

Photo: Taken July 13, 2018, at Hamilton City Reservoir in Caldwell County, MO, by Tim Baker, Daviess County Extension Specialist

North Central
"From the Rockies to the Great Lakes"

Climate & Drought Outlook Webinar

Thursday, July 19, 2018 from 1 pm - 2 pm CDT

Martha Shulski
Nebraska State Climatologist
University of Nebraska - Lincoln



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**

- August 16th 2017

- **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

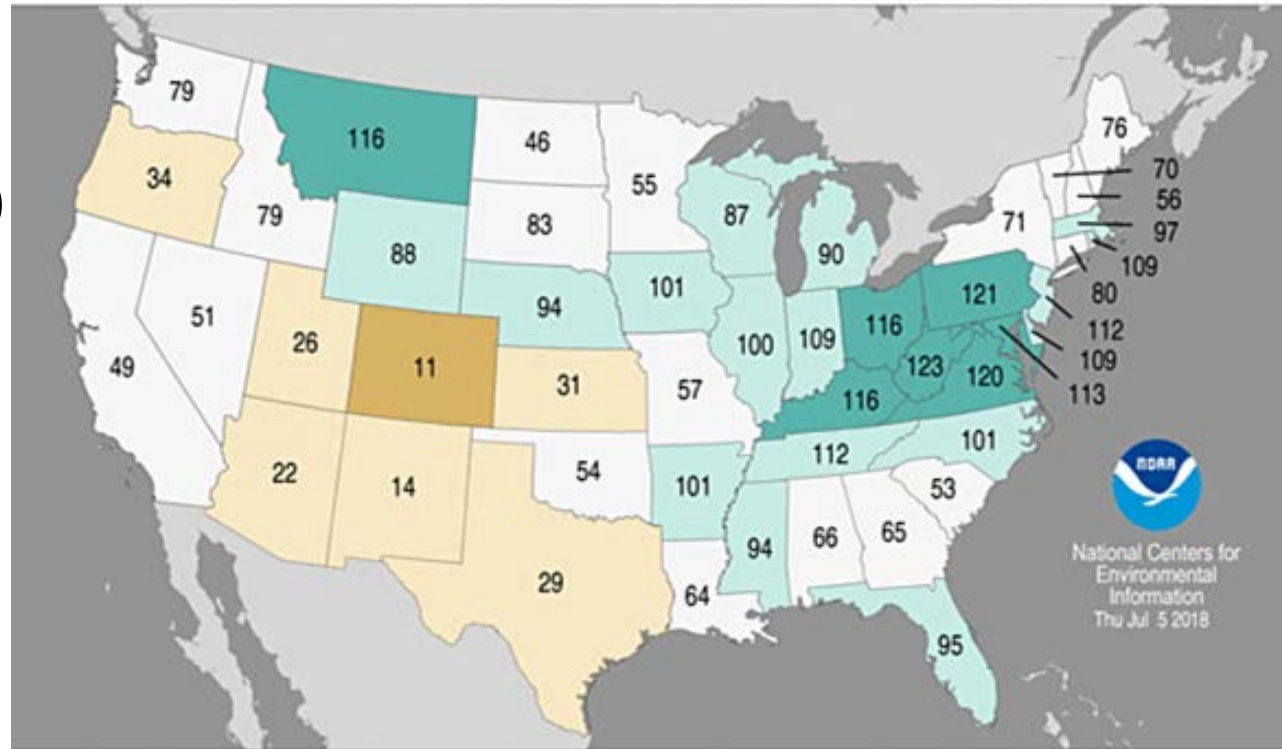
- **Year-to-date**
- **June conditions**
- **Last 30 days**
- **Impacts around the region**
- **El Niño?**
- **Climate outlooks**
- **Questions/Comments**

2018 Year-to-date

Statewide Precipitation Ranks

January–June 2018

Period: 1895–2018




National Centers for
Environmental
Information
Thu Jul 5 2018

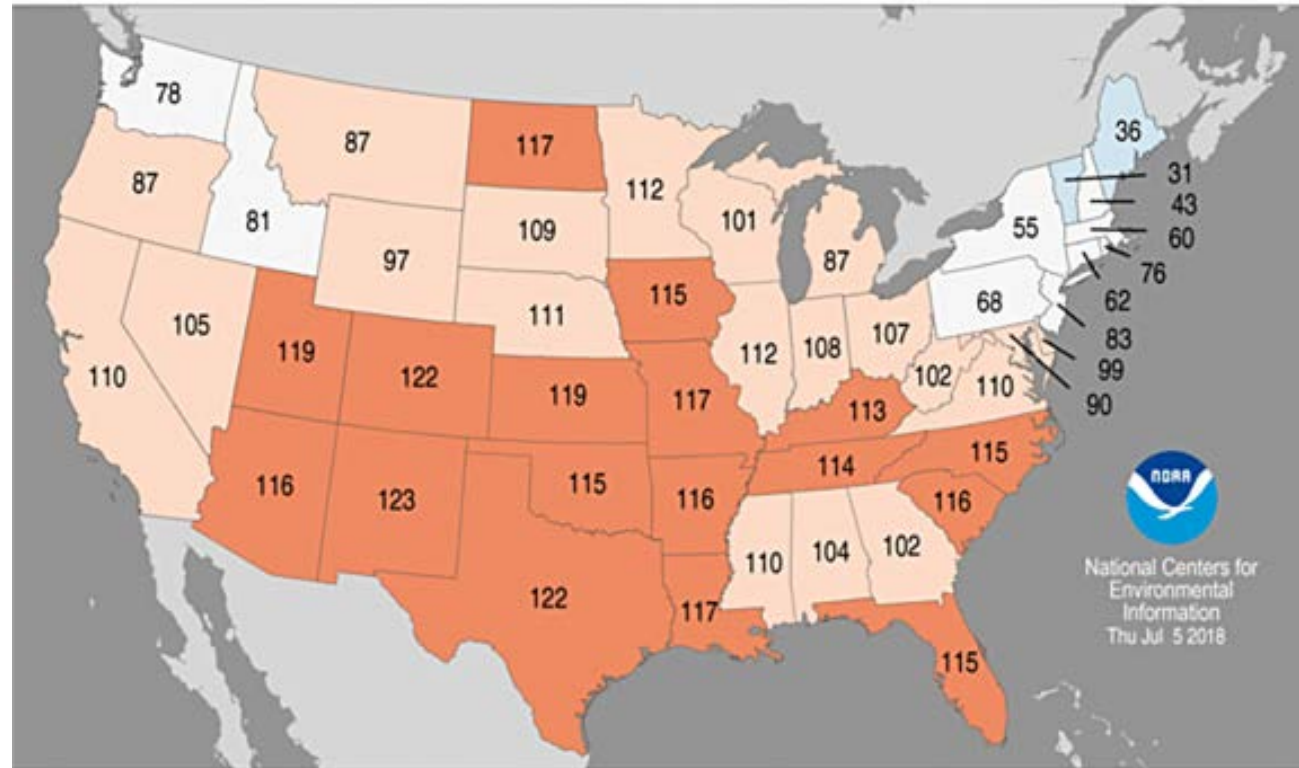
- Wetness in mid-Atlantic, swath of central U.S. (top 5 or top 10 wettest)
- Dryness for southcentral and southwest
- CO ranks 11th driest.

June temperatures

Statewide Average Temperature Ranks

June 2018

Period: 1895–2018



National Centers for
Environmental
Information
Thu Jul 5 2018

Record
Coldest
(1)

Much
Below
Average

Below
Average

Near
Average

Above
Average

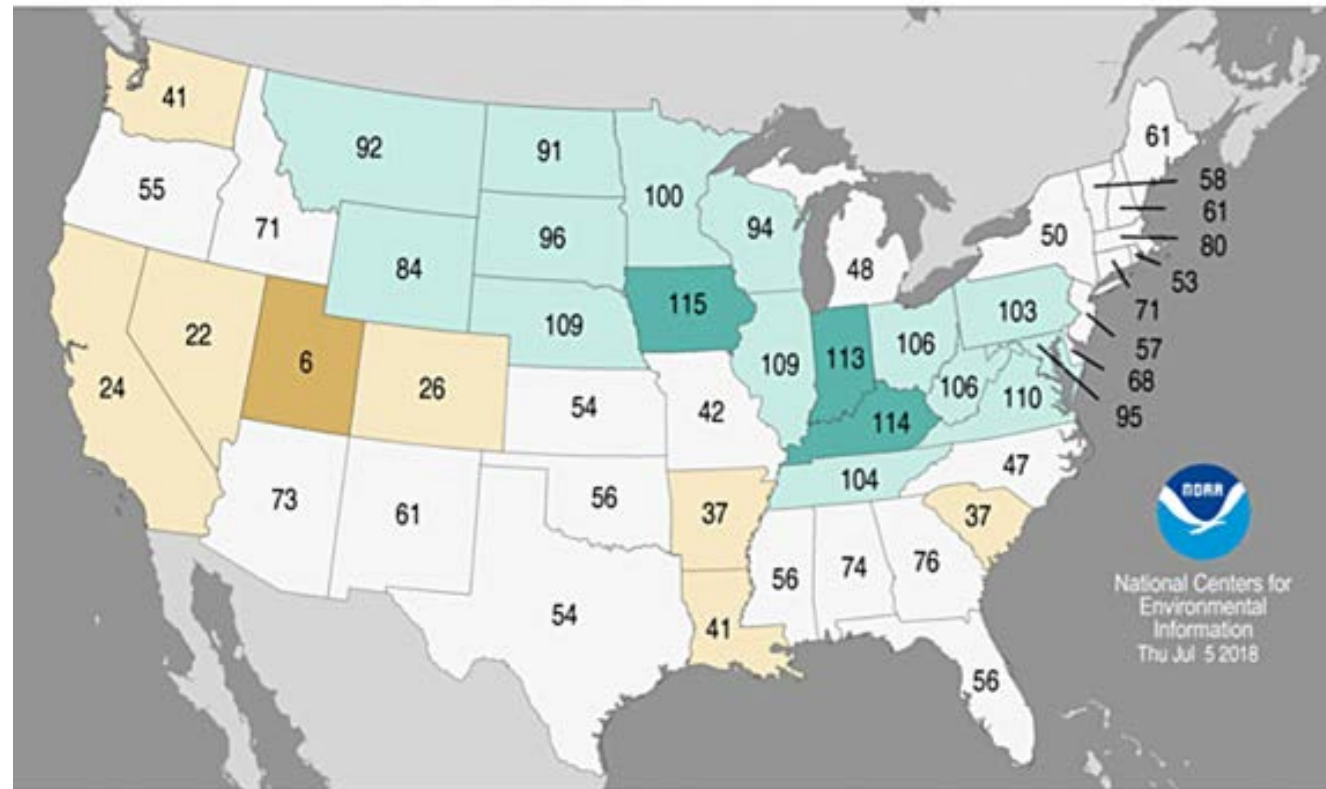
Much
Above
Average

Record
Warmest
(124)

- 5th warmest June globally.
- Above to much above average for most of U.S.
- **Top 10 warmest** for several states.
- High minimum temps.

