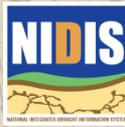


Central Region Climate Outlook

October 16, 2014

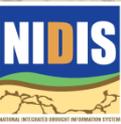
Brian Fuchs
Climatologist

National Drought Mitigation
Center
University of Nebraska-Lincoln
bfuchs2@unl.edu
402-472-6775



Agenda

- Current Conditions
- Regional Climate Updates
- Outlooks



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, Brian Fuchs (National Drought Mitigation Center)

▶ **Next Climate/Drought Outlook Webinar**

- November 20, 2014 with Dennis Todey (South Dakota State Climatologist)

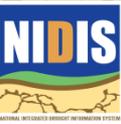
▶ **Access to Future Climate Webinars and Information**

- ▶ <http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars>

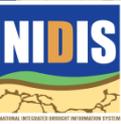
▶ **Past recorded presentations and slides can be found here:**

- ▶ <http://mrcc.isws.illinois.edu/webinars.htm>
- ▶ <http://www.hprcc.unl.edu/webinars.php>

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



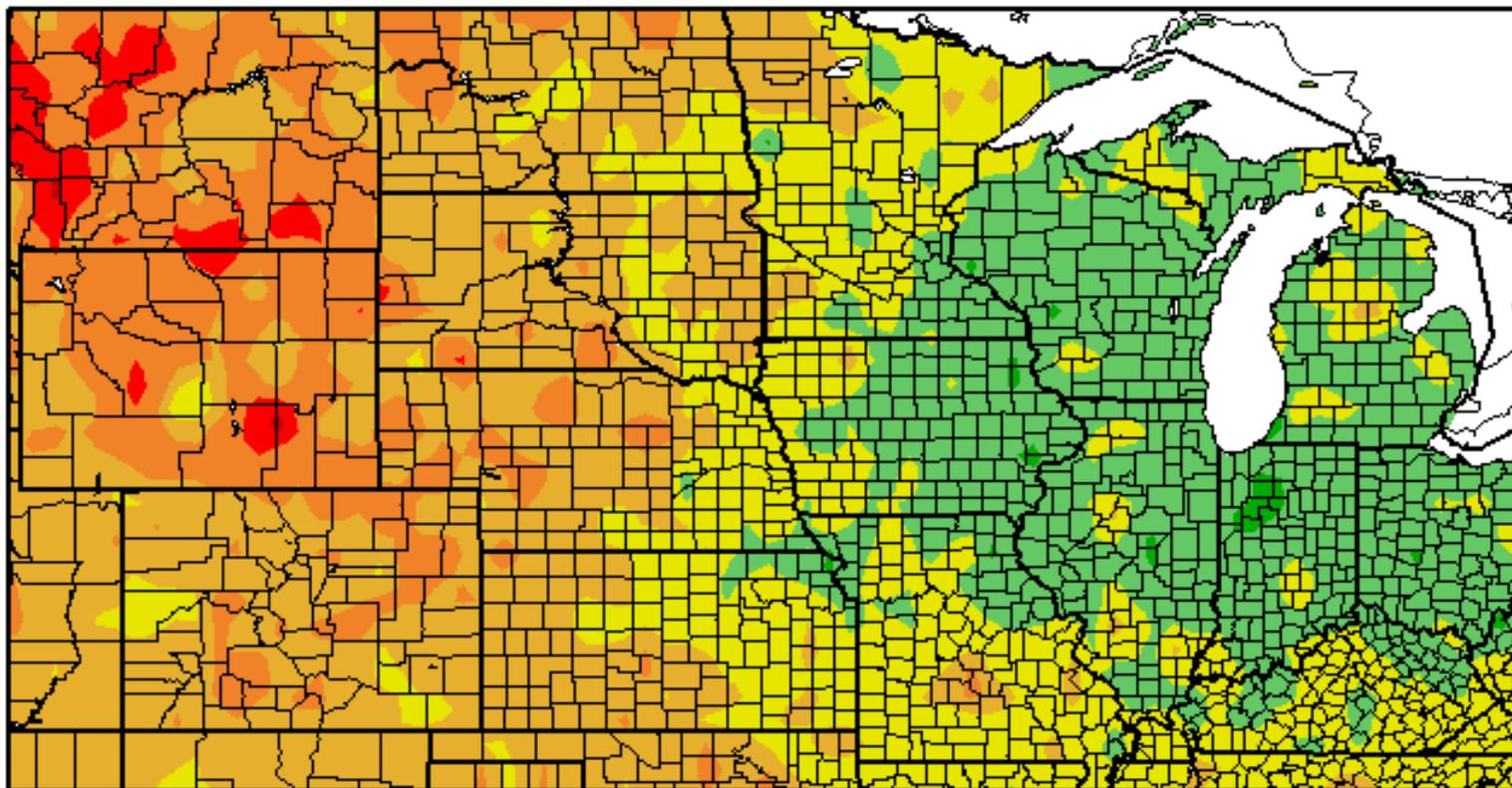
Current Conditions



30-Day Temperature Departure

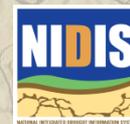
Departure from Normal Temperature (F)

9/16/2014 - 10/15/2014



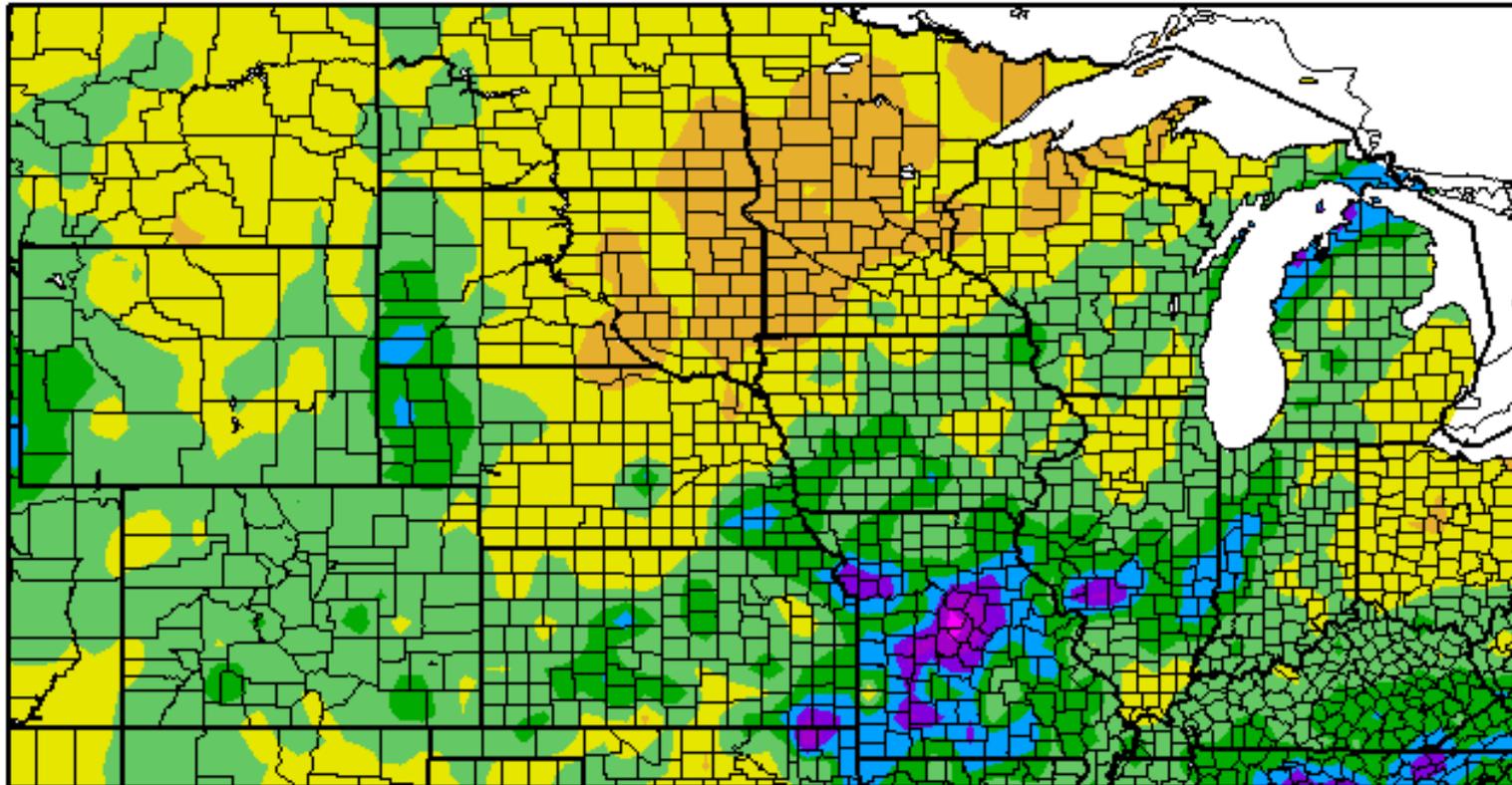
Generated 10/16/2014 at HPRCC using provisional data.

Regional Climate Centers



30-Day Precipitation Departure

Departure from Normal Precipitation (in)
9/16/2014 - 10/15/2014



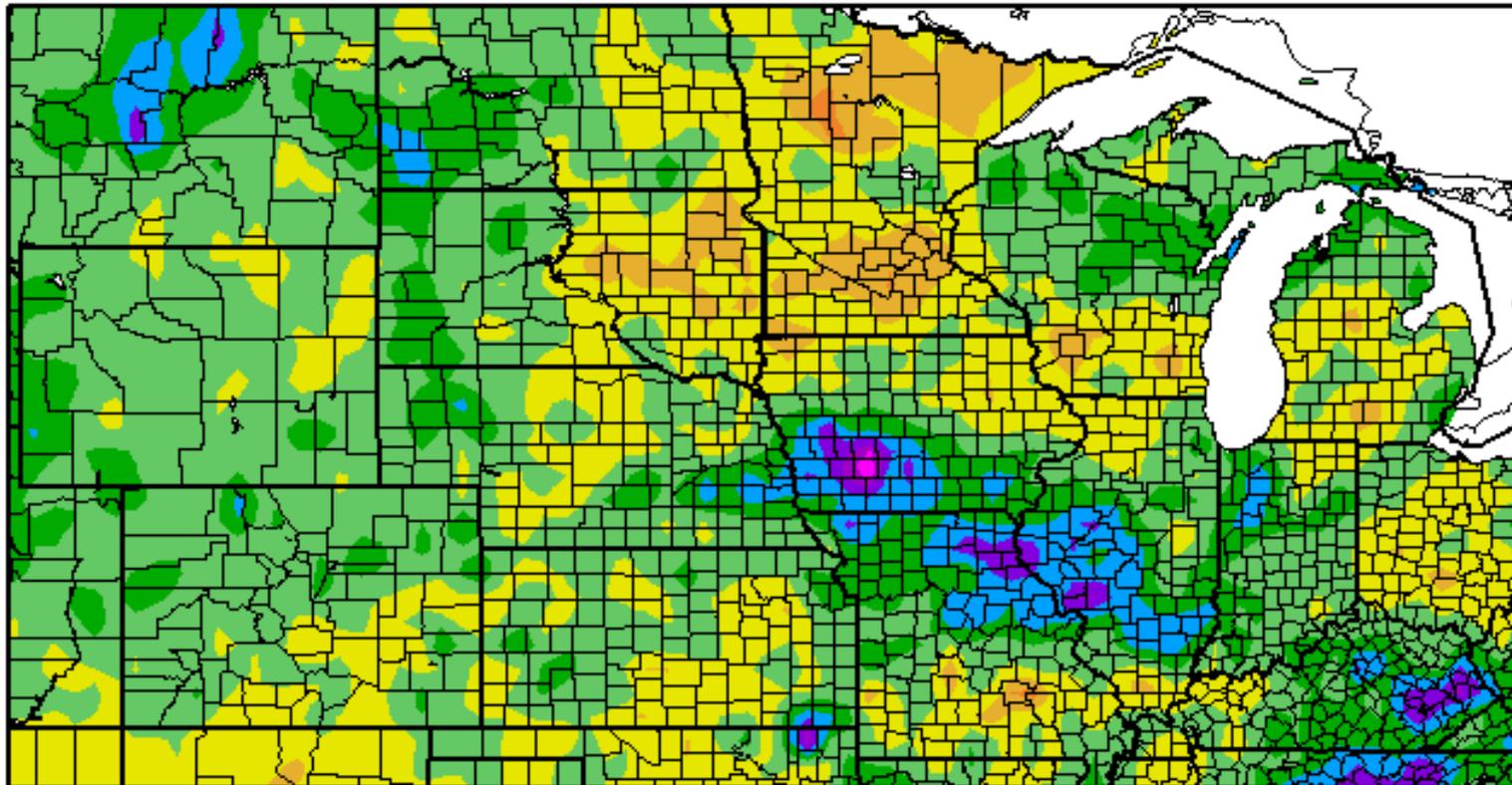
Generated 10/16/2014 at HPRCC using provisional data.

