

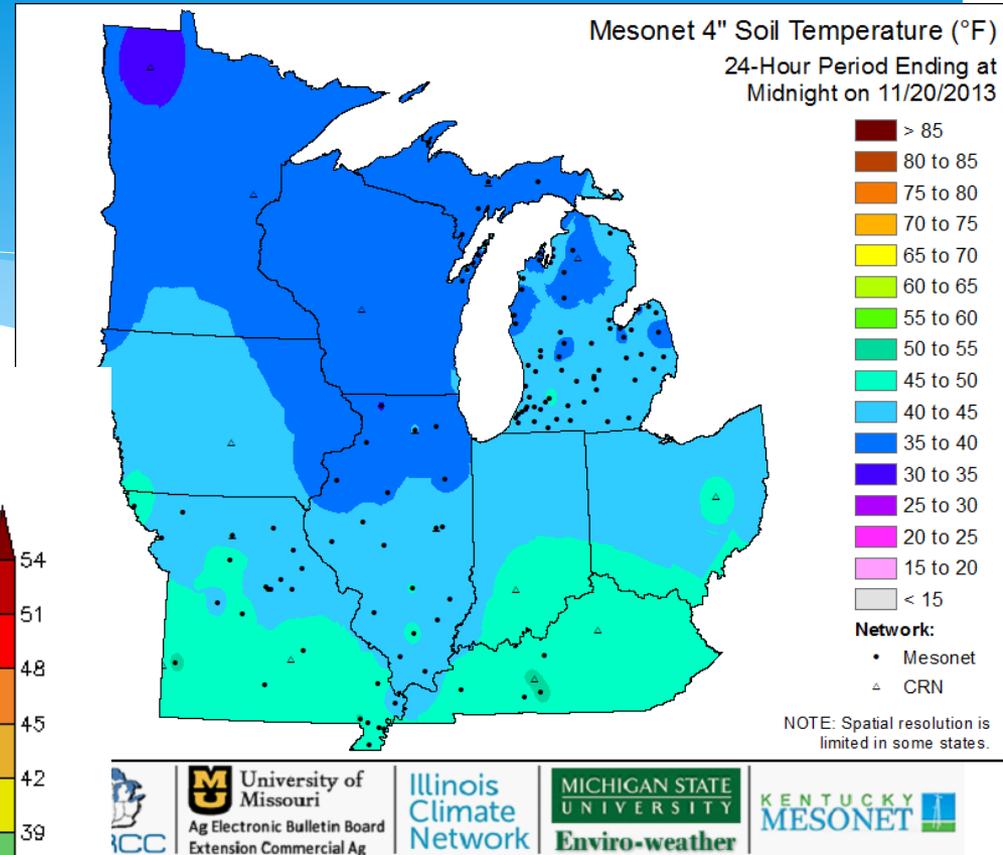
- Major areas combined account for 75% of the total national acreage.
- Major and minor areas combined account for 99% of the total national acreage.

# Soil temperatures

Soil Temperature (F at 4 inches)  
11/20/2013 – 11/20/2013



High Plains Regional Climate Center  
Generated 11/21/2013 using AWDN data.

