Midwest and Great Plains Climate and Drought Outlook

Thursday, September 19, 2019

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General Information

Regional climate services for the North Central U.S., including the Great Plains and Midwest, are provided through partnerships among federal, regional, and state partners:

- National Oceanic and Atmospheric Administration
- U.S. Department of Agriculture
- National Drought Mitigation Center
- High Plains and Midwestern Regional Climate Center
- American Association of State Climatologists
- State Drought Task Forces

Next webinar: Laura Edward and Brad Rippey on October 17th

Archive of past webinars:

- hprcc.unl.edu/webinars
- drought.gov/drought/calendar/webinars

Agenda

1. Current climate conditions in a historical context
2. Current and prospective climate impacts
3. Climate outlooks
4. Questions and Discussion

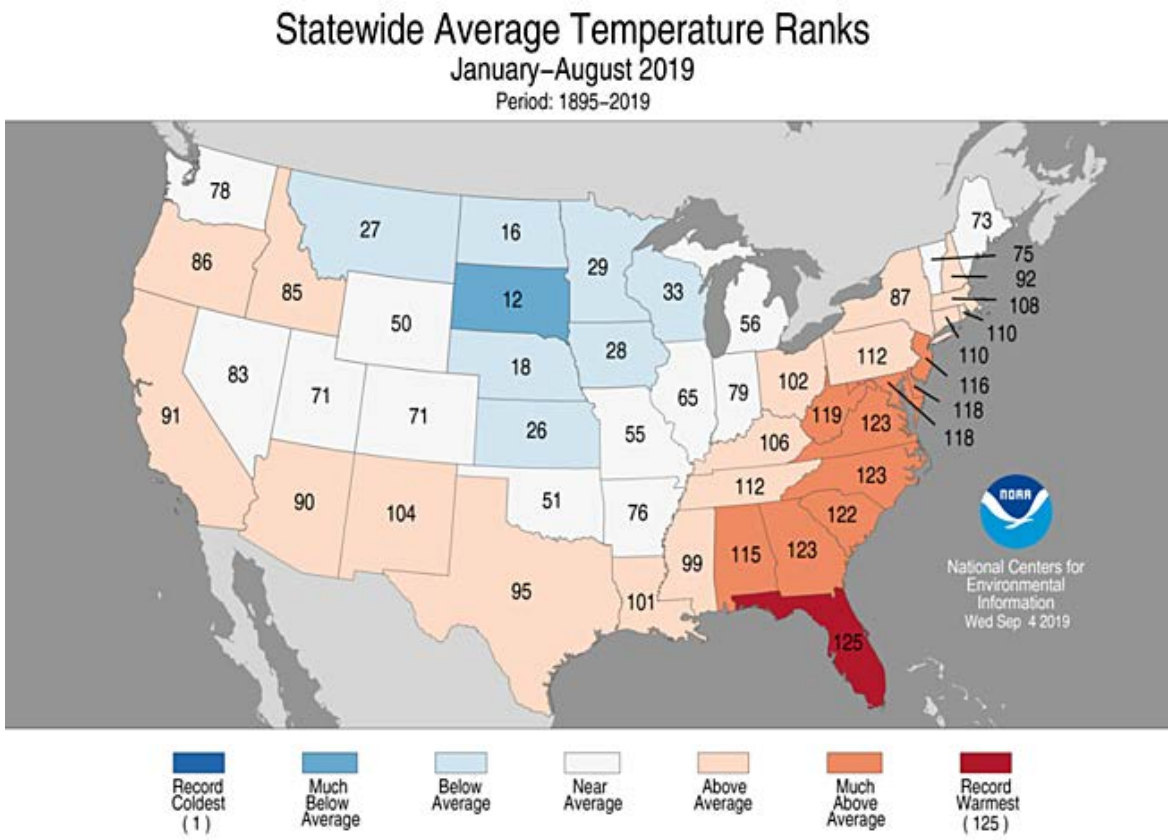
Sweet Clover Booms - Doug Kluck

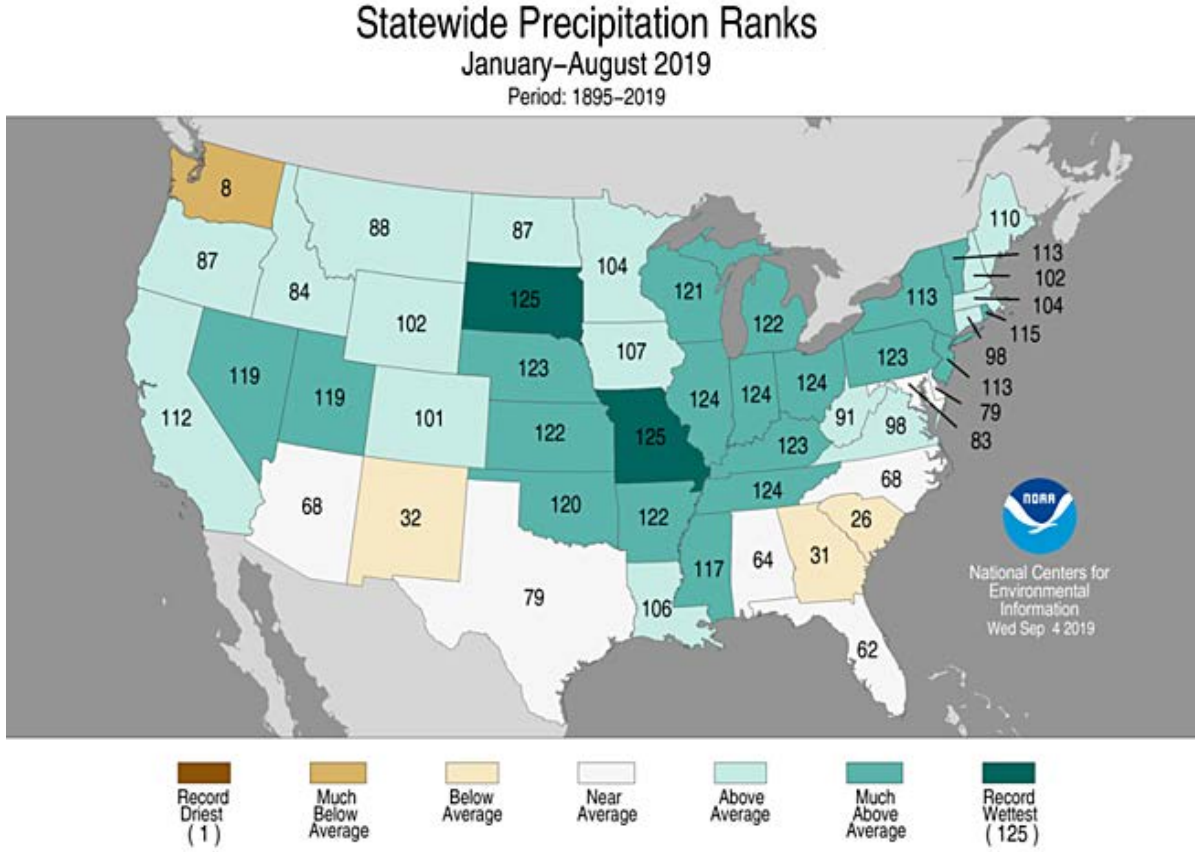
Burning waterlogged sileage - Doug Kluck

Platte River breach flows over Plattsmouth's water treatment plant - USACE

I-90 west of Sioux Falls - Patrick Todey

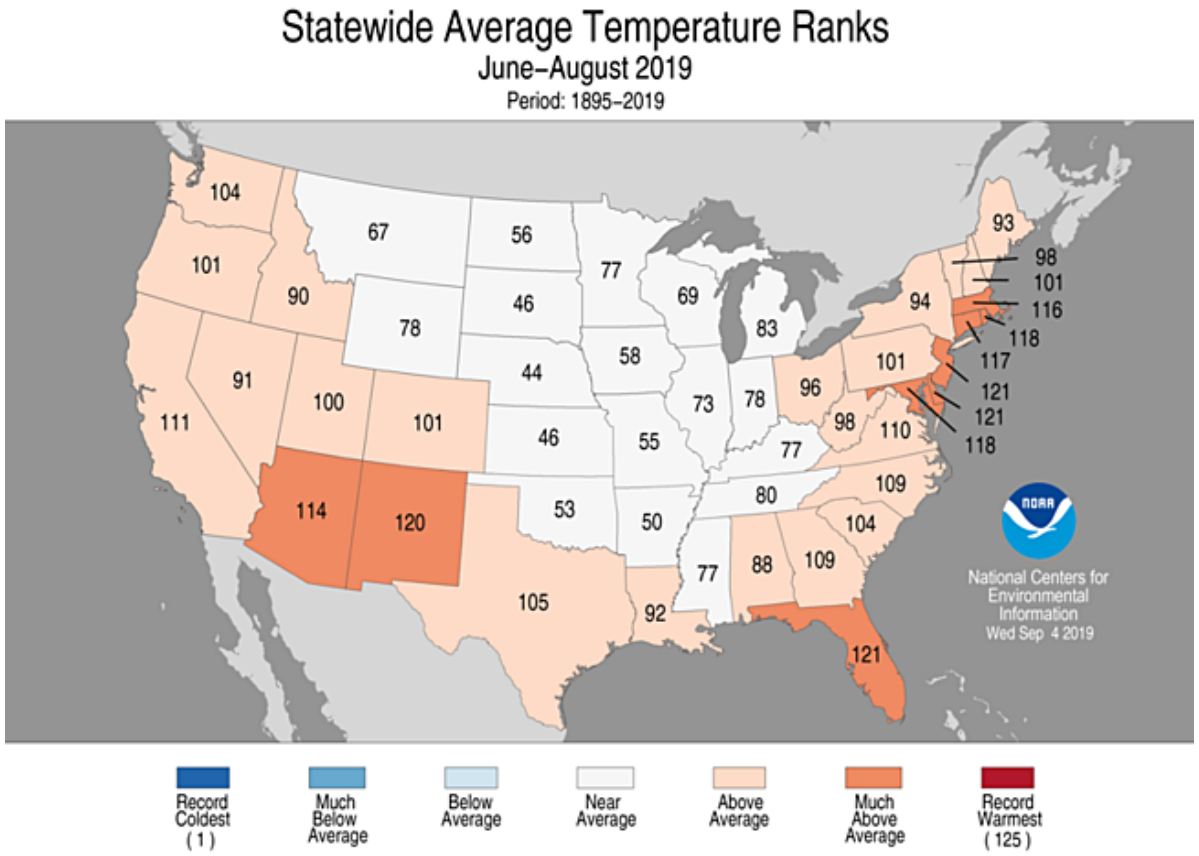
Annual Temperature and Precipitation Ranks

