

Central Region Climate Outlook

September 18, 2014

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Sept. 11, 2014, Earliest Recorded Snow
in Rapid City, 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**

- * October 16, 2014
- * November 20, 2014

* **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

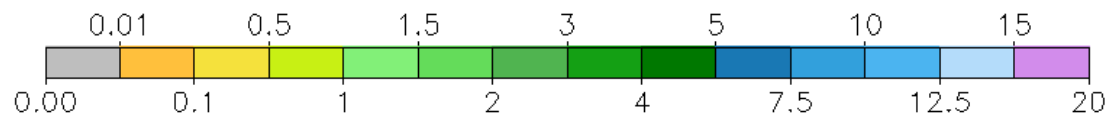
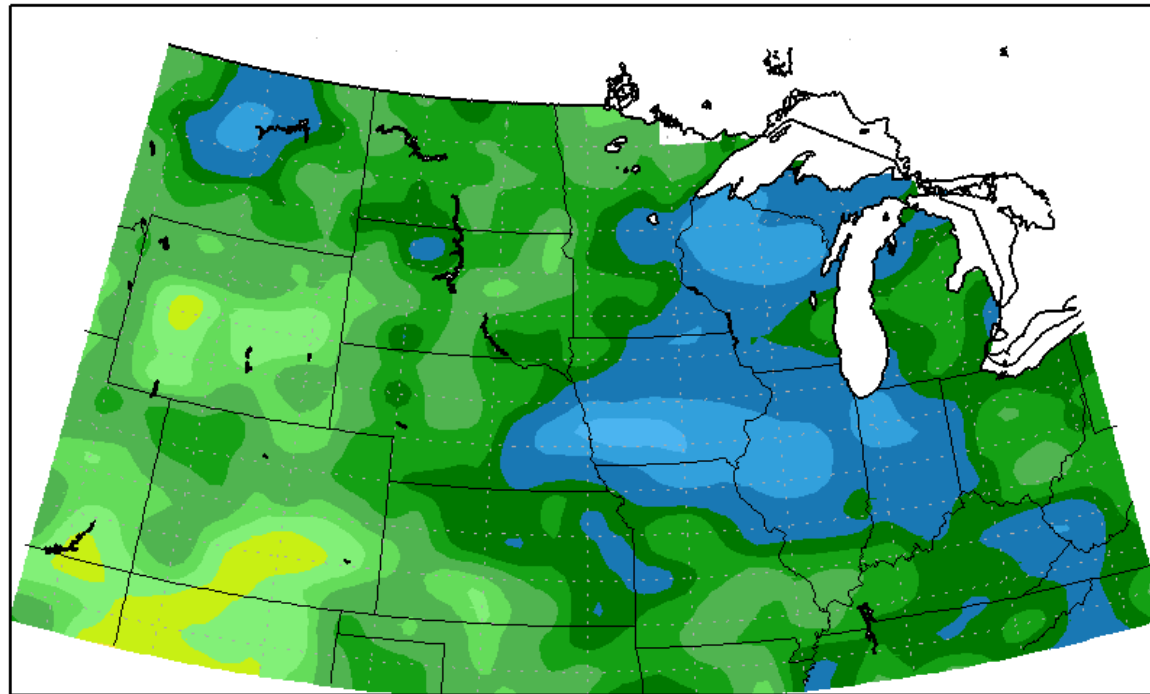
- * **Current conditions**
- * **Impacts**
- * **Outlooks**
- * **Special Ag Report**

Corn harvest underway near Taylorville, IL.
Yields greater than 200 bu/acre and 25% moisture content. Photo credit: Illinois FB FarmWeek magazine.



30-Day Precipitation

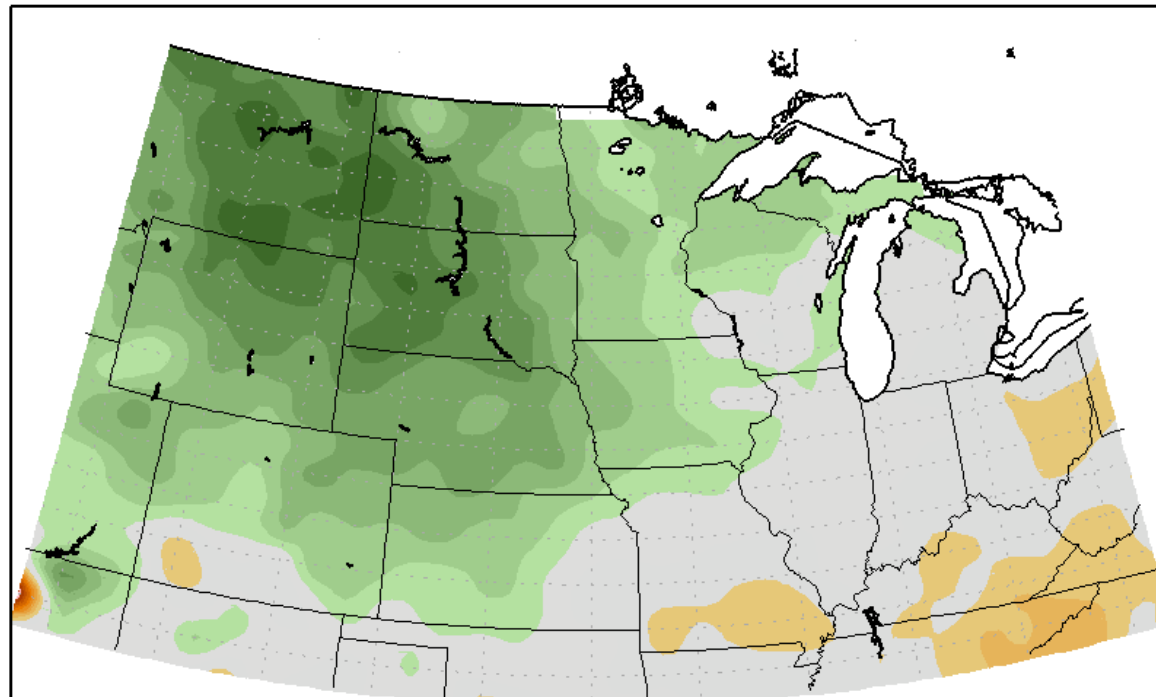
Accumulated Precipitation (in)
August 19, 2014 to September 17, 2014



Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment

30-Day Temperature Departure

Average Temperature ($^{\circ}\text{F}$): Departure from Mean
August 19, 2014 to September 16, 2014

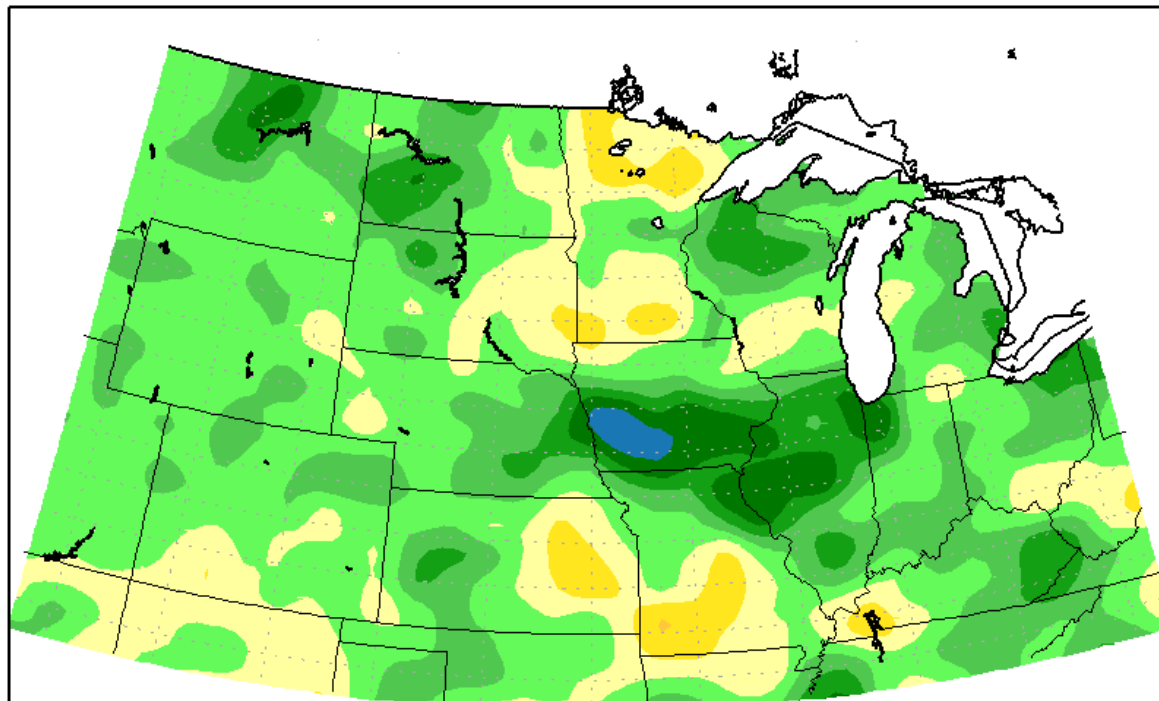


Mean period is 1981–2010.

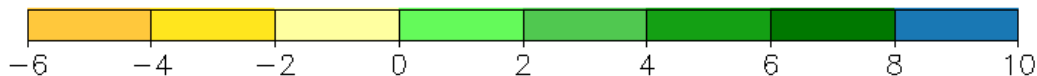


90-Day Precipitation Departure

Accumulated Precipitation (in): Departure from Mean
June 19, 2014 to September 17, 2014

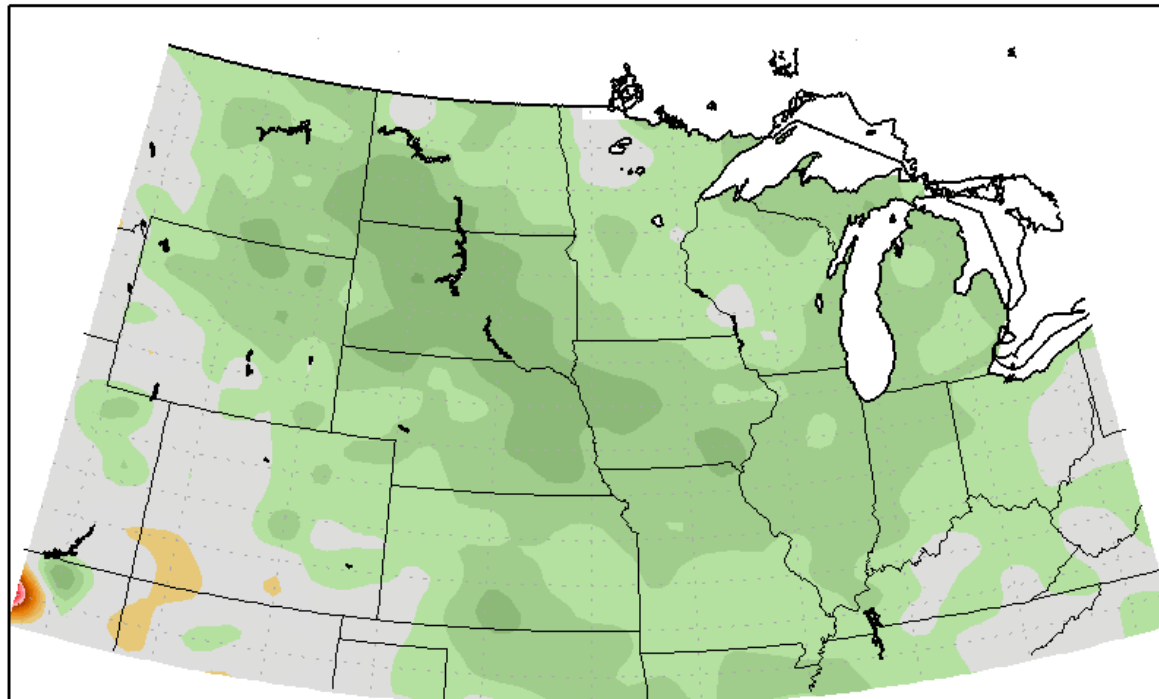


Mean period is 1981–2010.



90-Day Temperature Departure

Average Temperature ($^{\circ}\text{F}$): Departure from Mean
June 19, 2014 to September 16, 2014



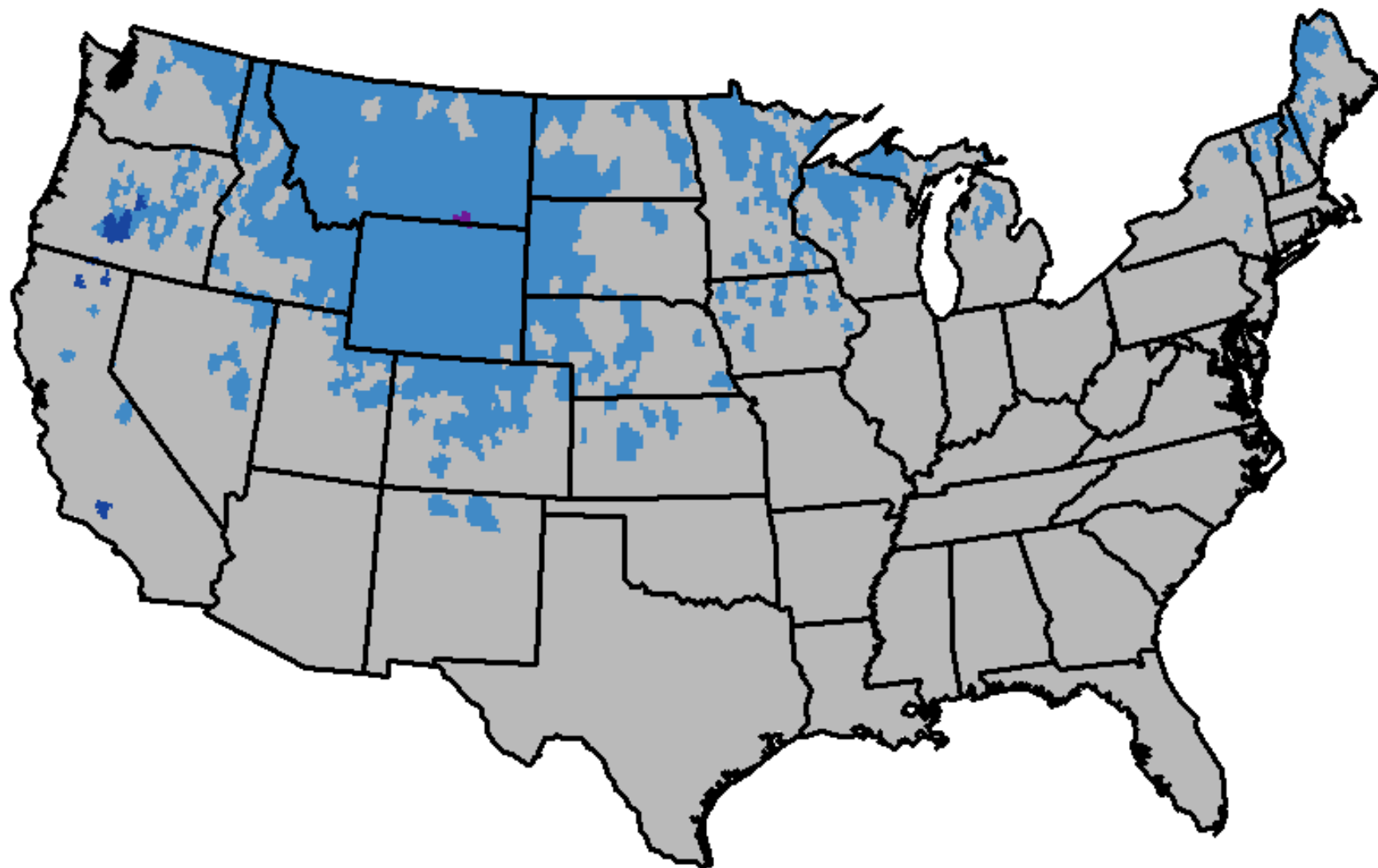
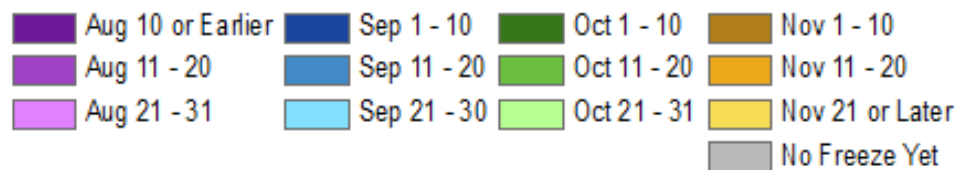
Mean period is 1981–2010.



Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment

Date of Most Recent 32°F Freeze since 8/1

As of 9/17/2014



MRCC Experimental Freeze Guidance:

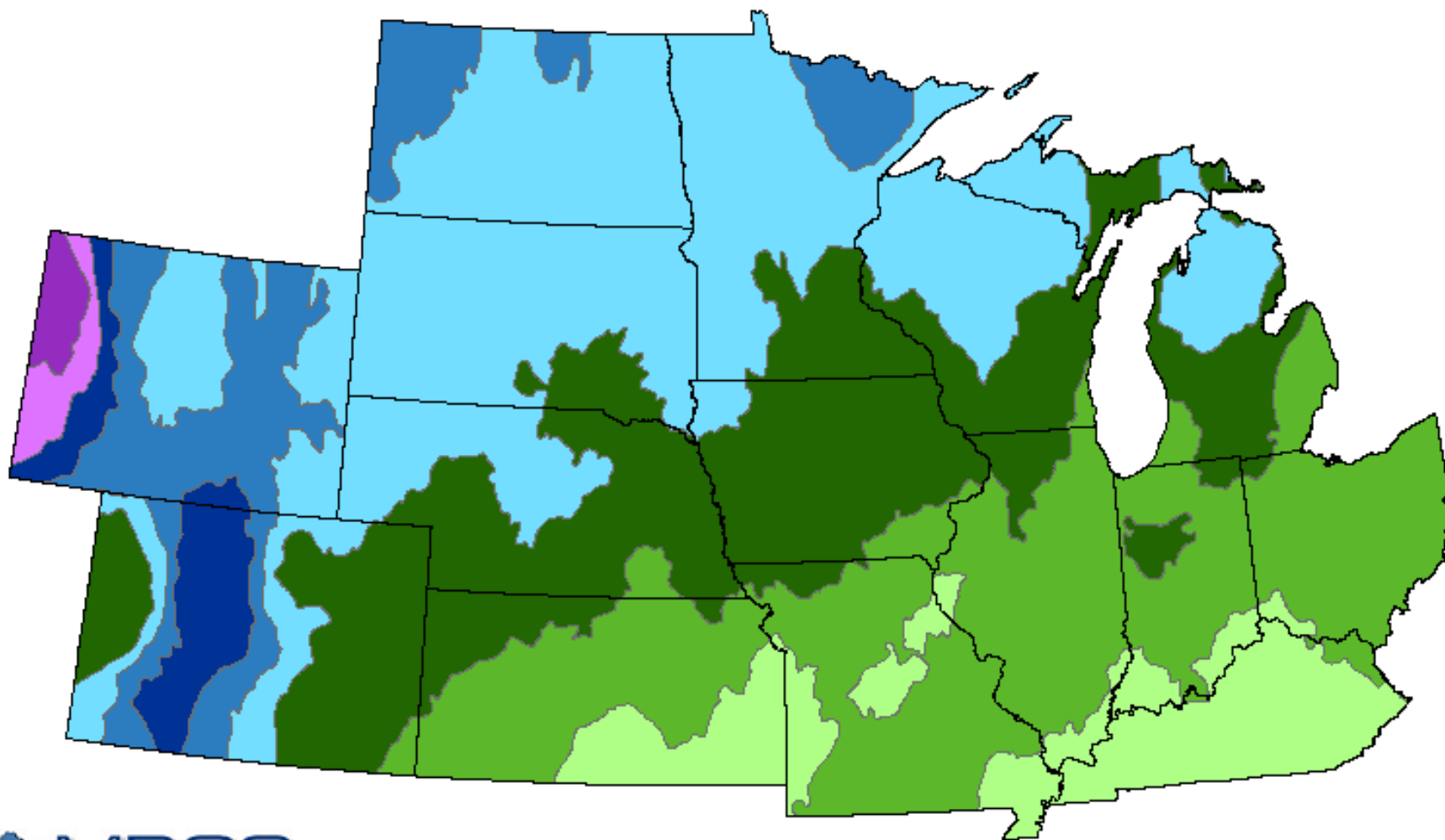
These experimental maps may be utilized as a guide to local and regional freeze conditions but should NOT be used by themselves for decision processes.

Fall Freeze

Median Date Of 32°F Freeze

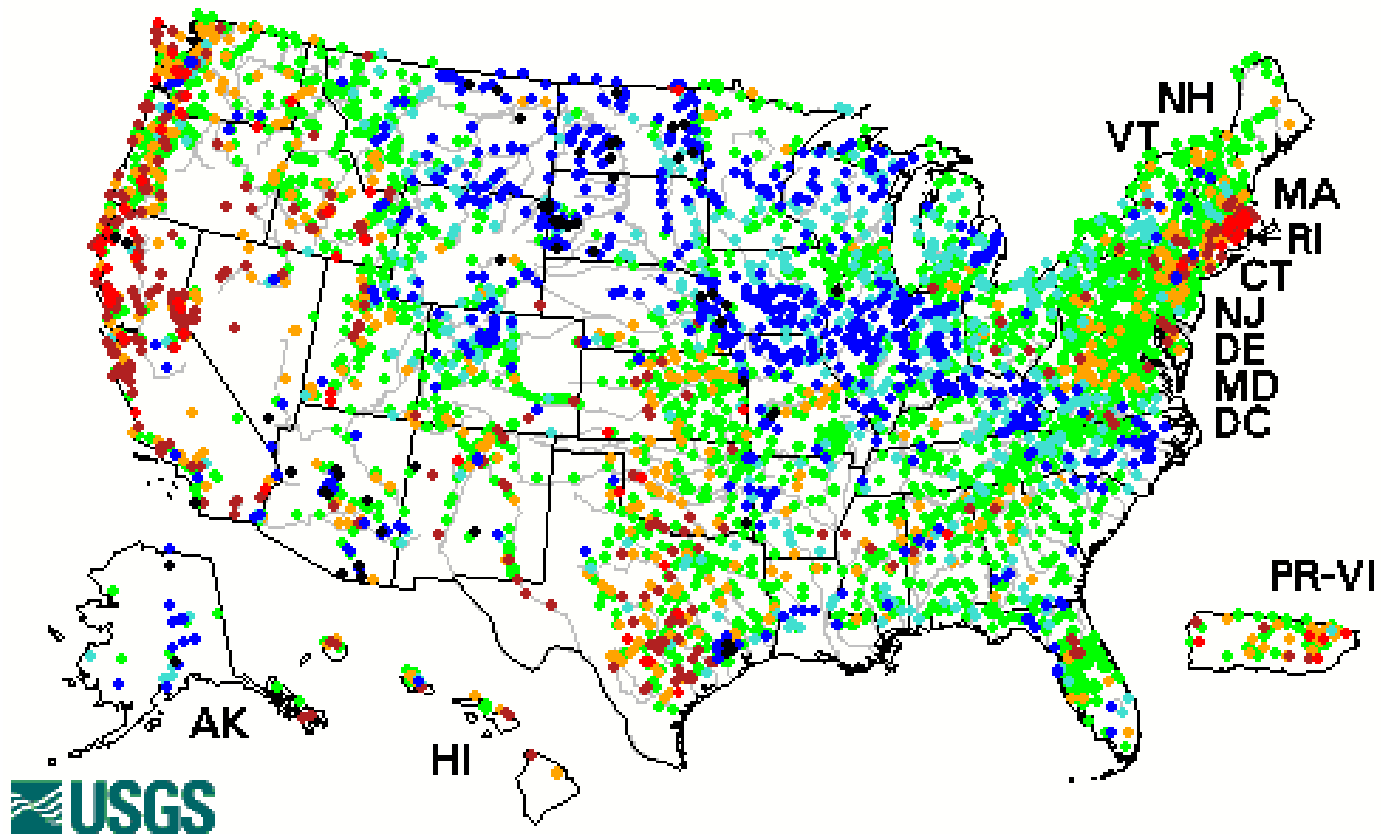
Based on 1981-2010 Average

- | | | | |
|---------------------|---------------|---------------|-------------------|
| ● Aug 10 or Earlier | ● Sep 1 - 10 | ● Oct 1 - 10 | ● Nov 1 - 10 |
| ● Aug 11 - 20 | ● Sep 11 - 20 | ● Oct 11 - 20 | ● Nov 11 - 20 |
| ● Aug 21 - 31 | ● Sep 21 - 30 | ● Oct 21 - 31 | ● Nov 21 or Later |