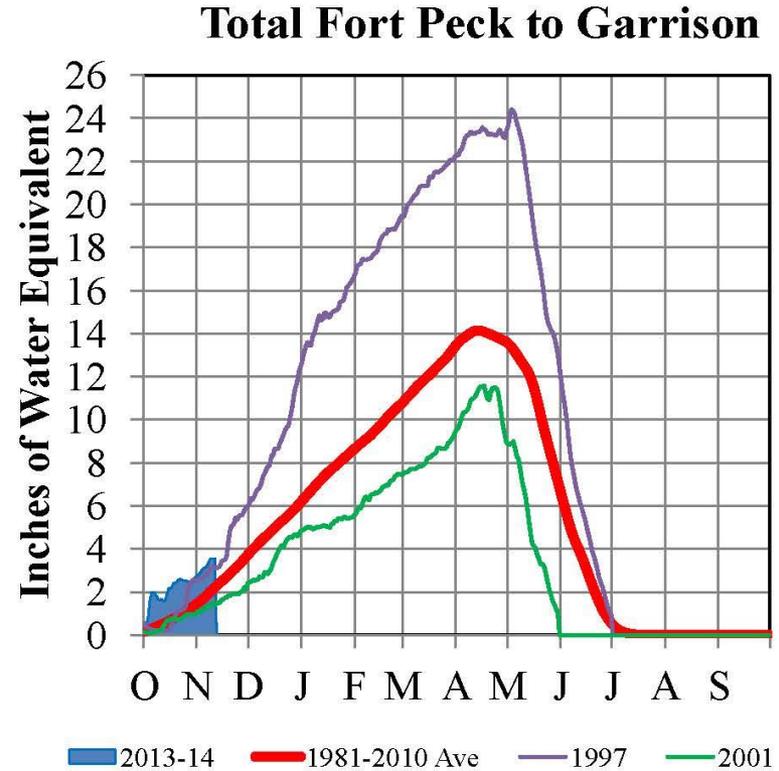
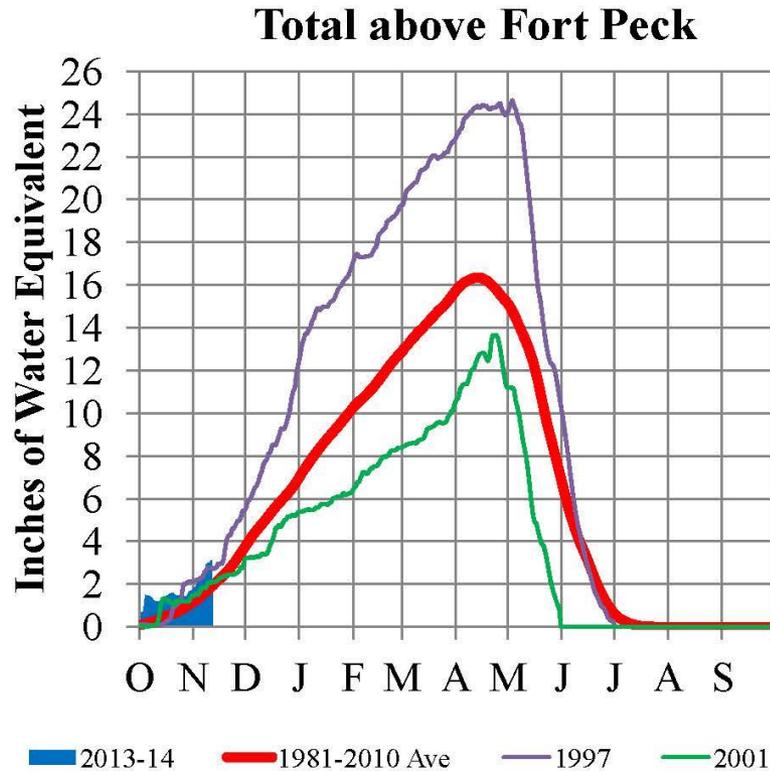


# Agricultural issues

- \* Harvest season generally progressed without major issues – close to completed
  - \* Corn 91% harvested
  - \* Soybeans 95% harvested
  - \* Winter wheat 89% emerged
  - \* Sunflowers 65% harvested
- \* Plains wetness slowed progress
- \* Blizzard – sunflower losses ND
- \* Yields generally near to above expectations
- \* Fire concerns in Kansas given ongoing dryness

# Missouri River Basin – Mountain Snowpack Water Content 2013-2014 with comparison plots from 1997\* and 2001\*

November 12, 2013



The Missouri River basin mountain snowpack normally peaks near April 15. By November 15, normally 16% of the peak has accumulated. On November 12, 2013 the mountain snowpack in the “Total above Fort Peck” reach is currently 3.1”, 162% of the 1981-2010 30-year average. The mountain snowpack in the “Total Fort Peck to Garrison” reach is currently 3.6”, 156% of the 1981-2010 30-year average.

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

Provisional data. Subject to revision.

