

# Midwest and Great Plains Climate & Drought Outlook 16 August 2018

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United States Department of Agriculture  
Midwest Climate Hub

# General information

- **Providing climate services to the Central Region**

- Collaboration between:

- NOAA – National Centers for Environmental Information
- American Association of State Climatologists
- Midwestern and High Plains Regional Climate Centers
- NOAA's Climate Prediction Center
- National Drought Mitigation Center

- **Next Climate/Drought Outlook Webinar**

- September 20<sup>th</sup> 2018

- **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>

- **Open for questions at the end**

# Agenda for today

- **Year-to-date**
- **July conditions**
- **Last 30 days**
- **Impacts around the region**
- **El Niño!!**
- **Climate outlooks**
- **Questions/Comments**

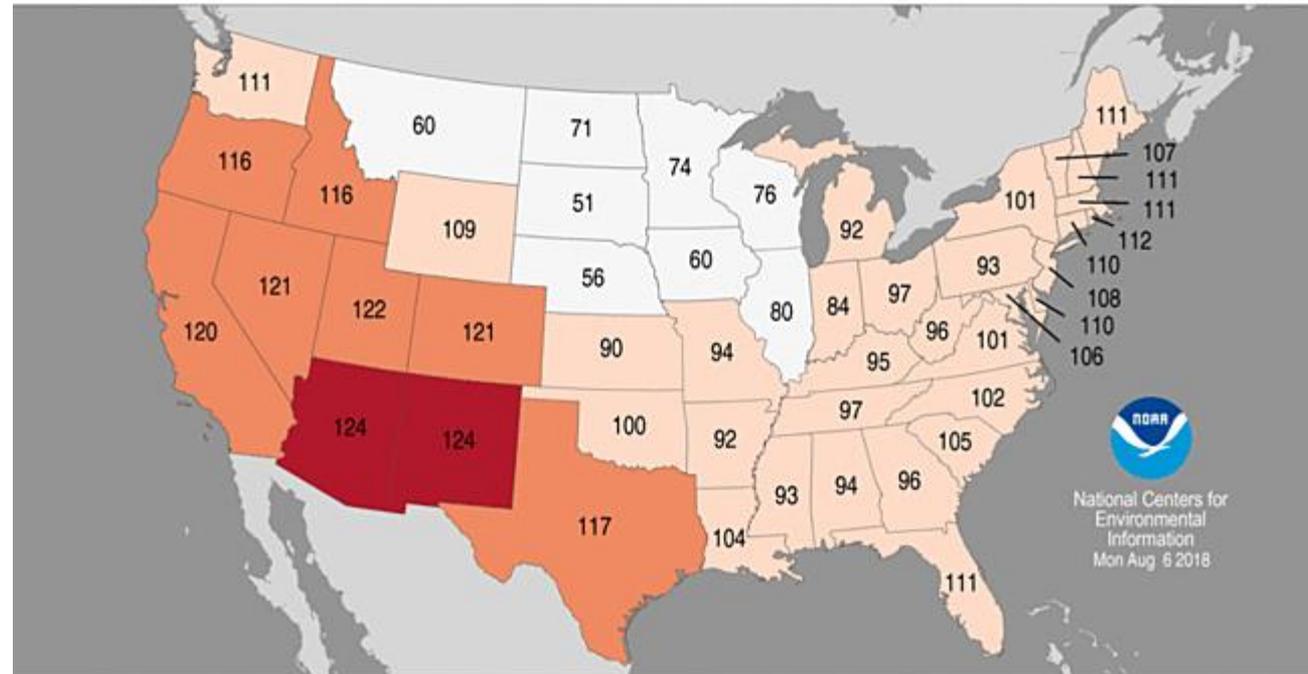


# 2018 Year-to-date

## Statewide Average Temperature Ranks

January–July 2018

Period: 1895–2018



  
National Centers for  
Environmental  
Information  
Mon Aug 6 2018

Record  
Coldest  
(1)

Much  
Below  
Average

Below  
Average

Near  
Average

Above  
Average

Much  
Above  
Average

Record  
Warmest  
(124)

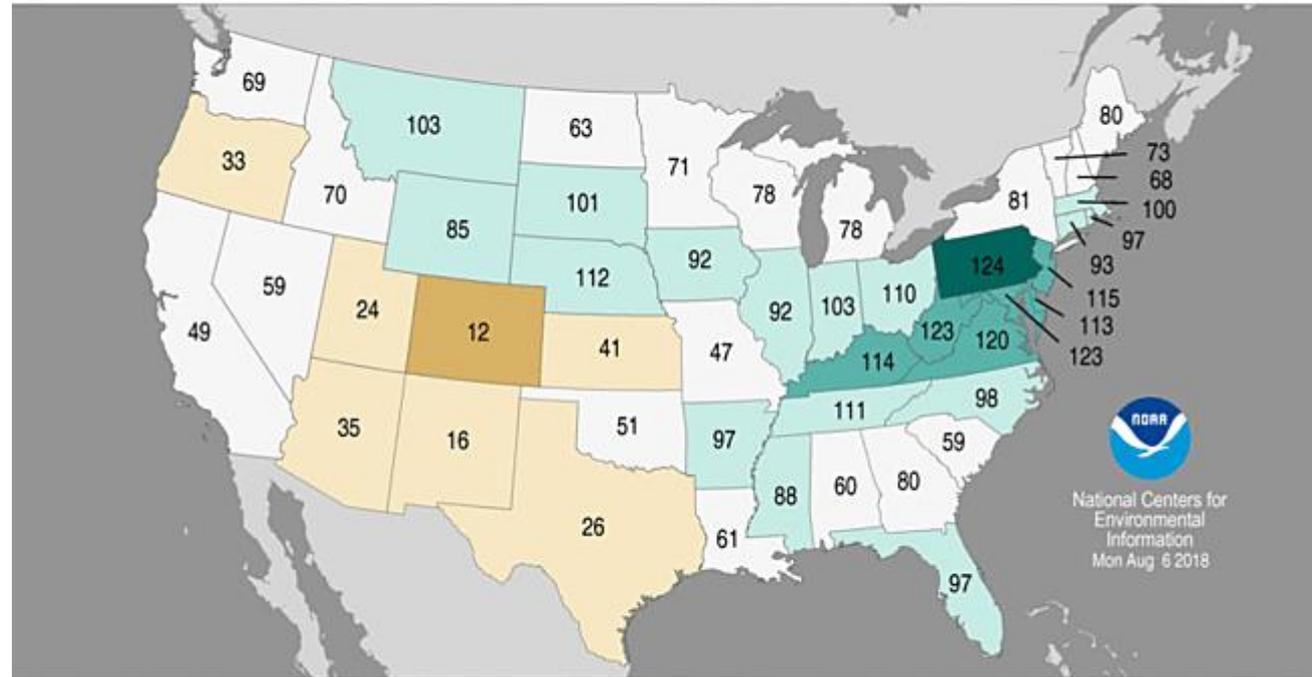
- 11<sup>th</sup> warmest **nationally** since 1895.
- “Near-Average” for north-central U.S.
- Above to much above average temperatures for rest of contiguous U.S. (**3rd warmest for CO**)

# 2018 Year-to-date

## Statewide Precipitation Ranks

January–July 2018

Period: 1895–2018



National Centers for Environmental Information  
Mon Aug 6 2018

- Wetness in mid-Atlantic, swath of central U.S.
- Dryness for southcentral and southwest
- **CO ranks 12<sup>th</sup> driest.**

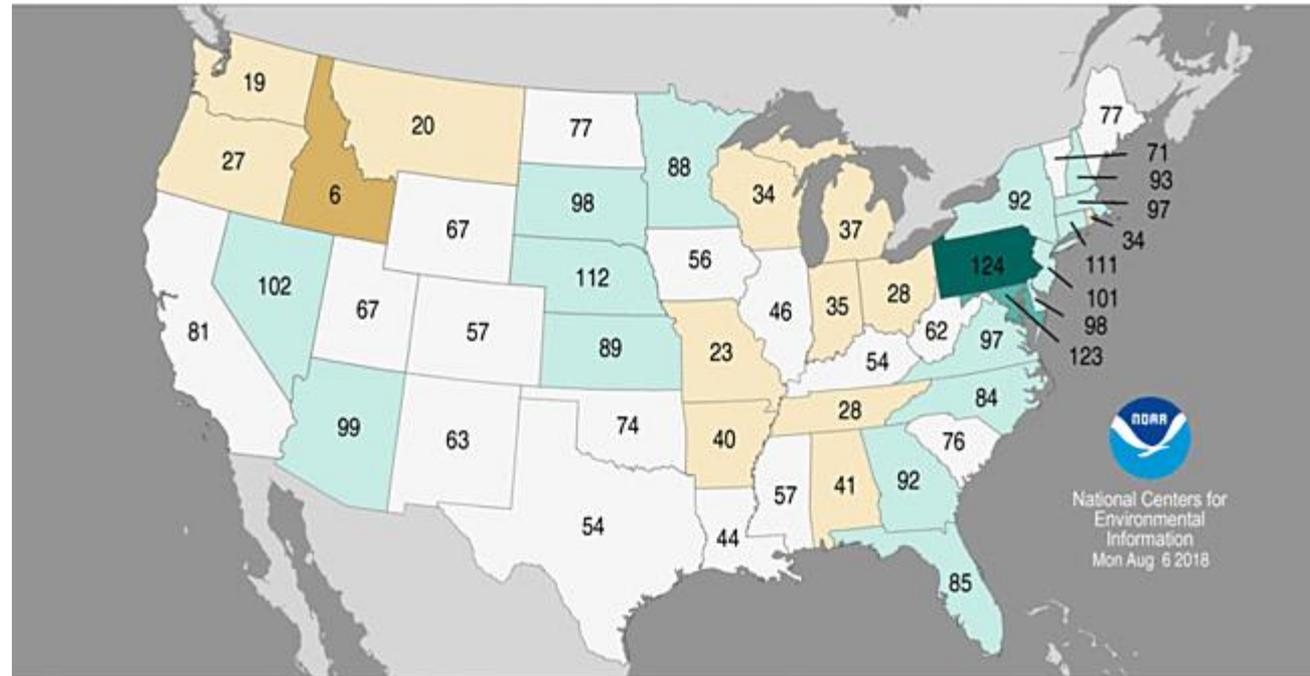


# July precipitation

## Statewide Precipitation Ranks

July 2018

Period: 1895–2018



National Centers for  
Environmental  
Information  
Mon Aug 6 2018

- Above average rainfall for High Plains.
- Below average rainfall in parts of the Midwest, especially Missouri.

# July Events

## U.S. Selected Significant Climate Anomalies and Events for July 2018



AK tied its fifth warmest Jul on record. Record warmth was observed in the panhandle, with Juneau and Annette having their warmest month on record.



Much of the Northwest was dry in Jul. ID had its sixth driest Jul on record.



CA was record warm at 79.7°F, surpassing the previous record set in 1931. Death Valley had the hottest month on record observed anywhere at 108.1°F.



Large and destructive fires burned across the West including the Spring Creek Fire in CO and the Carr, Ferguson, and Mendocino Complex Fires in CA.



Seven states in the Northeast had a top 10 warm Jul.



PA had its wettest Jul on record with 176% of average precipitation. MD had its 2<sup>nd</sup> wettest Jul.



On Jul 31, 34.1% of the contiguous U.S. was in drought, up 4.4%. Drought worsened in parts of the West, Plains and Midwest but improved in parts of the Southwest, Northeast and Plains.



GA, IA, IL, and NE had below-average Jul maximum temperatures.



Drought conditions expanded across parts of the Hawaiian Islands with 30.9% of the state in drought at the end of Jul.