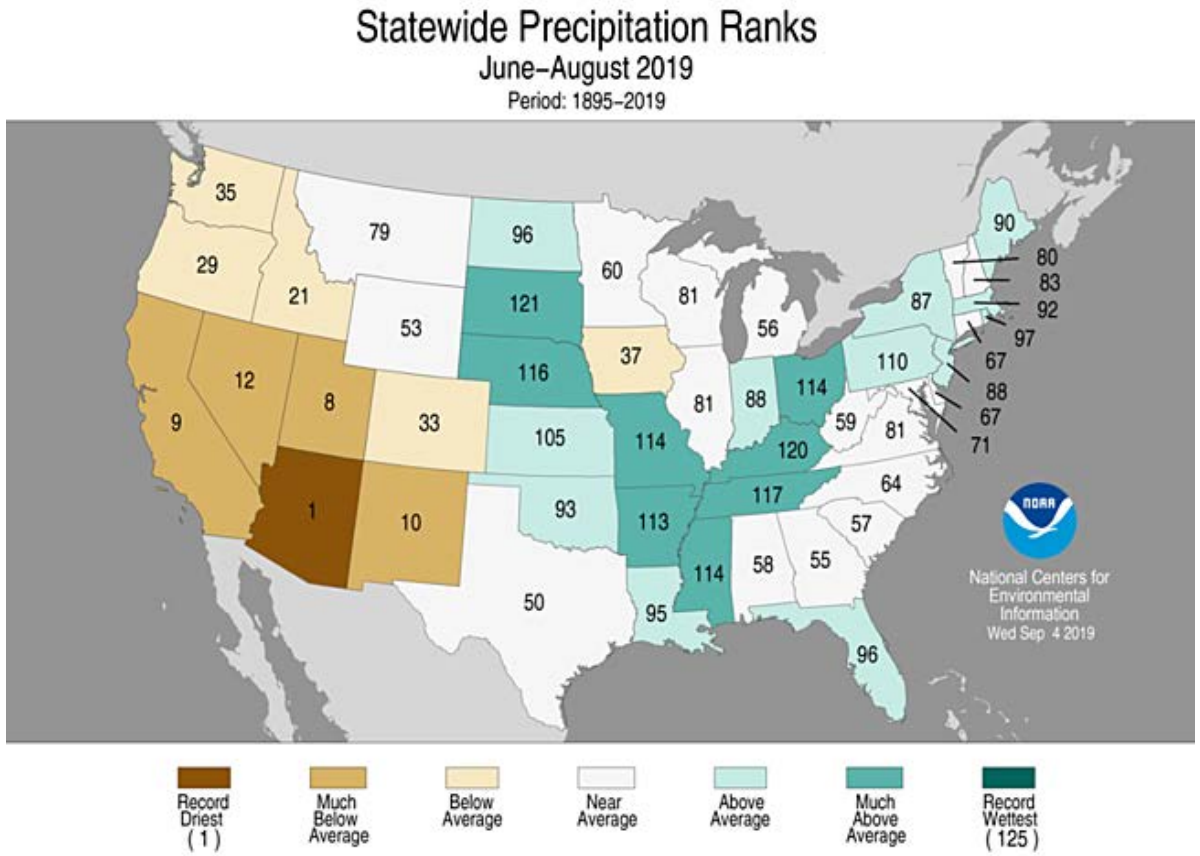




www.ncdc.noaa.gov/temp-and-precip/us-maps

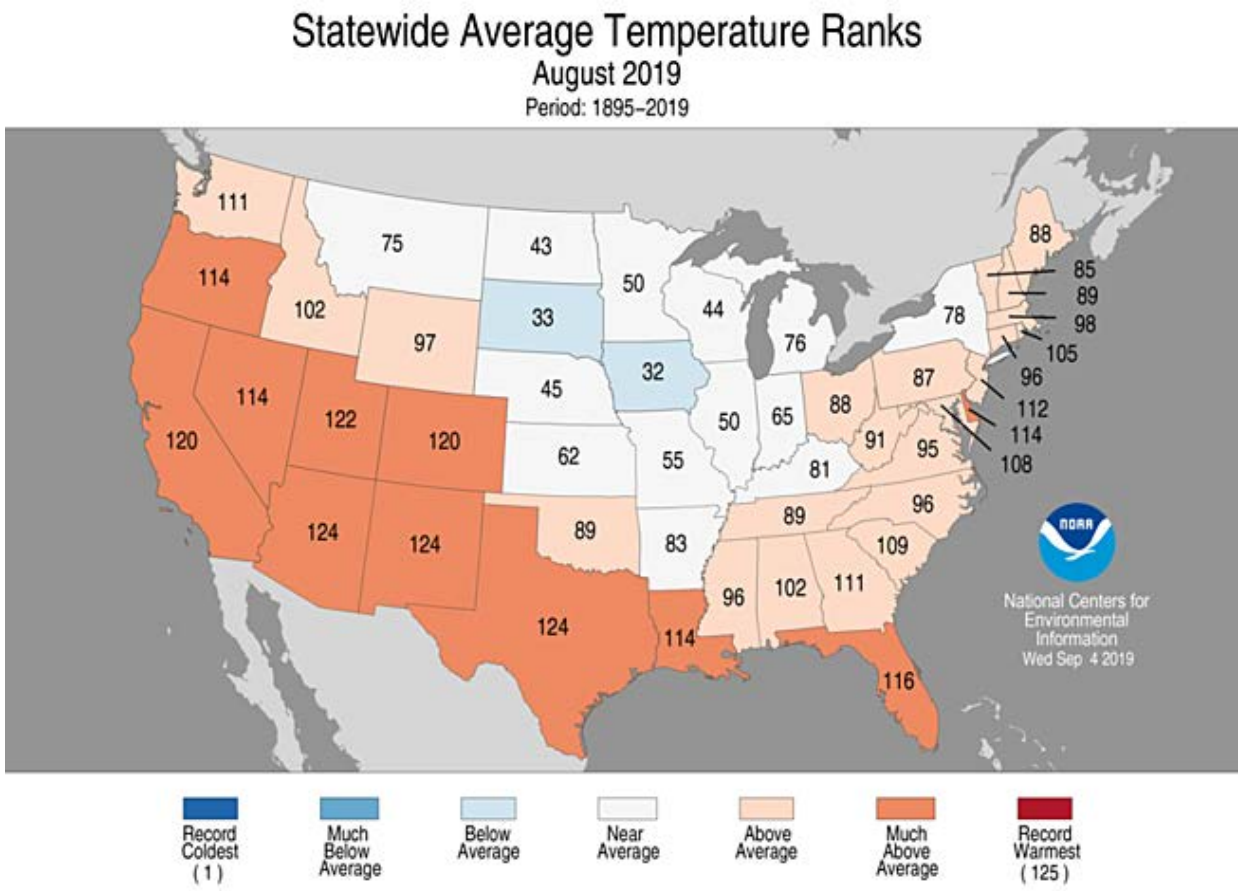
State Ranks: June - August

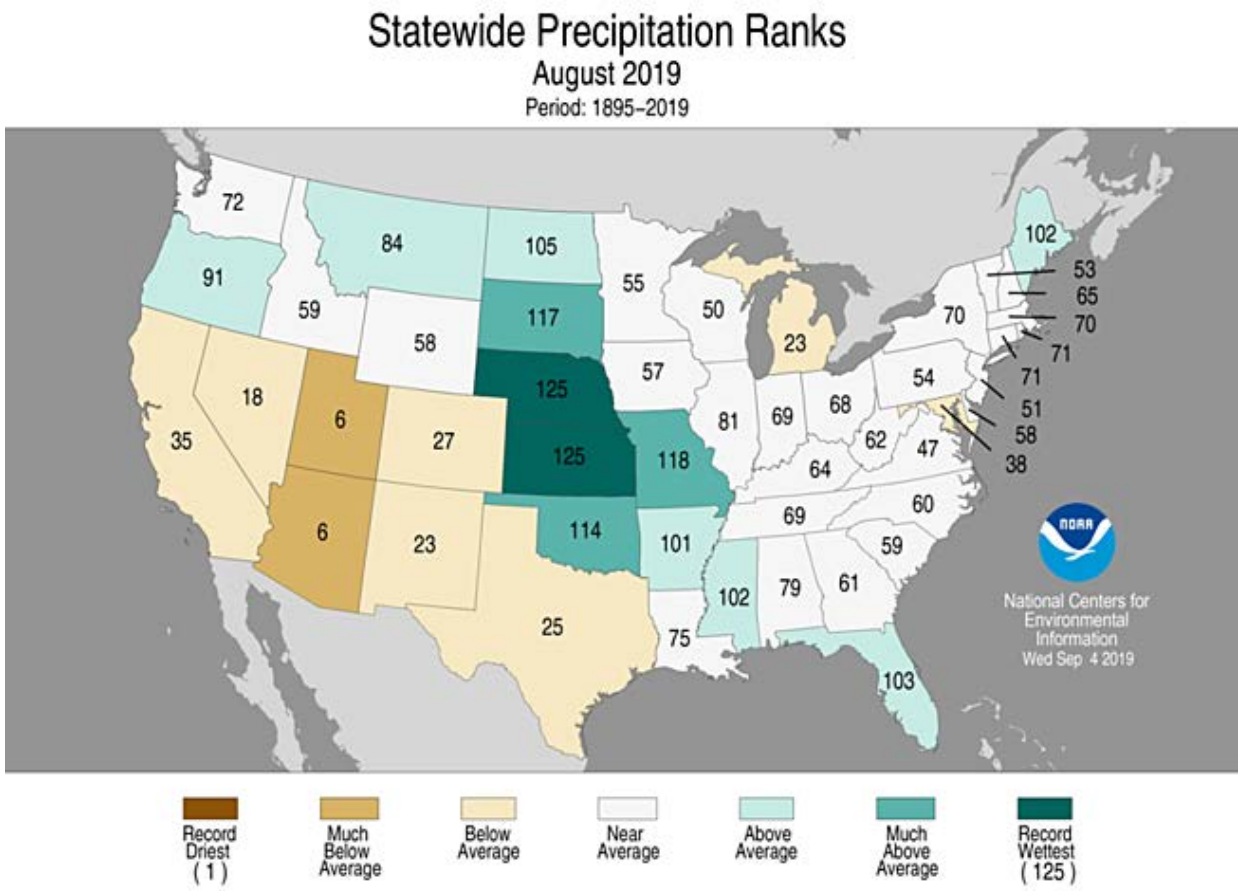




www.ncdc.noaa.gov/temp-and-precip/us-maps

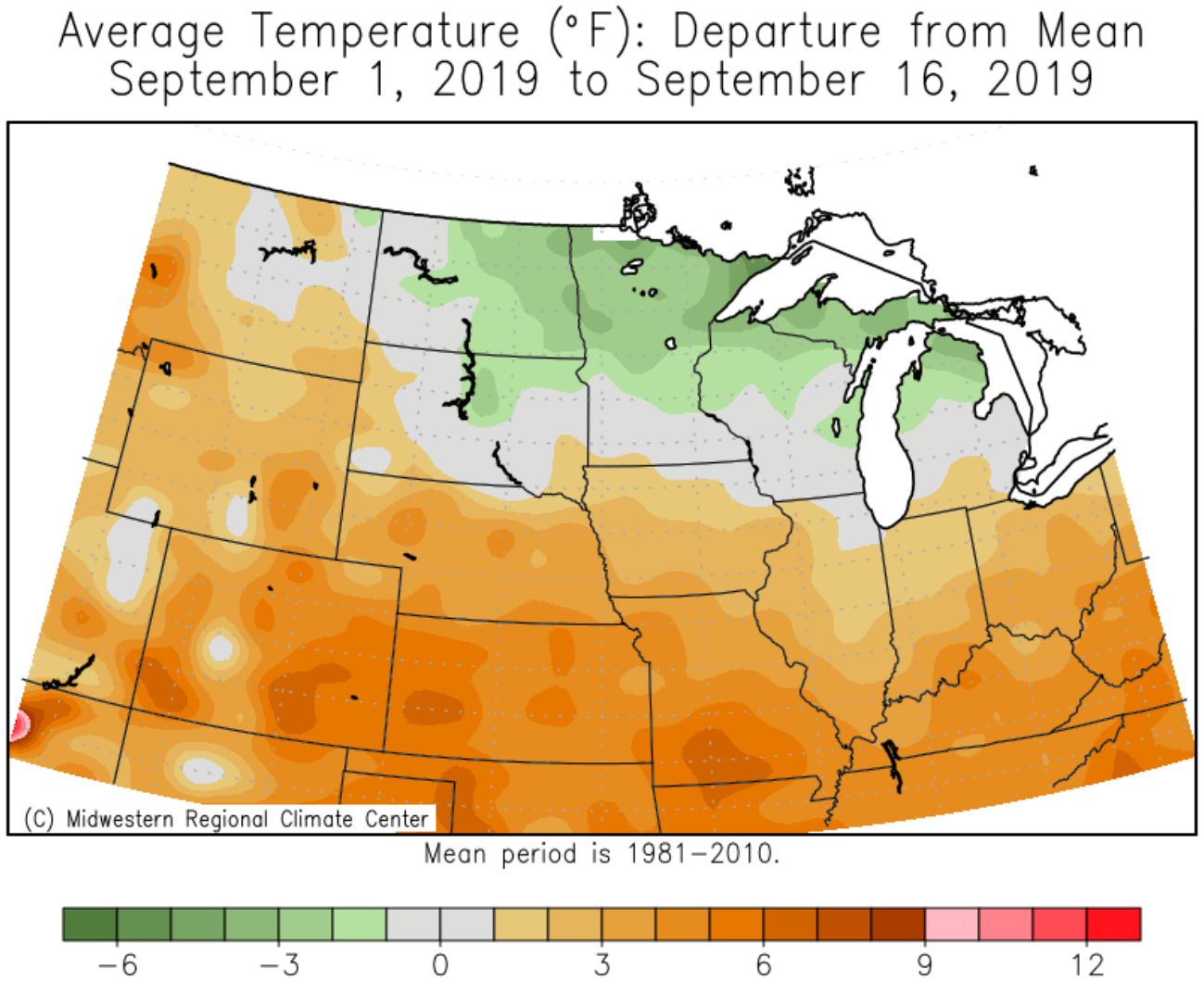
State Ranks: August





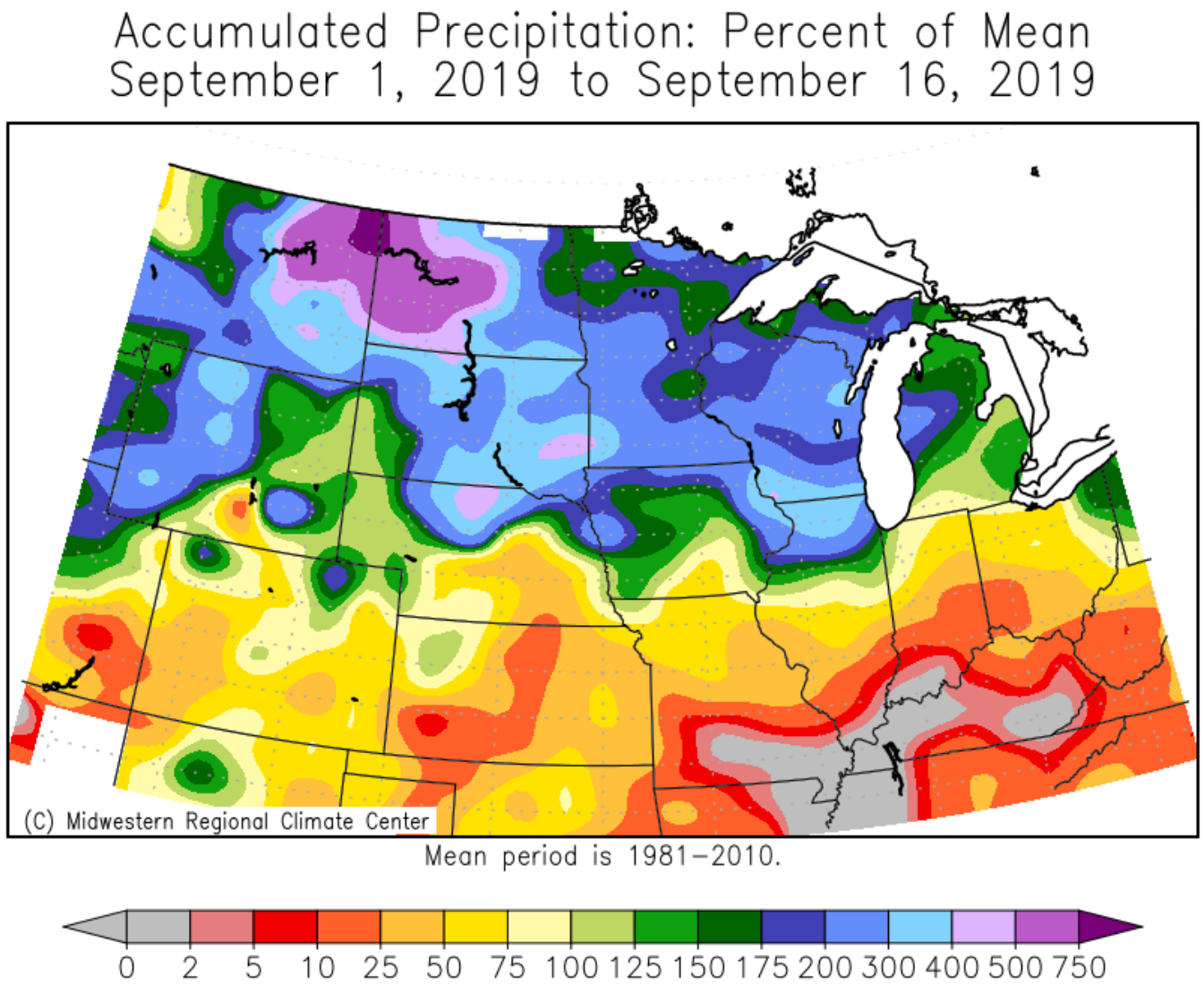
www.ncdc.noaa.gov/temp-and-precip/us-maps