June precipitation

Statewide Precipitation Ranks June 2018 Period: 1895–2018



National Centers for
Environmental
Information
Thu Jul 5 2018

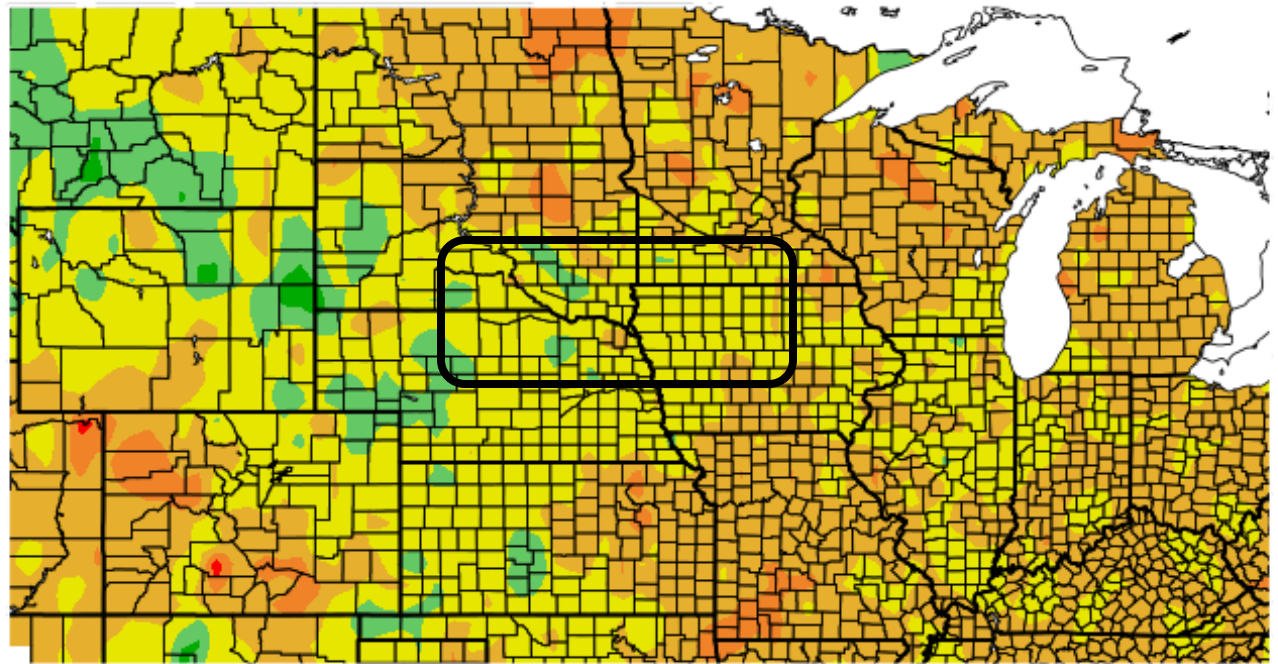


- Wetter than normal for northcentral and mid-atlantic.
- Areas of drought/dryness remain near or below average precip.

Temperature trend - last 30 days

Departure from Normal Temperature (F)
6/18/2018 – 7/17/2018

- Primarily above normal (2 – 4°F).
- Cooler than normal for pockets in the west.



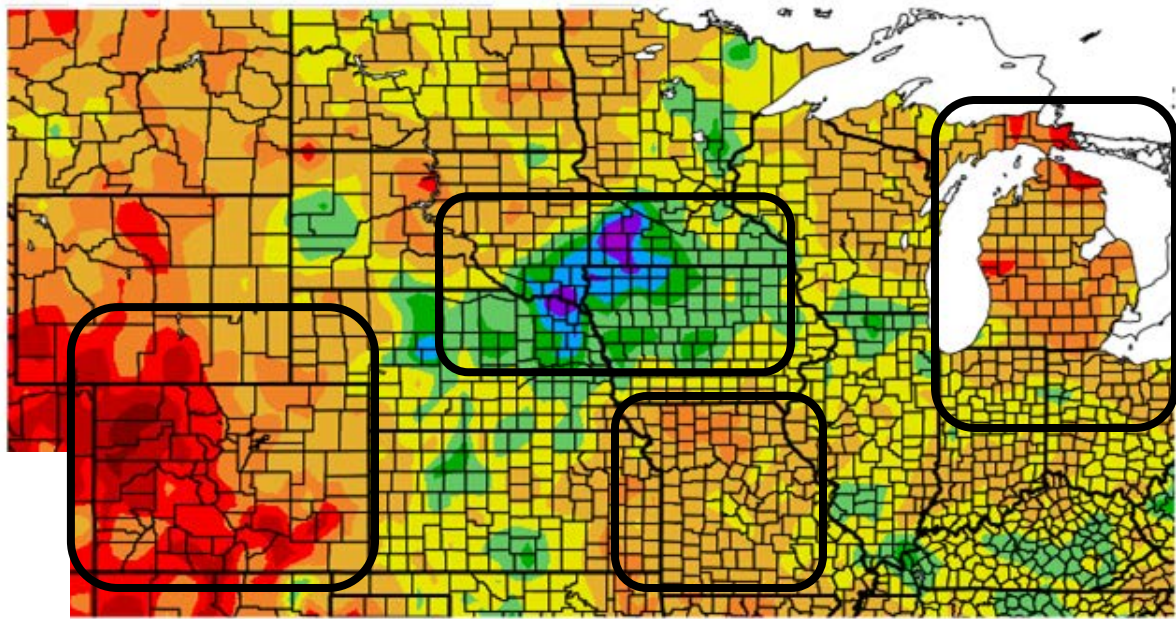
Generated 7/18/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

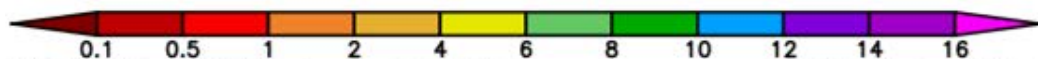
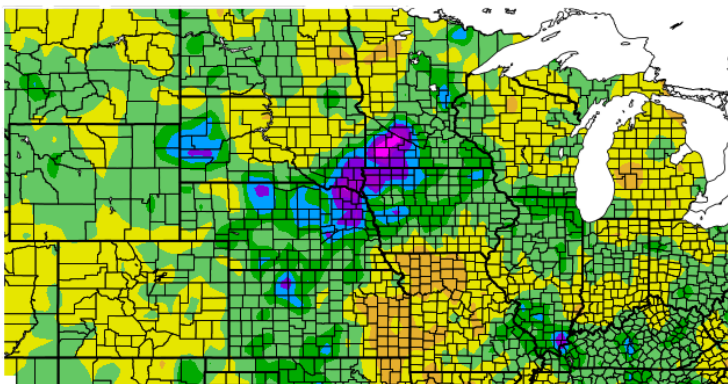
Precipitation trend - last 30 days

- 'Winners and losers' overall.
- Significant wetness in SD, NE, IA, MN border region.

Precipitation (in)
6/18/2018 - 7/17/2018



Departure from Normal Precipitation (in)
6/18/2018 - 7/17/2018



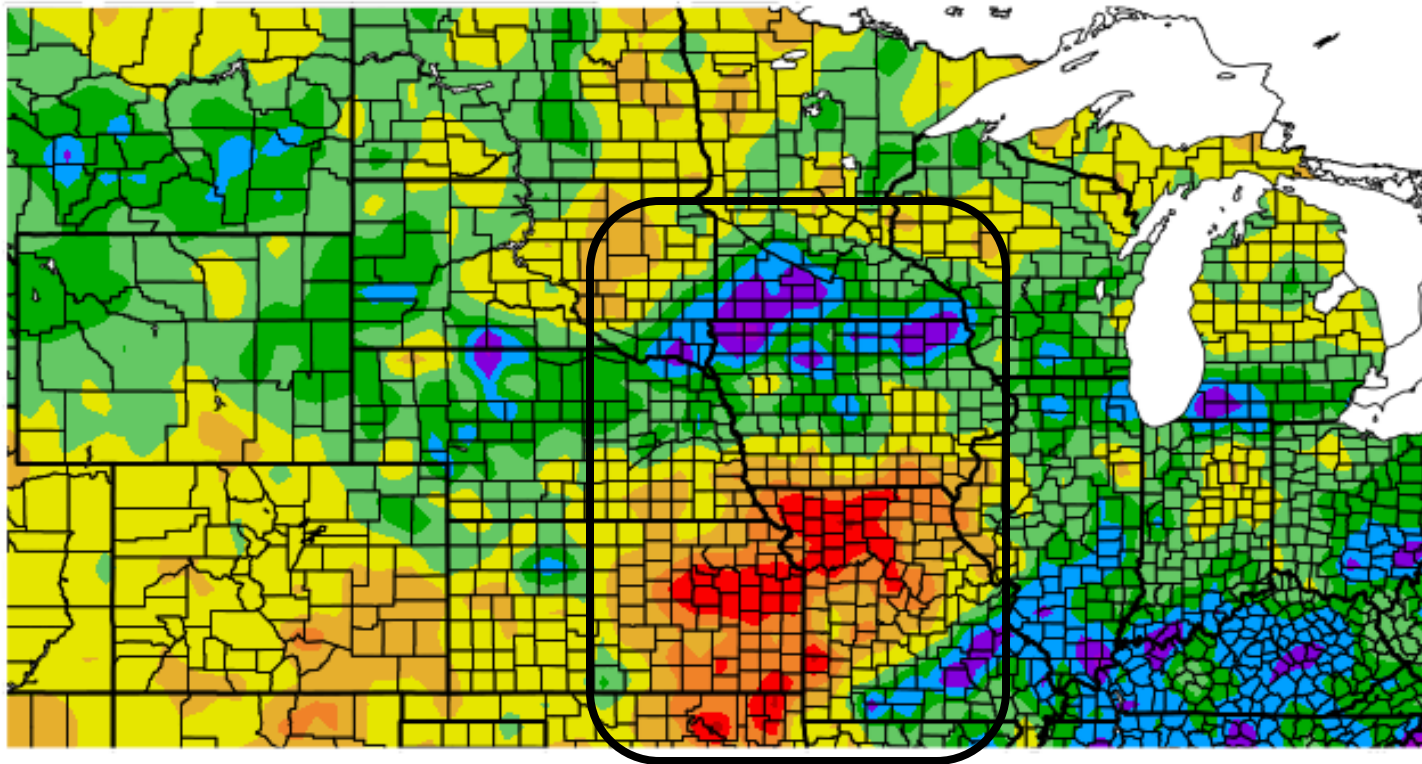
7/18/2018 at HPRCC using provisional data.

NOAA Regional Climate Cent



Precipitation trend – 6 months

Departure from Normal Precipitation (in)
1/18/2018 – 7/17/2018



Generated 7/18/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

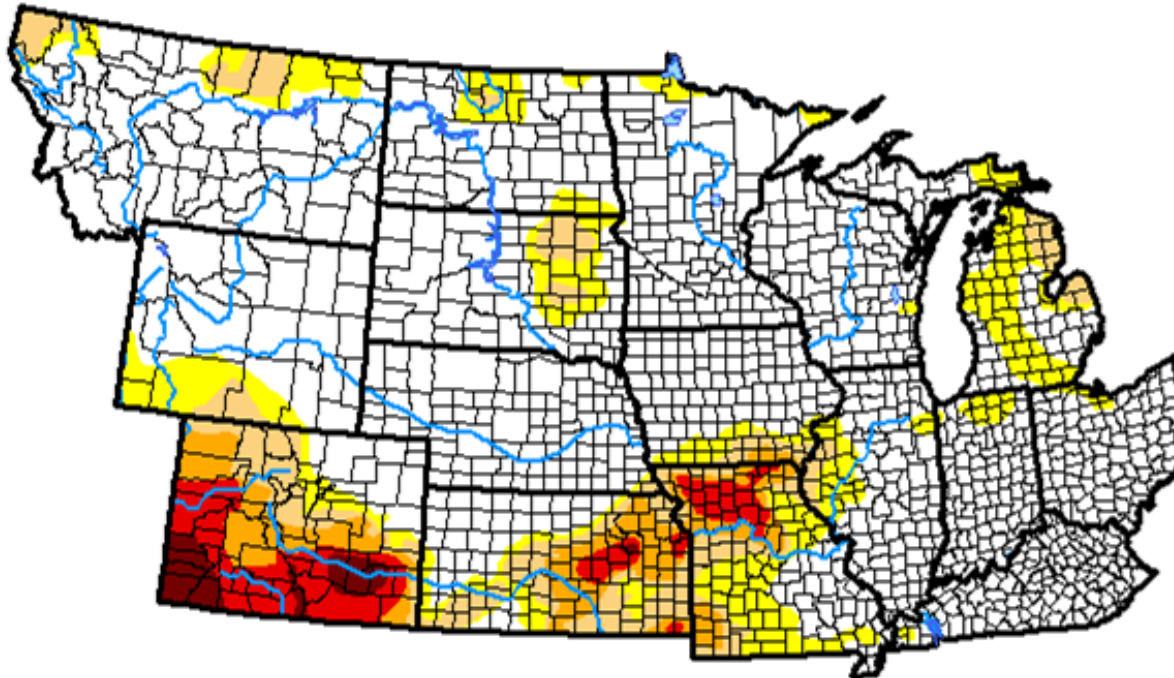
Current Drought Monitor

U.S. Drought Monitor NWS Central Region

July 17, 2018
(Released Thursday, Jul. 19, 2018)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	71.92	28.08	16.48	8.98	4.70	1.23
Last Week <i>07-10-2018</i>	72.75	27.25	16.19	8.87	4.51	1.20
3 Months Ago <i>04-17-2018</i>	72.03	27.97	17.55	9.21	4.15	0.86
Start of Calendar Year <i>01-02-2018</i>	44.74	55.26	22.30	7.69	2.03	0.00
Start of Water Year <i>09-26-2017</i>	50.80	49.20	24.09	12.89	6.13	2.26
One Year Ago <i>07-19-2017</i>	56.99	43.01	19.77	12.07	6.01	0.58