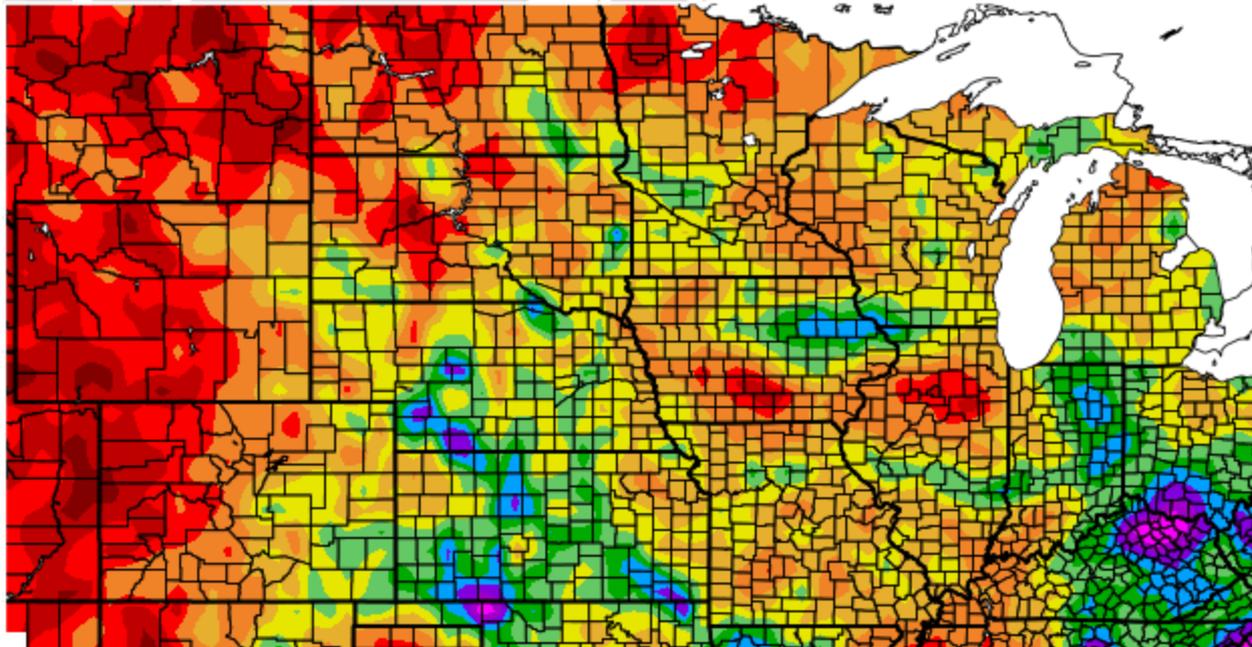


Abnormally dry conditions continued across southern Puerto Rico with nearly a quarter of the island impacted.

The average U.S. temperature during July was 75.5°F, 1.9°F above average. The July U.S. precipitation was 2.80 inches, 0.02 inch above average.

# Precipitation - last 30 days

Precipitation (in)  
7/17/2018 - 8/15/2018

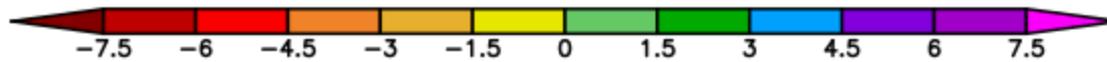
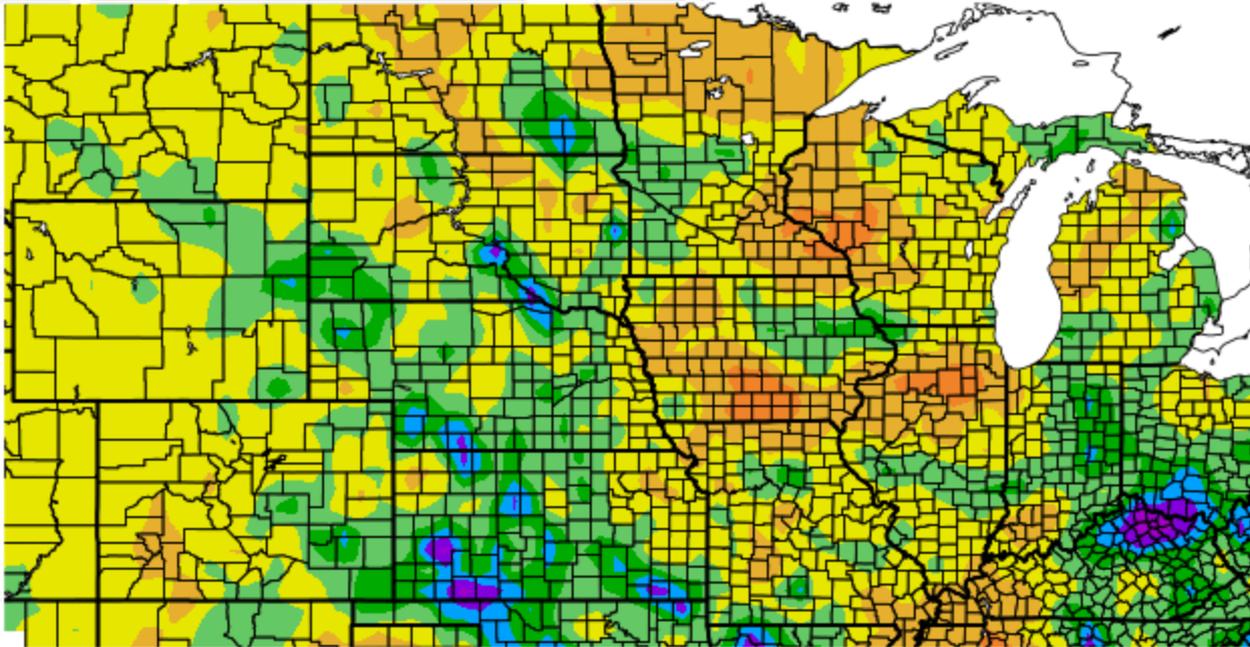


Generated 8/16/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

# Precipitation departure - last 30 days

Departure from Normal Precipitation (in)  
7/17/2018 - 8/15/2018

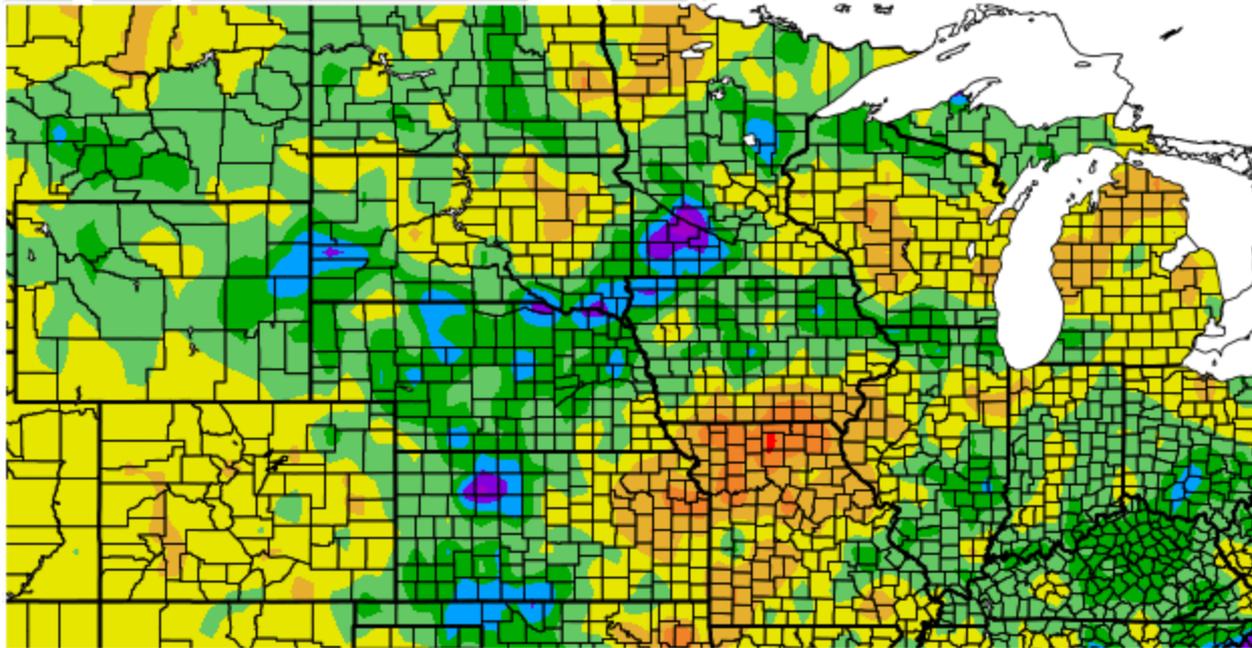


Generated 8/16/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

# Precipitation departure – 3 months

Departure from Normal Precipitation (in)  
5/18/2018 – 8/15/2018

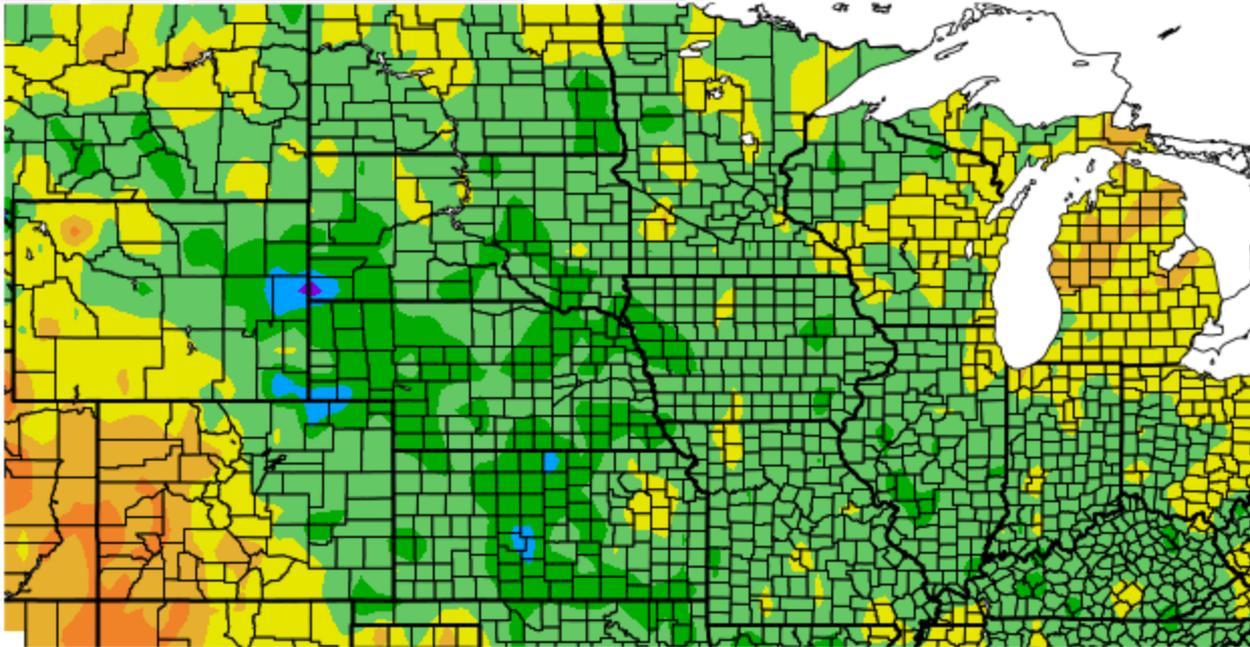


Generated 8/16/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

# Temperature departure – 30 days

Departure from Normal Temperature (F)  
7/17/2018 – 8/15/2018



Generated 8/16/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

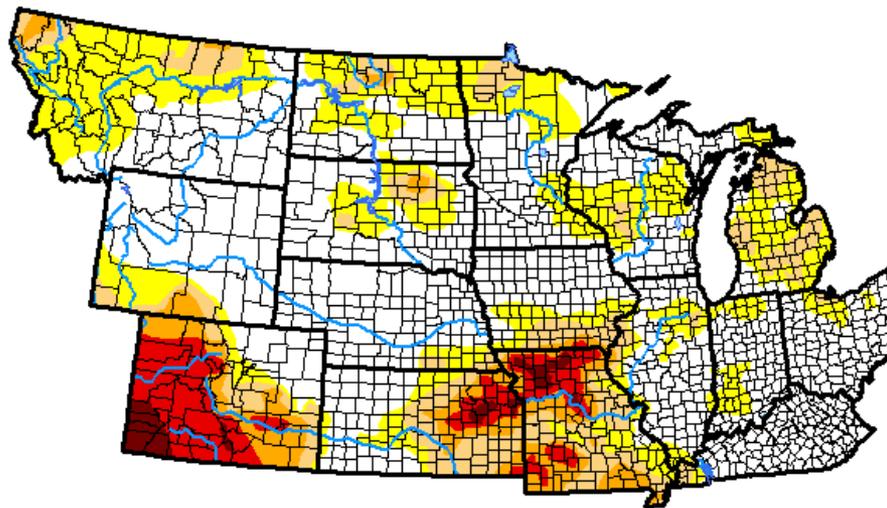
# Current Drought Monitor

## U.S. Drought Monitor NWS Central Region

**August 14, 2018**  
(Released Thursday, Aug. 16, 2018)  
Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	53.93	46.07	22.31	12.07	6.48	1.28
<b>Last Week</b> <i>08-07-2018</i>	63.49	36.51	20.28	11.16	5.01	0.87
<b>3 Months Ago</b> <i>05-15-2018</i>	62.48	37.52	18.45	8.53	4.33	1.03
<b>Start of Calendar Year</b> <i>01-02-2018</i>	44.74	55.26	22.30	7.69	2.03	0.00
<b>Start of Water Year</b> <i>09-26-2017</i>	50.80	49.20	24.09	12.89	6.13	2.26
<b>One Year Ago</b> <i>08-15-2017</i>	56.08	43.92	25.38	13.82	6.39	1.82



