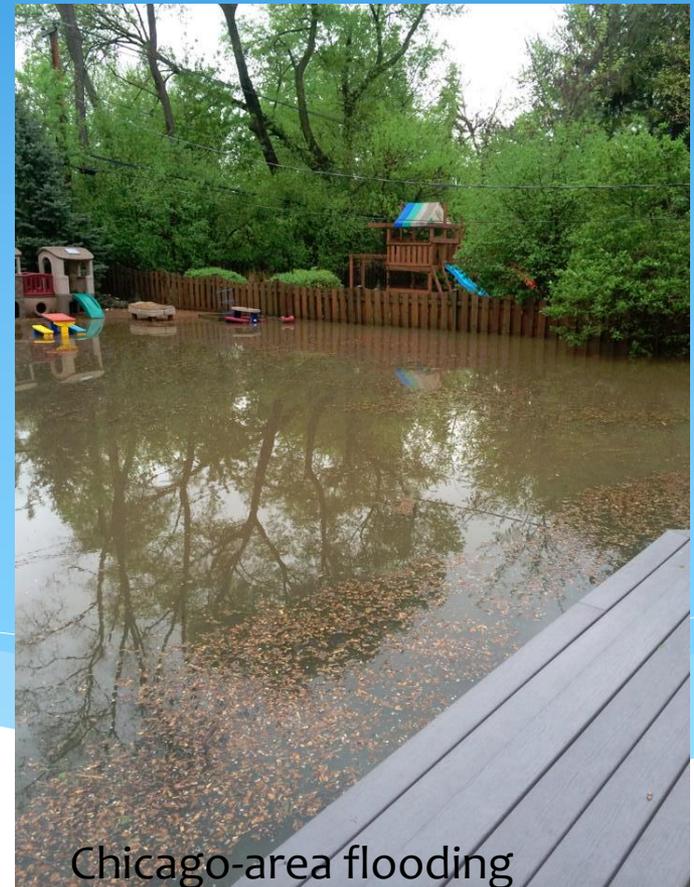


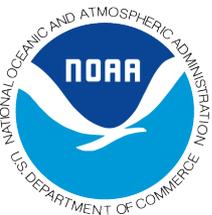
Central Region Climate Outlook

May 15, 2014

Dr. Jim Angel
State Climatologist
IL State Water Survey
University of Illinois
jimangel@illinois.edu
217-333-0729



Chicago-area flooding



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**

- * June 19, 2014 with Brian Fuchs (NDMC)
- * July 17, 2014 with Dennis Todey (South Dakota State Climatologist)

* **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**

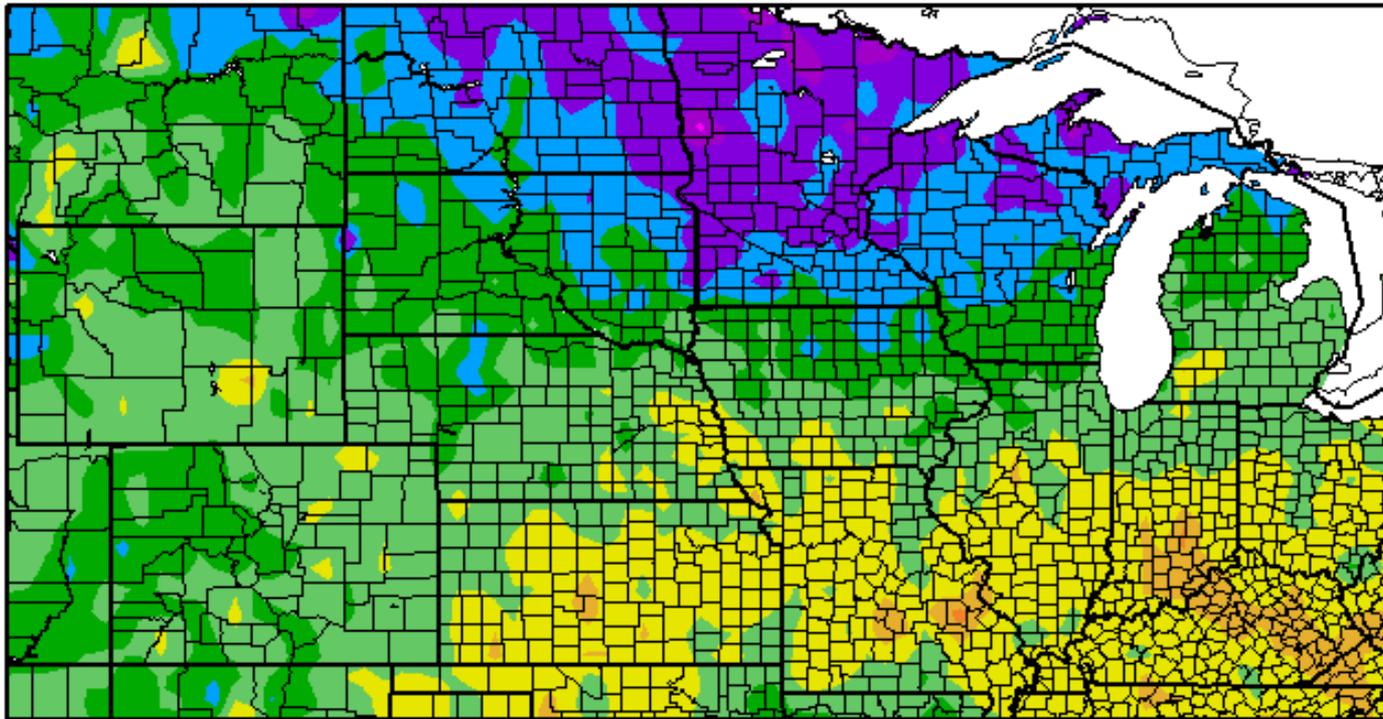
Agenda

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



30-Day Temperature Departure

Departure from Normal Temperature (F)
4/15/2014 - 5/14/2014

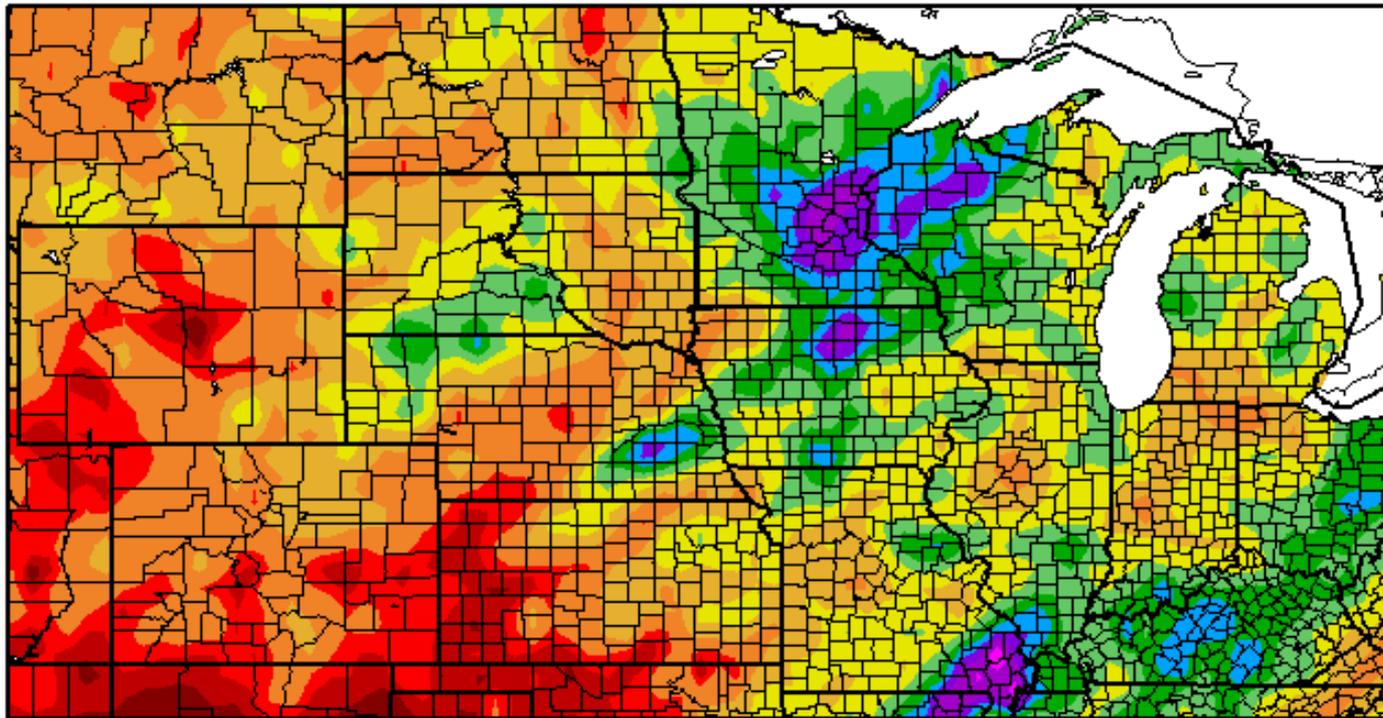


Generated 5/15/2014 at HPRCC using provisional data.

Regional Climate Centers

30-Day Precipitation

Precipitation (in)
4/15/2014 - 5/14/2014

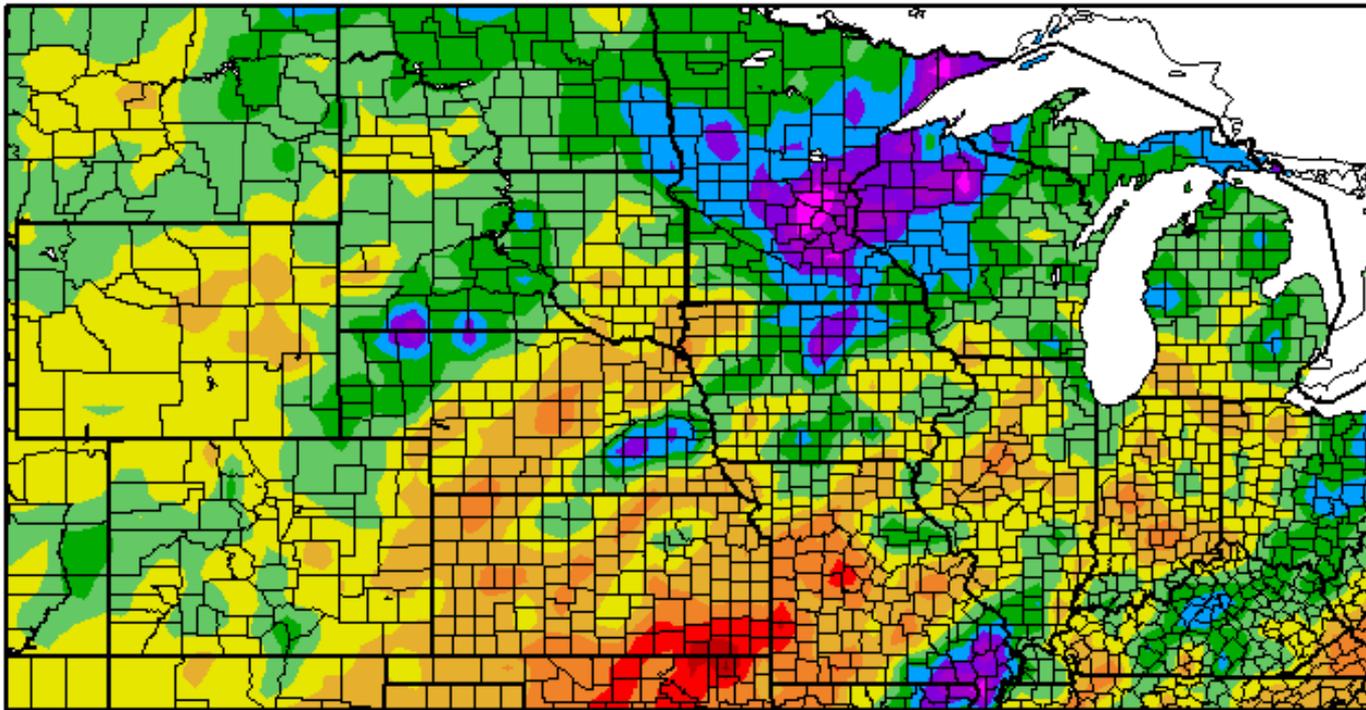


Generated 5/15/2014 at HPRCC using provisional data.

Regional Climate Centers

30-Day Precipitation Departure

Departure from Normal Precipitation (in)
4/15/2014 - 5/14/2014

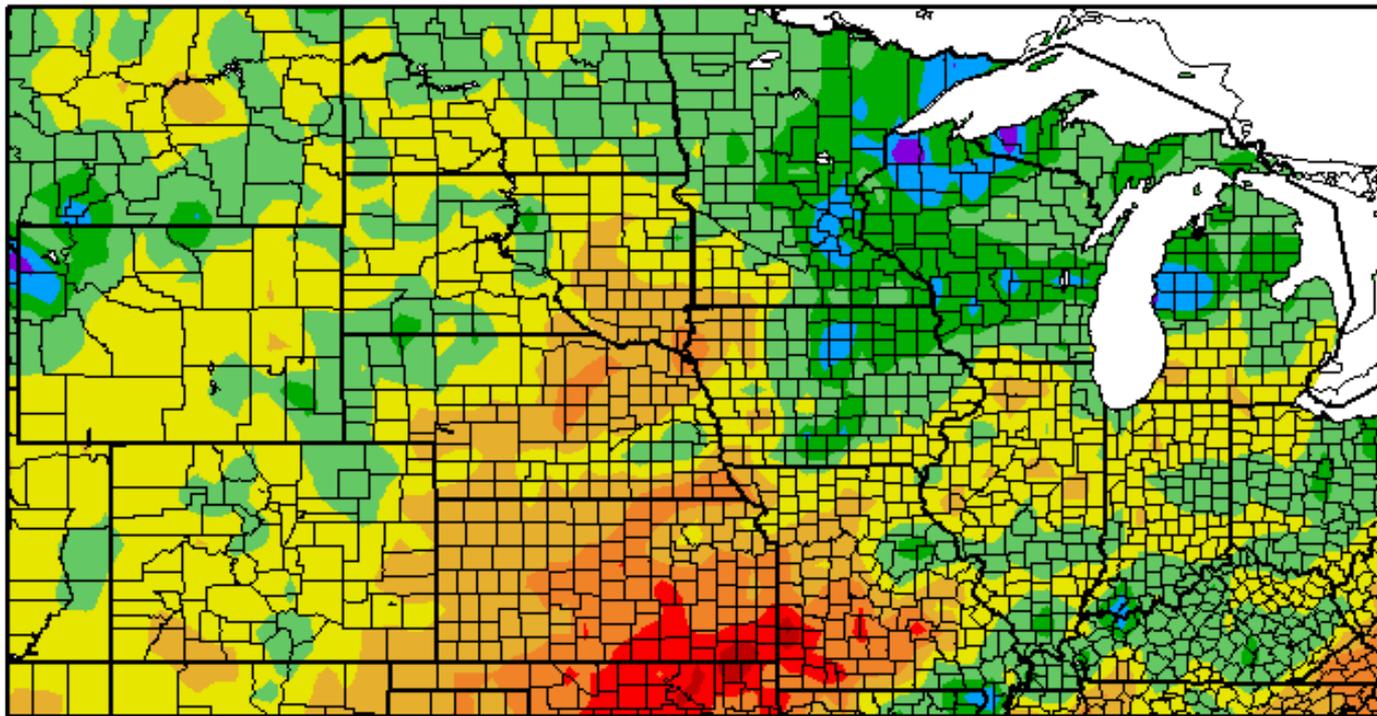


Generated 5/15/2014 at HPRCC using provisional data.