Regional Climate Centers



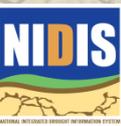
90-Day Precipitation Departure

Departure from Normal Precipitation (in)
7/18/2014 - 10/15/2014



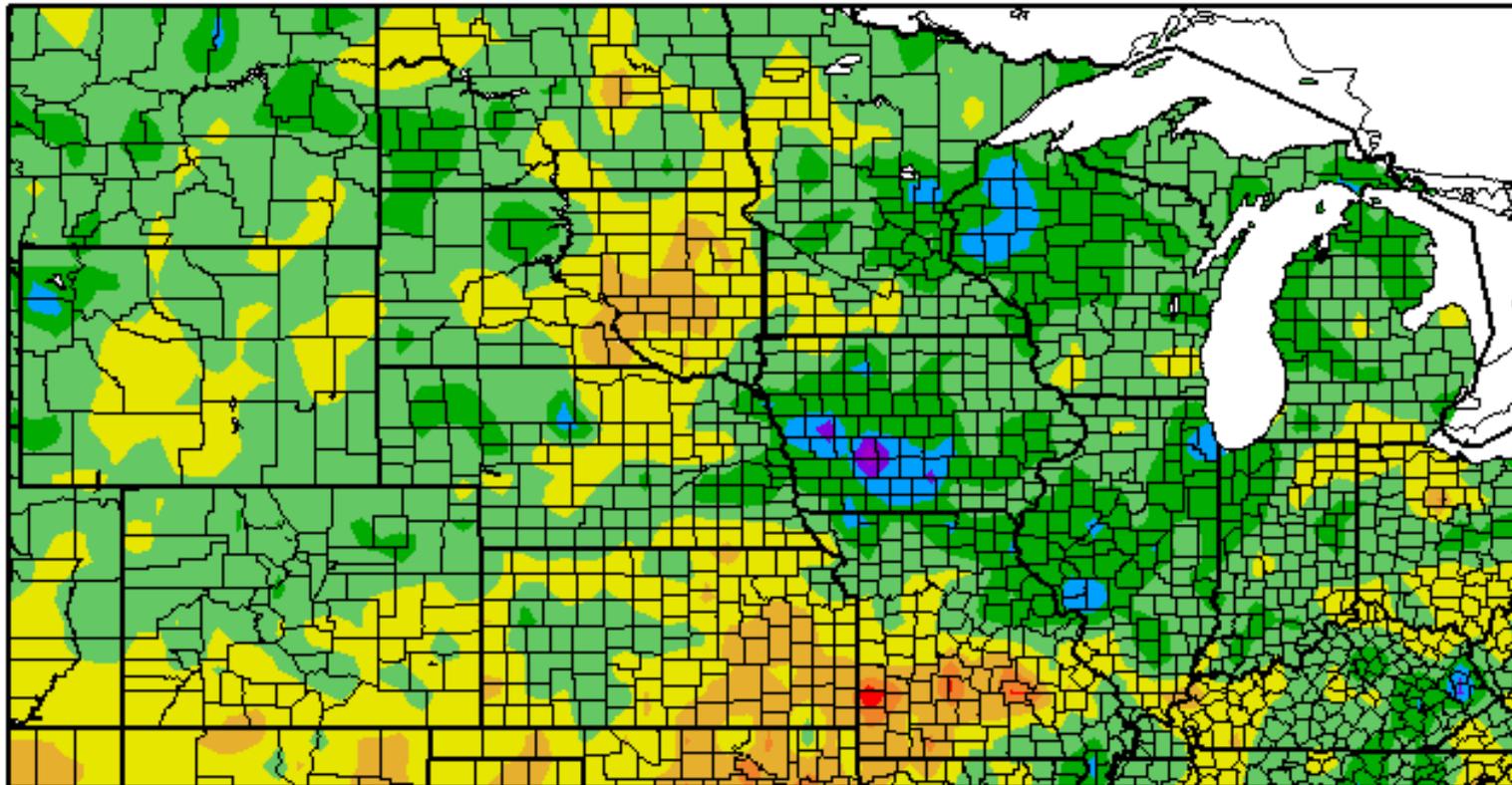
Generated 10/16/2014 at HPRCC using provisional data.

Regional Climate Centers



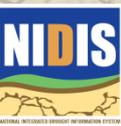
Year to Date Precipitation

Departure from Normal Precipitation (in)
1/1/2014 - 10/15/2014



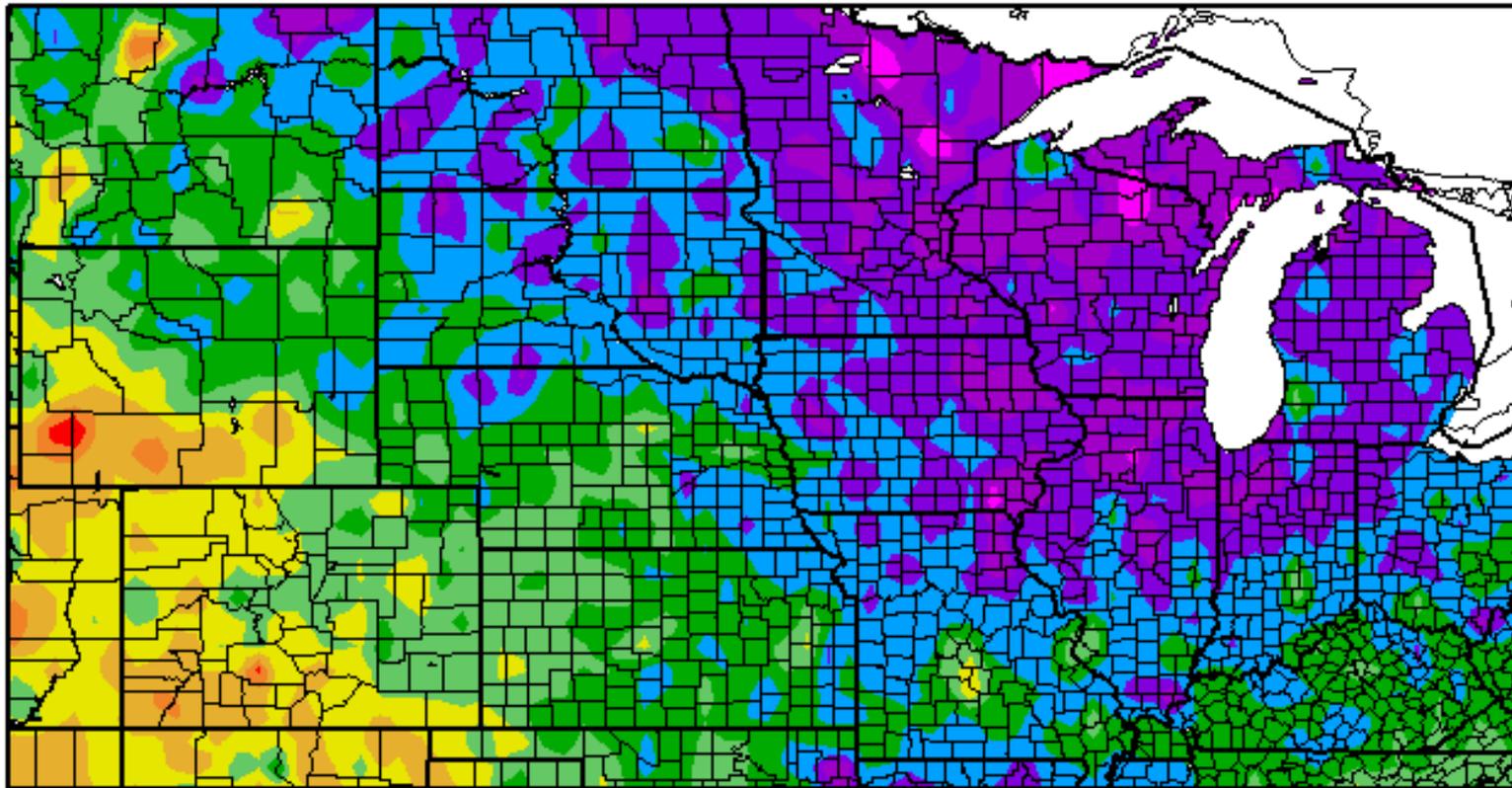
Generated 10/16/2014 at HPRCC using provisional data.

Regional Climate Centers



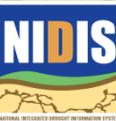
Year to Date Temperature

Departure from Normal Temperature (F)
1/1/2014 - 10/15/2014



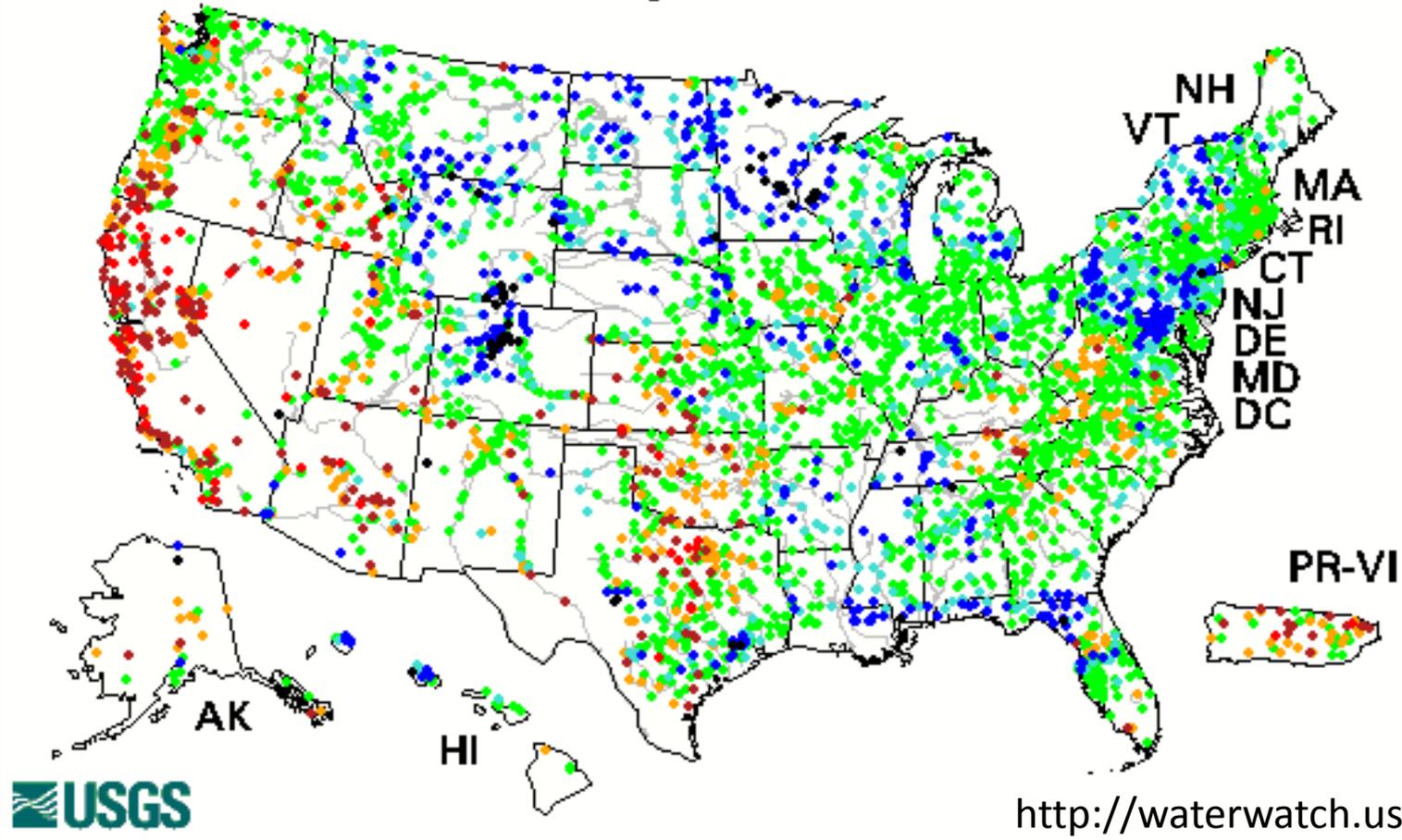
Generated 10/16/2014 at HPRCC using provisional data.