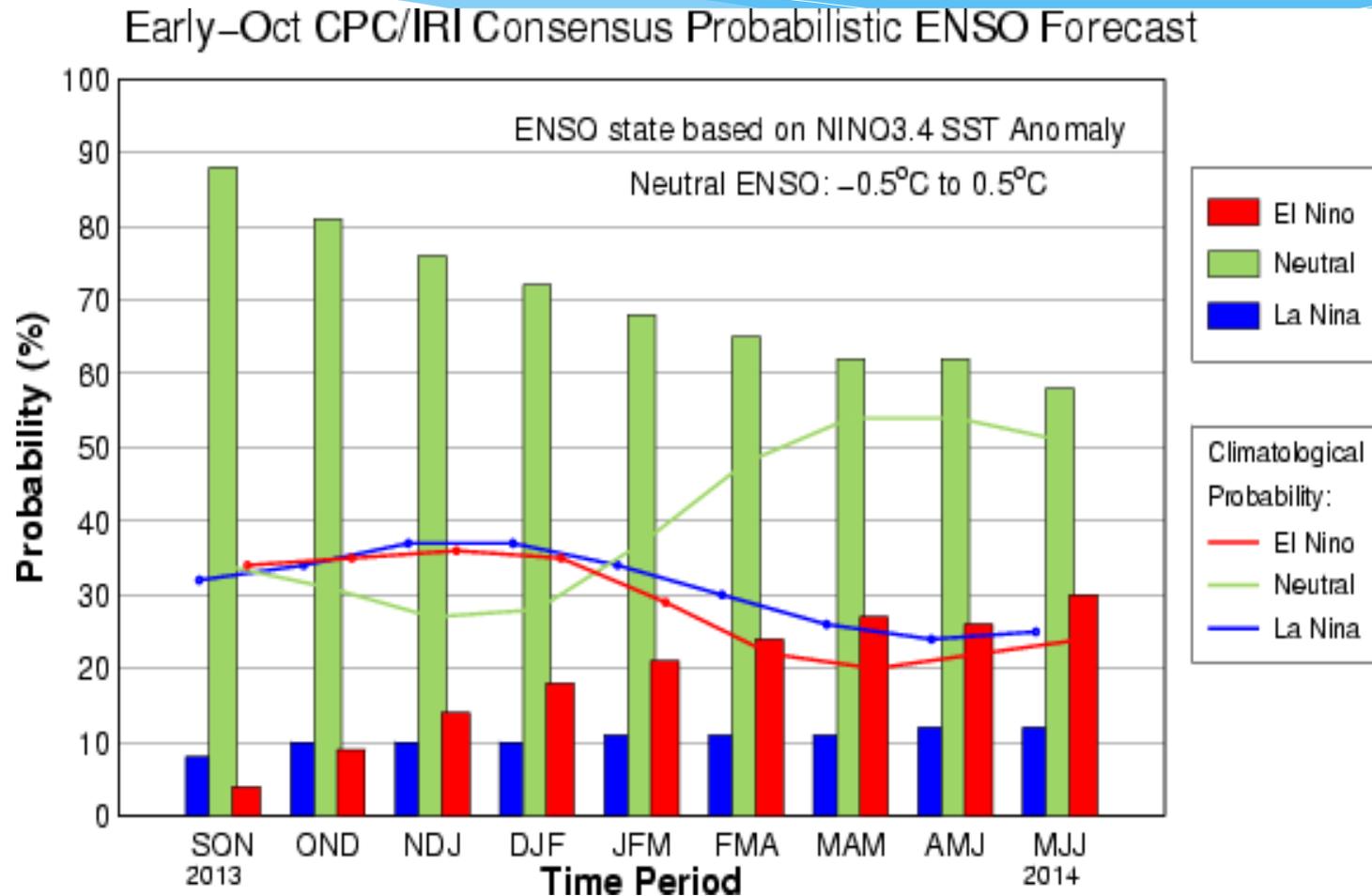
# Climate Outlooks

- \* **7-day precipitation forecast**
- \* **8-14 day outlook**
- \* **December**
- \* **3 Months (December - November)**
- \* **Seasonal Drought Outlooks**