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:

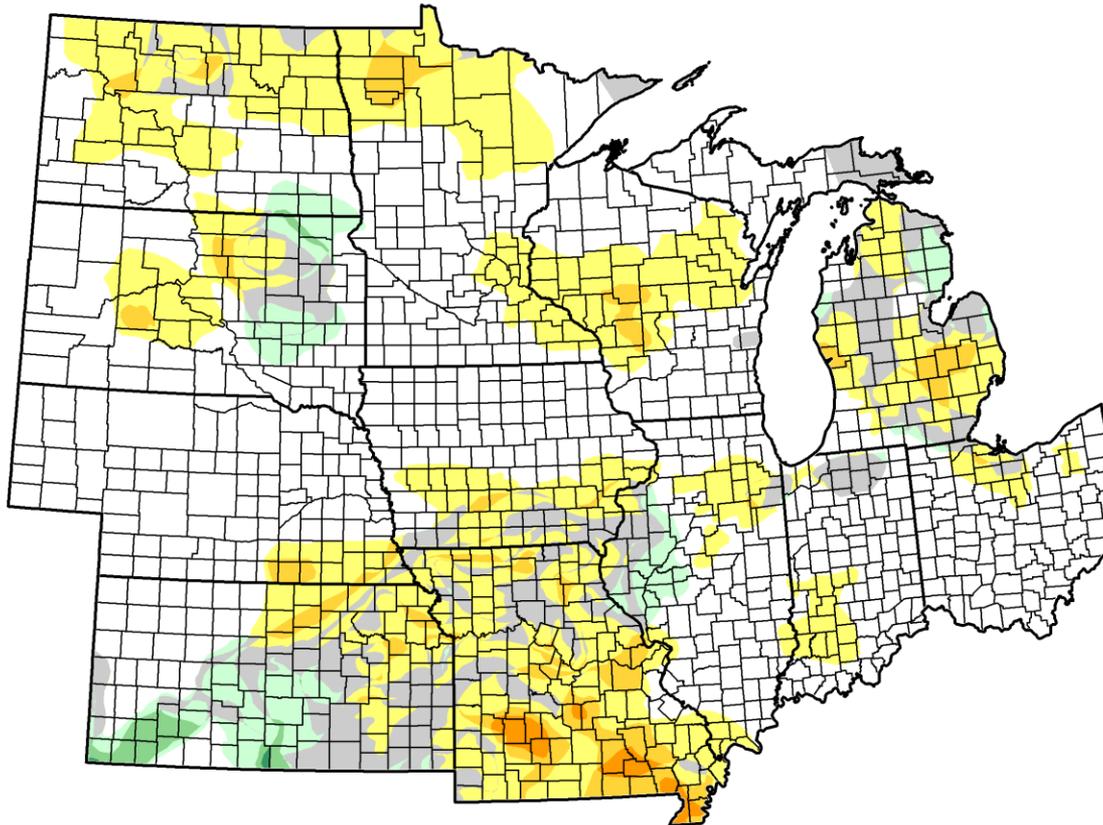
Richard Heim  
NCEI/NOAA



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

# Drought Monitor change

## U.S. Drought Monitor Class Change - North Central 1 Month



August 14, 2018  
compared to  
July 17, 2018

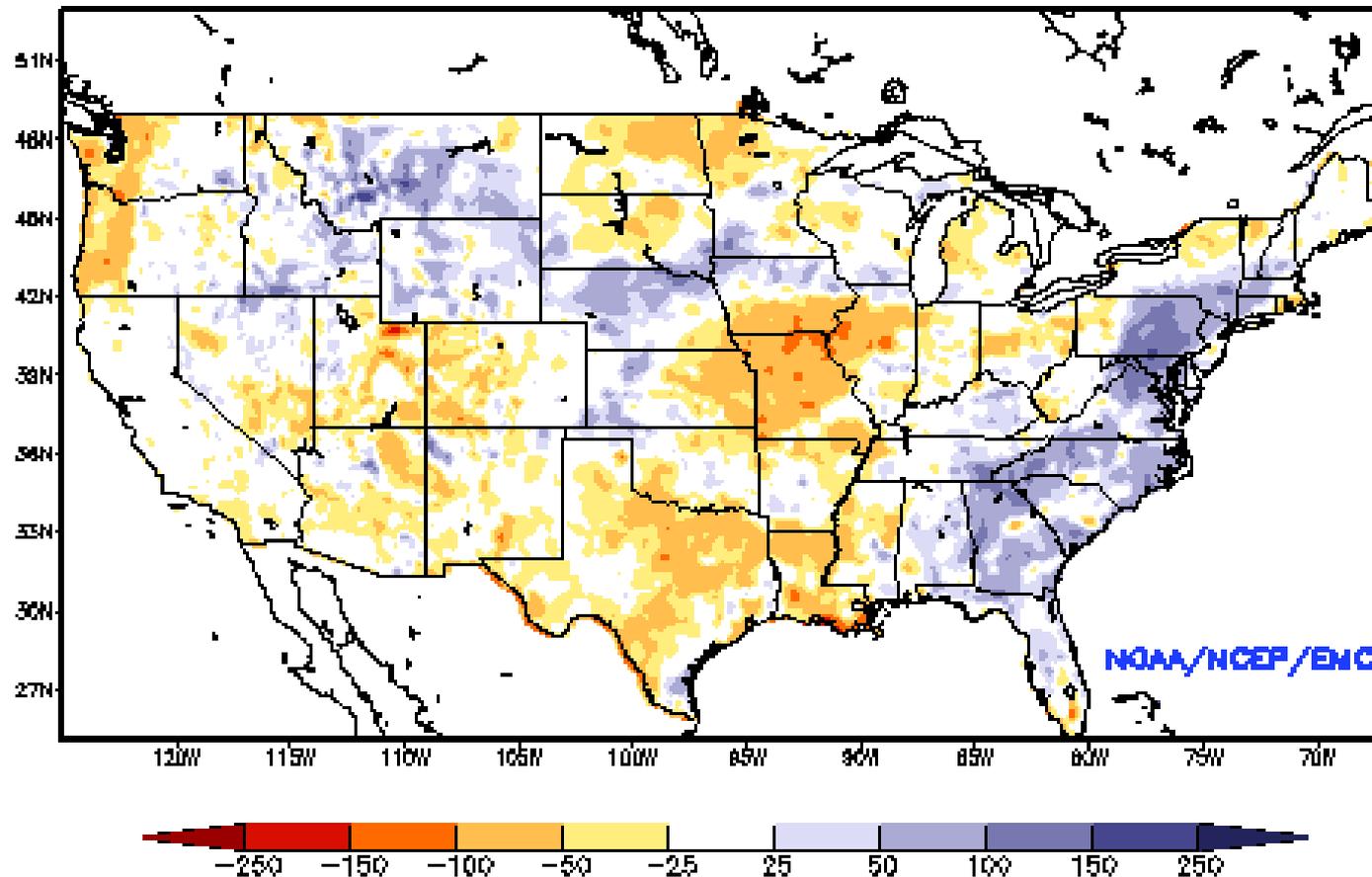
<http://droughtmonitor.unl.edu>

- 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

# Soil water conditions

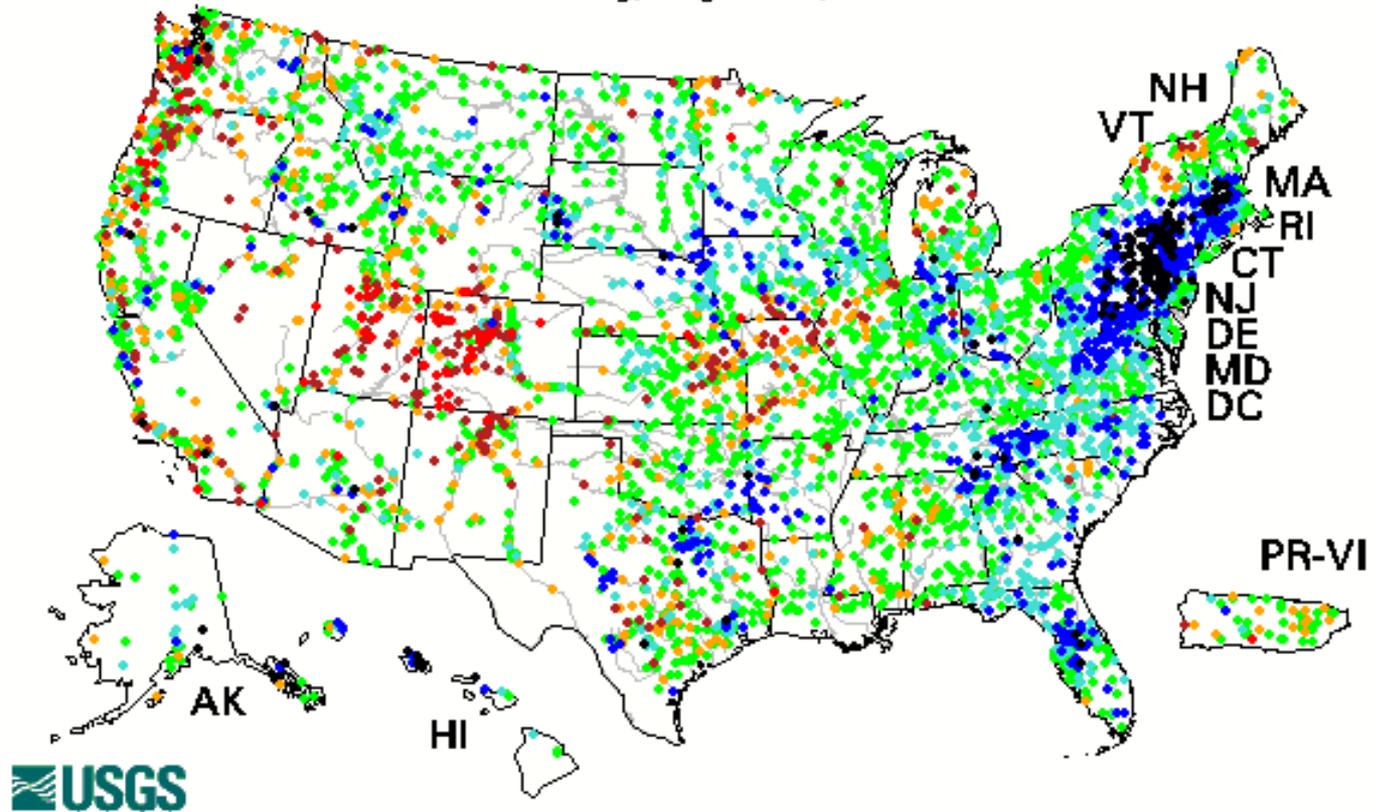
- Missouri – ground zero for low soil moisture

Ensemble-Mean - Current Total Column Soil Moisture Anomaly (mm)  
NCEP NLDAS Products Valid: AUG 11, 2018