Regional Climate Centers



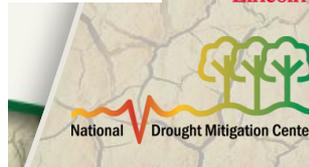
28-Day Average Streamflow

Wednesday, June 18, 2014



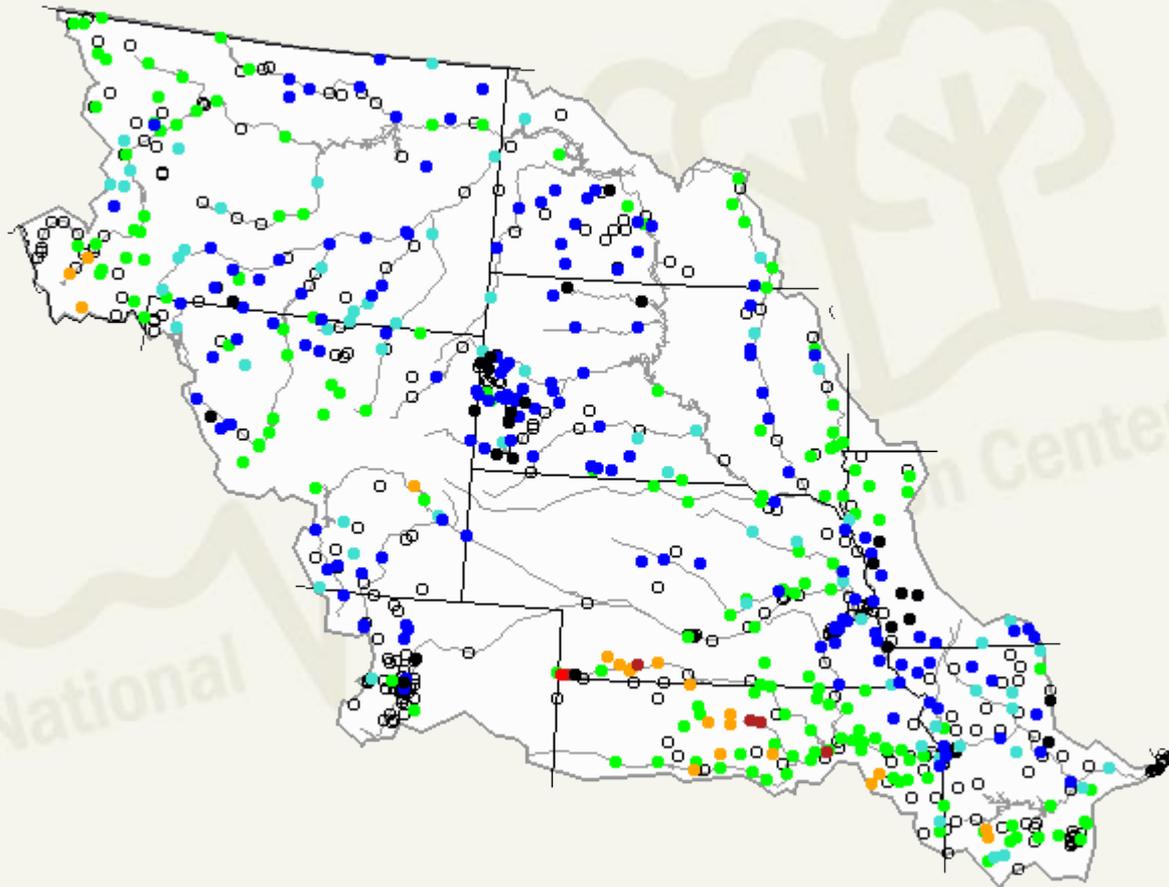
<http://waterwatch.usgs.gov/>

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

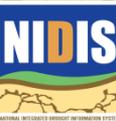


28-Day Average Streamflow

Wednesday, October 15, 2014

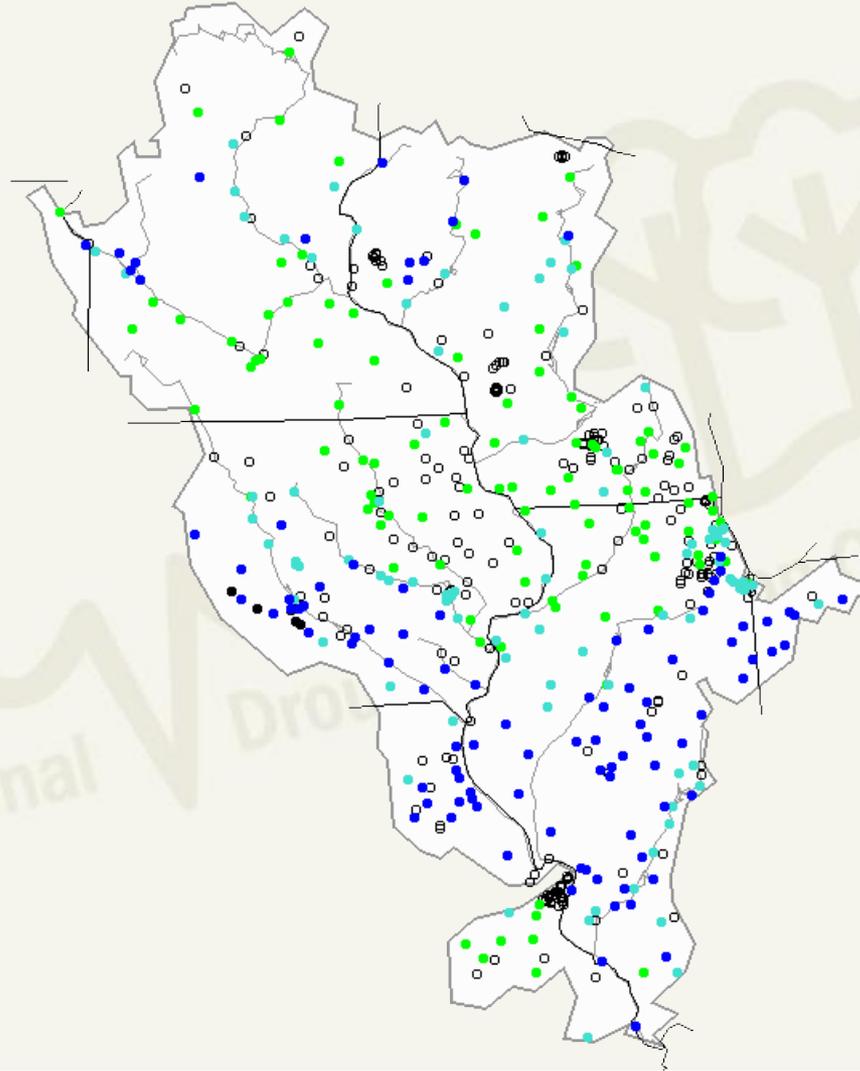


Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	



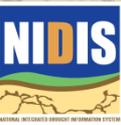
28-Day Average Streamflow

Wednesday, October 15, 2014



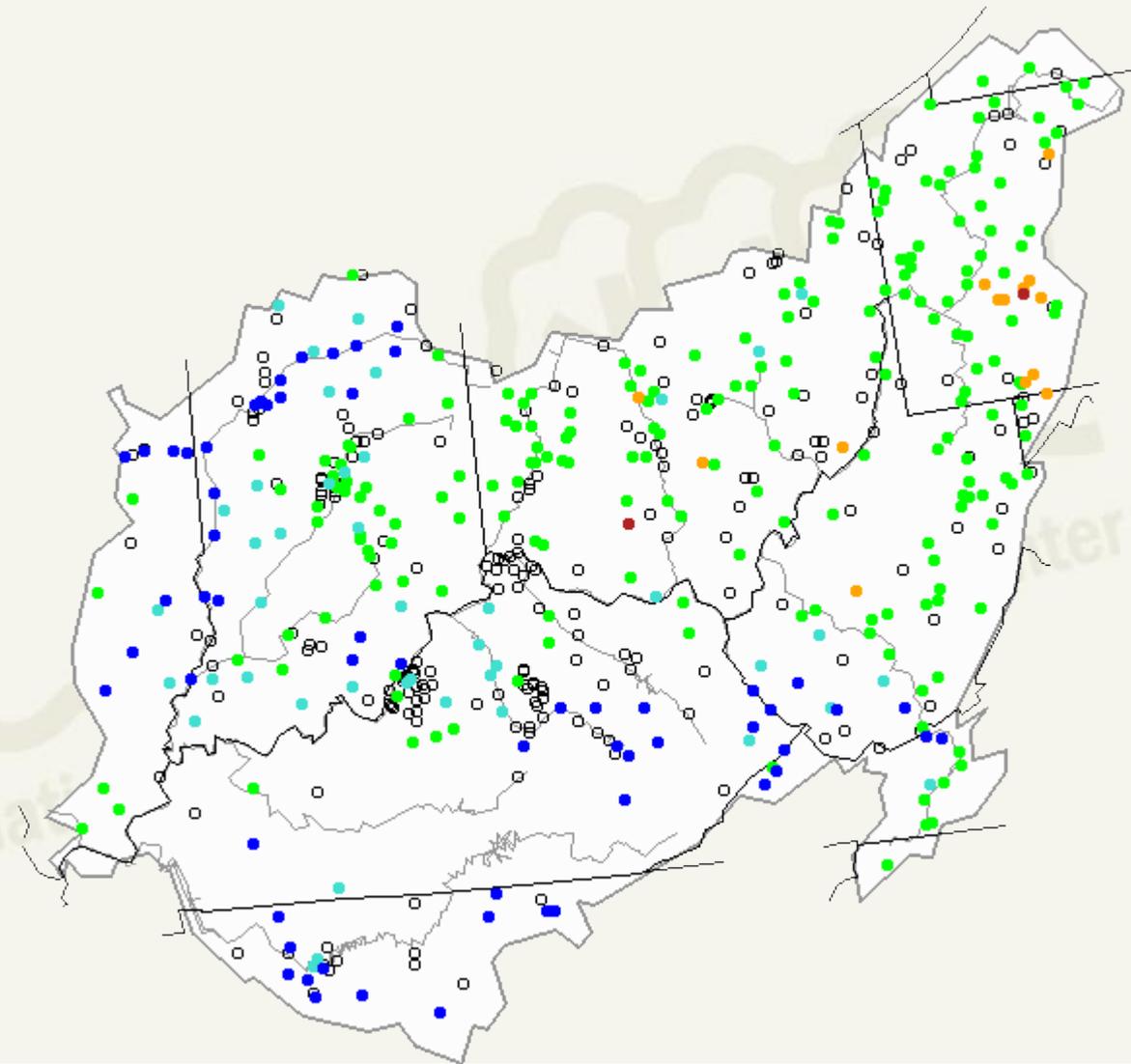
Explanation - Percentile classes

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

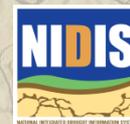


28-Day Average Streamflow

Wednesday, October 15, 2014



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

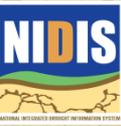




Great Lakes

➤ Lake Michigan and Lake Huron water level may do something only achieved 4 times in the last 154 years: Achieving a high water mark in October.

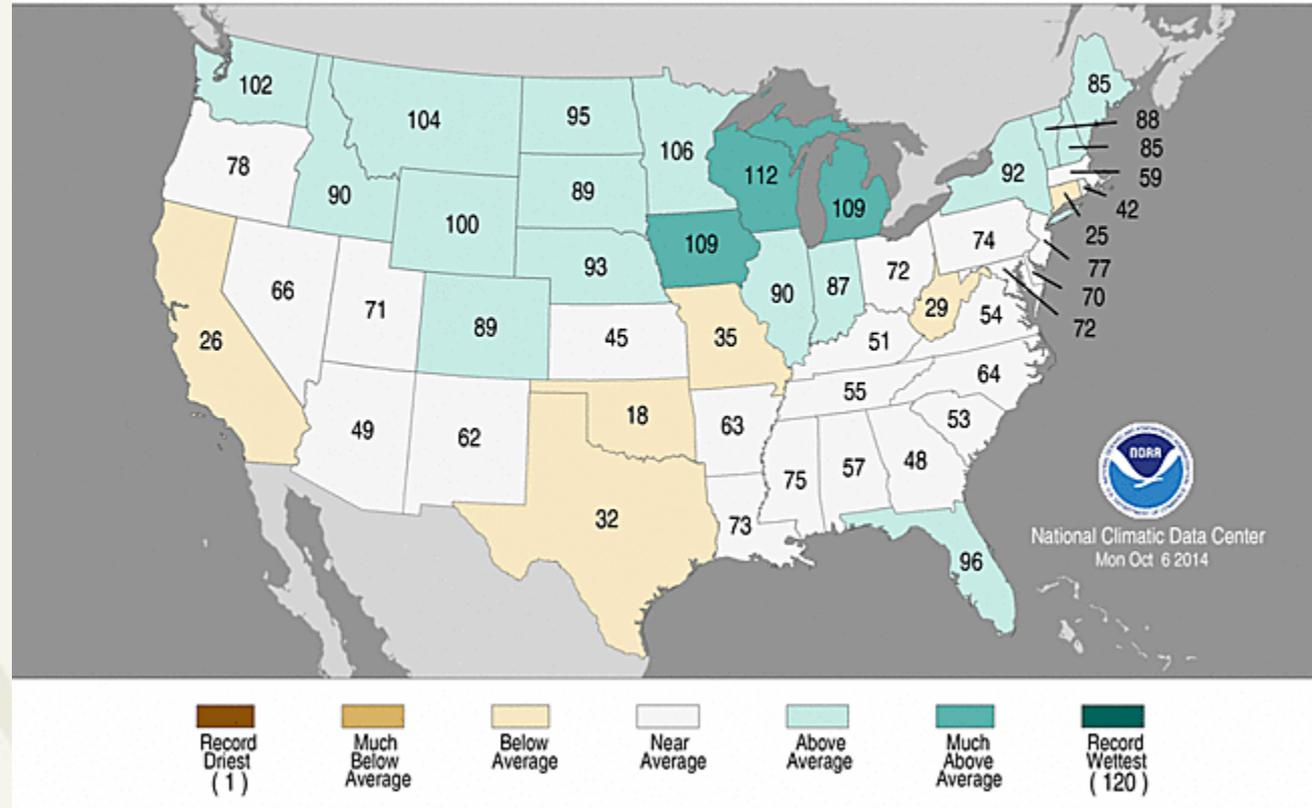
○ Lake Michigan-Huron has *never had its high water mark in November.*



Statewide Precipitation Ranks

January–September 2014

Period: 1895–2014



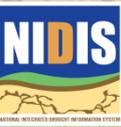
Near record precipitation in many of the states around the Great Lakes contributing to the high levels.

Whole Lake Surface Water Temperature - October 9

Lake	2014	2013	Normal
Lake Superior	47.6°	53.7°	51.1°
Lake Michigan	56.0°	62.1°	58.4°
Lake Huron	55.6°	60.6°	57.1°

Below normal temperatures for the Great Lakes:

<http://www.glerl.noaa.gov/data/now/wlevels/levels.html>



Agriculture

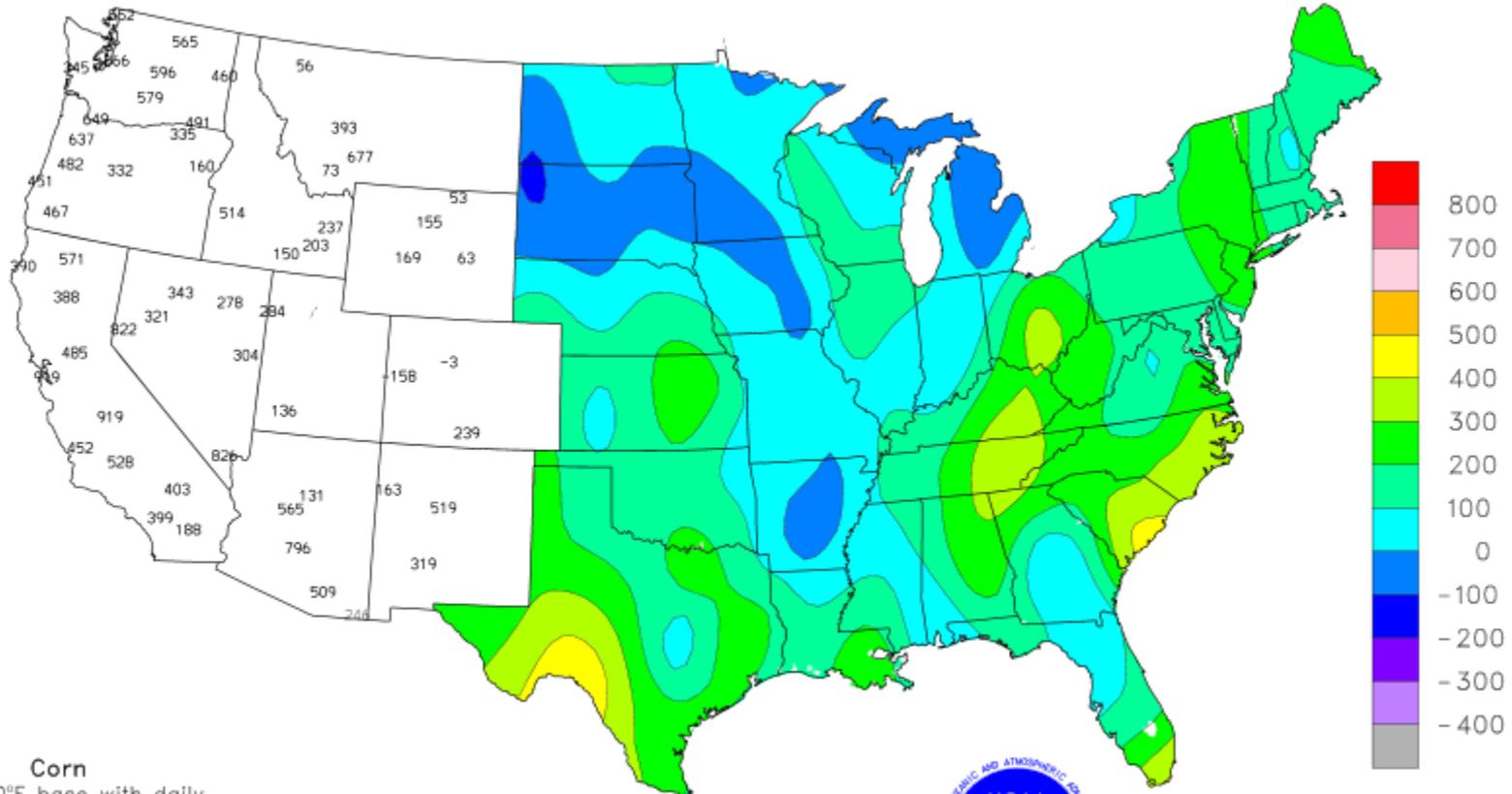


UNIVERSITY OF
Nebraska
Lincoln



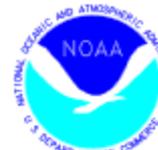
Departure From Normal Growing Degree Days