Daily Streamflow

Wednesday, September 17, 2014 23:00ET

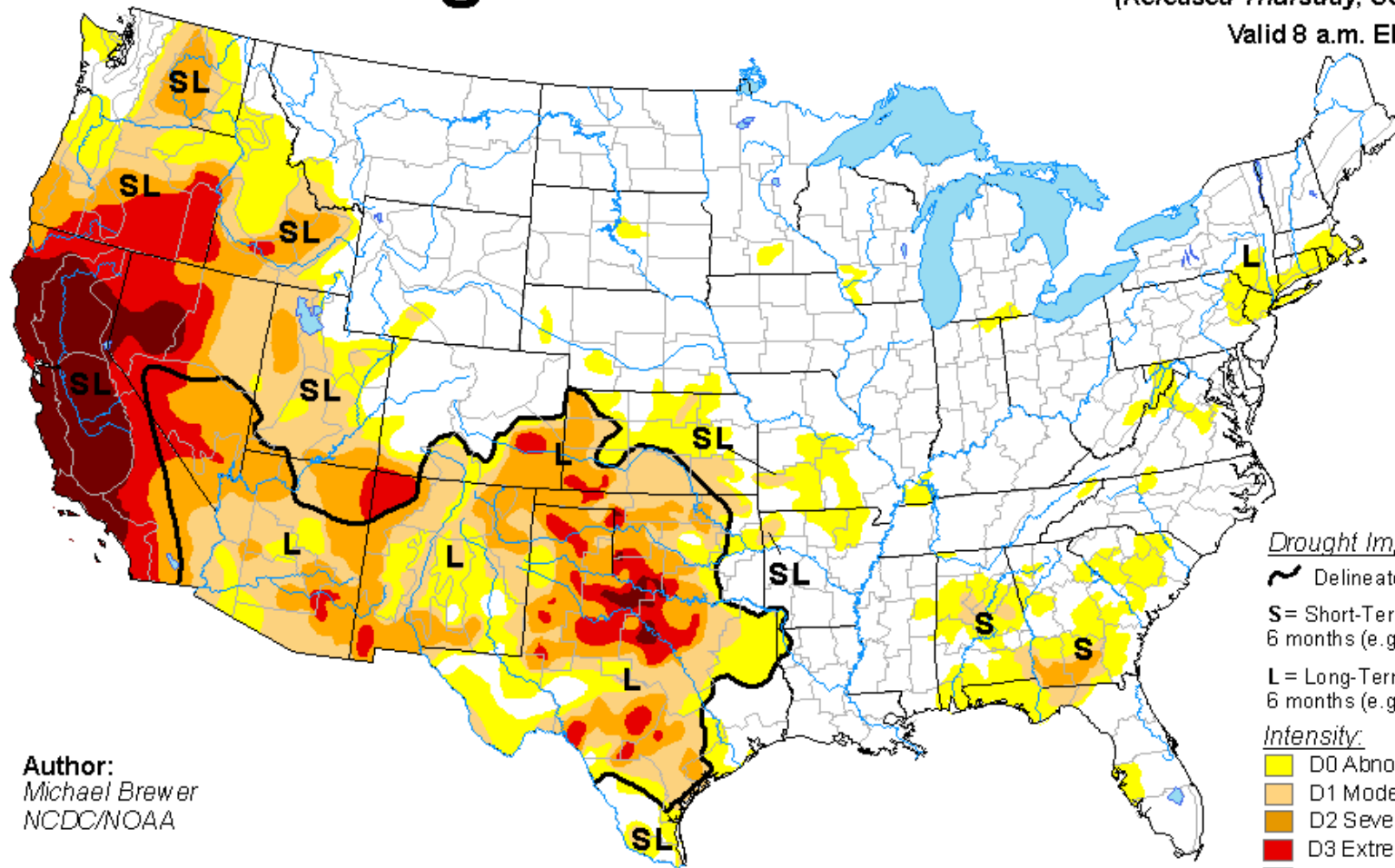


<http://waterwatch.usgs.gov/>

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

U.S. Drought Monitor

September 16, 2014
(Released Thursday, Sep. 18, 2014)
Valid 8 a.m. EDT



Author:
Michael Brewer
NCDC/NOAA

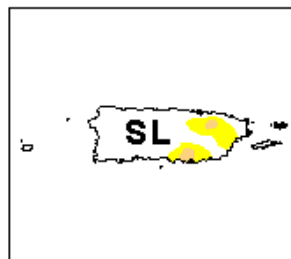
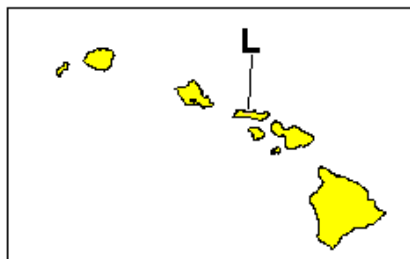
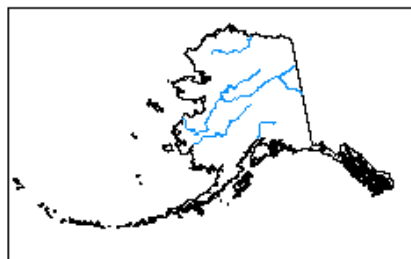
Drought Impact Types:

- 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)

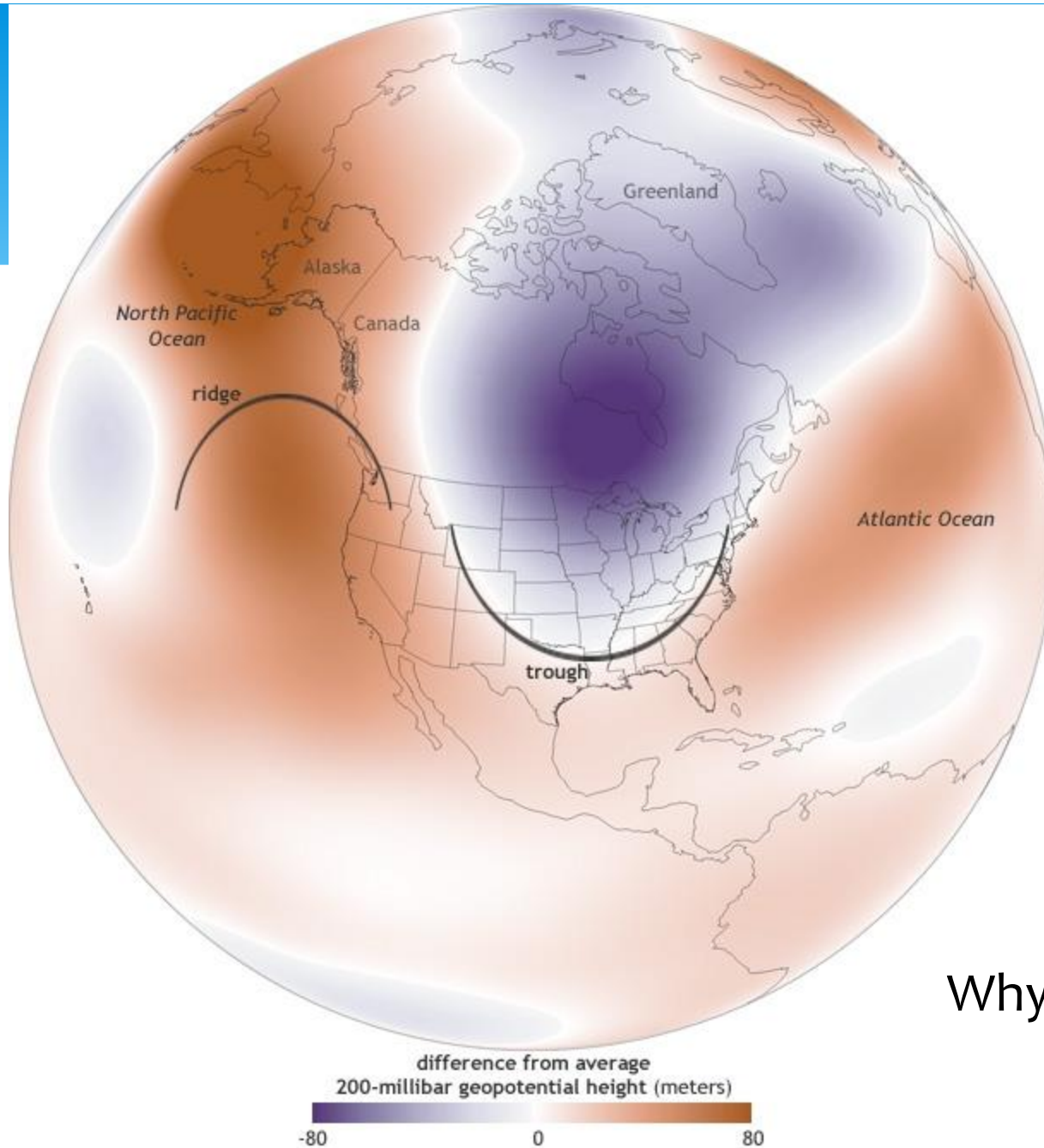
Intensity:

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

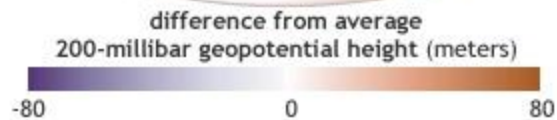
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



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



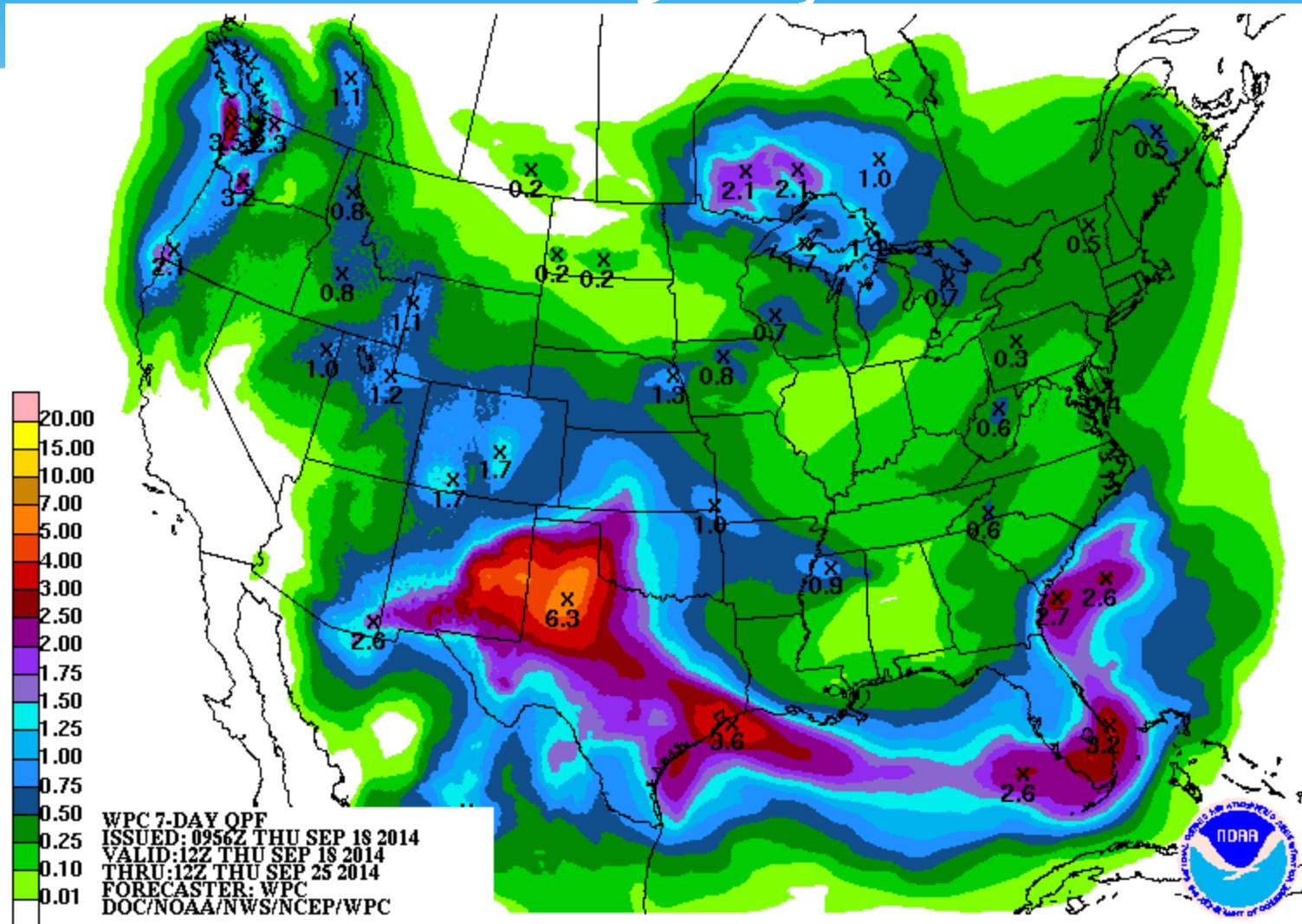
Why So Cool?



Climate Outlooks

- * **7-day precipitation forecast**
- * **8-14 day outlook**
- * **October**
- * **Fall and Winter**
- * **Seasonal Drought Outlooks**

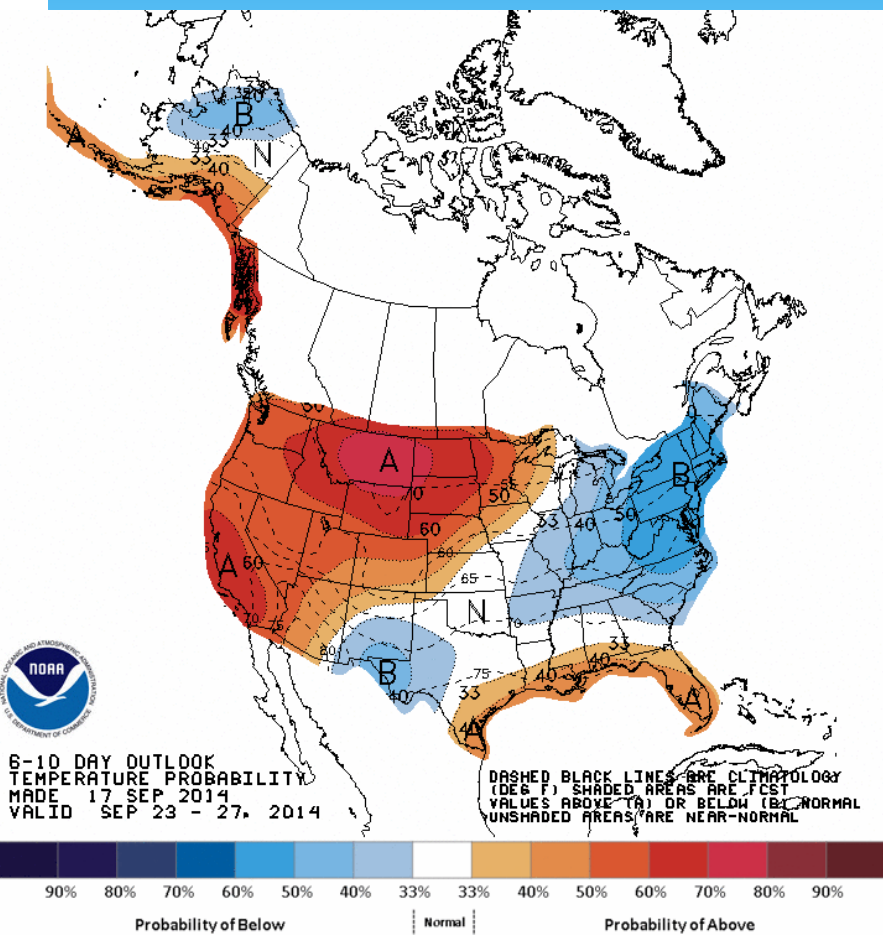
Potential Precipitation Amounts over next 5 days



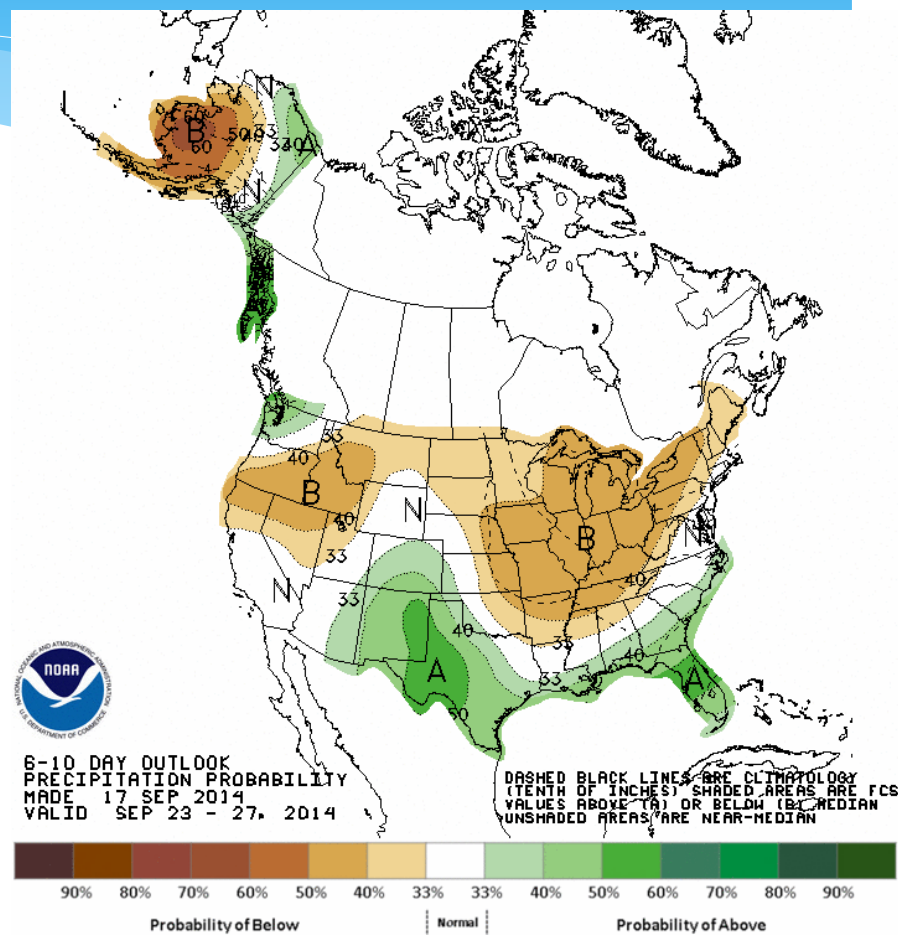
1-5 Day Temperatures

- * Temperatures running several degrees above average.
- * Lows in the 40s to the 50s from north to south.
- * Highs in the 60s to the 80s from north to south.