Regional Climate Centers

90-Day Precipitation Departure

Departure from Normal Precipitation (in)
2/14/2014 – 5/14/2014

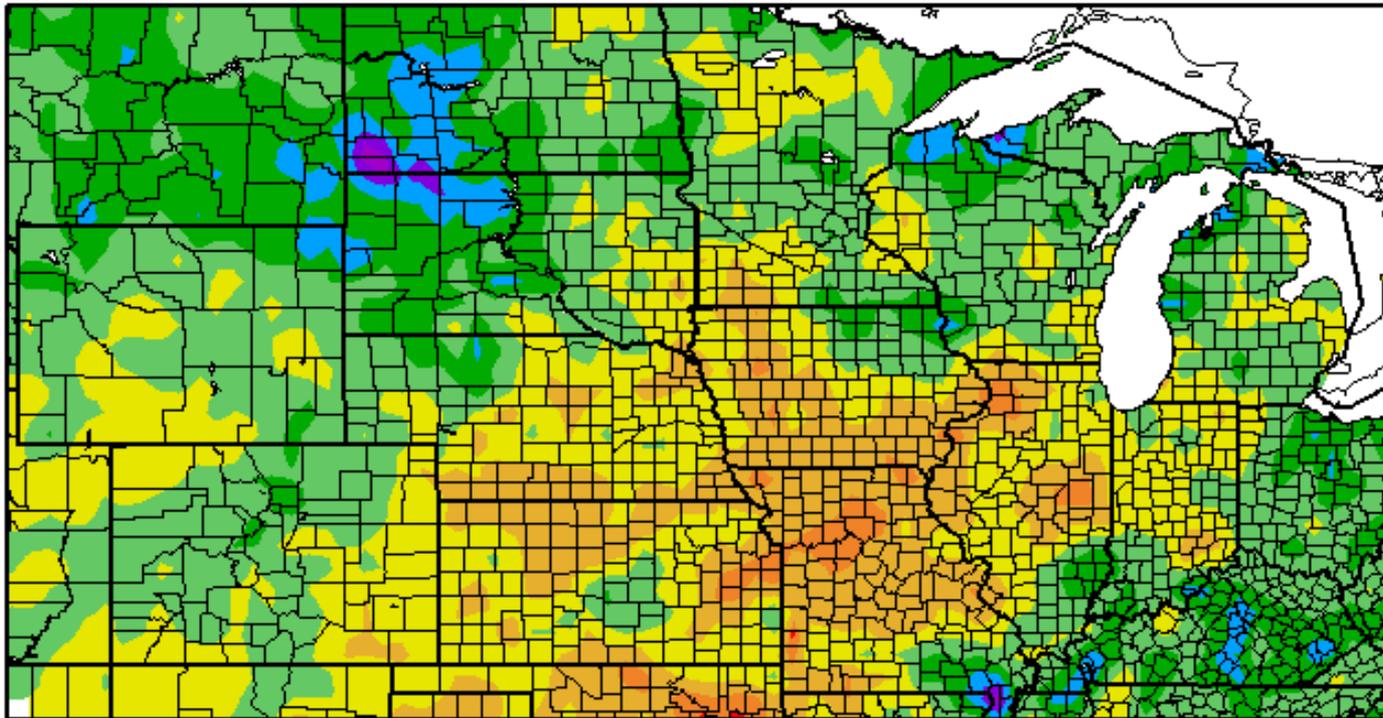


Generated 5/15/2014 at HPRCC using provisional data.

Regional Climate Centers

12-Month Precipitation Departure

Departure from Normal Precipitation (in)
5/15/2013 – 5/14/2014

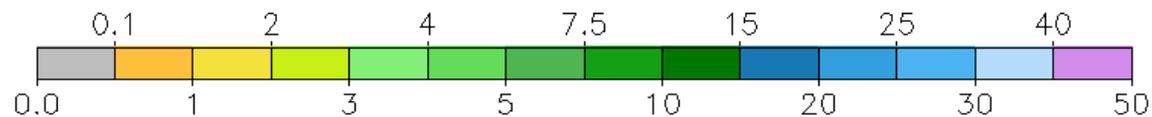
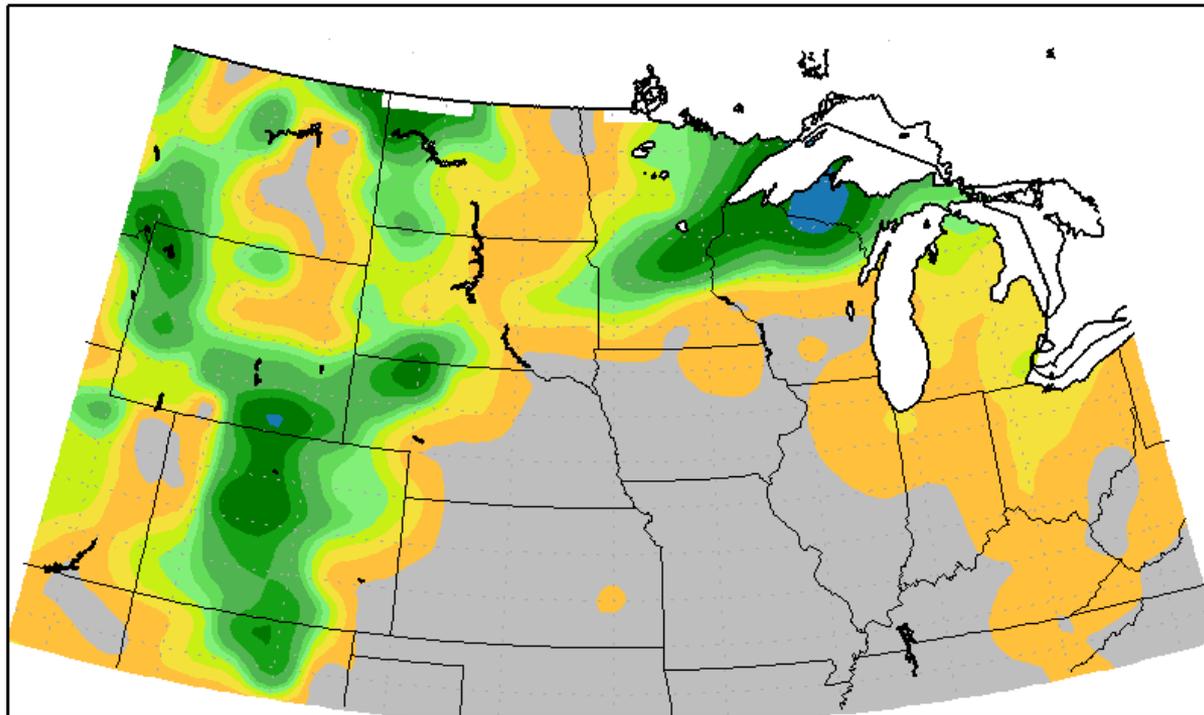


Generated 5/15/2014 at HPRCC using provisional data.

Regional Climate Centers

30-Day Snowfall

Accumulated Snowfall (in)
April 15, 2014 to May 14, 2014

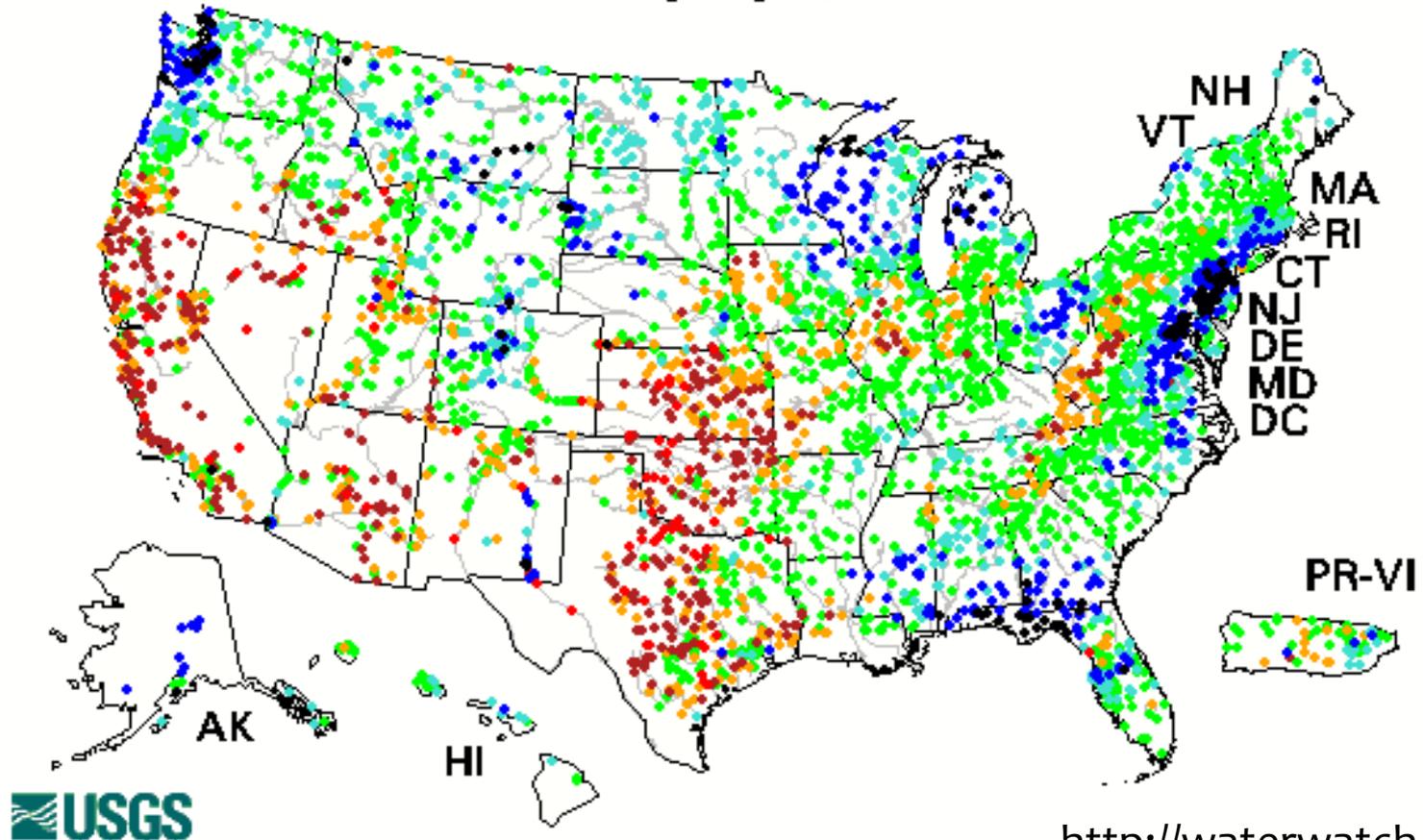


Rivers and Lakes

The image features a solid blue header at the top. Below the header, there are several overlapping, wavy, semi-transparent blue shapes that create a sense of movement and depth, resembling water or a stylized landscape. The rest of the page is plain white.

28-Day Average Streamflow

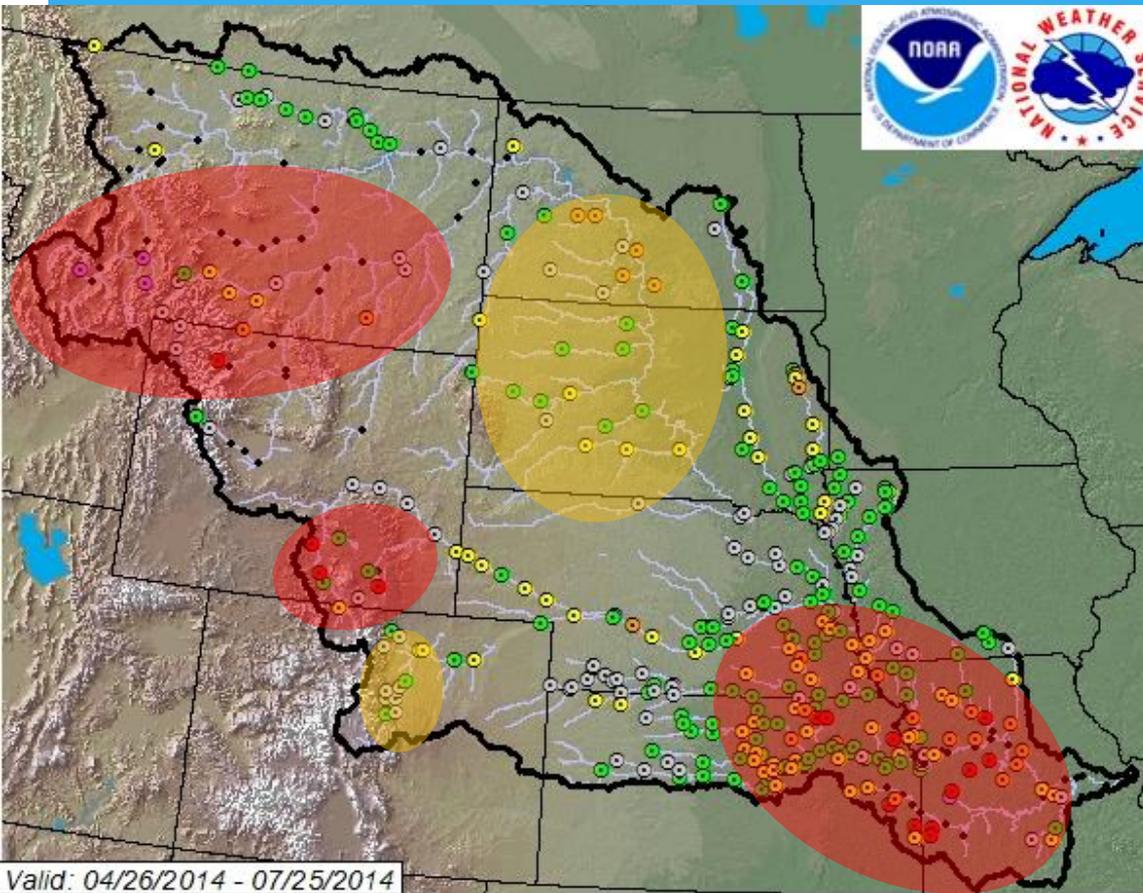
Wednesday, May 14, 2014



<http://waterwatch.usgs.gov/>

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

MISSOURI BASIN RIVER FORECAST CENTER



Percent Chance of Minor Flooding

- | | | |
|------------------|-------------|-------------|
| • Not Calculated | ⊙ < 5% | ● 5% - 20% |
| ● 21% - 40% | ● 41% - 60% | ● 61% - 80% |
| ● > 80% | | |