APR 1 - OCT 4, 2014



Corn

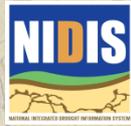
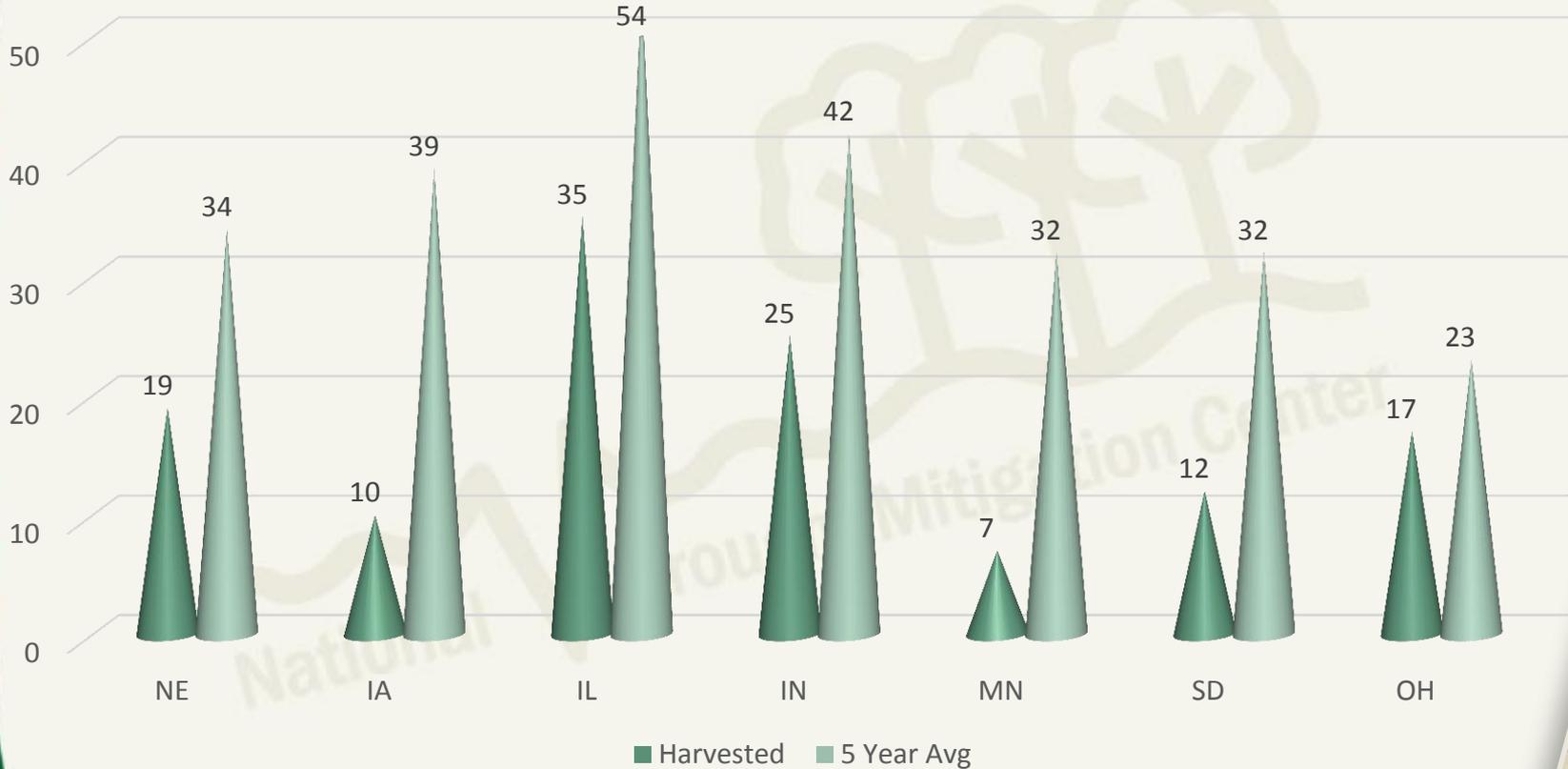
Computed to 50°F base with daily maximum temperature limited to 86°F or less and daily minimum to 50°F or more.



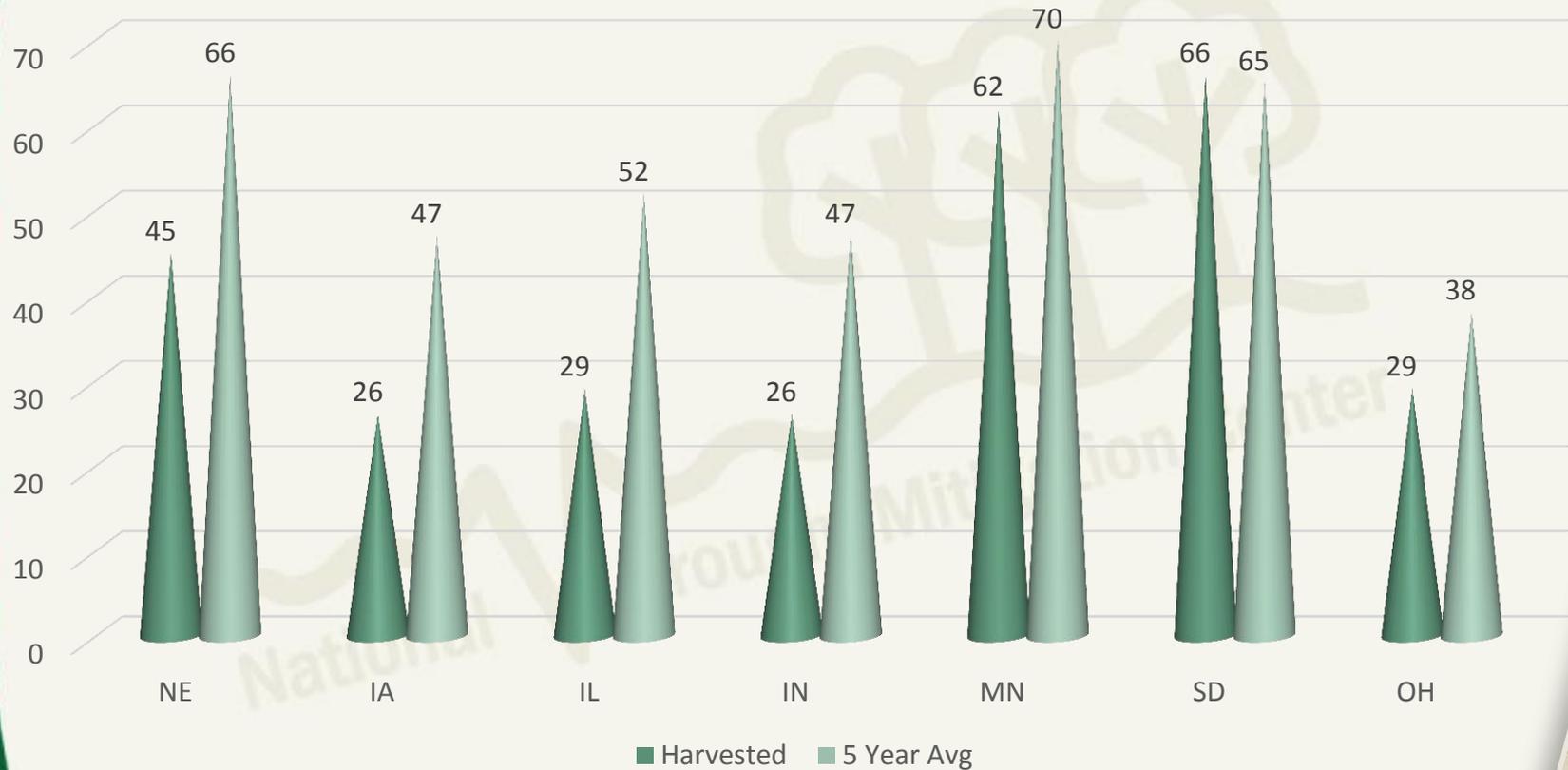
Below normal growing degree day (GDD) accumulation contributing to a delay in crops maturing and slowing down harvest



Corn Harvest

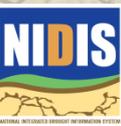
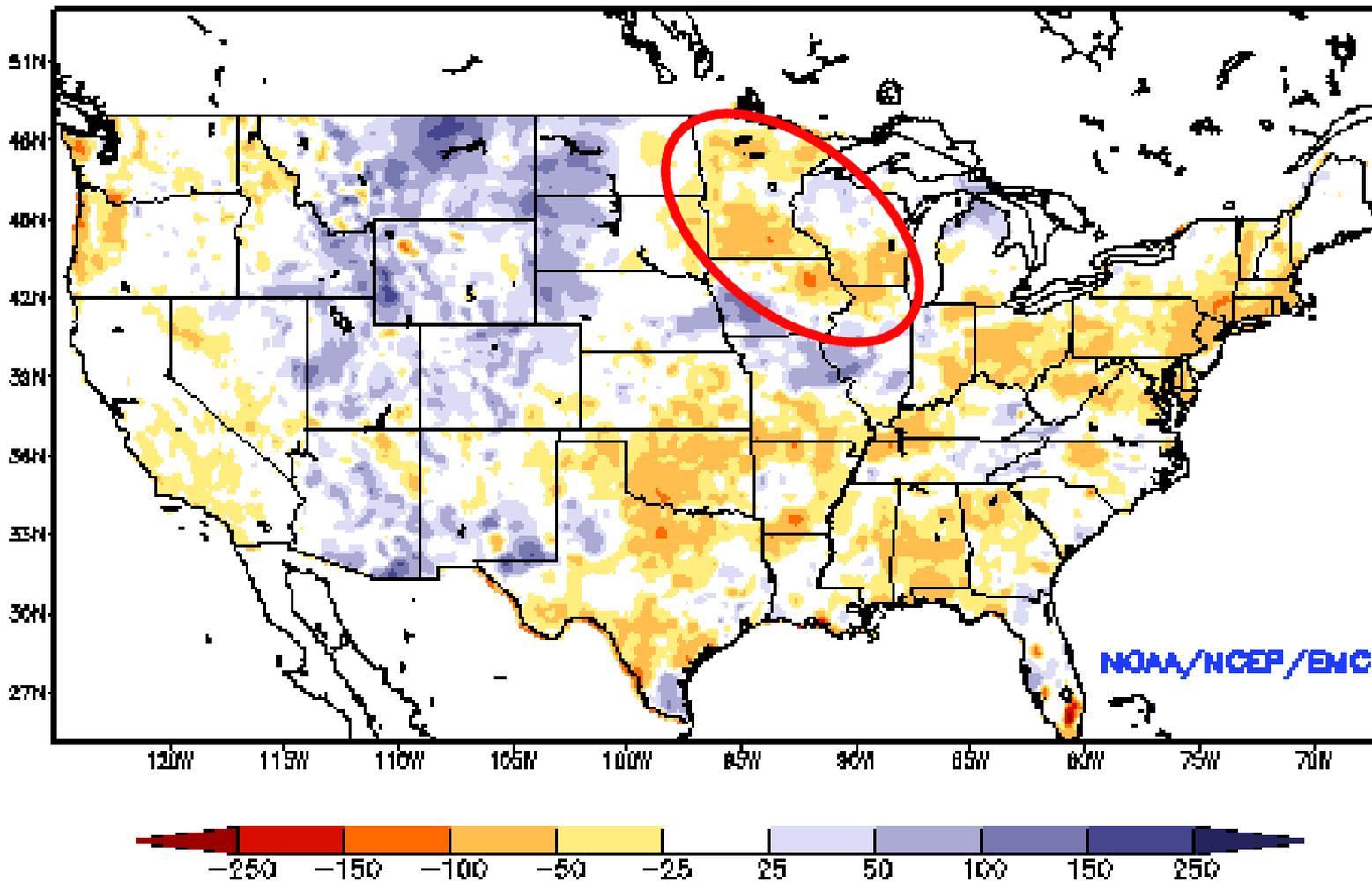