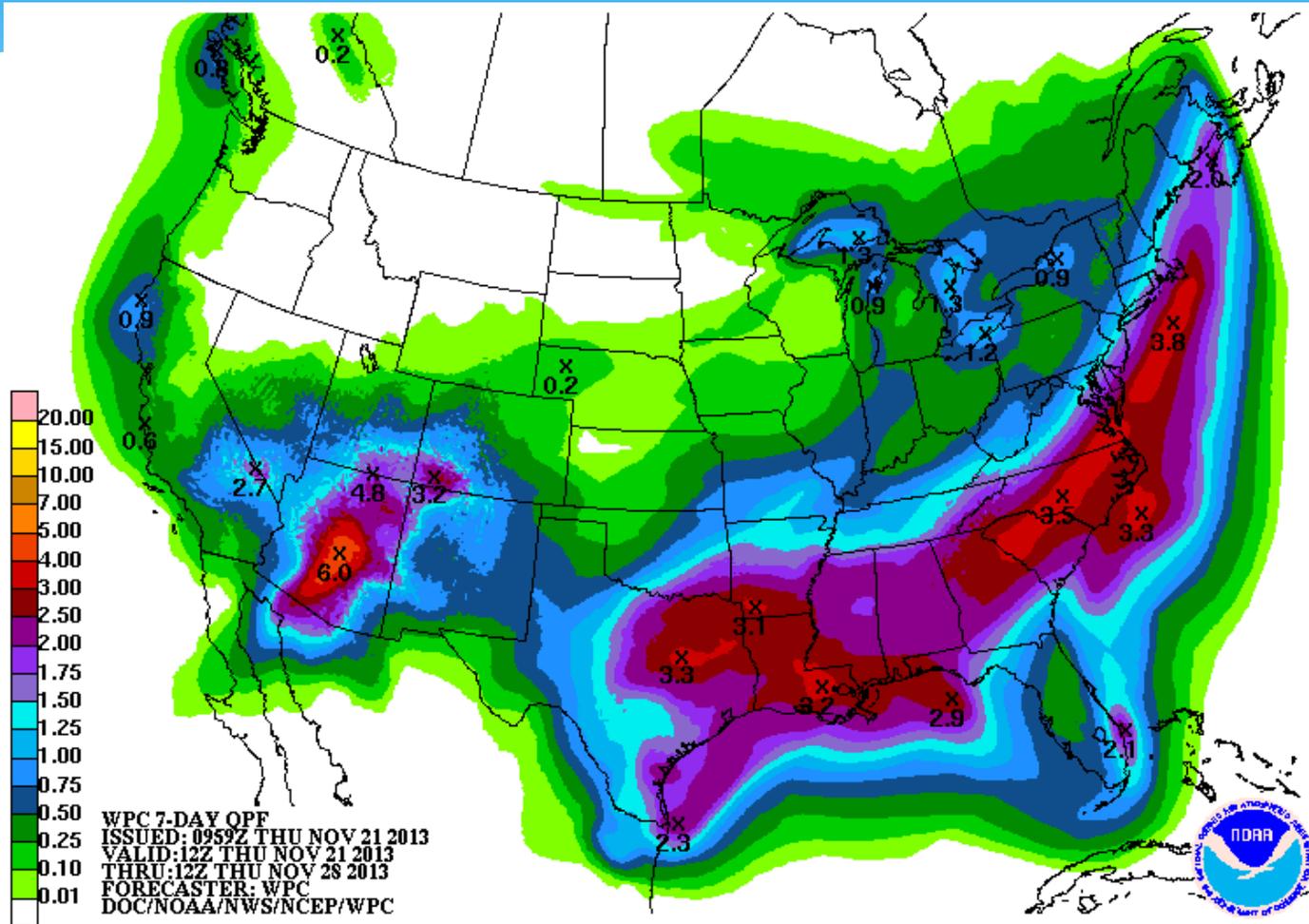
# CPC/IRI Probabilistic ENSO Outlook

(updated 10 October 2013)

ENSO-neutral is expected through the Northern Hemisphere spring 2014.