September: Temperature departures



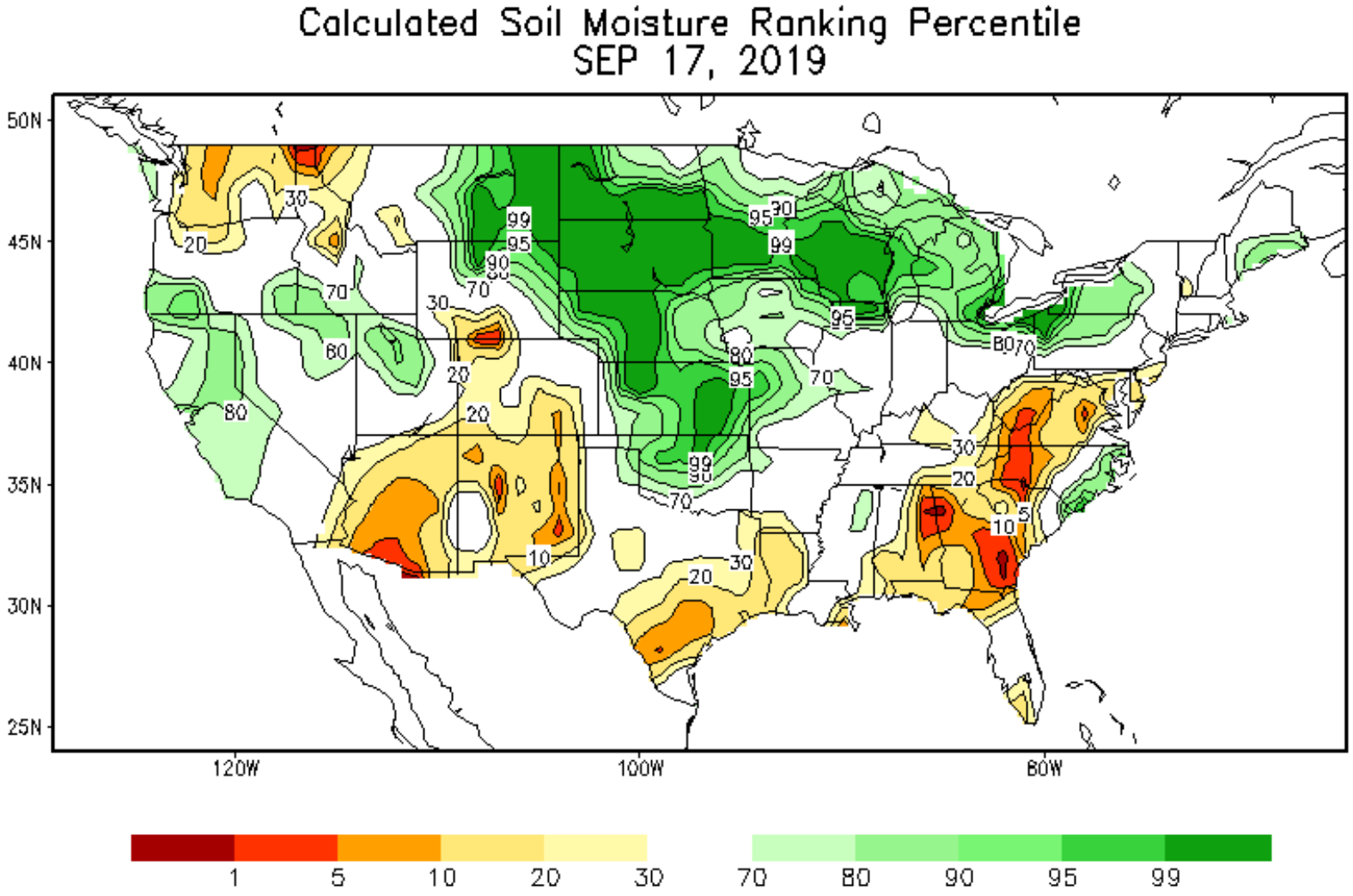
mrcc.isws.illinois.edu/cliwatch

September: Precipitation percent of mean



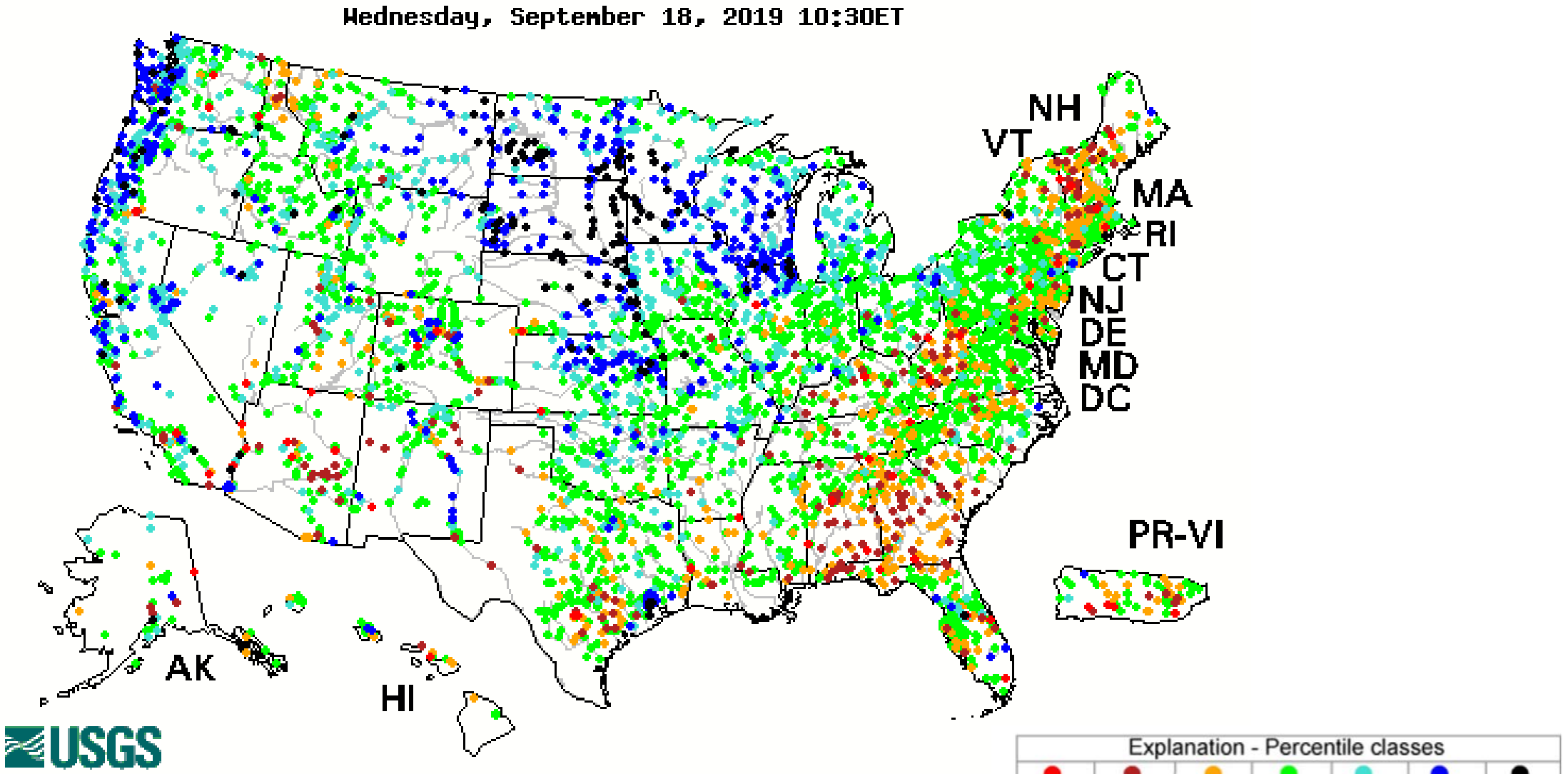
mrcc.isws.illinois.edu/cliwatch

Soil Moisture



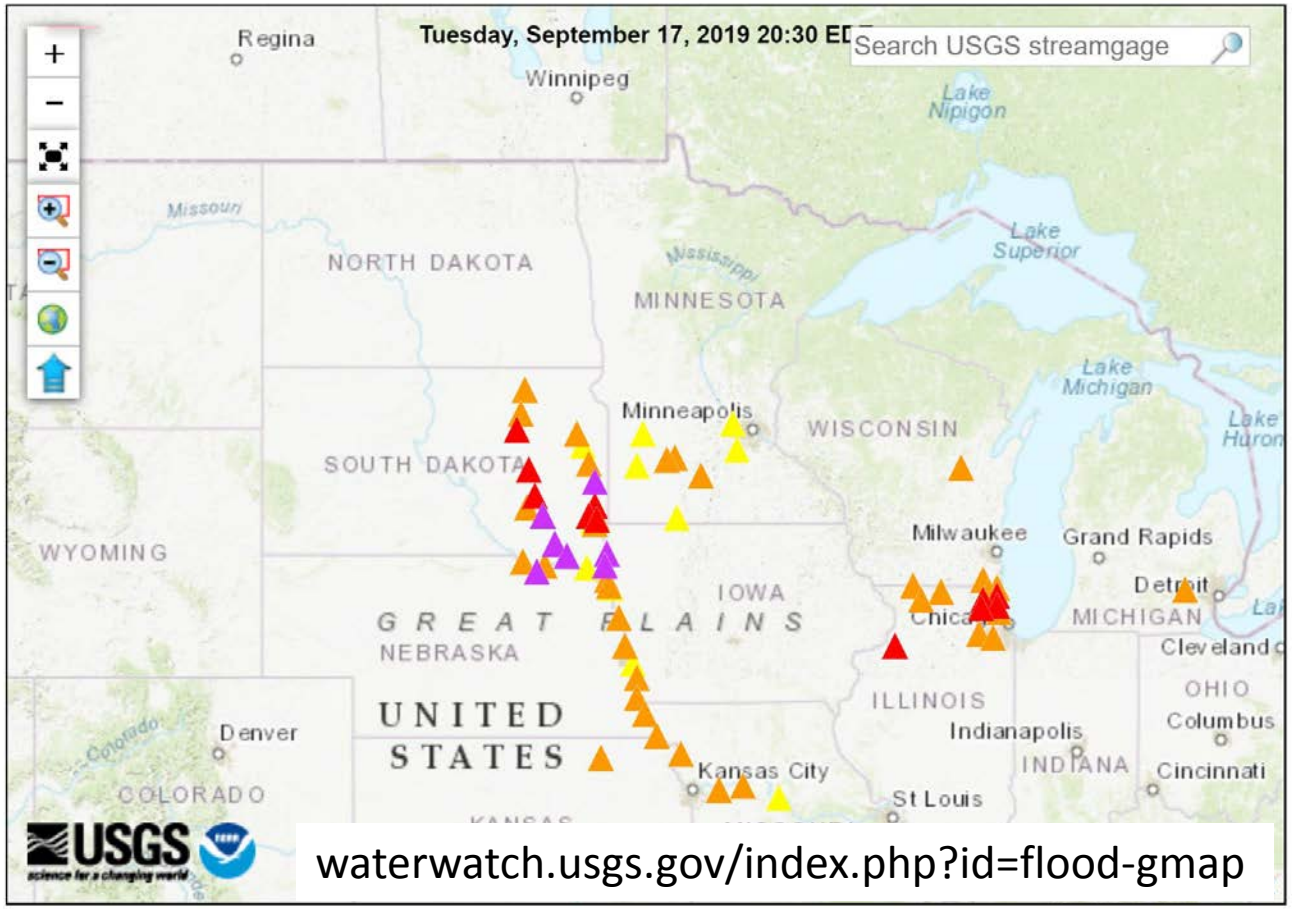
www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Soilmst

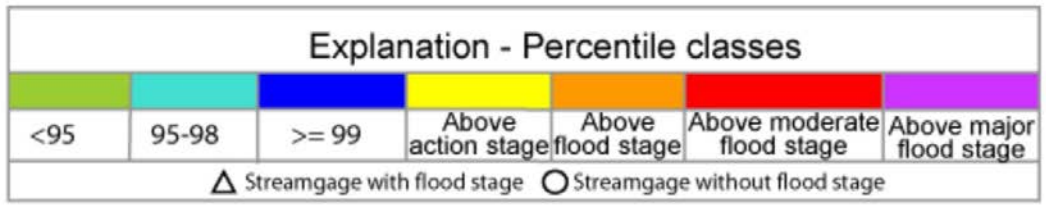
Streamflow



waterwatch.usgs.gov

Current Flood Stages

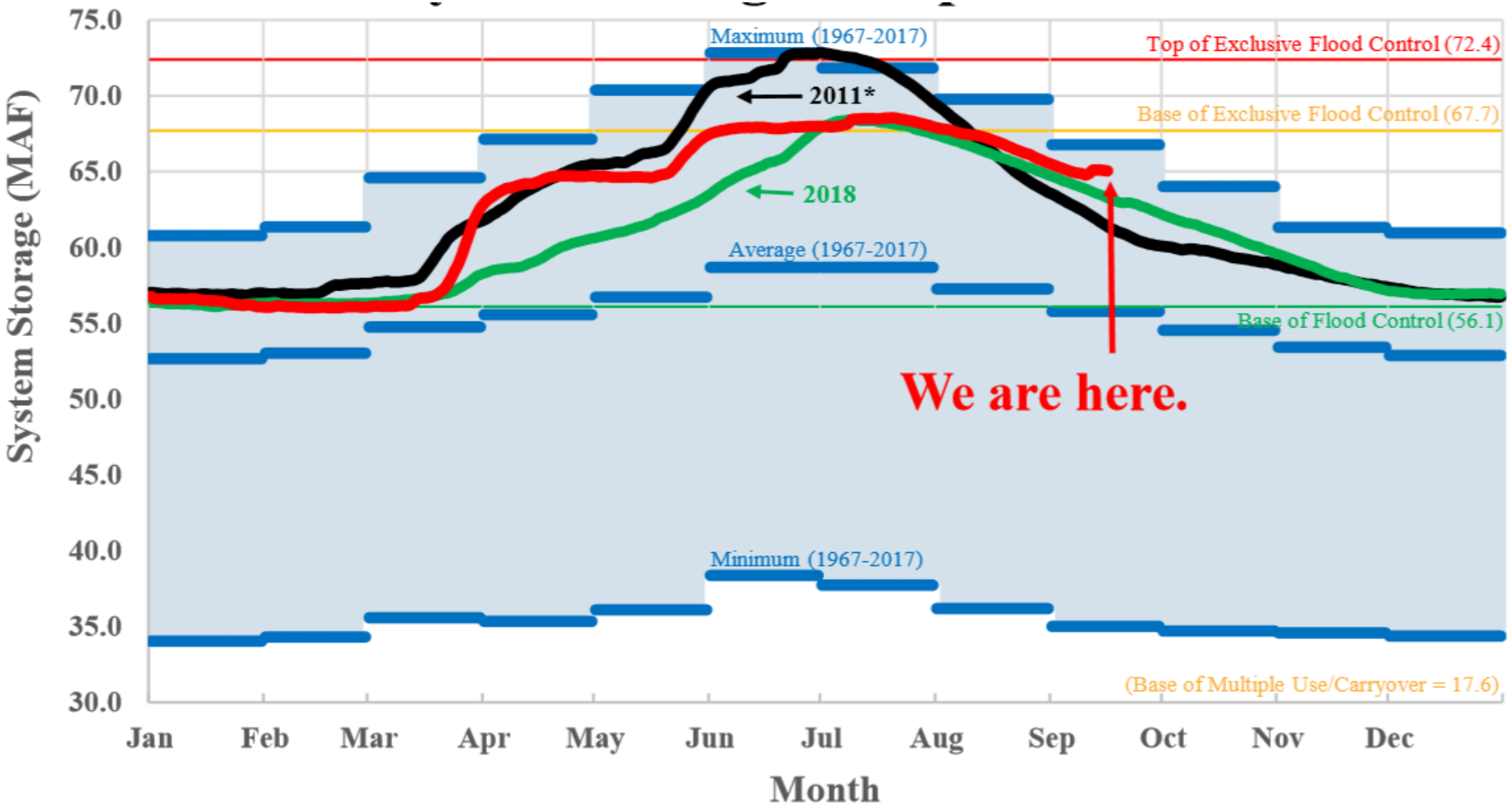




- **Five new record flows in Upper Missouri!**

Name	Record Stage	Date (z)	Previous record	Previous date
Split Rock Creek @ Corson, SD	18.7	9/13/2019 4:30	17.58	5/8/1993
Big Sioux River @ Dell Rapids, SD	16.72	9/13/2019 17:00	16.47	4/9/1969
James River @Scotland, SD	22.24	9/14/2019 6:15	20.45	6/23/1984
Vermillion River @ Parker,SD	17.09	9/13/2019 18:15	16.09	3/14/2019
James River @ Yankton, SD	26.49	9/15/2019 19:00	24.34	6/23/1984