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:

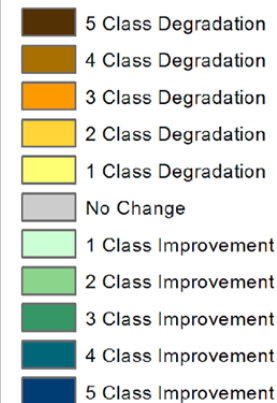
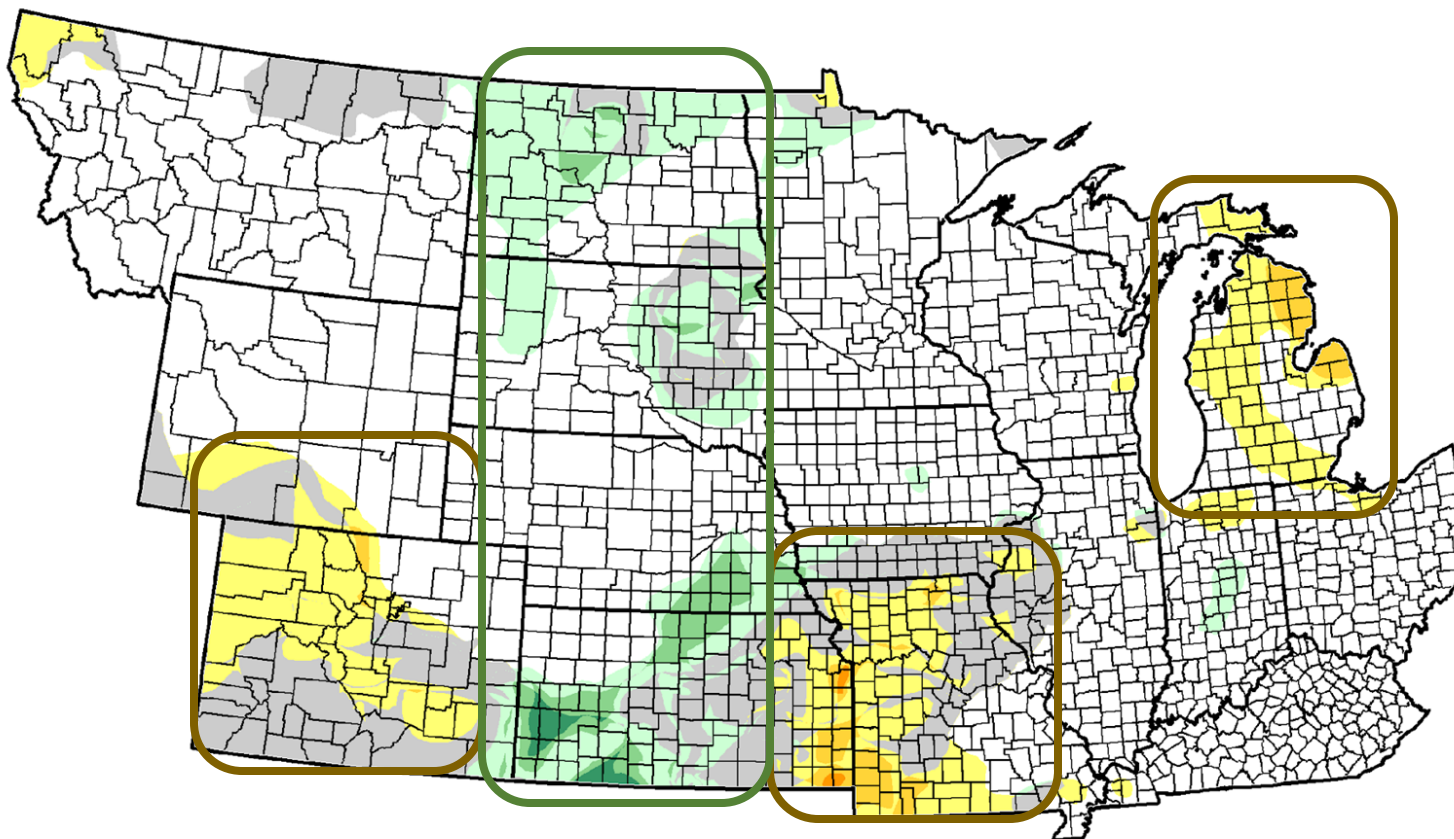
Curtis Riganti
National Drought Mitigation Center



- 15% of the region in drought
- 13% abnormally dry
- D4 confined to southern areas

