

North Central U.S. Climate and Drought Outlook

August 2020

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State Climatologist for Kentucky

ARTP

Applied Research &
Technology Program

KENTUCKY
CLIMATE
CENTER 


WKU

Providing climate services to the North Central US

Collaboration Activity Among:

NOAA NCEI/NWS/OAR/NIDIS/

USDA Climate Hubs

American Association of State Climatologists

Midwest and High Plains Regional Climate Centers

National Drought Mitigation Center



Next Regular Climate/Drought Outlook Webinar

September 17, 2020 (1 PM CDT) Brian Fuchs, NDMC

Access to Future Climate Webinars and Information

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

<https://mrcc.illinois.edu/multimedia/webinars.jsp>

<http://www.hprcc.unl.edu/webinars.php>

Open for questions at the end



- Recent and Current Climatic Conditions
- Events and Impacts
 - Midwest Derecho
 - Colorado Fires
- Outlooks

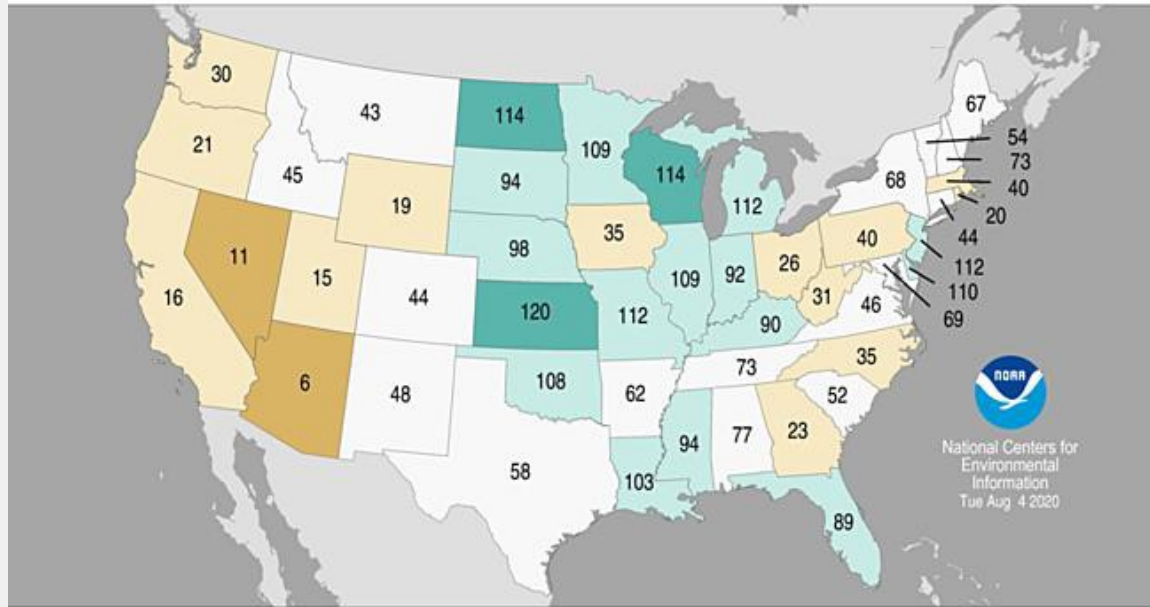
Localized heavy rain produced flooding in north central South Dakota on July 25. Photos provided by Laura Edwards.