Temperature and Precipitation Probabilities for Sept. 22– Sept. 27, 2014

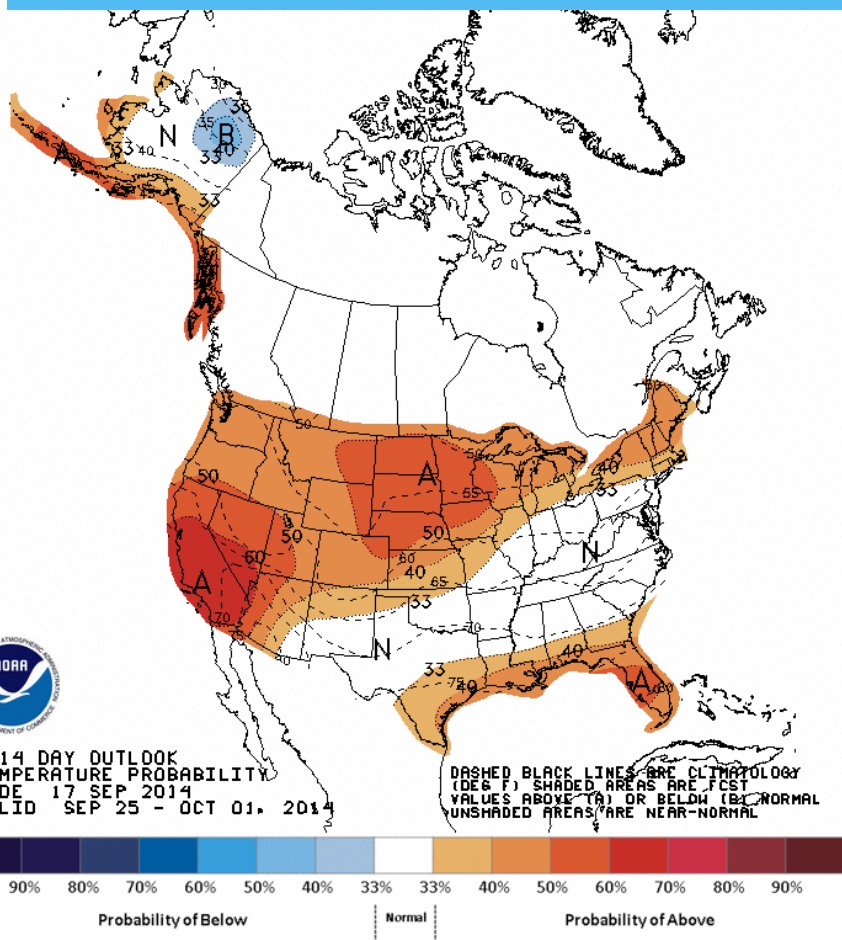


Temperature

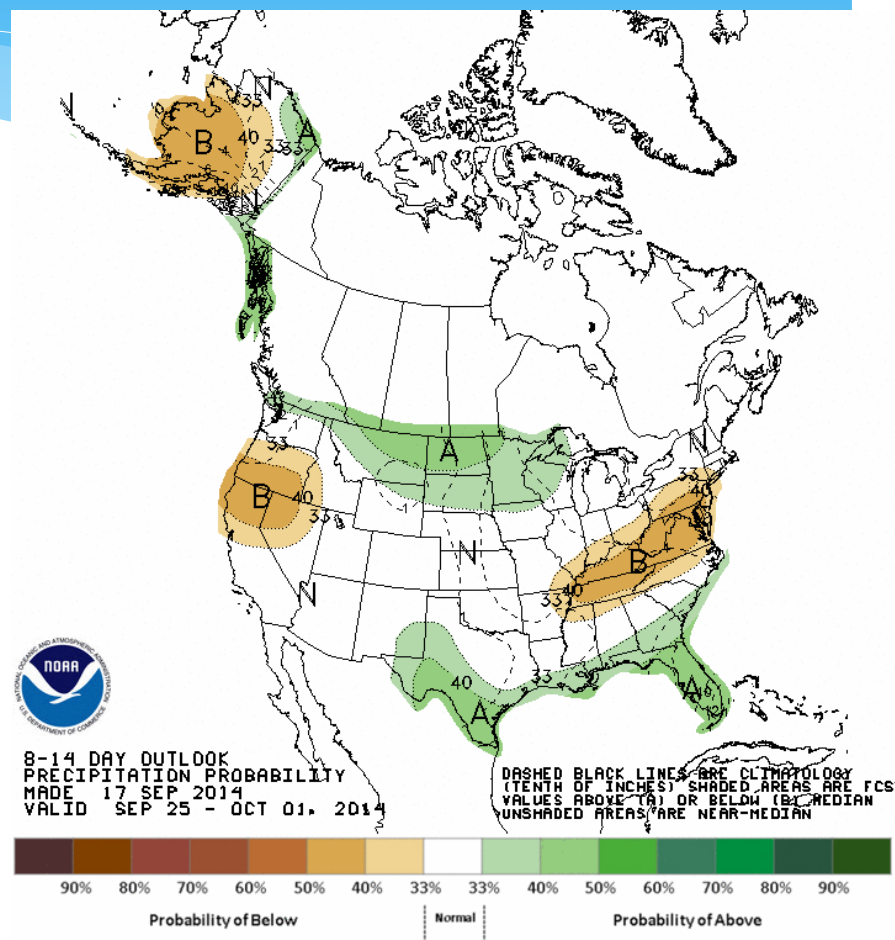


Precipitation

Temperature and Precipitation Probabilities for Sept. 25– Oct. 1, 2014

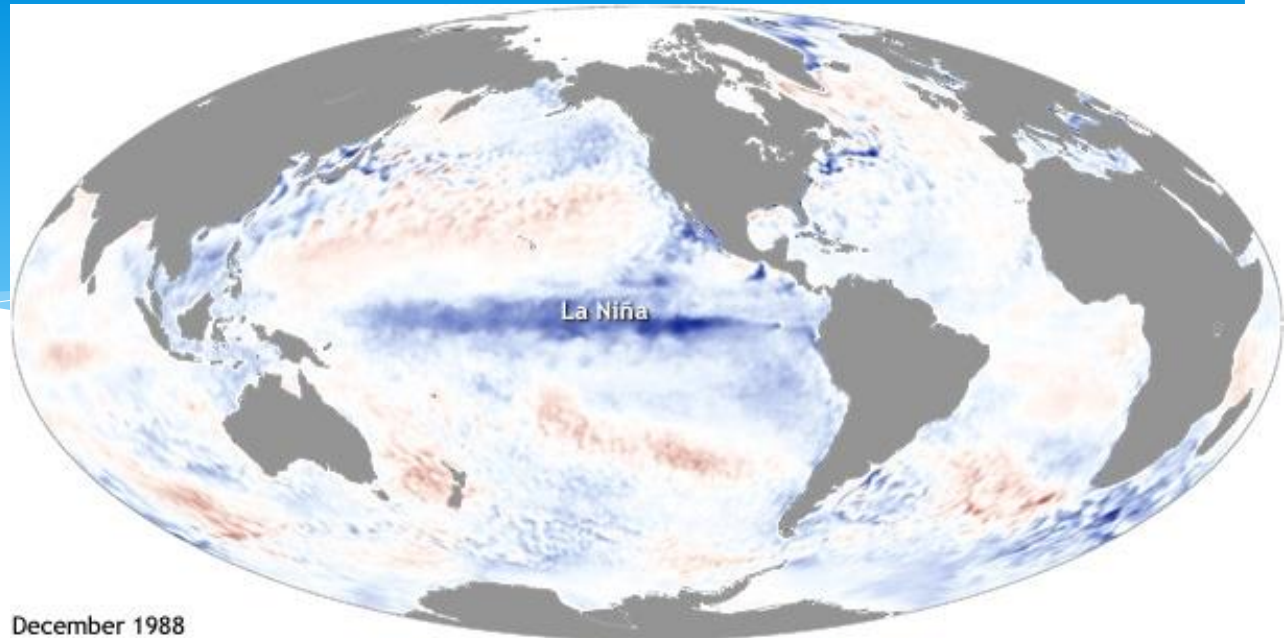


Temperature

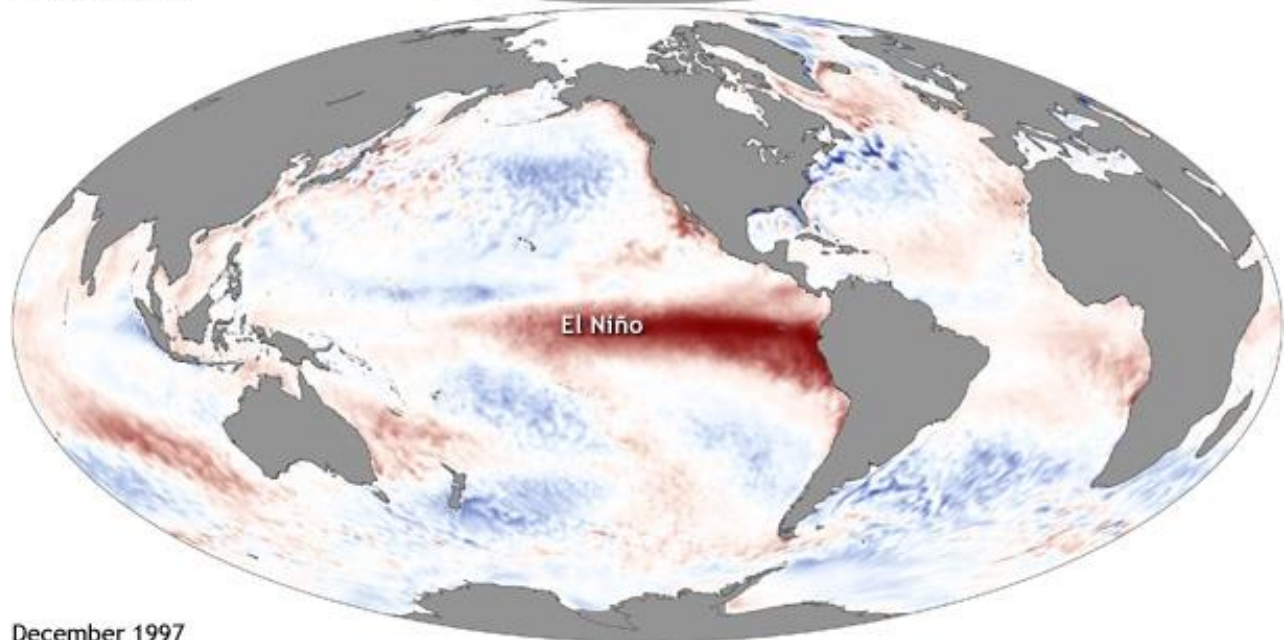


Precipitation

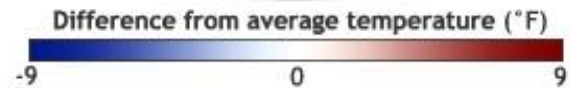
La Niña and El Niño



December 1988



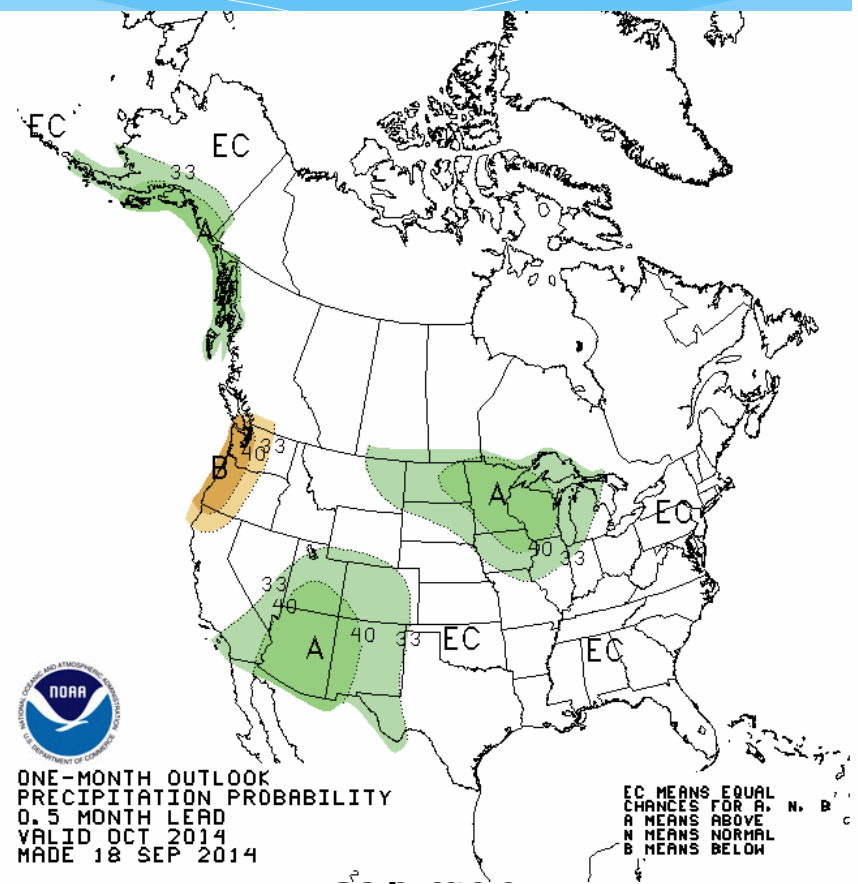
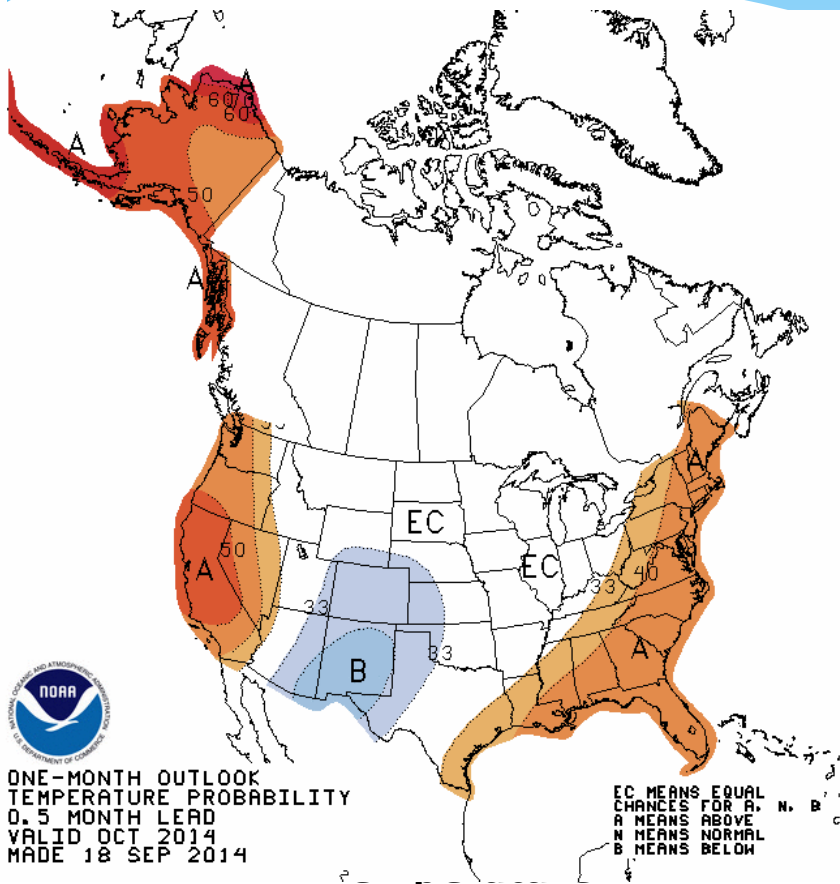
December 1997



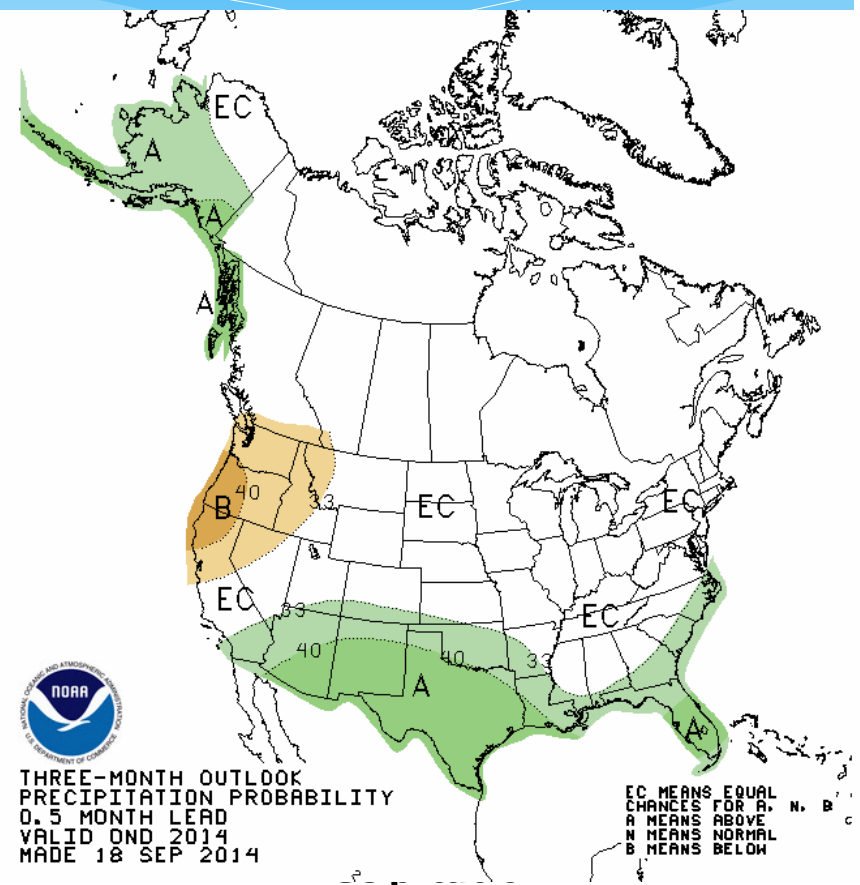
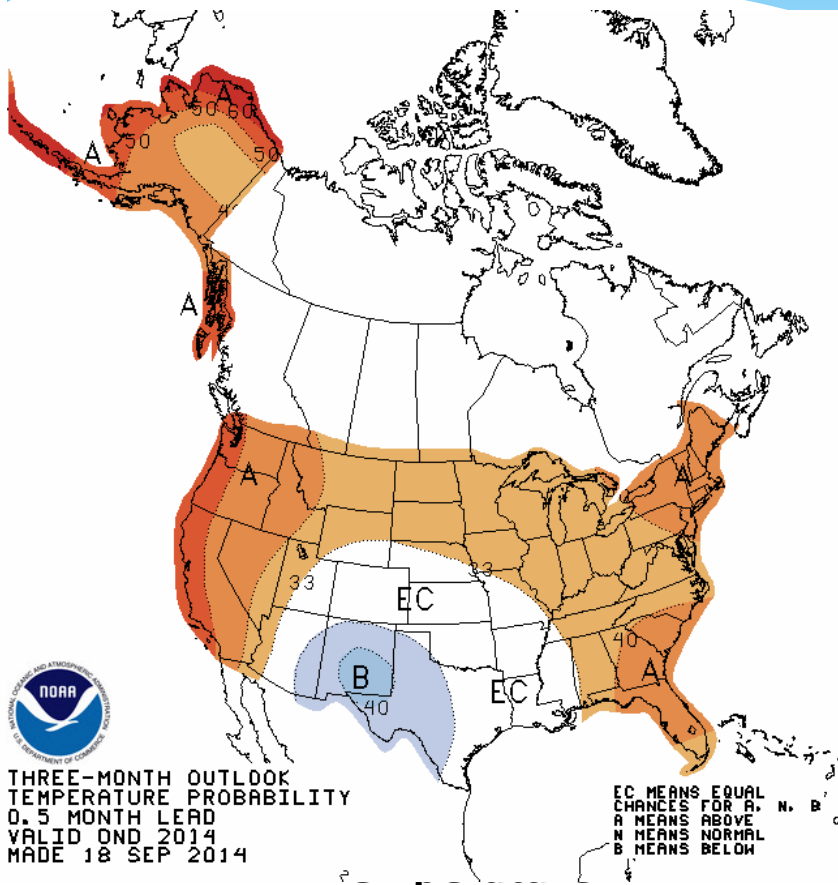
El Niño Forecast

- * Right now, we are considered to be in the ENSO neutral phase.
- * Chance of El Niño at 60-65% for this fall and winter.
- * A weak El Niño is the most likely outcome, if it even shows up.
- * Some evidence to suggest that in recent decades El Niño has been a slow starter.

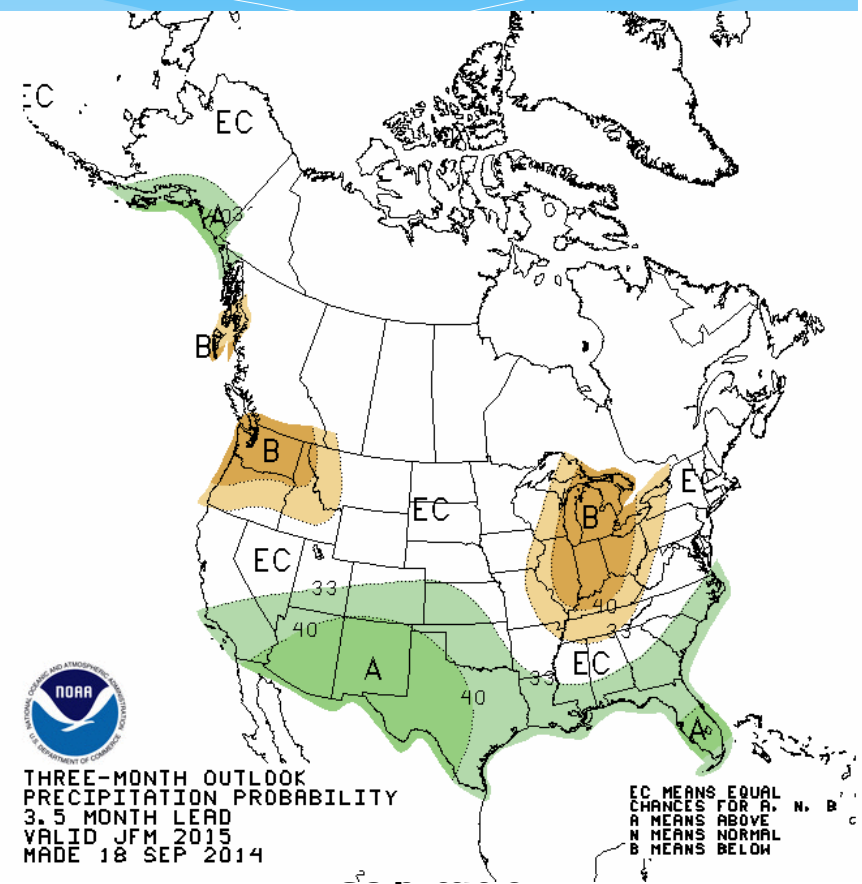
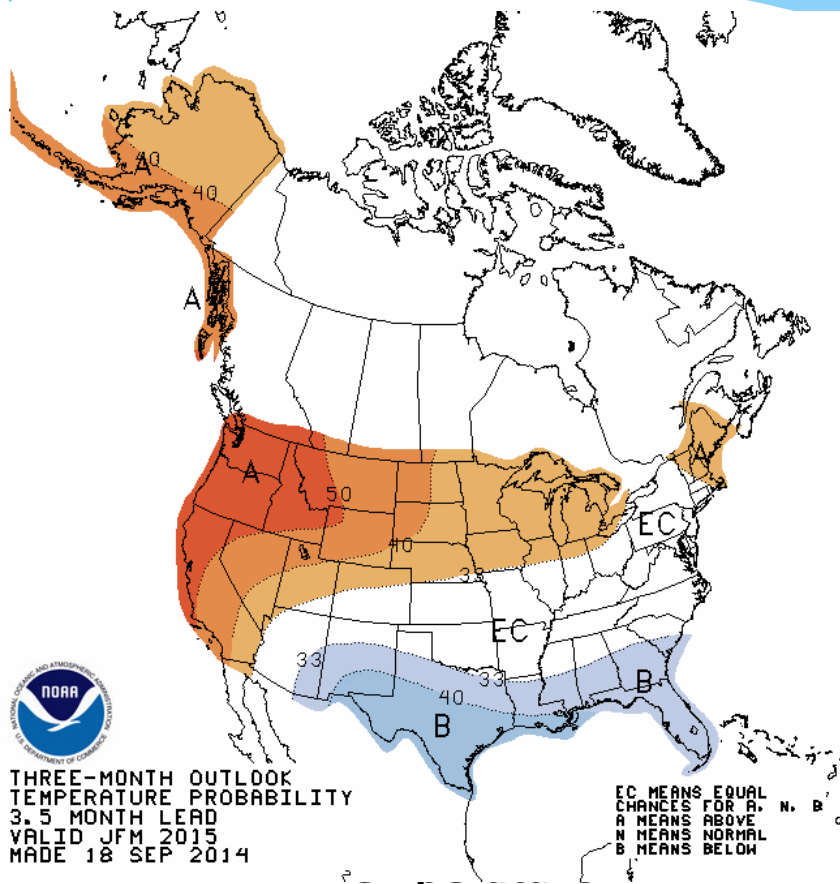
October Temperature and Precipitation Probabilities



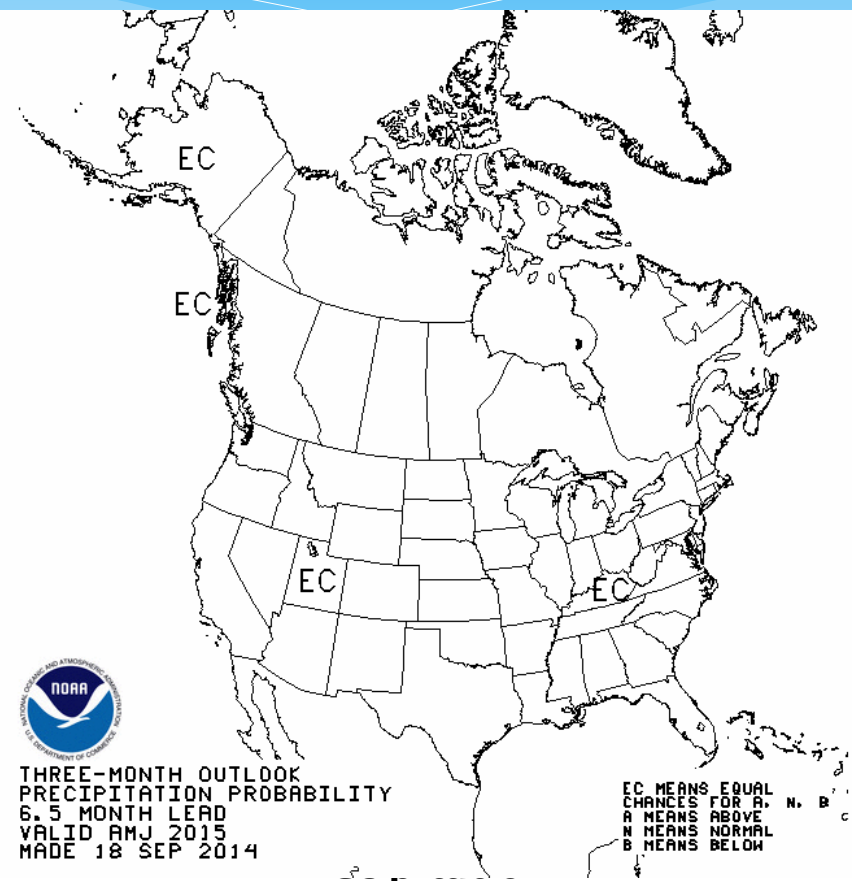
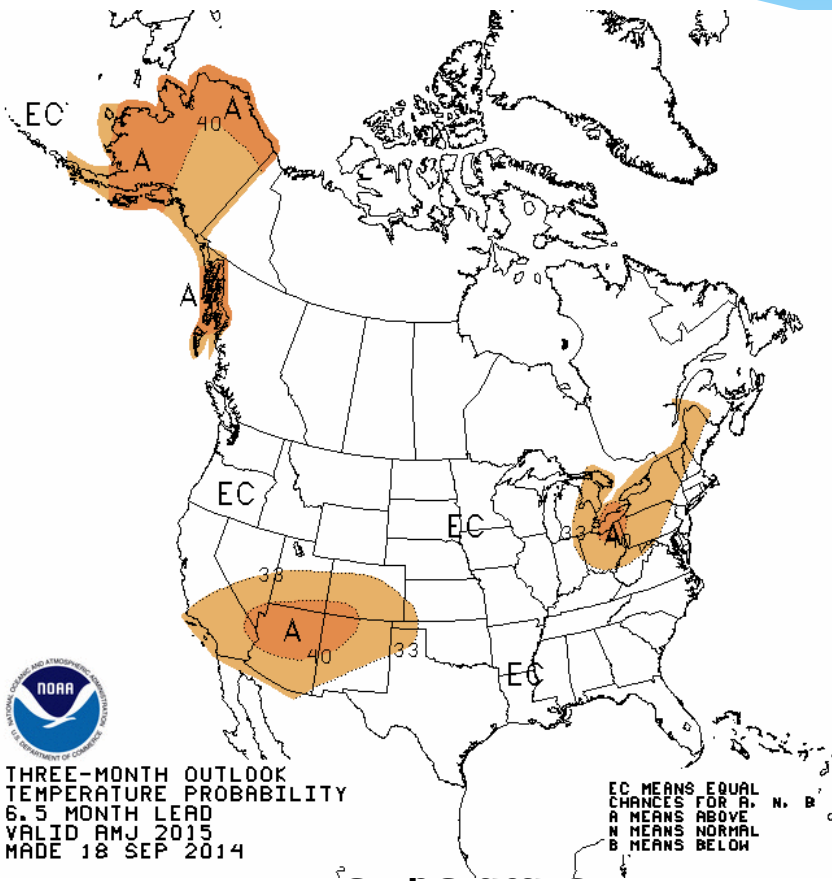
3 Month Temperature and Precipitation Probabilities (October-December)



3 Month Temperature and Precipitation Probabilities (January-March)



3 Month Temperature and Precipitation Probabilities (April-June)



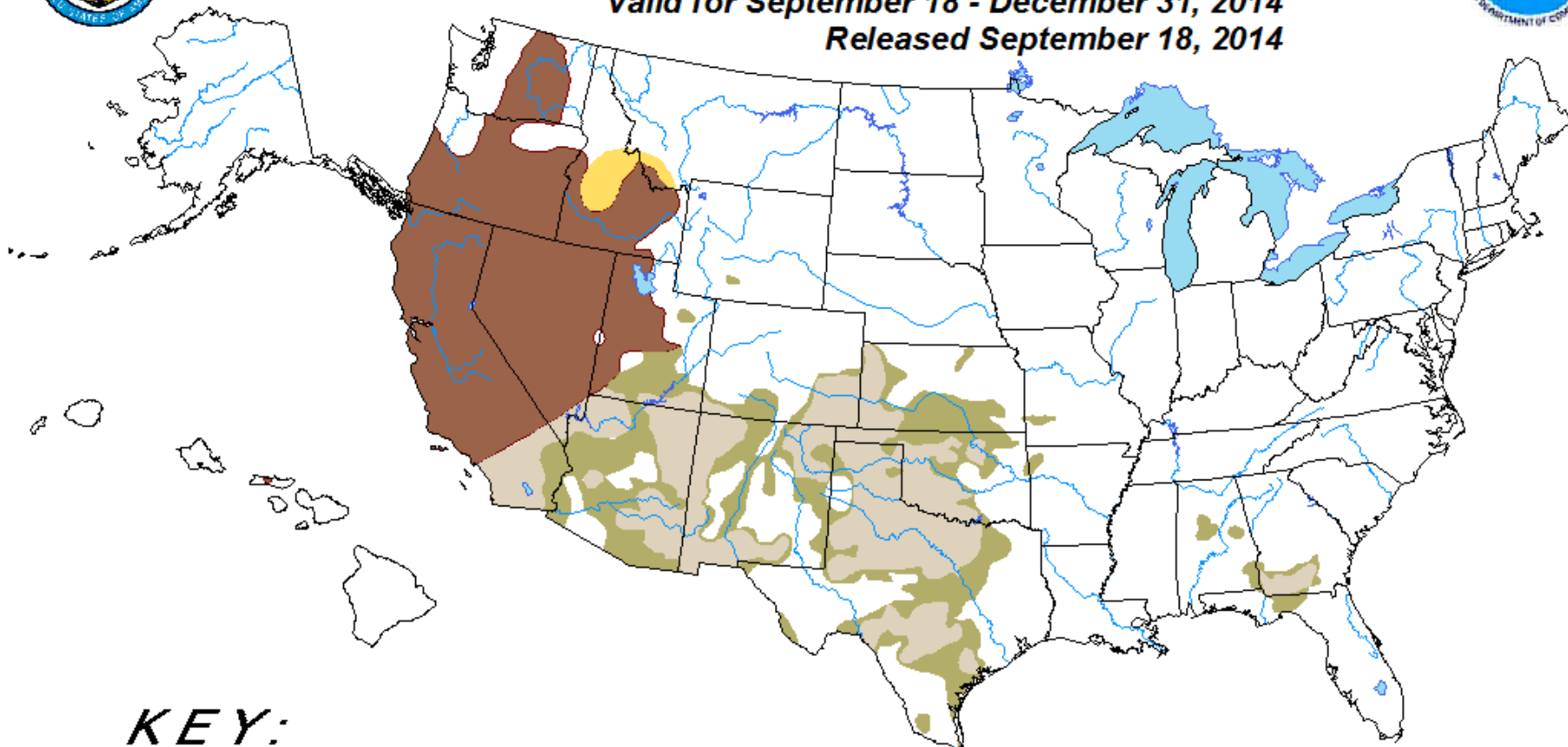


U.S. Seasonal Drought Outlook





Drought Tendency During the Valid Period

Valid for September 18 - December 31, 2014

Released September 18, 2014



KEY:

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

Author: Anthony Artusa, 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 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 conditions prevailed over much of the Central Region in the last 30 to 90 days.
- * Wetter-than-average conditions across the region, especially in the central Corn Belt.
- * The cool and wet conditions, plus the unwelcome arrival of freezing weather in the northern states, are a continuing concern for agriculture.