Upper Missouri Reservoir Storage



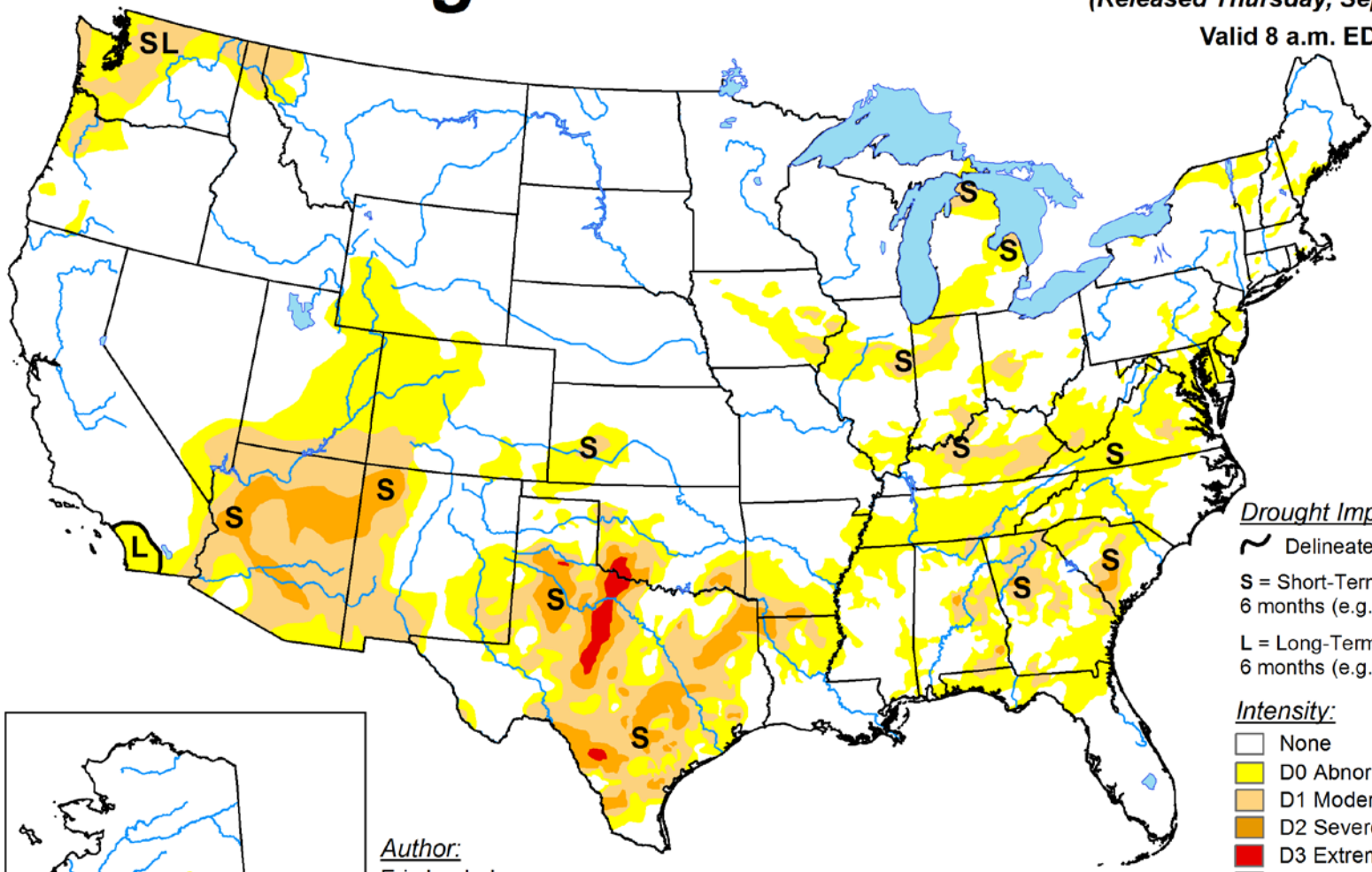
www.nwd-mr.usace.army.mil/rcc/reports/pdfs/weeklyupdate.pdf

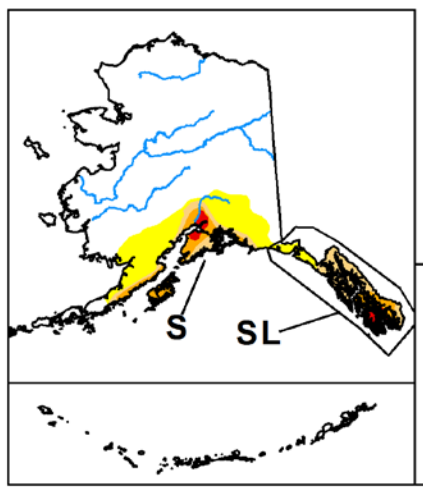
U.S. Drought Monitor

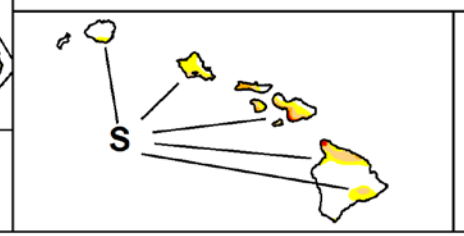
September 17, 2019

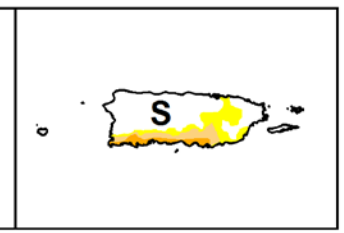
(Released Thursday, Sep. 19, 2019)

Valid 8 a.m. EDT









Author:
Eric Luebehusen
U.S. Department of Agriculture

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:

- None
- 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.

USDA NDMC NOAA

droughtmonitor.unl.edu

Impacts: Flooding


Plattsmouth Water Treatment Plant. Photo: USACE


Baltic SD. Photo: Josh Stukel

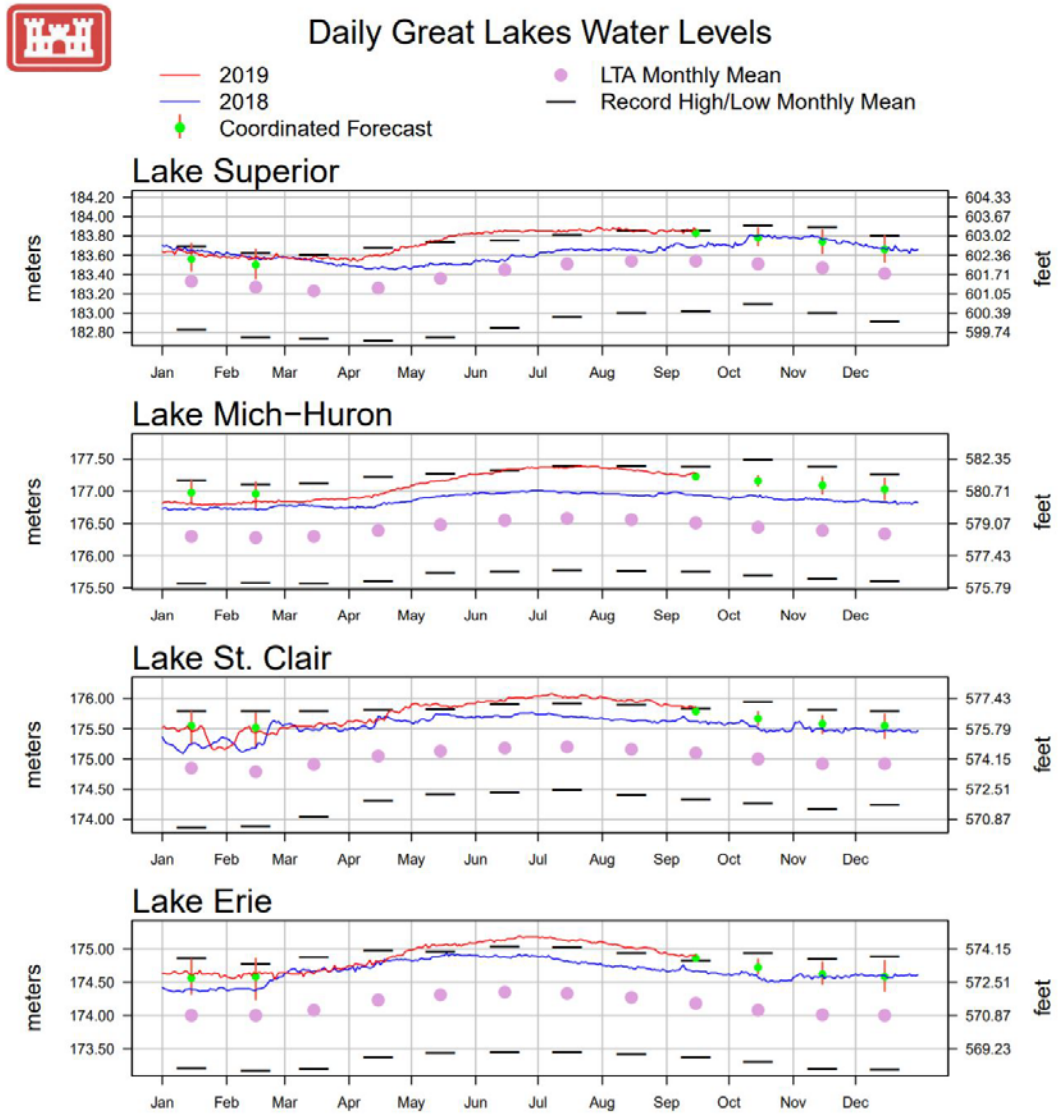

South Dakota. Photo: Sara Bauder

South Dakota. Photo: Sara Bauder

Continued record precipitation has contributed to continued flooding:

- 52 flood related deaths this year - weather.gov/arx/usflood
- Flooding of rivers and lakes has impacted homes, vehicles, navigation, roadways (e.g. I-90), railroads and water conveyance infrastructure across the region
- South Dakota Governor declares disaster emergencies totaling $43 million in damages
- Record water levels in the Great Lakes combined with winds have led to storm surges, groundwater intrusion into homes and flooding of roads
- Significant erosion and nutrient export have caused harmful algal blooms in the Great Lakes and Lower Mississippi
- Mosquito outbreaks and frogs in stagnant water bodies across the region

Impacts: Flooding in the Great Lakes



- Record water levels that are expected to persist!

Erosion on the Upper Penninsula – Michigan DNR

Flooding in Detroit's Jefferson Chalmers neighborhood – Tanya Moutzalias|Mlive.com

Impacts: Agriculture Summary

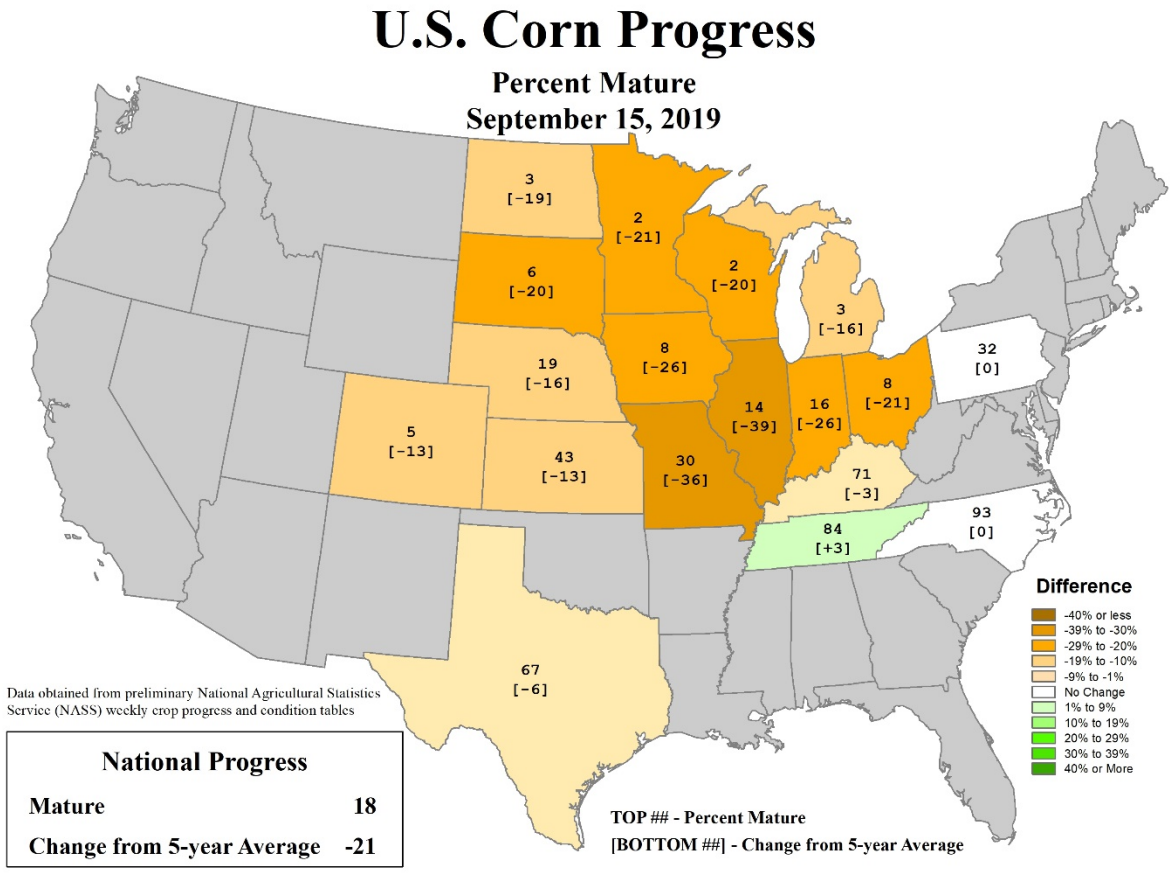
Brad Rippey, USDA

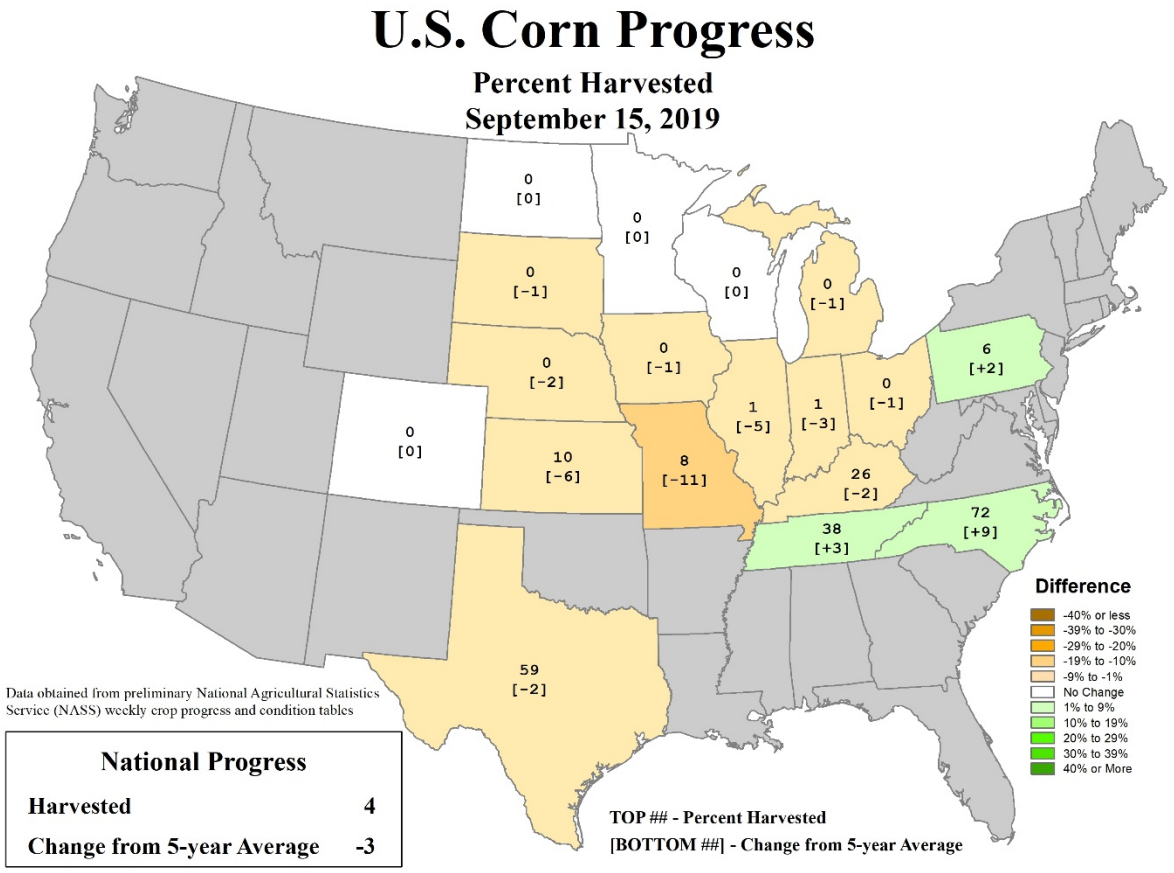
Burning Sileage – Doug Kluck

4 miles north of Yankton on the James River – Credit: @JackrabbitSeed

- Crops not in great condition and need more time and warmth to reach maturity – early freeze unlikely
- South Dakota grain elevators rejecting a lot of cereal crops because of sprouting in the humid conditions
- Crop diseases from ample moisture are widespread
- Crops inundated and may be completely lost in locations of flooding along the Missouri.
- Moist conditions and delayed spring planting have led to delays in harvest even for crops that reach maturity (too wet to enter fields)
- Pasture and range are quite good except for ability to cut and dry hay