CONDITIONS

PRECIPITATION RANKS

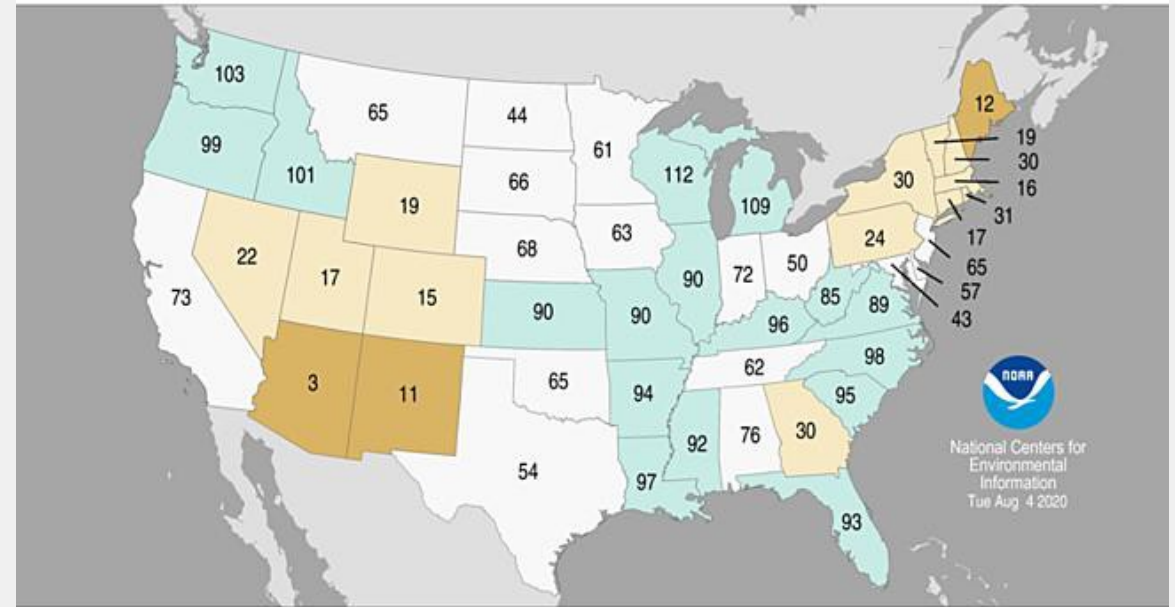
Statewide Precipitation Ranks

July 2020
Period: 1895–2020



Statewide Precipitation Ranks

May – July 2020
Period: 1895–2020



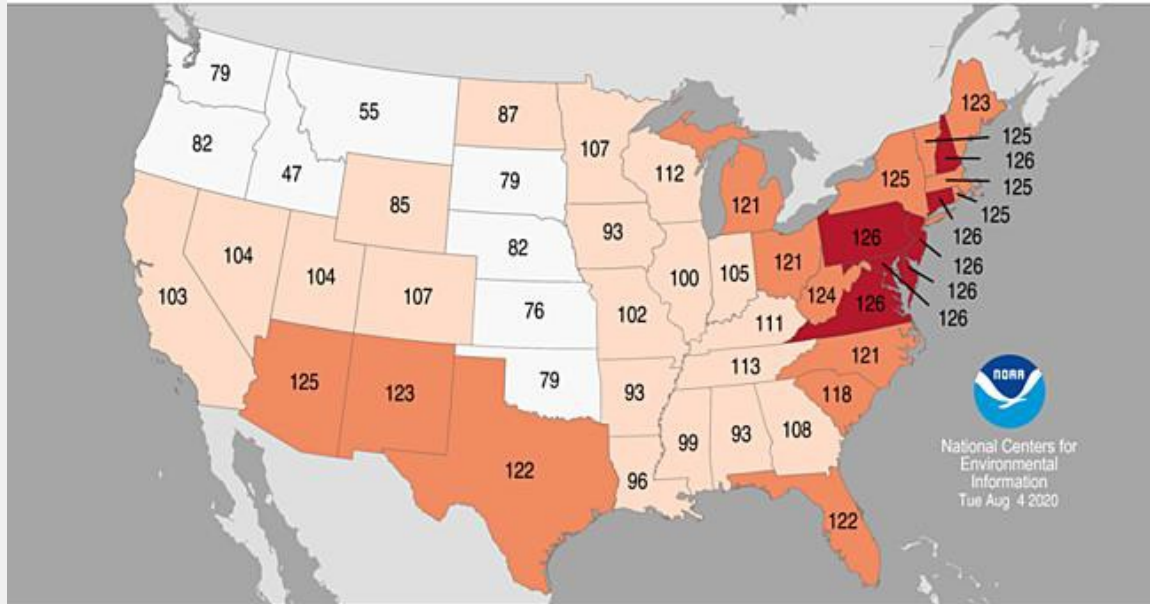
CONDITIONS

AVERAGE TEMPERATURE RANKS

Statewide Average Temperature Ranks

July 2020

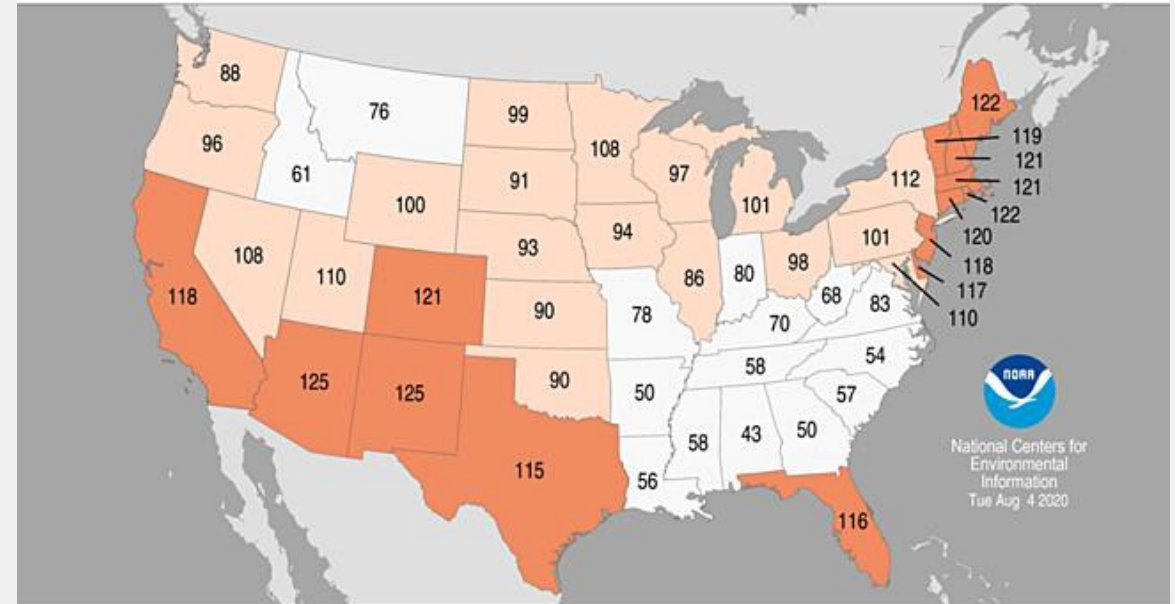
Period: 1895–2020



Statewide Average Temperature Ranks

May – July 2020

Period: 1895–2020

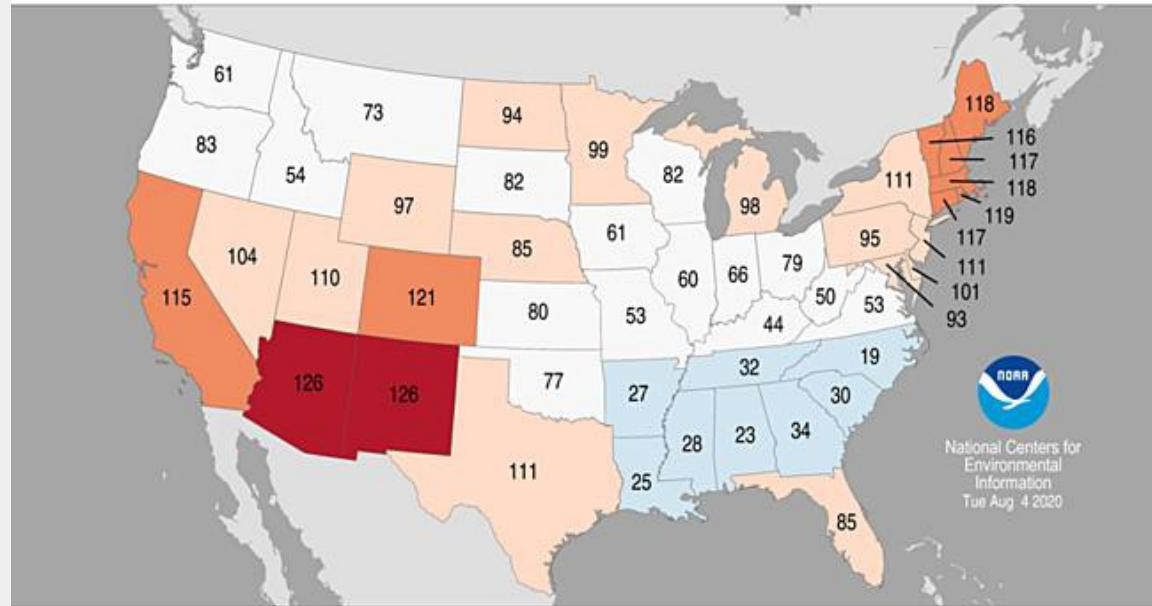


CONDITIONS

MAX & MIN TEMPERATURE RANKS

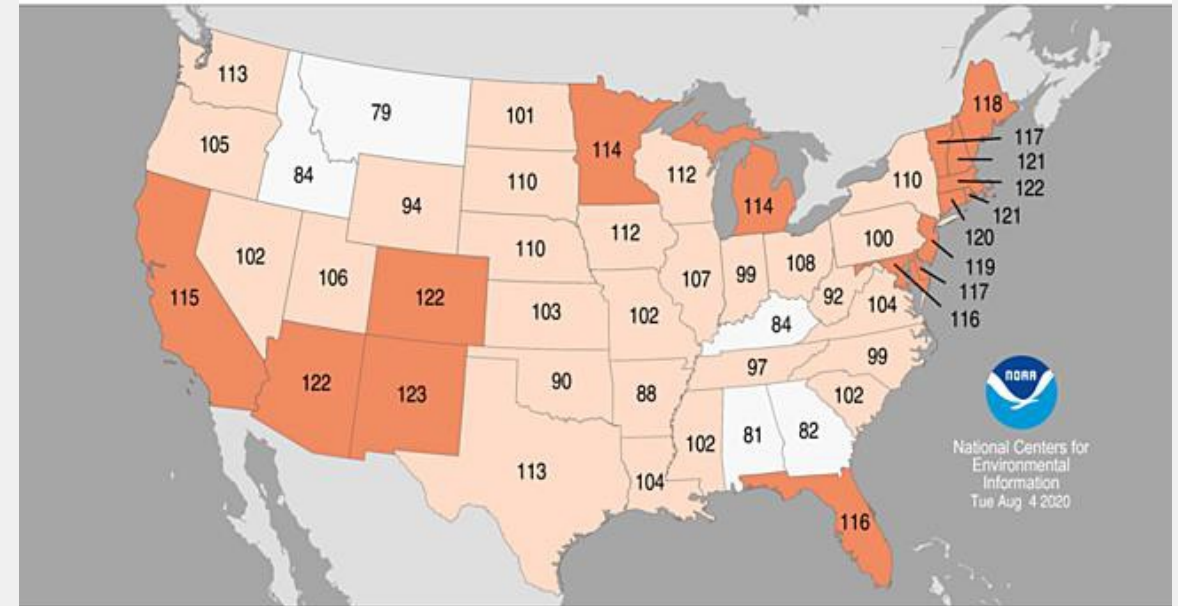
Statewide Maximum Temperature Ranks

May - July 2020
Period: 1895-2020



Statewide Minimum Temperature Ranks

May - July 2020
Period: 1895-2020



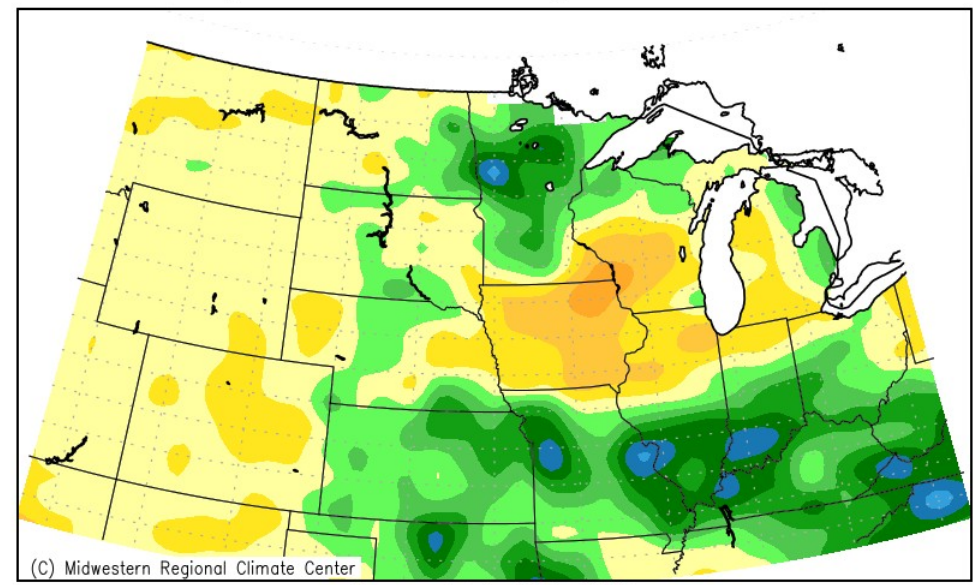
National Centers for Environmental Information
Tue Aug 4 2020

National Centers for Environmental Information
Tue Aug 4 2020

CONDITIONS

30-DAY PRECIPITATION

Accumulated Precipitation (in): Departure from Mean
July 21, 2020 to August 19, 2020



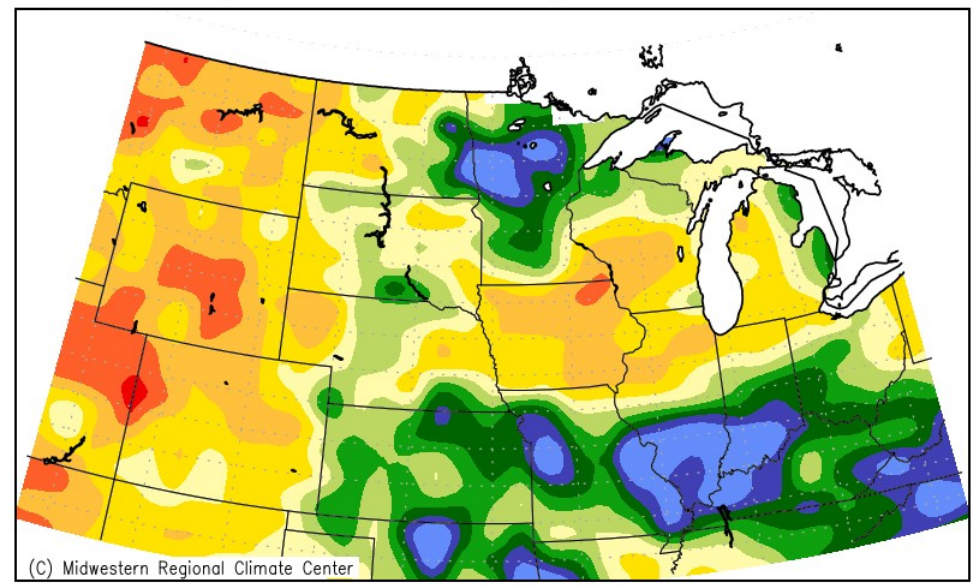
(C) Midwestern Regional Climate Center

Mean period is 1981–2010.



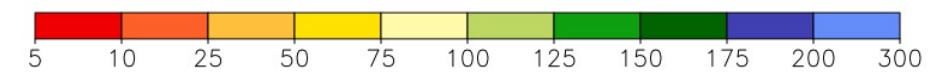
Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana–Champaign

Accumulated Precipitation: Percent of Mean
July 21, 2020 to August 19, 2020



(C) Midwestern Regional Climate Center

Mean period is 1981–2010.

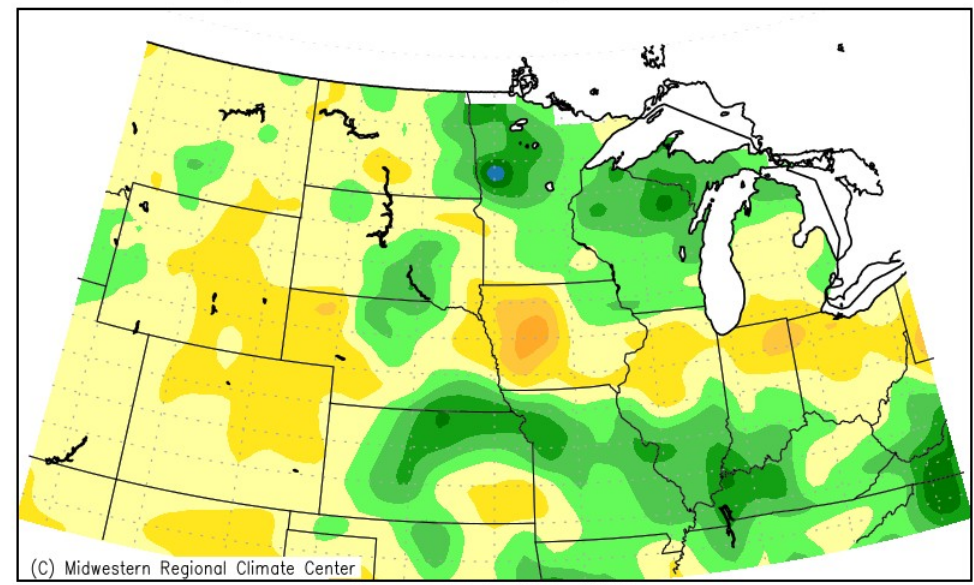


Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana–Champaign

CONDITIONS

90-DAY PRECIPITATION

Accumulated Precipitation (in): Departure from Mean
May 22, 2020 to August 19, 2020



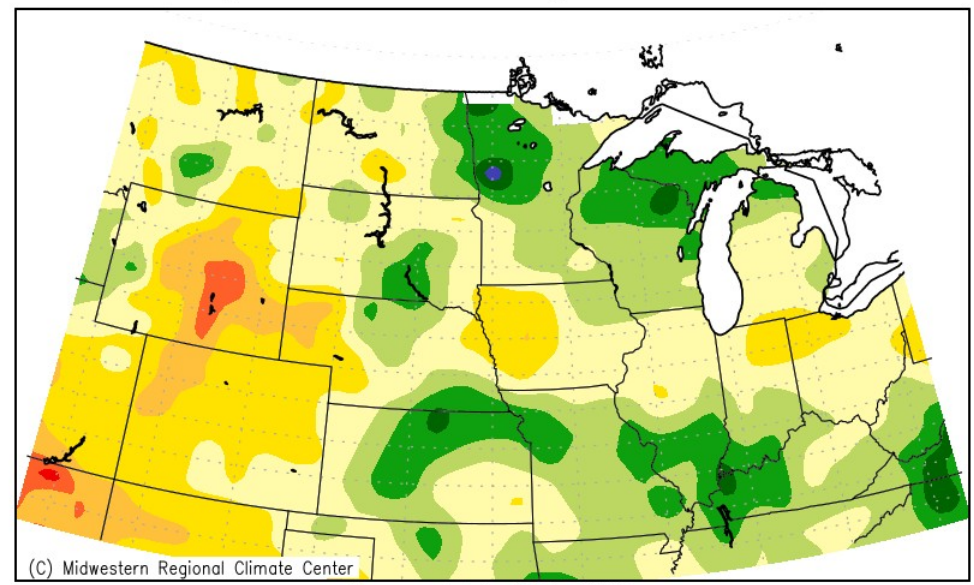
(C) Midwestern Regional Climate Center

Mean period is 1981–2010.



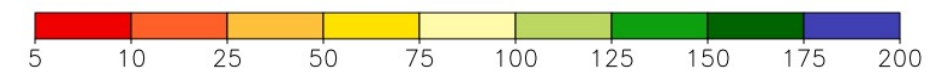
Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana–Champaign

Accumulated Precipitation: Percent of Mean
May 22, 2020 to August 19, 2020



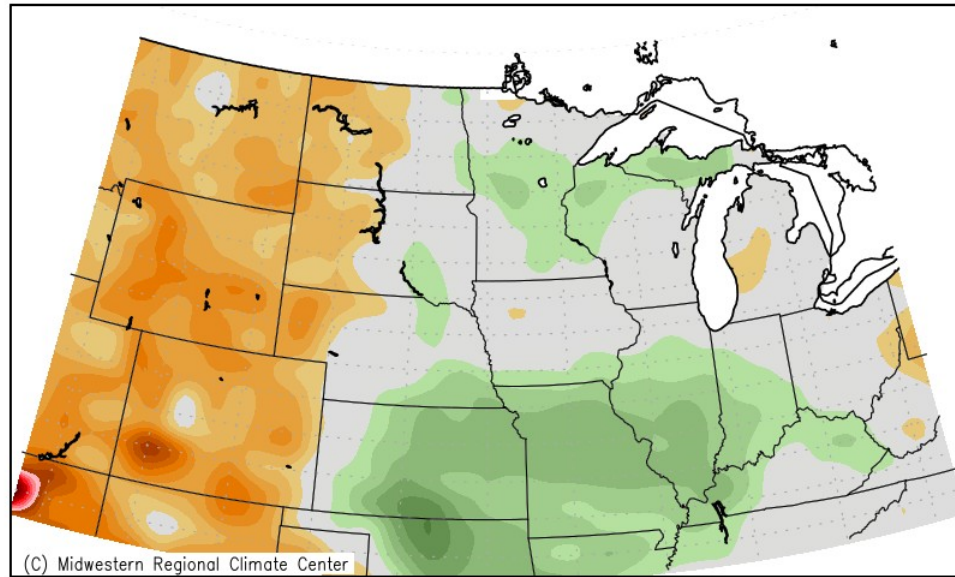
(C) Midwestern Regional Climate Center

Mean period is 1981–2010.