# Streamflow (7-day)

Wednesday, August 15, 2018



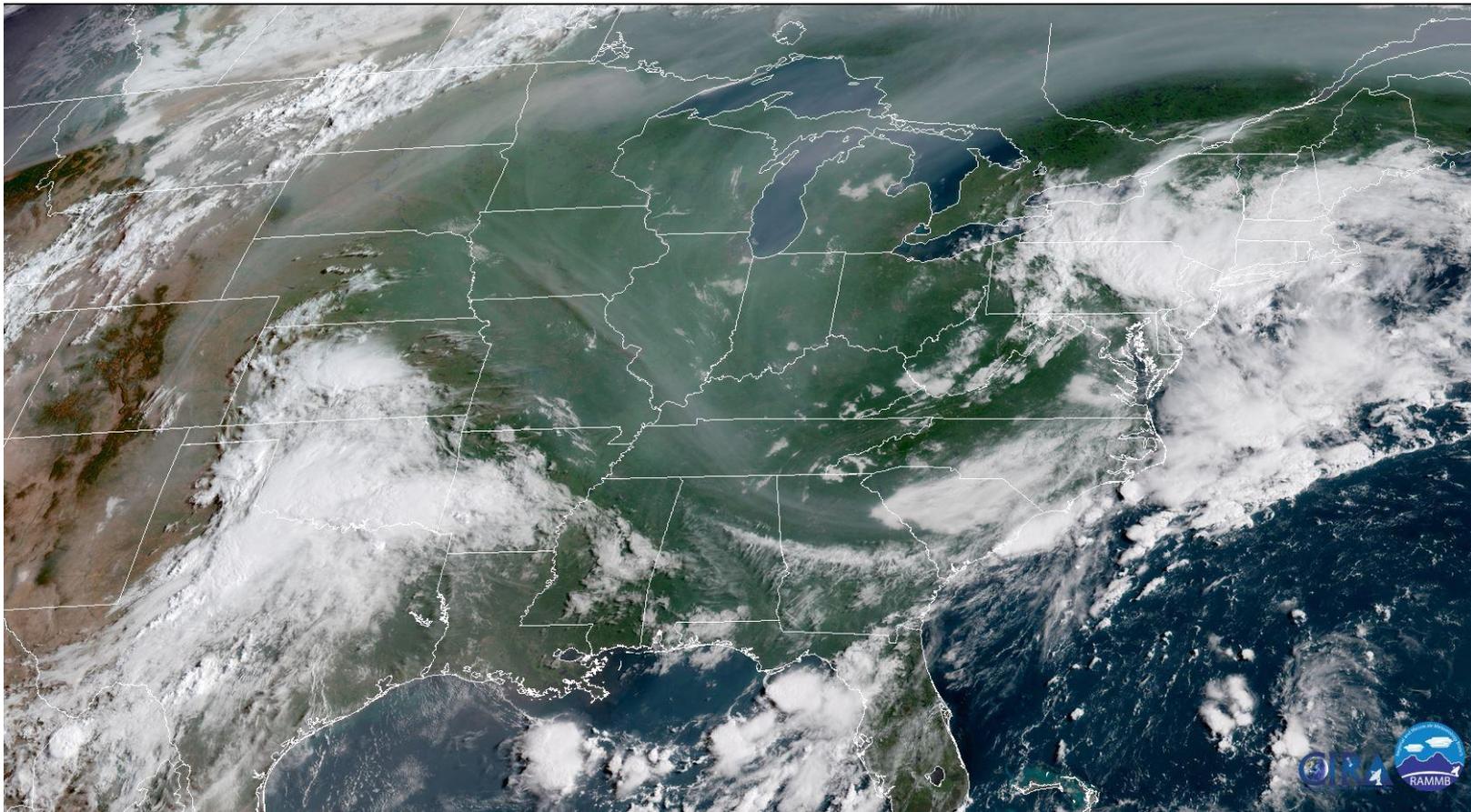
● High = The estimated streamflow is the highest value ever measured for the week.

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)

# Impact highlights

- Drought concerns in Colorado, Kansas, Missouri, Michigan, and Iowa
- Hail damage



# Impacts around the region

## Colorado

- Underperforming monsoon (so far)
- Worsening drought in western Colorado
- Very active hail season, especially large hail (+2")
- Poor air quality due to fires in the West



# Impacts around the region

## Missouri

- 98% of state in D0-D4
- Severe impacts on crops, pasture, farm ponds



Lewis County farm pond. August 13  
Photo courtesy Pat Guinan.



Lewis County corn field. August 13  
Photo courtesy Pat Guinan.



Kyle Allen  
@channelseed7



How bad is the [#drought](#) here in East Central, MO? They are round baling soybeans in Pike County right now. 1/2 the hay crop going into winter, farmers are making tough decisions.

9:54 PM - Aug 4, 2018 · Missouri, USA

128 111 people are talking about this

# Impacts around the region

## South Dakota

- Worsening drought in north-central, west-central SD. Black Hills and southeast are wet. Tough on soybeans.

## North Dakota

- Worsening drought due to heat and lack of rain
- Reduced air quality due to western fires raising health concerns



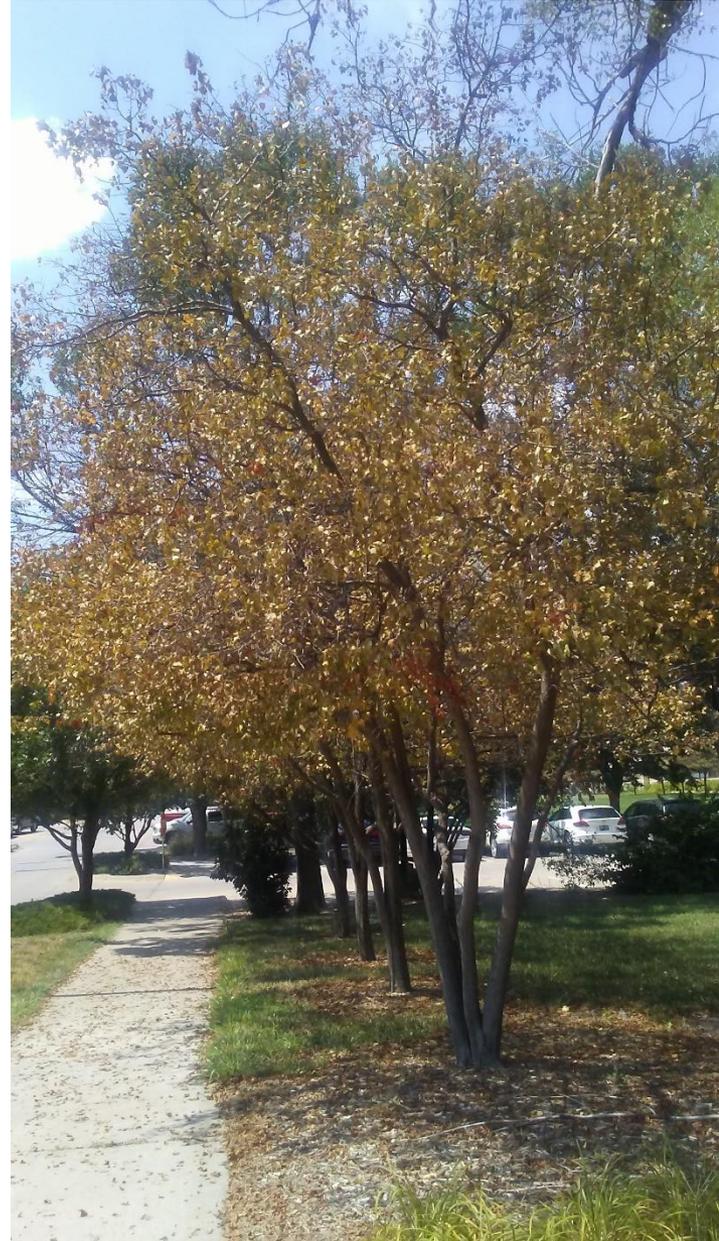
# Impacts around the region

## Nebraska

- Too wet in parts of northern NE, impacting hay harvest. Drought impacts in southeastern NE include stress to corn and soybeans.

## Kansas

- Worsening drought due to heat and lack of rain
- Impacts on crop and forage, as well as urban impacts on trees and lawns



# Impacts around the region

## Iowa

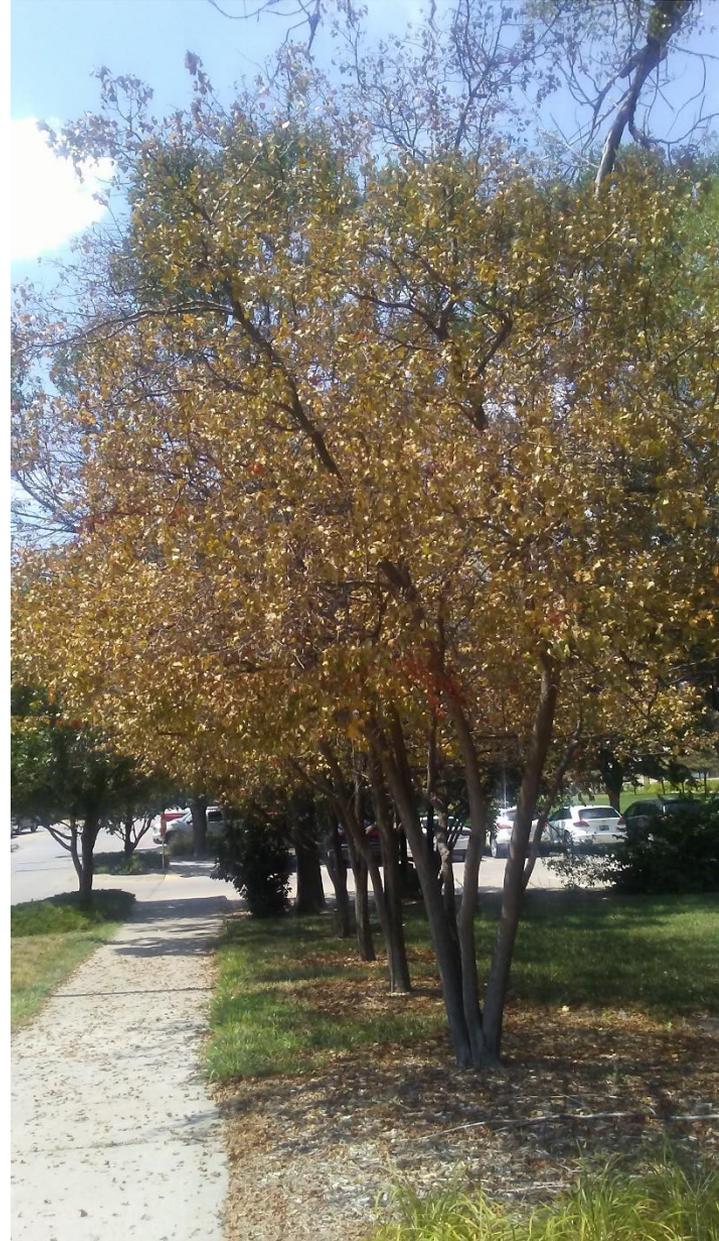
- Worsening drought in southern IA while wet in northern IA

## Illinois

- In good shape from ag standpoint, some dry areas in far western IL and a few hot spots around Bloomington and Kankakee

## Indiana

- Bouts of dryness during the growing season, livestock areas mostly spared



# Impacts around the region

## Michigan

- High lake levels
- Highly variable rainfall, some impacts on yields. Reports of smaller fruit size (e.g., cherries) along with reduced disease pressure. Warm, dry weather ideal for winter wheat harvest.

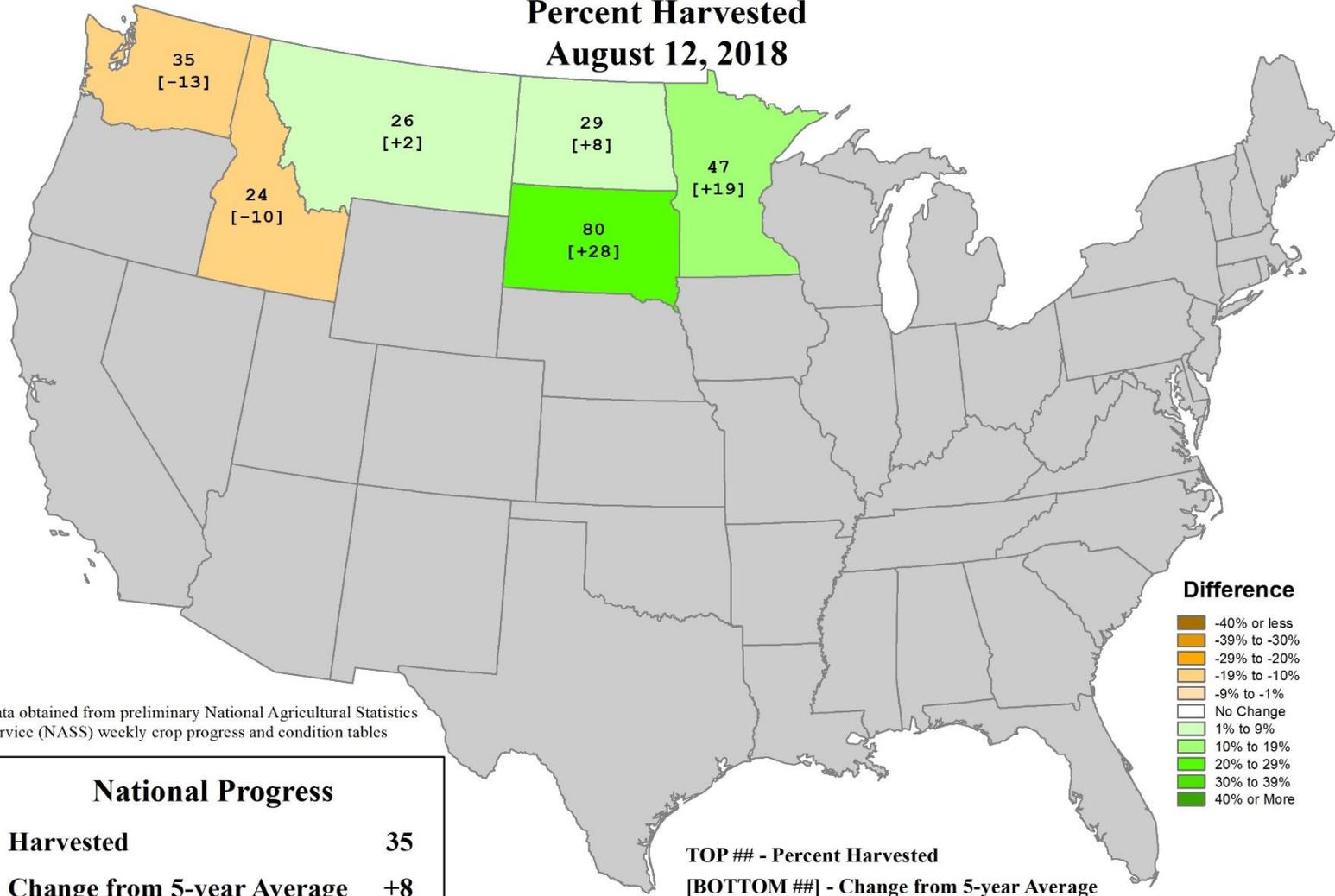
## Ohio

- Cooler temperatures at night could favor higher yields (reduced respiration, prolong grain filling).
- Wet weather impacted hay production.