Impacts: Corn

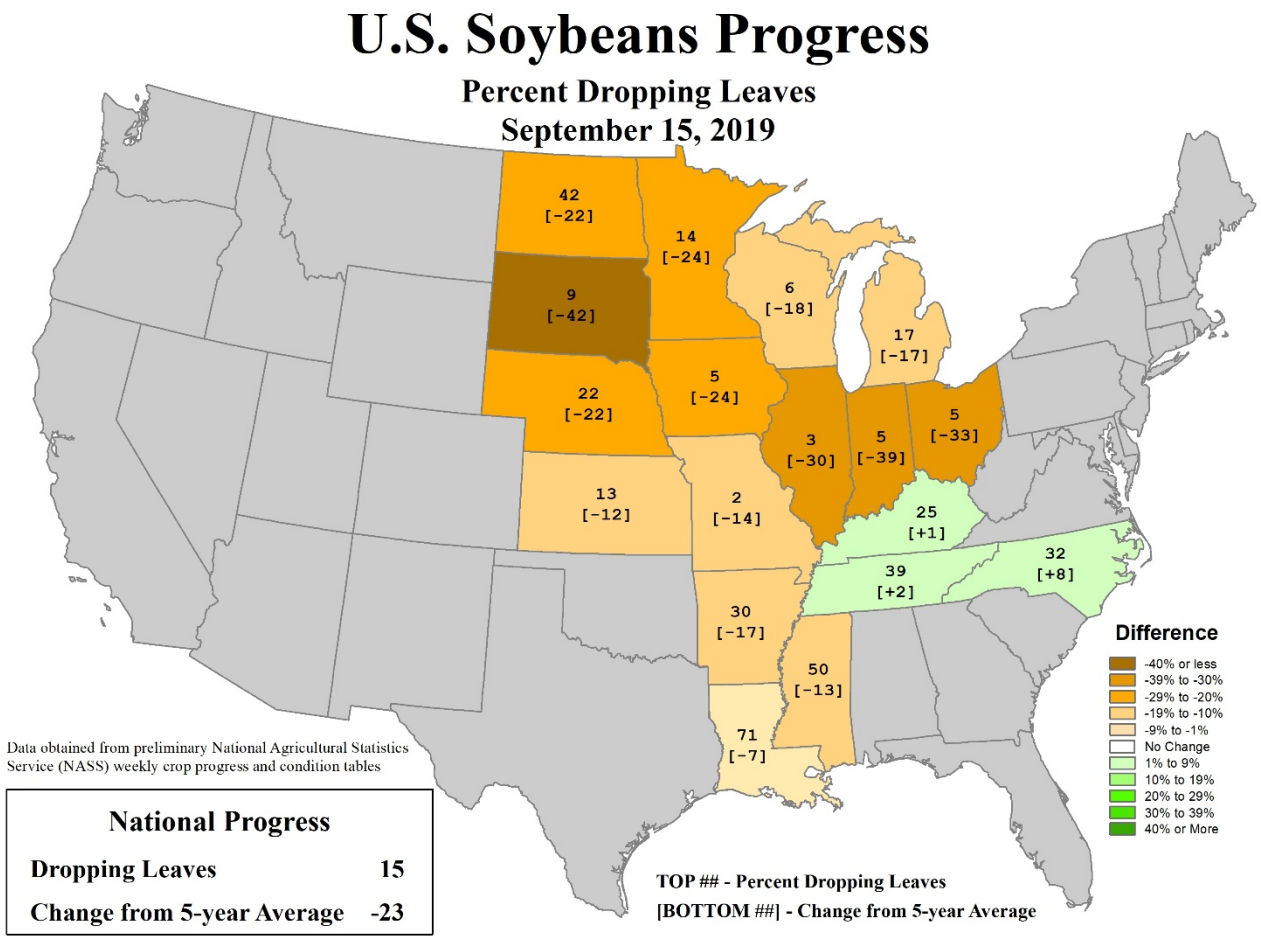




- Corn is behind on maturation due to late planting dates and cooler summer temperatures.
- In southern states, progress has been accelerated by the September heat and dryness

- Historically wet conditions have hindered harvest

Impacts: Soybean Progress

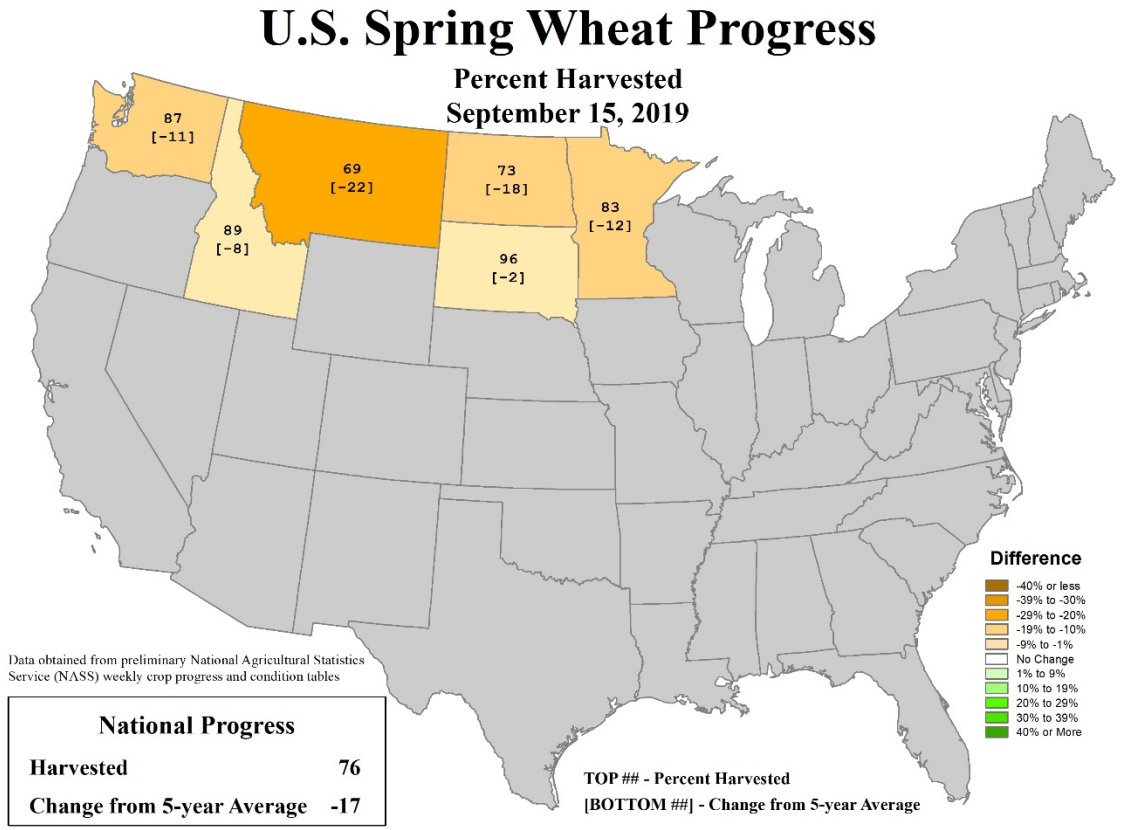


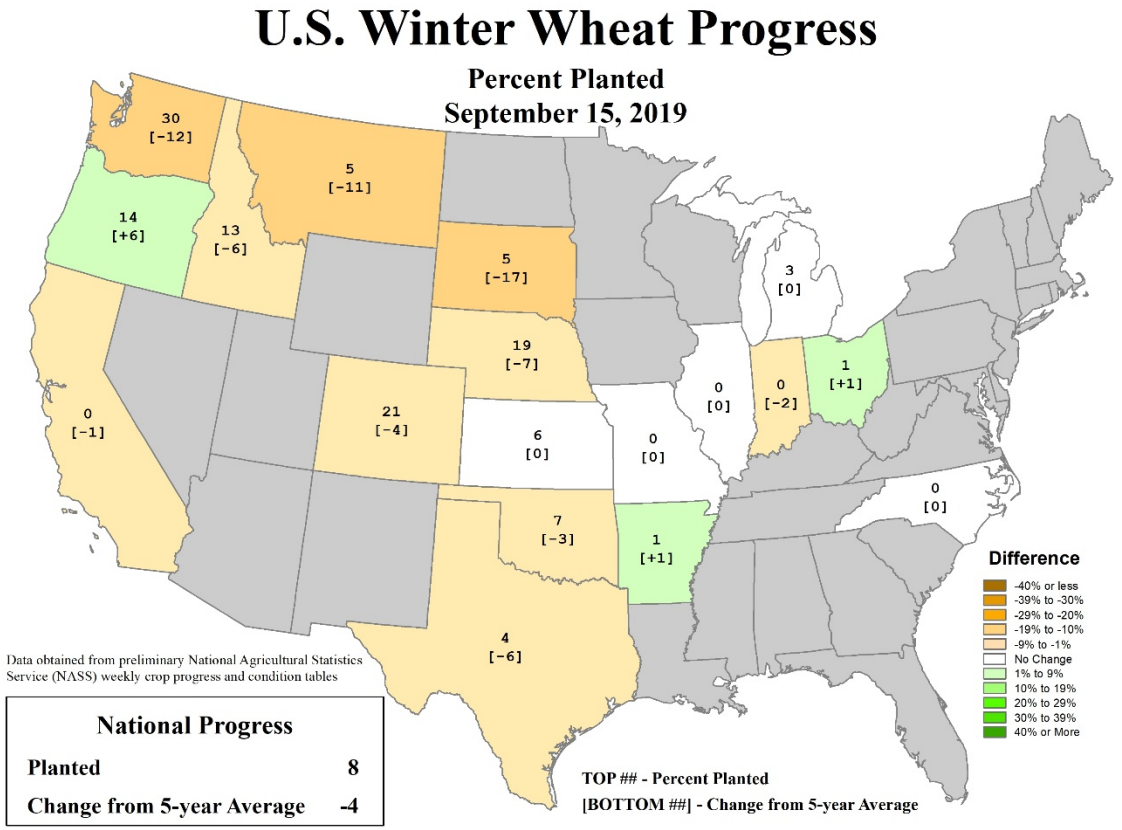
-Soybean crop progress has been accelerated by the late-season heat and dryness, possibly at the expense of yield potential.