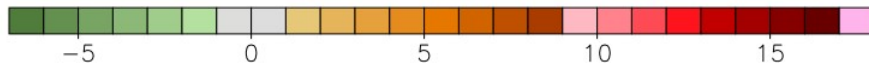


Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana–Champaign

Average Maximum Temp. (°F): Departure from Mean
July 21, 2020 to August 19, 2020

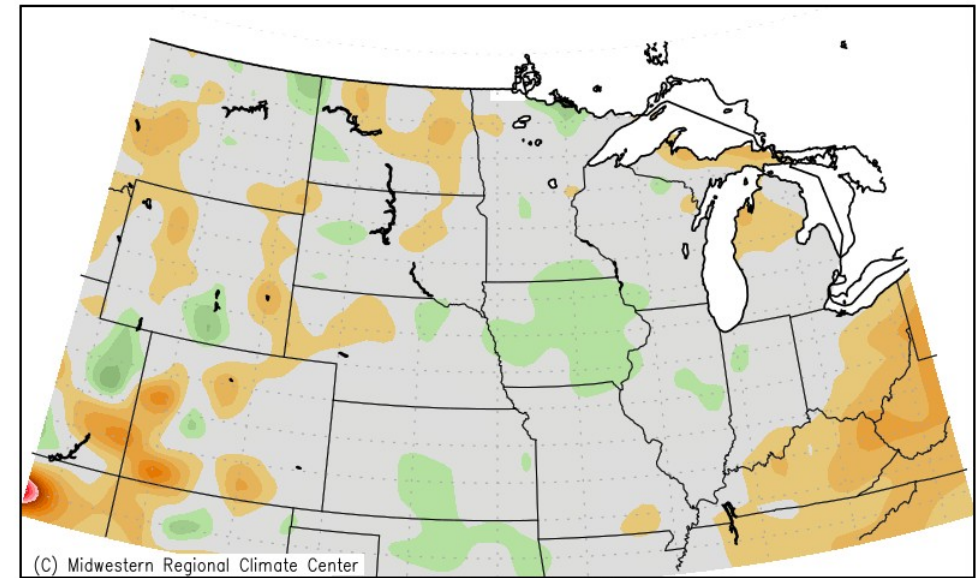


Mean period is 1981–2010.

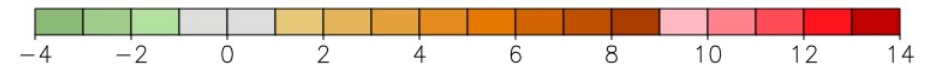


Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana–Champaign

Average Minimum Temp. (°F): Departure from Mean
July 21, 2020 to August 19, 2020



Mean period is 1981–2010.

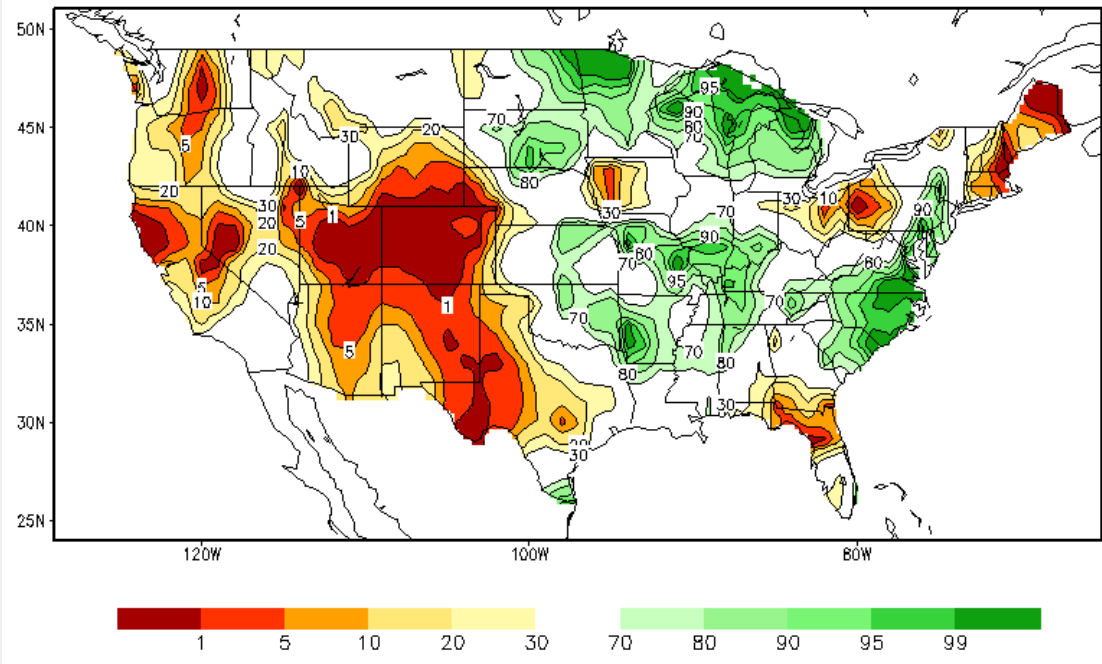


Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana–Champaign

CONDITIONS

SOIL MOISTURE AND GROUNDWATER

Calculated Soil Moisture Ranking Percentile
AUG 19, 2020

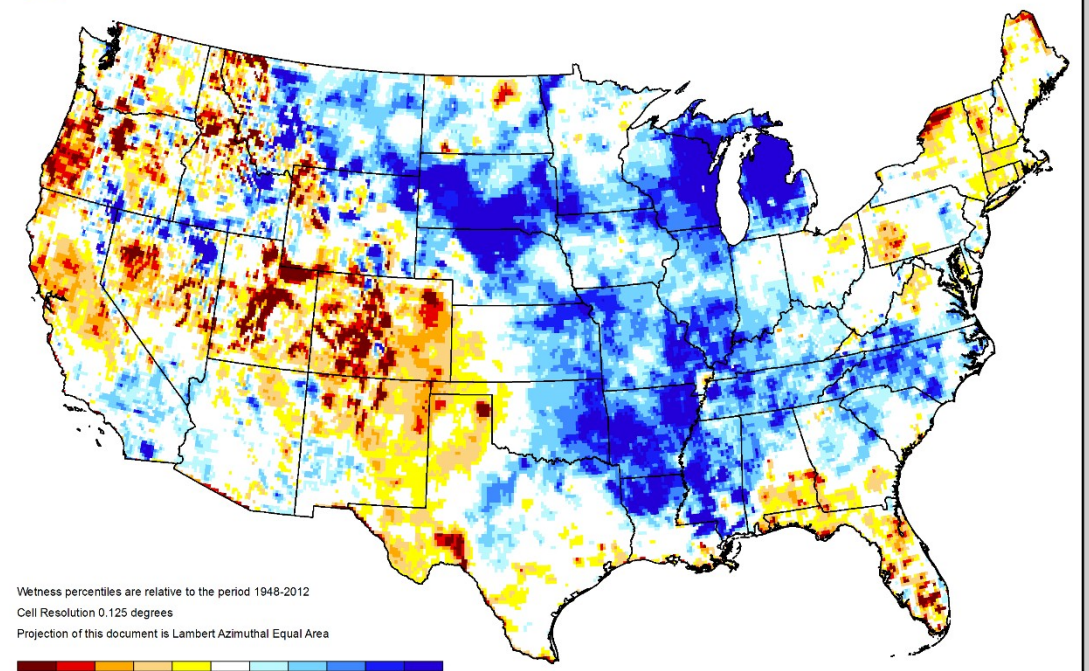


https://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Soilmst/Soilmst.shtml#



GRACE-Based Shallow Groundwater Drought Indicator

August 17, 2020

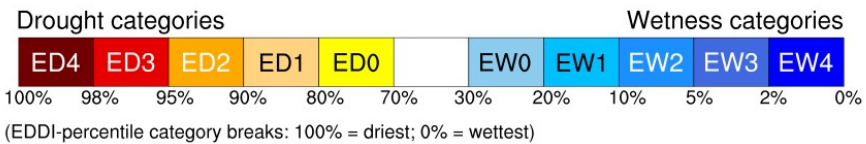
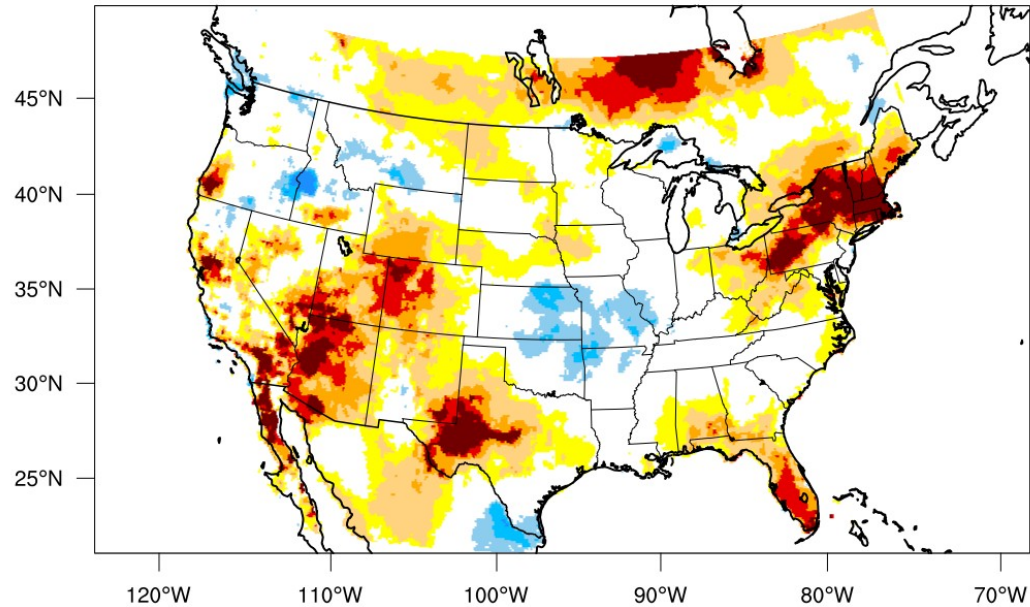


<https://nasagrace.unl.edu>

<https://nasagrace.unl.edu/Default.aspx>

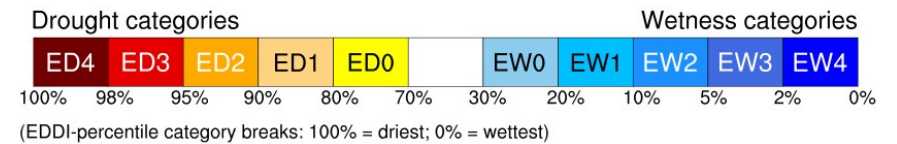
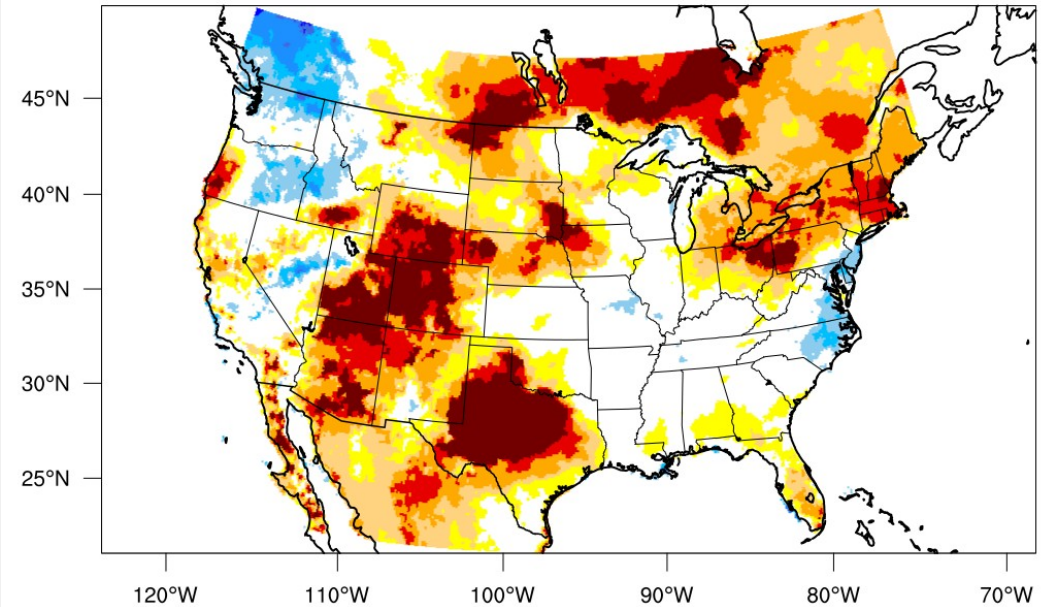
EVAPORATIVE DEMAND DROUGHT INDEX