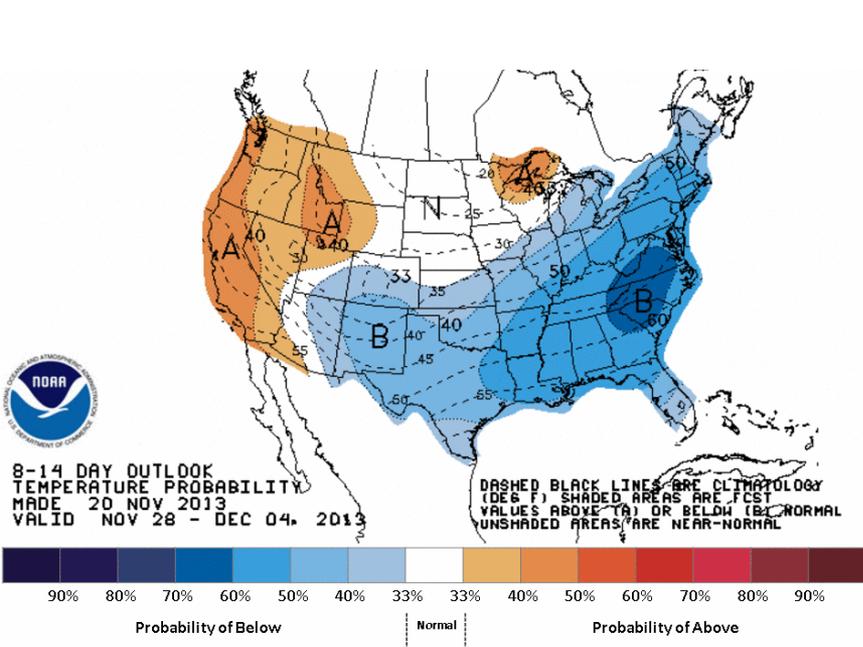


# 7-day Quantitative Precipitation Forecast Valid: 7 AM Thu 21 Nov – 7 AM Thu 28 Nov

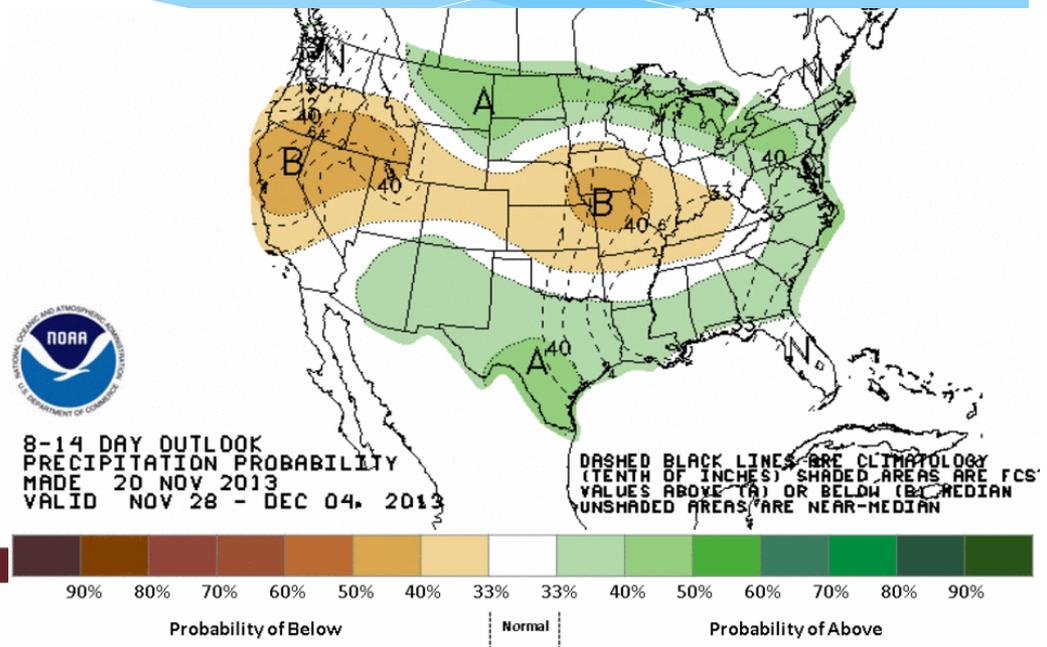


<http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml>

# Temperature and Precipitation Probabilities for 28 Nov. – 4 Dec 2013



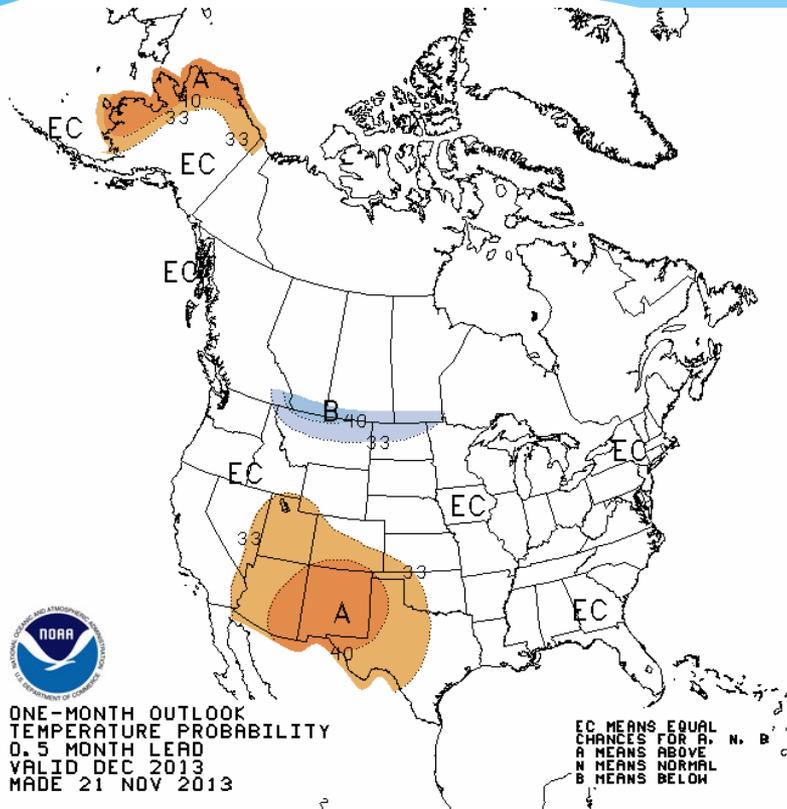
Temperature



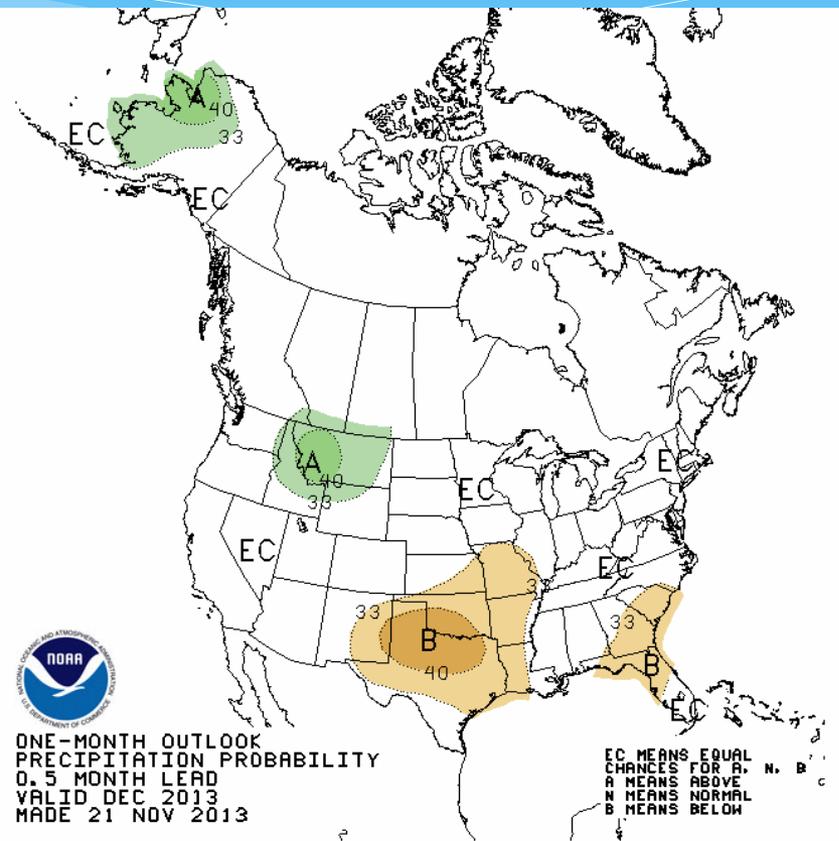
Precipitation

<http://www.cpc.ncep.noaa.gov/products/predictions/814day/index.php>

# December Temperature and Precipitation Probabilities



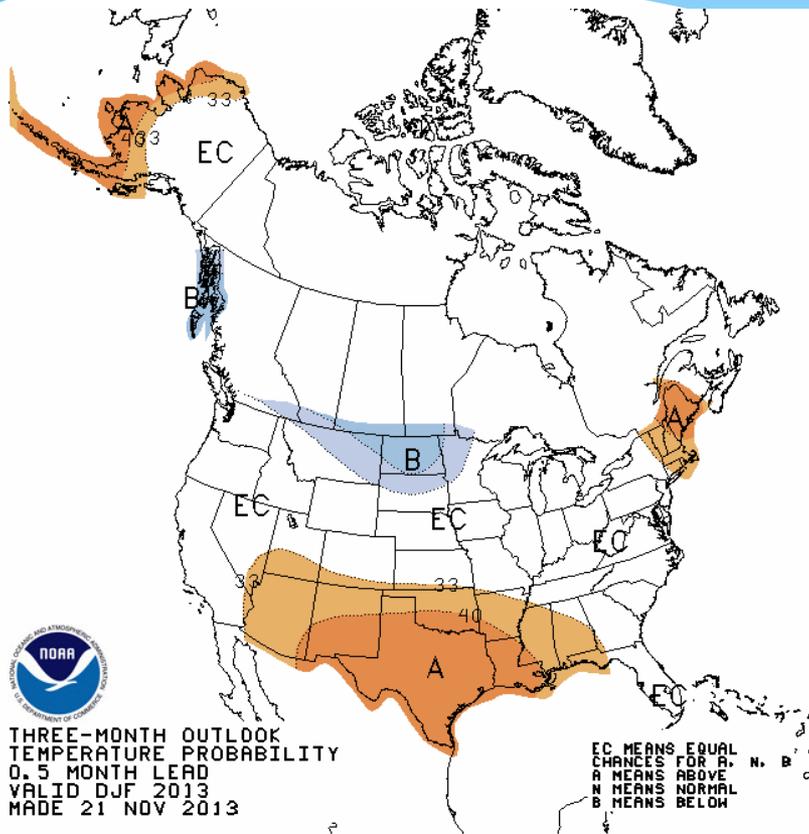
Temperature



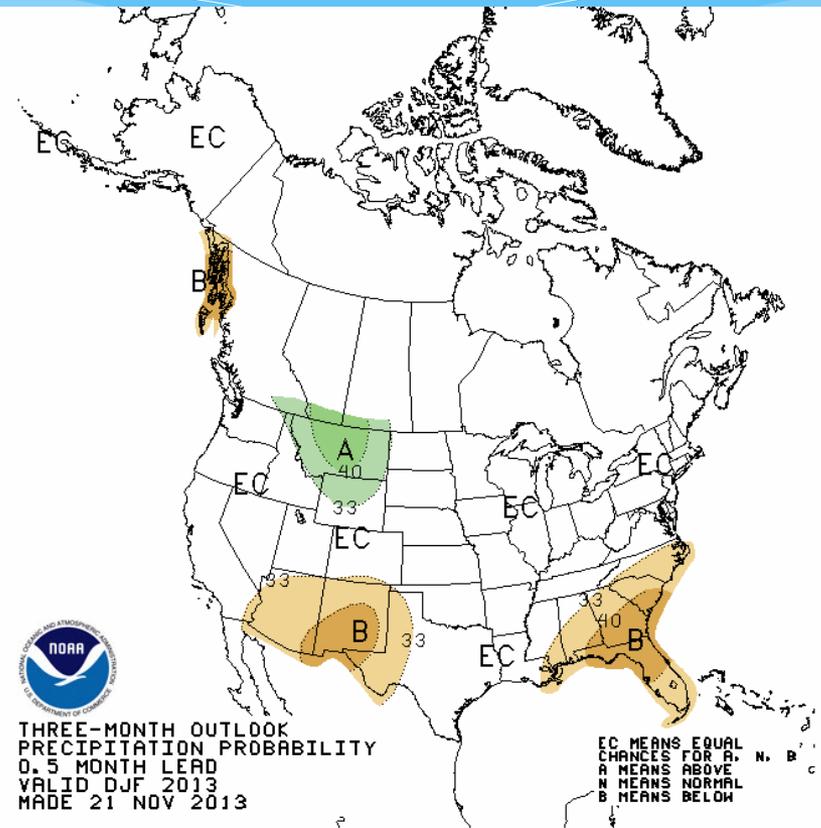
Precipitation