Soybean Harvest



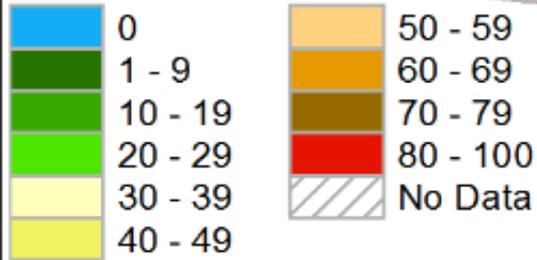
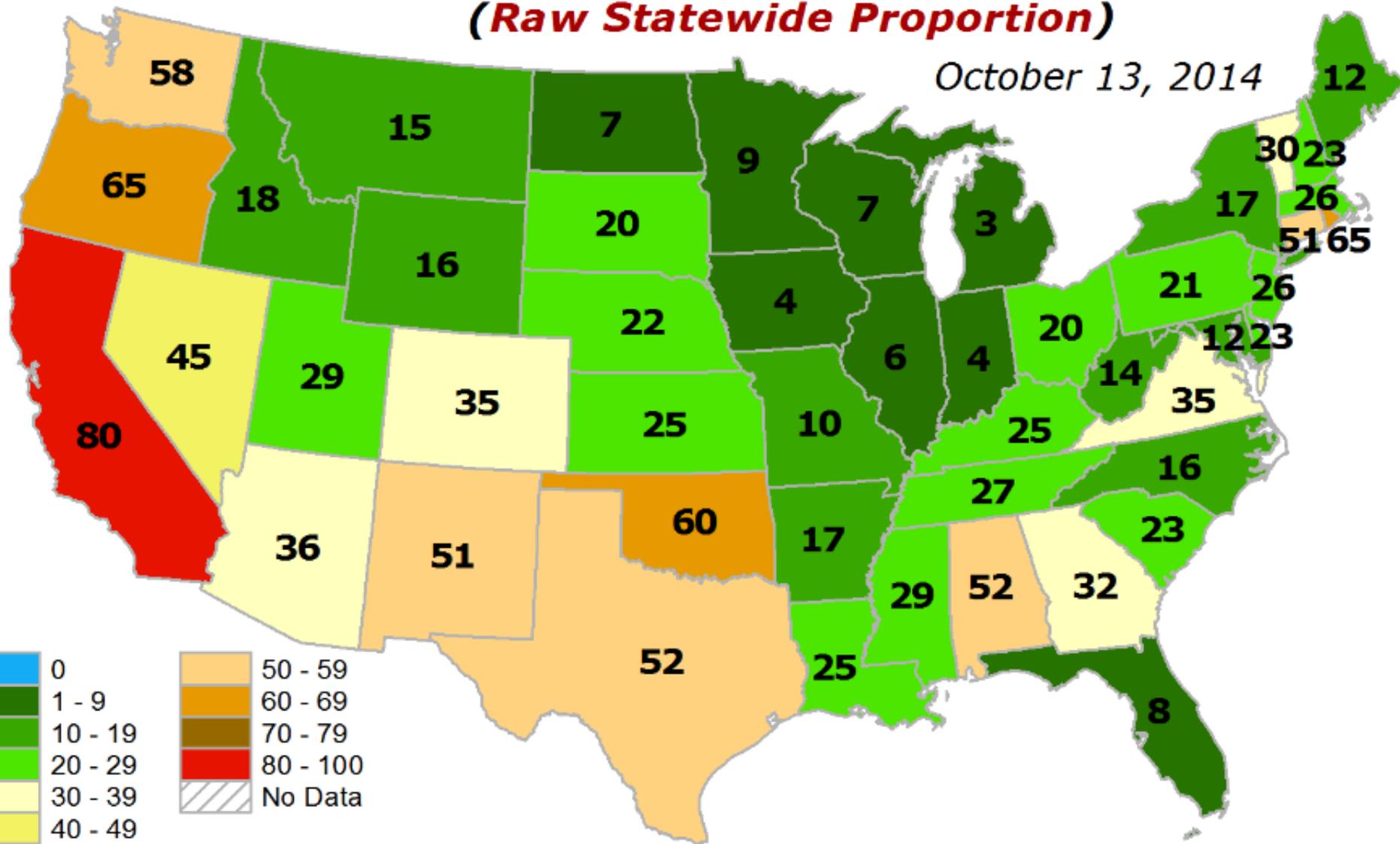
Soil Moisture Anomaly

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



Extent of Topsoil Short or Very Short of Moisture (*Raw Statewide Proportion*)

October 13, 2014

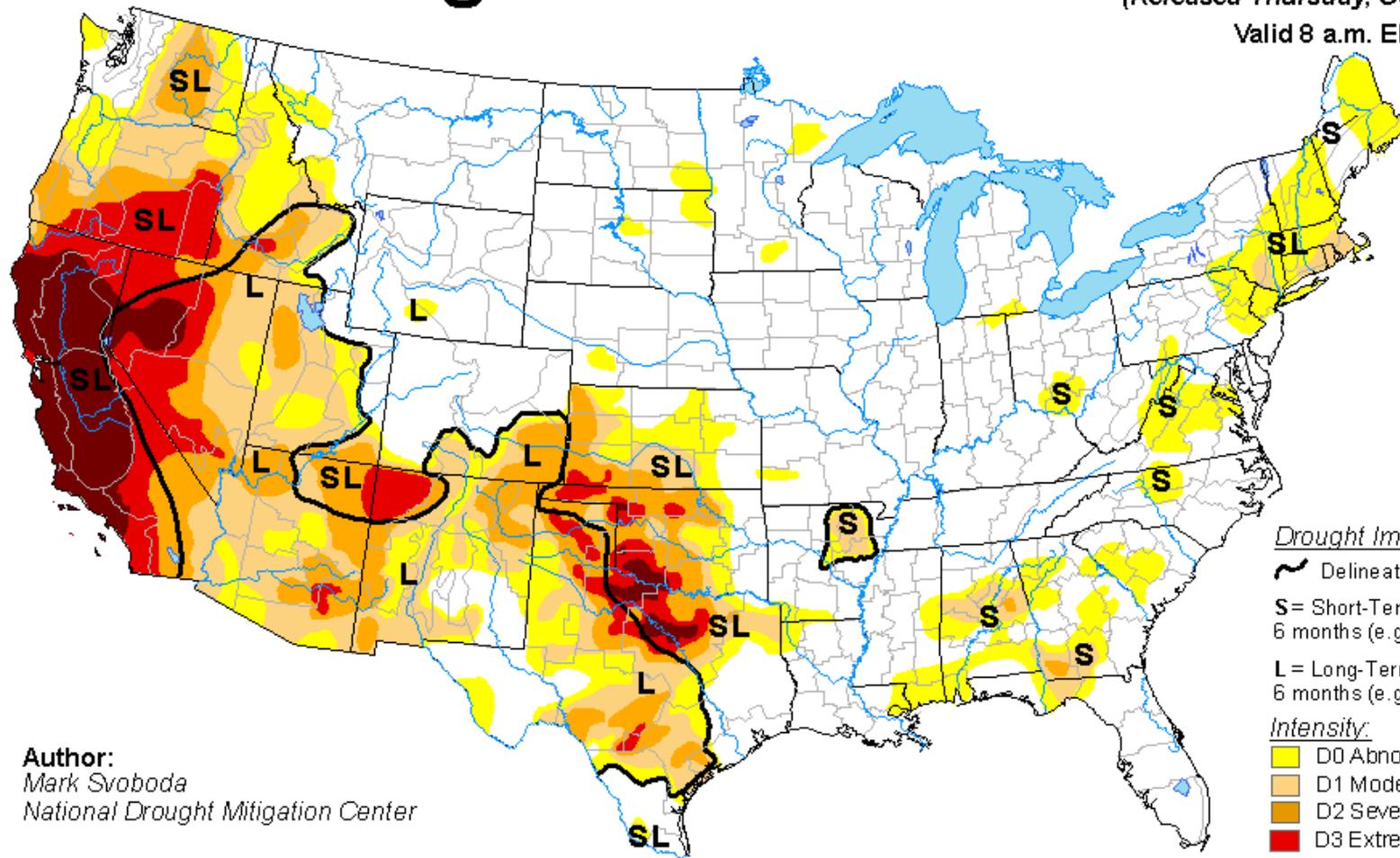


U.S. Drought Monitor

October 14, 2014

(Released Thursday, Oct. 16, 2014)

Valid 8 a.m. EDT



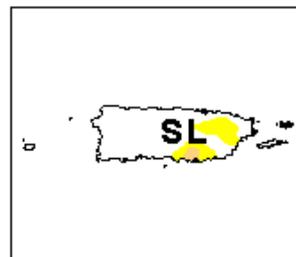
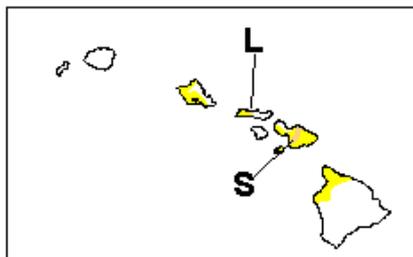
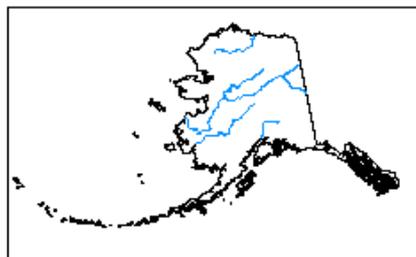
Author:
Mark Svoboda
National Drought Mitigation Center

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:

- 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.



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

Drought Condition (Percent Area): United States

Statistics type: Traditional (D0-D4, D1-D4, etc.) Categorical (D0, D1, etc.)

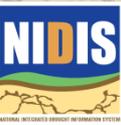
Conditions for the U.S., including Alaska, Hawaii and Puerto Rico

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2014-10-14	62.83	37.17	24.89	15.15	7.77	3.24
Last Week	2014-10-07	60.65	39.35	25.50	15.59	7.90	3.24
3 Months Ago	2014-07-15	61.98	38.02	28.55	20.15	9.92	2.39
Start of Calendar Year	2013-12-31	54.20	45.80	26.01	13.96	3.31	0.31
Start of Water Year	2014-09-30	59.89	40.11	25.54	15.59	7.86	3.22
One Year Ago	2013-10-15	48.95	51.05	33.45	15.18	2.31	0.24

Conditions for the Contiguous U.S.

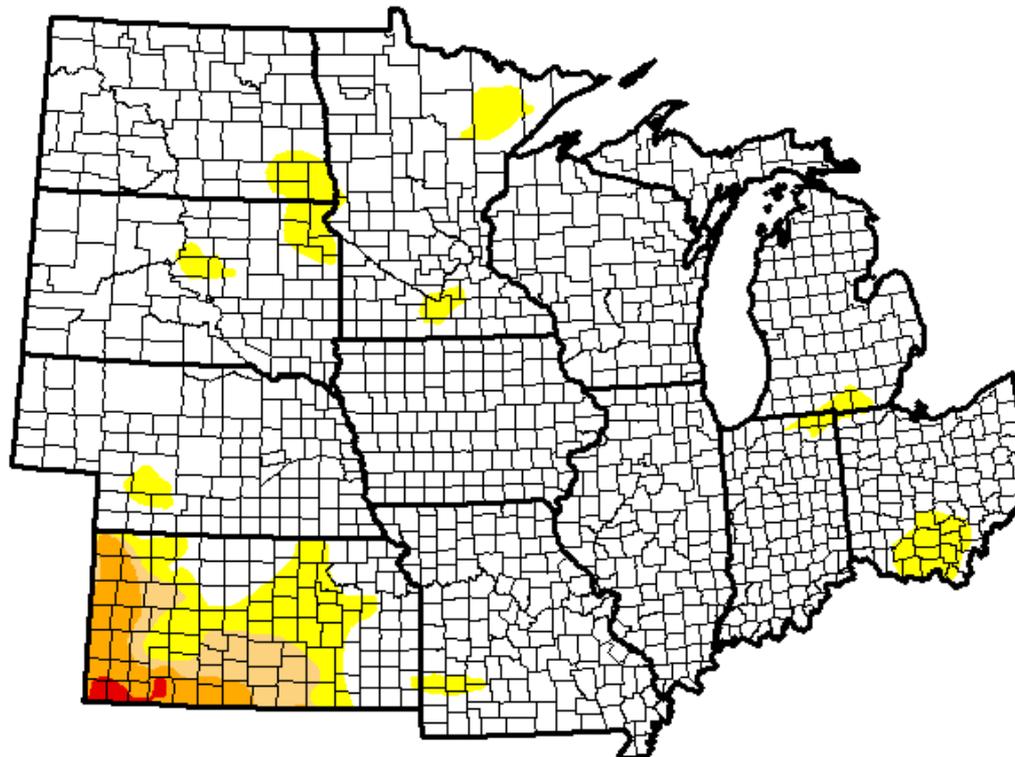
Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2014-10-14	55.59	44.41	29.78	18.14	9.30	3.87
Last Week	2014-10-07	53.03	46.97	30.51	18.66	9.46	3.87
3 Months Ago	2014-07-15	54.61	45.39	34.16	24.12	11.87	2.86
Start of Calendar Year	2013-12-31	48.24	51.76	30.95	16.67	3.96	0.37
Start of Water Year	2014-09-30	52.22	47.78	30.57	18.66	9.41	3.85
One Year Ago	2013-10-15	45.24	54.76	36.71	18.13	2.75	0.29

Drought is impacting less than 30% of the contiguous United States for the first time since December 2011 but just over **74,000,000** people are still being impacted by drought



U.S. Drought Monitor North Central

October 14, 2014
(Released Thursday, Oct. 16, 2014)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	89.03	6.95	1.93	1.85	0.24	0.00
Last Week <i>10/7/2014</i>	85.12	9.82	2.96	1.85	0.24	0.00
3 Months Ago <i>7/15/2014</i>	83.09	6.13	6.80	2.89	1.09	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>9/30/2014</i>	84.94	9.86	3.11	1.84	0.26	0.00
One Year Ago <i>10/15/2013</i>	48.93	24.96	14.28	10.80	1.03	0.00

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.