# Wheat harvest

## U.S. Spring Wheat Progress

Percent Harvested  
August 12, 2018

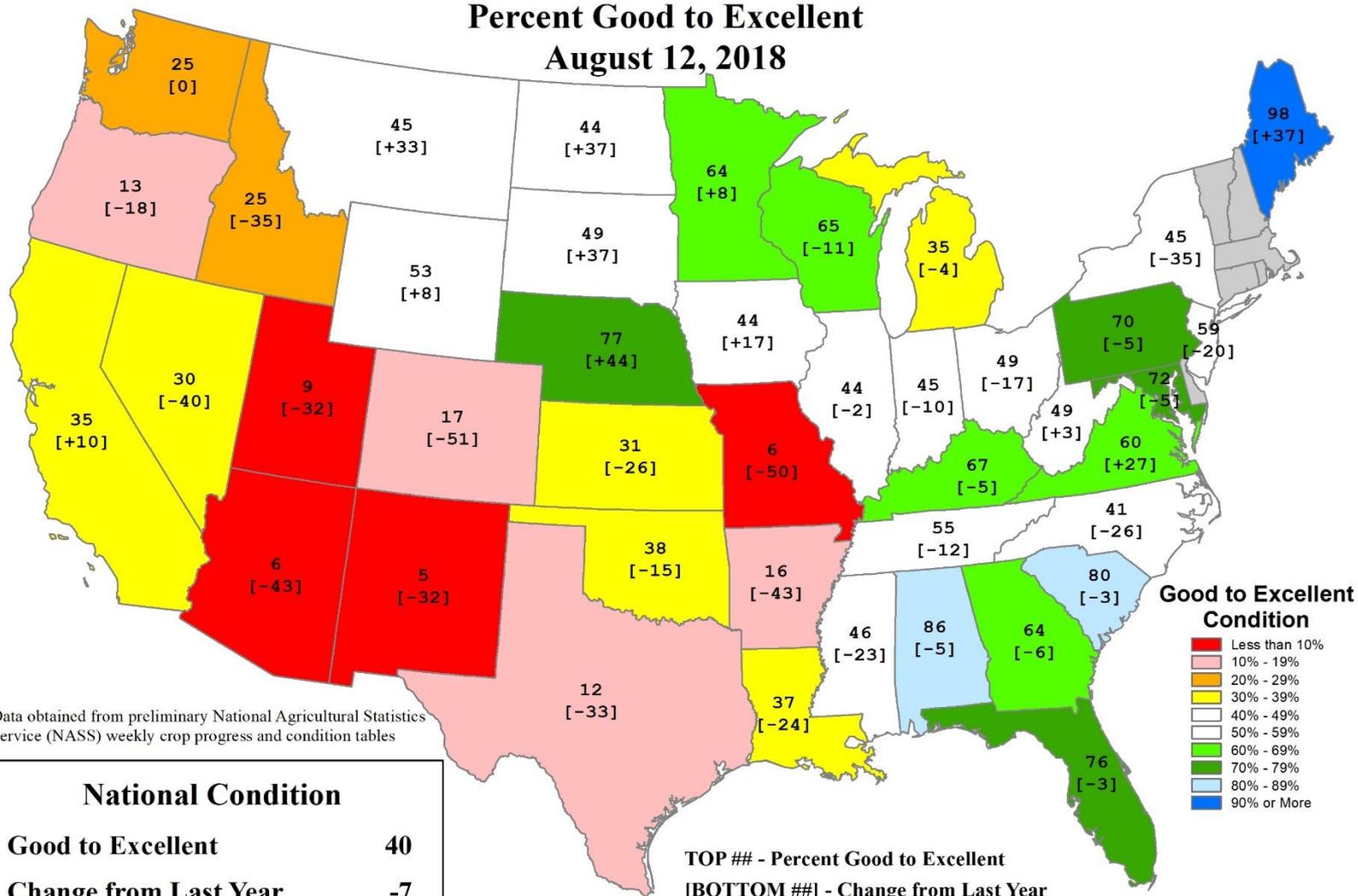


Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

# Pasture and Range Conditions

## U.S. Pasture and Range Conditions

Percent Good to Excellent  
August 12, 2018

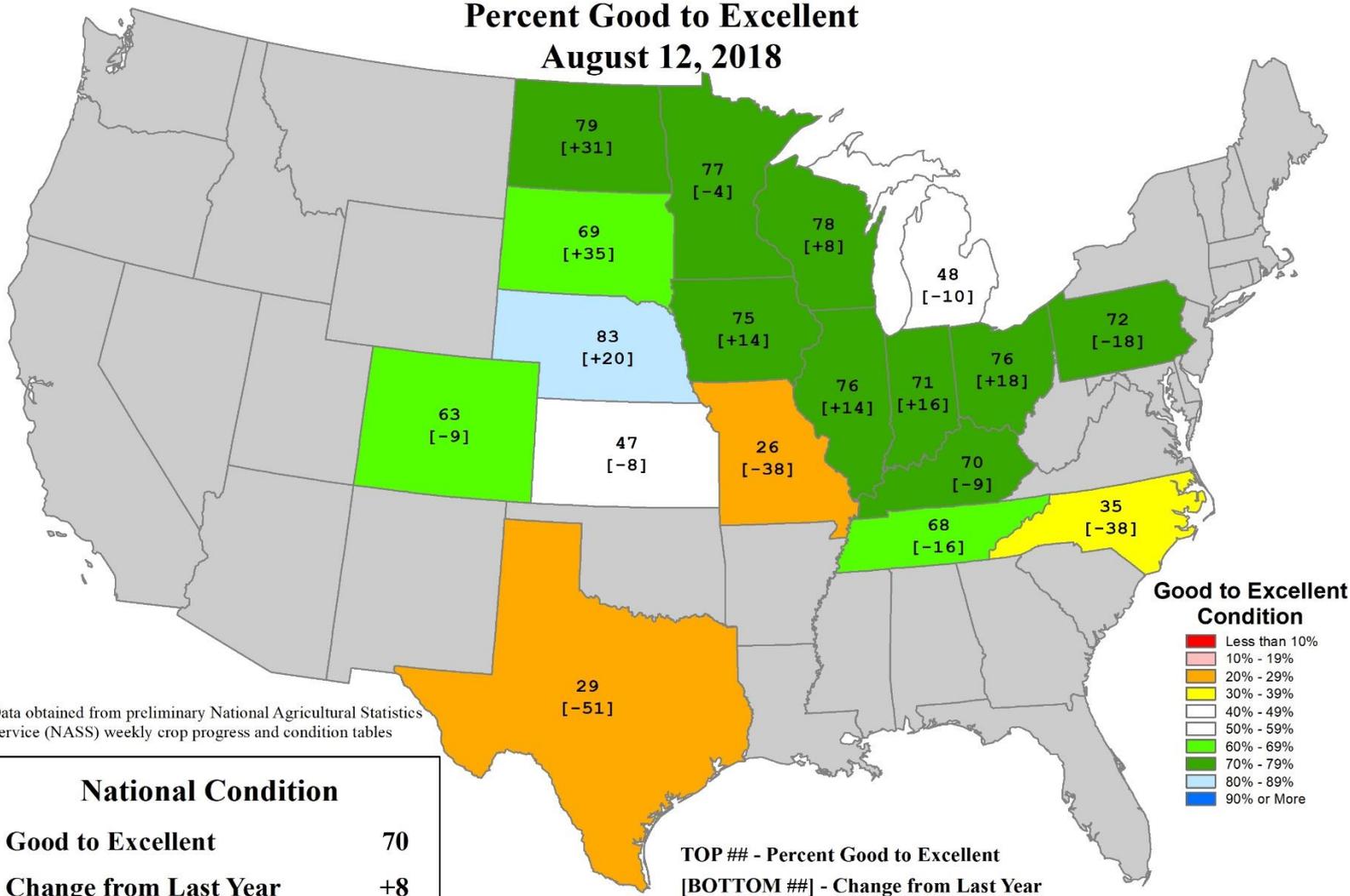


Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

# Corn rated good to excellent

## U.S. Corn Conditions

Percent Good to Excellent  
August 12, 2018