<http://www.cpc.ncep.noaa.gov/products/predictions/30day/>

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

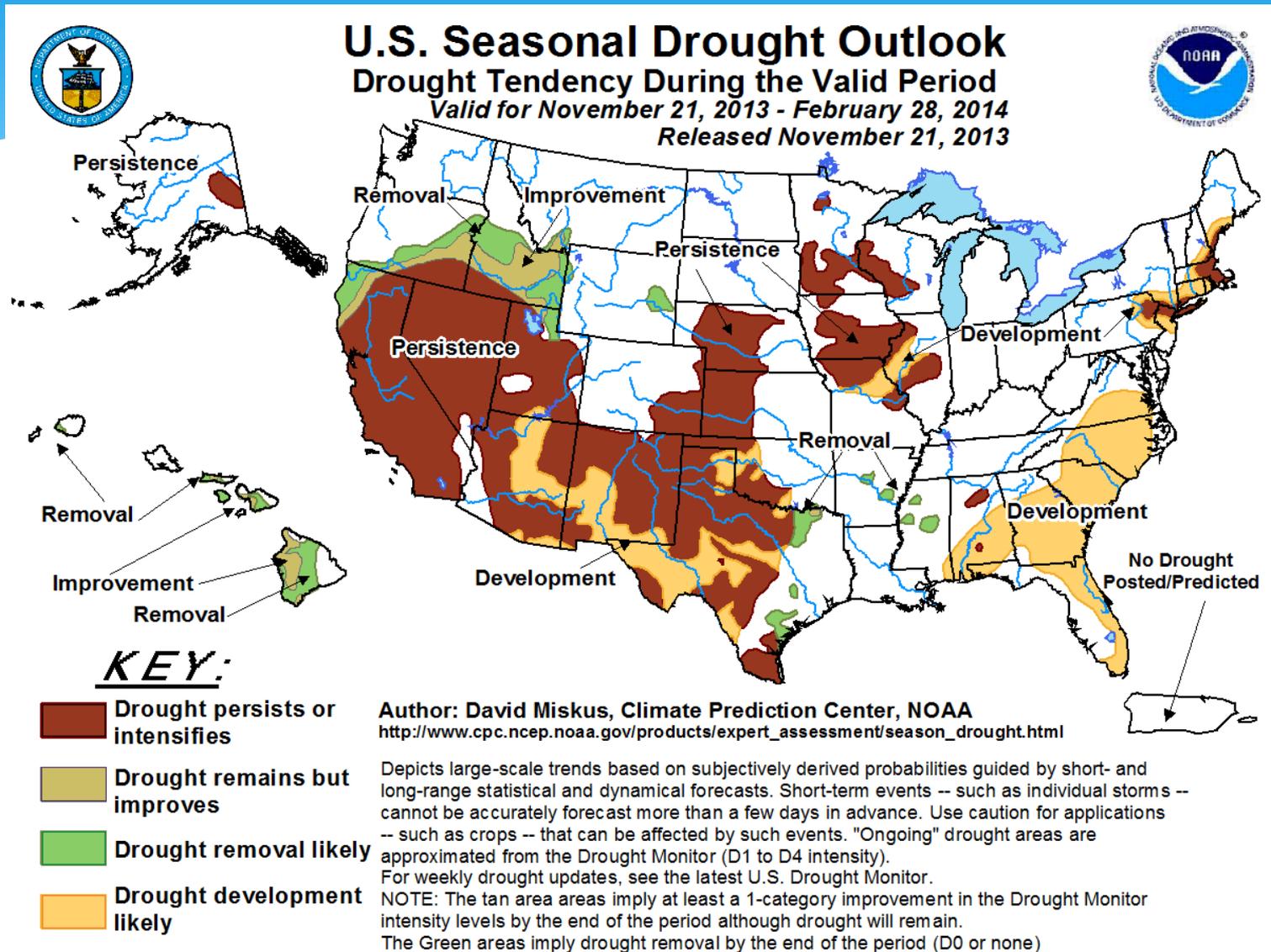


Temperature



Precipitation

# Drought Outlook through 28 Feb.



# Summary

## \* **Recent Conditions**

- \* Recent heavy precipitation wetting areas of plains – need to be watched for winter/spring
- \* Harvest season wrapping up largely – few delays or major problems – save for the Dakotas
- \* Fire potential further south (KS) – where dry conditions drought continue
- \* Lower streamflows in places – higher streamflows in plains
- \* Soil moisture recovery excessive in parts of plains – limited in corn belt – some ongoing drought