1-month EDDI categories for August 14, 2020



Generated by NOAA/ESRL/Physical Sciences Laboratory

1-week EDDI categories for August 14, 2020



Generated by NOAA/ESRL/Physical Sciences Laboratory

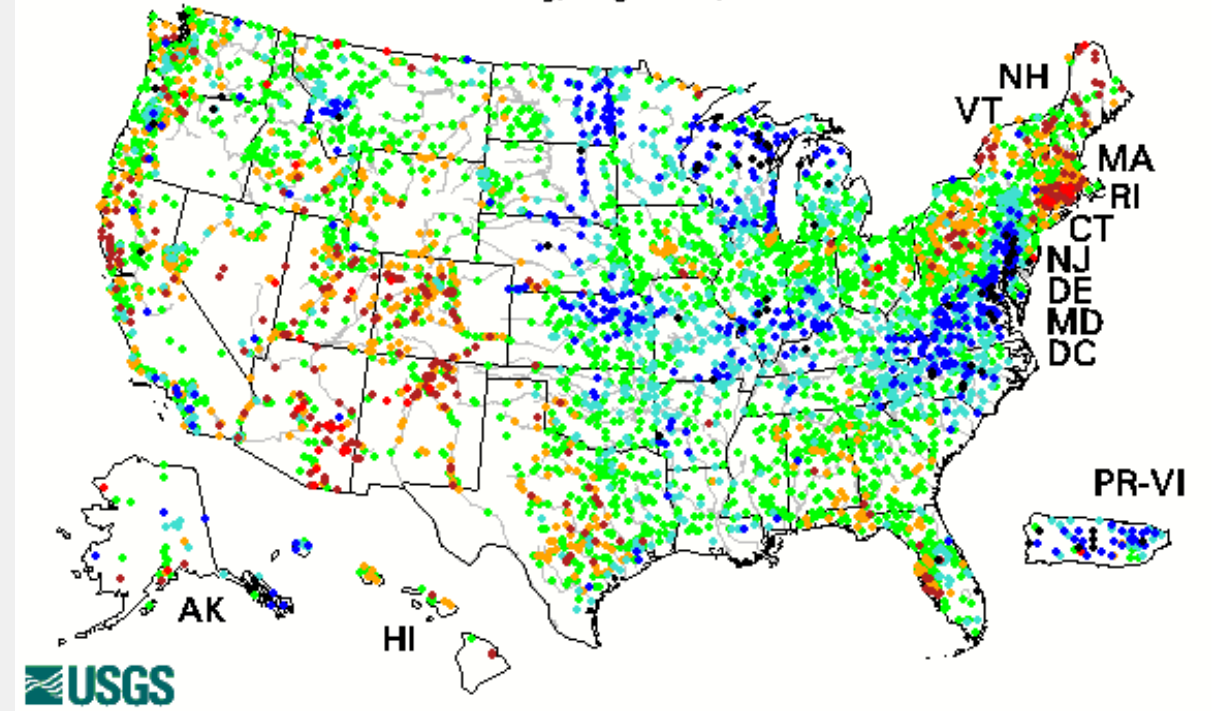
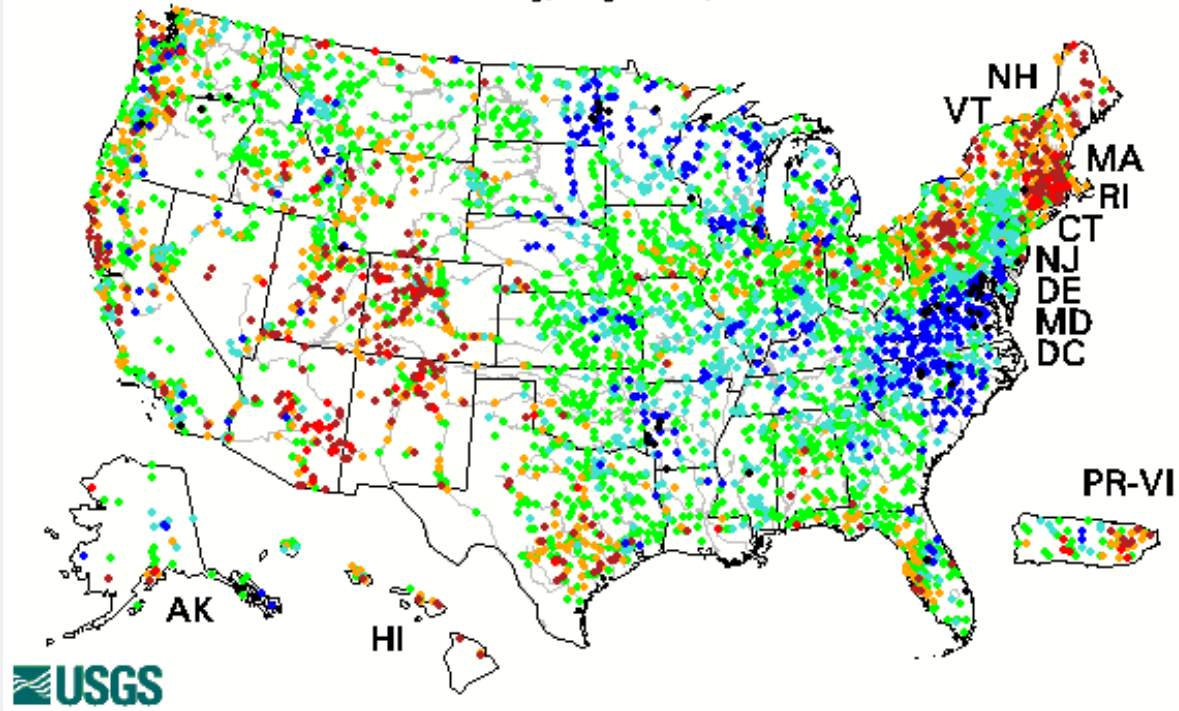
STREAM FLOWS – 7 & 28 DAY

7-Day

28-Day

Wednesday, August 19, 2020

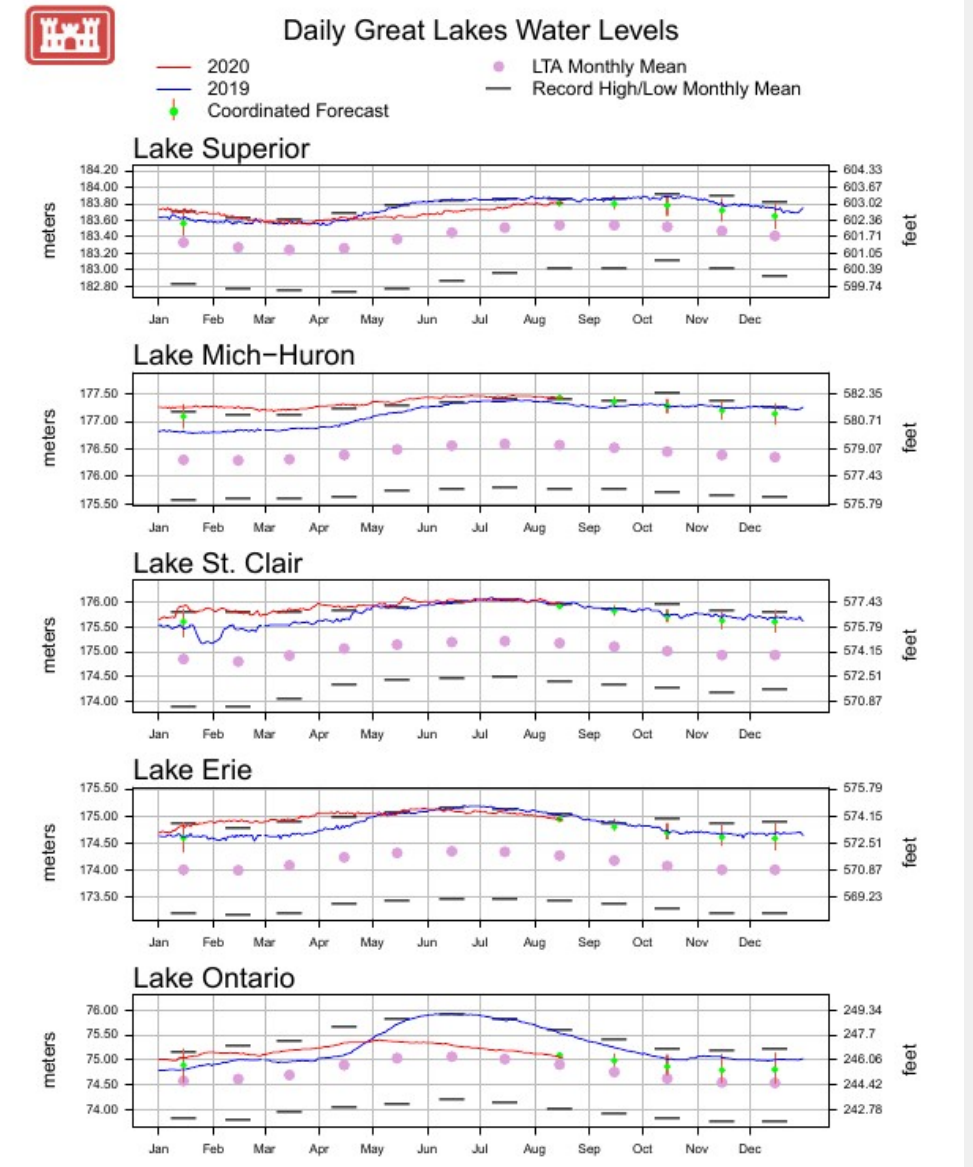
Wednesday, August 19, 2020



Explanation - Percentile classes

Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

CONDITIONS GREAT LAKES

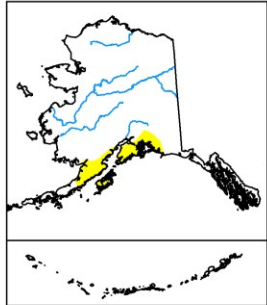
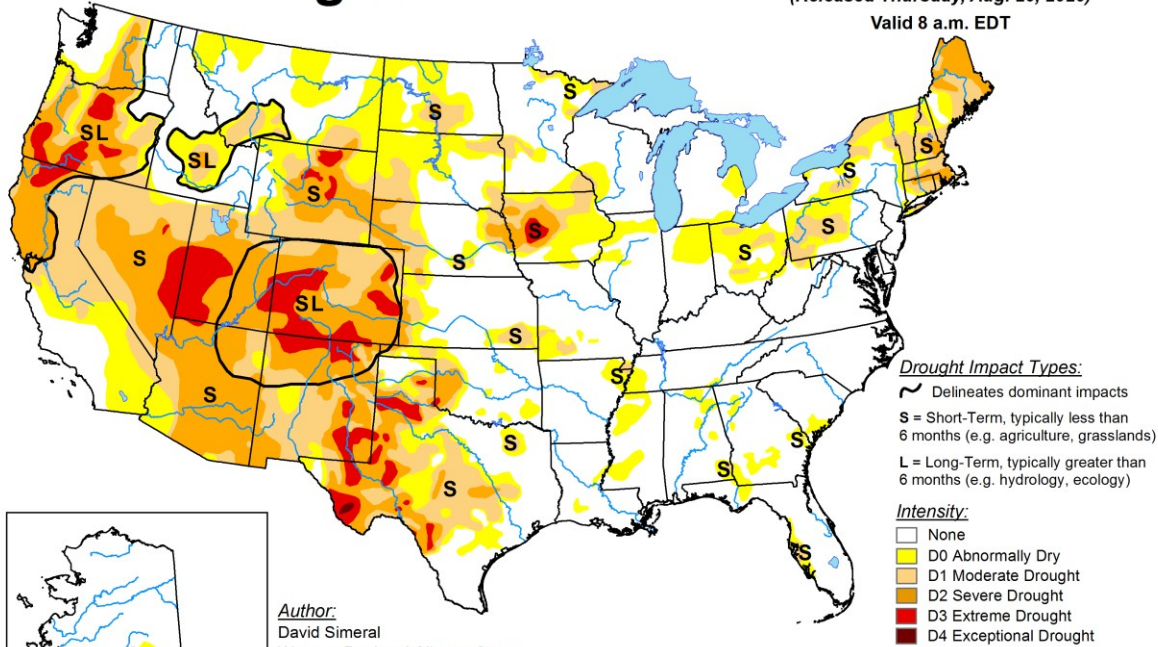