Rivers likely to experience minor (and maybe moderate) flooding

- Big Hole River, MT
- Gallatin River, MT
- Clarks Fk Yellowstone, MT
- Tongue, MT
- N Fk Shoshone, WY
- North Platte, WY
- Laramie, WY
- Big Blue, KS
- Marais des Cygnes—
Osage River basin, KS & MO
- Grand River, MO
- Chariton River, MO
- Missouri River below Gavins, some reaches
- Smaller streams in MO & extreme eastern KS

MISSOURI BASIN

SPRING FLOOD SUMMARY

- **Above average mountain snowpack. Snowmelt has begun.**
- **Northern Plains soils wetter than normal.**
- **Some minor-to-moderate flooding is expected due to the mountain snow runoff. Peak flows expected late May—early June. **Widespread significant flooding is not expected.****
- **Need to watch western portions of the Dakotas, as rain events could still lead to localized minor flooding.**
- **Thunderstorms resulted in minor flooding this week in southeast Nebraska. Minor-to-moderate flooding will continue in lower basin into early Summer. Not atypical!!!!**

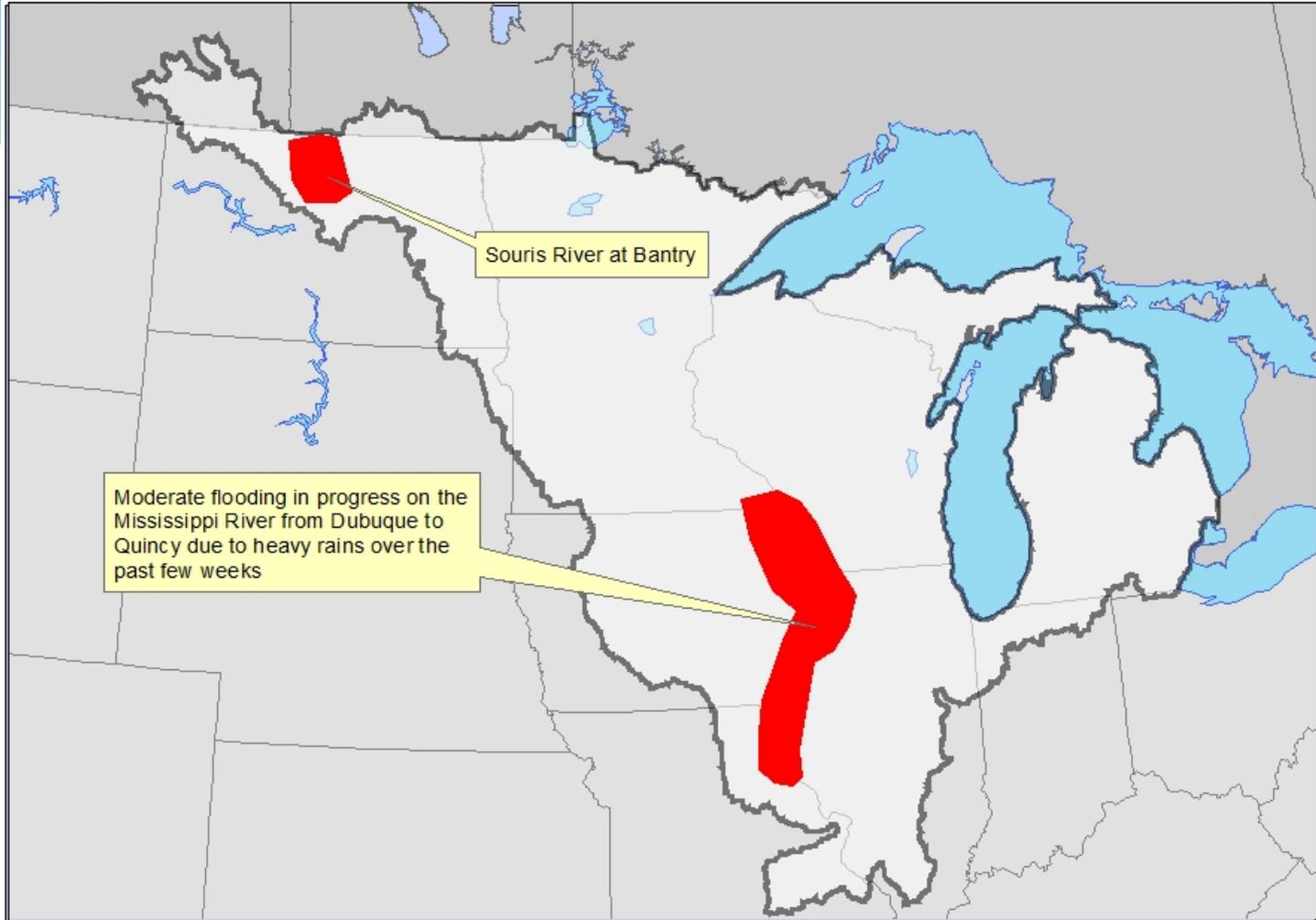


Significant River Flood Outlook



Valid: 5/14/2014 - 5/19/2014

North Central River Forecast Center 5/14/2014 11:45:47 AM



SIGNIFICANT RIVER FLOODING POSSIBLE.



SIGNIFICANT RIVER FLOODING LIKELY.



SIGNIFICANT RIVER FLOODING OCCURRING OR IS IMMINENT.

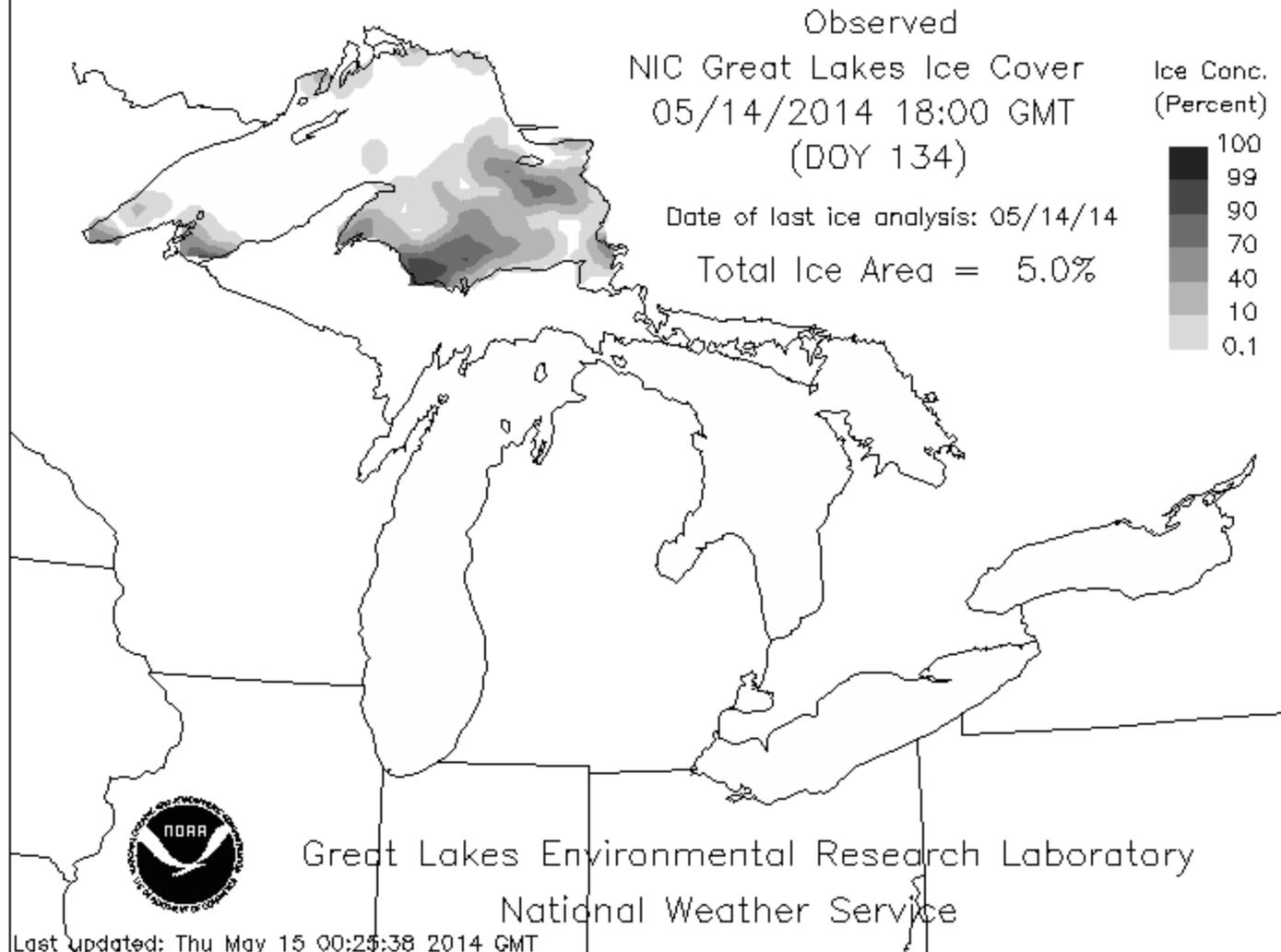
Significant River Flooding Impacts include: Roads adversely affected. Residential, commercial, industrial, and/or agricultural areas affected. May require evacuation of people.

NOTE: Flash Flooding or Minor River Flooding will NOT be included in this outlook.

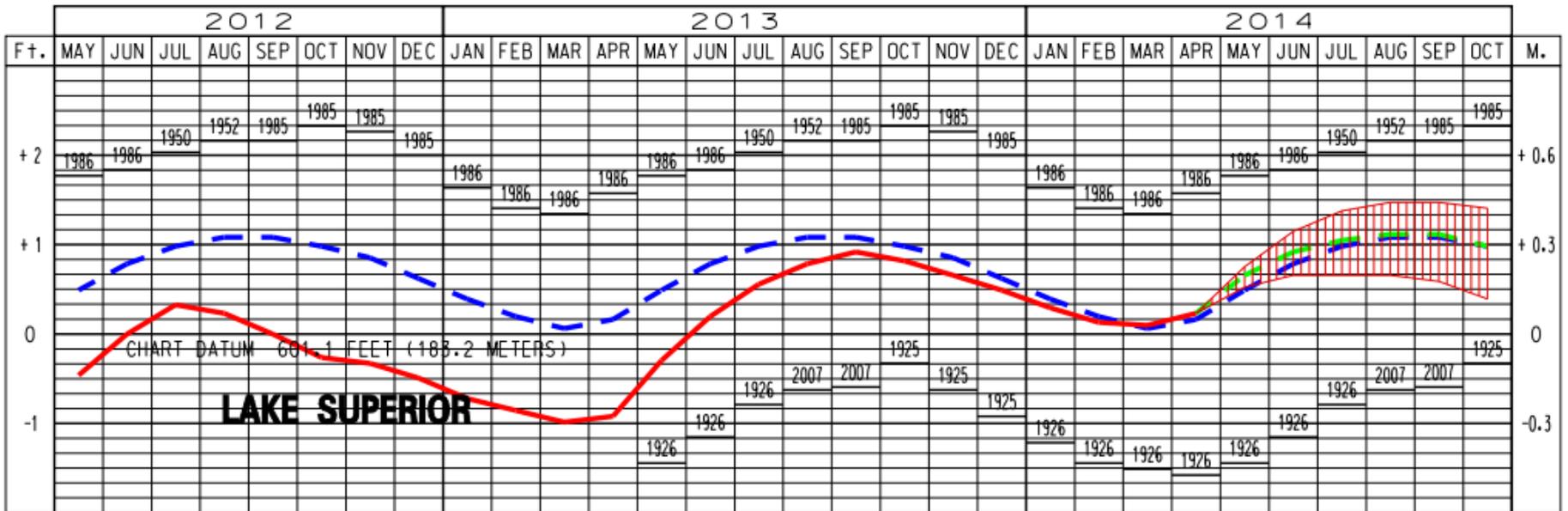
First Ship - Soo Locks April 15



NOAA Great Lakes Coastal Forecasting System



LAKE SUPERIOR WATER LEVELS - MAY 2014



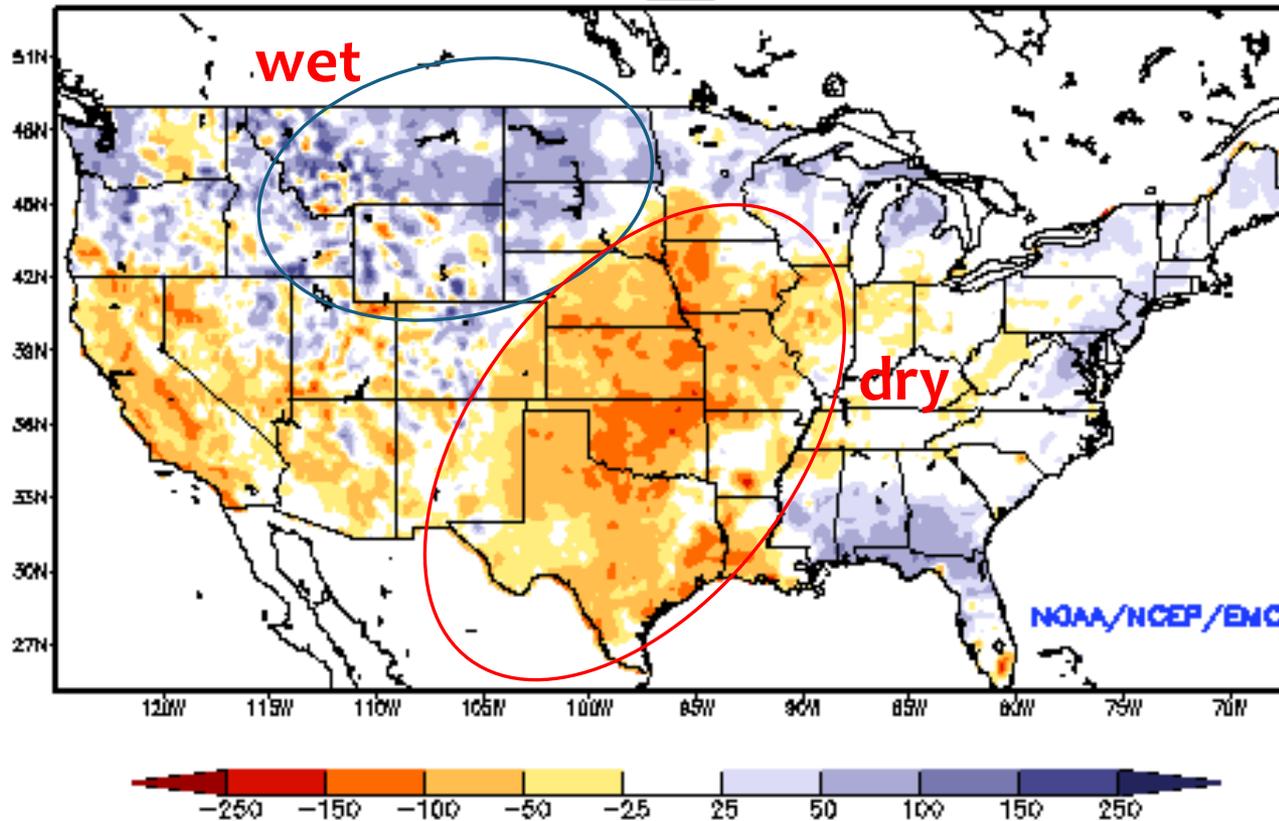
<http://www.lre.usace.army.mil/Missions/GreatLakesInformation.aspx>

Agriculture

The image features a solid blue header at the top. Below the header, there are several overlapping, wavy, semi-transparent blue shapes that create a sense of depth and movement, resembling a stylized landscape or water waves. The rest of the page is plain white.