Author:

Mark Svoboda
National Drought Mitigation Center



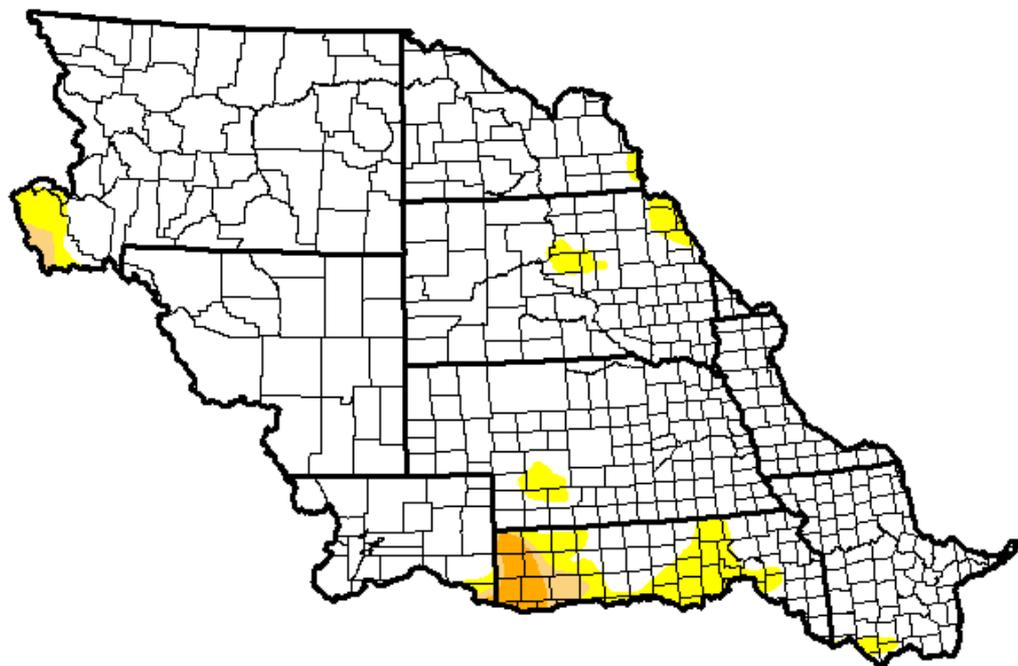
U.S. Drought Monitor

Missouri Watershed

October 14, 2014
 (Released Thursday, Oct. 16, 2014)
 Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	93.21	5.05	0.86	0.89	0.00	0.00
Last Week <i>10/7/2014</i>	91.89	6.06	1.16	0.89	0.00	0.00
3 Months Ago <i>7/15/2014</i>	83.72	8.40	6.84	0.47	0.57	0.00
Start of Calendar Year <i>12/31/2013</i>	63.00	20.27	9.75	5.57	1.41	0.00
Start of Water Year <i>9/30/2014</i>	90.62	7.11	1.38	0.89	0.00	0.00
One Year Ago <i>10/15/2013</i>	60.02	19.55	11.11	8.14	1.19	0.00



Intensity:

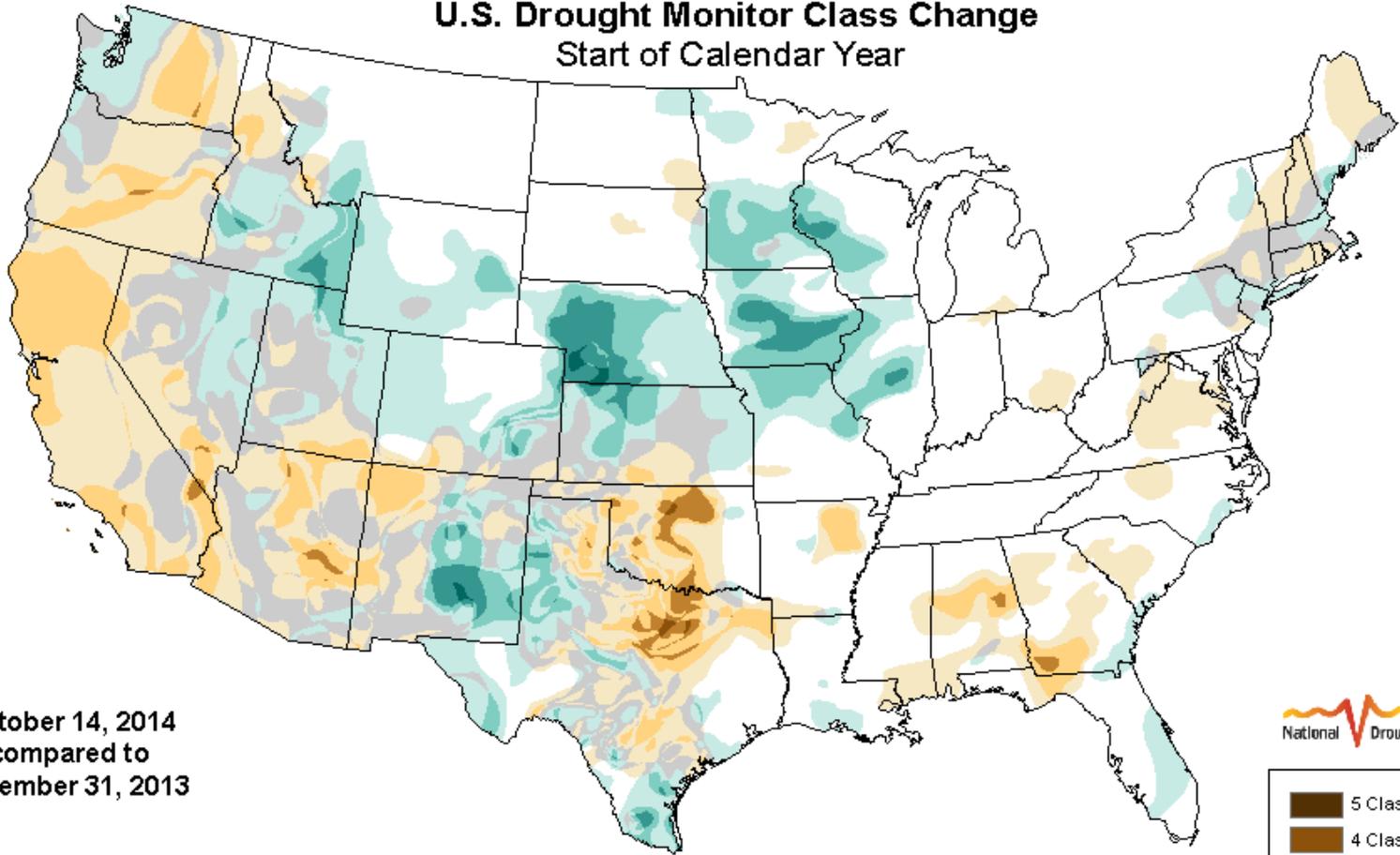
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

Author:
 Mark Svoboda
 National Drought Mitigation Center



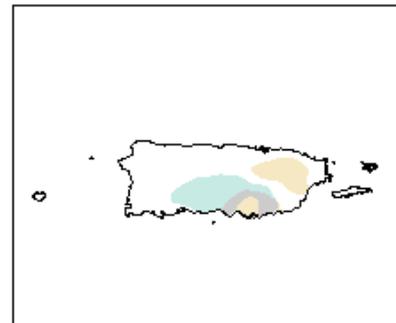
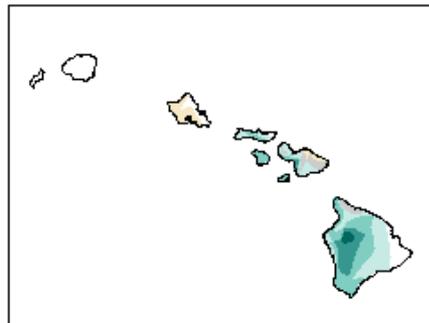
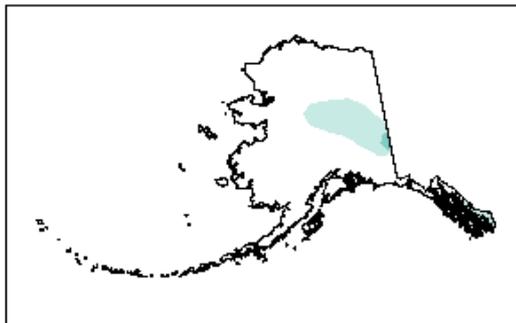
U.S. Drought Monitor Class Change Start of Calendar Year



October 14, 2014
compared to
December 31, 2013



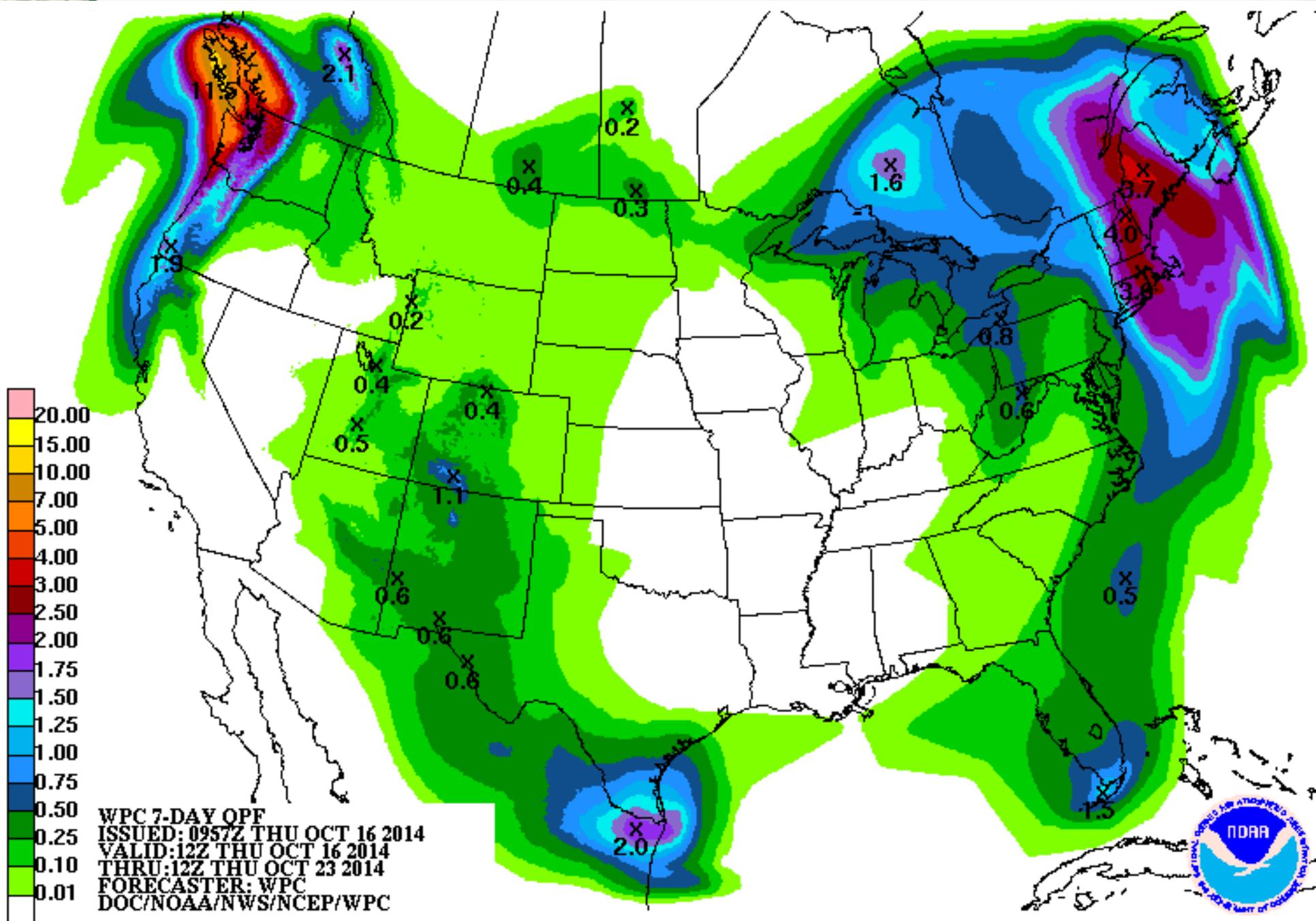
- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement



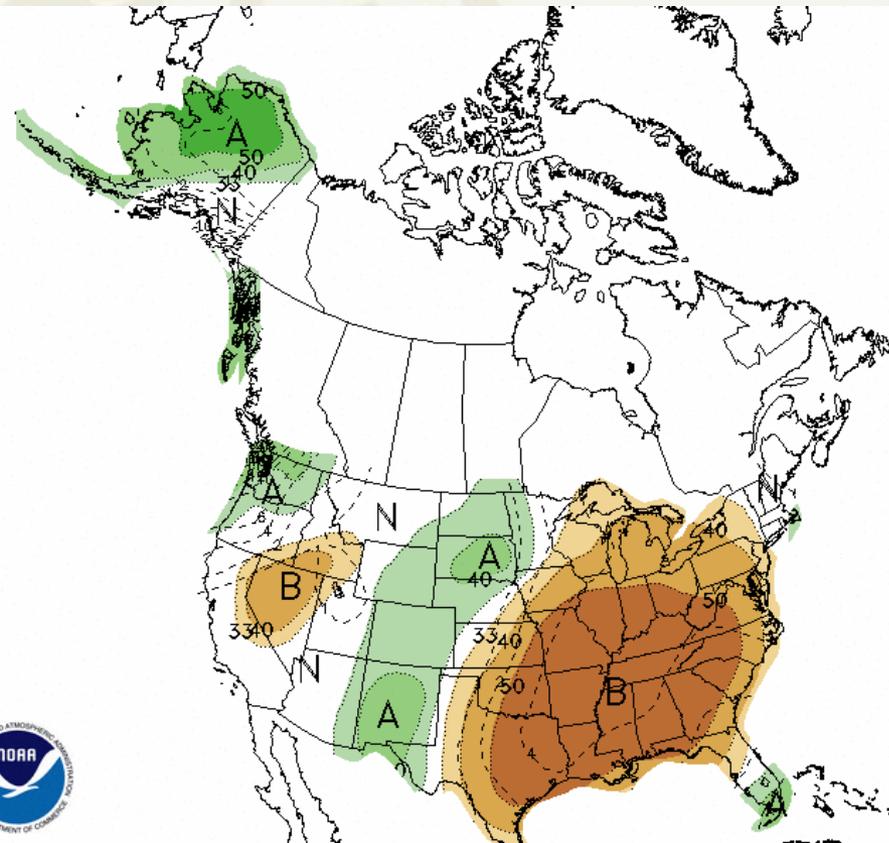
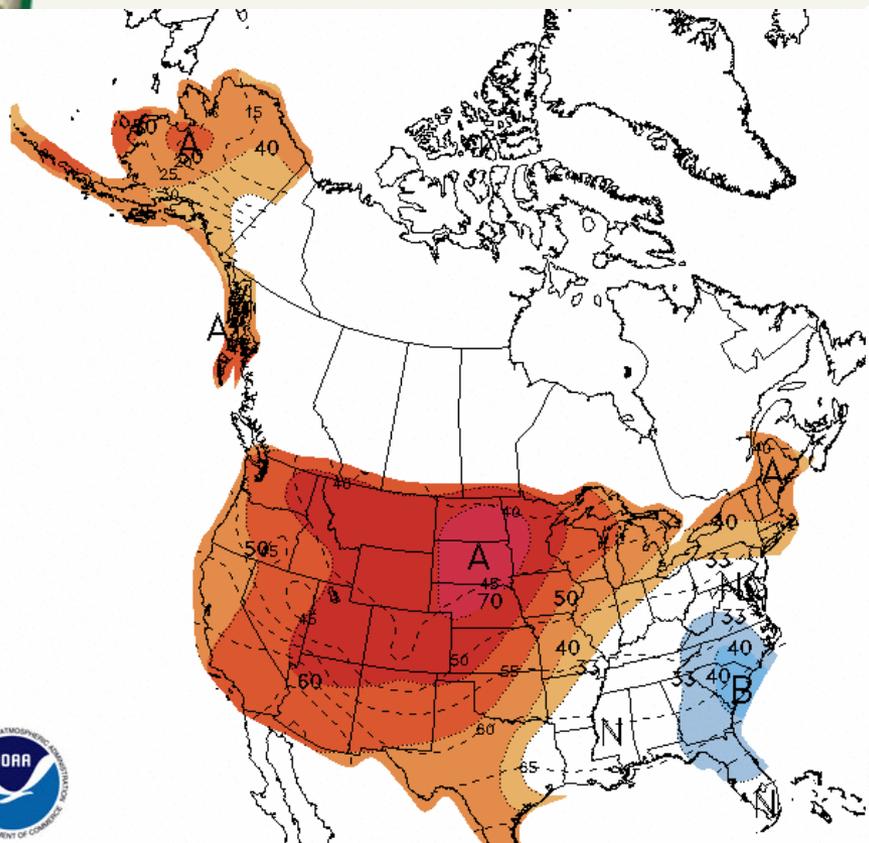
Climate Outlooks

- **7-day precipitation forecast**
- **8-14 day outlook**
- **Monthly/Seasonal**
- **Winter Outlook (Dec-Feb)**
- **Seasonal Drought Outlooks**





8-14 day Outlook

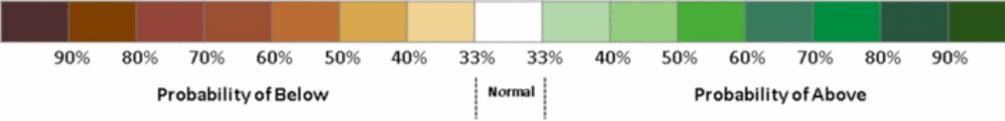
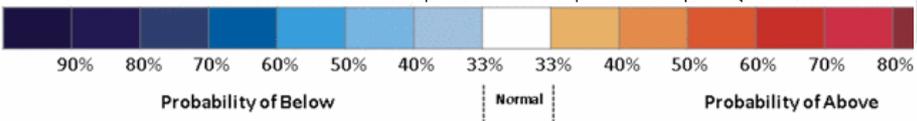


8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 15 OCT 2014
VALID OCT 23 - 29, 2014

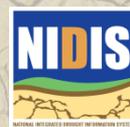
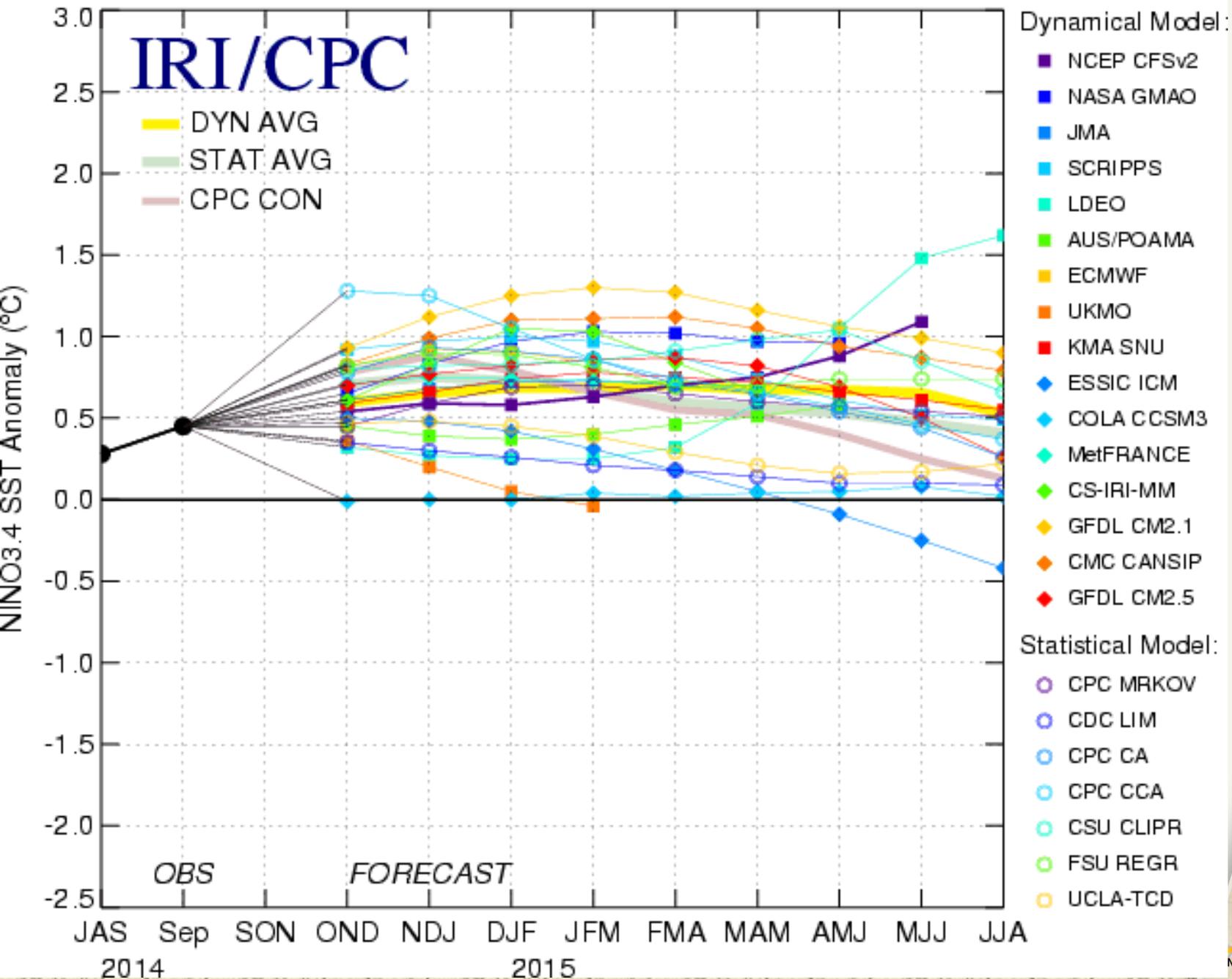
DASHED BLACK LINES ARE CLIMATE (DEG F) SHADED AREAS ARE FCS1 VALUES ABOVE (A) OR BELOW (B) UNSHADED AREAS ARE NEAR-NORMAL

8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 15 OCT 2014
VALID OCT 23 - 29, 2014

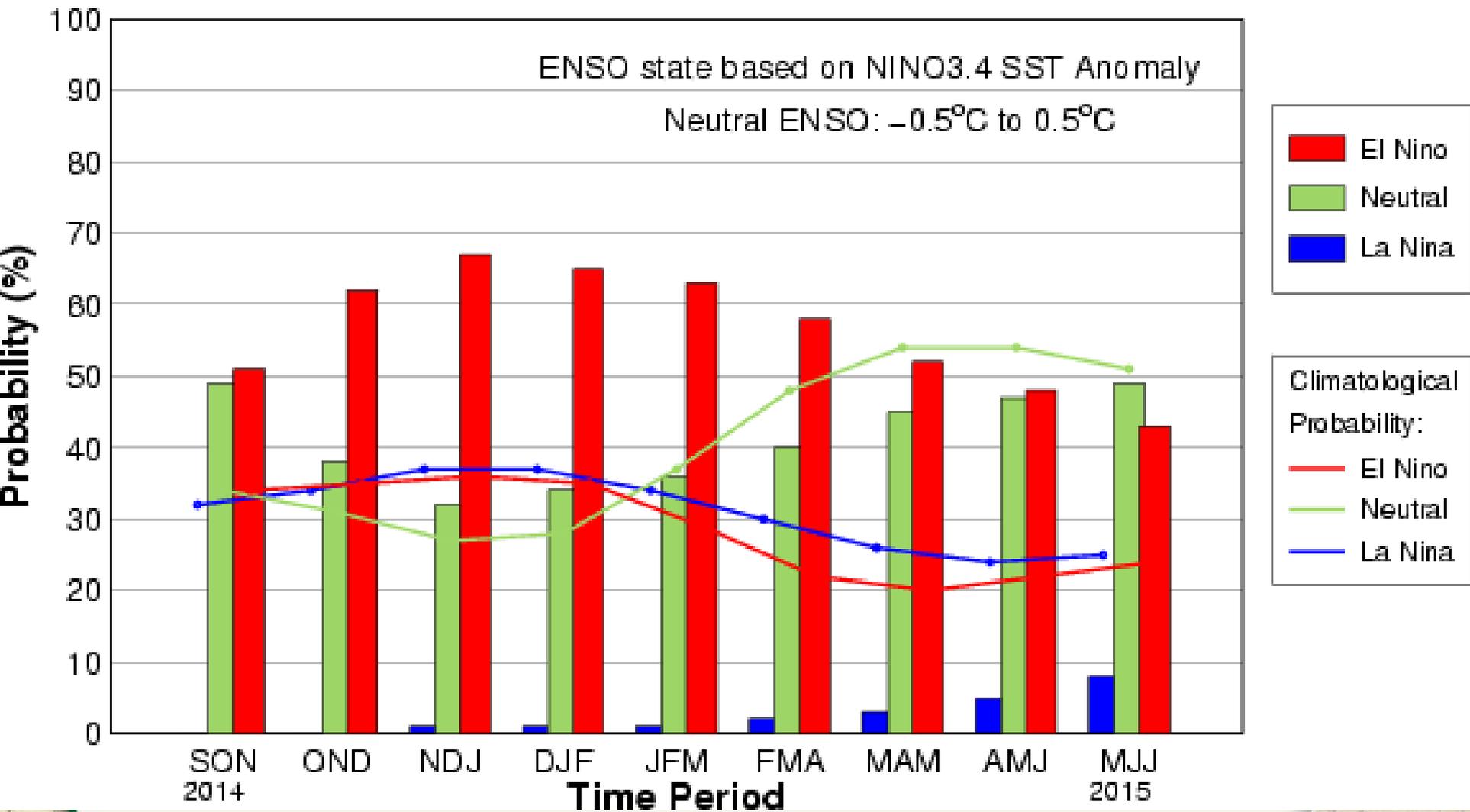
DASHED BLACK LINES ARE CLIMATOLOGY (TENTH OF INCHES) SHADED AREAS ARE FCS1 VALUES ABOVE (A) OR BELOW (B) UNSHADED AREAS ARE NEAR-MEDIAN