CONDITIONS

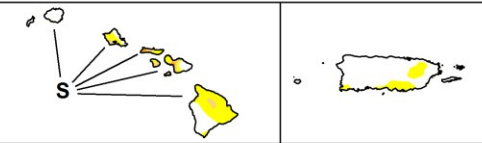
DROUGHT YEAR-OVER-YEAR

U.S. Drought Monitor

August 18, 2020
(Released Thursday, Aug. 20, 2020)
Valid 8 a.m. EDT



Author:
David Simeral
Western Regional Climate Center



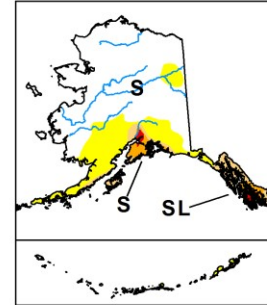
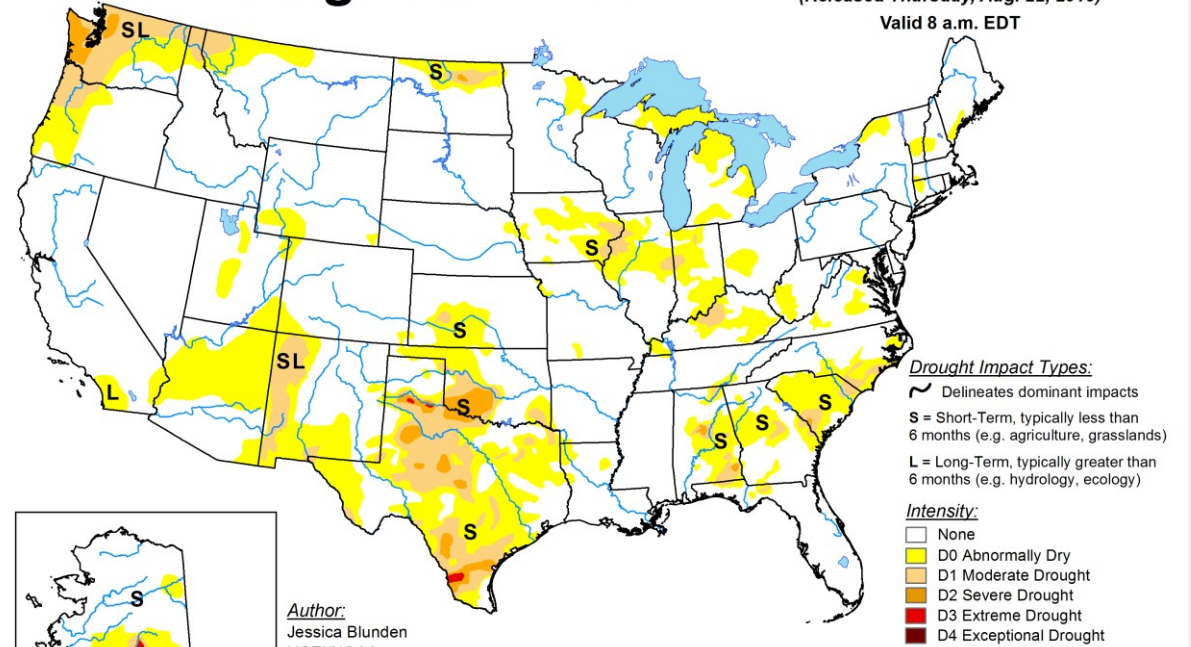
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>



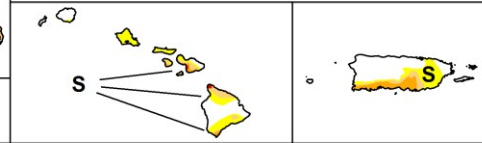
droughtmonitor.unl.edu

U.S. Drought Monitor

August 20, 2019
(Released Thursday, Aug. 22, 2019)
Valid 8 a.m. EDT



Author:
Jessica Blunden
NCEI/NOAA



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



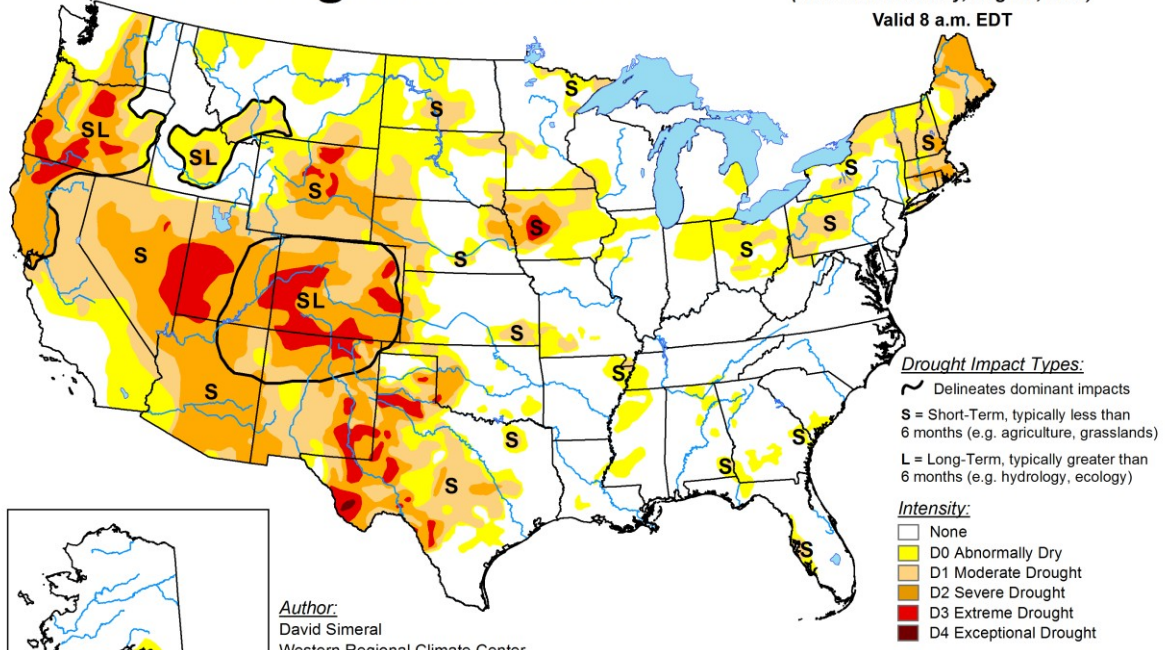
droughtmonitor.unl.edu

CONDITIONS

DROUGHT 4-WEEK CHANGE

U.S. Drought Monitor

August 18, 2020
(Released Thursday, Aug. 20, 2020)
Valid 8 a.m. EDT



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)

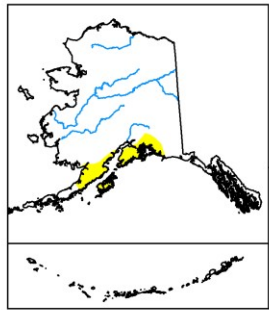
Intensity:
 □ None
 □ D0 Abnormally Dry
 □ D1 Moderate Drought
 □ D2 Severe Drought
 □ D3 Extreme Drought
 □ D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>



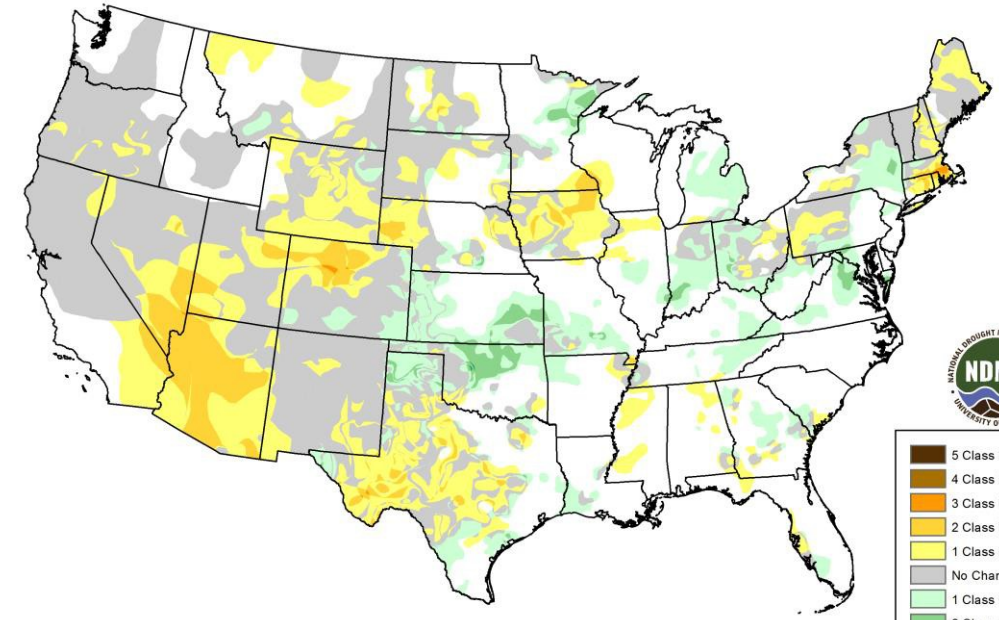
droughtmonitor.unl.edu

Author:
David Simeral
Western Regional Climate Center



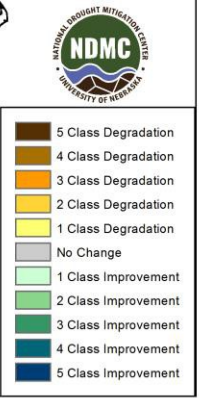
U.S. Drought Monitor Class Change - CONUS

1 Month



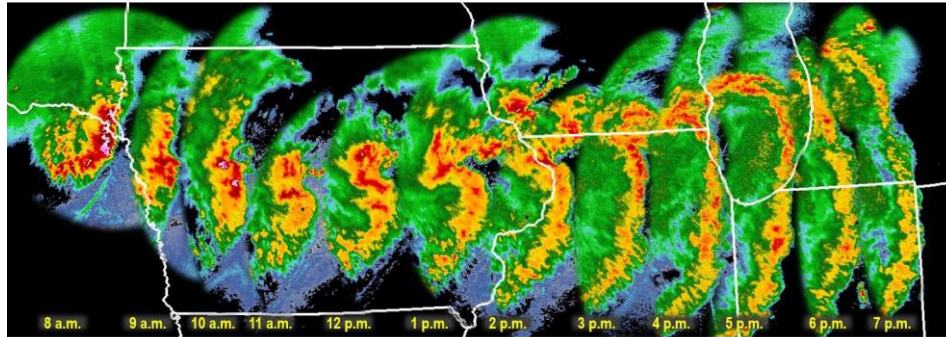
August 18, 2020
compared to
July 21, 2020

droughtmonitor.unl.edu



August 10, 2020 Derecho: Lowest Angle NWS Radar Reflectivity at One-Hour Time Steps

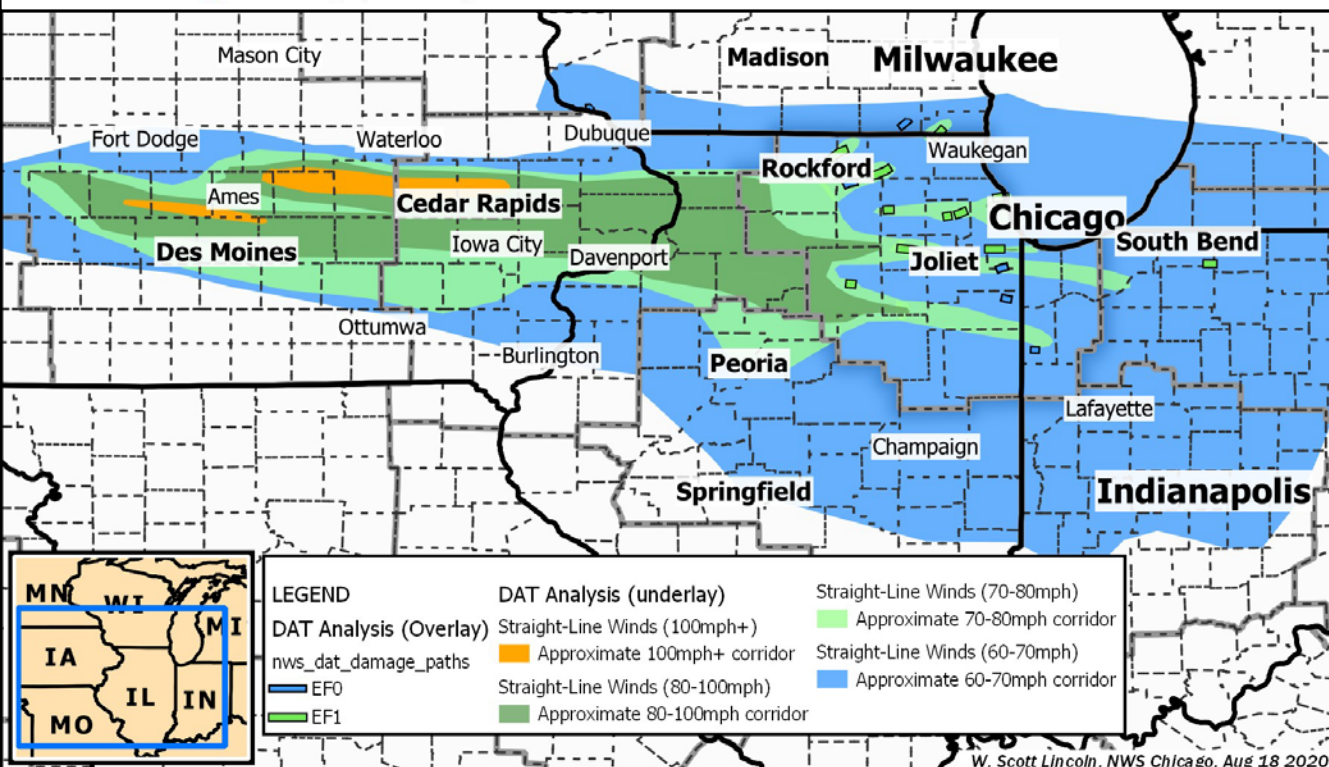
All times in CDT



This long-lasting, severe wind thunderstorm complex (known as a derecho) produced hundreds of reports of damage along with likely a few tornadoes.