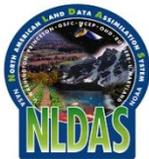
Soil Moisture Anomaly

Ensemble-Mean - Current Total Column Soil Moisture Anomaly (mm)
NCEP NLDAS Products ___ Valid: MAY 10, 2014

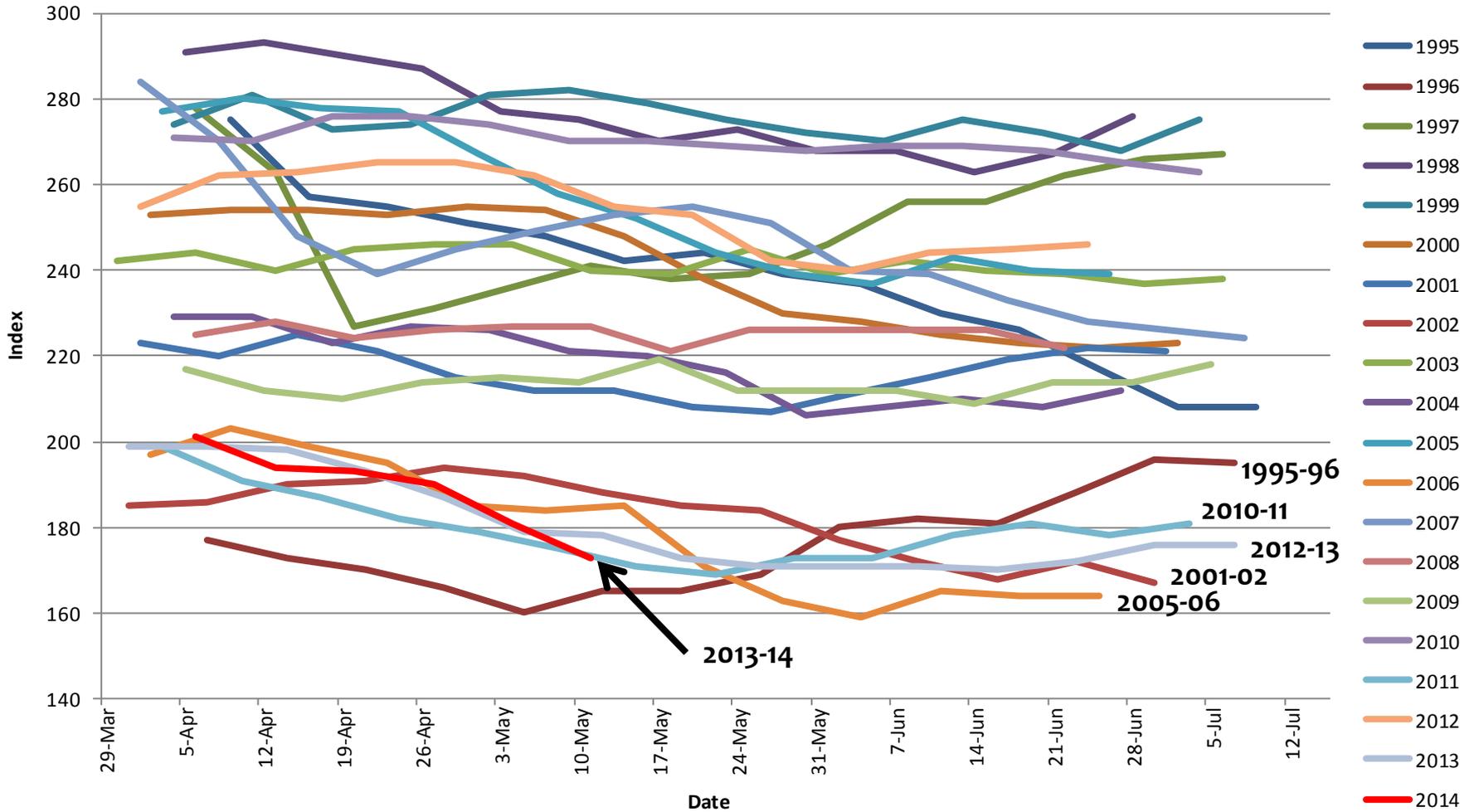


Soil Moisture Anomaly in millimeters

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



U.S. WINTER WHEAT Condition Index

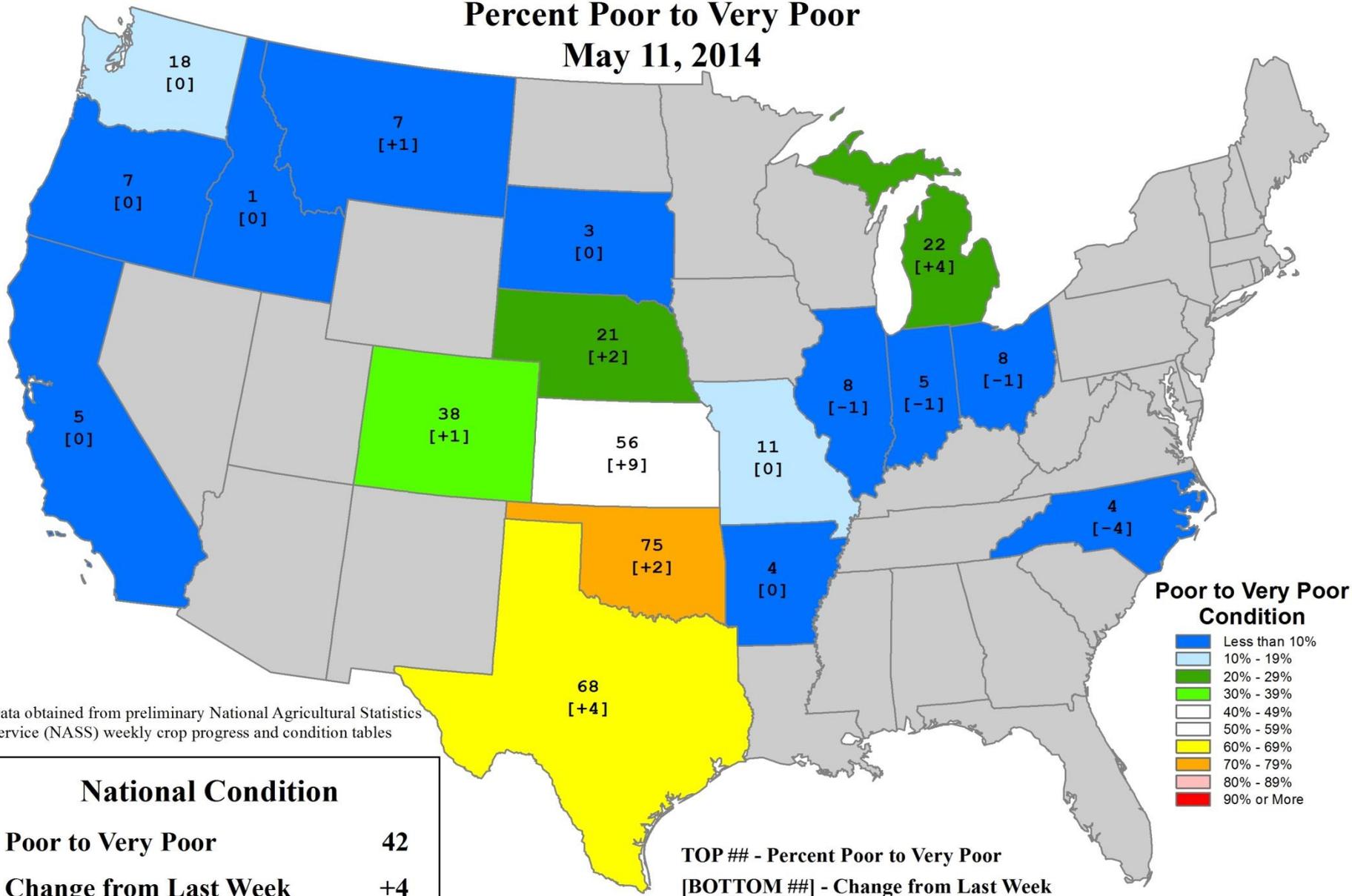


Based on NASS crop progress data.

Index Weighting: Excellent = 4; Good = 3; Fair = 2; Poor = 1; Very Poor = 0

U.S. Winter Wheat Conditions

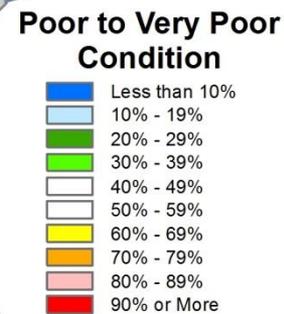
Percent Poor to Very Poor
May 11, 2014



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

National Condition	
Poor to Very Poor	42
Change from Last Week	+4

TOP ## - Percent Poor to Very Poor
[BOTTOM ##] - Change from Last Week

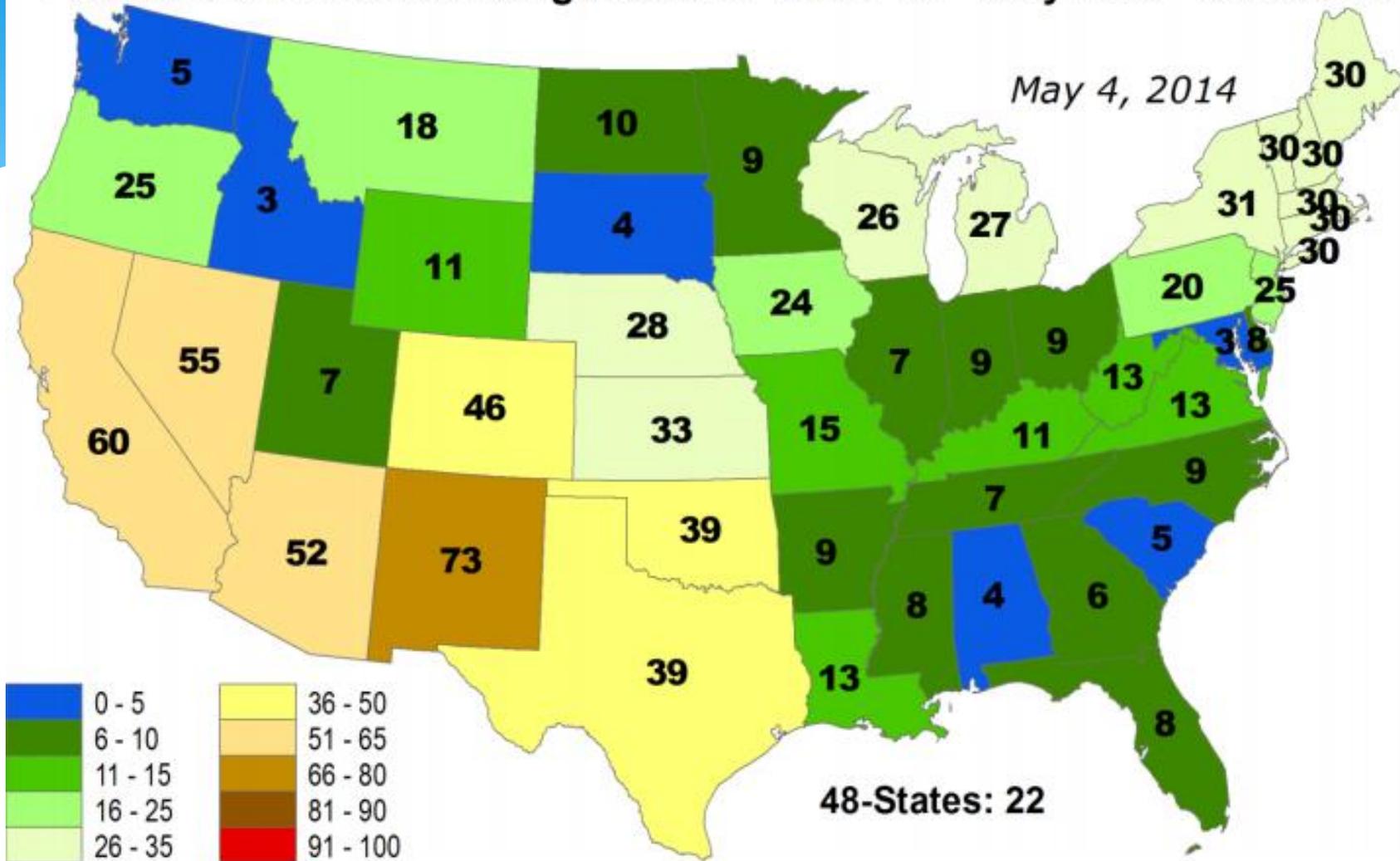


USDA Wheat Outlook

- * USDA expects winter wheat production to be down 8% from last year
- * Some states will be hit harder. For example, Kansas could be down 18% from last year.

Percent of Pasture & Range Land in "Poor" or "Very Poor" Condition

May 4, 2014



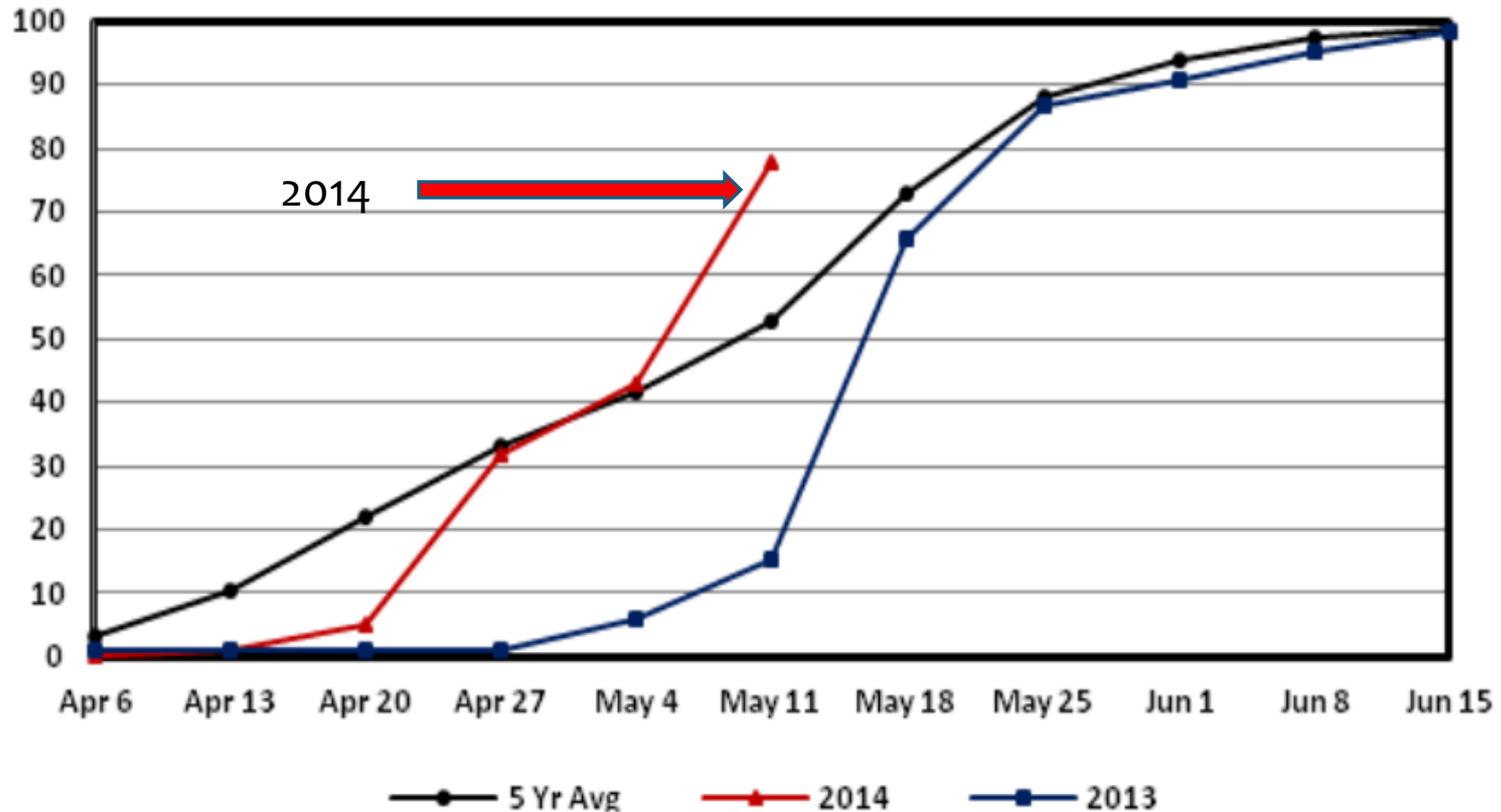
Corn Planting Progress

- * Overall, 59% planted versus 58% (5-year average)
- * Emergence is a little behind, 18% versus 25% (5-year average)
- * Northern Tier States
 - * North Dakota, 3% versus 33% (5-year average)
 - * Minnesota, 31% versus 62%
 - * Wisconsin, 20% versus 41%
 - * Michigan, 20% versus 41%