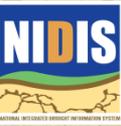
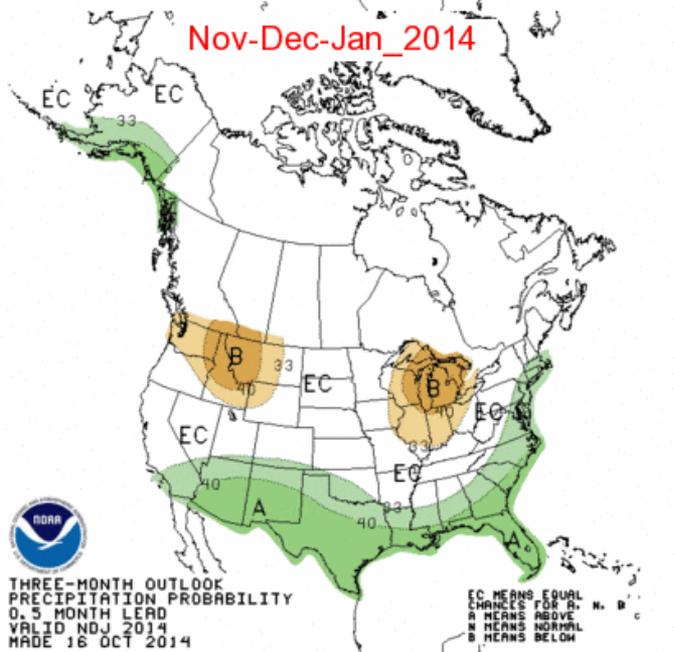
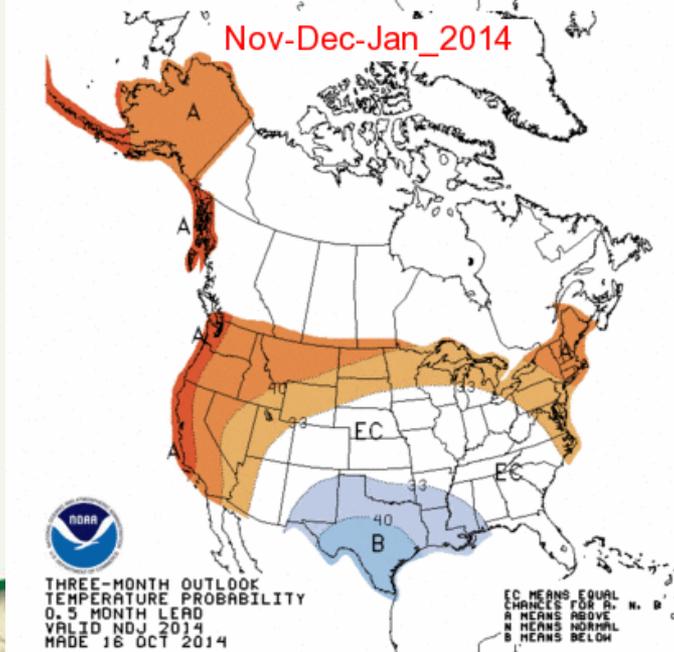
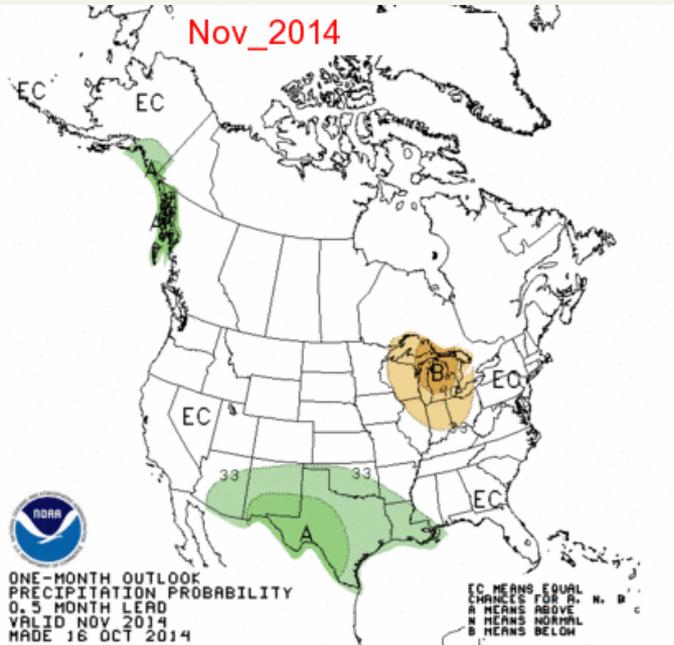
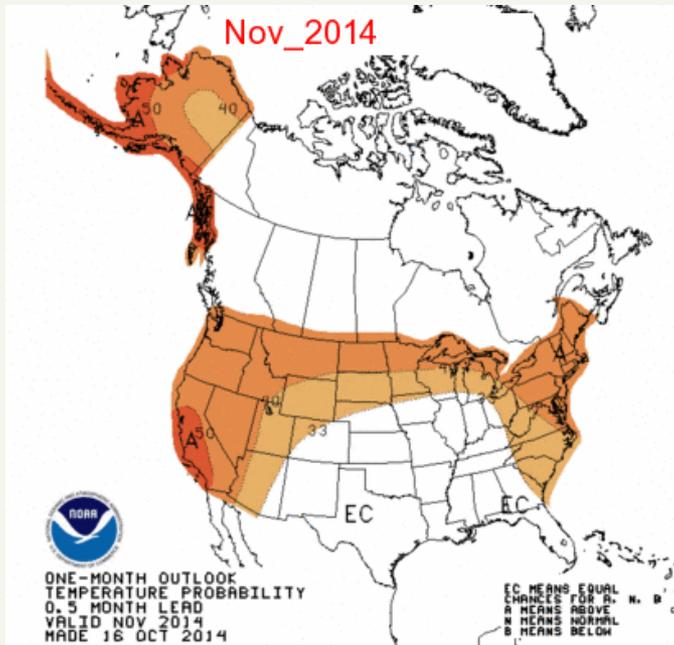
Mid-Oct 2014 Plume of Model ENSO Predictions



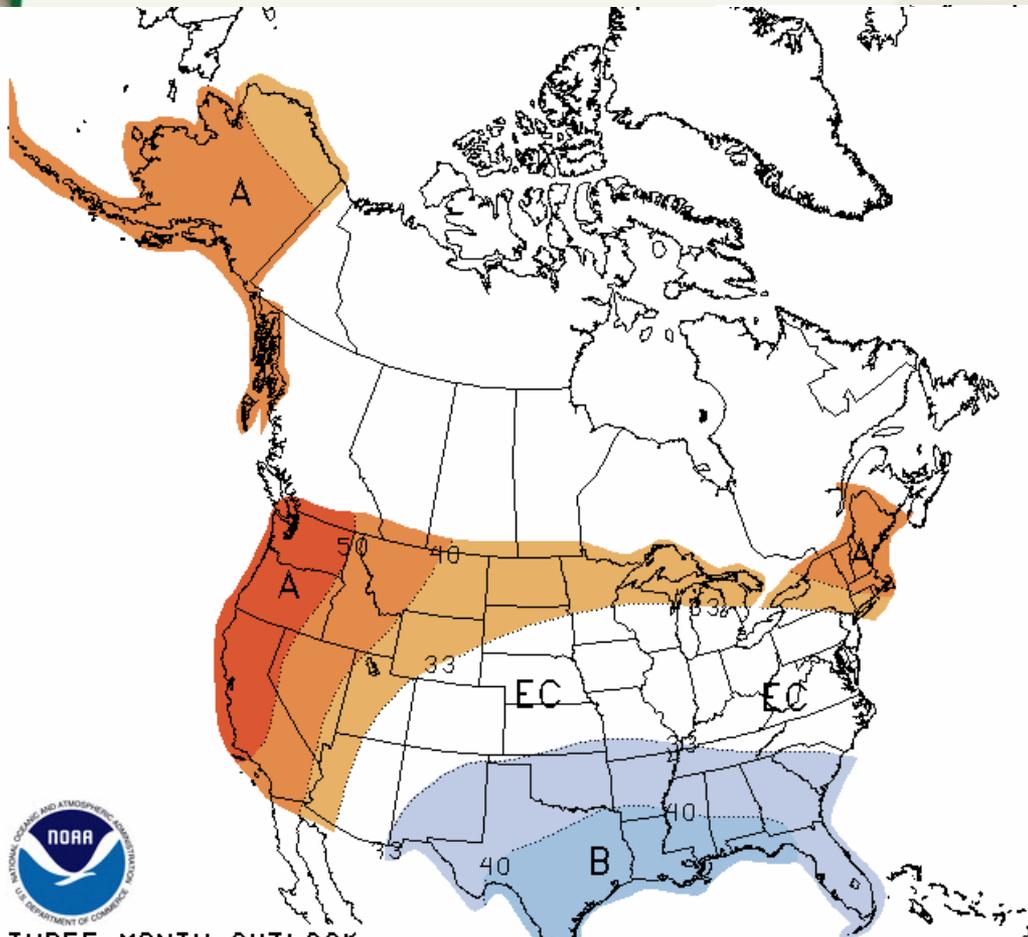
Early-Oct CPC/IRI Consensus Probabilistic ENSO Forecast



Monthly and Seasonal Outlook

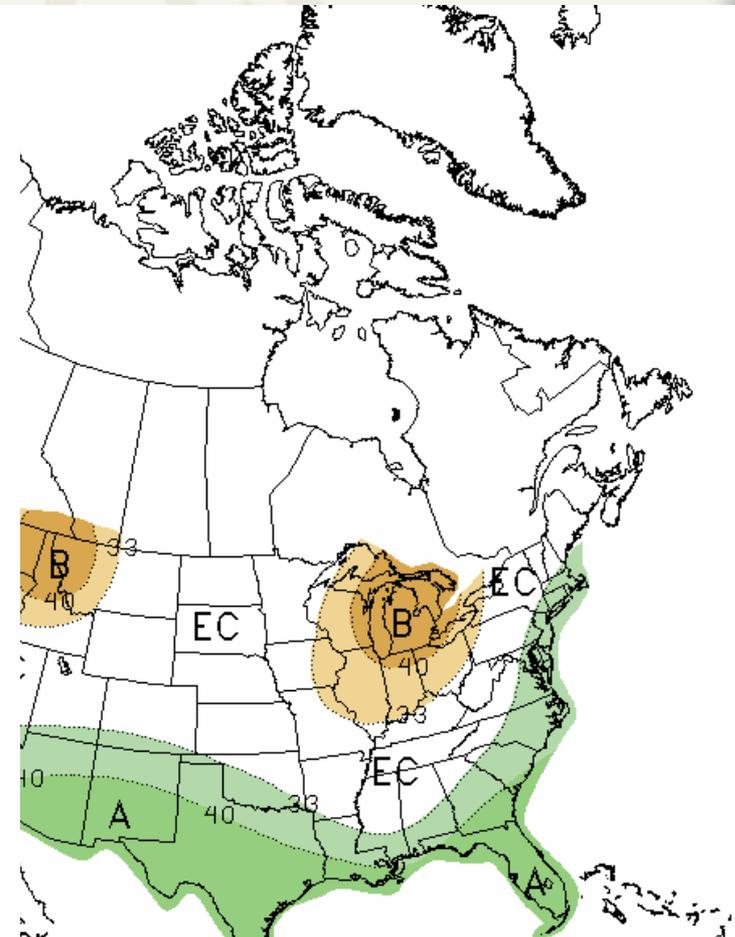


Winter Outlook



THREE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
1.5 MONTH LEAD
VALID DJF 2014
MADE 16 OCT 2014

EC MEANS EQUAL CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW



TEMPERATURE PROBABILITY

EC MEANS EQUAL CHANCES FOR A, N, B
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Seasonal Drought Outlook

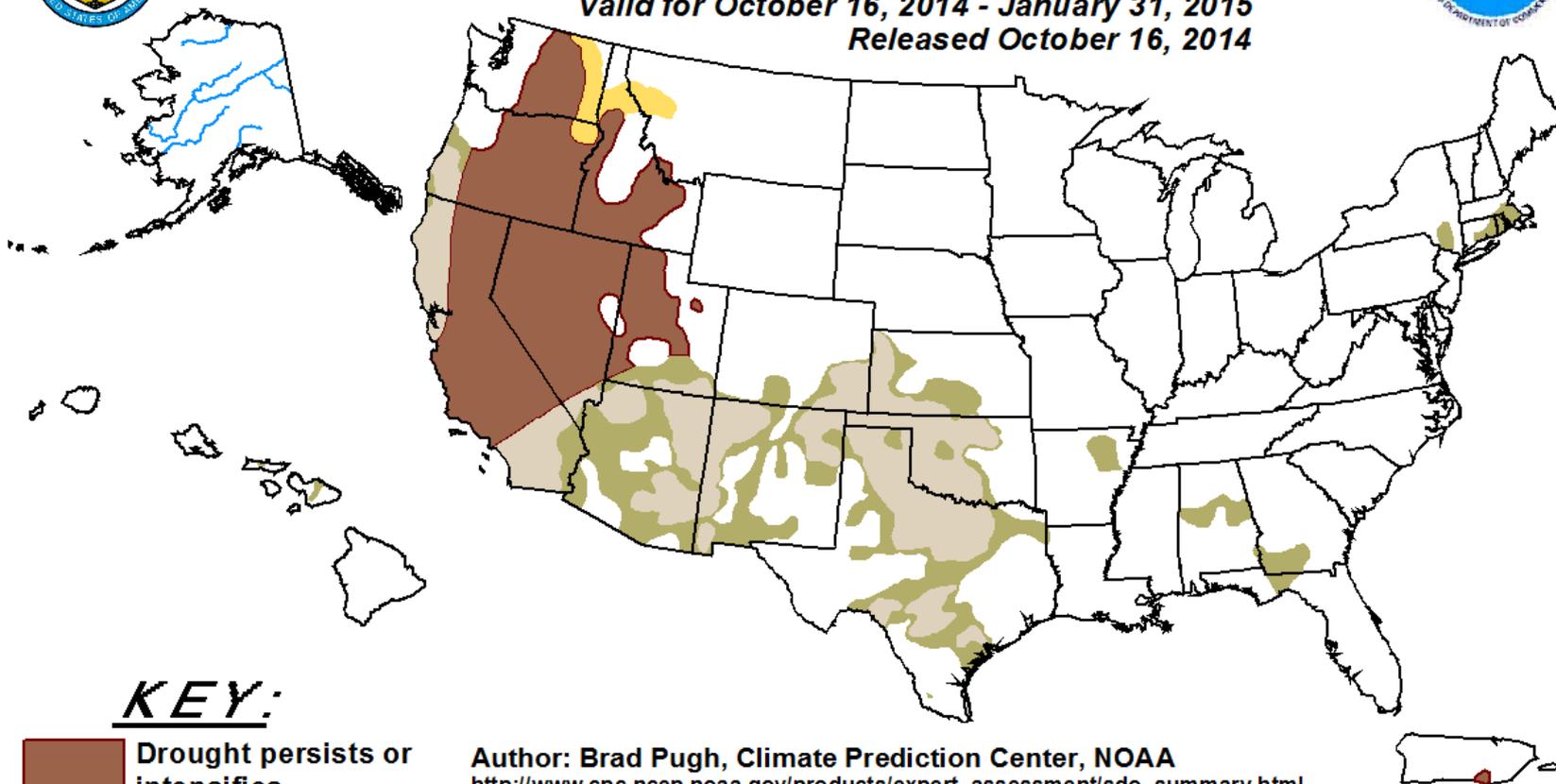


U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for October 16, 2014 - January 31, 2015

Released October 16, 2014



KEY:

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

Author: Brad Pugh, Climate Prediction Center, NOAA

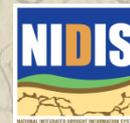
http://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.html

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)



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Any Questions ?

KC



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