Drought Monitor change

U.S. Drought Monitor Class Change - NWS Central Region 1 Month



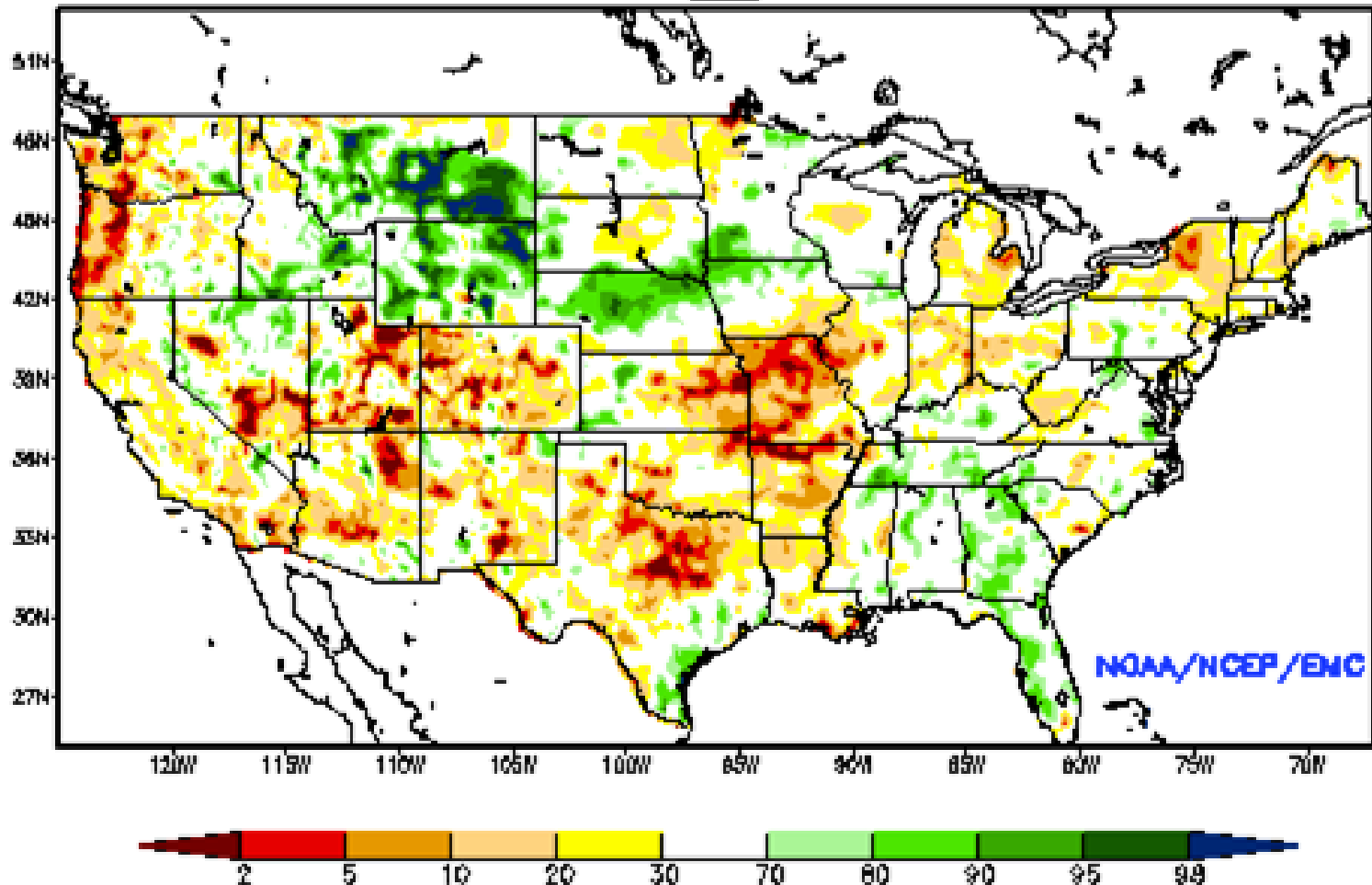
July 17, 2018
compared to
June 19, 2018

<http://droughtmonitor.unl.edu>

Soil water conditions

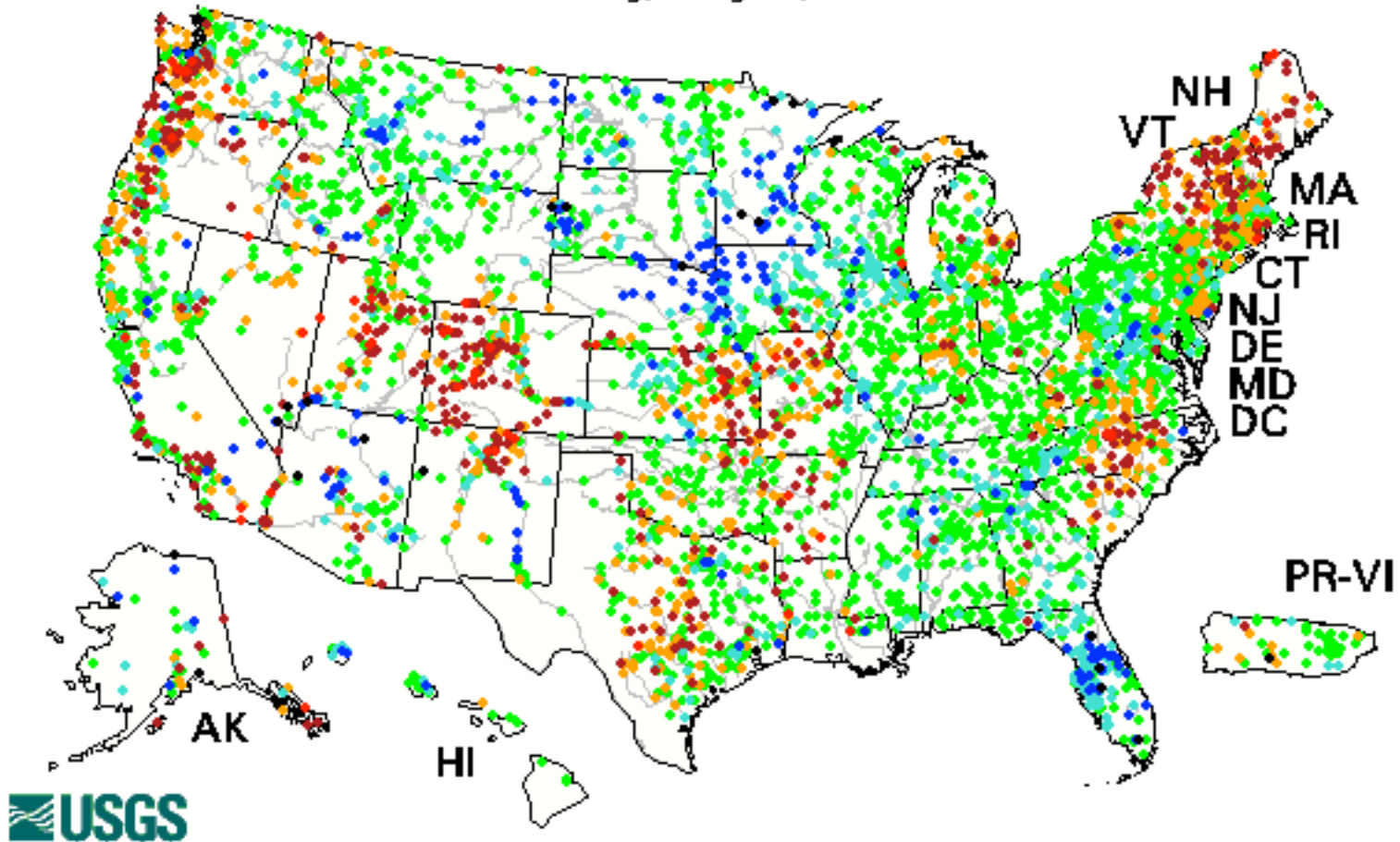
- Variable across the region.

Ensemble-Mean - Past Week Top 1M Soil Moisture Percentile
NCEP NLDAS Products Valid: JUL 14, 2018



Streamflow (7-day)

Tuesday, July 17, 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

Impact highlights

- Late start to the growing season due to wet/cold conditions, but progression rapidly caught up. GDD's now above normal (20% - 30% ahead).
- Hail damage to crops around the region.
- Colorado impacted by state's 3rd largest fire (human-caused) – Spring Creek. Mostly contained.
- Dryness intensification in Missouri with significant crop impacts.
- Localized heavy precipitation events with flooding.
- Missouri River 3rd highest recorded runoff.

Impacts around the region

Colorado

- Spring Creek fire (southcentral) is 3rd largest fire in history, 108,000 acres, 91% contained.
- Rapid development and destroyed quite a few homes.
- '416' fire (southwest), 54,000 acres, 50% contained.
- Concern for mudslides in burn scars.

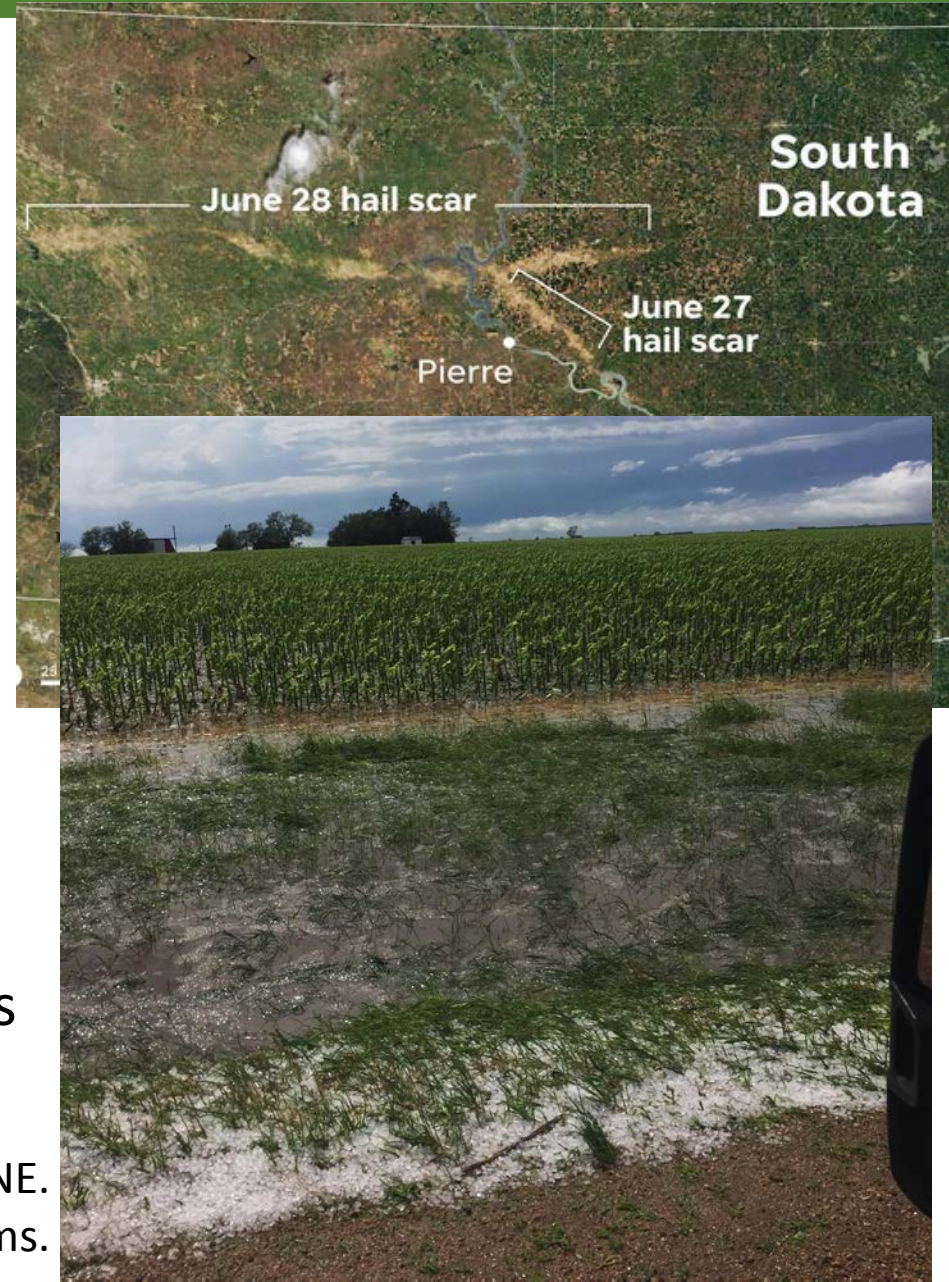


Impacts around the region

South Dakota and Nebraska

- Late planting but rapid crop growth due to above normal temperatures.
- Green pastures, full stock ponds due to timely rains in the west.
- Hail reports with crop damages.
- Frequent flooding in eastern SD (8.87 inches yesterday, Brookings Co).

Hail-damaged corn near Holdrege, NE.
Photo courtesy Tyler Williams.



Impacts around the region

Minnesota

- Flood events around the state. Lake Mille Lacs rose 0.5ft in one day (7" rain event).
- GDDs 20% ahead of normal. Good crop reports.



Cottonwood River near Lambertson following July 3 heavy rain
Photo courtesy Pete Boulay.

Iowa

- Strong moisture gradient: Wet in the northwest, dry in the southeast corner (some long-term).
- Significant flood event in central Iowa



Des Moines Register



Photo courtesy Justin Glisan

Impacts around the region

Missouri

- Significant dryness issues in drought areas.
- 3rd dries YTD in a century for Unionville.



Unionville corn field. July 13
Photo courtesy Pat Guinan.



Pasture near Unionville. July 13
Photo courtesy Pat Guinan.

Impacts around the region

Michigan

- High lake levels (1.5 – 2ft above average) and associated shore damage.
- Quick deterioration with dryness and above normal temperatures.
 - Burn bans in effect.
 - Issues with late-planted crops.

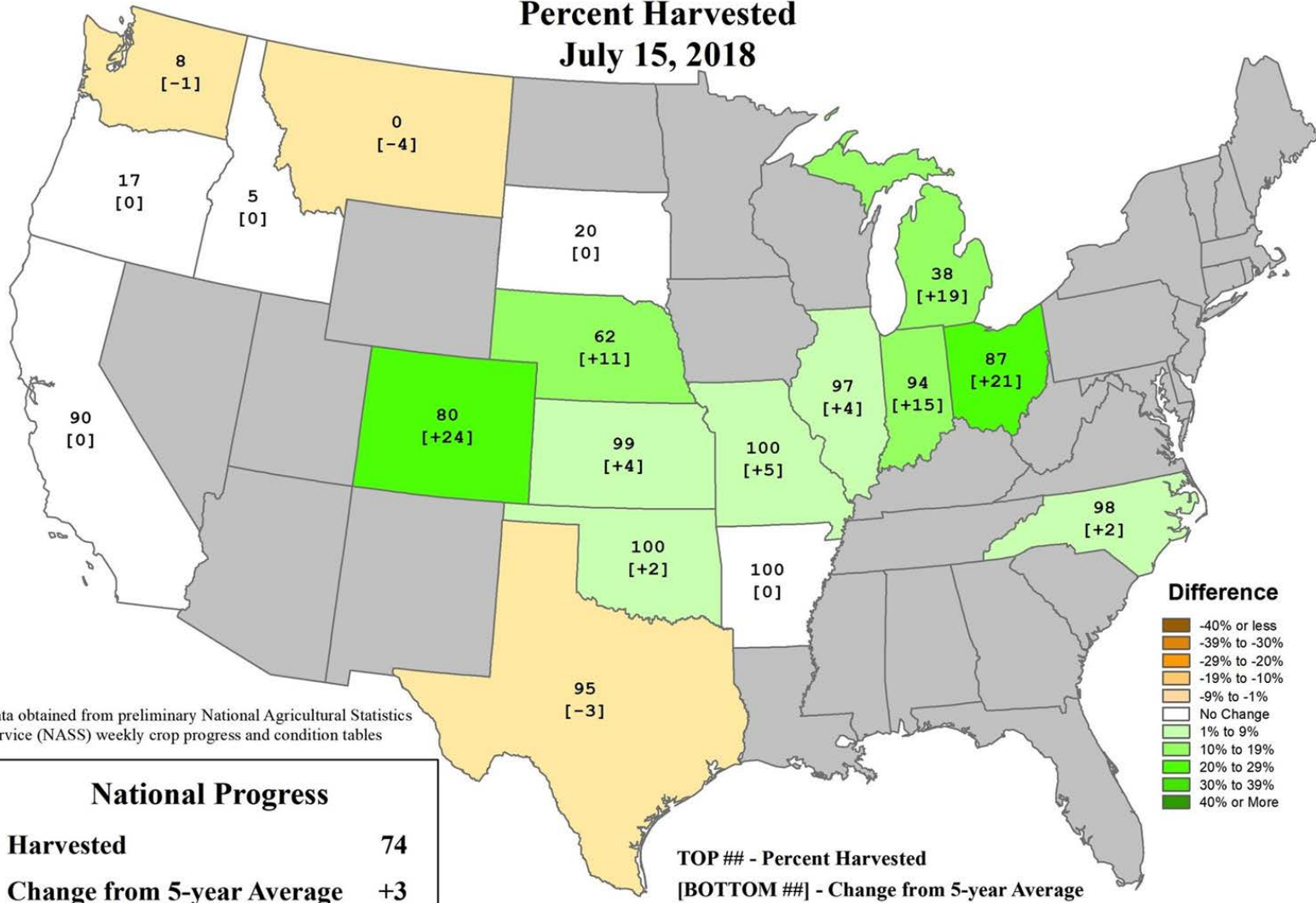
Ohio

- Conditions deteriorating in NW part of the state with dry trend.
- Minimal agricultural impacts thus far but late-planted crops seeing stress.