# Summary

## \* **Outlooks**

- \* ENSO neutral conditions continue
- \* Cooler expected northern plains
- \* Wetter WY-MT
- \* Drought conditions limited changes – overall lack of winter precipitation
- \* Have to watch winter precipitation for spring flood potential

## 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](http://www.ncdc.noaa.gov)
  - Monthly climate reports (U.S. & Global):  
[www.ncdc.noaa.gov/sotc/](http://www.ncdc.noaa.gov/sotc/)
- NOAA's Climate Prediction Center: [www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov)
- Climate Portal: [www.climate.gov](http://www.climate.gov)
- U.S. Drought Portal: [www.drought.gov](http://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:**

- \* Dennis Todey: [dennis.todey@sdstate.edu](mailto:dennis.todey@sdstate.edu) , 605-688-5141

- \* Doug Kluck: [doug.kluck@noaa.gov](mailto:doug.kluck@noaa.gov), 816-994-3008

- \* John Eise: [john.eise@noaa.gov](mailto:john.eise@noaa.gov), 816-268-3144

- \* Mike Timlin: [mtimlin@illinois.edu](mailto:mtimlin@illinois.edu); 217-333-8506

- \* Natalie Umphlett: [numphlett2@unl.edu](mailto:numphlett2@unl.edu) ; 402 472-6764

- \* Brian Fuchs: [bfuchs2@unl.edu](mailto:bfuchs2@unl.edu) 402 472-6775

- \* **Weather:**

- \* [crhroc@noaa.gov](mailto:crhroc@noaa.gov)