NWS Chicago | weather.gov

Aug 11, 2020



What happened

- 100+ mph winds in some areas
- Torrential rain
- Tornadoes

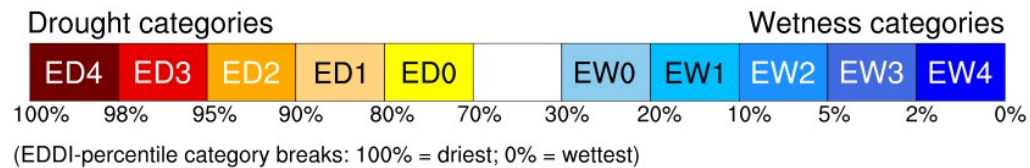
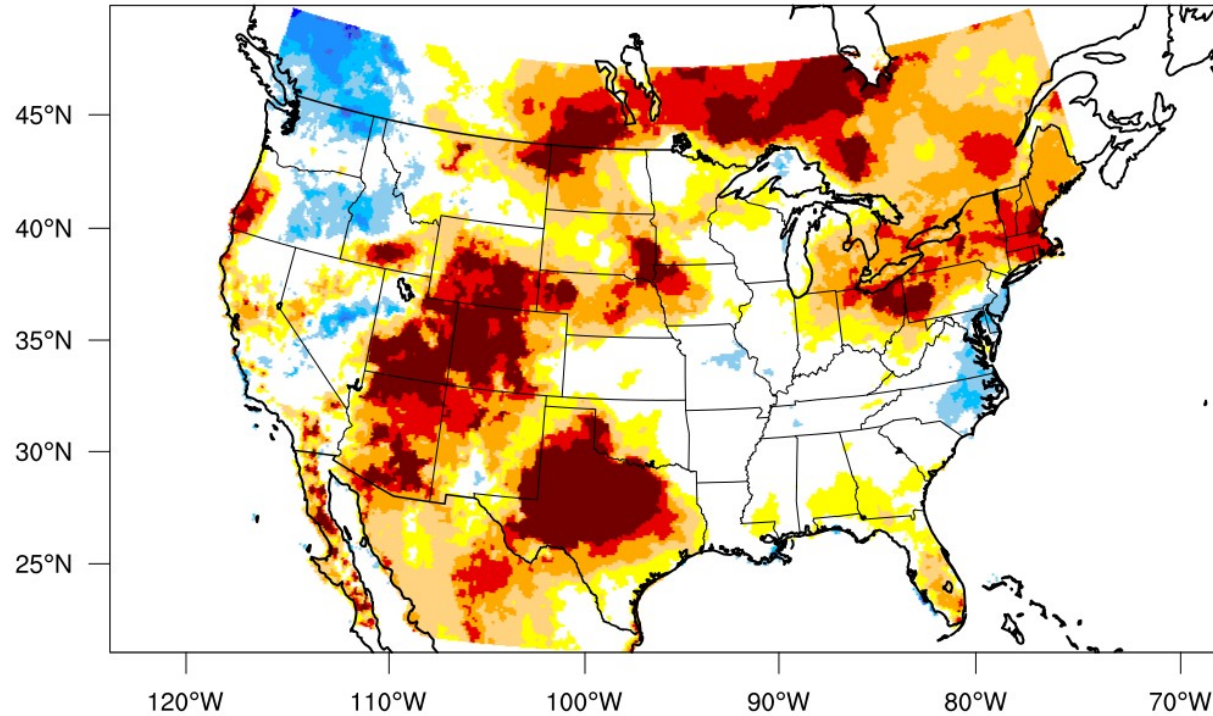
Impacts

- Downed power lines and outages resulted in more than 1.2 million people without power (*PowerOutage.US*)
- Property damage resulted from high winds and localized flash flooding
- Damage to corn and soybeans in areas of peak winds. Millions of acres impacted. Challenges ahead regarding harvest.

EVENTS – MIDWEST DERECHO, 8/10/2020



1-week EDDI categories for August 14, 2020



Generated by NOAA/ESRL/Physical Sciences Laboratory



Context

- Drought conditions accentuate the risk of very large fires
- High pressure ridge in the West blocks monsoon

Highlights

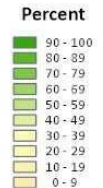
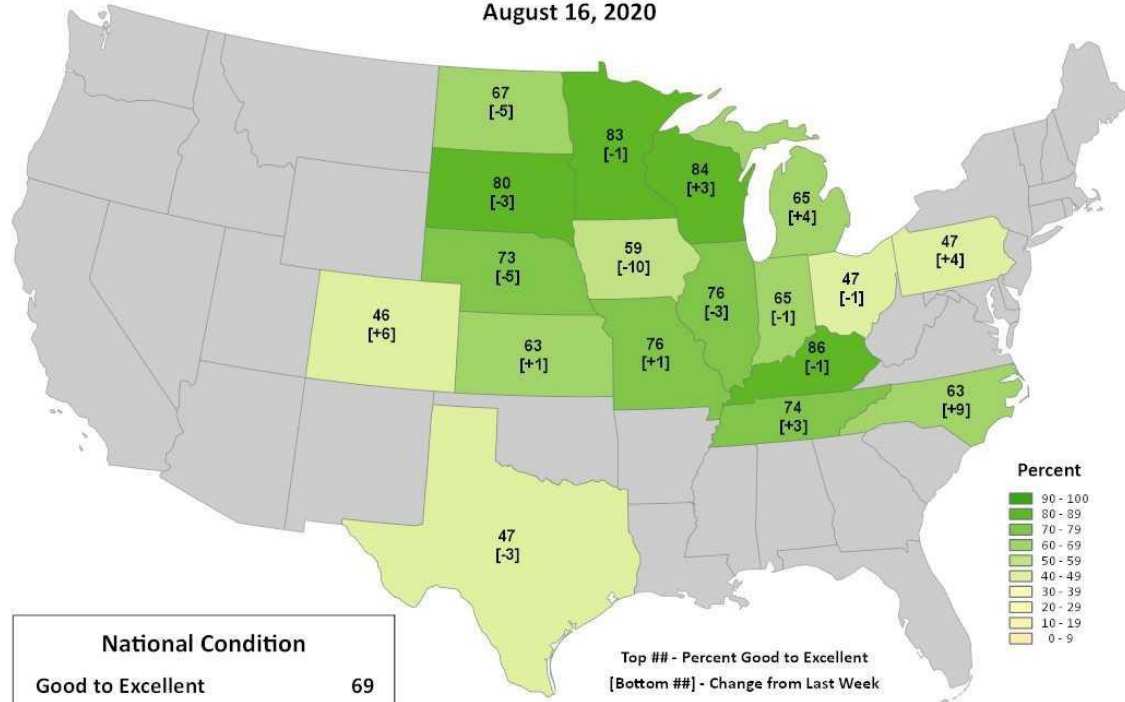
- Pine Gulch Fire is 2nd largest in historical record
- Grizzly Creek Fire has forced closure of I-70



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

Corn Conditions Percent Good to Excellent

August 16, 2020



National Condition	
Good to Excellent	69
Change from Last Week	-2

Top ## - Percent Good to Excellent
[Bottom ##] - Change from Last Week

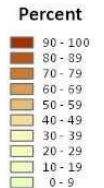
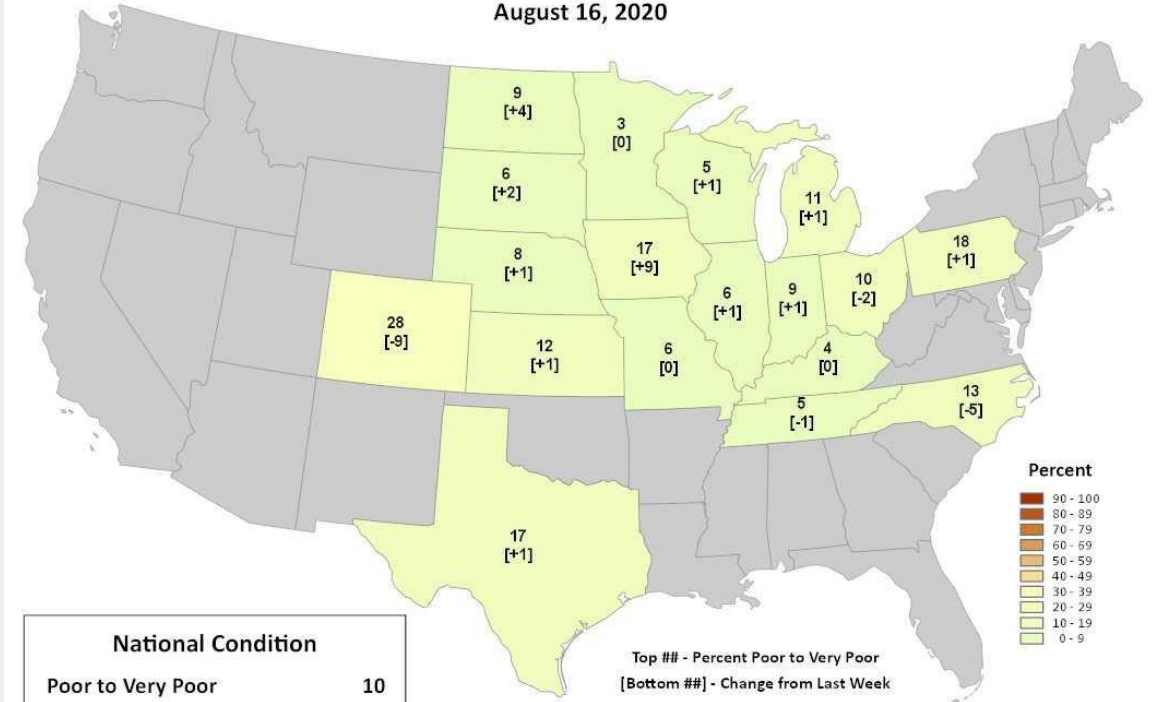
Data obtained from USDA National Agricultural Statistics Service weekly Crop Progress reports.



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

Corn Conditions Percent Poor to Very Poor

August 16, 2020



National Condition	
Poor to Very Poor	10
Change from Last Week	+2

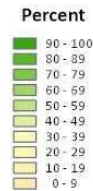
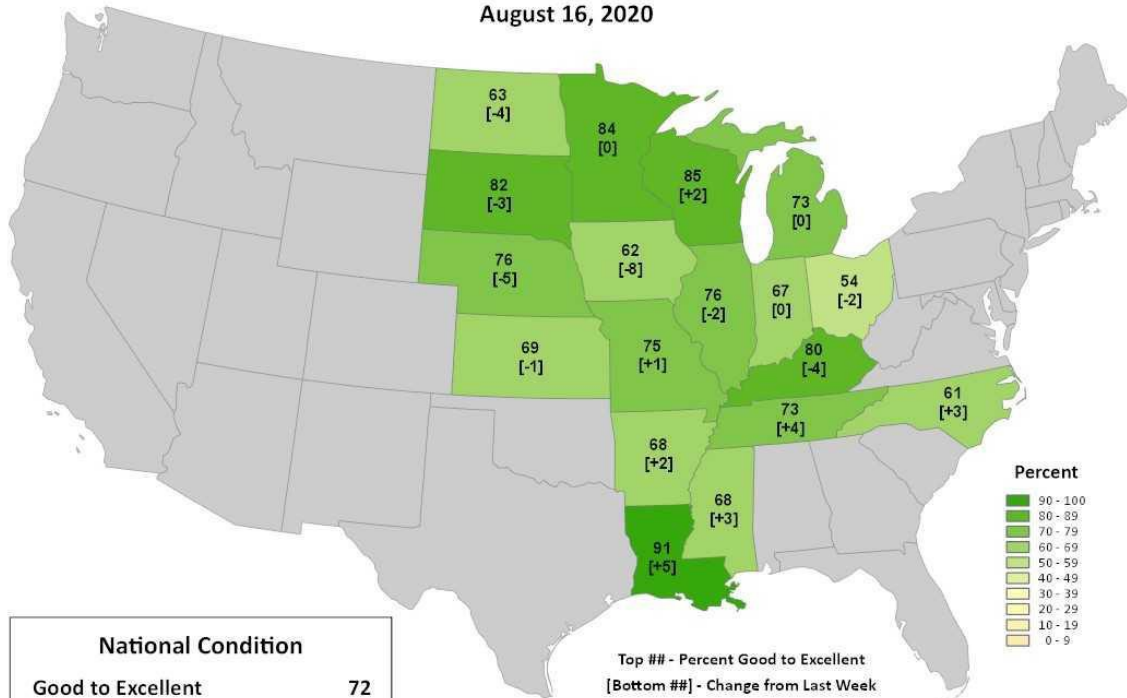
Top ## - Percent Poor to Very Poor
[Bottom ##] - Change from Last Week

Data obtained from USDA National Agricultural Statistics Service weekly Crop Progress reports.