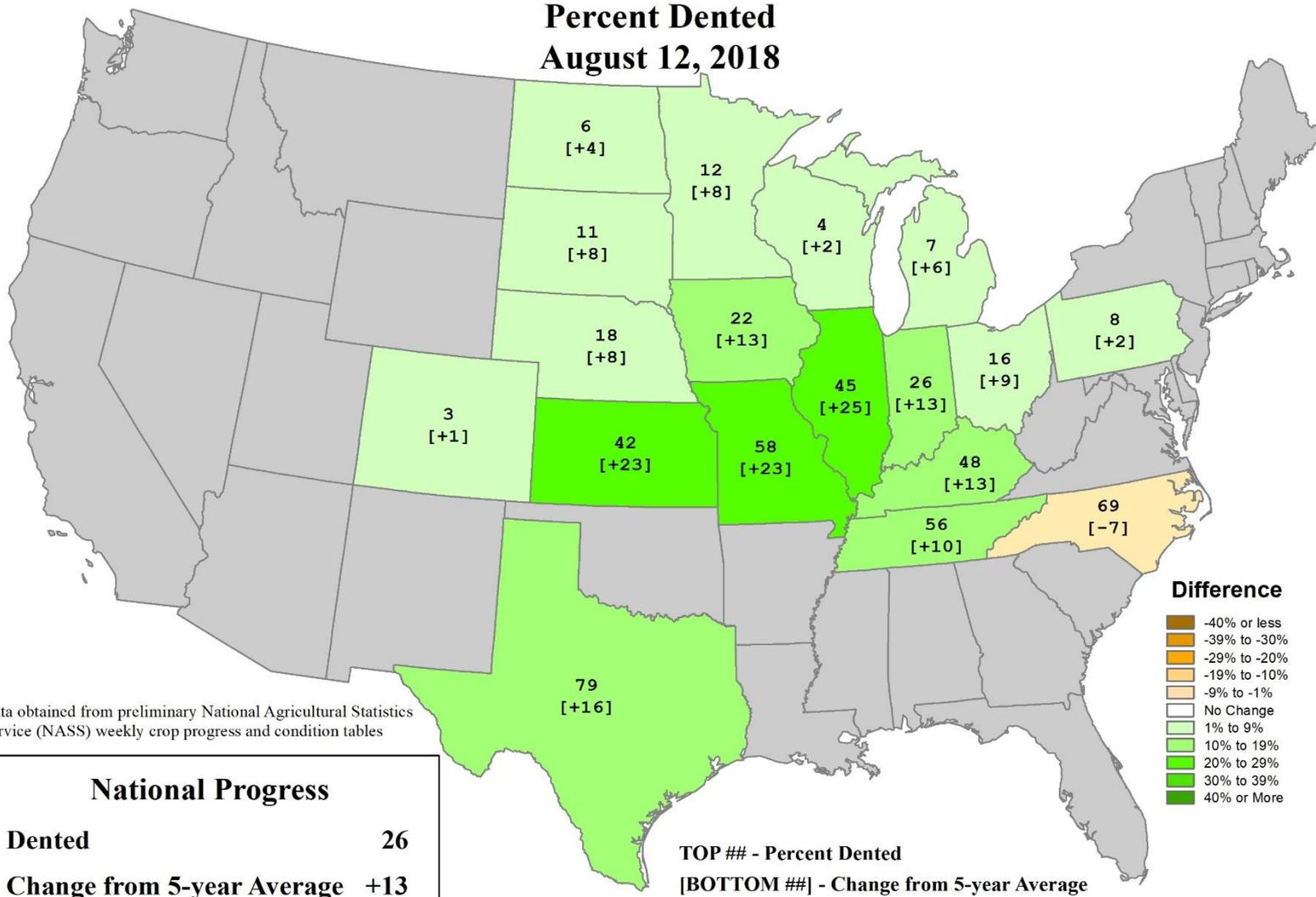


Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

# Corn progress

## U.S. Corn Progress

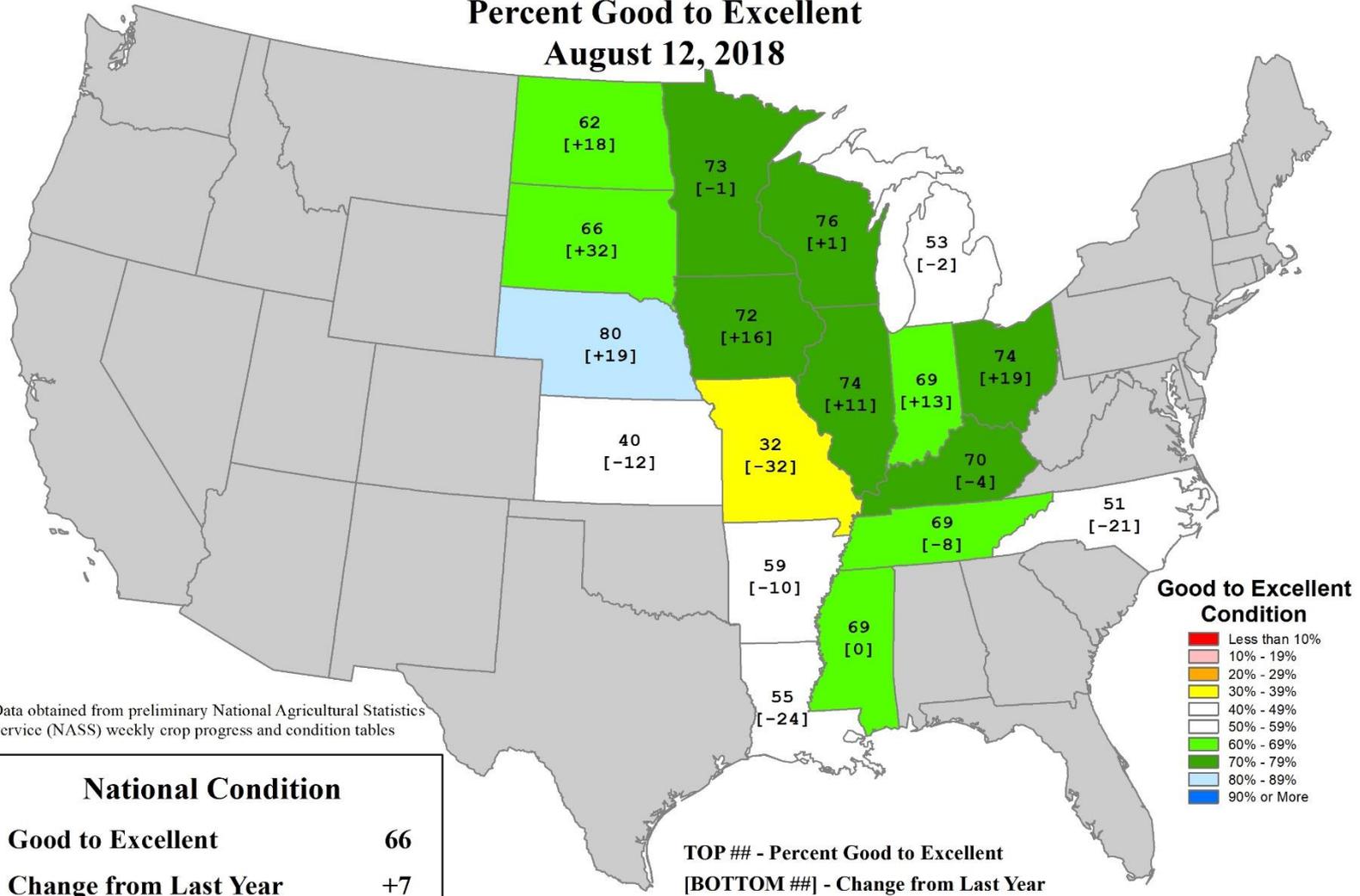
Percent Dented  
August 12, 2018



# Soybean rated good to excellent

## U.S. Soybean Conditions

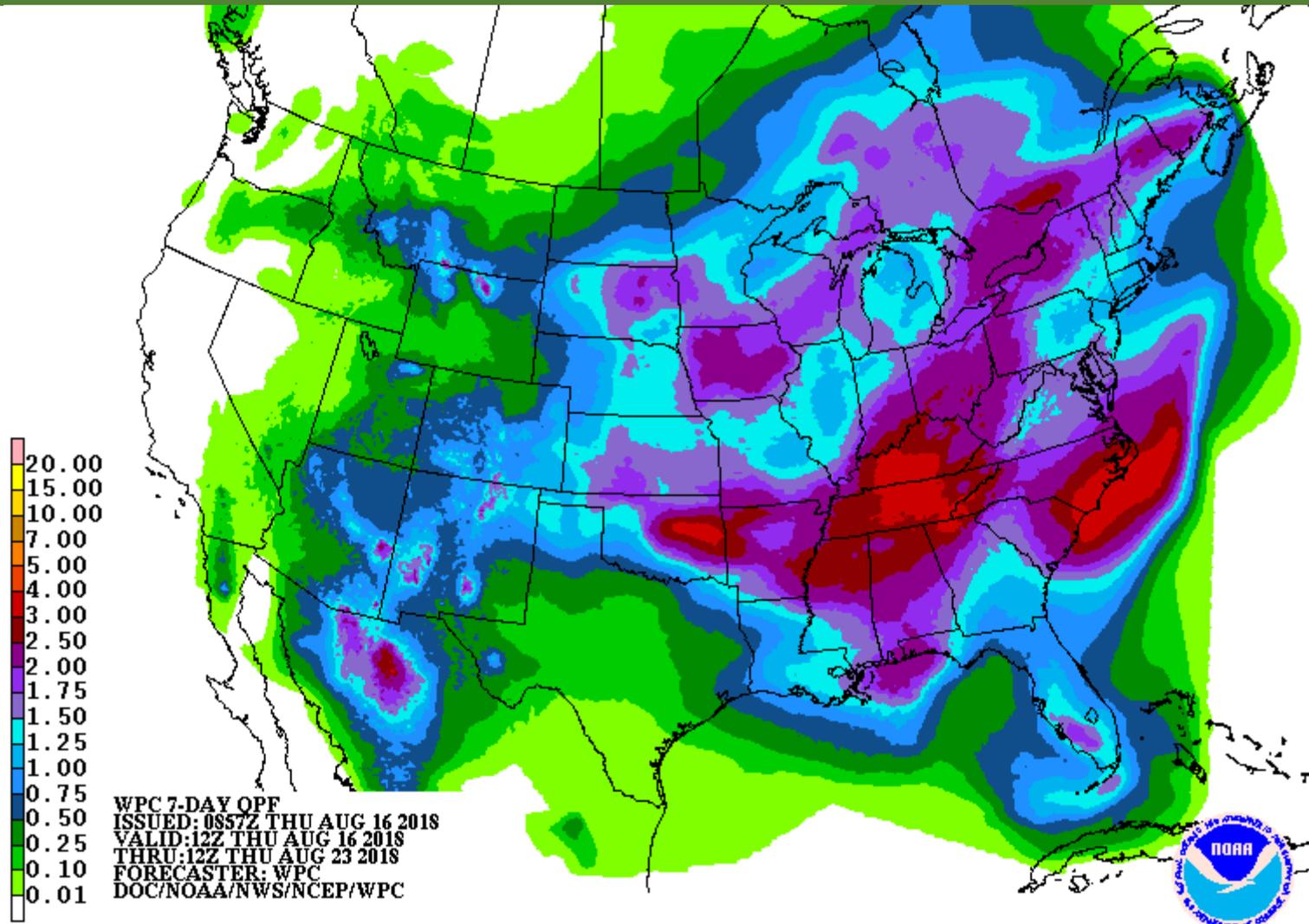
Percent Good to Excellent  
August 12, 2018



# Climate outlooks

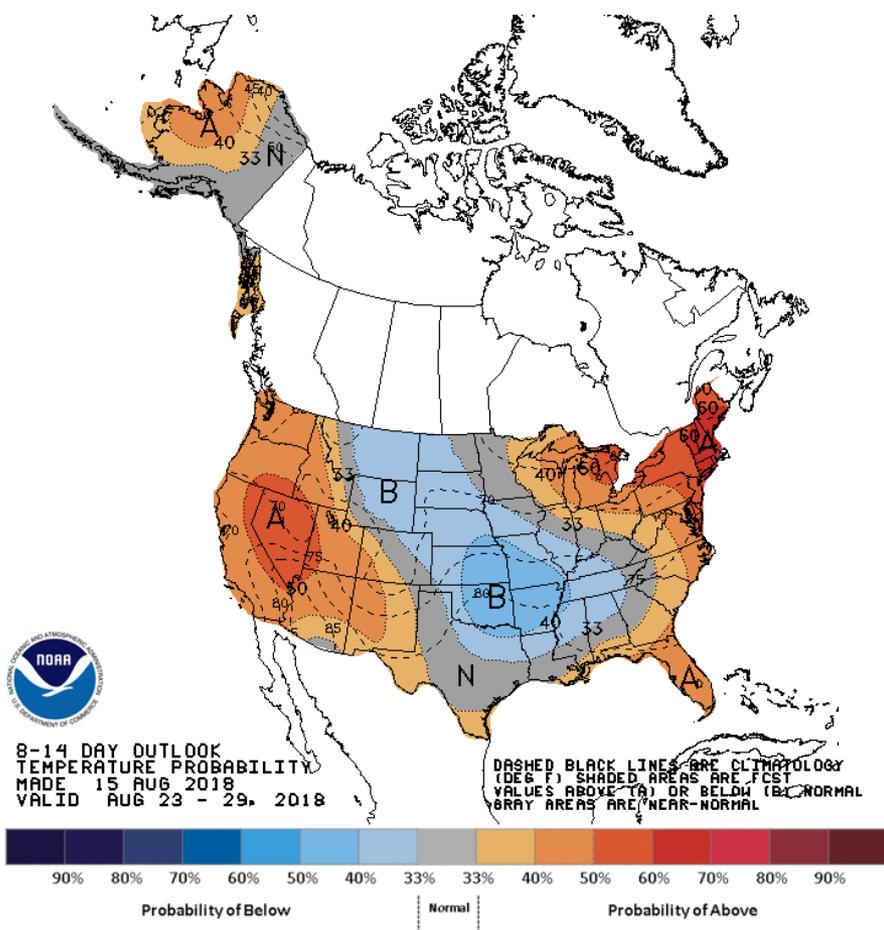
- **Short-term**
- **El Niño!!**
- **Drought**
- **Summer and fall conditions**