Planting Delays

As of May 11

Corn - Percent Planted Illinois

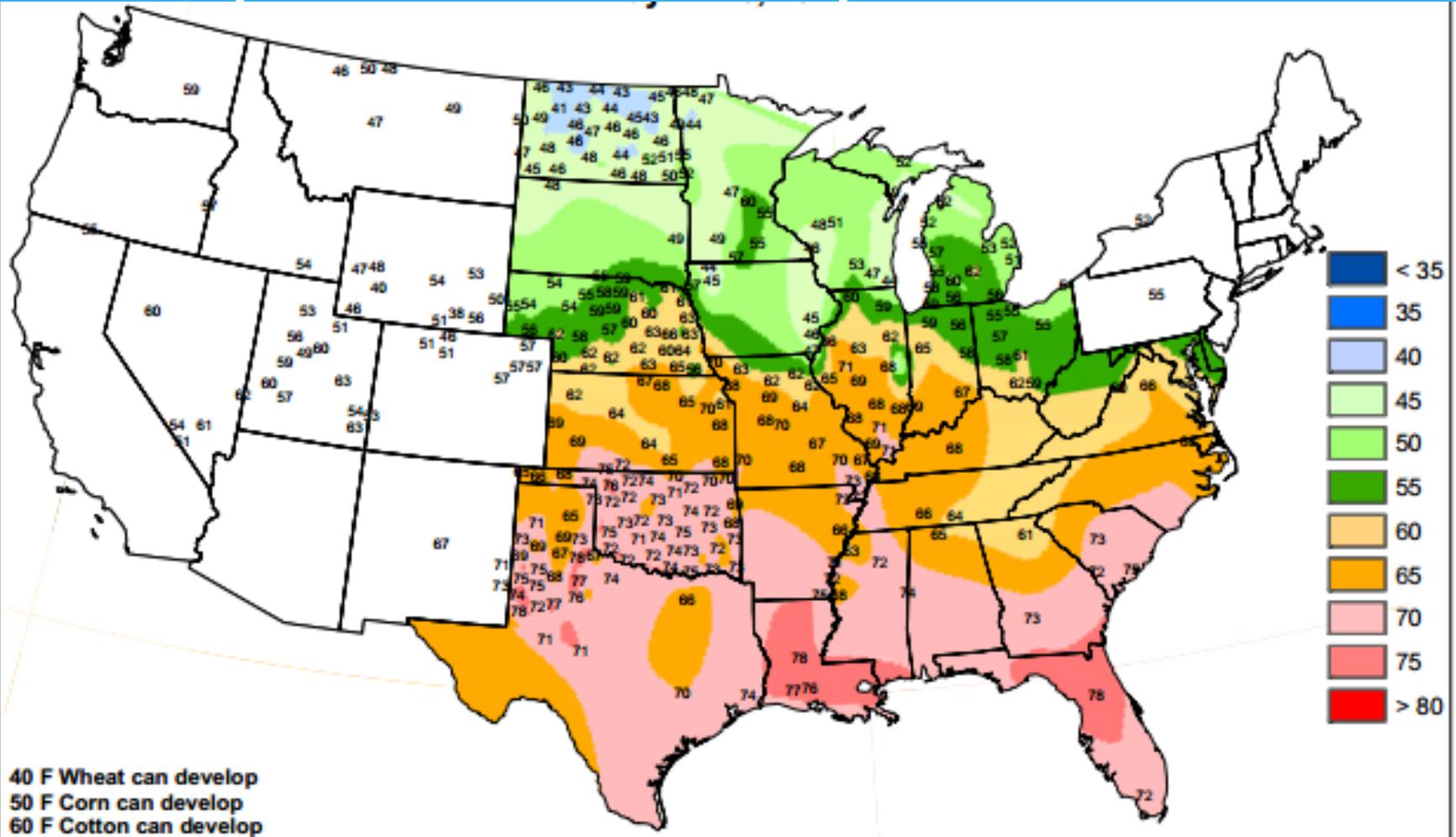


Sub-Soil Moisture

	“Very Short”	“Short”
Iowa	9	26
Illinois	4	24
Missouri	10	35

Topsoil in the USDA NASS reports refers to the top 6 inches of soil
Sub-soil refers to the layer below that and can extend down to 3 feet

4-Inch Soil Temperatures



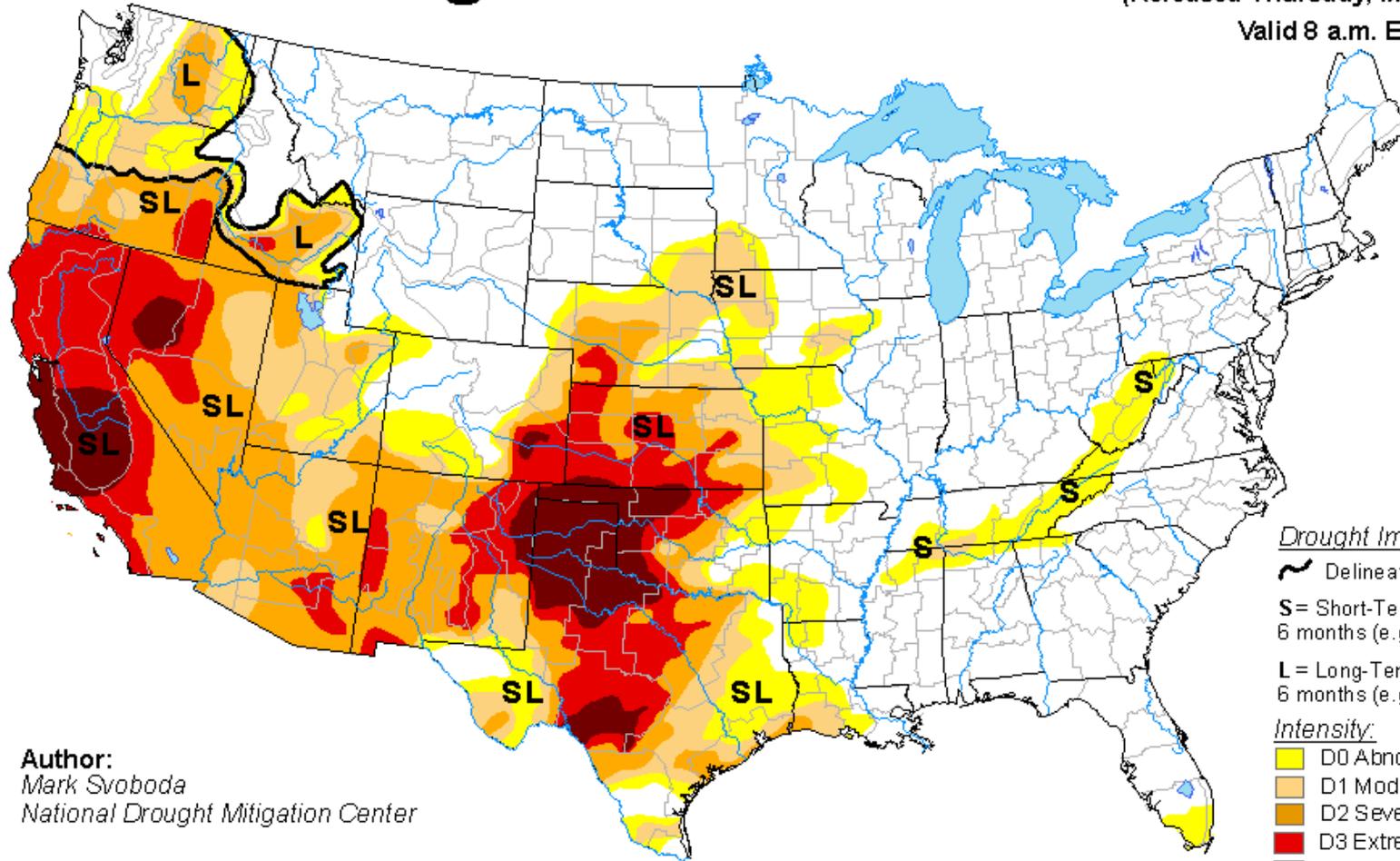
Supplemental data provided by Alabama A&M University, Bureau of Reclamation - Pacific Northwest Region AgriMet Program, High Plains Regional Climate Center, Illinois State Water Survey, Iowa State University, Louisiana Agrilimatic Information System, Mississippi State University, Oklahoma Mesonet, Purdue University, University of Missouri and USDA/NRCS Soil Climate Analysis Network.

U.S. Drought Monitor

May 13, 2014

(Released Thursday, May. 15, 2014)

Valid 8 a.m. EDT



Author:
Mark Svoboda
National Drought Mitigation Center

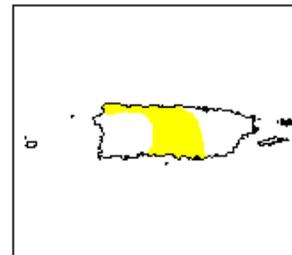
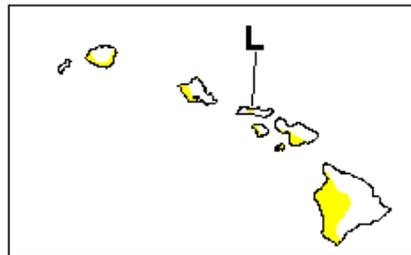
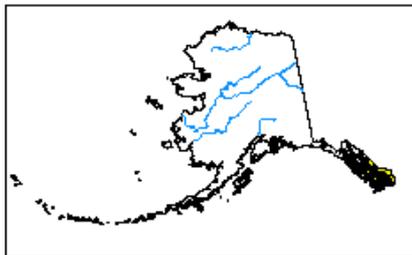
Drought Impact Types:

- ~ 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:

- Yellow: D0 Abnormally Dry
- Light Orange: D1 Moderate Drought
- Orange: D2 Severe Drought
- Red: D3 Extreme Drought
- Dark Red: D4 Exceptional Drought

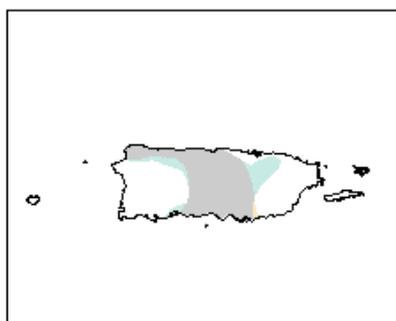
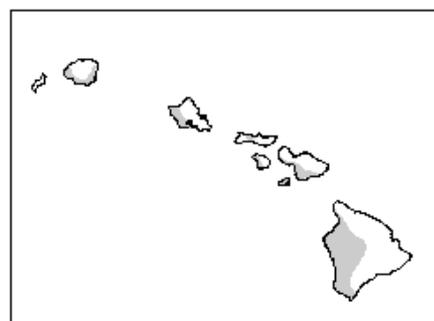
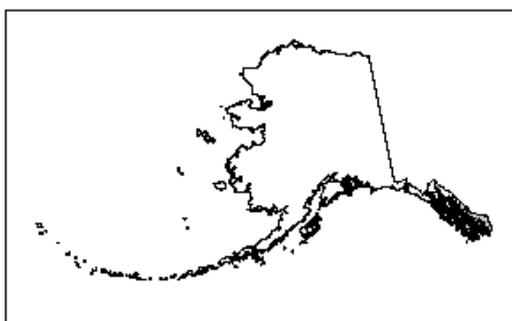
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>

U.S. Drought Monitor Class Change 1 Week

May 13, 2014
compared to
May 6, 2014



U.S. Drought Monitor North Central

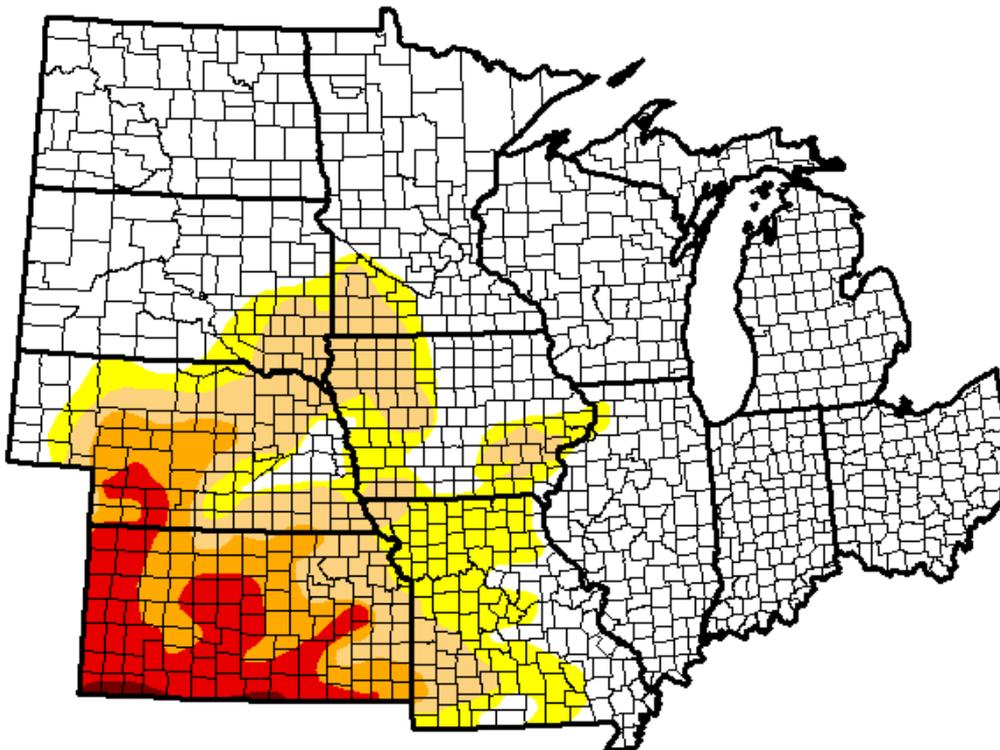
May 13, 2014

(Released Thursday, May. 15, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	67.93	10.09	10.72	5.59	5.38	0.30
Last Week <i>5/6/2014</i>	63.86	11.35	12.68	6.01	5.99	0.11
3 Months Ago <i>2/11/2014</i>	56.84	20.92	12.96	7.94	1.34	0.00
Start of Calendar Year <i>12/31/2013</i>	58.55	20.04	13.18	7.15	1.08	0.00
Start of Water Year <i>10/1/2013</i>	37.82	26.00	20.08	14.87	1.22	0.00
One Year Ago <i>5/14/2013</i>	50.73	13.46	10.50	10.96	11.26	3.09