Wheat harvest

U.S. Winter Wheat Progress

Percent Harvested
July 15, 2018



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

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

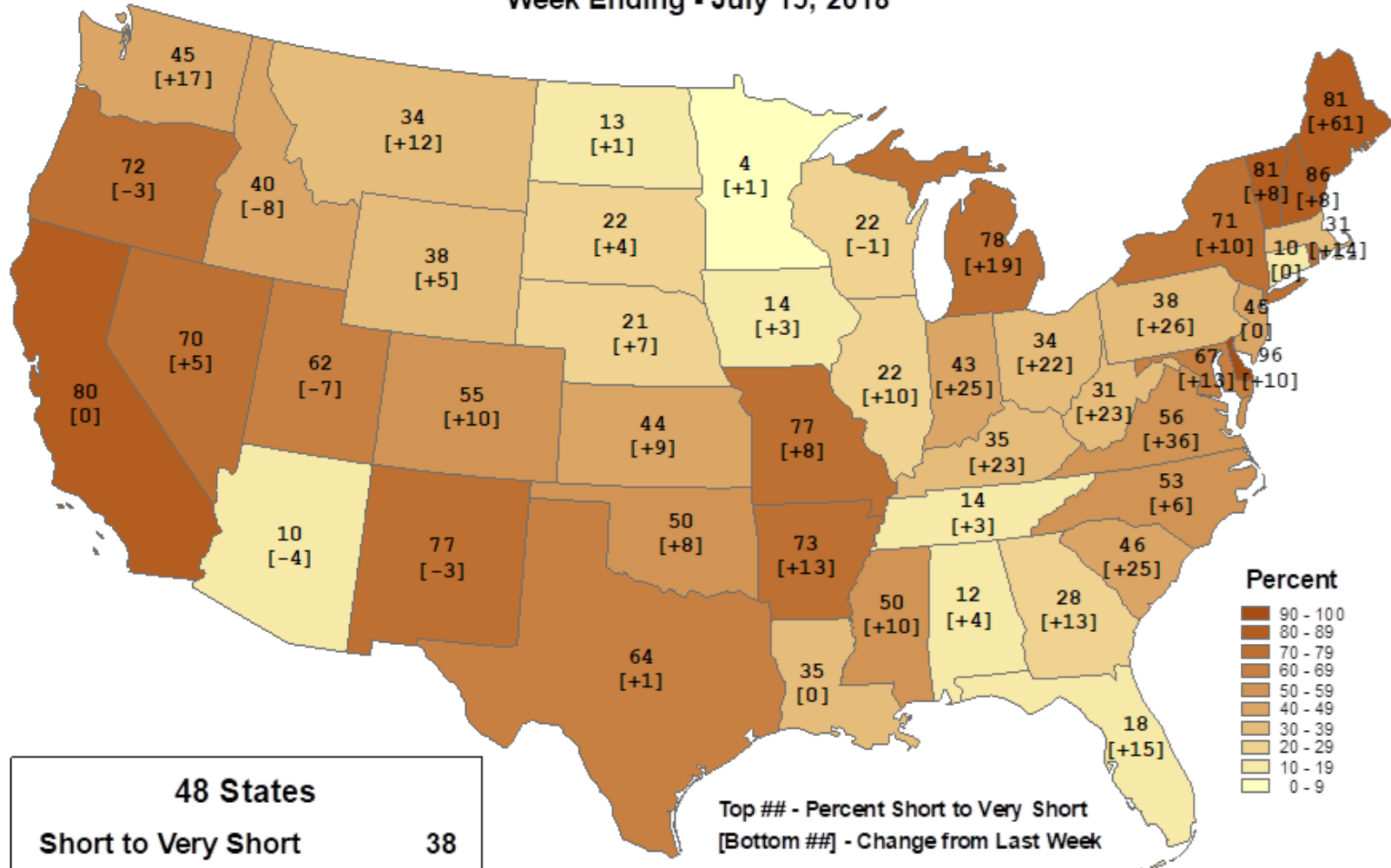
Topsoil moisture



United States
Department of
Agriculture

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

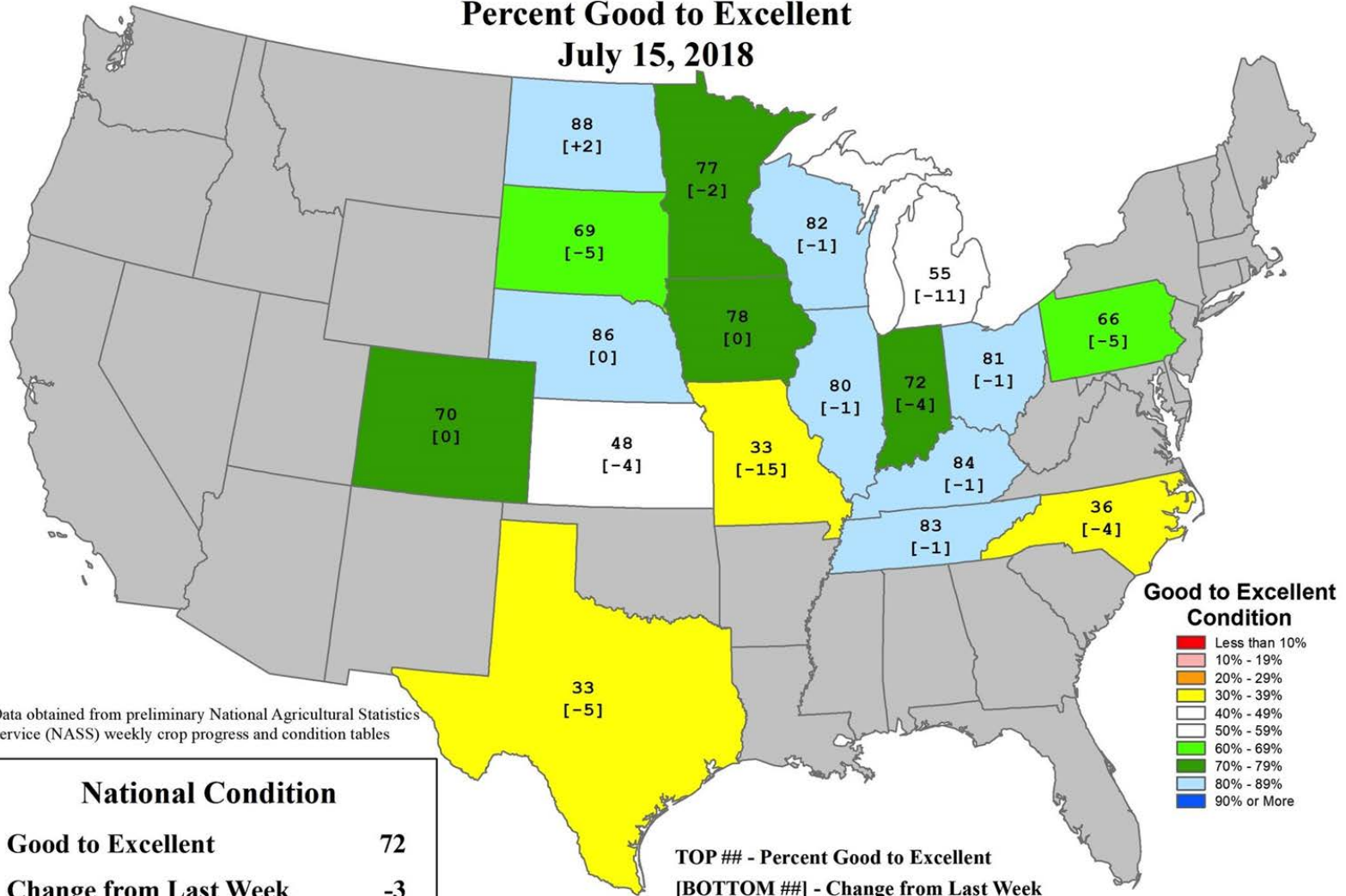
Topsoil Moisture Percent Short to Very Short Week Ending - July 15, 2018



Corn rated good to excellent

U.S. Corn Conditions

Percent Good to Excellent
July 15, 2018



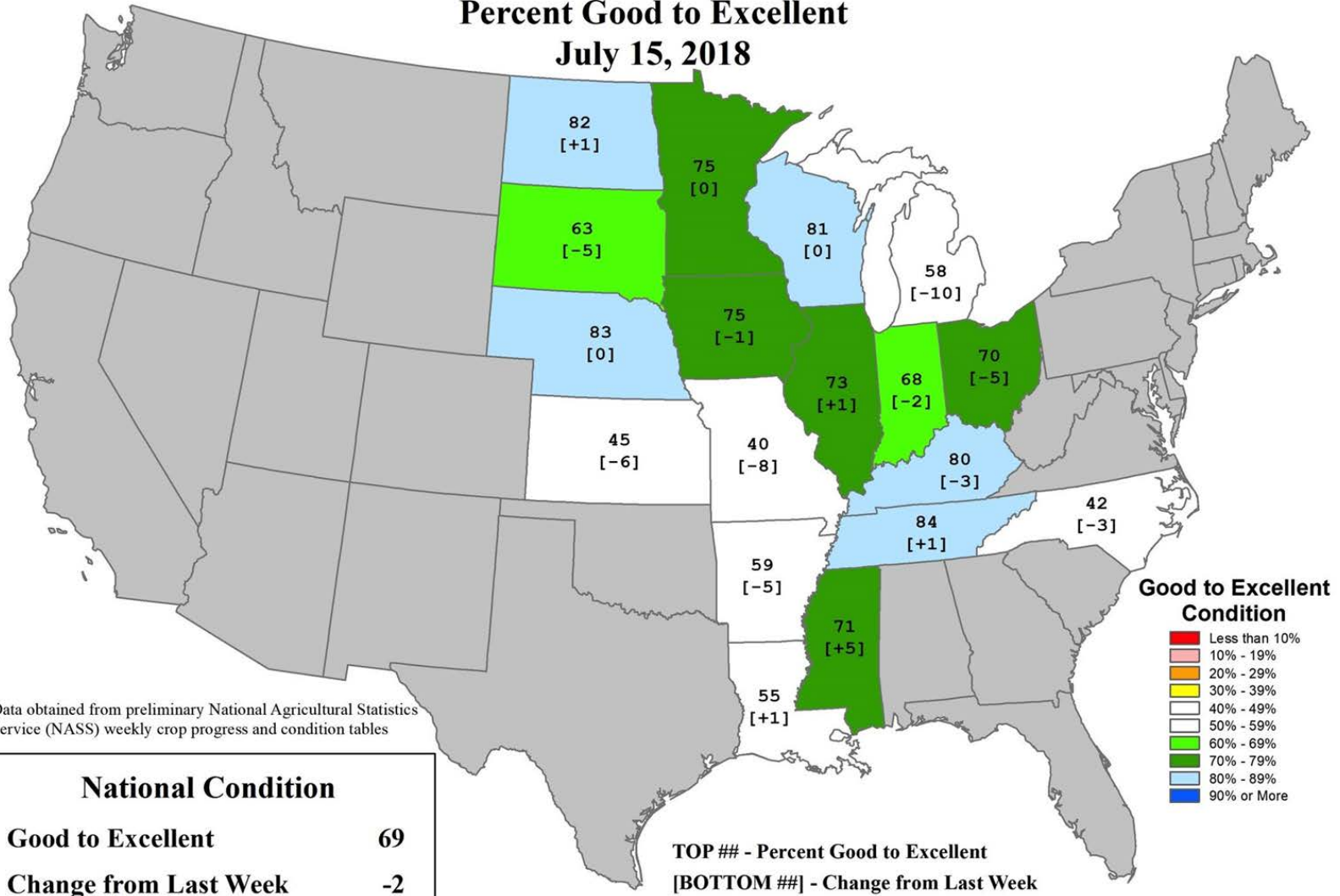
Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