Summary

* **Outlooks**

- * Chance of El Nino 60-65% this fall and winter
- * Increased chance of above-normal precipitation across the Dakotas, MN, IA, WI, and northern IL, could be a concern for harvest.
- * Increased chance of above-normal temperatures across much of the region for fall and winter.
- * Will this winter be like last winter?

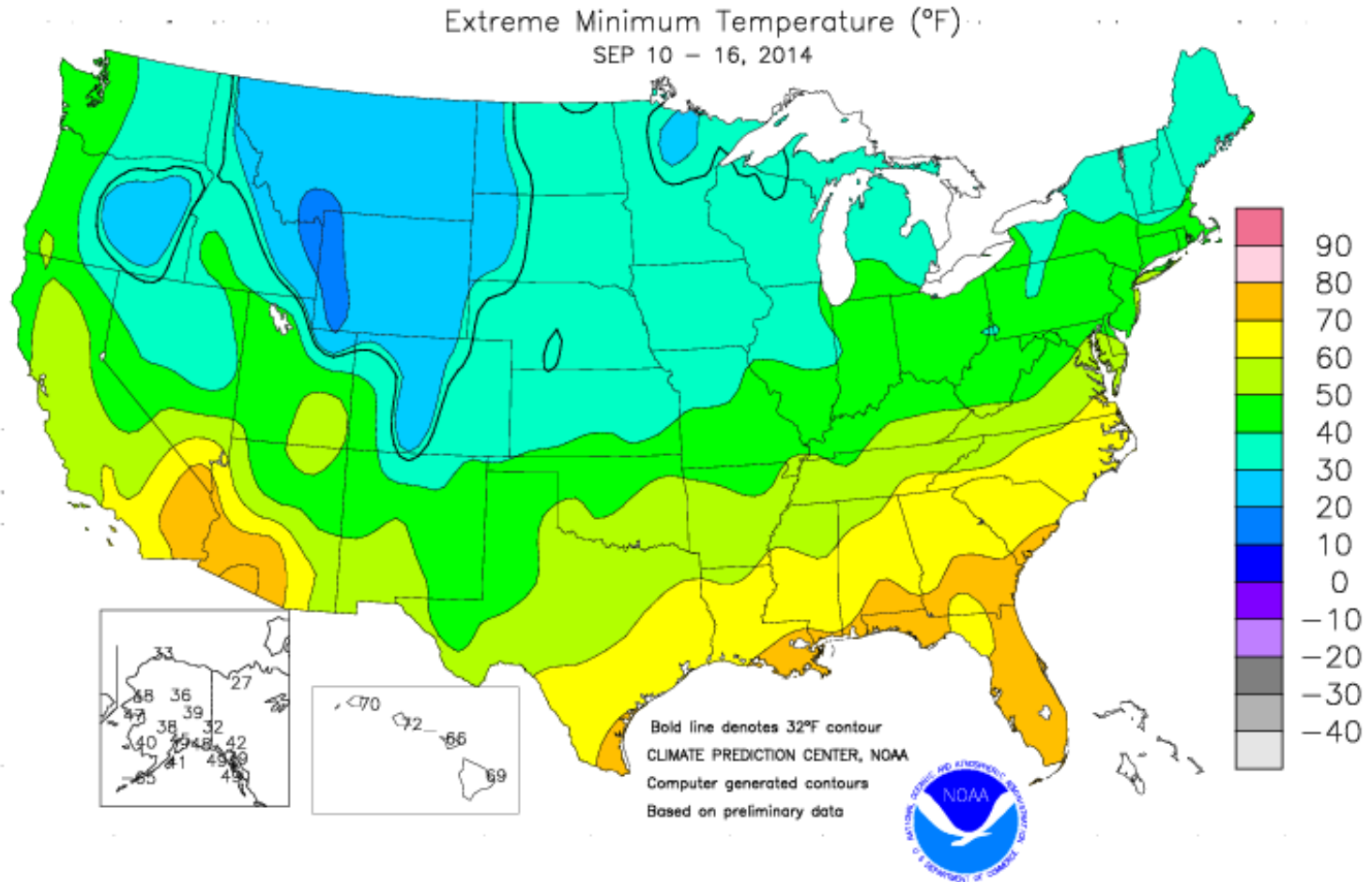
Brad Rippey

Central Region Webinar, September 18, 2014

Rapid City, SD
Sep. 11, 2014



Extreme Minimum Temp, Sep. 10 – 16, 2014

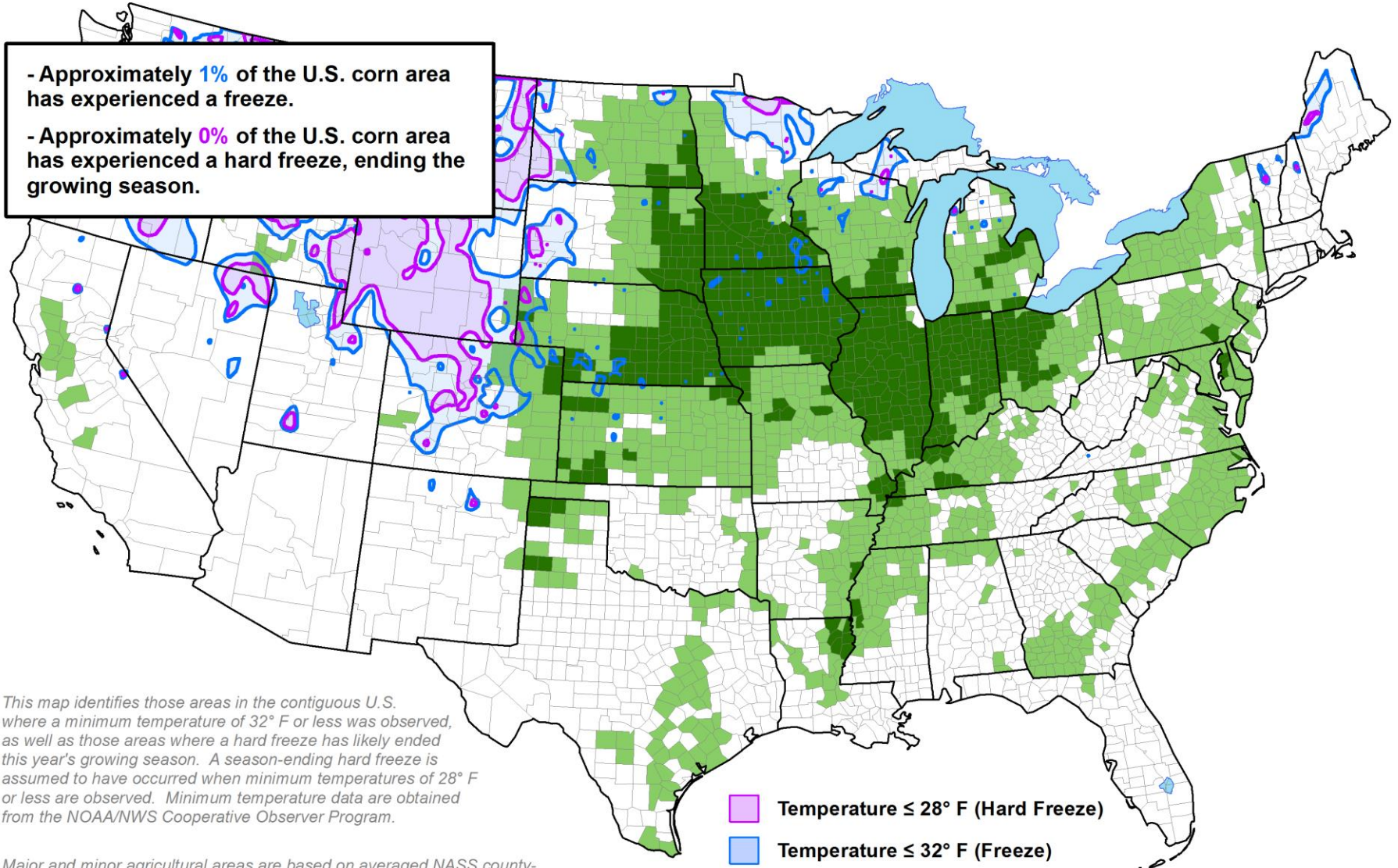




Monitoring the End of the 2014 Growing Season





data valid through - September 14, 2014

- Approximately 1% of the U.S. corn area has experienced a freeze.
- Approximately 0% of the U.S. corn area has experienced a hard freeze, ending the growing season.



This map identifies those areas in the contiguous U.S. where a minimum temperature of 32° F or less was observed, as well as those areas where a hard freeze has likely ended this year's growing season. A season-ending hard freeze is assumed to have occurred when minimum temperatures of 28° F or less are observed. Minimum temperature data are obtained from the NOAA/NWS Cooperative Observer Program.

Major and minor agricultural areas are based on averaged NASS county-level crop production data from 2006 to 2010. The counties that combine to form the major agricultural areas are, on average, responsible for 75% of the total national production annually. Similarly, the counties that comprise the major and minor areas combined are, on average, responsible for 99% of the total national production annually.

-  Temperature ≤ 28° F (Hard Freeze)
-  Temperature ≤ 32° F (Freeze)
-  Major Corn Area
-  Minor Corn Area

This product is prepared by the USDA
Office of the Chief Economist (OCE)
World Agricultural Outlook Board (WAOB).

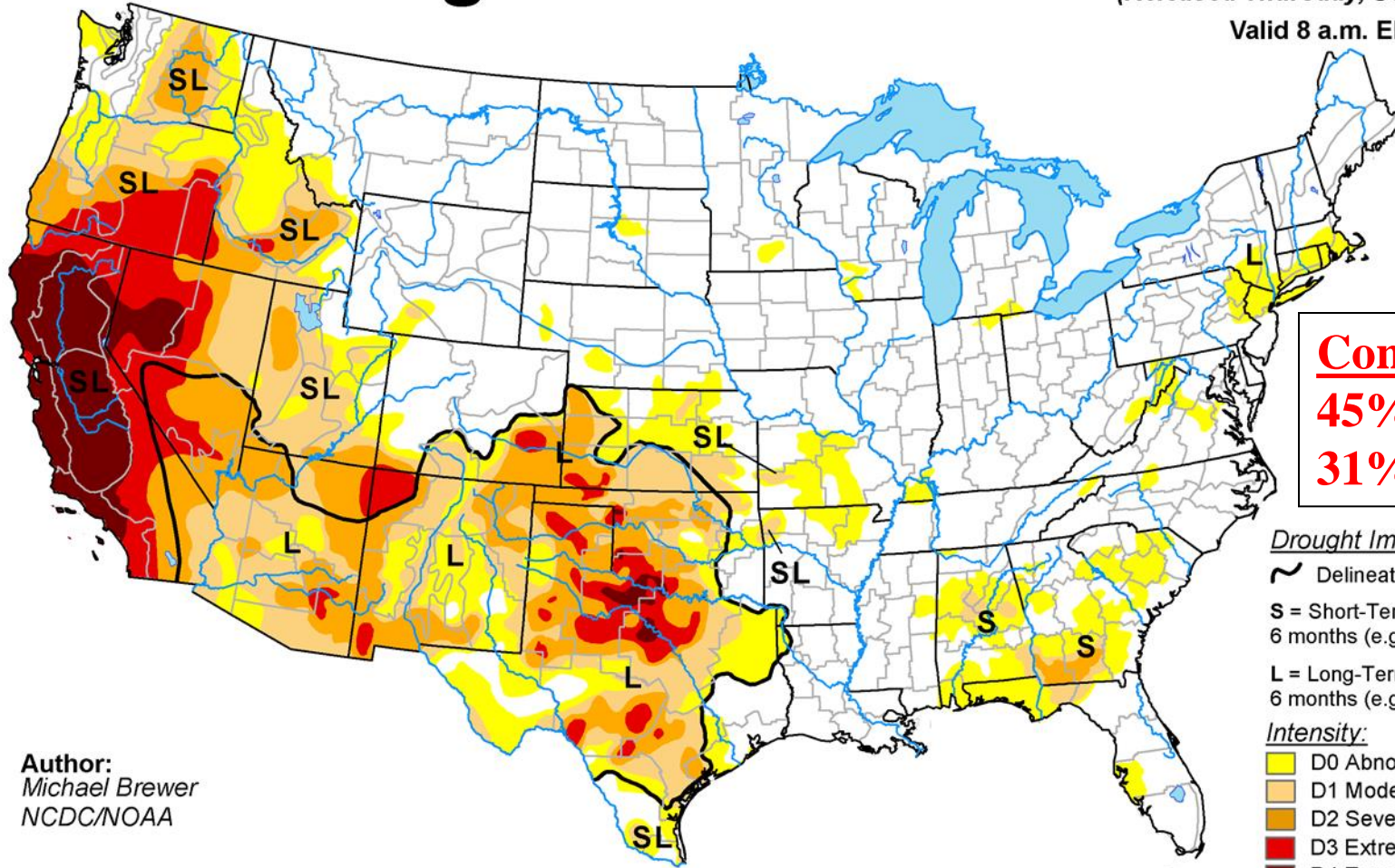


Clark County, South Dakota, September 17, 2014

U.S. Drought Monitor

September 16, 2014
(Released Thursday, Sep. 18, 2014)

Valid 8 a.m. EDT



Contiguous U.S.
45% D0 – D4
31% D1 – D4

Author:
Michael Brewer
NCDC/NOAA

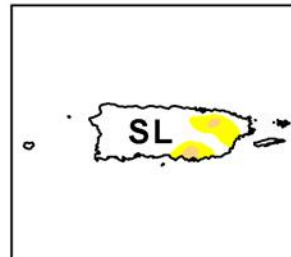
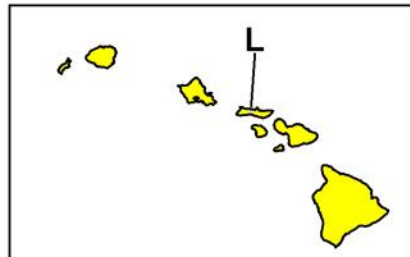
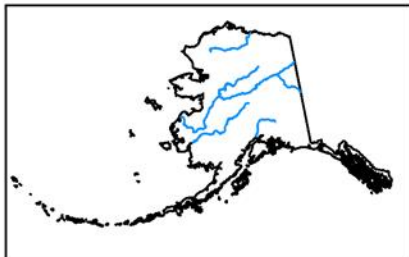
Drought Impact Types:

- ~ 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.



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

U.S. Drought Monitor

Midwest

September 16, 2014

(Released Thursday, Sep. 18, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
|---|-------|-------|-------|-------|-------|------|
| Current | 94.32 | 5.68 | 0.25 | 0.00 | 0.00 | 0.00 |
| Last Week 9/9/2014 | 93.60 | 6.40 | 0.25 | 0.00 | 0.00 | 0.00 |
| 3 Months Ago 6/17/2014 | 89.88 | 10.12 | 2.30 | 0.00 | 0.00 | 0.00 |
| Start of Calendar Year 12/31/2013 | 66.90 | 33.10 | 17.70 | 2.93 | 0.00 | 0.00 |
| Start of Water Year 10/1/2013 | 43.94 | 56.06 | 30.56 | 11.64 | 0.20 | 0.00 |
| One Year Ago 9/17/2013 | 43.22 | 56.78 | 31.96 | 11.48 | 0.00 | 0.00 |

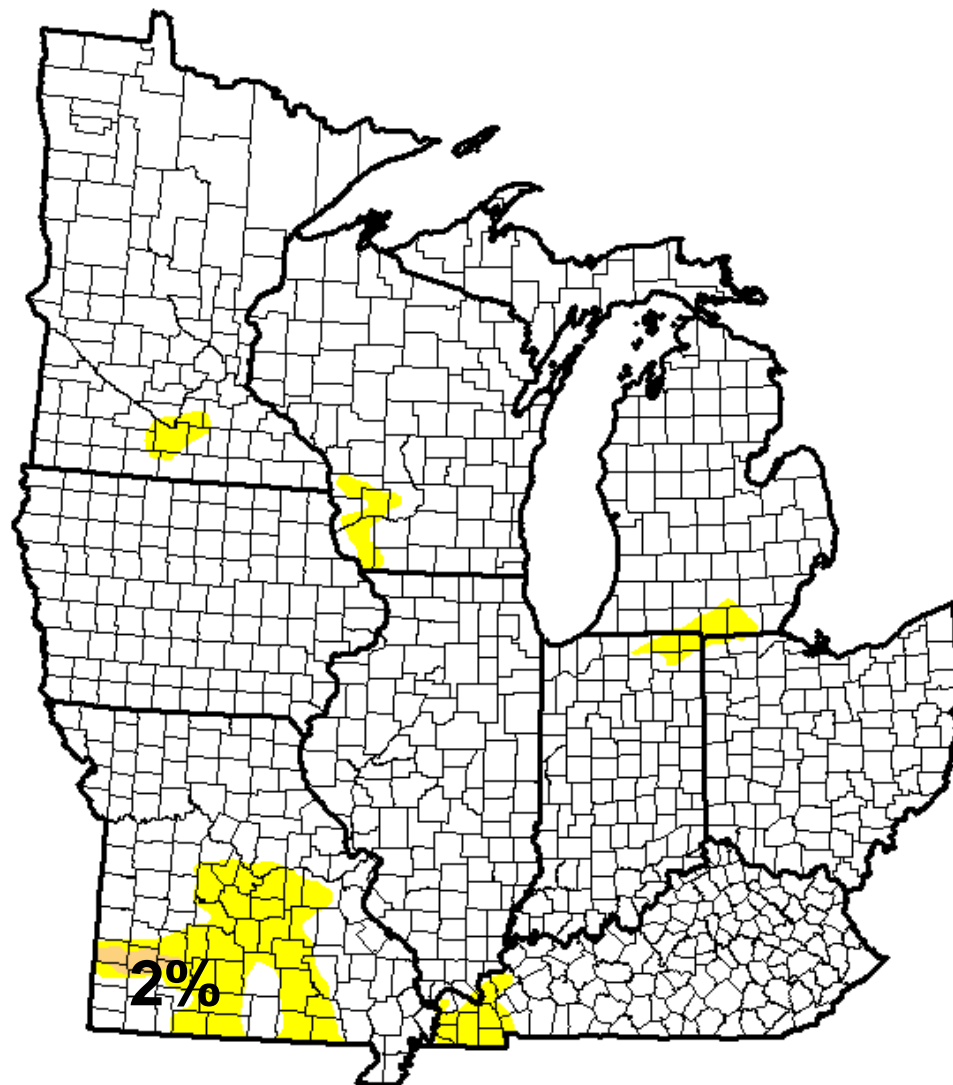
Intensity:

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Author:

Michael Brewer
NCDC/NOAA



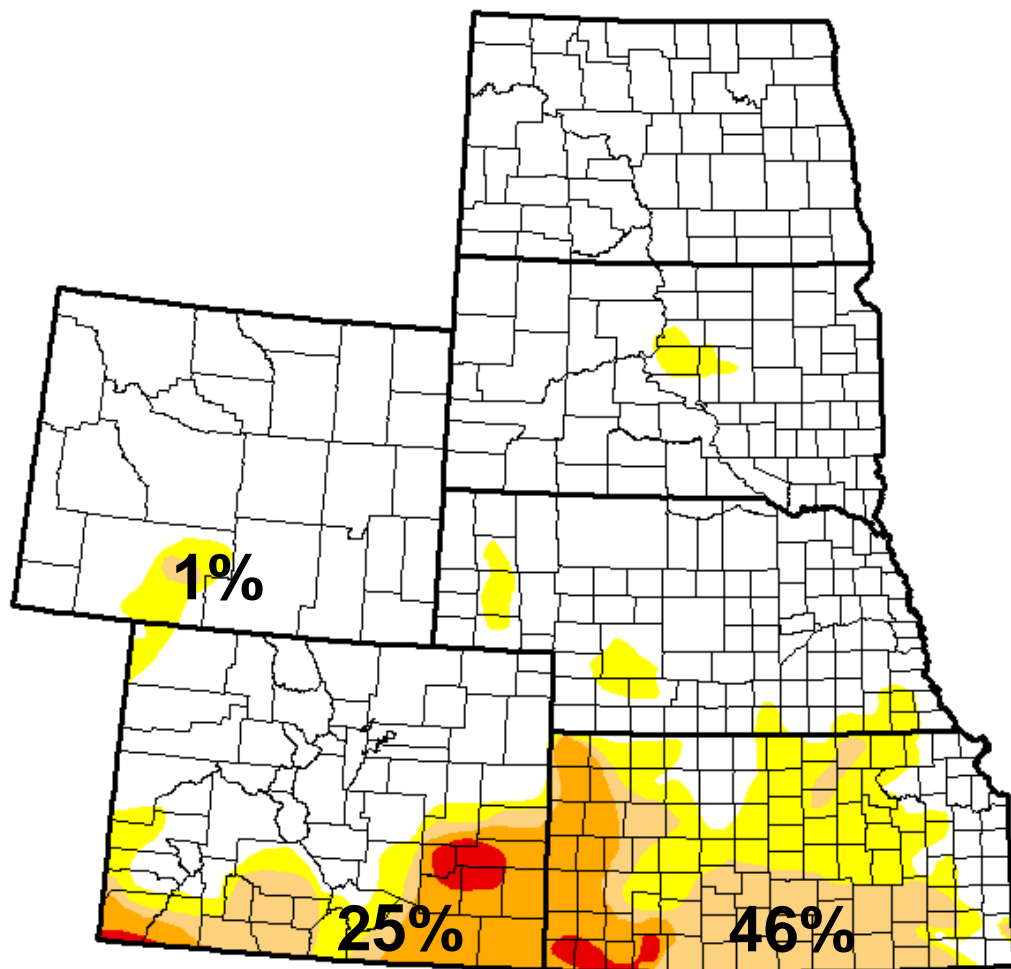
U.S. Drought Monitor

High Plains

September 16, 2014
 (Released Thursday, Sep. 18, 2014)
 Valid 8 a.m. EDT

Drought Conditions (Percent Area)

| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
|---|-------|-------|-------|-------|-------|------|
| Current | 77.31 | 22.69 | 12.71 | 5.67 | 0.87 | 0.00 |
| Last Week 9/9/2014 | 75.75 | 24.25 | 12.74 | 5.67 | 1.43 | 0.00 |
| 3 Months Ago 6/17/2014 | 62.91 | 37.09 | 23.90 | 12.36 | 5.34 | 0.39 |
| Start of Calendar Year 12/31/2013 | 45.79 | 54.21 | 20.60 | 12.28 | 2.44 | 0.30 |
| Start of Water Year 10/1/2013 | 29.87 | 70.13 | 43.21 | 19.50 | 3.01 | 0.30 |
| One Year Ago 9/17/2013 | 25.94 | 74.06 | 54.27 | 25.19 | 7.47 | 0.30 |



Intensity:

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

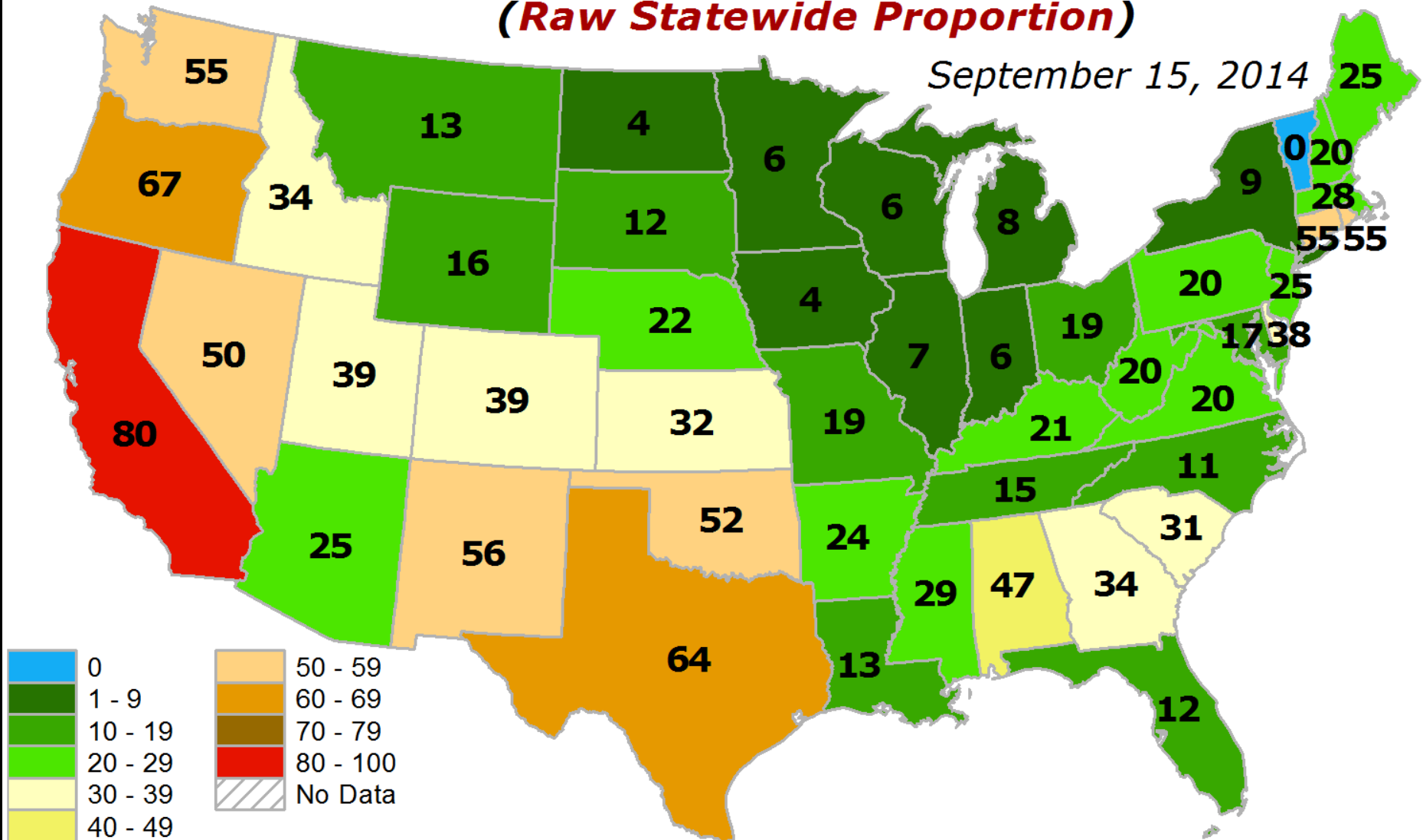
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 Michael Brewer
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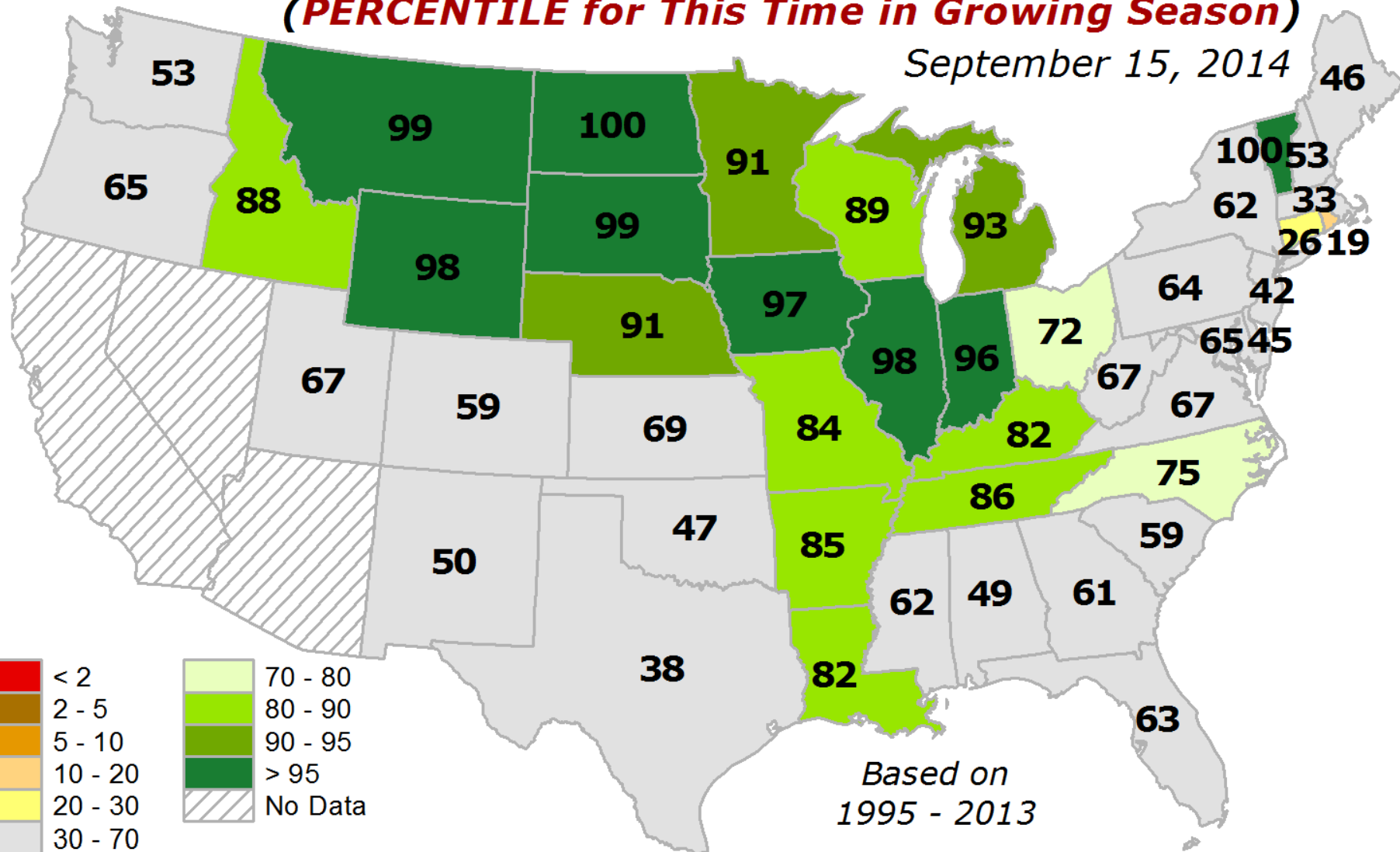
Extent of Topsoil Short or Very Short of Moisture (*Raw Statewide Proportion*)

September 15, 2014



Extent of Topsoil Short or Very Short of Moisture (*PERCENTILE for This Time in Growing Season*)

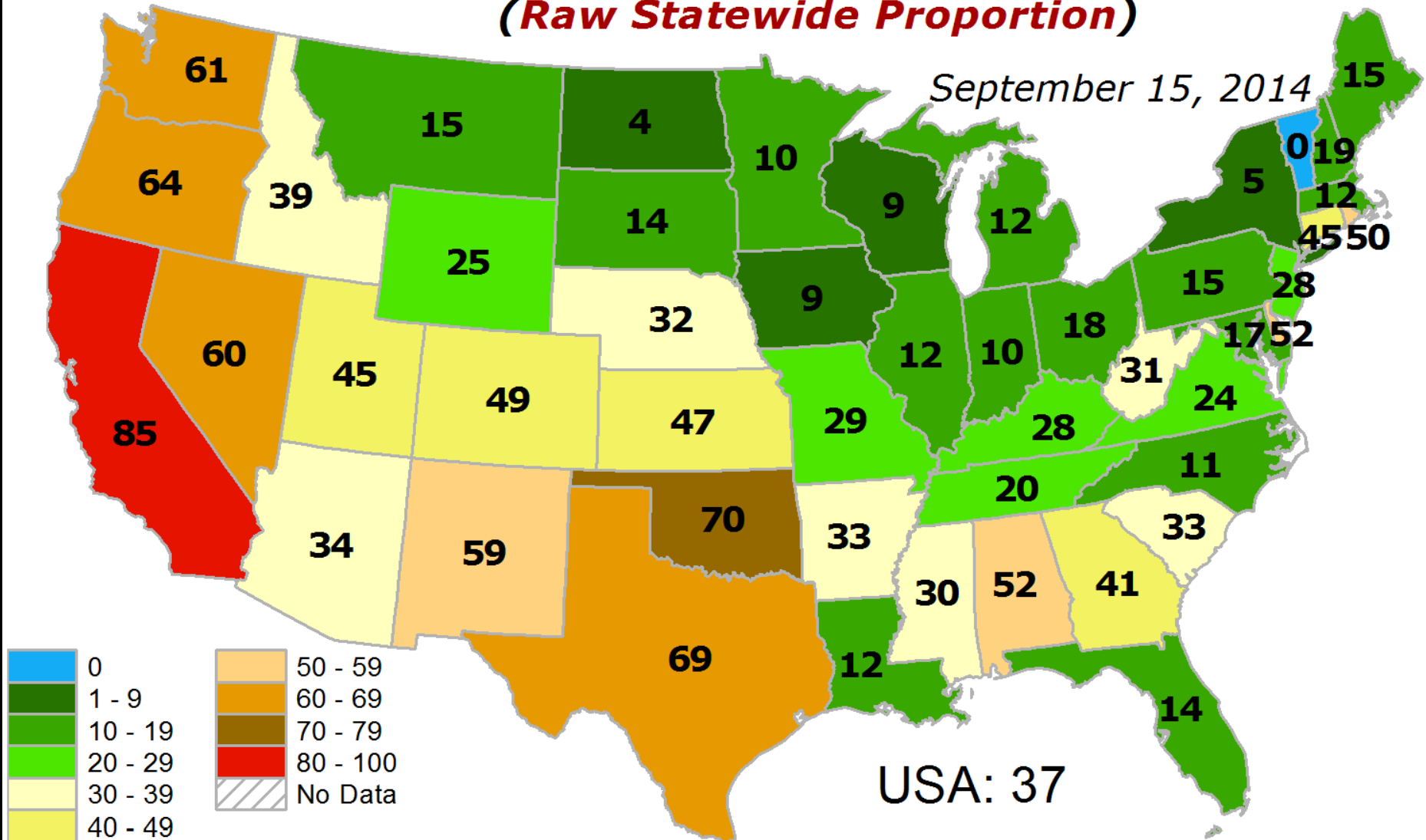
September 15, 2014



Based on
1995 - 2013

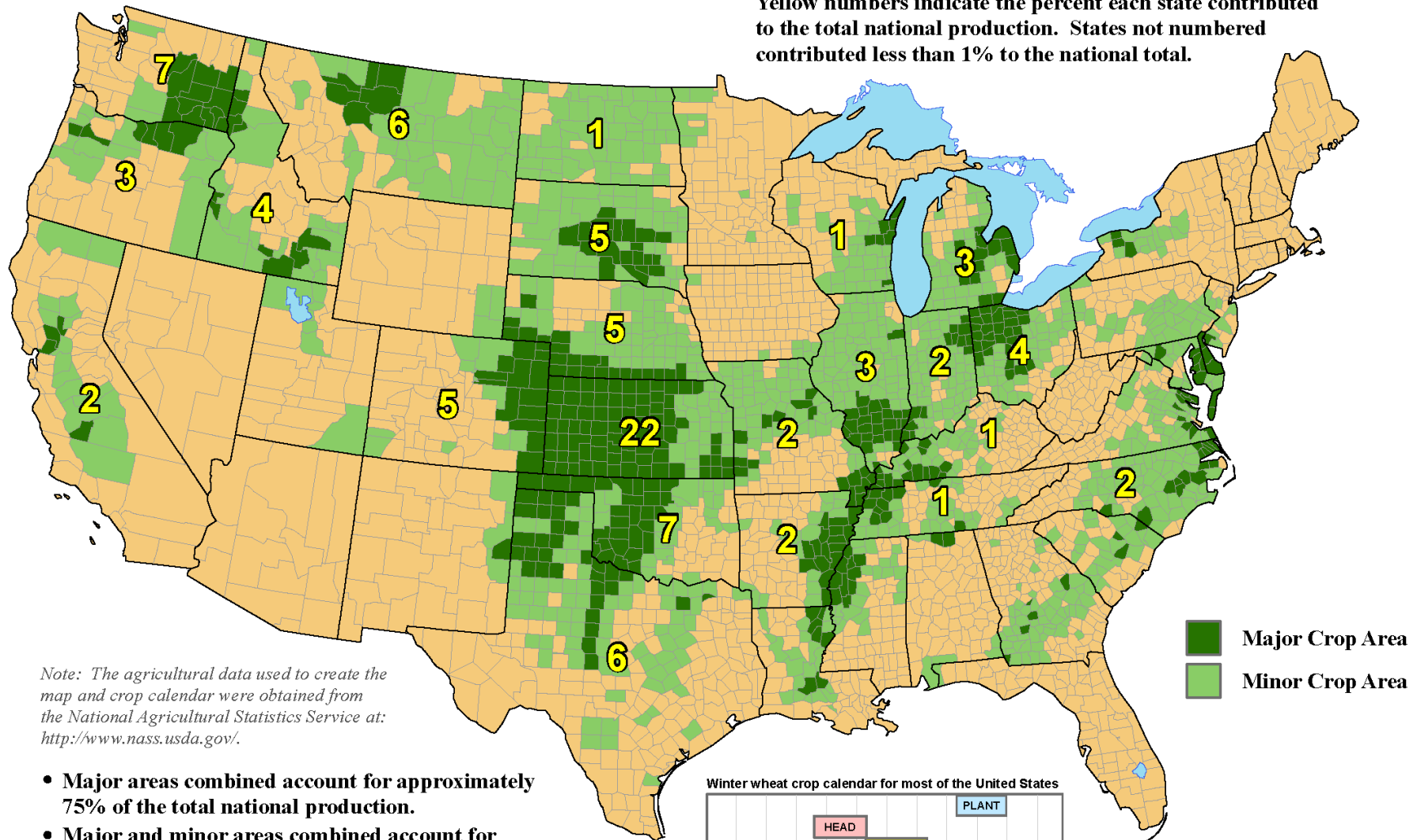
Extent of *Subsoil* Short or Very Short of Moisture (*Raw Statewide Proportion*)

September 15, 2014



United States: Winter Wheat

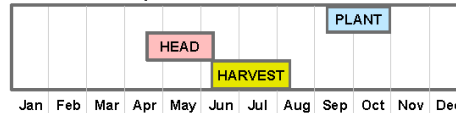
Yellow numbers indicate the percent each state contributed to the total national production. States not numbered contributed less than 1% to the national total.



Note: The agricultural data used to create the map and crop calendar were obtained from the National Agricultural Statistics Service at: <http://www.nass.usda.gov/>.

- Major areas combined account for approximately 75% of the total national production.
- Major and minor areas combined account for approximately 99% of the total national production.
- Major and minor areas and state production percentages are derived from NASS county- and state-level production data from 2006-2010.

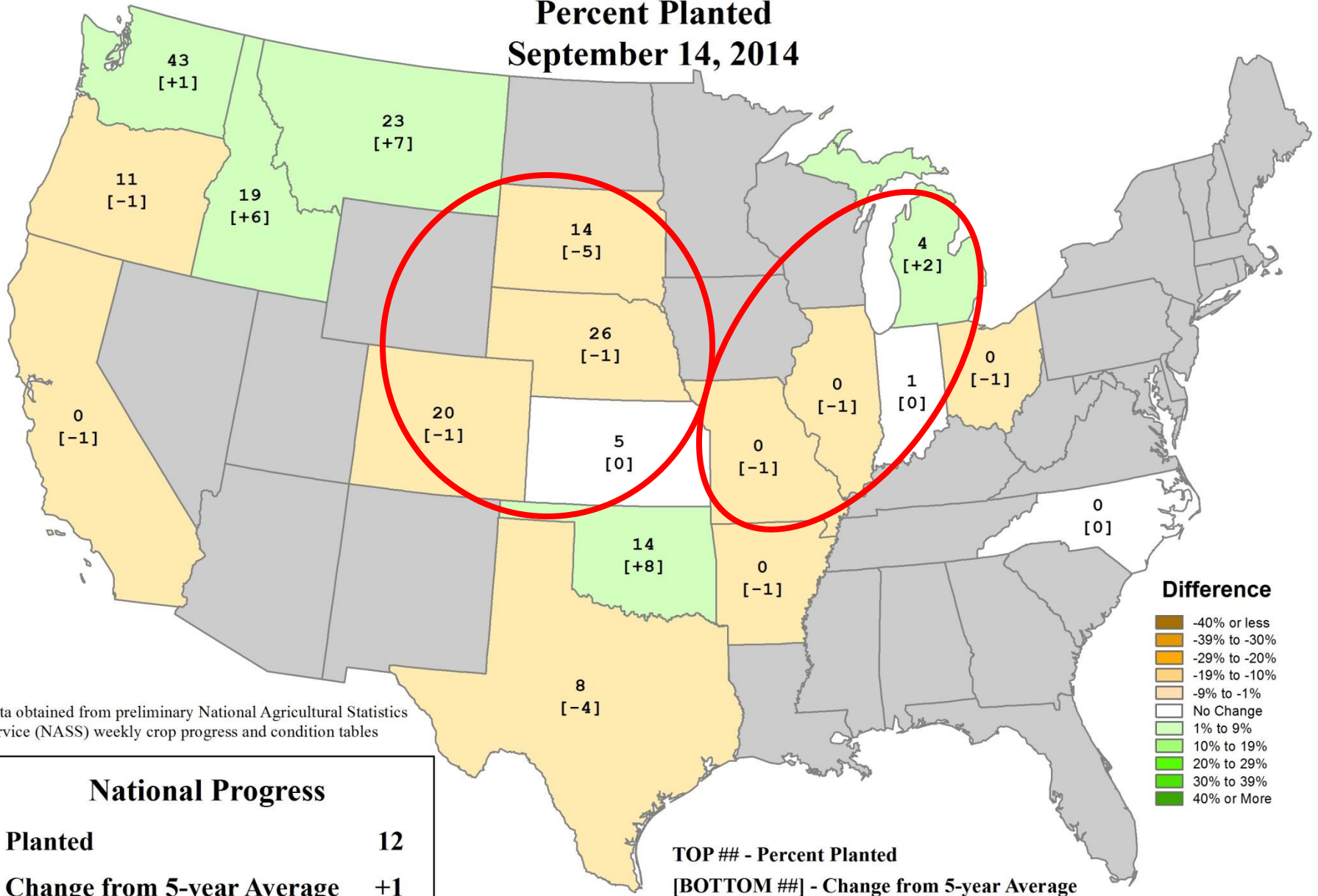
Winter wheat crop calendar for most of the United States



Crop calendar dates are based upon NASS crop progress data from 2006-2010. The field activities and crop development stages illustrated in the crop calendar represent the average time period when national progress advanced from 10 to 90 percent.

U.S. Winter Wheat Progress

Percent Planted
September 14, 2014



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

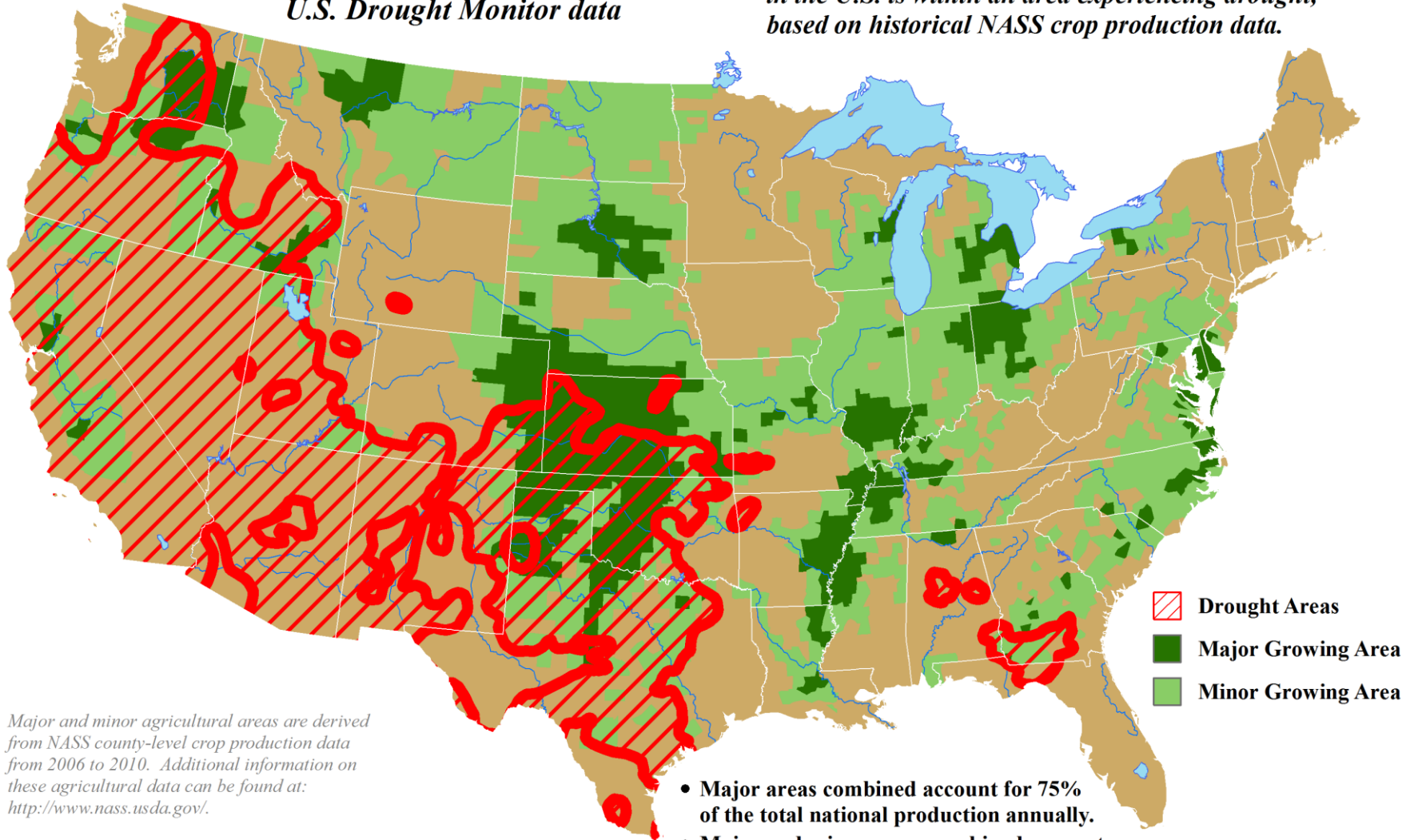
| National Progress | |
|----------------------------|----|
| Planted | 12 |
| Change from 5-year Average | +1 |




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

U.S. Winter Wheat Areas Experiencing Drought

Reflects September 16, 2014
U.S. Drought Monitor data

Approximately 35% of the winter wheat grown
in the U.S. is within an area experiencing drought,
based on historical NASS crop production data.



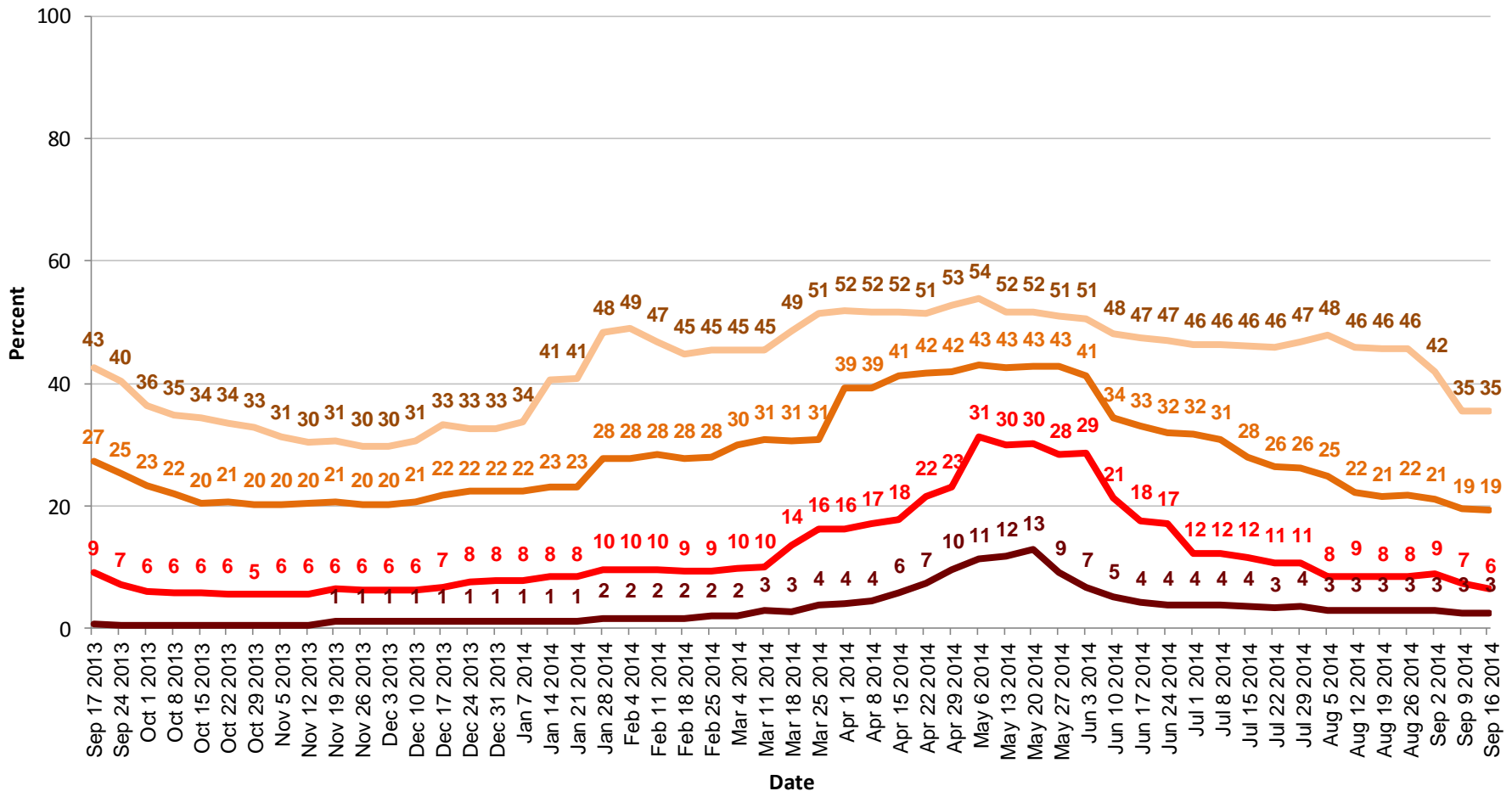
-  Drought Areas
-  Major Growing Area
-  Minor Growing Area

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.