# Precipitation forecast

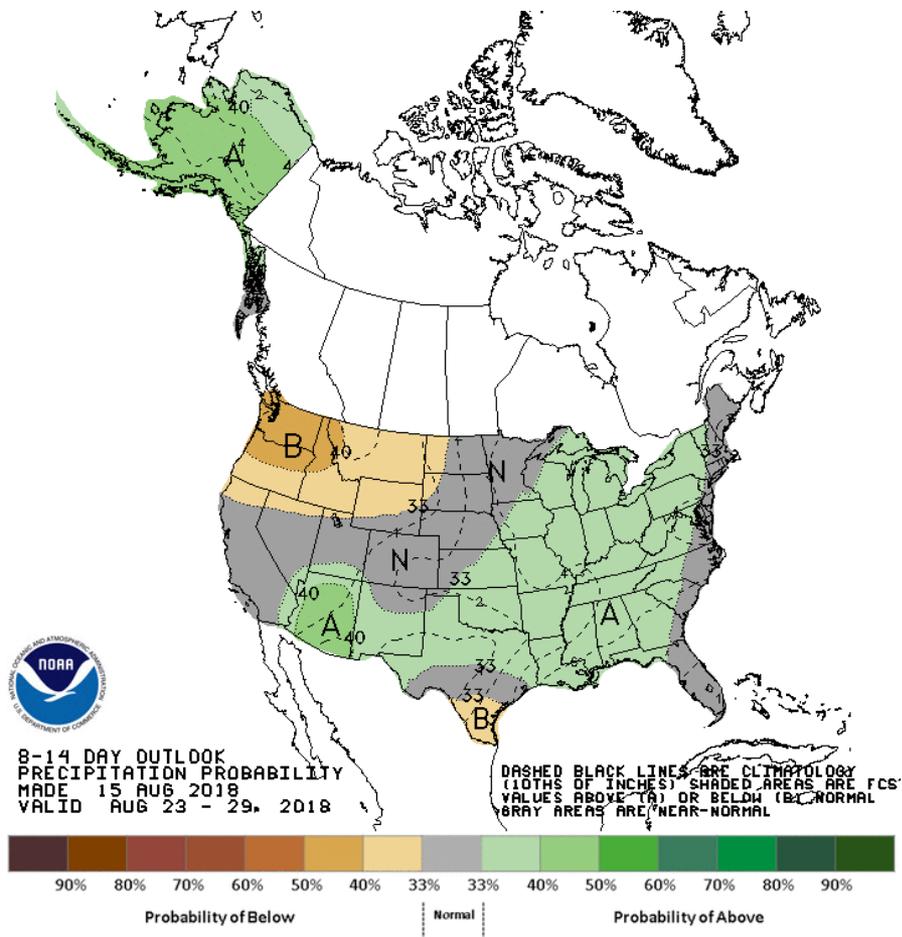


<http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml>

# 8-14 Day outlook for Aug 23 - 29



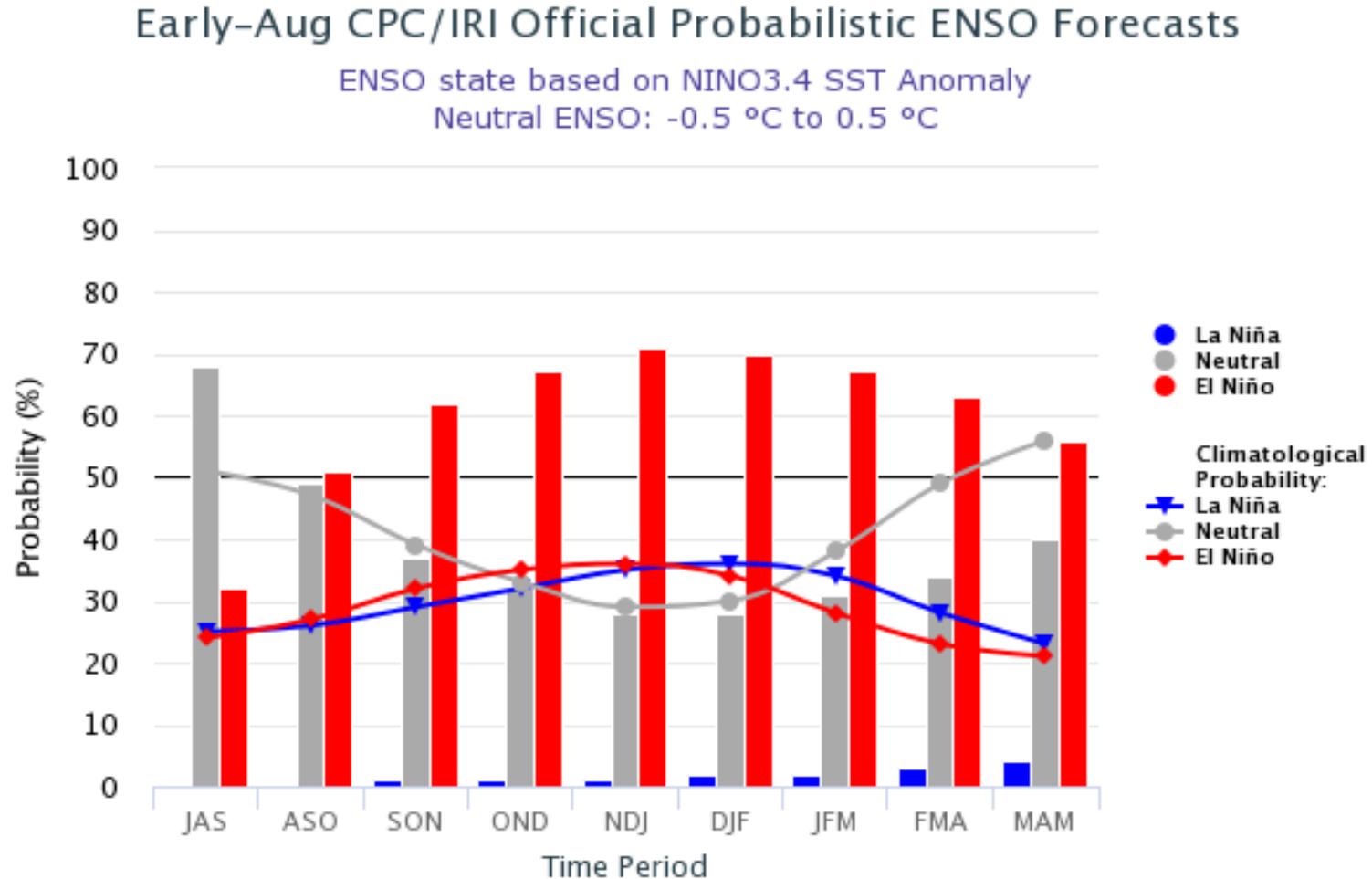
Temperature



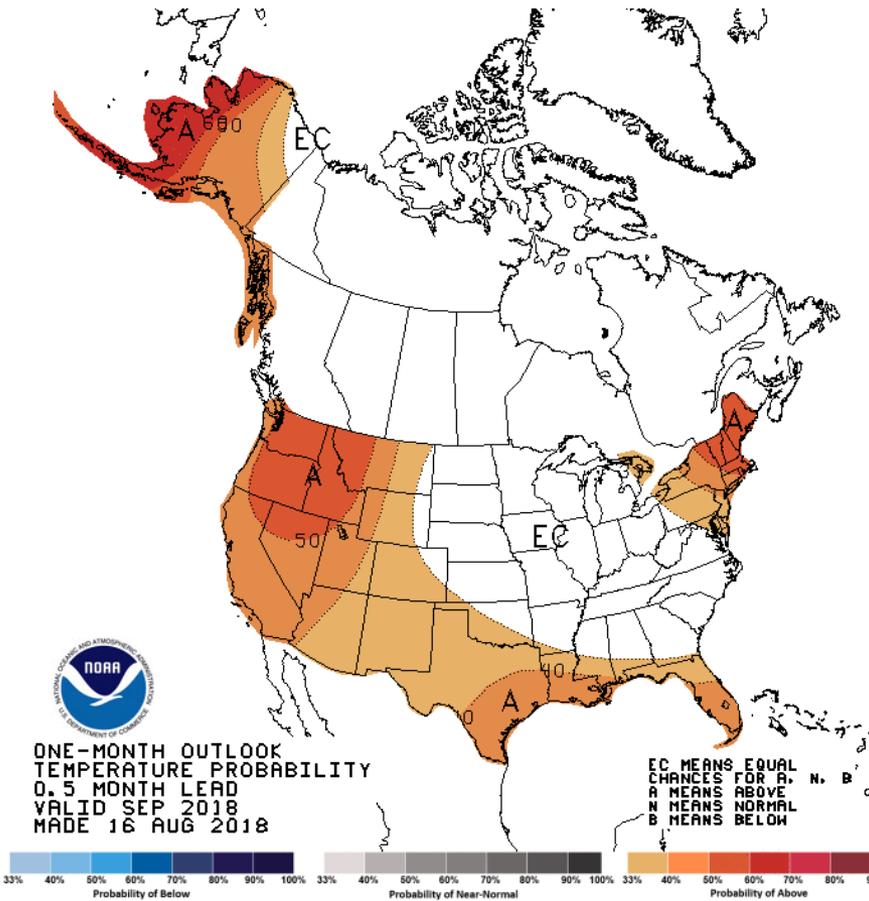
Precipitation

# El Niño watch

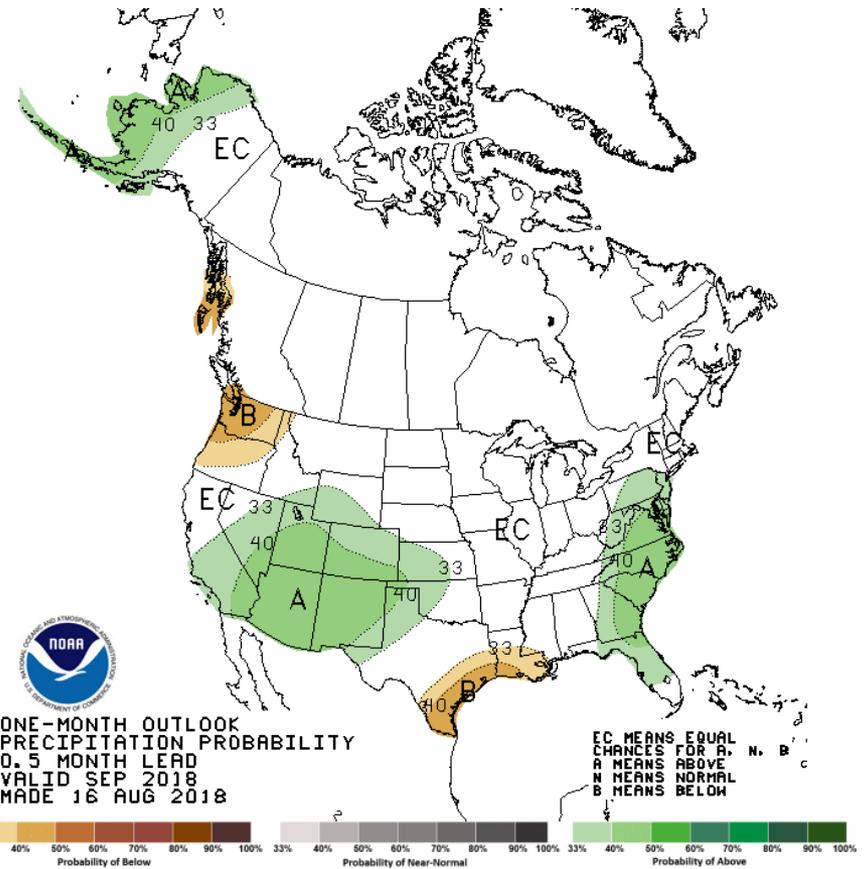
- El Niño is most likely scenario by fall (60%) and winter (70%)