Intensity:



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

Author:

Mark Svoboda

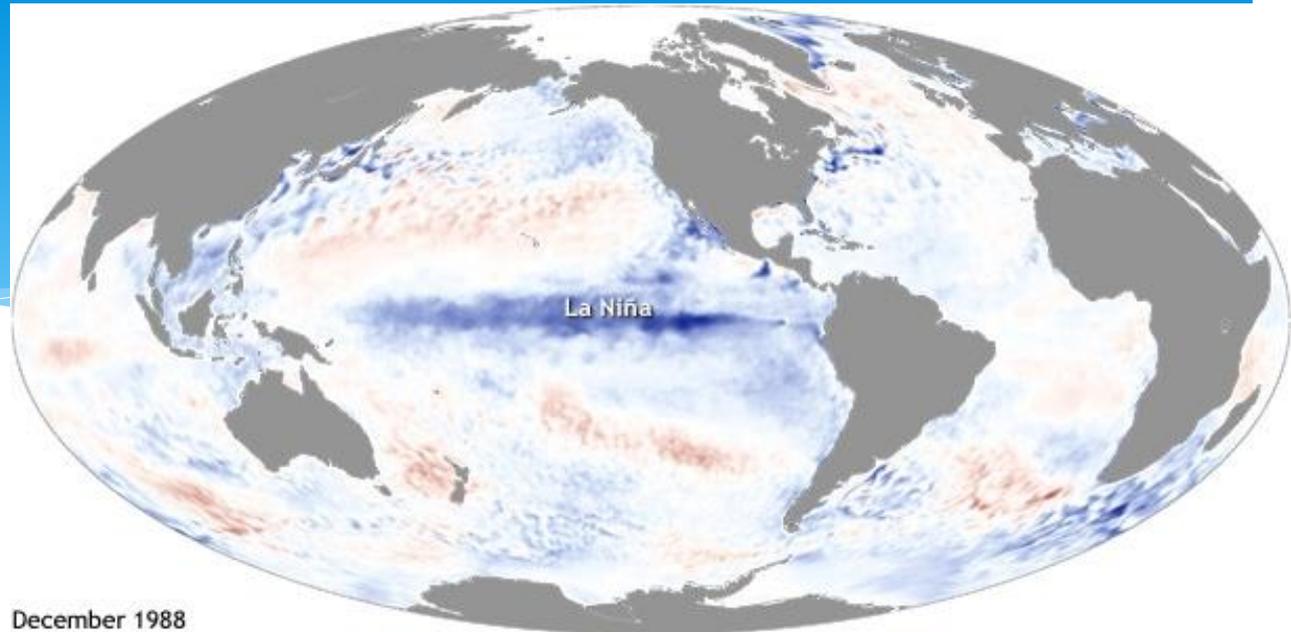
National Drought Mitigation Center



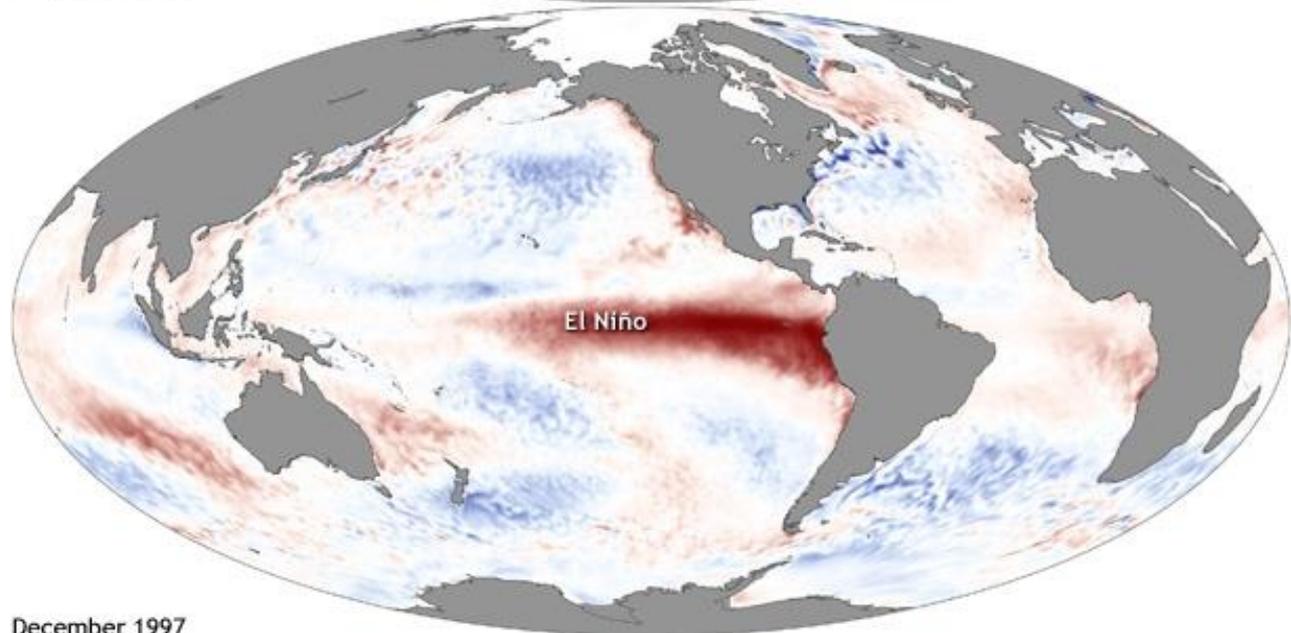
Climate Outlooks

- * **7-day precipitation forecast**
- * **8-14 day outlook**
- * **April**
- * **6 Months (April - September)**
- * **Seasonal Drought Outlooks**
- * **Spring Flooding Outlook**