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

Soybean Conditions Percent Good to Excellent

August 16, 2020



National Condition	
Good to Excellent	72
Change from Last Week	-2

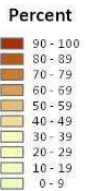
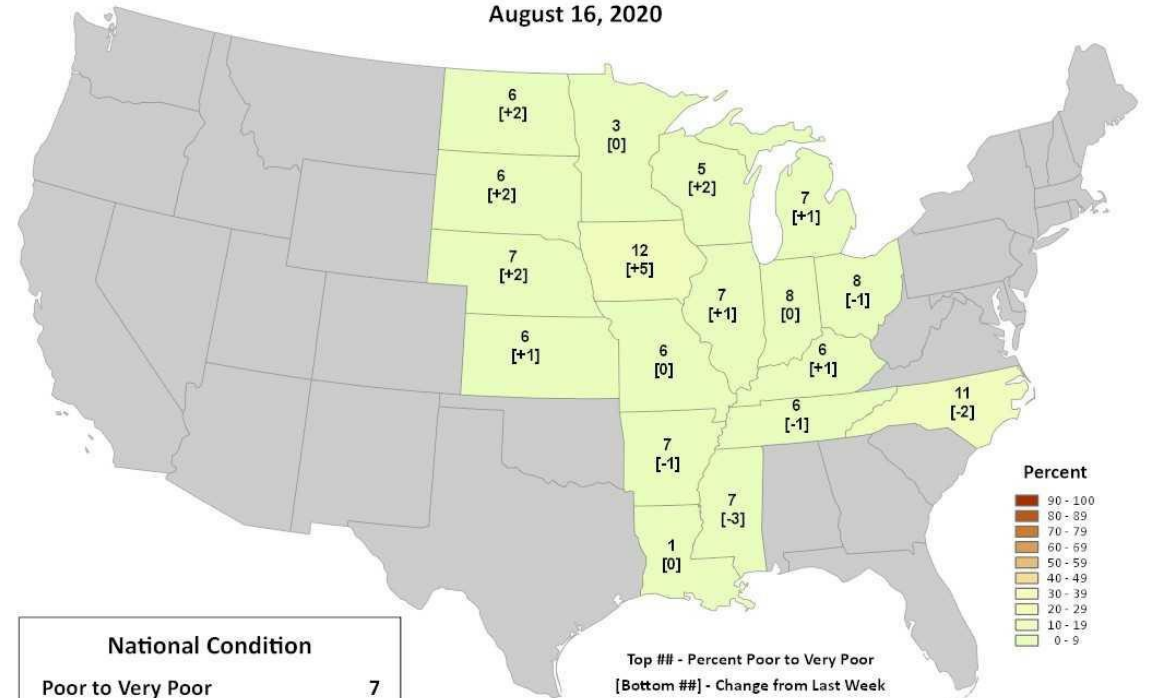
Top ## - Percent Good to Excellent
[Bottom ##] - Change from Last Week

Data obtained from USDA National Agricultural Statistics Service weekly Crop Progress reports.

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

Soybean Conditions Percent Poor to Very Poor

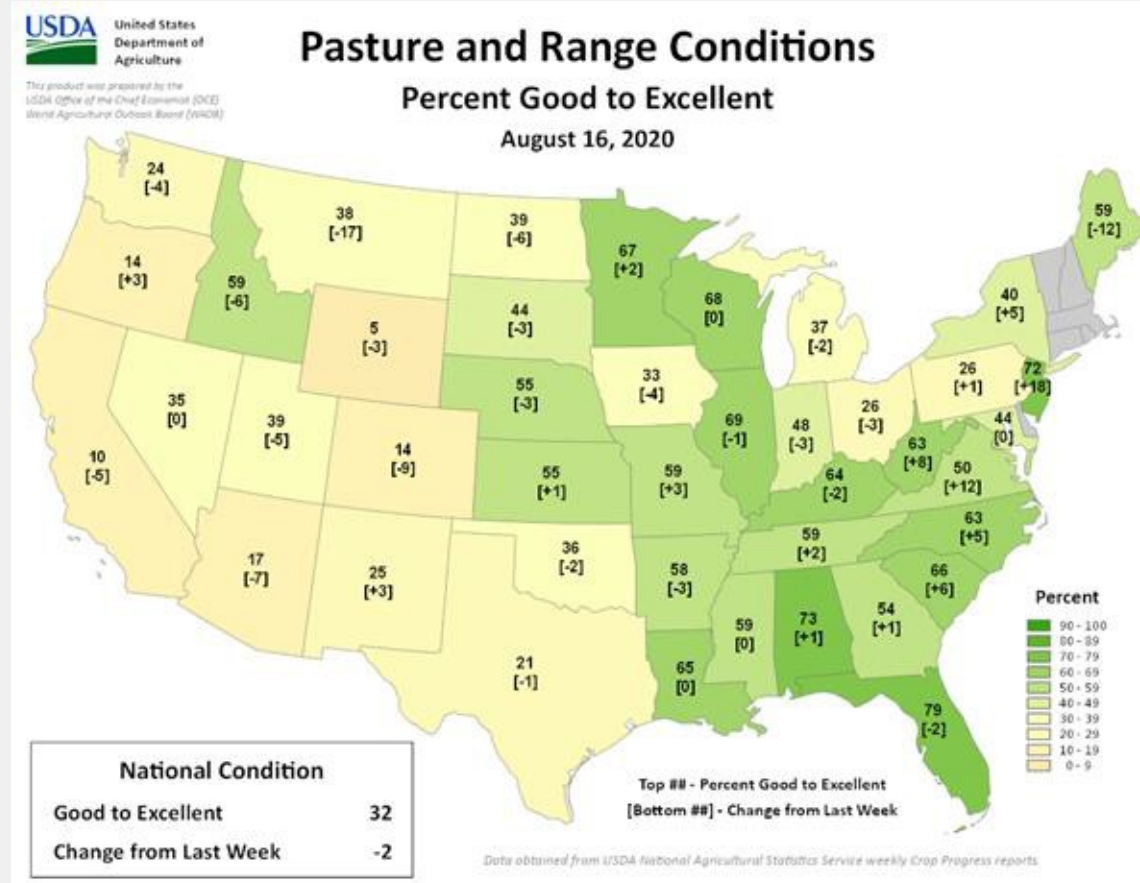
August 16, 2020



National Condition	
Poor to Very Poor	7
Change from Last Week	+2

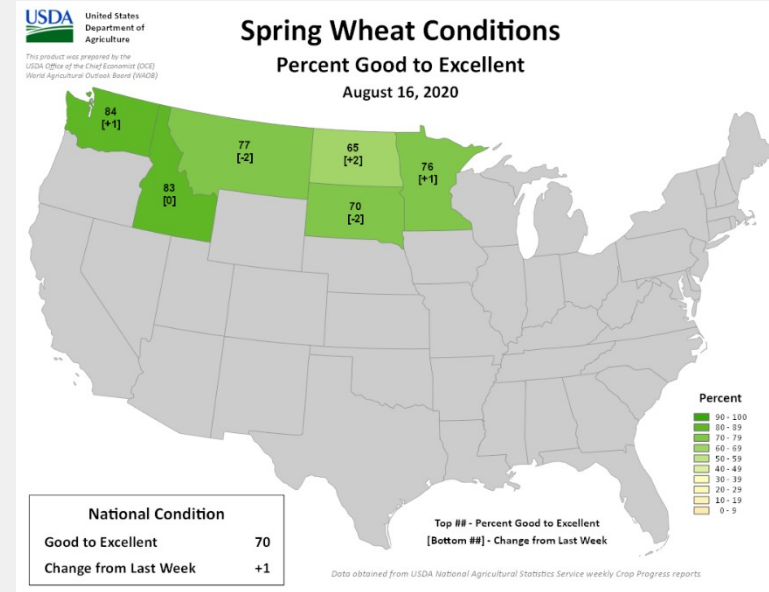
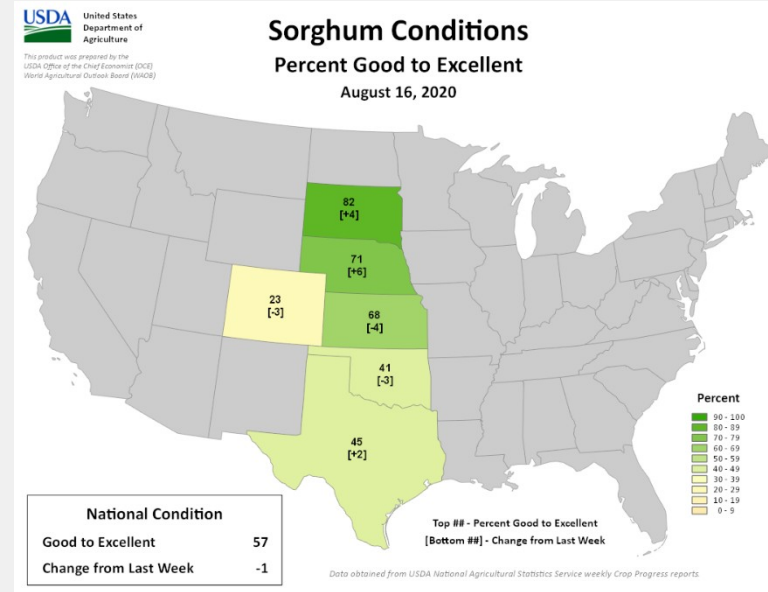
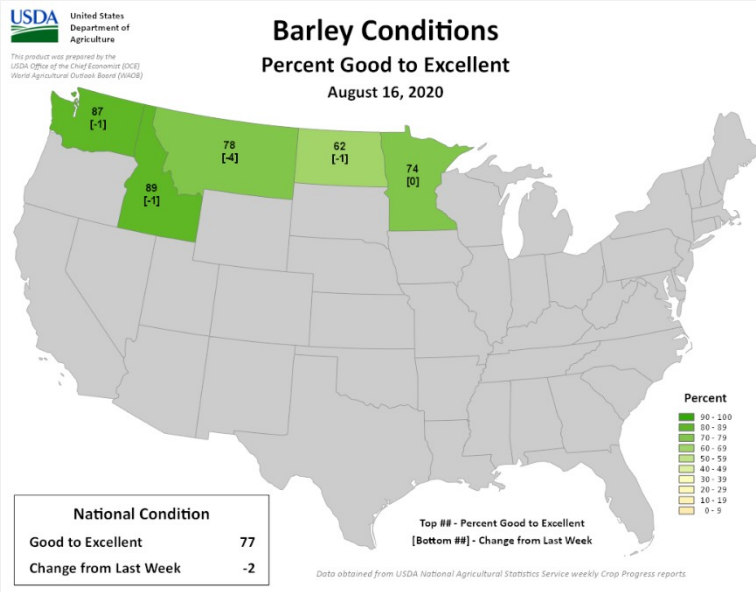
Top ## - Percent Poor to Very Poor
[Bottom ##] - Change from Last Week

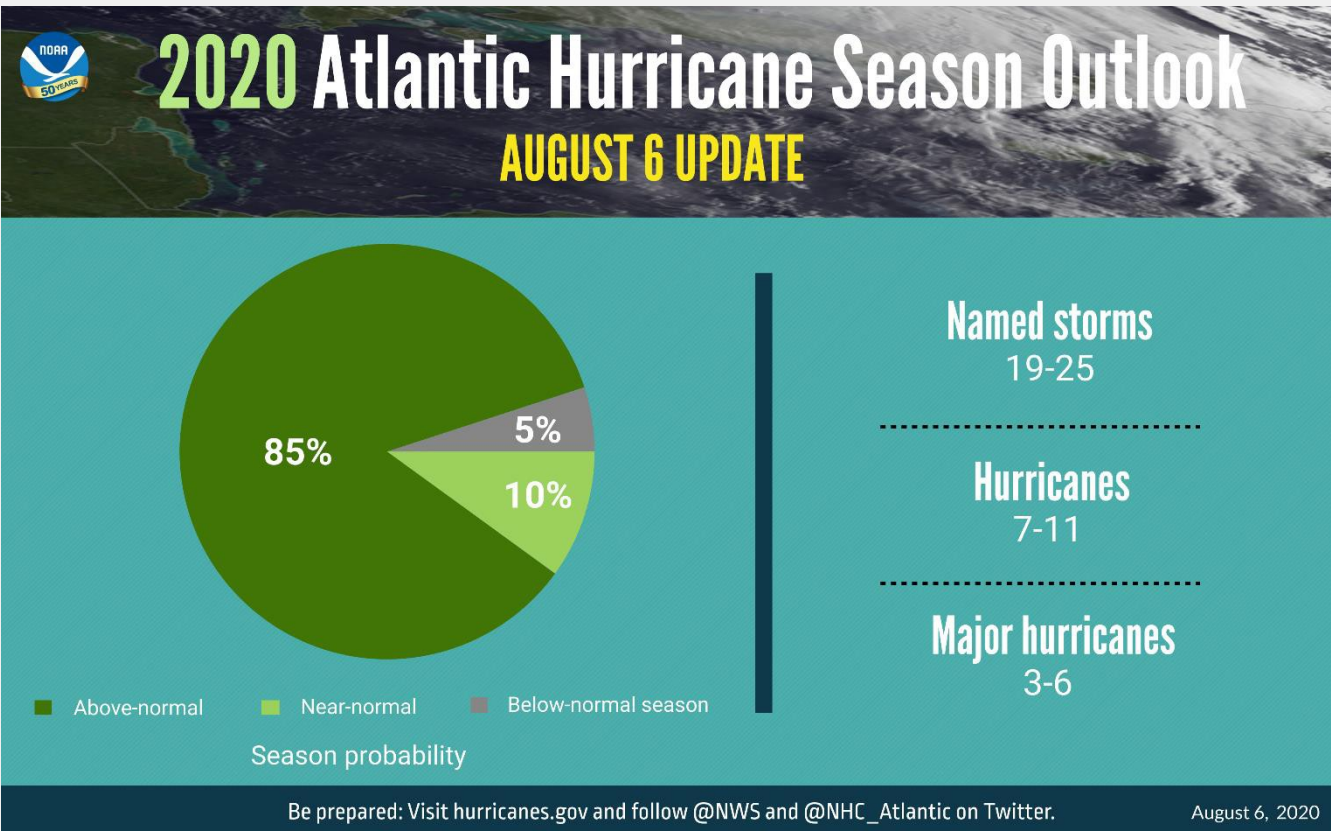
Data obtained from USDA National Agricultural Statistics Service weekly Crop Progress reports.