Brad Rippey, USDA

www.nass.usda.gov/Charts_and_Maps

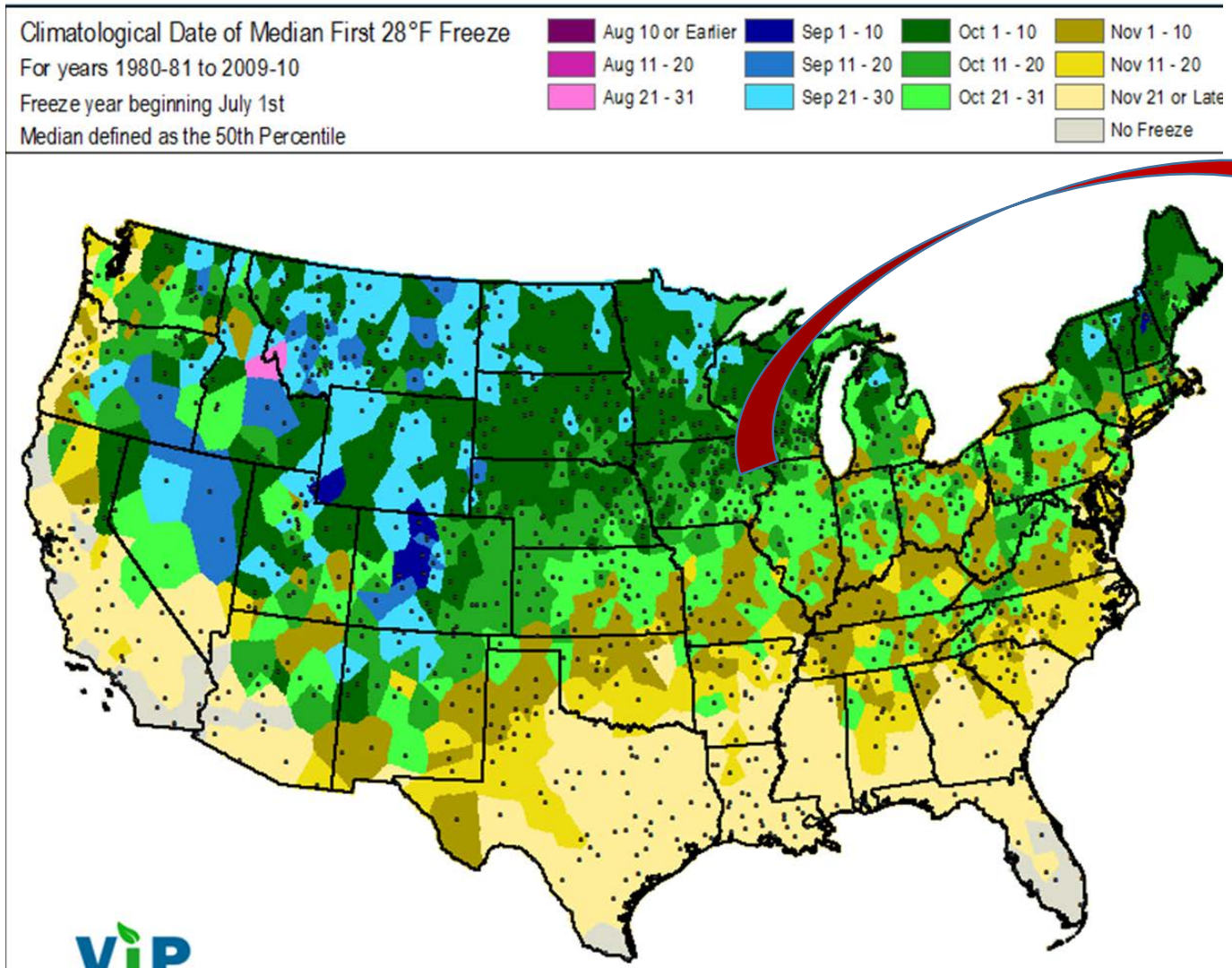
Spring and Winter Wheat Progress





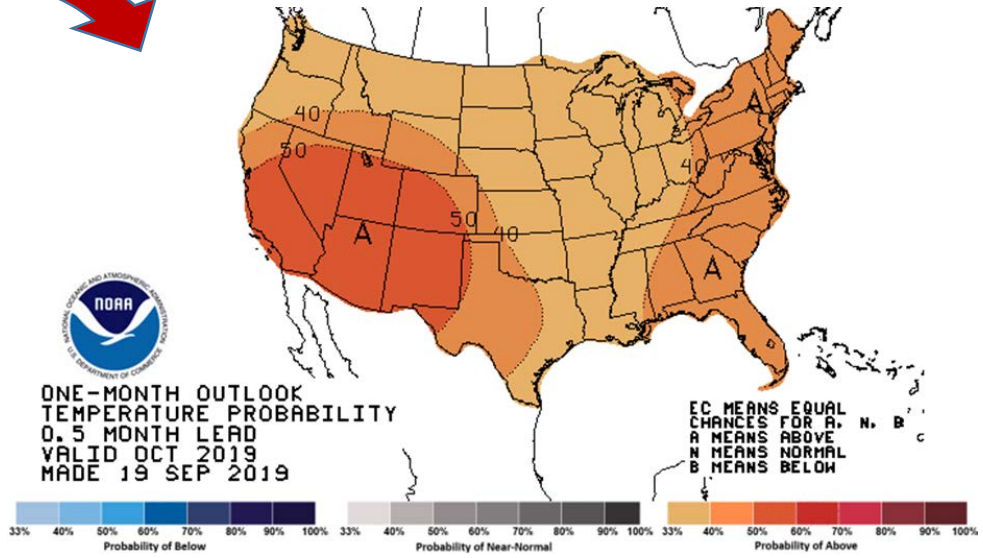
www.nass.usda.gov/Charts_and_Maps

Historical Date of First Freeze*



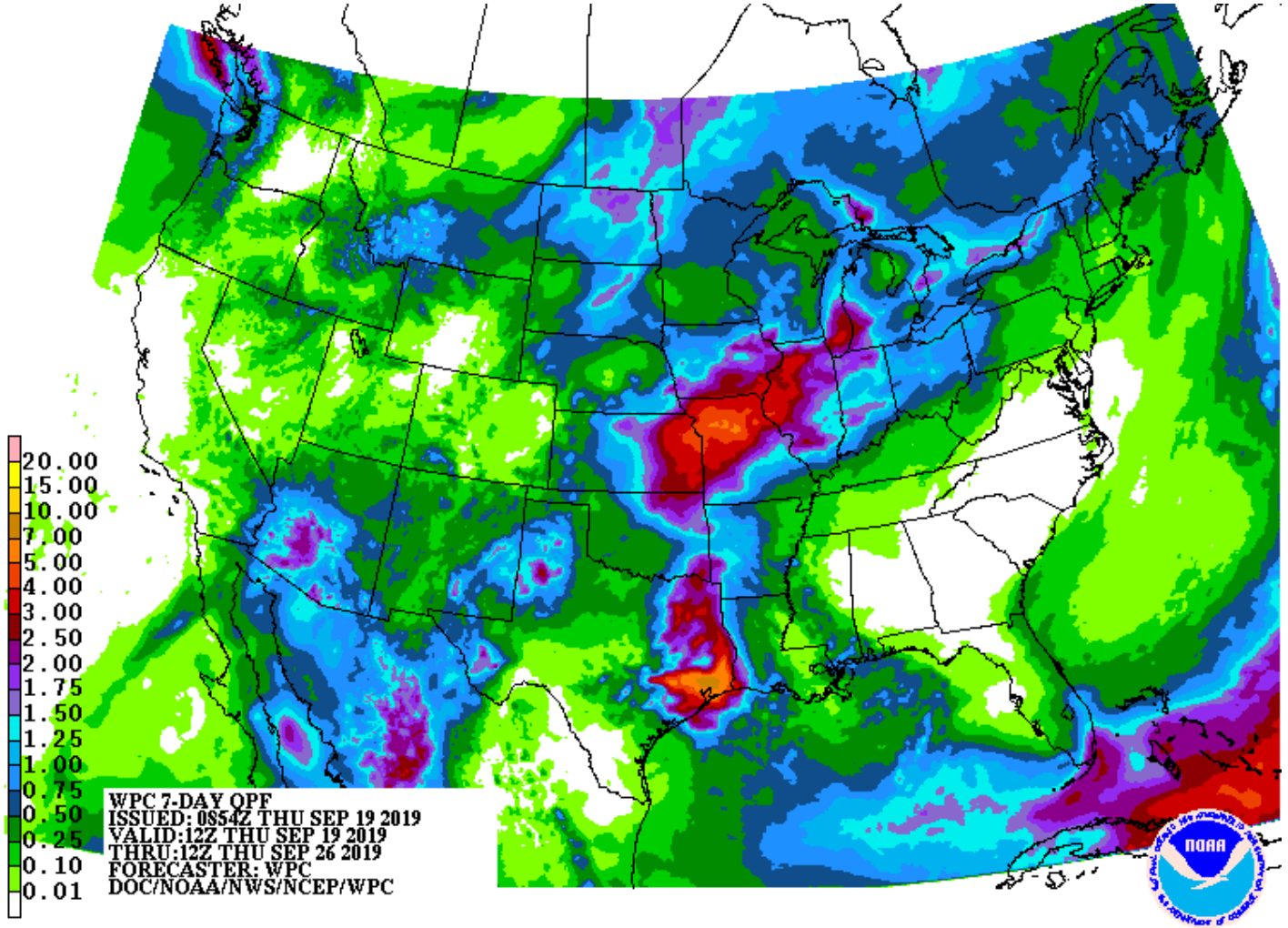
https://mrcc.illinois.edu/VIP/frz_maps/freeze_maps.html#frzMaps