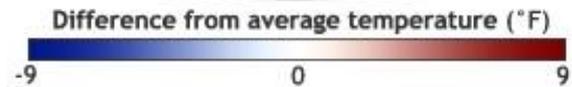
La Niña and El Niño



December 1988

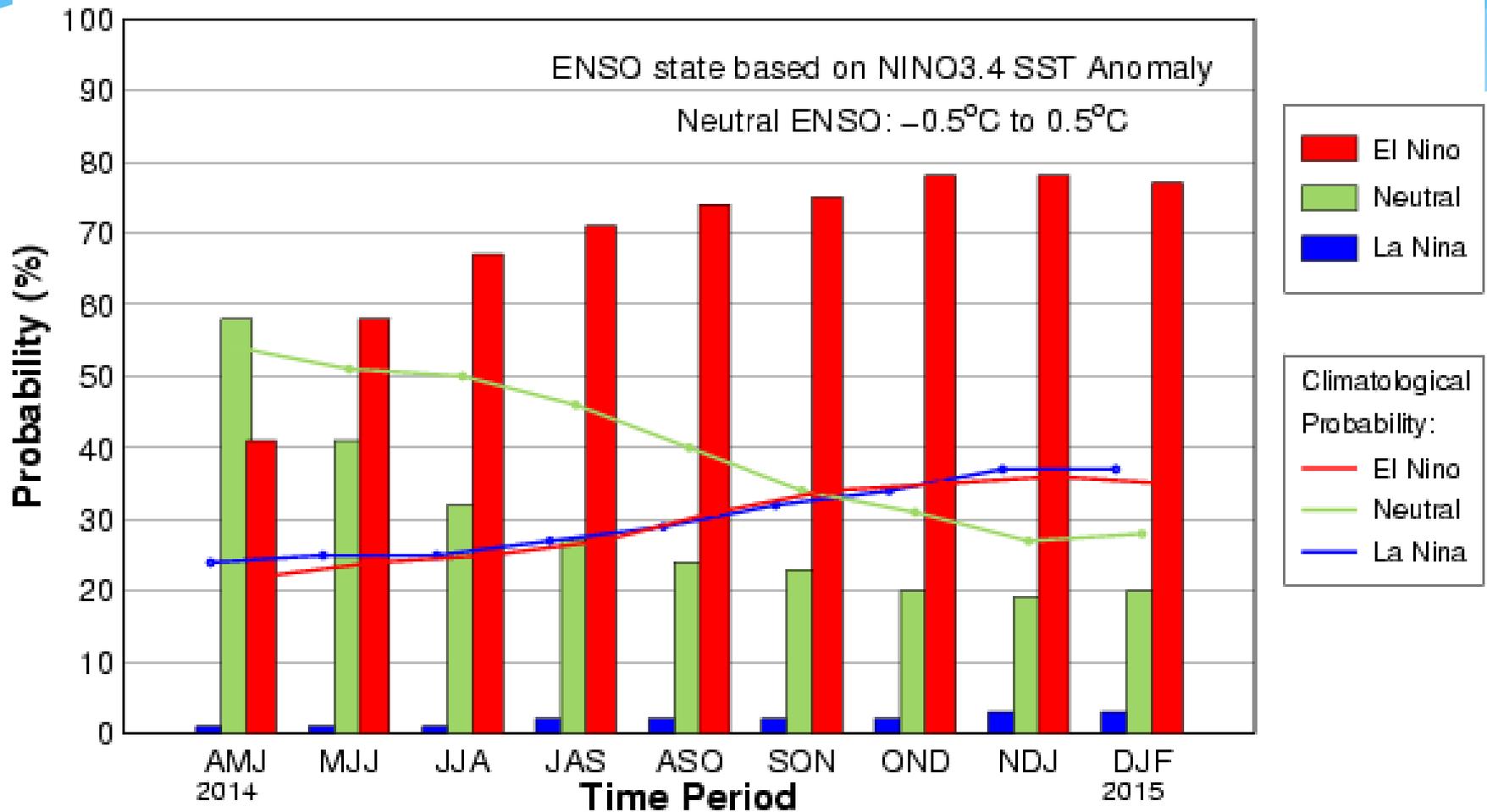


December 1997



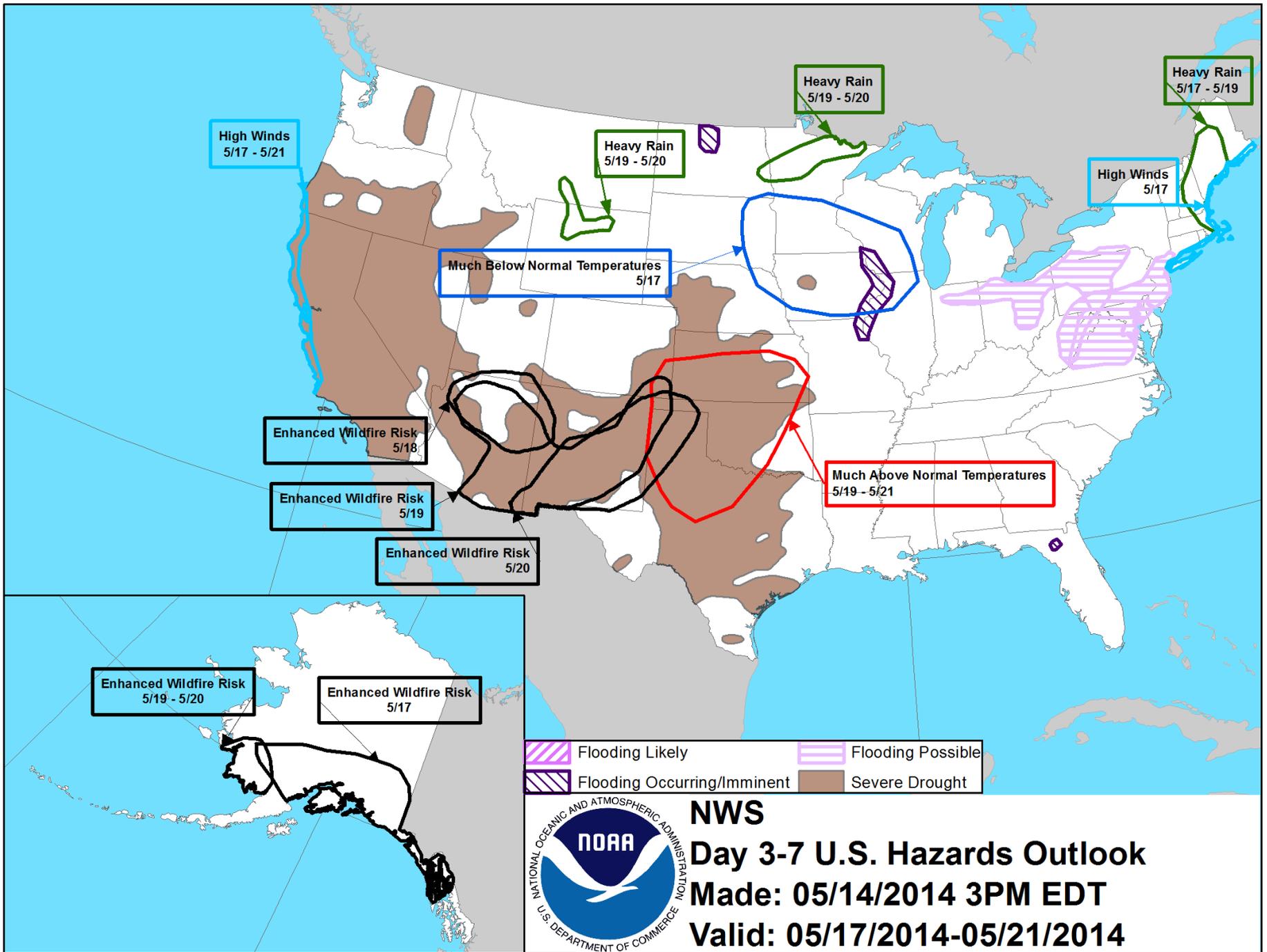
El Nino/La Nina Forecast

Early-May CPC/IRI Consensus Probabilistic ENSO Forecast

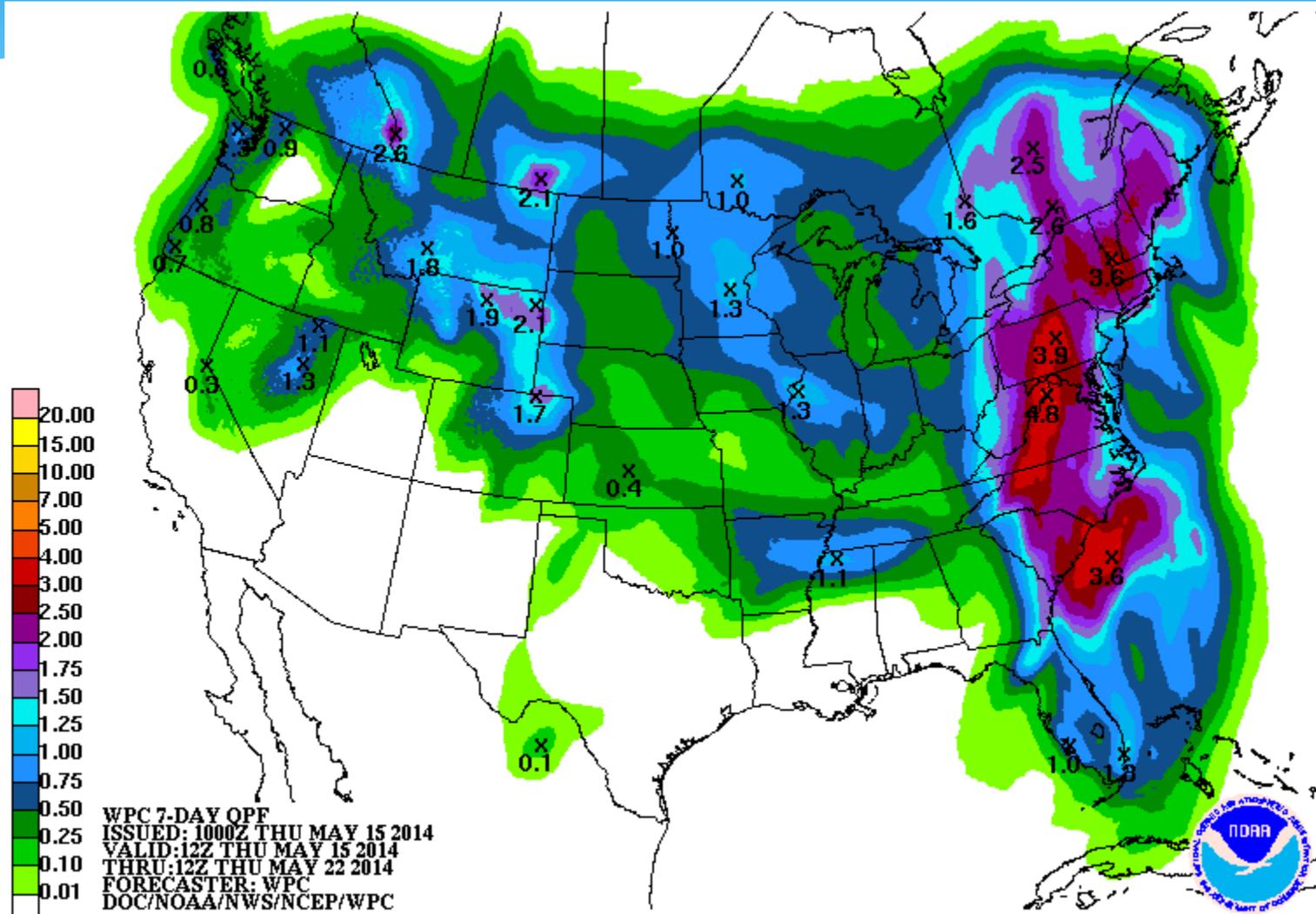


Key Points About El Niño

- * The chance of El Niño exceeds 65% by summer and remains high for the rest of 2014.
- * It's impact on the 2014 growing season will be somewhat limited due to the timing and strength.
- * In general, the effects of El Niño are considered in the official CPC forecasts, especially the possible cooler conditions in the north and wetter conditions in the West.