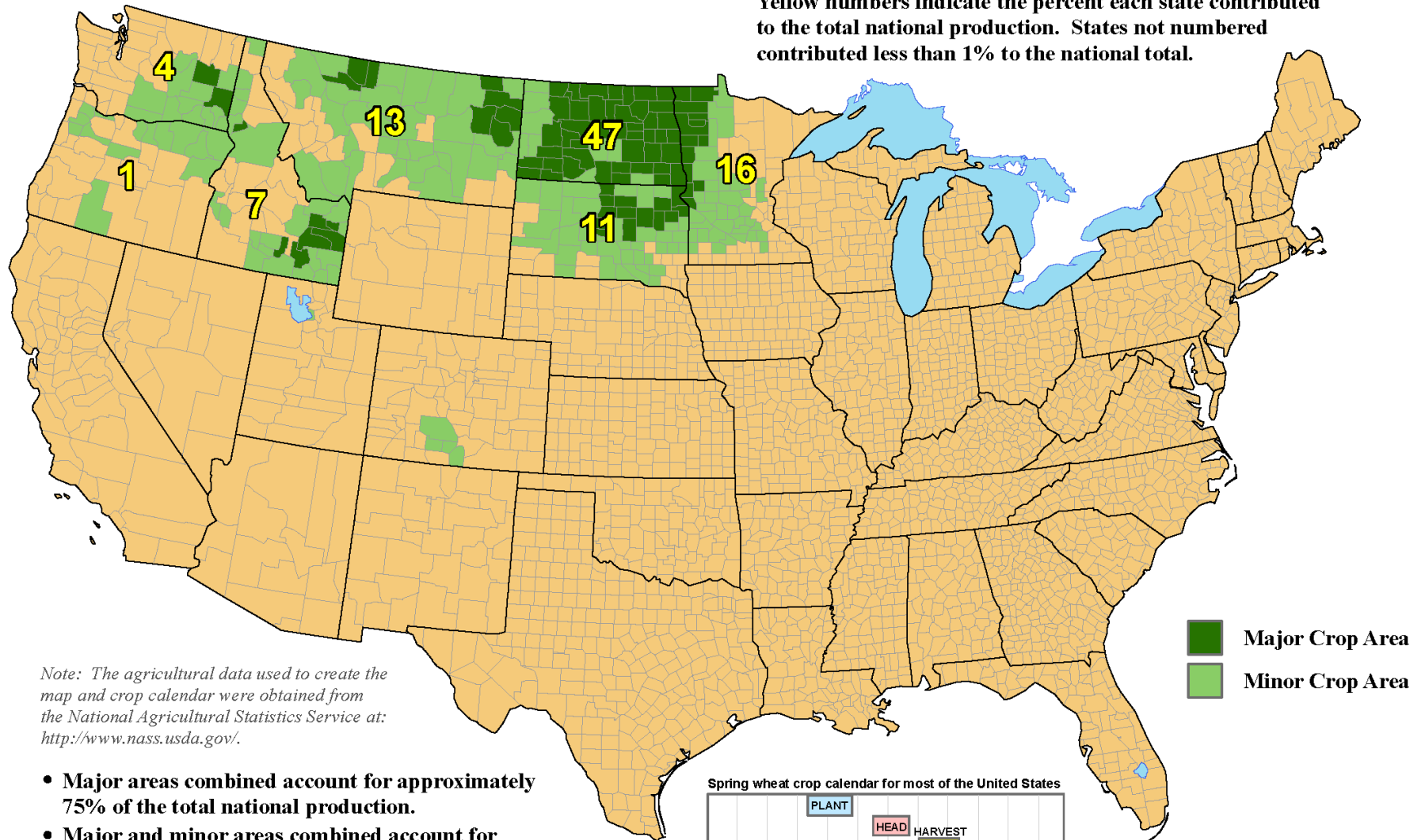
United States Winter Wheat Areas Located in Drought



- Moderate or more intense drought (D1+)
- Severe or more intense drought (D2+)
- Extreme or more intense drought (D3+)
- Exceptional drought (D4)

United States: Spring Wheat (excluding durum)

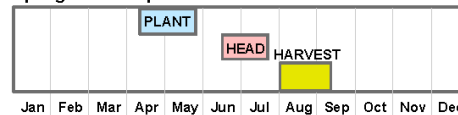
Yellow numbers indicate the percent each state contributed to the total national production. States not numbered contributed less than 1% to the national total.



Note: The agricultural data used to create the map and crop calendar were obtained from the National Agricultural Statistics Service at: <http://www.nass.usda.gov/>.

- Major areas combined account for approximately 75% of the total national production.
- Major and minor areas combined account for approximately 99% of the total national production.
- Major and minor areas and state production percentages are derived from NASS county- and state-level production data from 2006-2010.

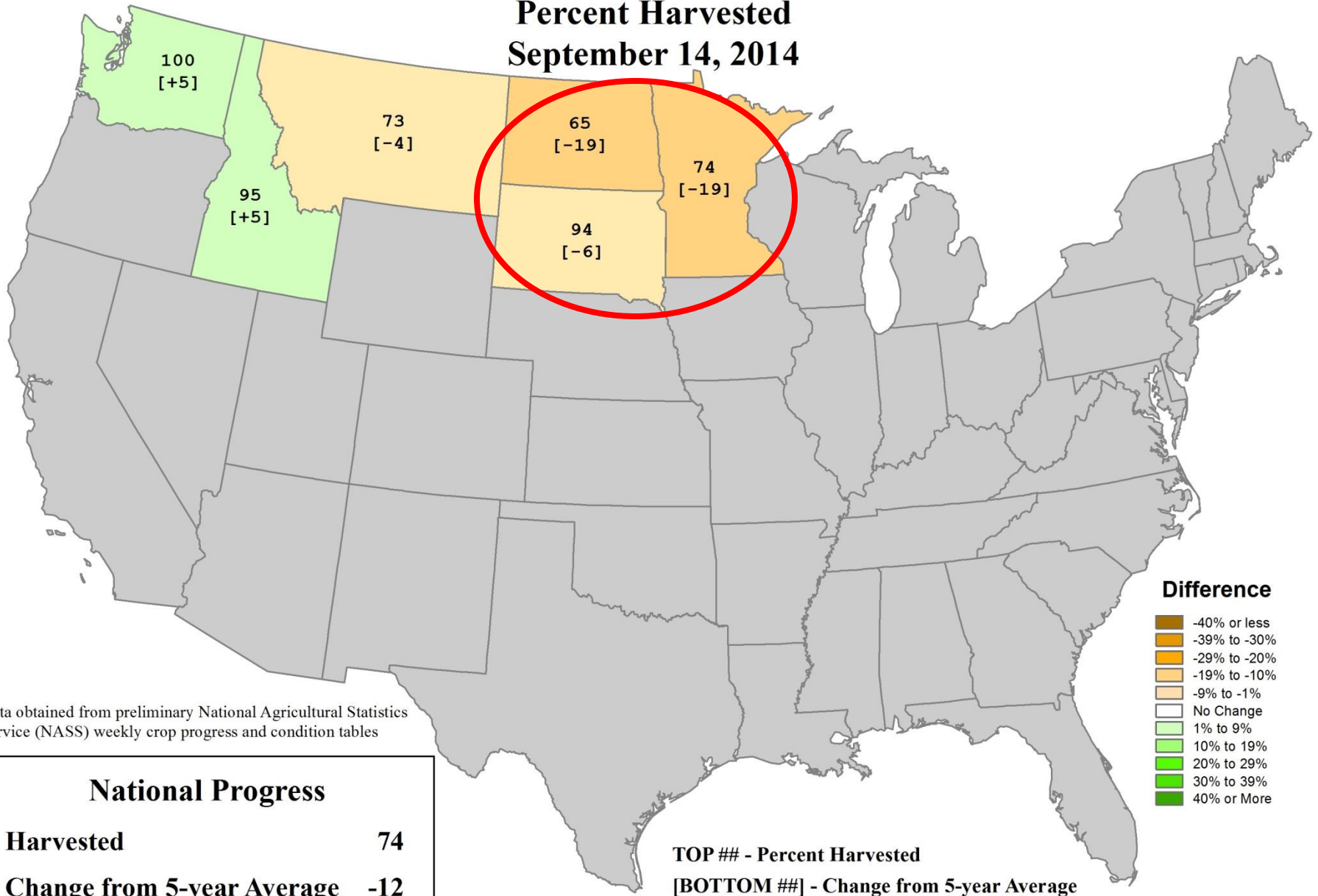
Spring wheat crop calendar for most of the United States



Crop calendar dates are based upon NASS crop progress data from 2006-2010. The field activities and crop development stages illustrated in the crop calendar represent the average time period when national progress advanced from 10 to 90 percent.

U.S. Spring Wheat Progress

Percent Harvested
September 14, 2014



Difference

- 40% or less
- 39% to -30%
- 29% to -20%
- 19% to -10%
- 9% to -1%
- No Change
- 1% to 9%
- 10% to 19%
- 20% to 29%
- 30% to 39%
- 40% or More

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

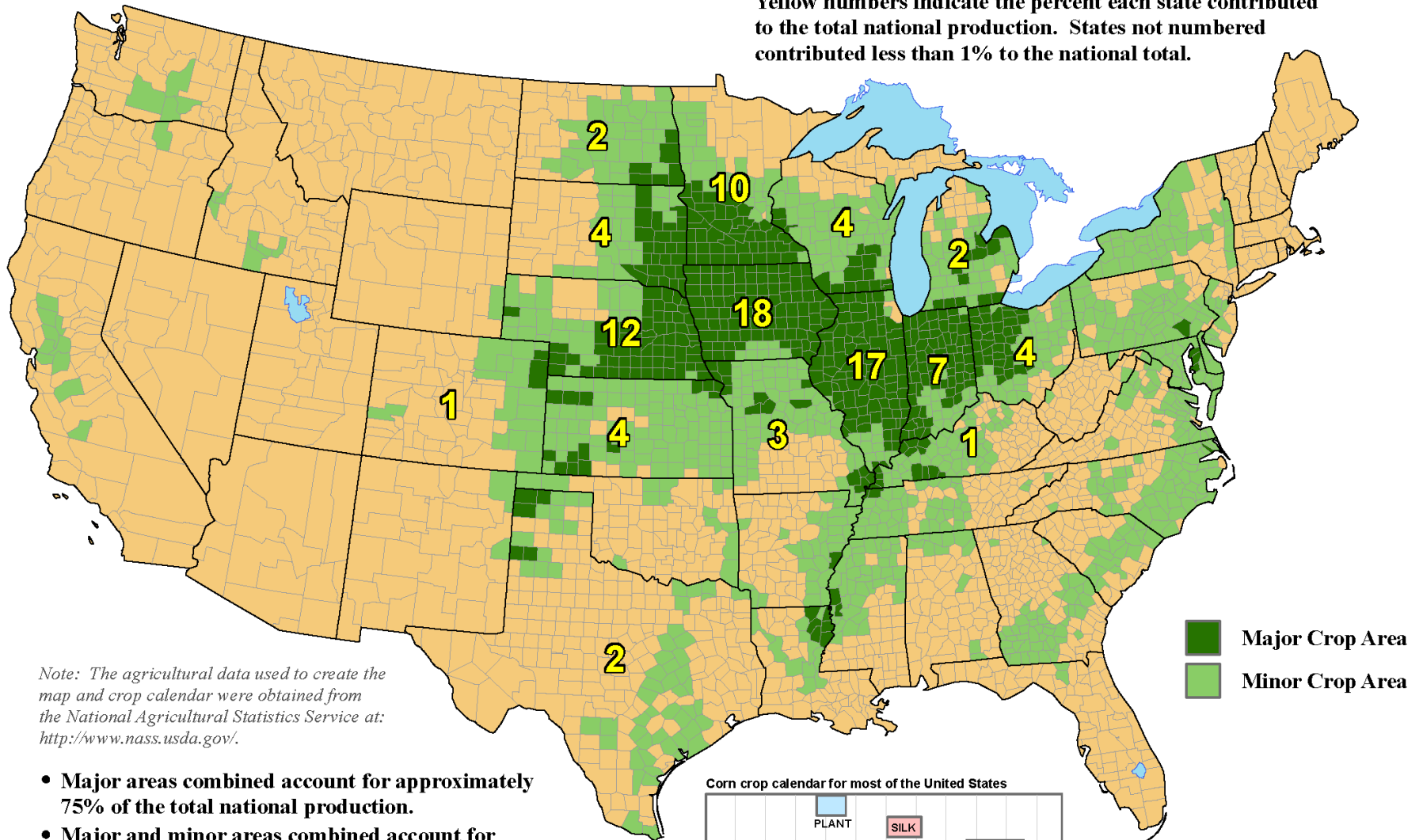
National Progress

Harvested 74
Change from 5-year Average -12

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

United States: Corn

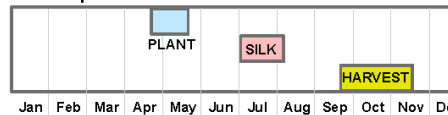
Yellow numbers indicate the percent each state contributed to the total national production. States not numbered contributed less than 1% to the national total.



Note: The agricultural data used to create the map and crop calendar were obtained from the National Agricultural Statistics Service at: <http://www.nass.usda.gov/>.

- Major areas combined account for approximately 75% of the total national production.
- Major and minor areas combined account for approximately 99% of the total national production.
- Major and minor areas and state production percentages are derived from NASS county- and state-level production data from 2006-2010.

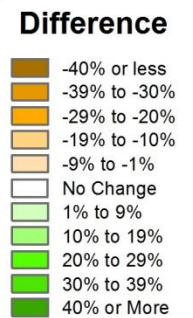
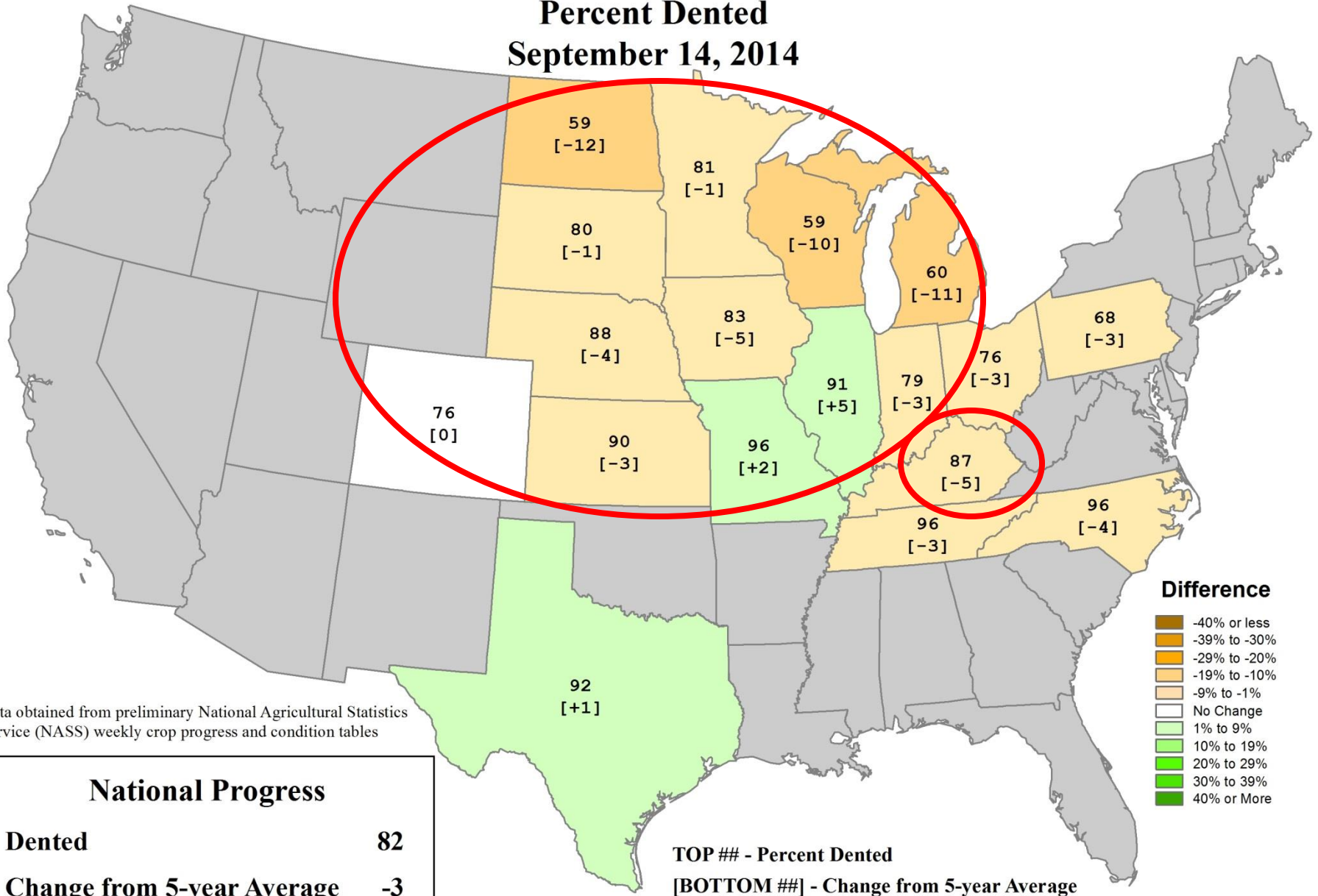
Corn crop calendar for most of the United States



Crop calendar dates are based upon NASS crop progress data from 2006-2010. The field activities and crop development stages illustrated in the crop calendar represent the average time period when national progress advanced from 10 to 90 percent.

U.S. Corn Progress

Percent Dented
September 14, 2014



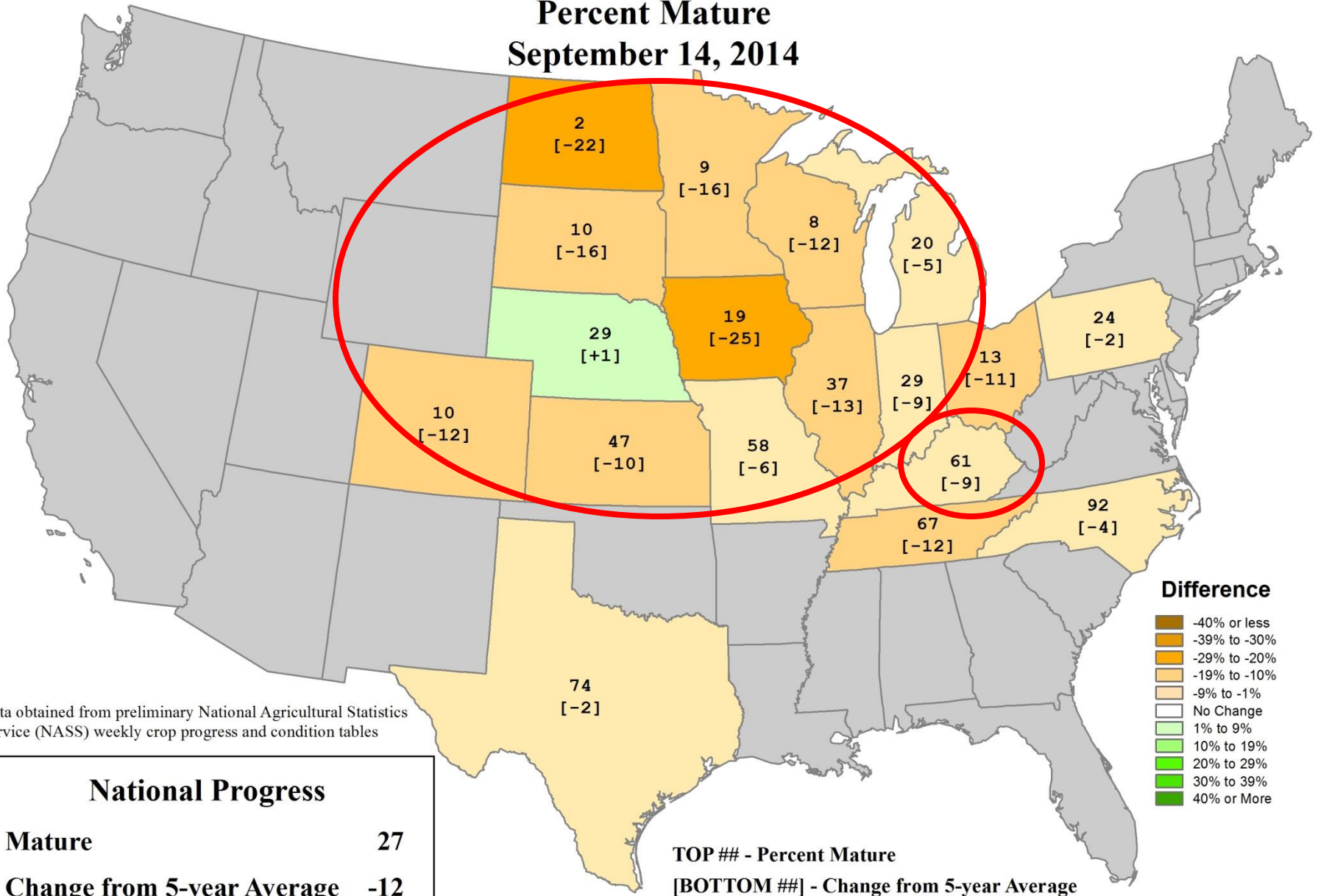
Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

| National Progress | |
|----------------------------|----|
| Dented | 82 |
| Change from 5-year Average | -3 |

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

U.S. Corn Progress

Percent Mature
September 14, 2014



Difference

- 40% or less
- 39% to -30%
- 29% to -20%
- 19% to -10%
- 9% to -1%
- No Change
- 1% to 9%
- 10% to 19%
- 20% to 29%
- 30% to 39%
- 40% or More

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

National Progress

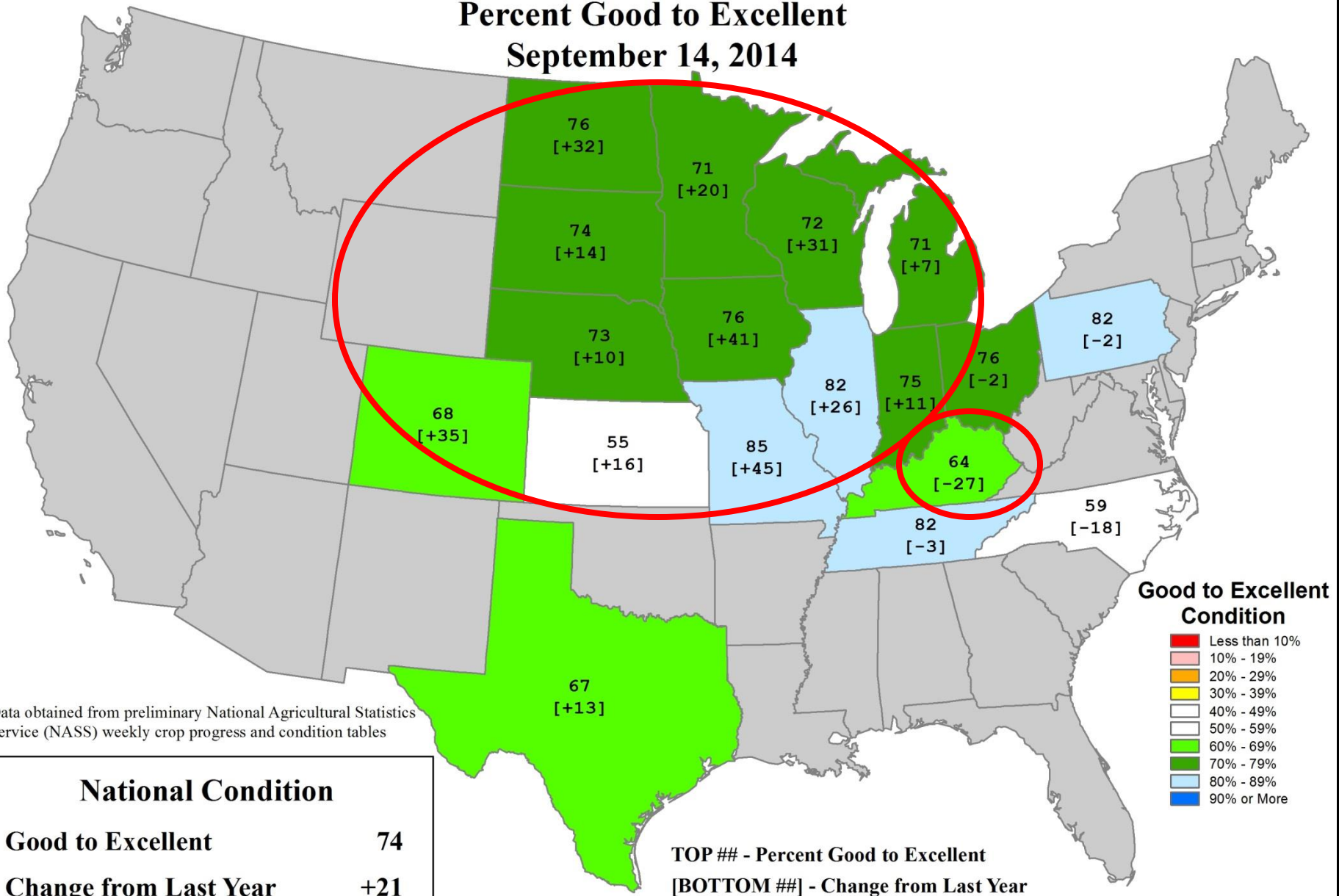
Mature 27
Change from 5-year Average -12