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

Soybean rated good to excellent

U.S. Soybean Conditions

Percent Good to Excellent
July 15, 2018

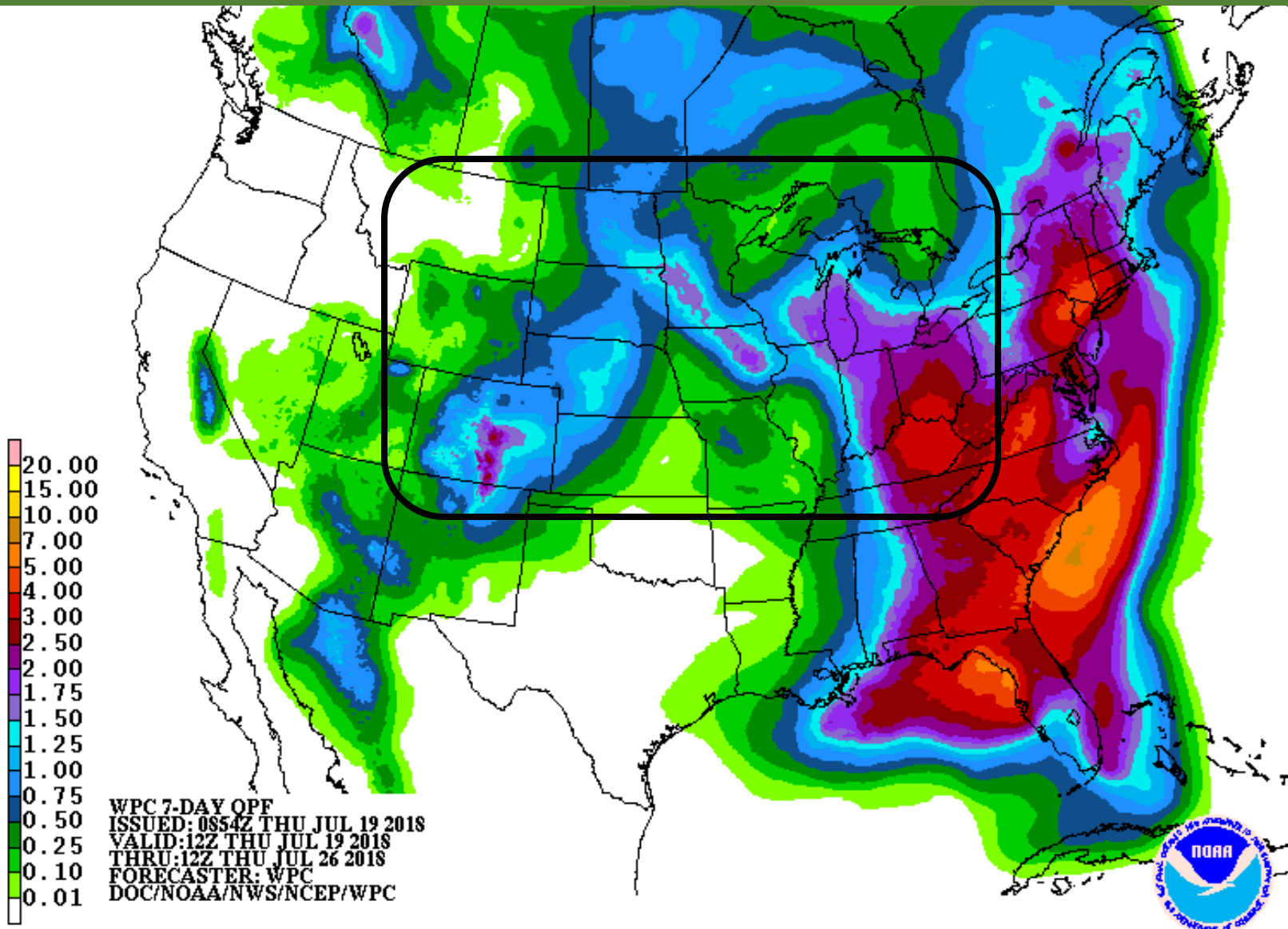


Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

Climate outlooks

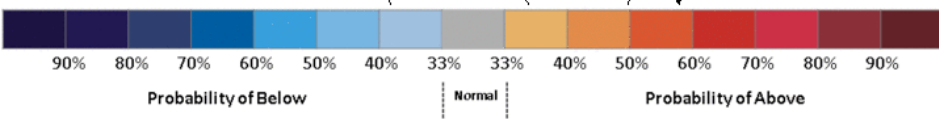
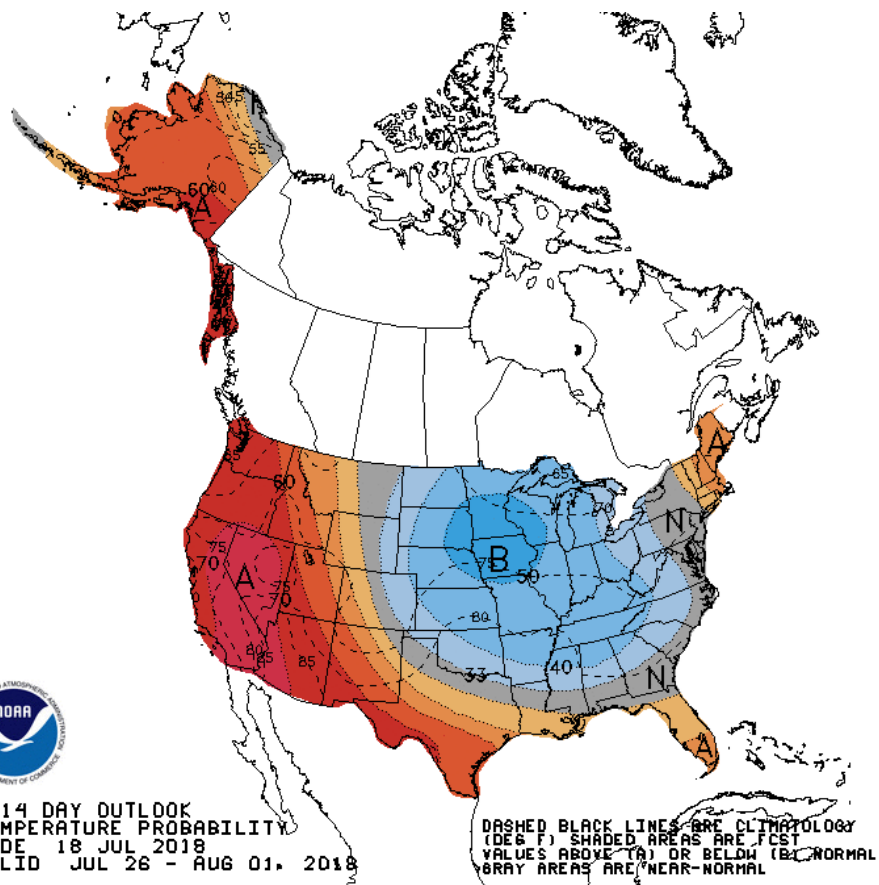
- **Short-term**
- **El Niño?**
- **Drought**
- **Summer and fall conditions**

Precipitation forecast

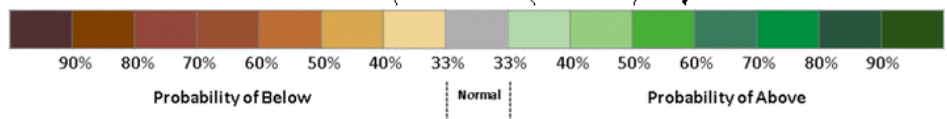
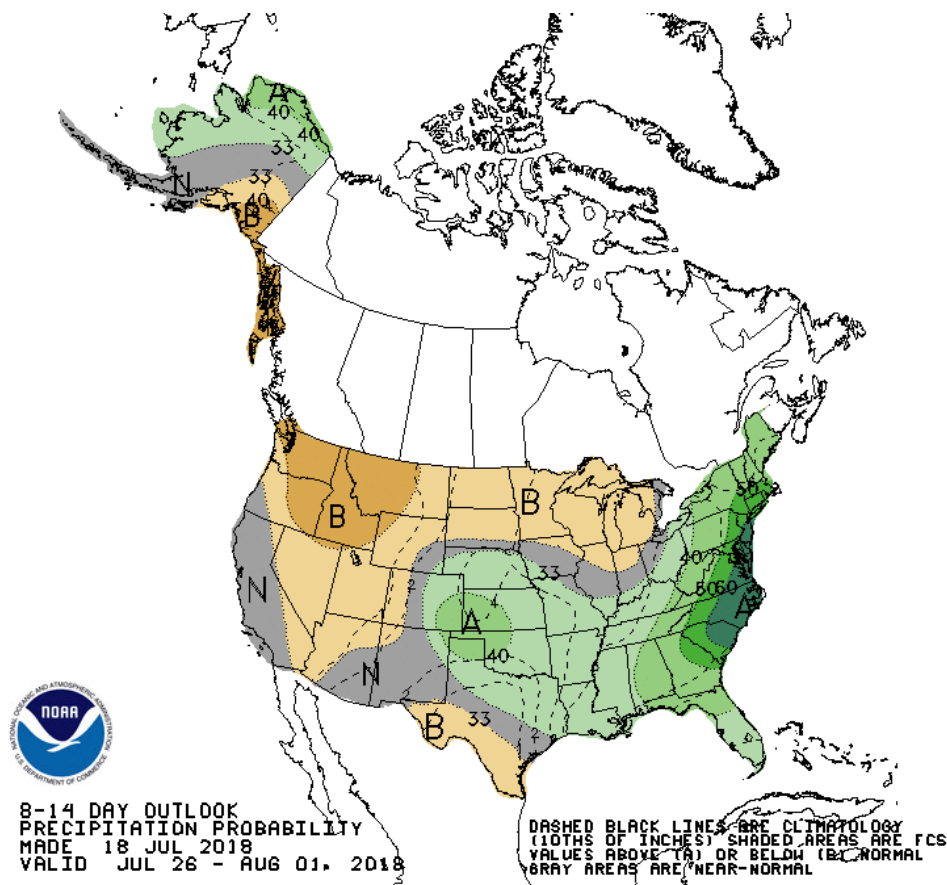