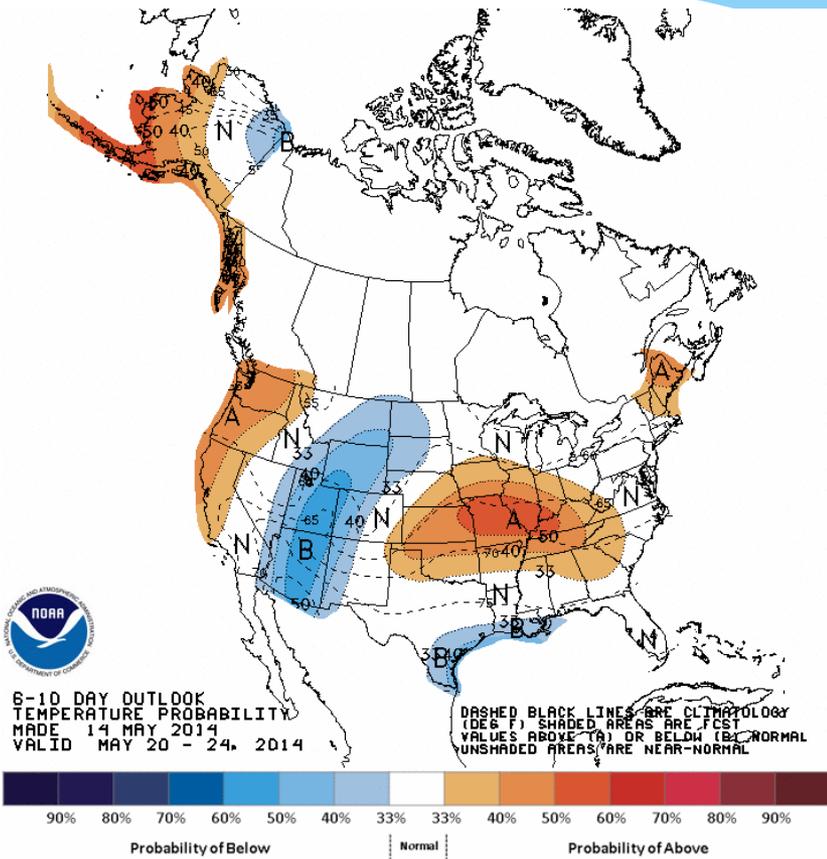


7-day Quantitative Precipitation Forecast Valid: 12z Thu Mar 15 – 12z Thu Mar 22

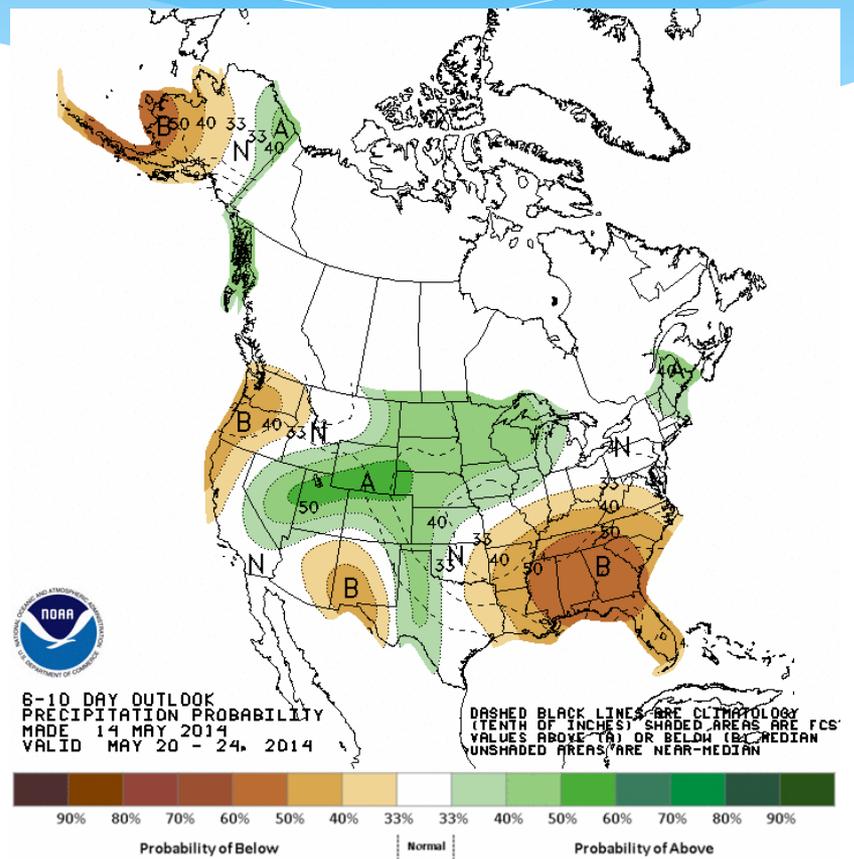


<http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml>

Temperature and Precipitation Probabilities for May 20– May 24, 2014

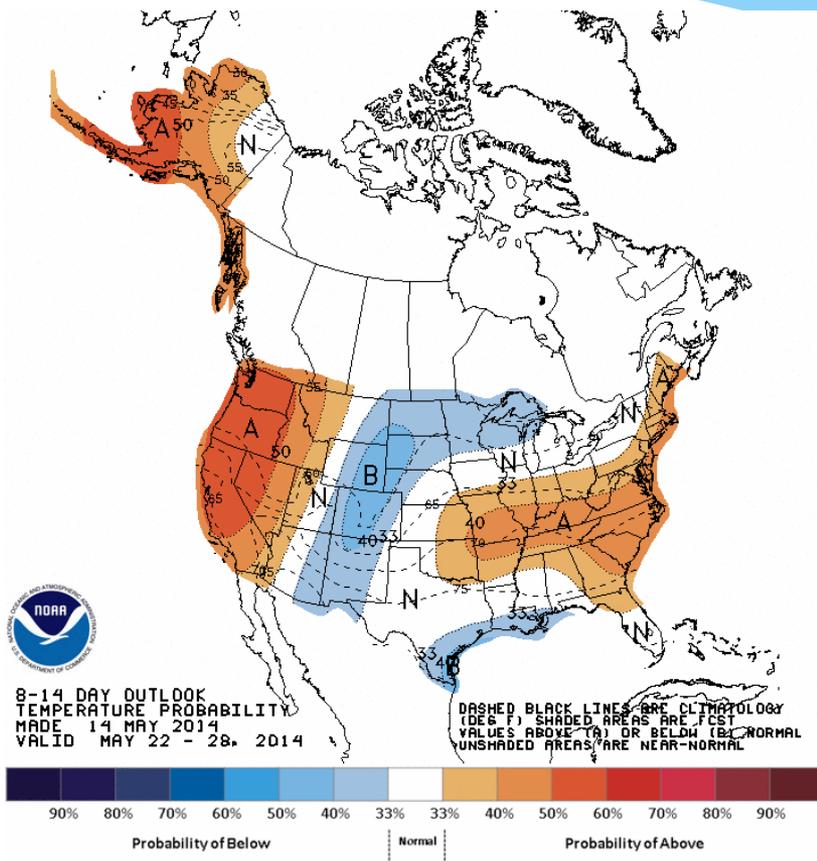


Temperature

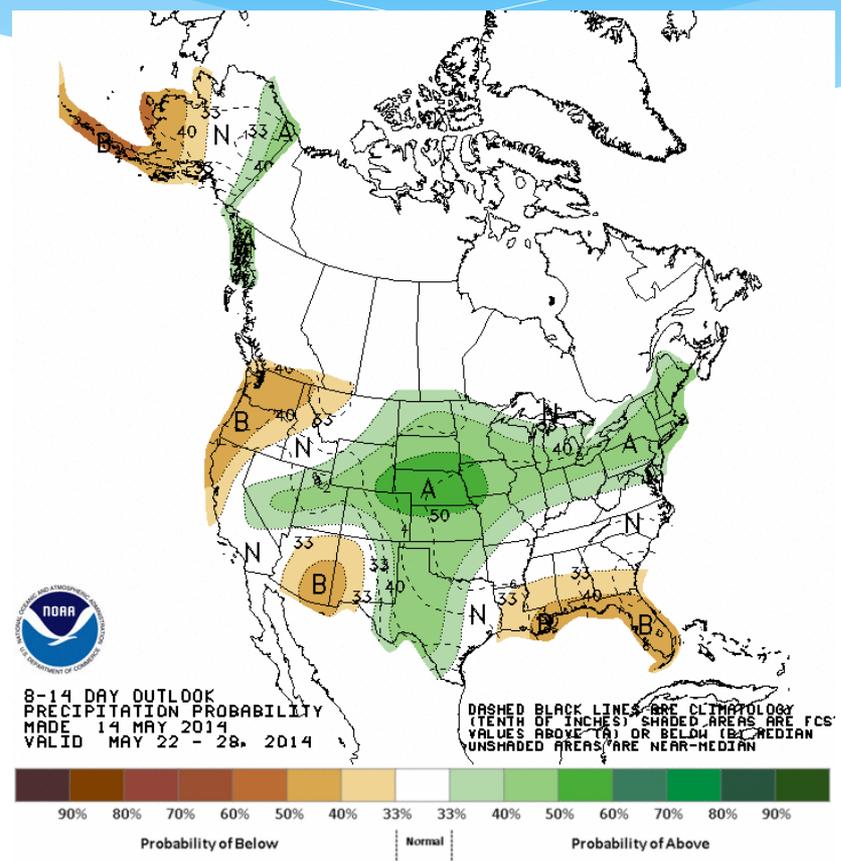


Precipitation

Temperature and Precipitation Probabilities for May 22– May 28, 2014

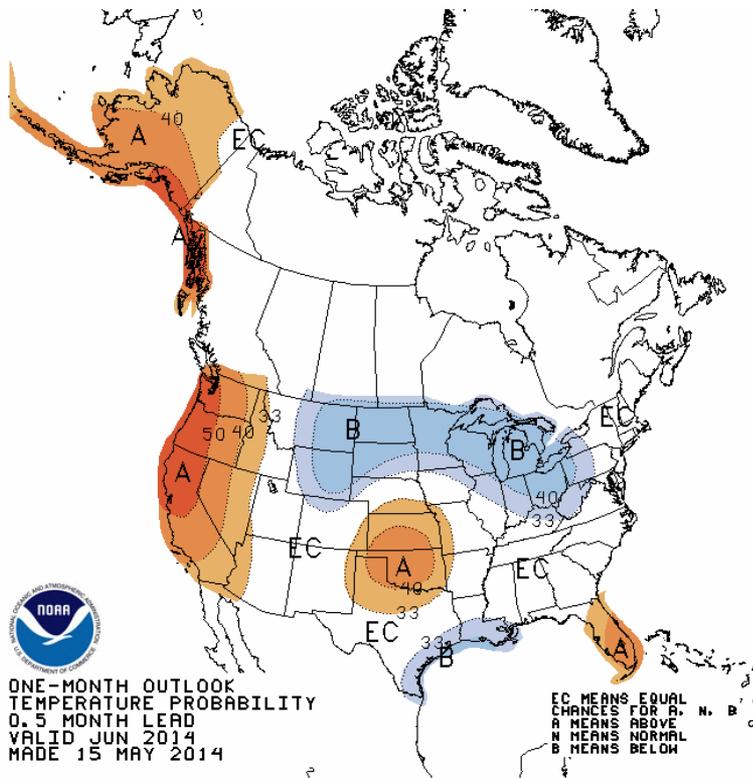


Temperature

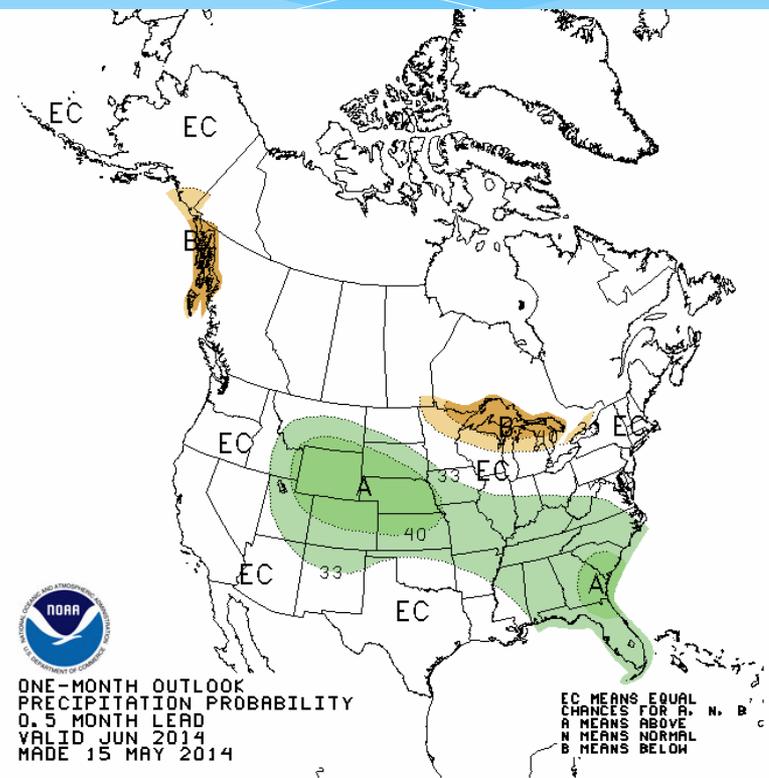


Precipitation

June Temperature and Precipitation Probabilities

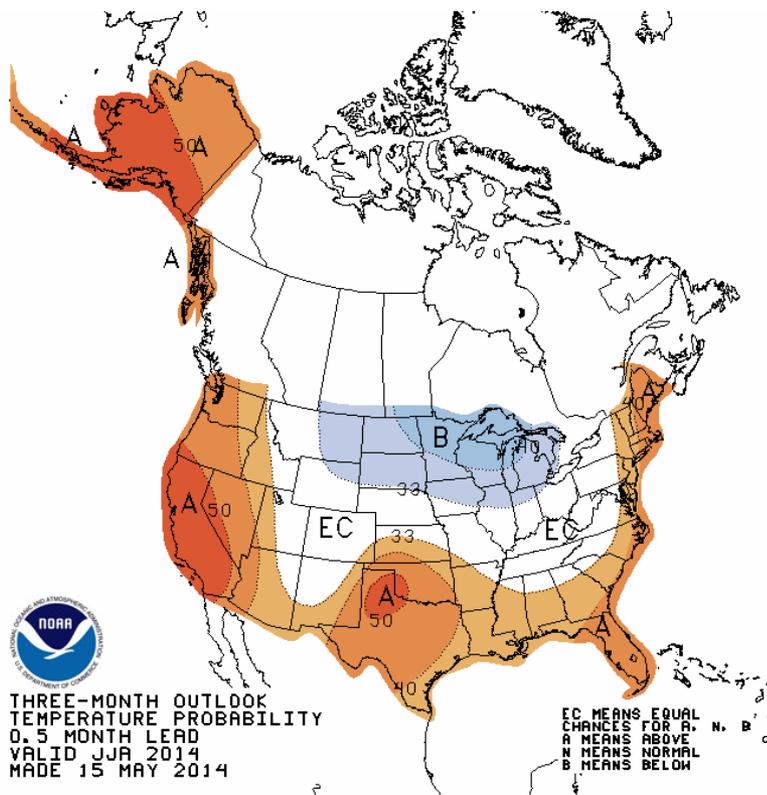


Temperature

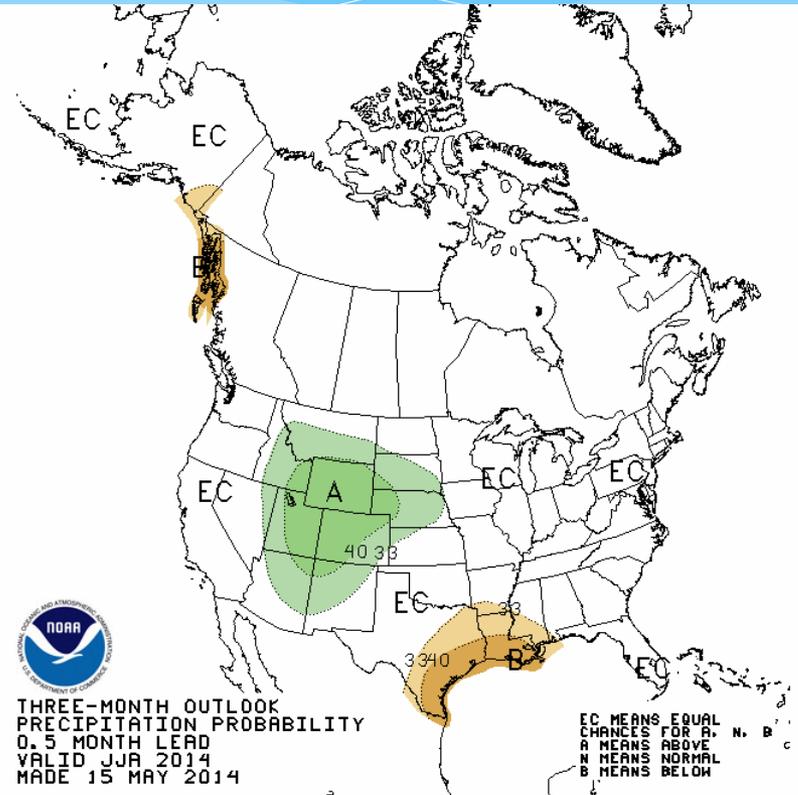


Precipitation

3 Month Temperature and Precipitation Probabilities (June-August)

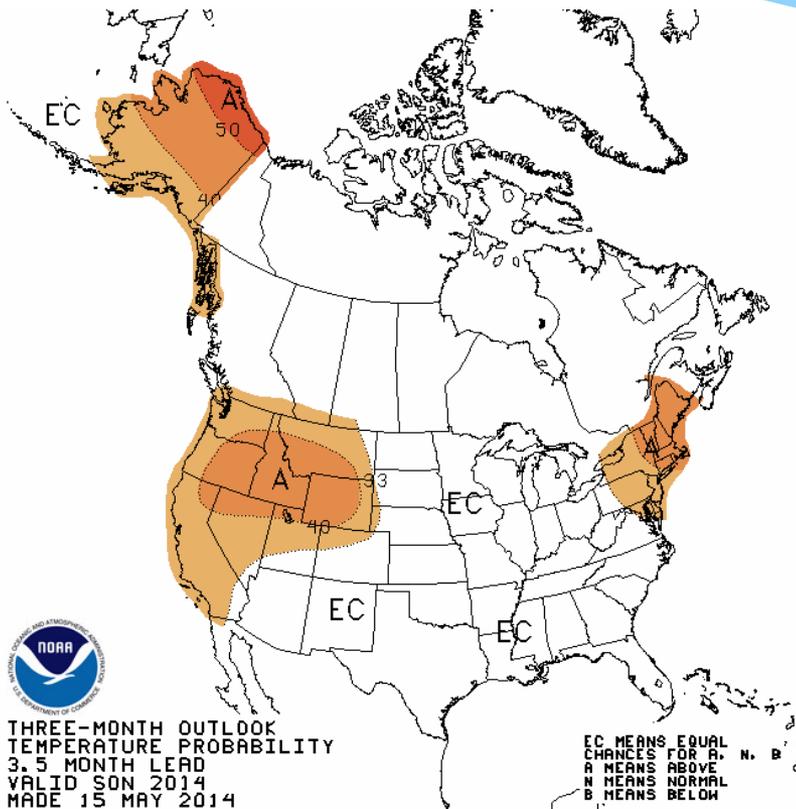


Temperature

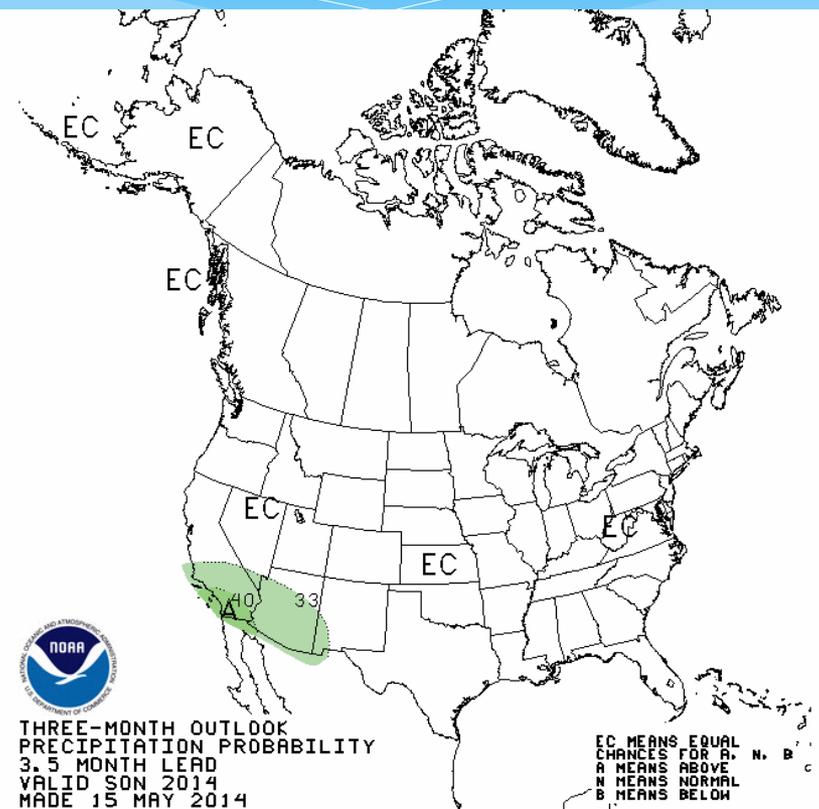


Precipitation

3 Month Temperature and Precipitation Probabilities (September-November)



Temperature



Precipitation

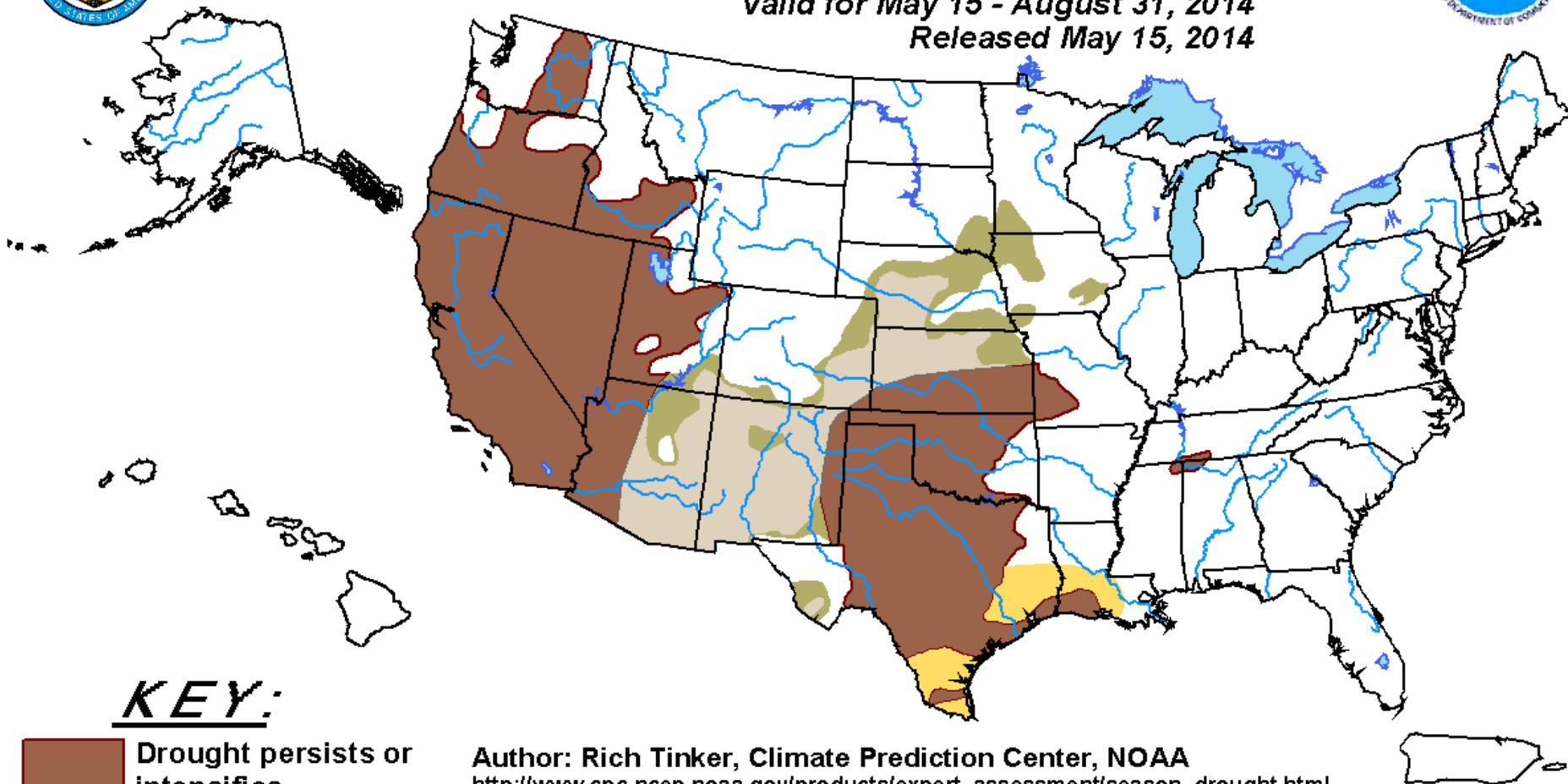


U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for May 15 - August 31, 2014

Released May 15, 2014



KEY:

-  Drought persists or intensifies
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely

Author: Rich Tinker, Climate Prediction Center, NOAA

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

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity).

For weekly drought updates, see the latest U.S. Drought Monitor.

NOTE: The tan area 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)

Summary

* **Recent Conditions**

- * Colder-than-average have prevailed over much of the Central Region and is most severe in the northern-most states.
- * Wetter-than-average conditions across the northern states in the last 30 to 90 days.
- * Drought conditions in parts of Colorado, Kansas, Nebraska, Missouri, and Iowa. Drought free in the eastern Corn Belt.
- * Winter wheat crop is a concern
- * Late start to planting of corn and soybeans could be a concern.

Summary

* Outlooks

- * Chance of El Nino exceeds 65% by summer
- * June – increased odds of cooler conditions in the north and wetter conditions through much of the central region.
- * Increased chance of cooler temperatures this summer in the north and wetter conditions in the west.

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

- * Dennis Todey: dennis.todey@sdstate.edu , 605-688-5141

- * Doug Kluck: doug.kluck@noaa.gov, 816-994-3008

- * John Eise: john.eise@noaa.gov, 816-268-3144

- * 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