TOP ## - Percent Mature

[BOTTOM ##] - Change from 5-year Average

U.S. Corn Conditions

Percent Good to Excellent
September 14, 2014



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

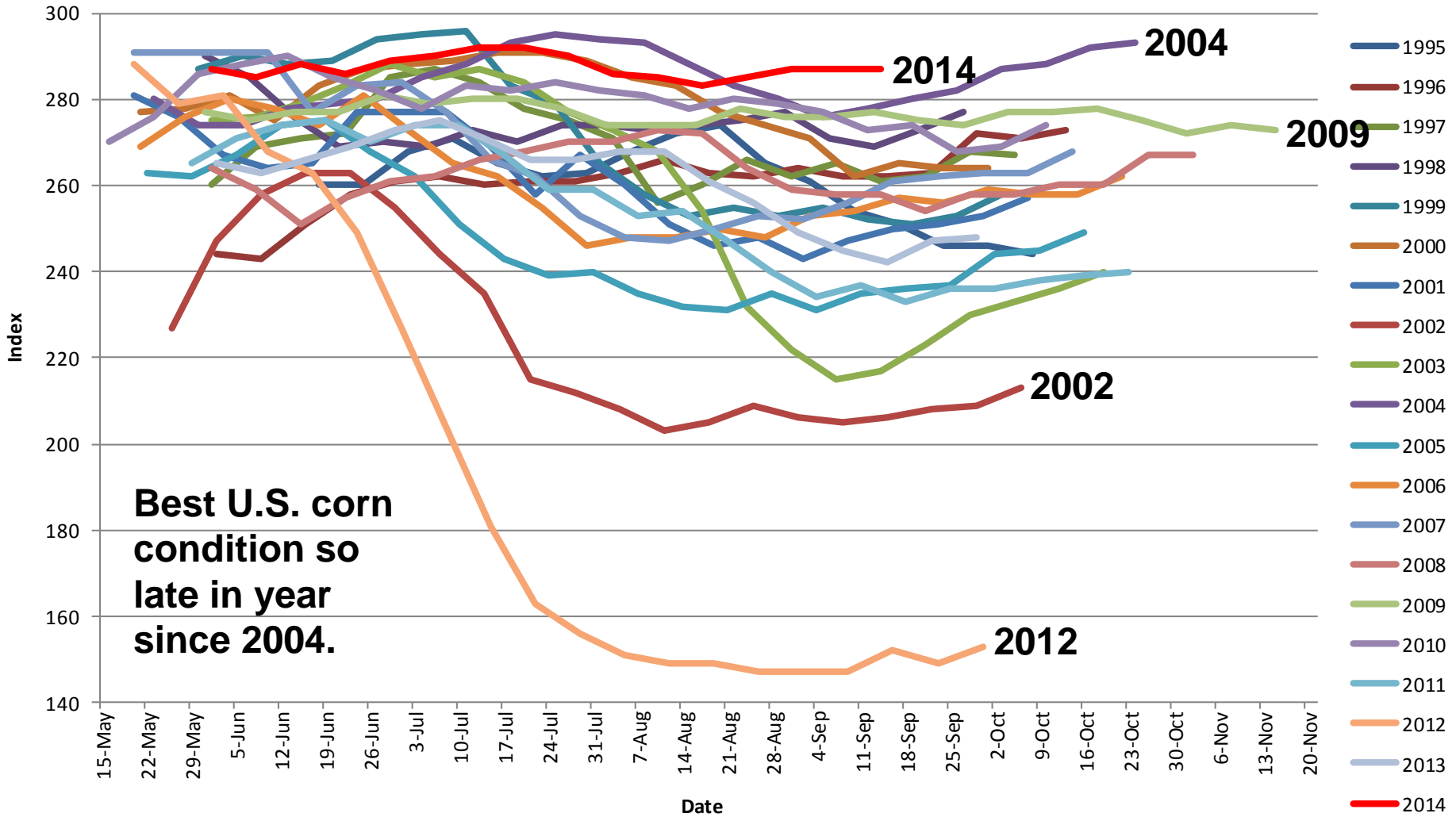
| National Condition | |
|-----------------------|-----|
| Good to Excellent | 74 |
| Change from Last Year | +21 |

TOP ## - Percent Good to Excellent
[BOTTOM ##] - Change from Last Year

Good to Excellent Condition

- Less than 10%
- 10% - 19%
- 20% - 29%
- 30% - 39%
- 40% - 49%
- 50% - 59%
- 60% - 69%
- 70% - 79%
- 80% - 89%
- 90% or More

U.S. CORN Condition Index



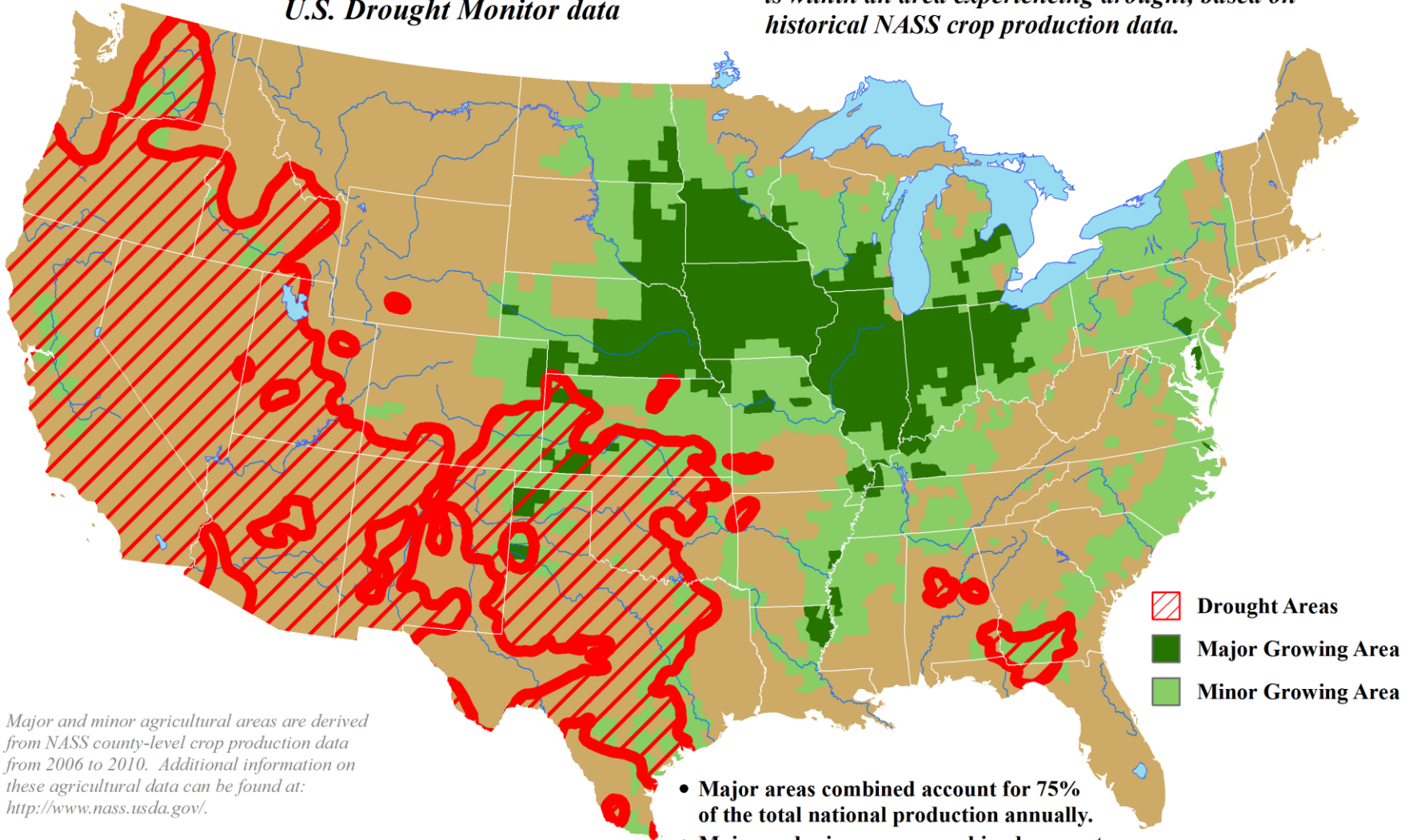
Index Weighting: Excellent = 4; Good = 3; Fair = 2; Poor = 1; Very Poor = 0

Based on NASS crop progress data.

U.S. Corn Areas Experiencing Drought

Reflects September 16, 2014
U.S. Drought Monitor data

Approximately 5% of the corn grown in the U.S.
is within an area experiencing drought, based on
historical NASS crop production data.

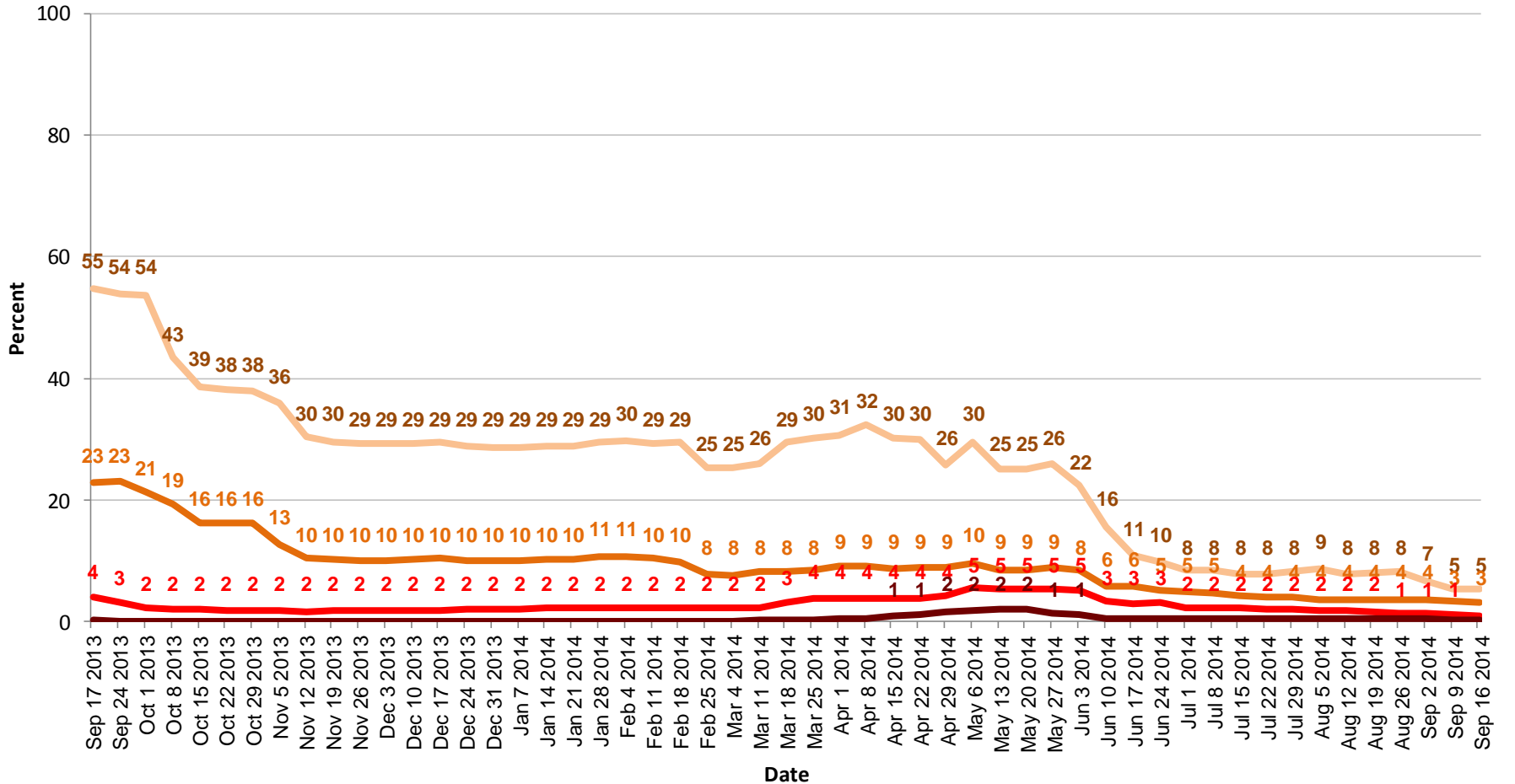


Major and minor agricultural areas are derived from NASS county-level crop production data from 2006 to 2010. Additional information on these agricultural data can be found at: <http://www.nass.usda.gov/>.

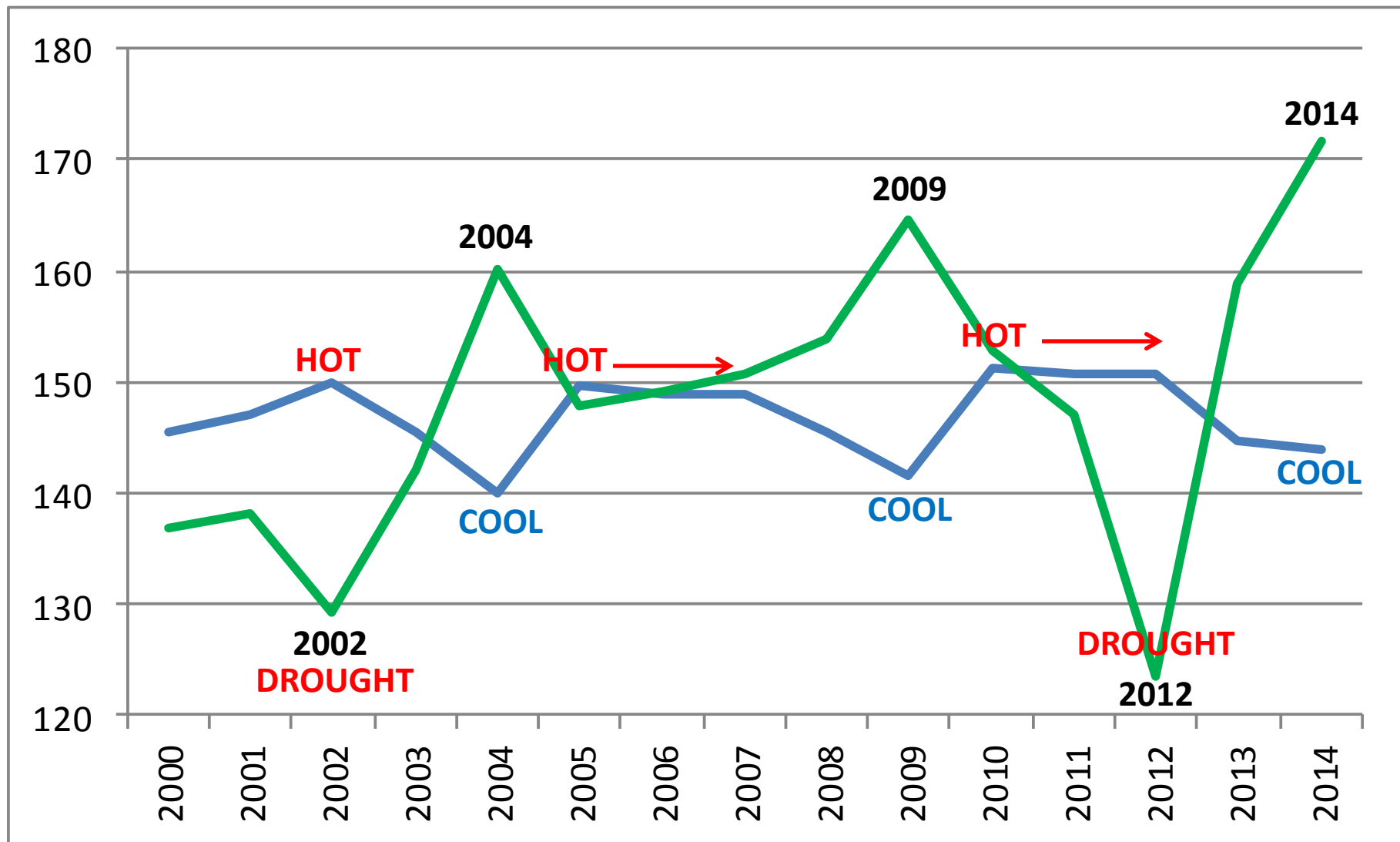
Mapped drought areas are derived from the U.S. Drought Monitor product and do not depict the intensity of drought in any particular location. More information on the Drought Monitor can be found at: <http://droughtmonitor.unl.edu/>.

- 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.

United States Corn Areas Located in Drought

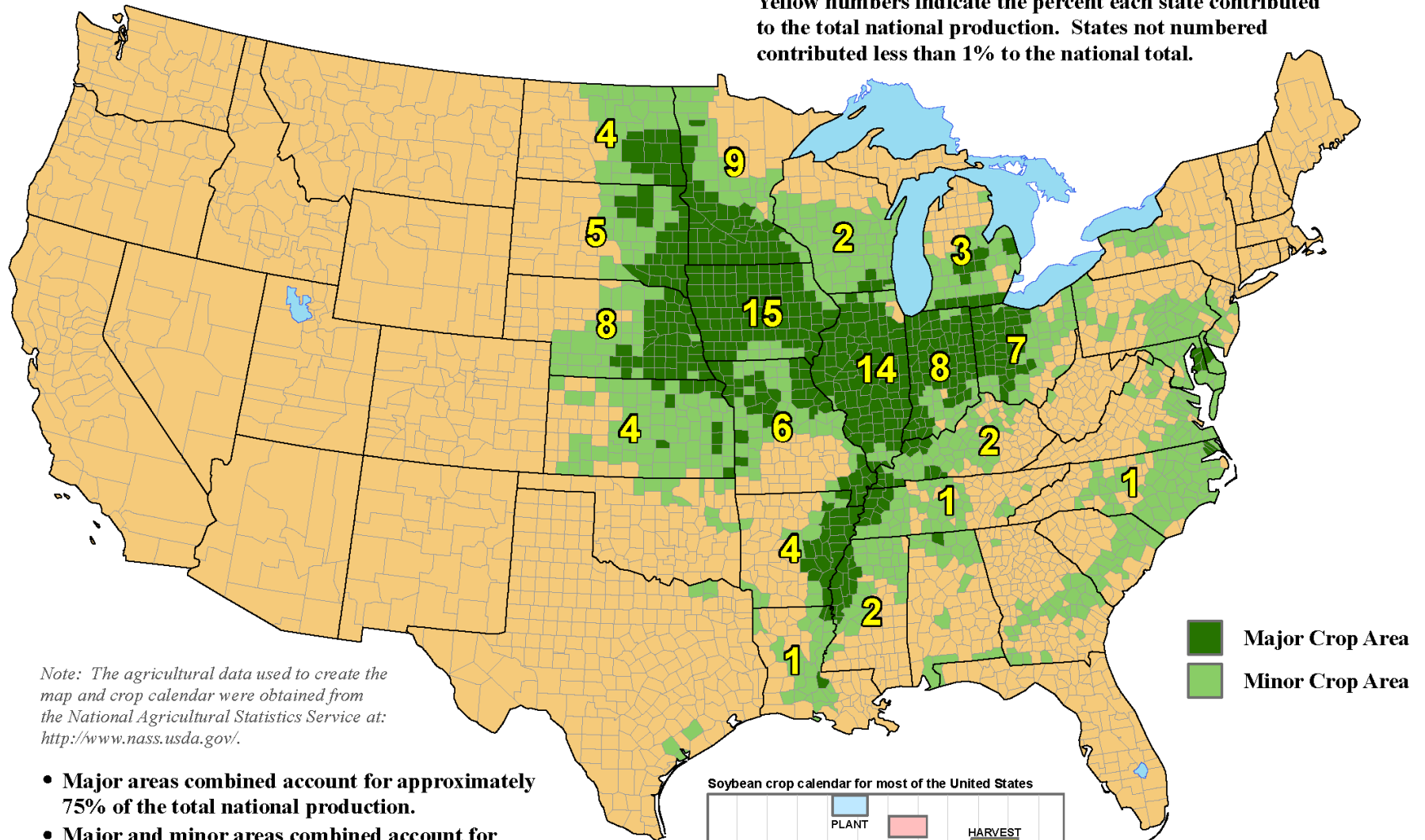


U.S. Corn Yield, Bushels Per Acre and Corn Belt Summer Average Temperature (°F) (Temperature Multiplied by Two for Scaling Purposes) 2000-2014



United States: Soybeans

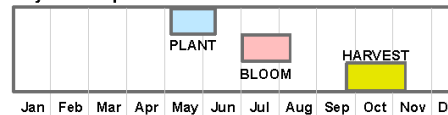
Yellow numbers indicate the percent each state contributed to the total national production. States not numbered contributed less than 1% to the national total.



Note: The agricultural data used to create the map and crop calendar were obtained from the National Agricultural Statistics Service at: <http://www.nass.usda.gov/>.

- Major areas combined account for approximately 75% of the total national production.
- Major and minor areas combined account for approximately 99% of the total national production.
- Major and minor areas and state production percentages are derived from NASS county- and state-level production data from 2006-2010.

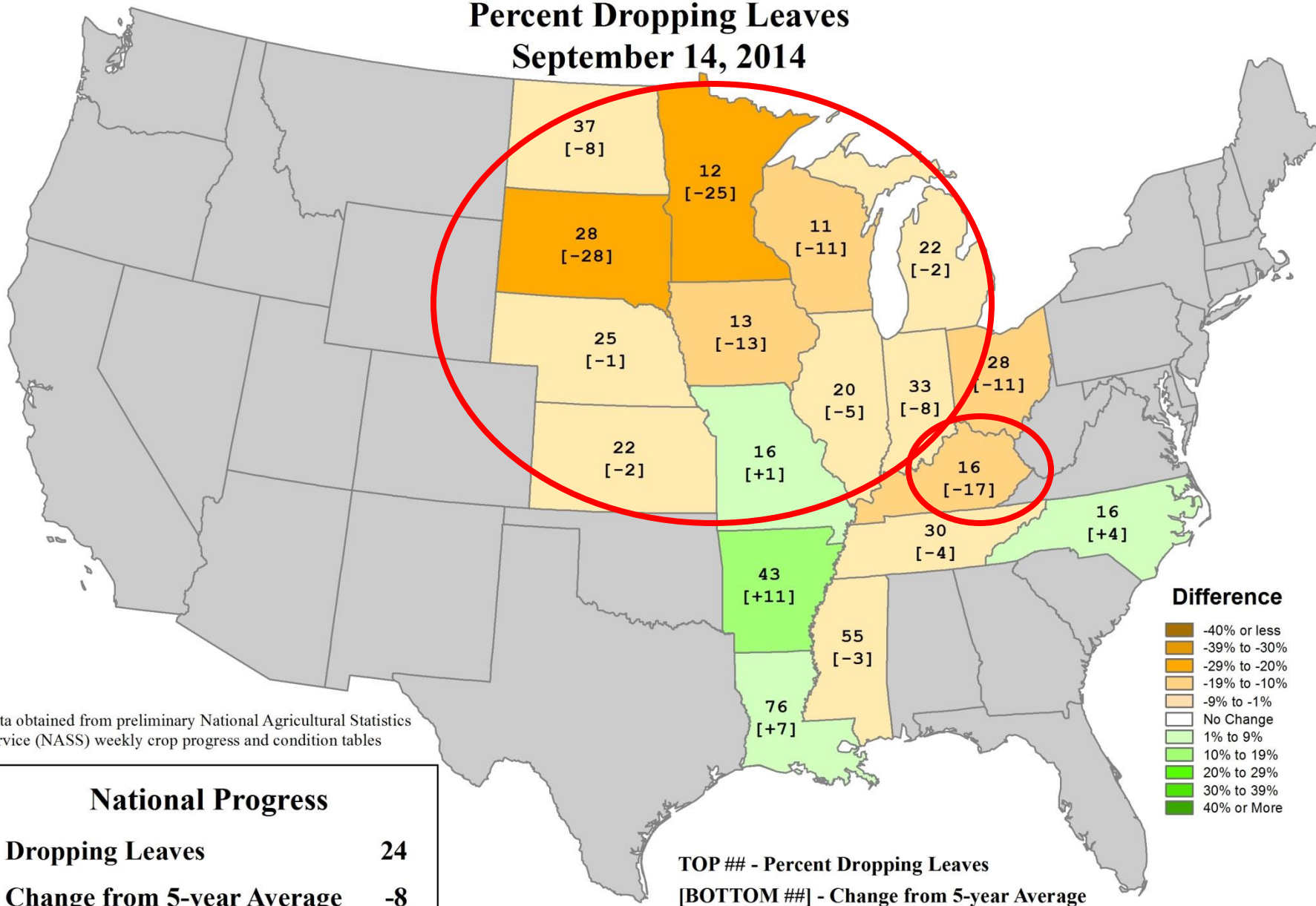
Soybean crop calendar for most of the United States



Crop calendar dates are based upon NASS crop progress data from 2006-2010. The field activities and crop development stages illustrated in the crop calendar represent the average time period when national progress advanced from 10 to 90 percent.