<http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml>

8-14 Day outlook for Jul 26 – Aug 1



Temperature



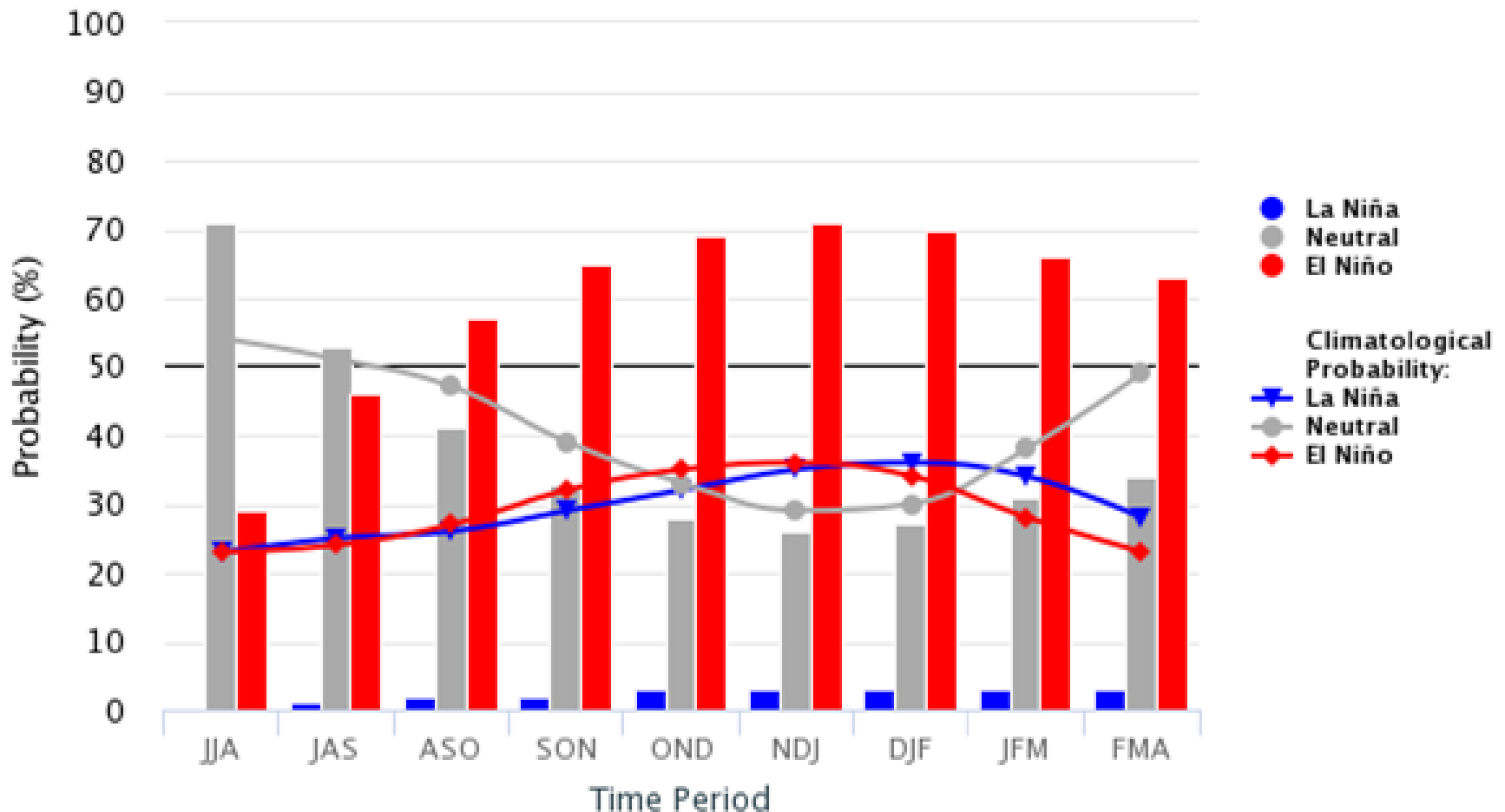
Precipitation

El Niño watch

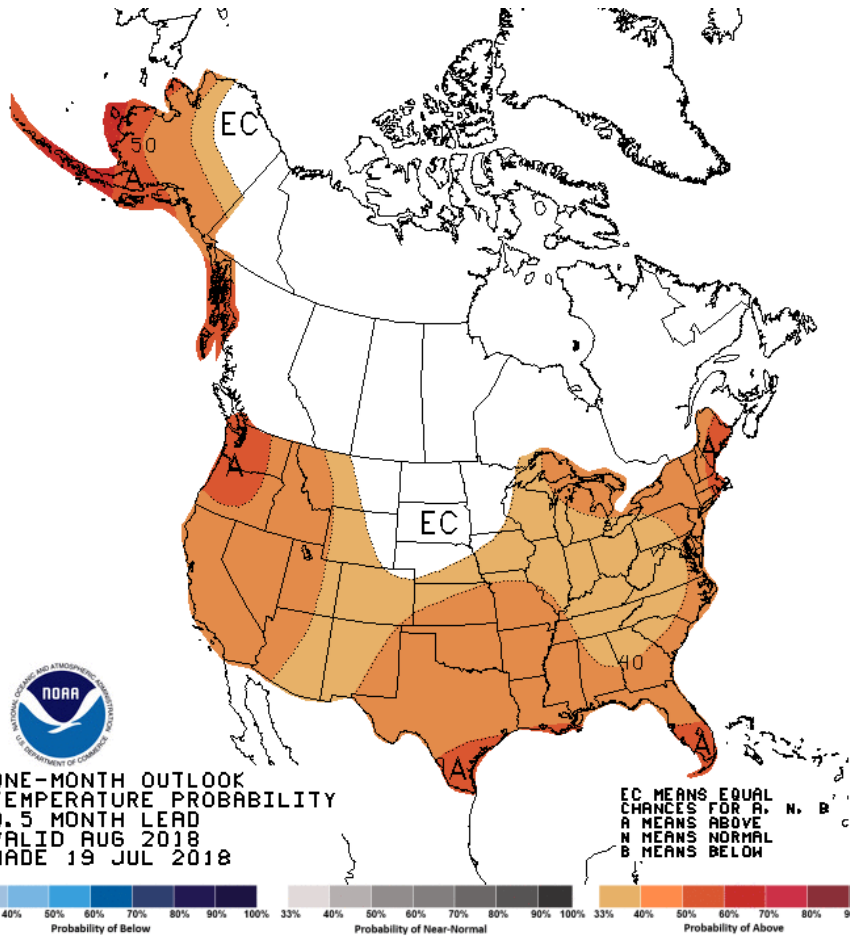
- El Niño is most likely scenario by fall.

Early-Jul CPC/IRI Official Probabilistic ENSO Forecasts

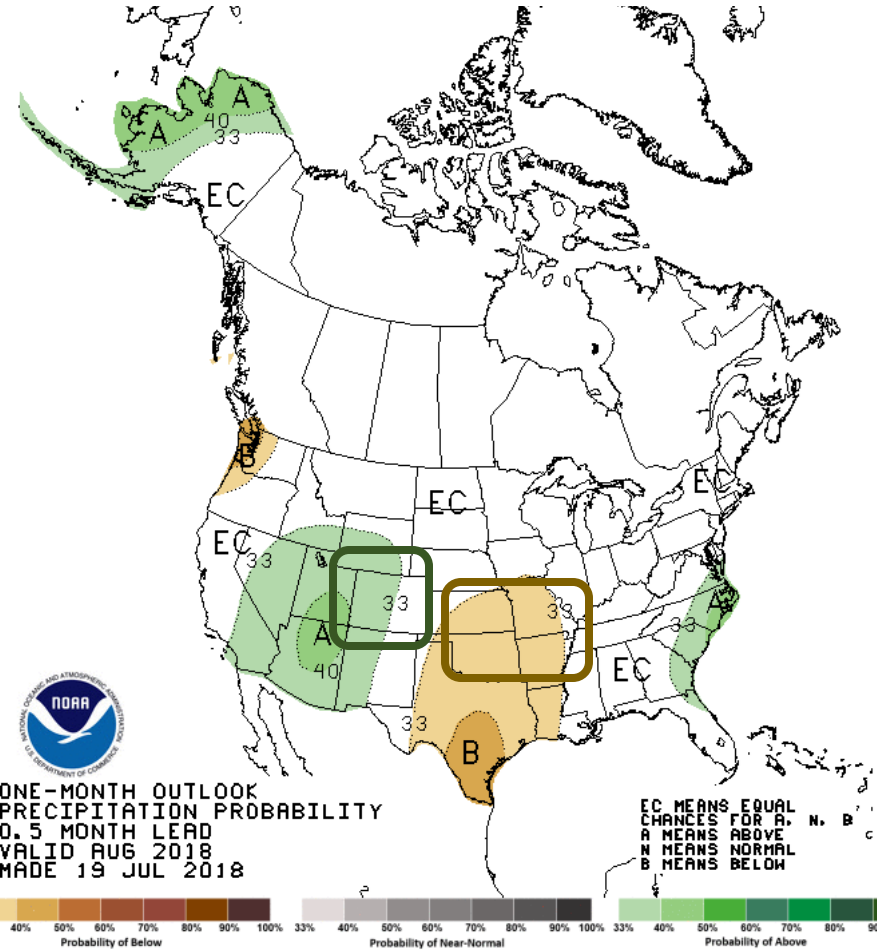
ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: $-0.5\text{ }^{\circ}\text{C}$ to $0.5\text{ }^{\circ}\text{C}$