# September outlook

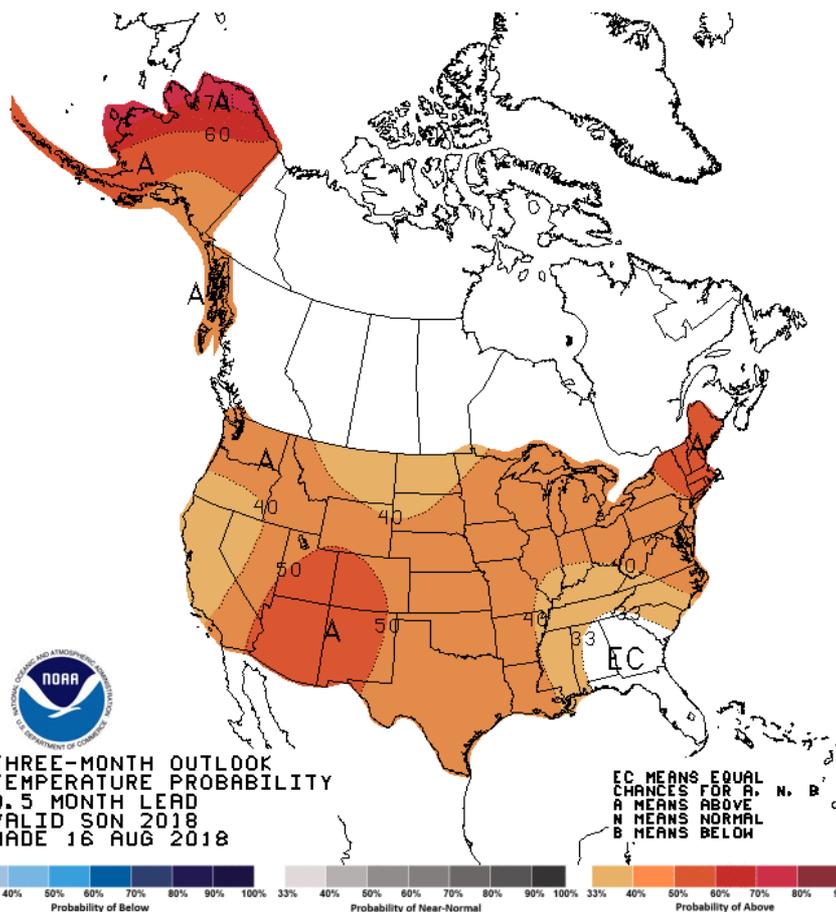


Temperature

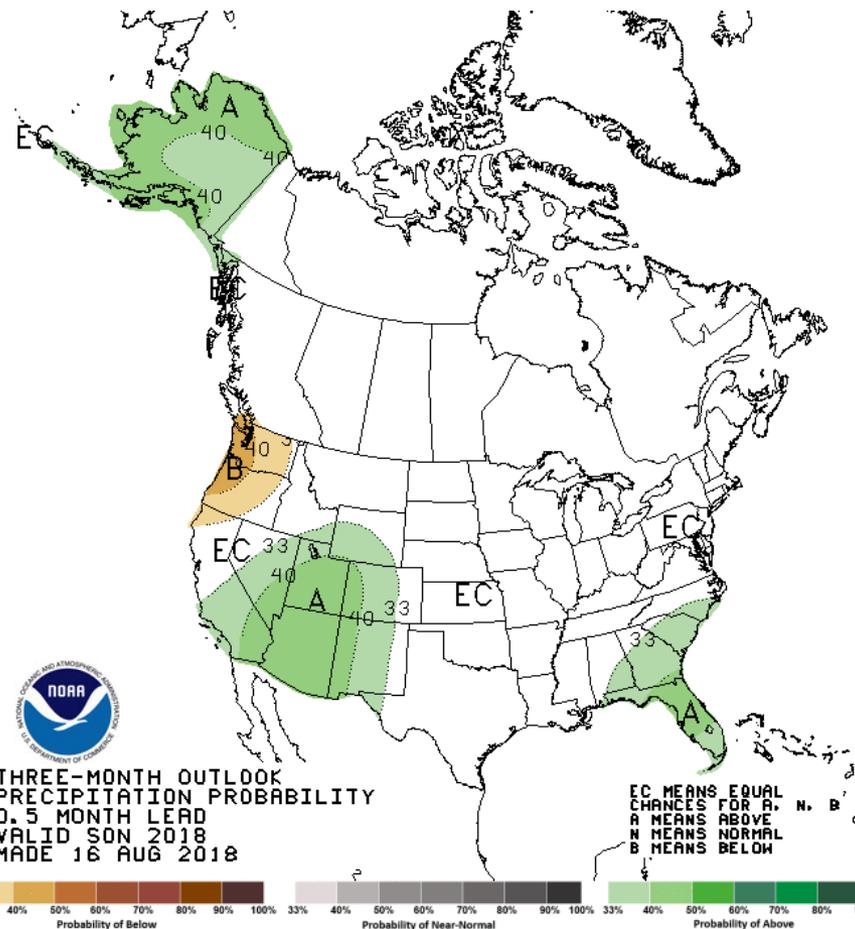


Precipitation

# Sep-Nov outlook



Temperature

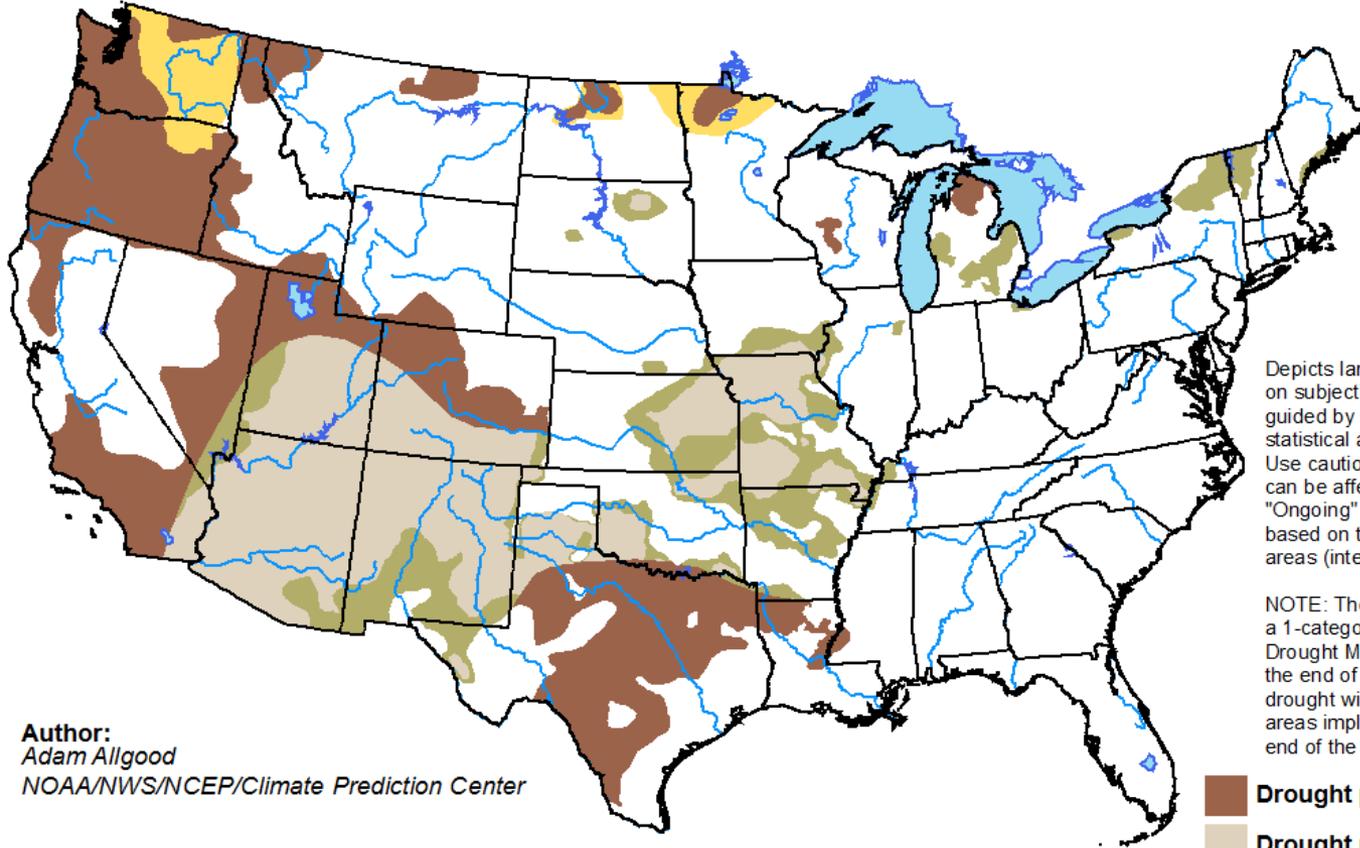


Precipitation

# Drought outlook

## U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for August 16 - November 30, 2018  
Released August 16, 2018

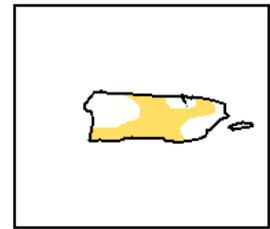
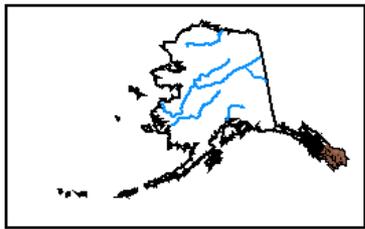


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

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).

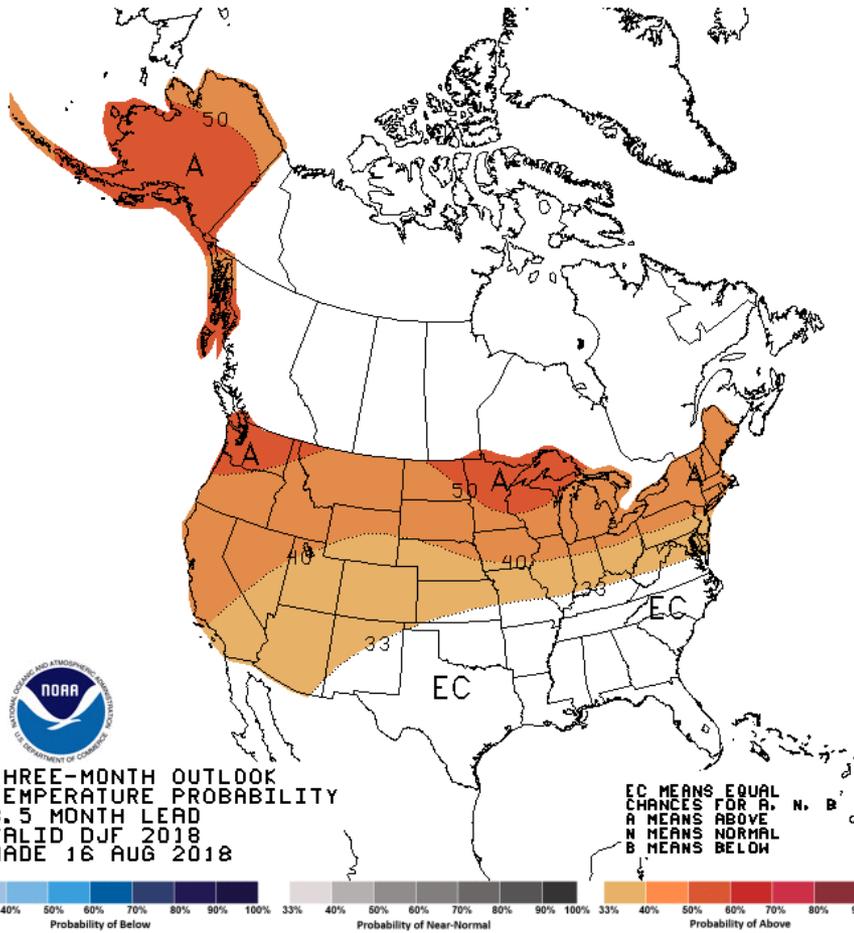
Author:  
Adam Allgood  
NOAA/NWS/NCEP/Climate Prediction Center

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

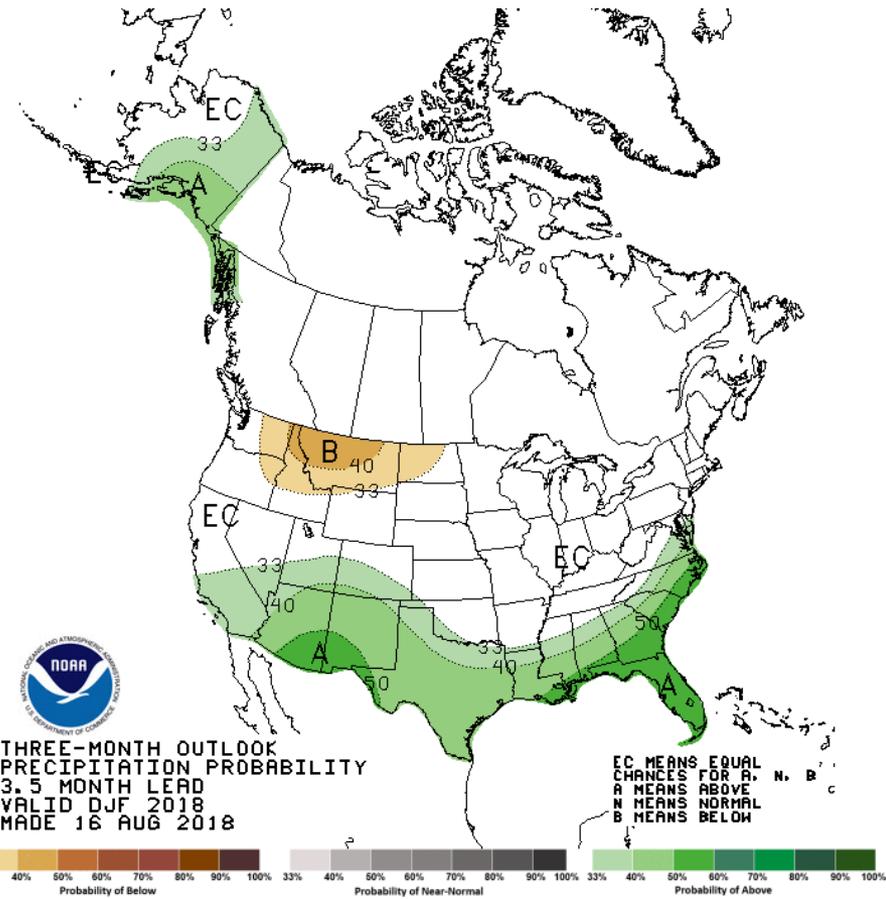


<http://go.usa.gov/3eZ73>

# Dec-Jan-Feb outlook



Temperature



Precipitation

# Summary

- Cooler temps in last 30 days, helpful for agriculture even in dry areas
- Concerns of drought especially in western half of region
- El Niño likely
- September: not much to report, except CO with increased chance of above normal temperature and rainfall
- September-November: increased chance of above normal temperatures across region, increased chance of above normal rainfall in CO

# Further information - Partners

- **Today's Recorded Presentations and :**
- <http://mrcc.isws.illinois.edu/webinars.htm>
- <http://www.hprcc.unl.edu>
- NOAA's National Centers for Environmental Information:  
<https://www.ncdc.noaa.gov/news/national-centers-environmental-information>
- 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)
- Current Weather Forecasts: [www.weather.gov](http://www.weather.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:**

- Jim Angel: [jimangel@Illinois.edu](mailto:jimangel@Illinois.edu), 217-333-0729
    - Dennis Todey: [Dennis.Todey@ars.usda.gov](mailto:Dennis.Todey@ars.usda.gov) , 515-294-2013
    - Doug Kluck: [doug.kluck@noaa.gov](mailto:doug.kluck@noaa.gov), 816-994-3008
    - 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)