October Temperature Outlook



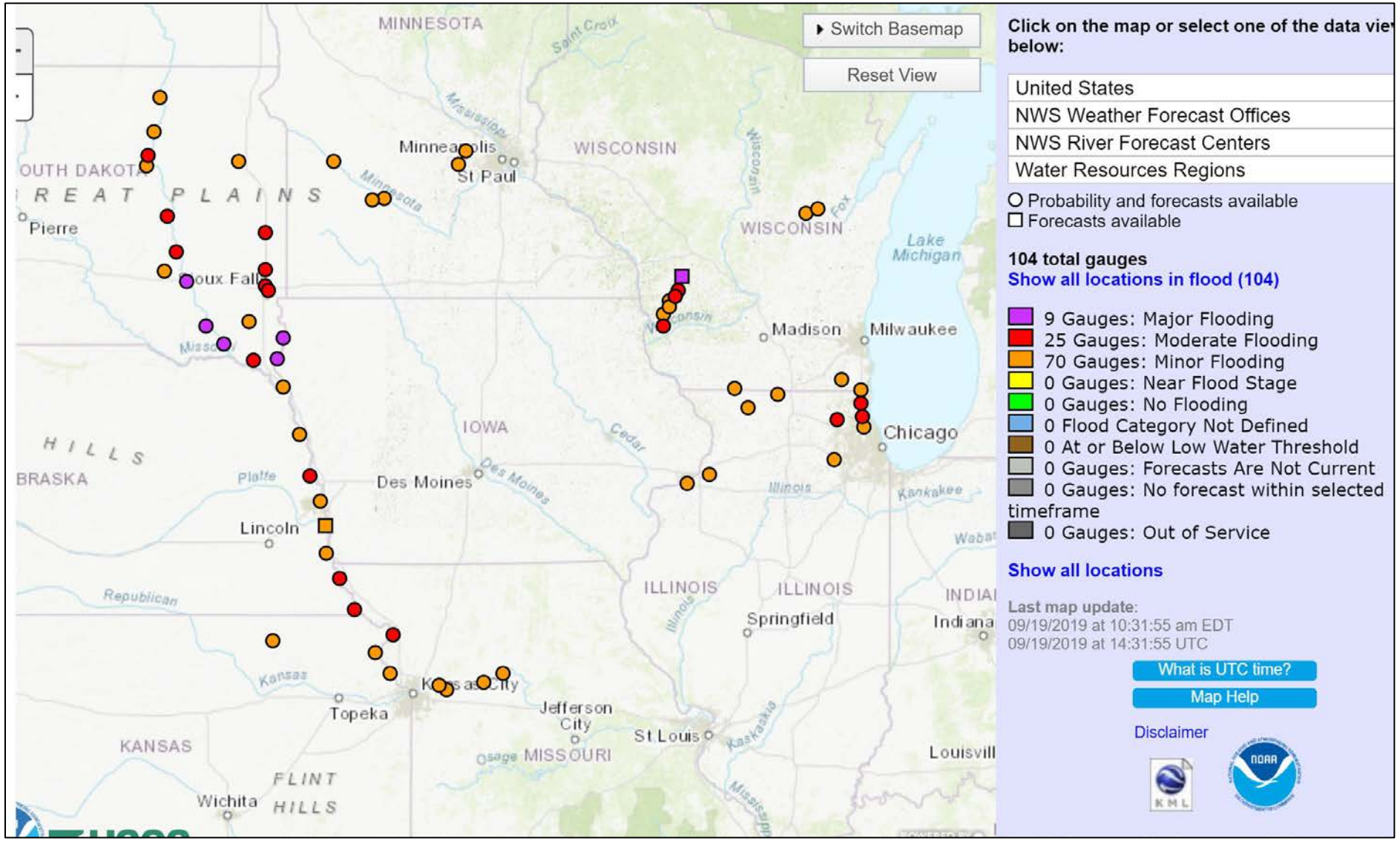
- Early season freeze is unlikely

7 Day Quantitative Precipitation Forecast



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

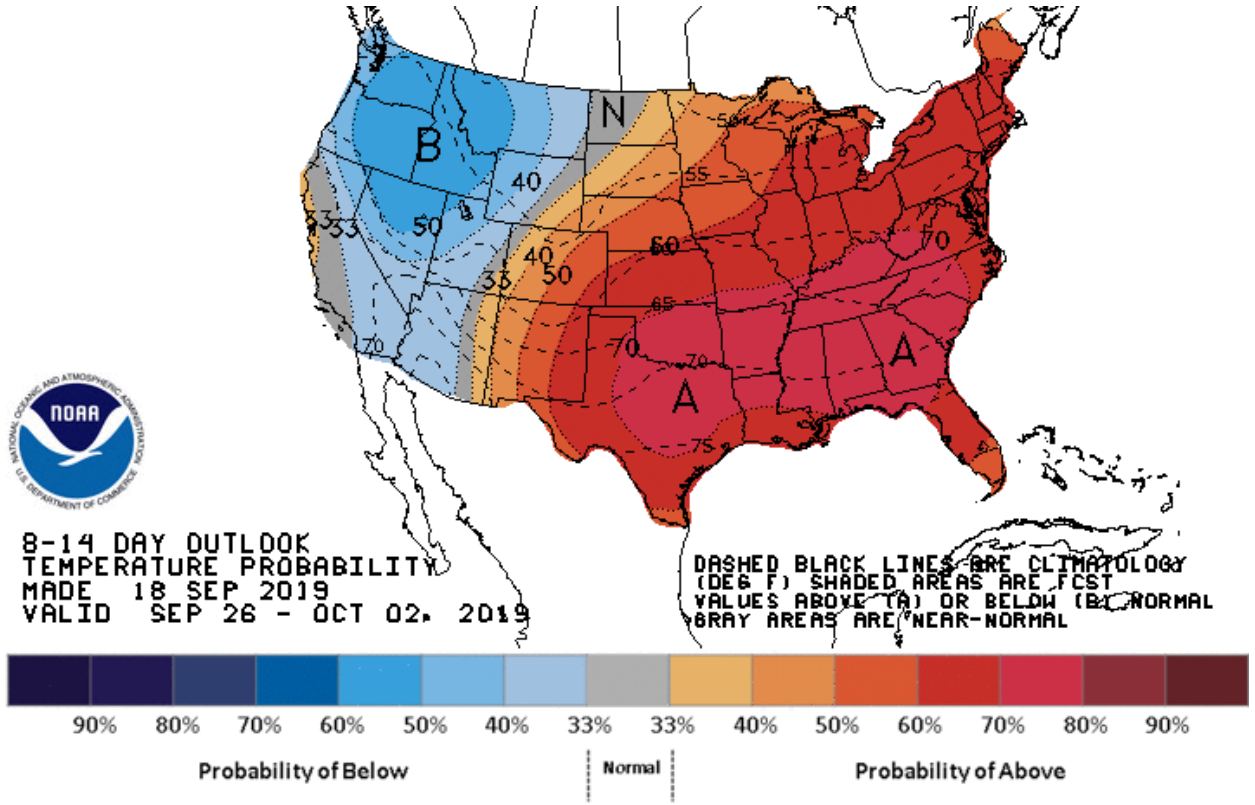
Flood Forecast: September 19th-28th



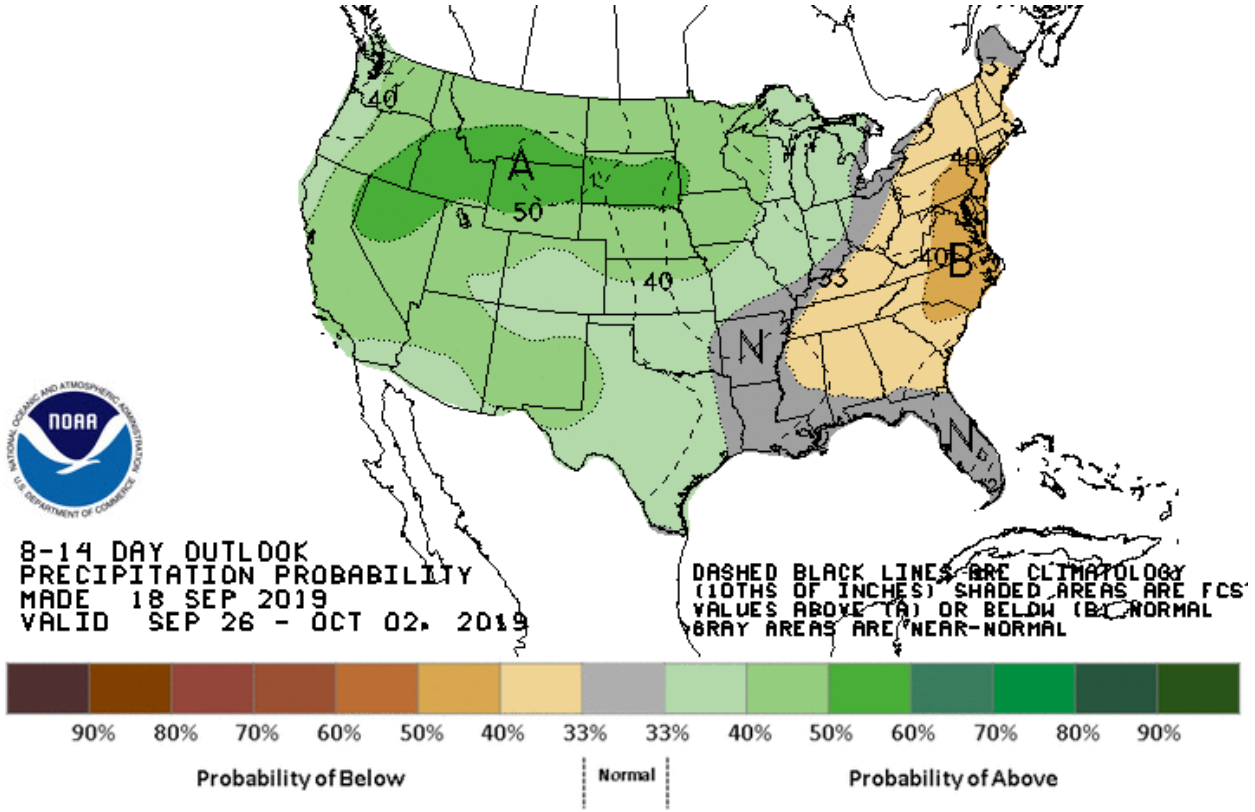
https://www.weather.gov/ohrfc/

8-14 Day Outlook

Temperature

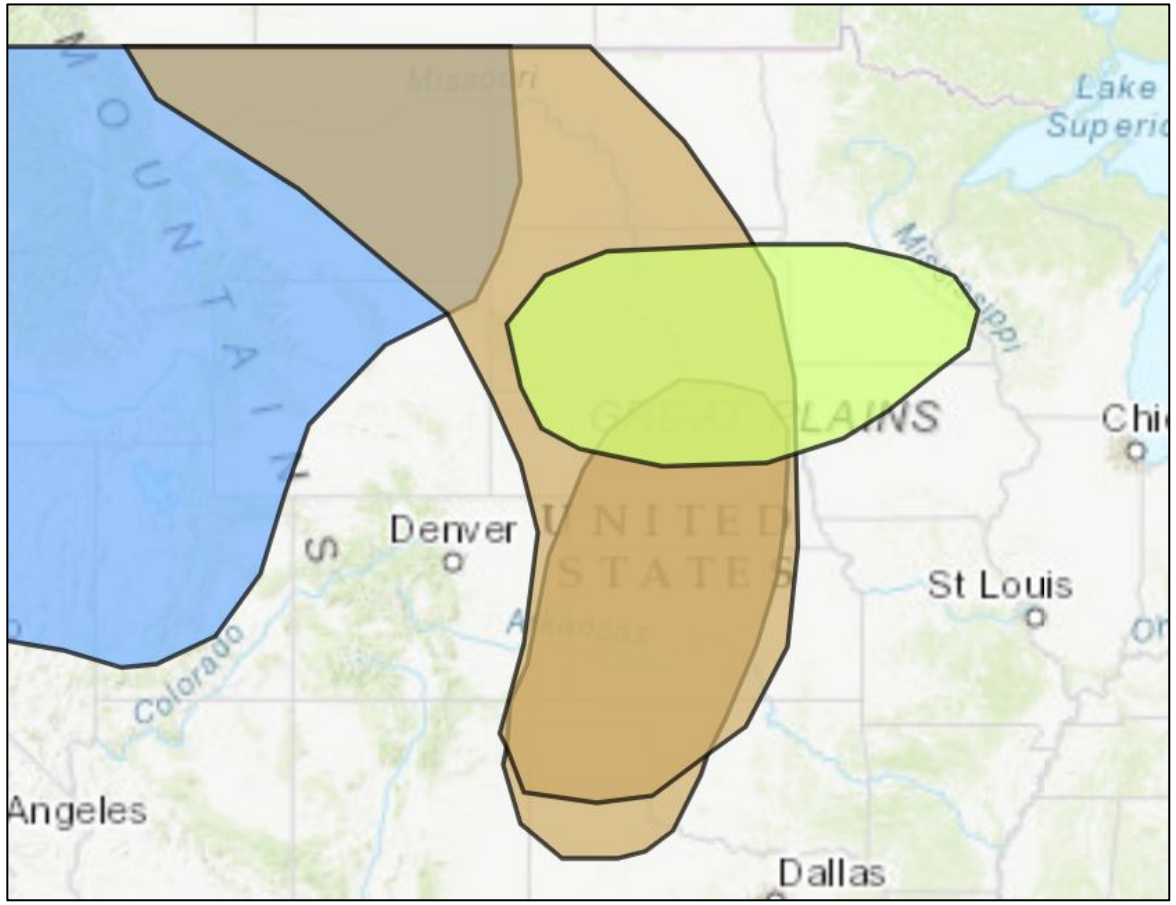


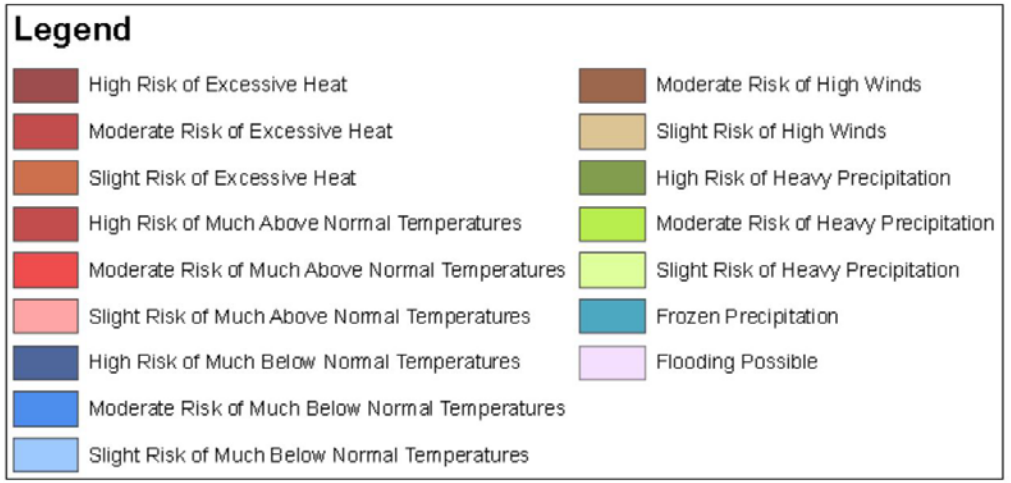
Precipitation



www.cpc.ncep.noaa.gov/products/predictions

8-14 Day Hazard Outlook



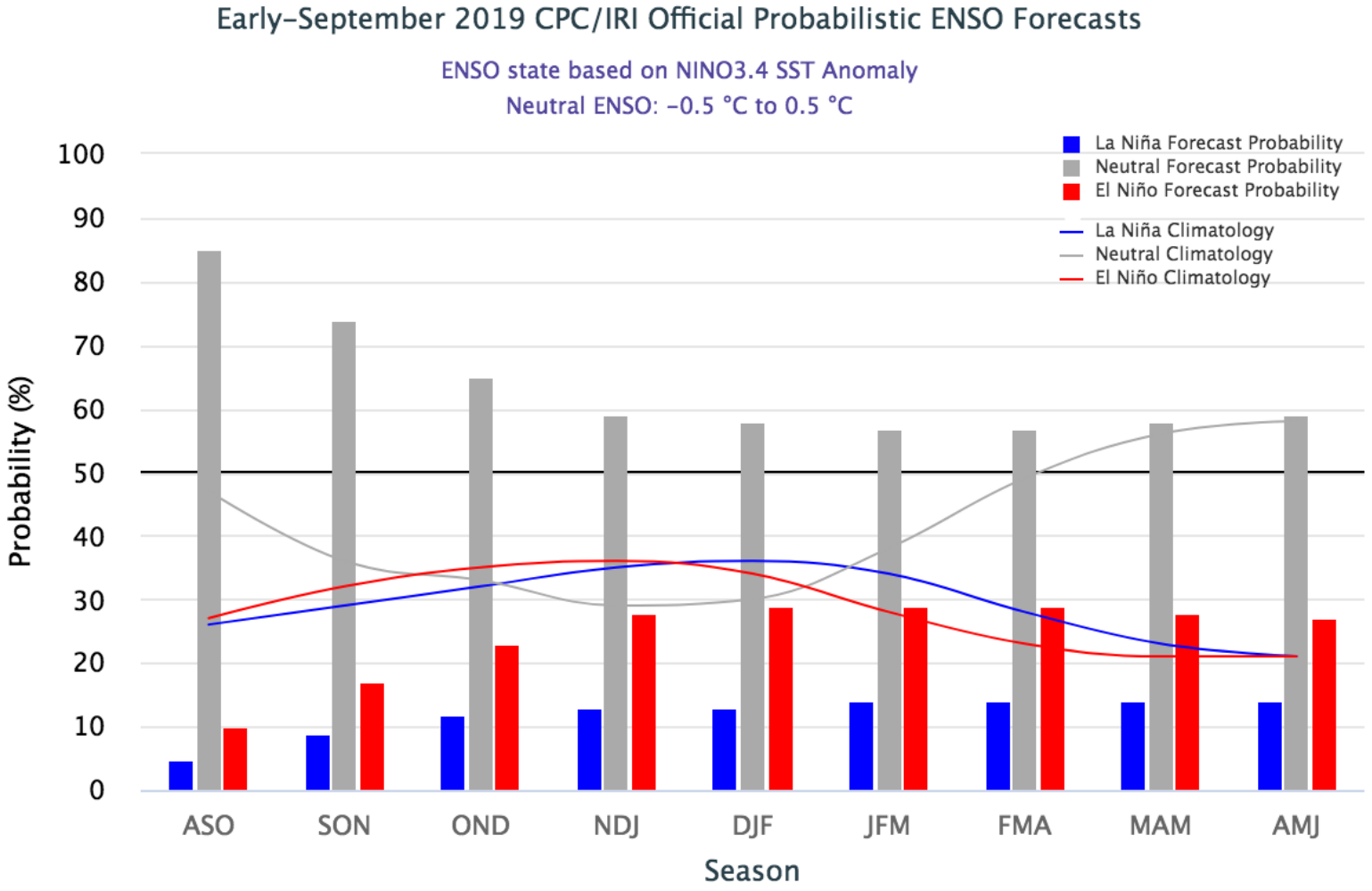


- slight risk of heavy precipitation (3-day totals reaching or exceeding one inch) across parts of the Central Plains and Upper and Middle Mississippi Valley for Sep 26 to 30th.

- low pressure over the Rockies and Great Plains supports a slight risk of high winds across parts of the Great Plains from Sep 28 to 26th.

www.cpc.ncep.noaa.gov/products/predictions/threats/threats.php

ENSO Forecast

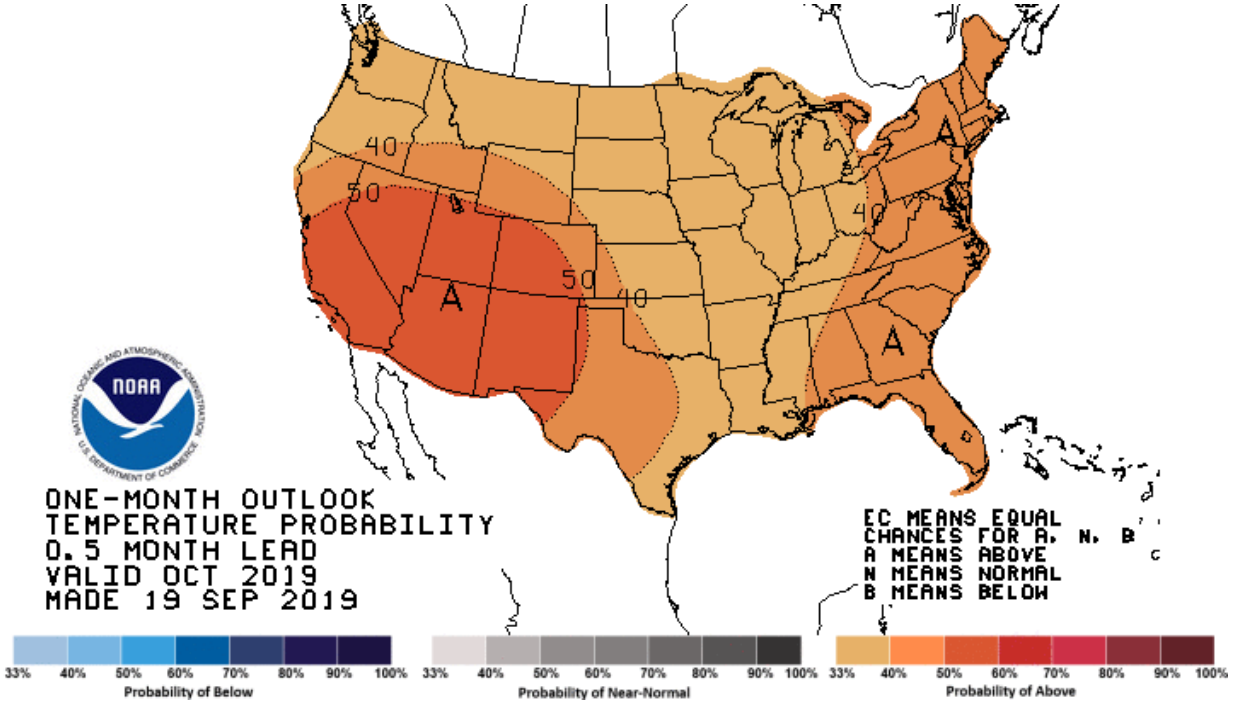


ENSO-neutral is favored during the Northern Hemisphere fall 2019 (~75% chance) and is expected to continue through Northern Hemisphere spring 2020 (55-60% chance)

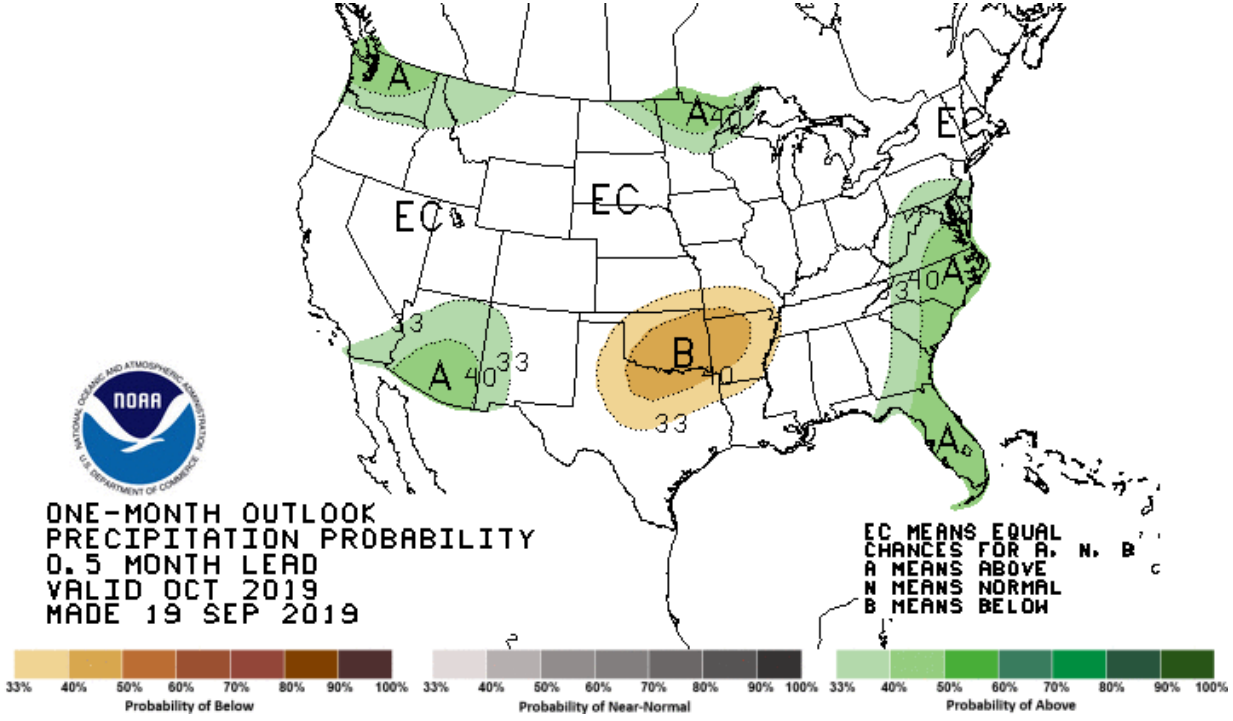
https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current