August outlook

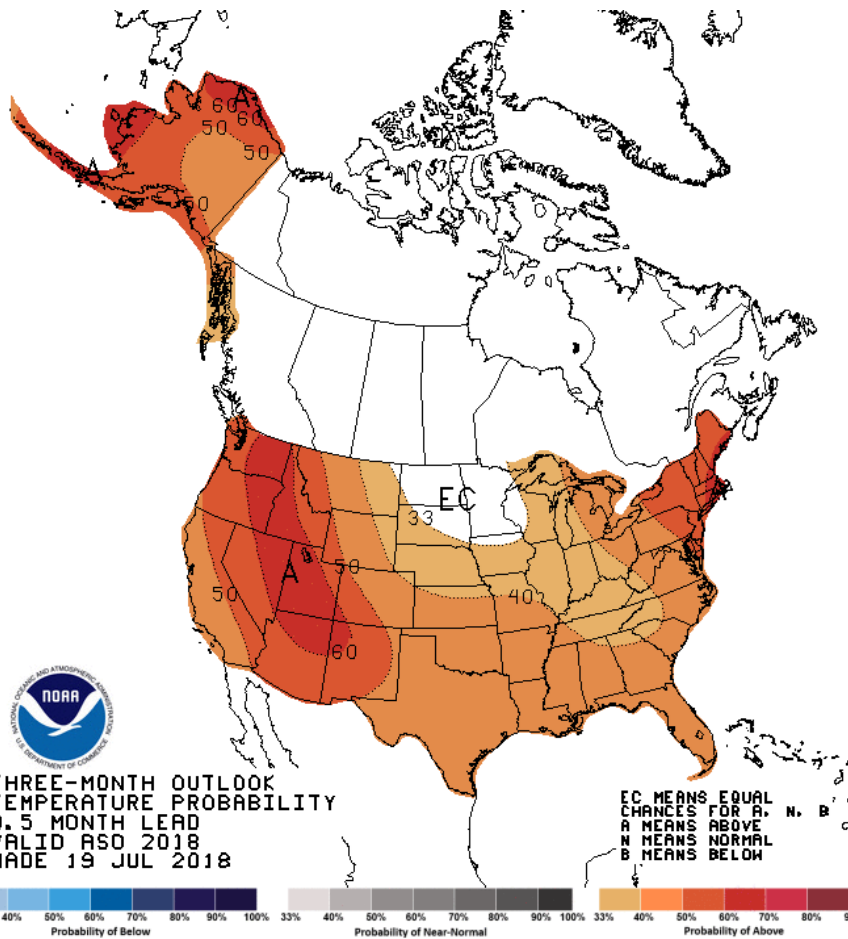


Temperature

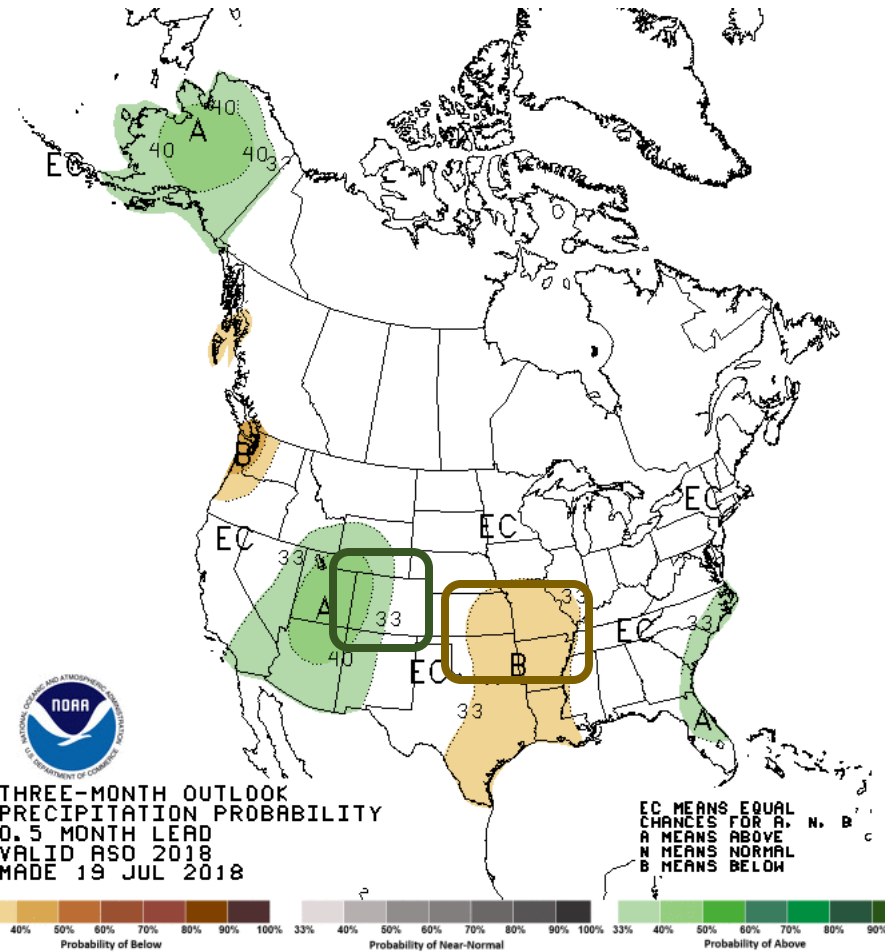


Precipitation

Aug-Sep-Oct outlook



Temperature

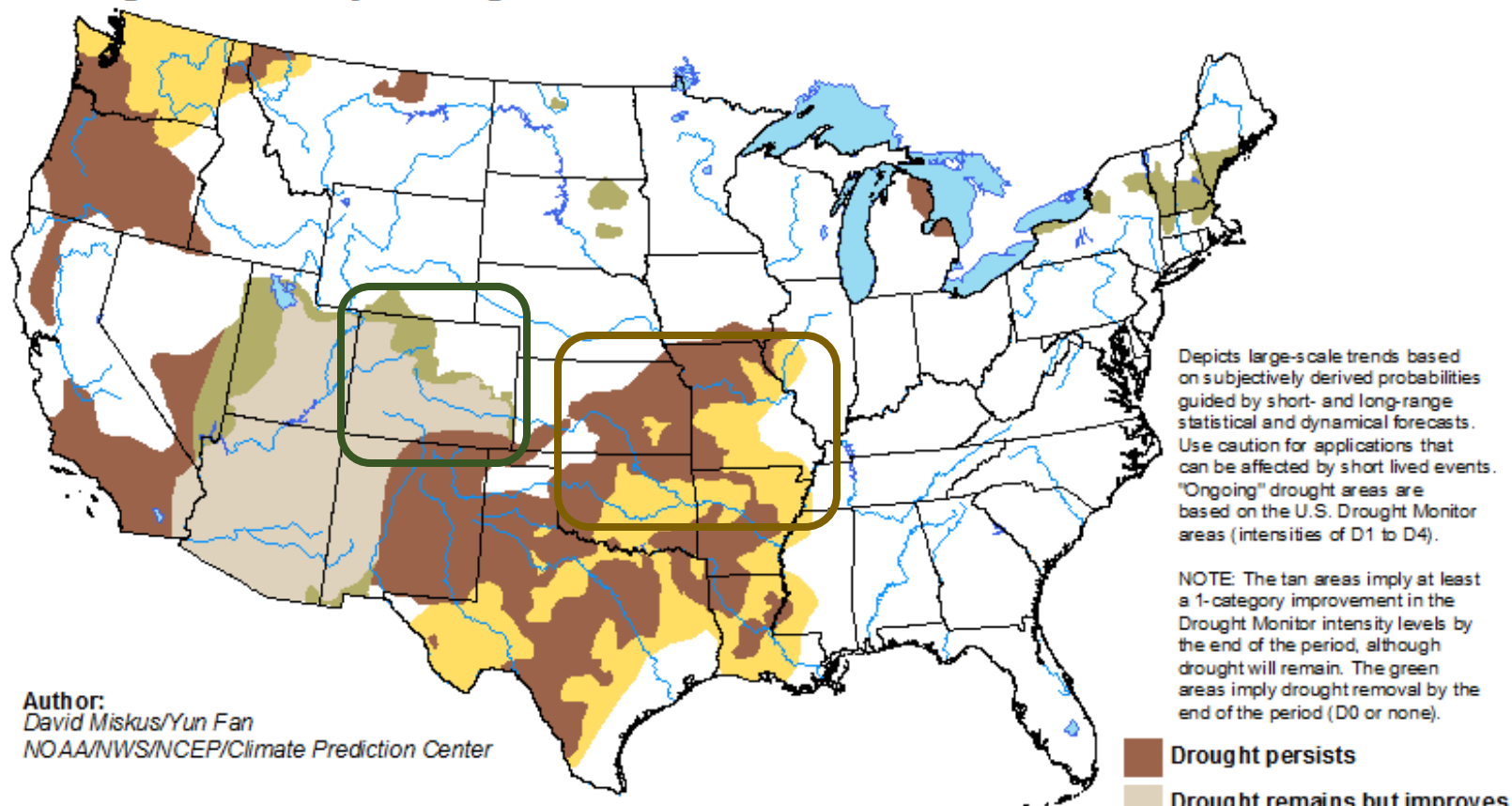


Precipitation

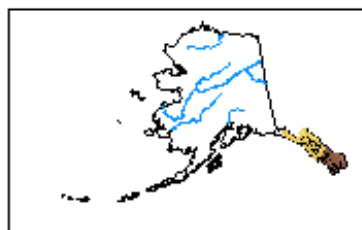
Drought outlook

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

Valid for July 19 - October 31, 2018
Released July 19, 2018

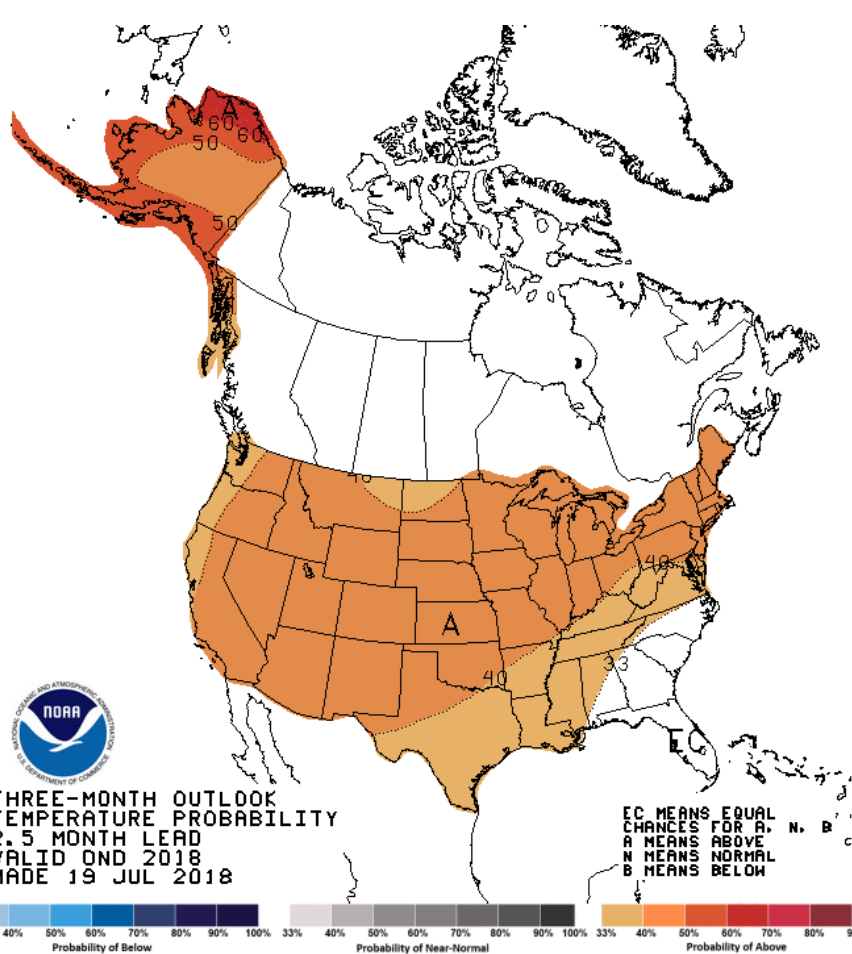


Author:
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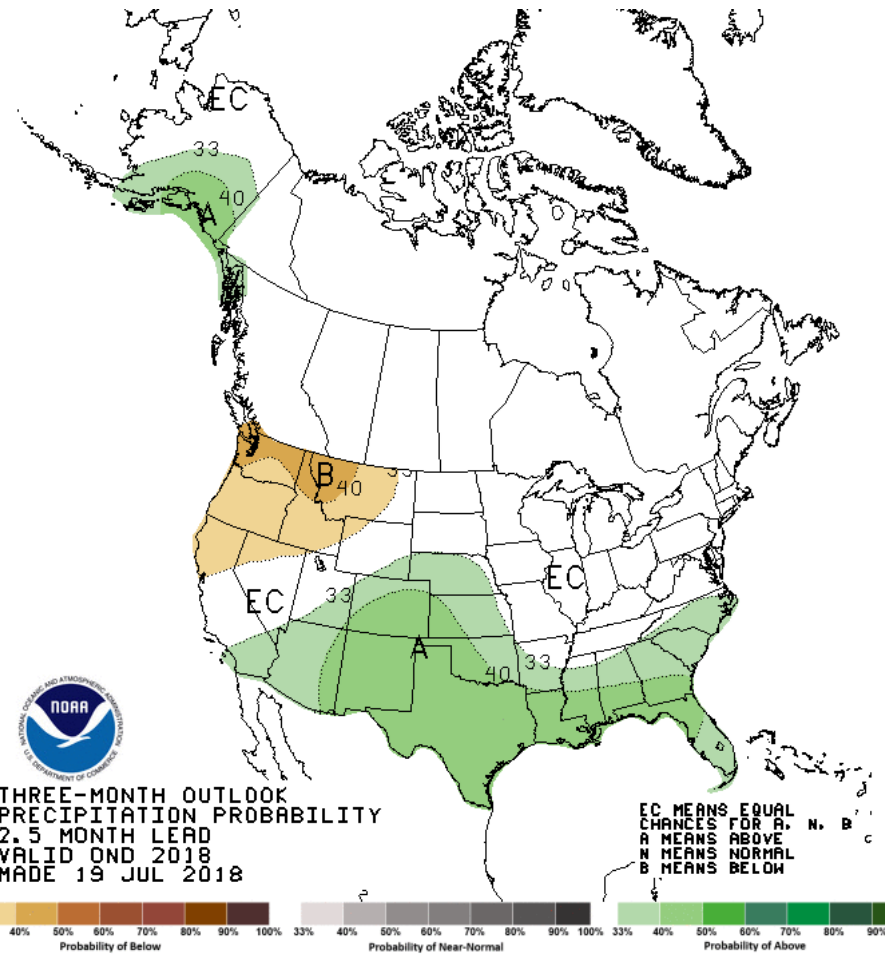


<http://go.usa.gov/3eZ73>

Oct-Nov-Dec outlook



Temperature



Precipitation

Summary

- Cold and late start to the growing season.
- Significant warmth has led to rapid crop growth putting progress ahead of schedule (~ a few weeks).
- Spotty precipitation with localized heavy rain events and flooding.
- July ends with enhanced likelihood for: cooler than normal, dry in the north, wet in the south.
- Hopeful for monsoon relief in CO. Not so lucky further east (MO).

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/
- NOAA's Climate Prediction Center: www.cpc.ncep.noaa.gov
- Current Weather Forecasts: www.weather.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:
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 - **Weather:**
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