U.S. Soybeans Progress

Percent Dropping Leaves
September 14, 2014



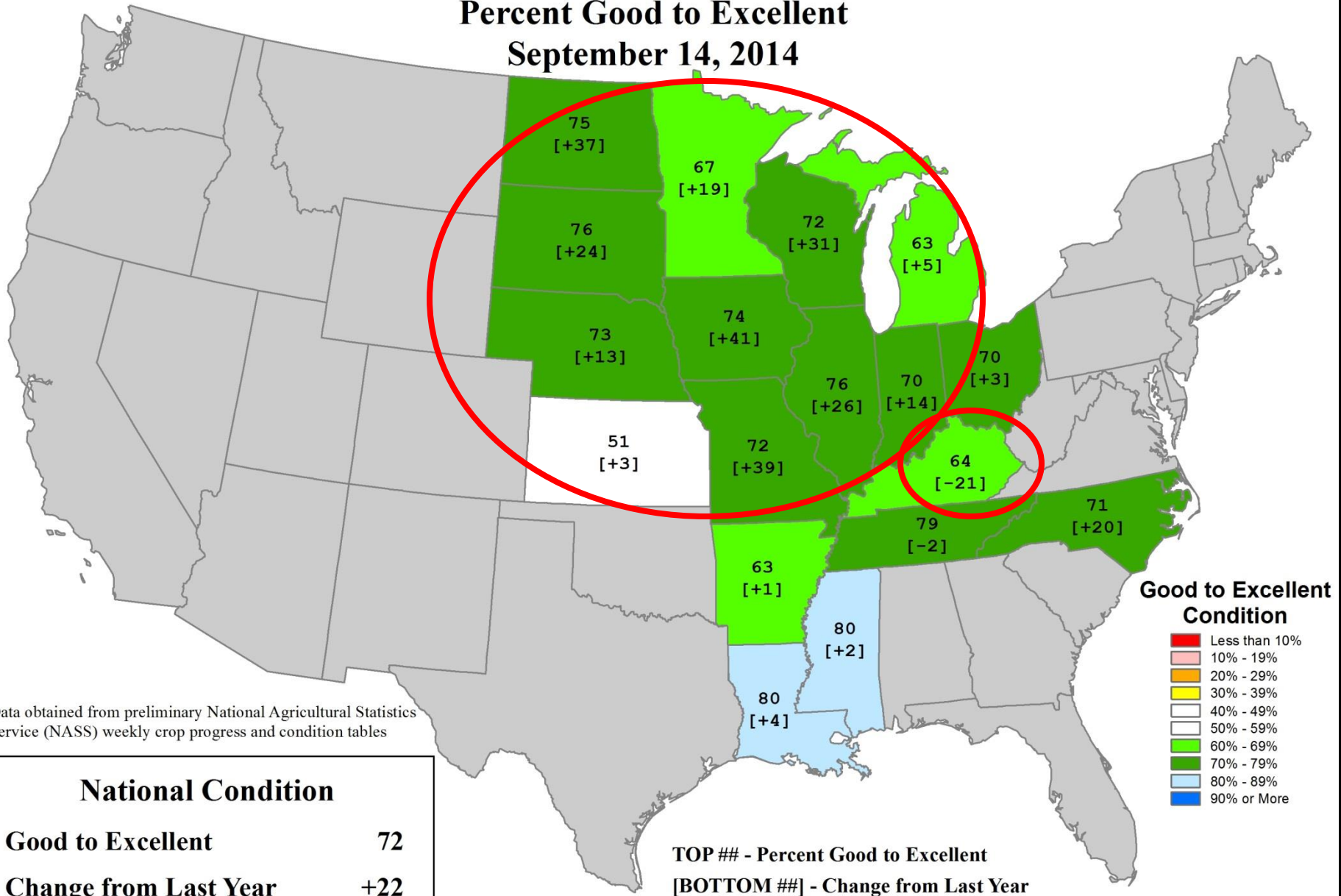
Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

| National Progress | |
|----------------------------|----|
| Dropping Leaves | 24 |
| Change from 5-year Average | -8 |

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

U.S. Soybean Conditions

Percent Good to Excellent
September 14, 2014

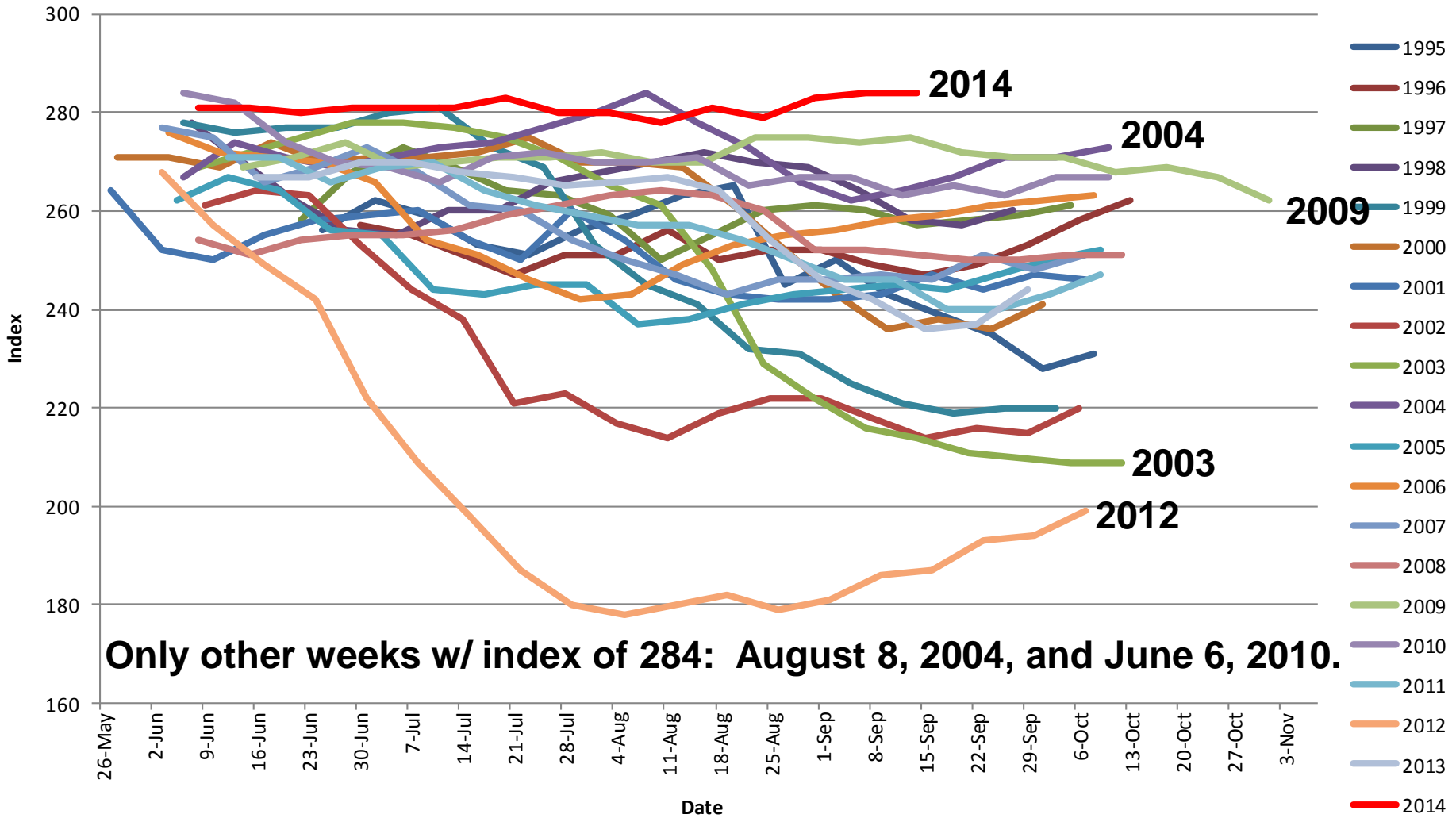


Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

| National Condition | |
|-----------------------|-----|
| Good to Excellent | 72 |
| Change from Last Year | +22 |

TOP ## - Percent Good to Excellent
[BOTTOM ##] - Change from Last Year

U.S. SOYBEAN Condition Index



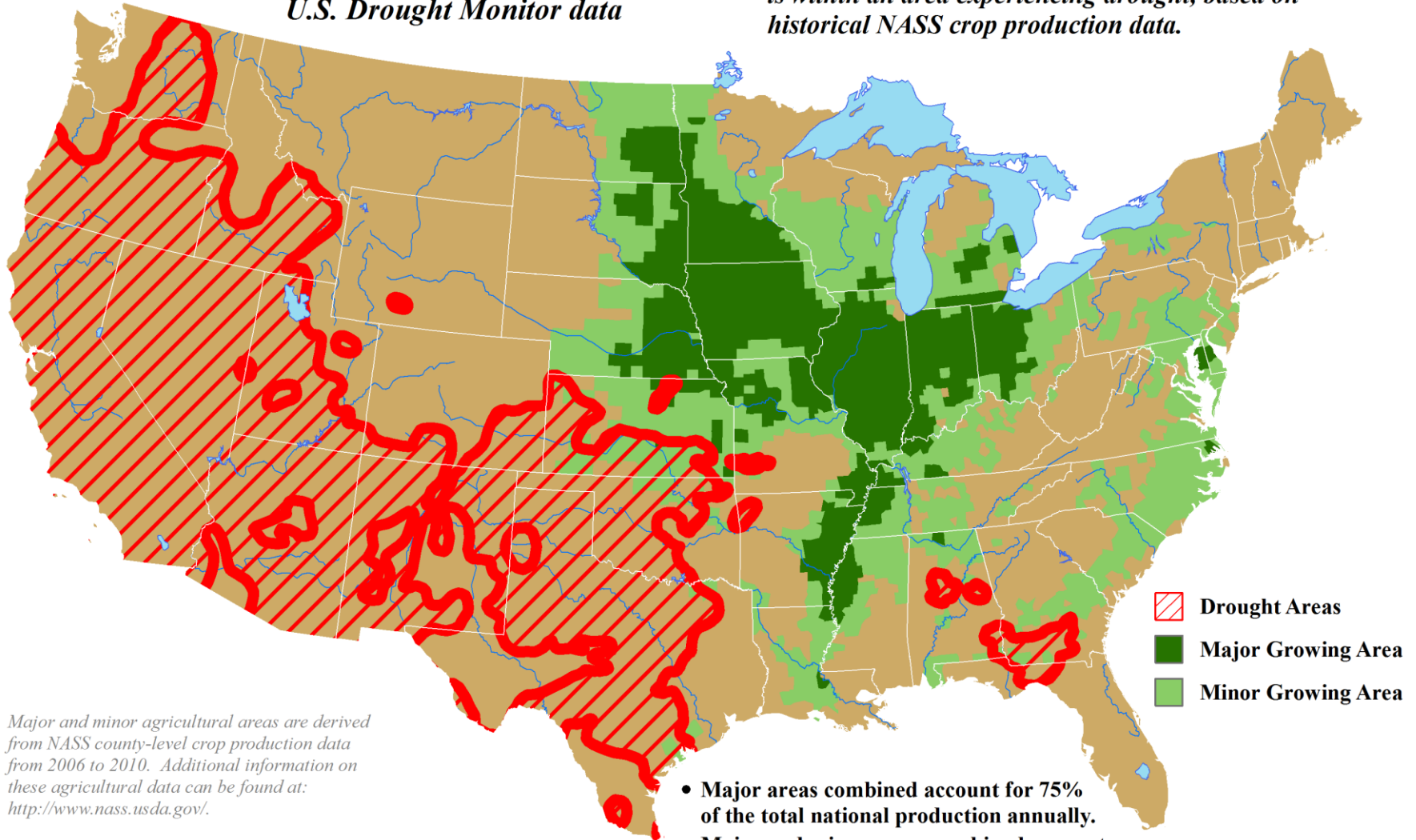
Only other weeks w/ index of 284: August 8, 2004, and June 6, 2010.

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

U.S. Soybean Areas Experiencing Drought

Reflects September 16, 2014
U.S. Drought Monitor data

Approximately 2% of the soybeans grown in the U.S.
is within an area experiencing drought, based on
historical NASS crop production data.

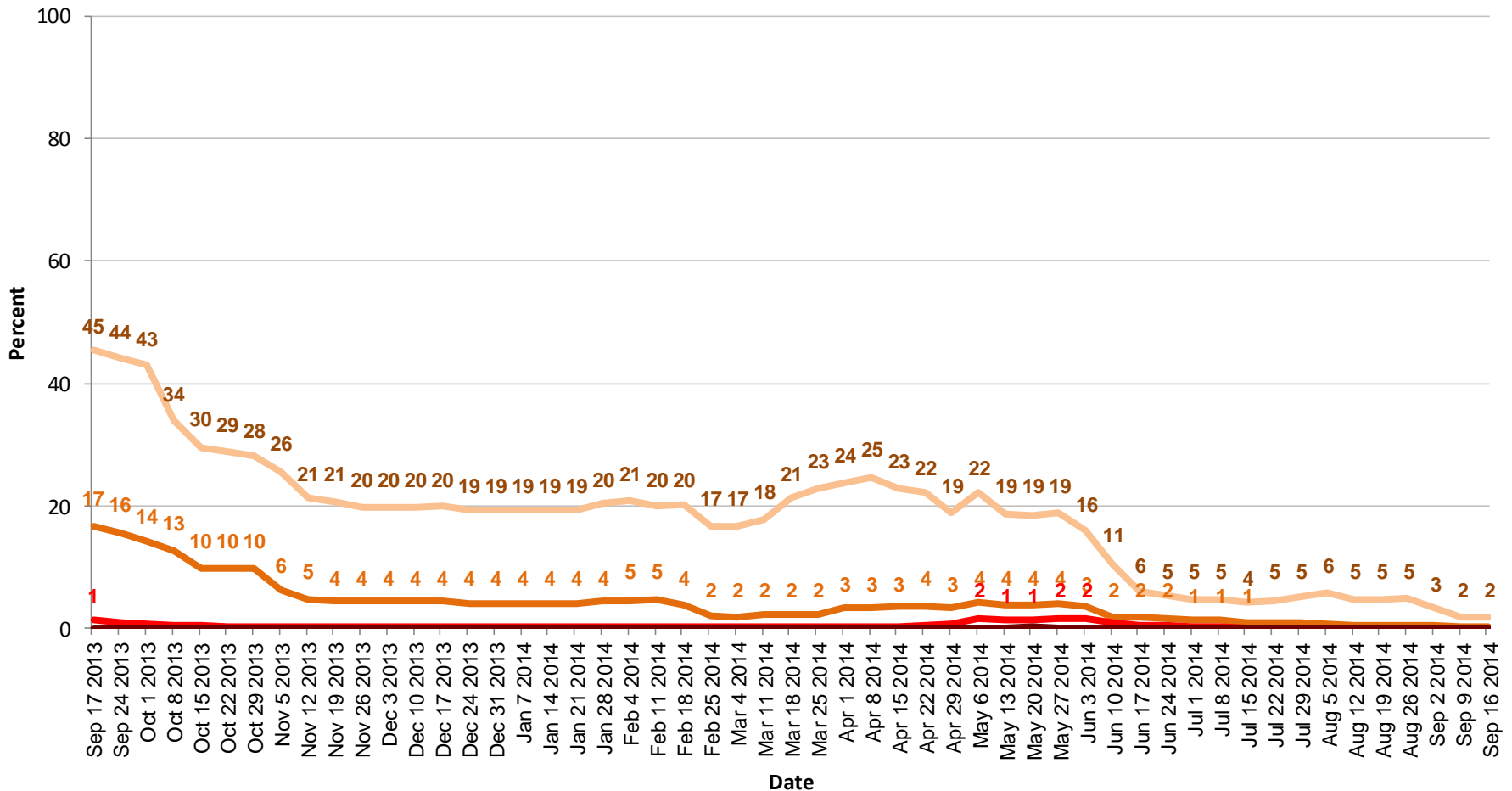


Major and minor agricultural areas are derived from NASS county-level crop production data from 2006 to 2010. Additional information on these agricultural data can be found at: <http://www.nass.usda.gov/>.

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.

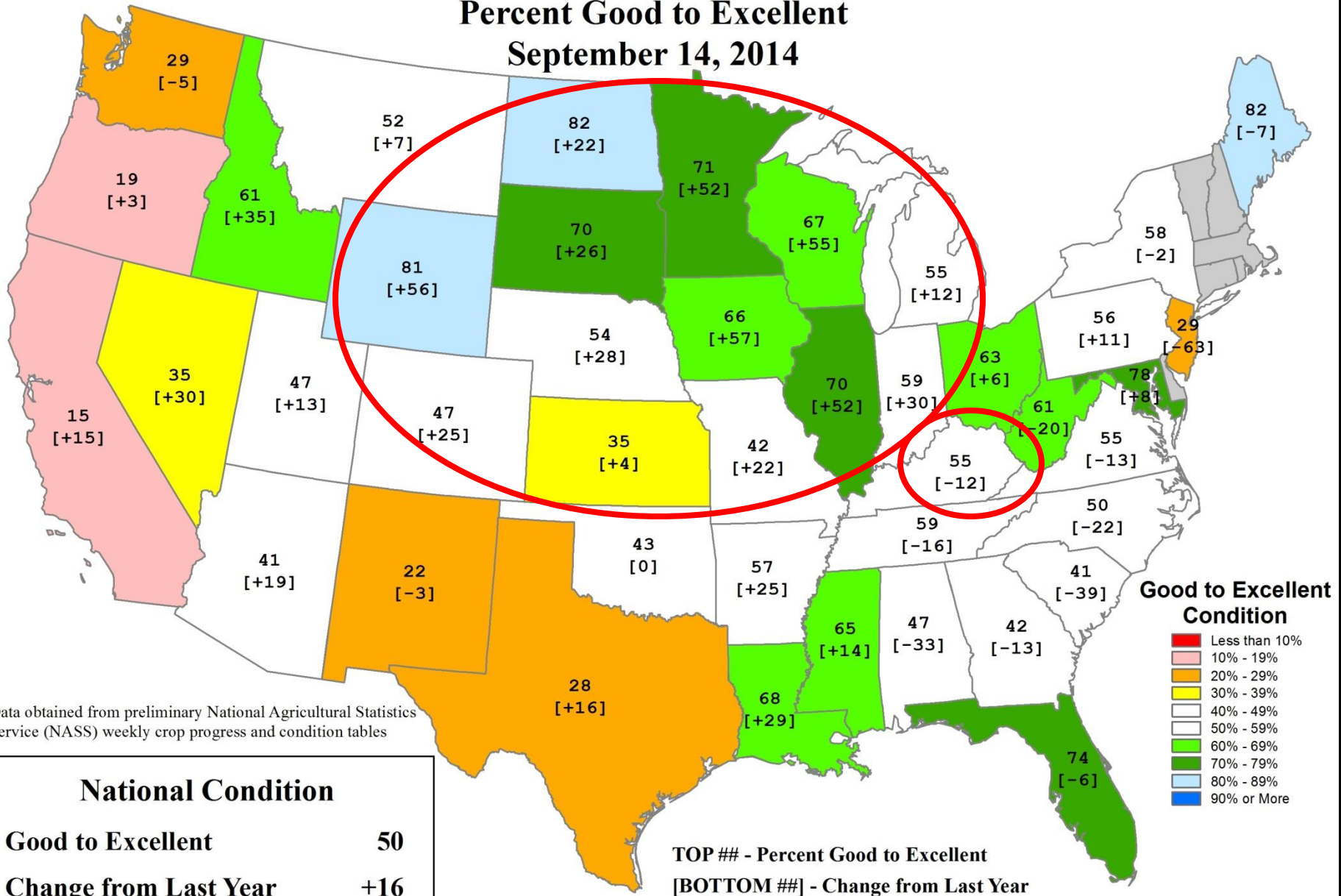
United States Soybean Areas Located in Drought



- Moderate or more intense drought (D1+)
- Severe or more intense drought (D2+)
- Extreme or more intense drought (D3+)
- Exceptional drought (D4)

U.S. Pasture and Range Conditions

Percent Good to Excellent
September 14, 2014

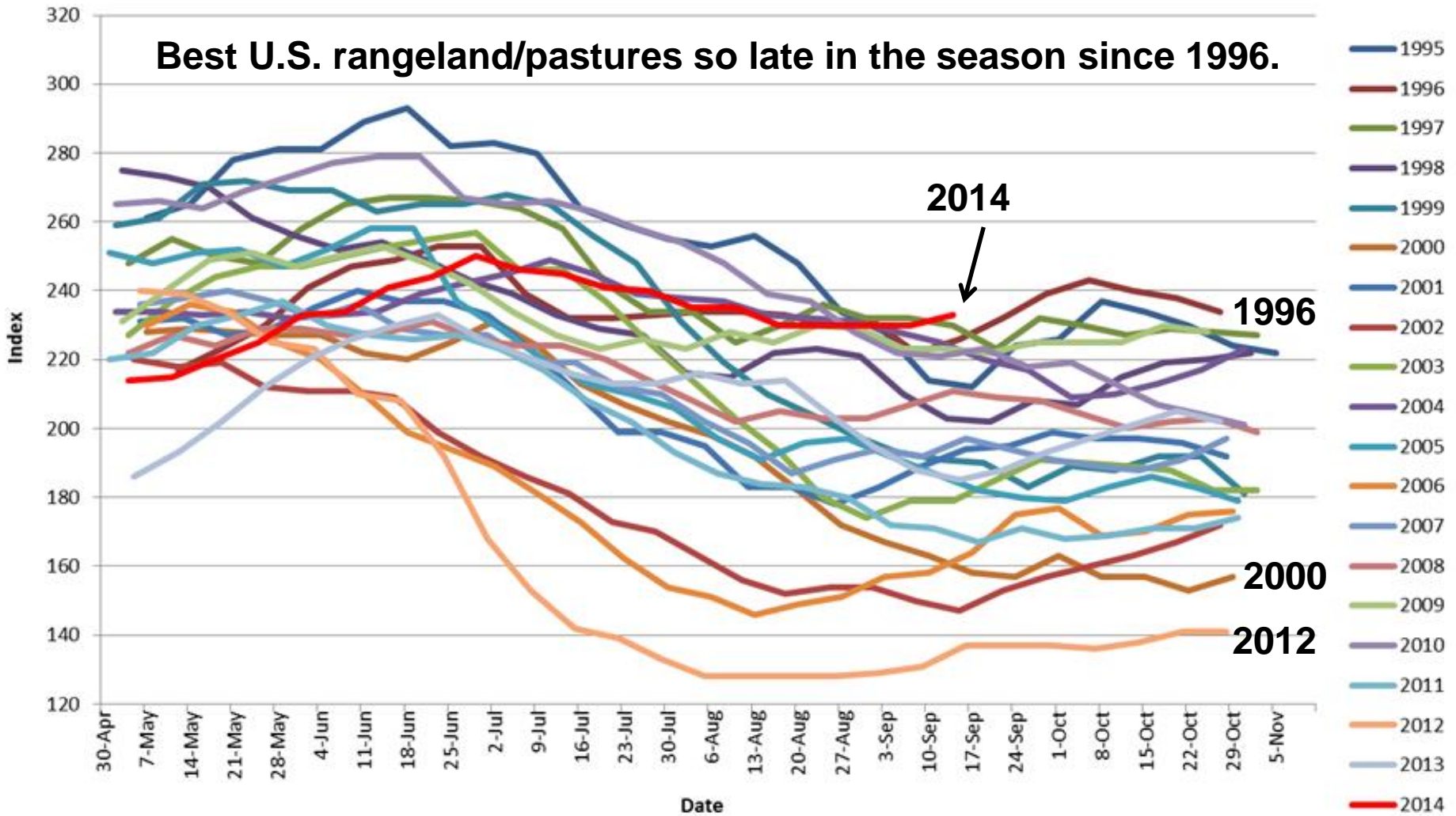


Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables


| | |
|------------------------------|------------|
| National Condition | |
| Good to Excellent | 50 |
| Change from Last Year | +16 |

TOP ## - Percent Good to Excellent
[BOTTOM ##] - Change from Last Year

U.S. PASTURE AND RANGE Condition Index



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



Cass County, Michigan
June 23, 2014
(Brad Rippey photo)

Thank you!

Contact information:

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Further Information - Partners

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 - 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?

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