Monthly outlook for October

Temperature



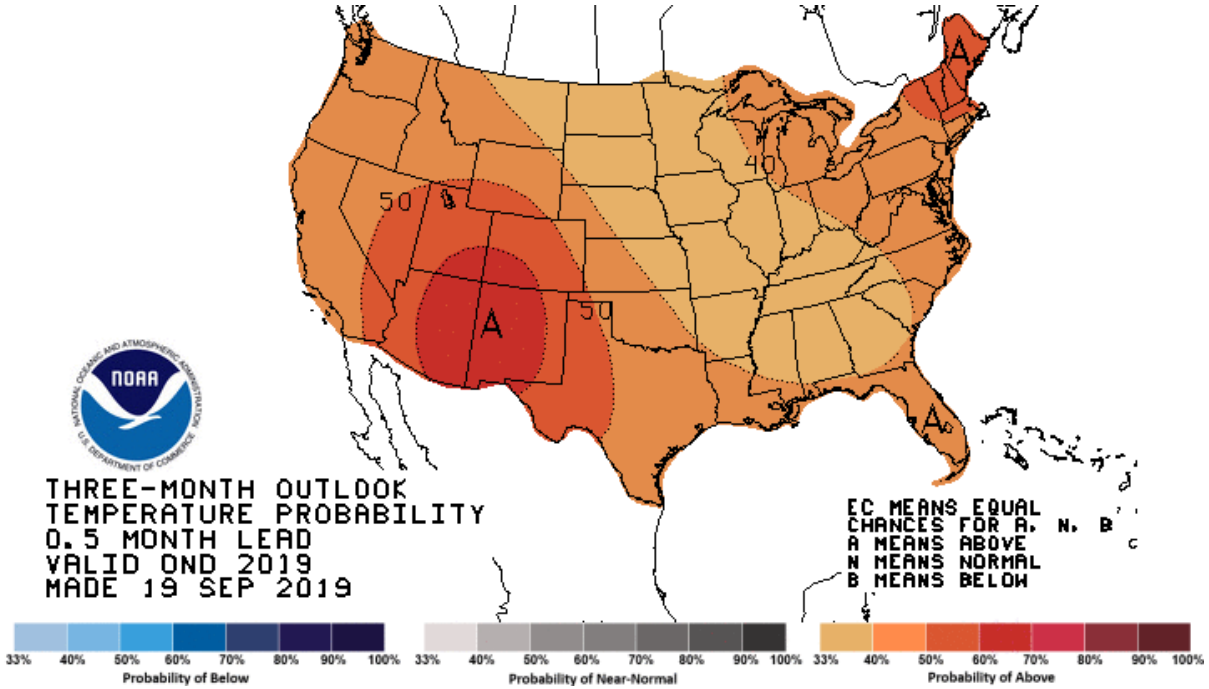
Precipitation



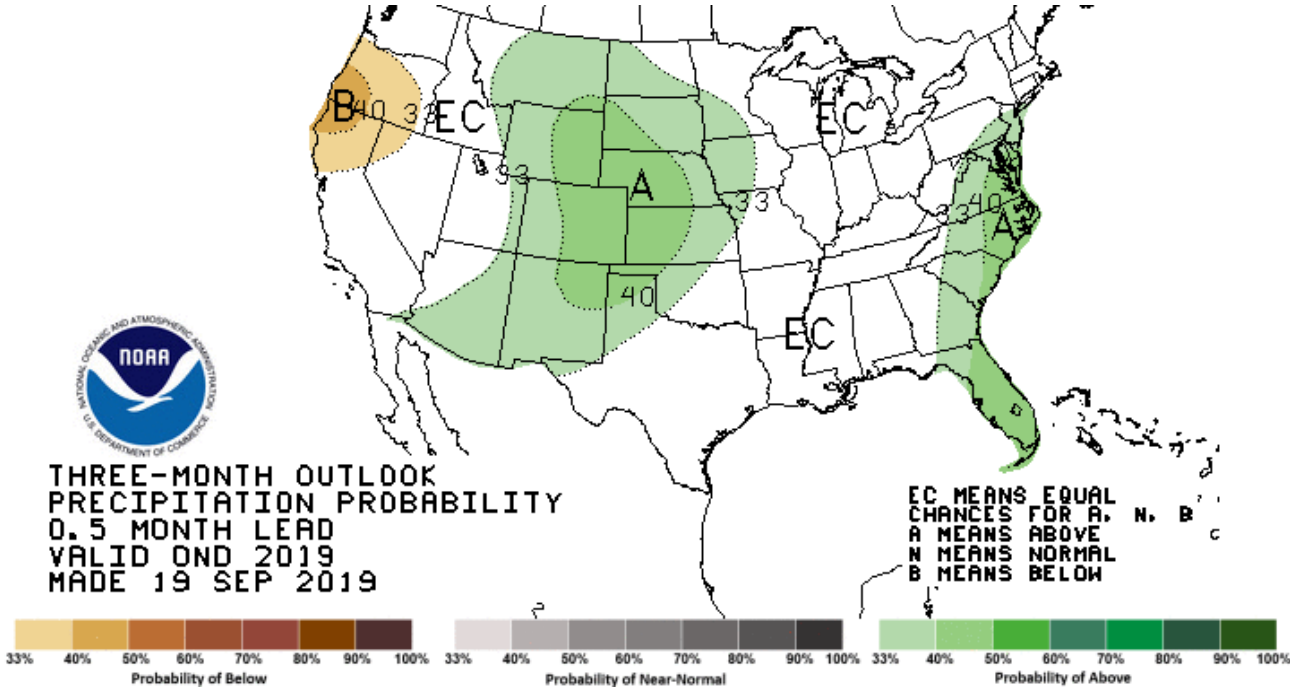
www.cpc.ncep.noaa.gov/products/predictions

Outlook for October - December

Temperature

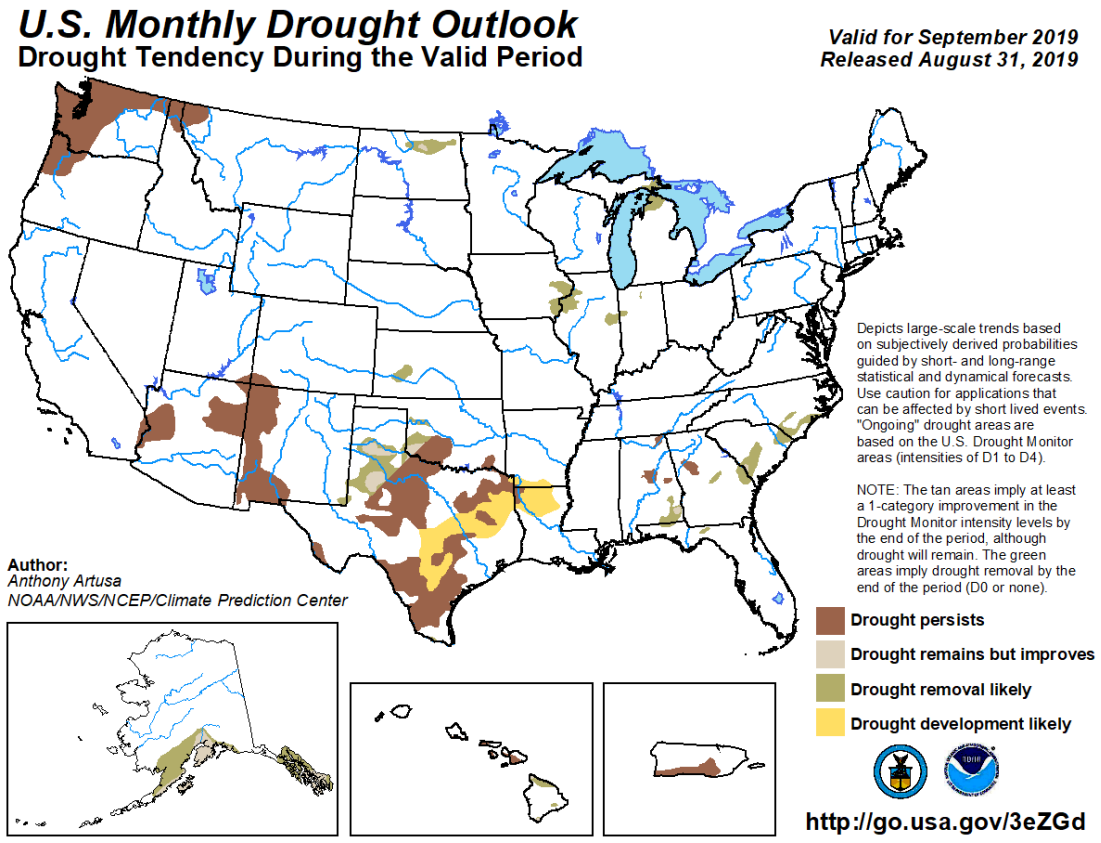


Precipitation

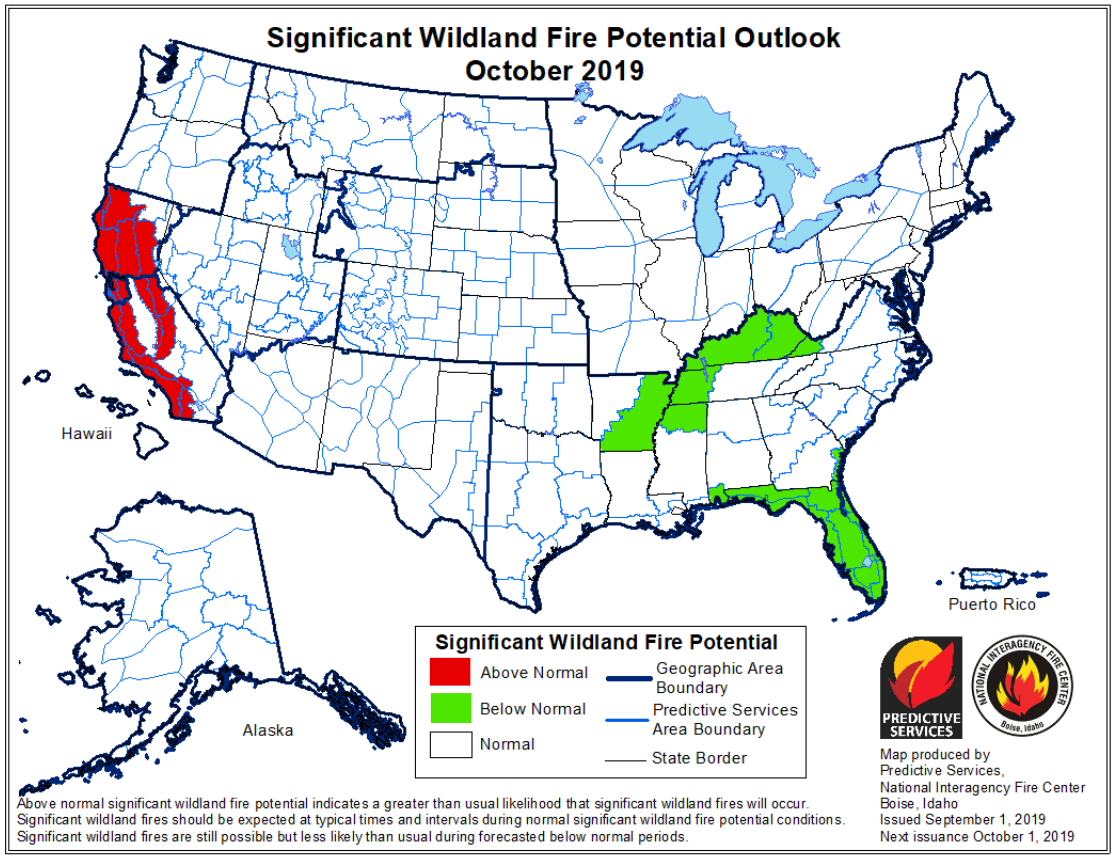


www.cpc.ncep.noaa.gov/products/predictions

Outlook: Fire & Drought



www.cpc.ncep.noaa.gov/products/expert_assessment/



www.predictiveservices.nifc.gov/outlooks/

- Drought removal is likely for the region given the wet conditions and anticipated precipitation
- Fire potential is predicted to be normal to below normal for the region

Summary

- Its been historically wet and cooler than normal.
- Record setting floods across the region are beginning to decline but may pick up again with anticipated wet weather forecast in the next 14 days - stay tuned to the Upper Missouri!
- Significant agricultural impacts due to the record weather conditions.
- Warmer weather is needed in the next couple of weeks for maturation of crops that made it into the ground.
- The 1 month and 3 month outlooks suggest above normal warmth - unlikely to see early freezes.
- Precipitation odds are uncertain for the next month, but tilted towards wetter conditions over the next 3 months for the Upper Missouri Region.
- Significant drought and wildfire conditions are unlikely to develop for the majority of the region.

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

Questions?

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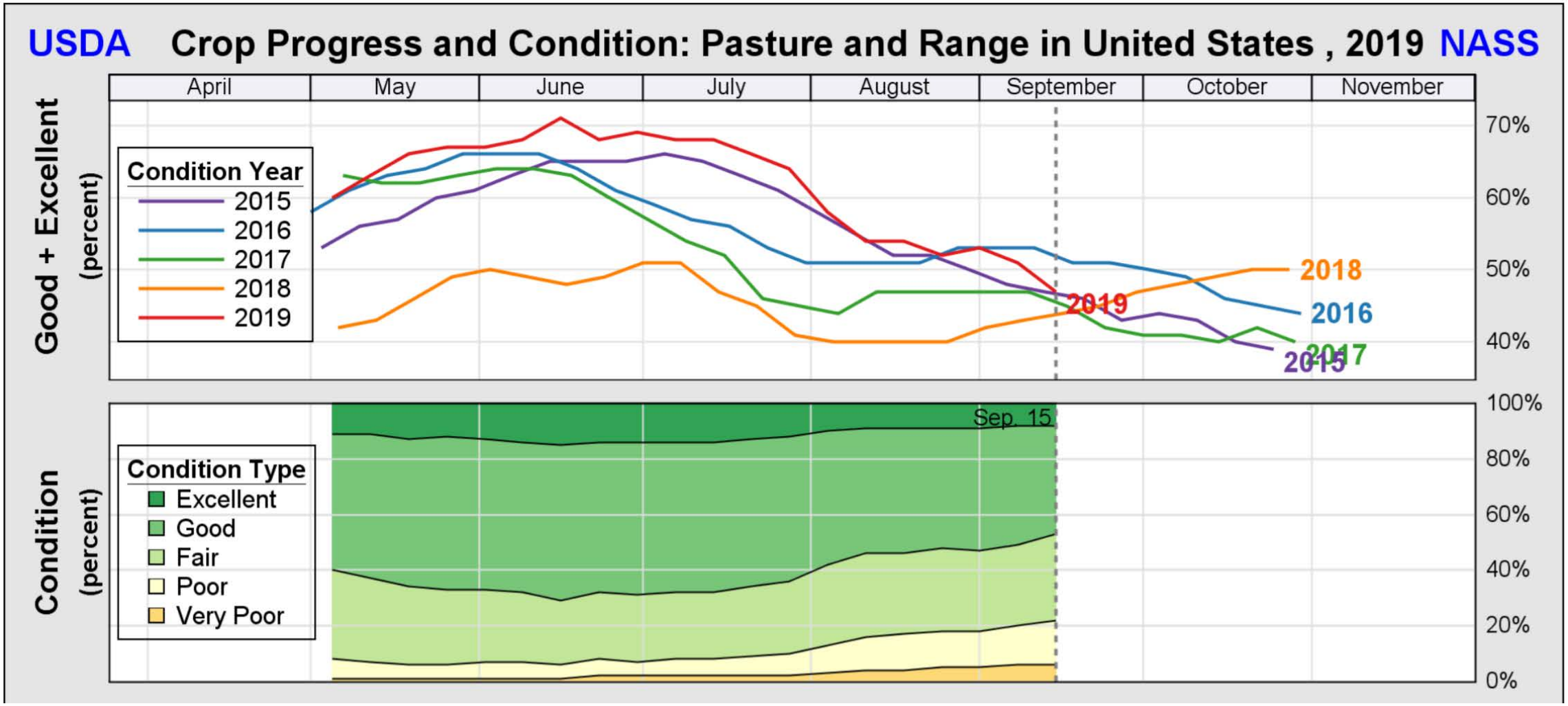
  - Doug Kluck: doug.kluck@noaa.gov, 816-994-3008
  - Natalie Umphlett: numphlett2@unl.edu ; 402 472-6764
  - Brian Fuchs: bfuchs2@unl.edu 402 472-6775
- Weather:
  - crhroc@noaa.gov

Impacts: Pasture and Range Conditions



www.nass.usda.gov/Charts_and_Maps