IMPACTS

CROP CONDITIONS - OTHER





Heading

- 2020 has had 9 named storms as of early August, compared to an average of 2.
- An average year has 12 names storms, 6 of which become hurricanes, and 3 of which become major hurricanes (Category 3, 4, or 5).

Conditions Favoring Development

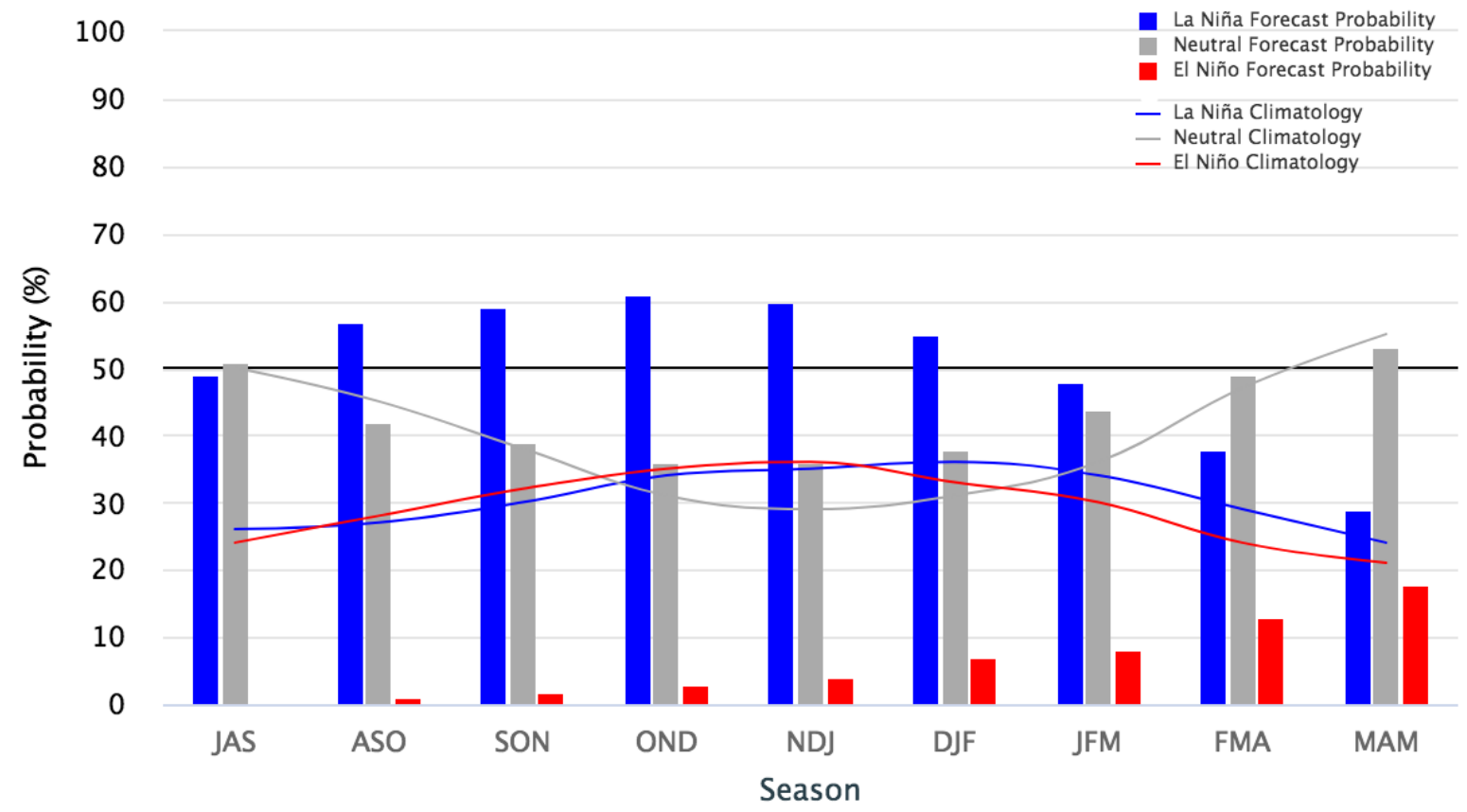
- Warmer-than-average sea surface temperatures in the tropical Atlantic Ocean and Caribbean Sea
- Reduced vertical wind shear
- Weaker tropical Atlantic trade winds
- An enhanced west African monsoon
- Warm phase of the Atlantic Multi-Decadal Oscillation

OUTLOOKS

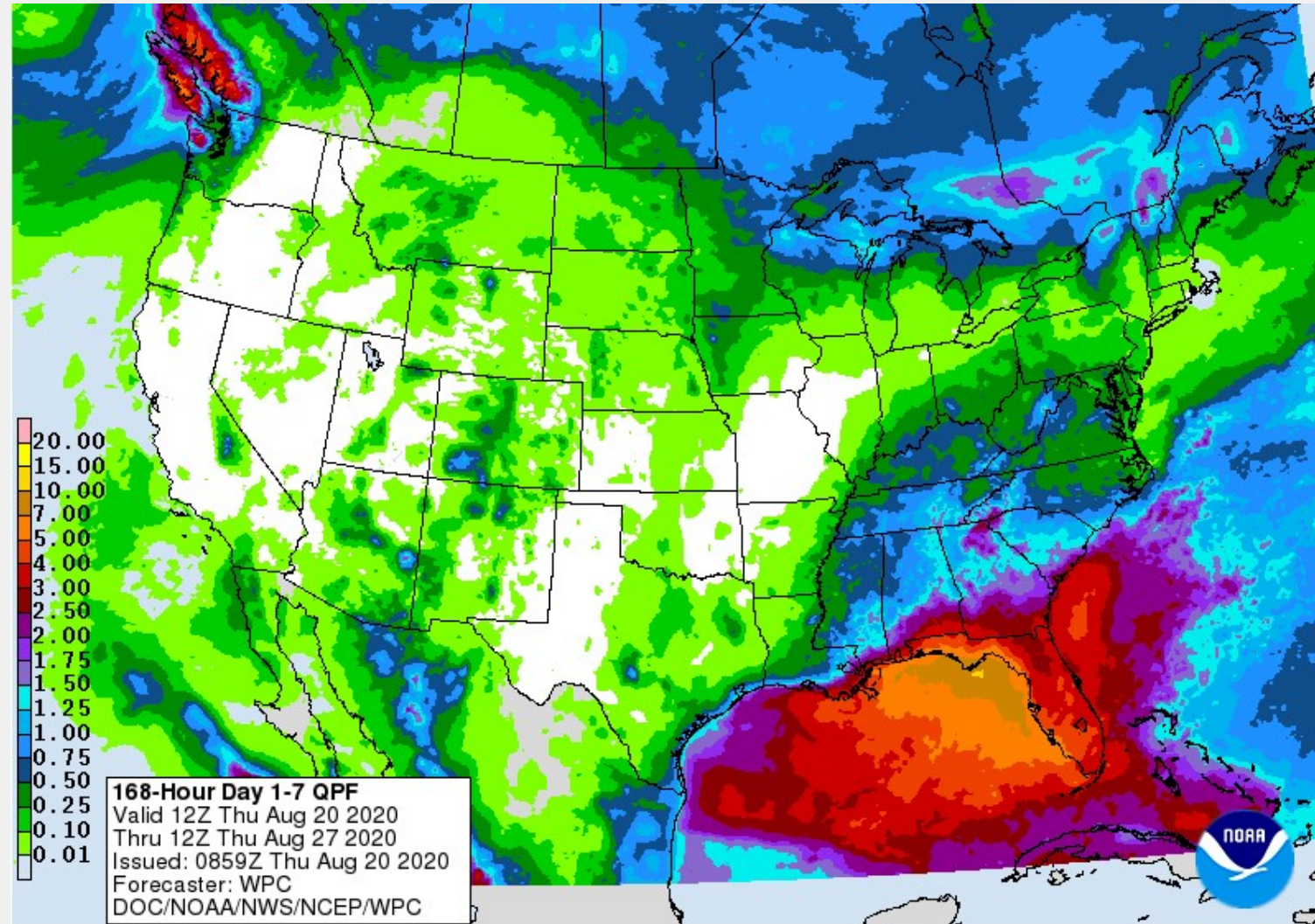
ENSO FORECAST

Early-August 2020 CPC/IRI Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: -0.5 °C to 0.5 °C

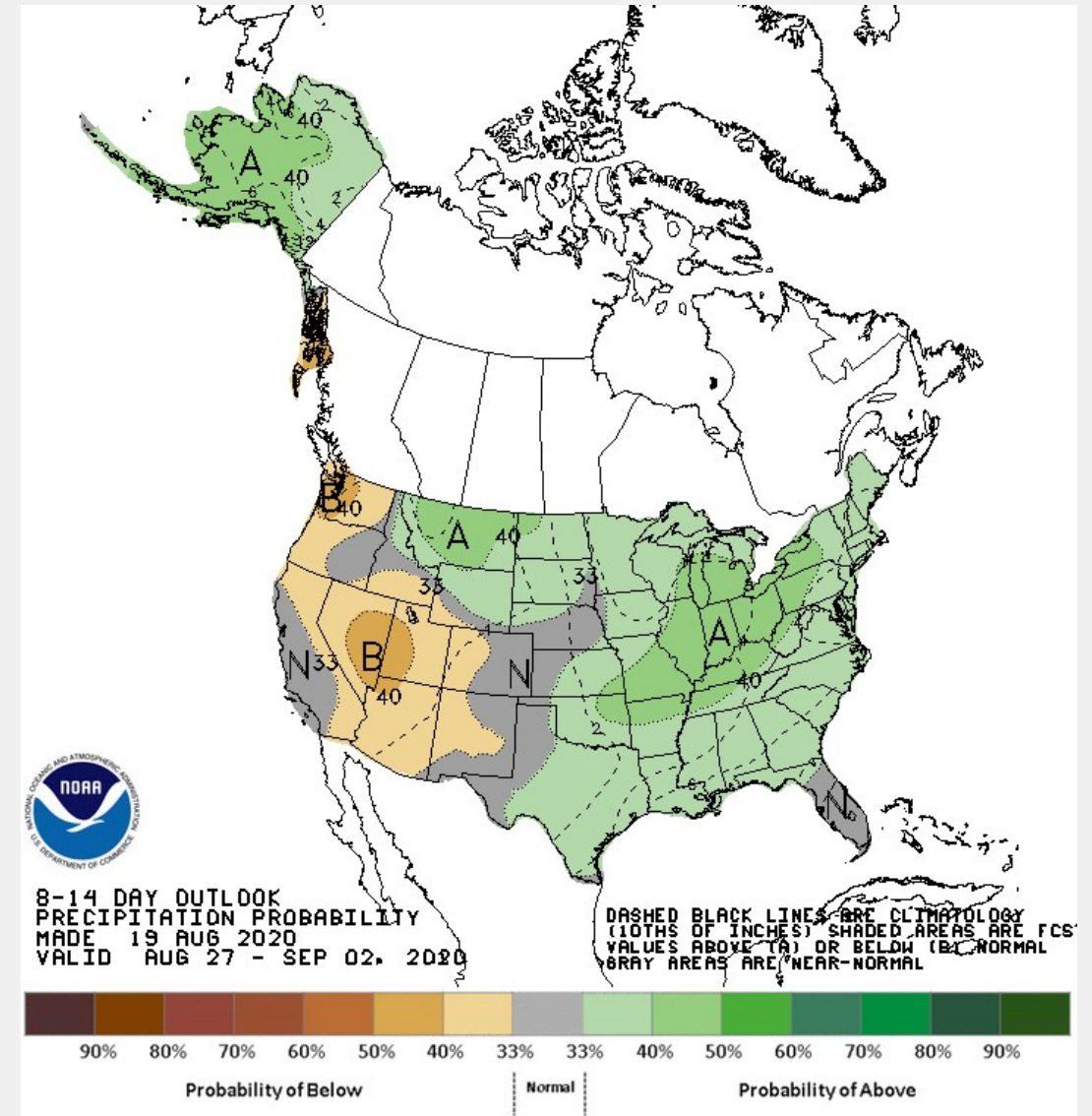
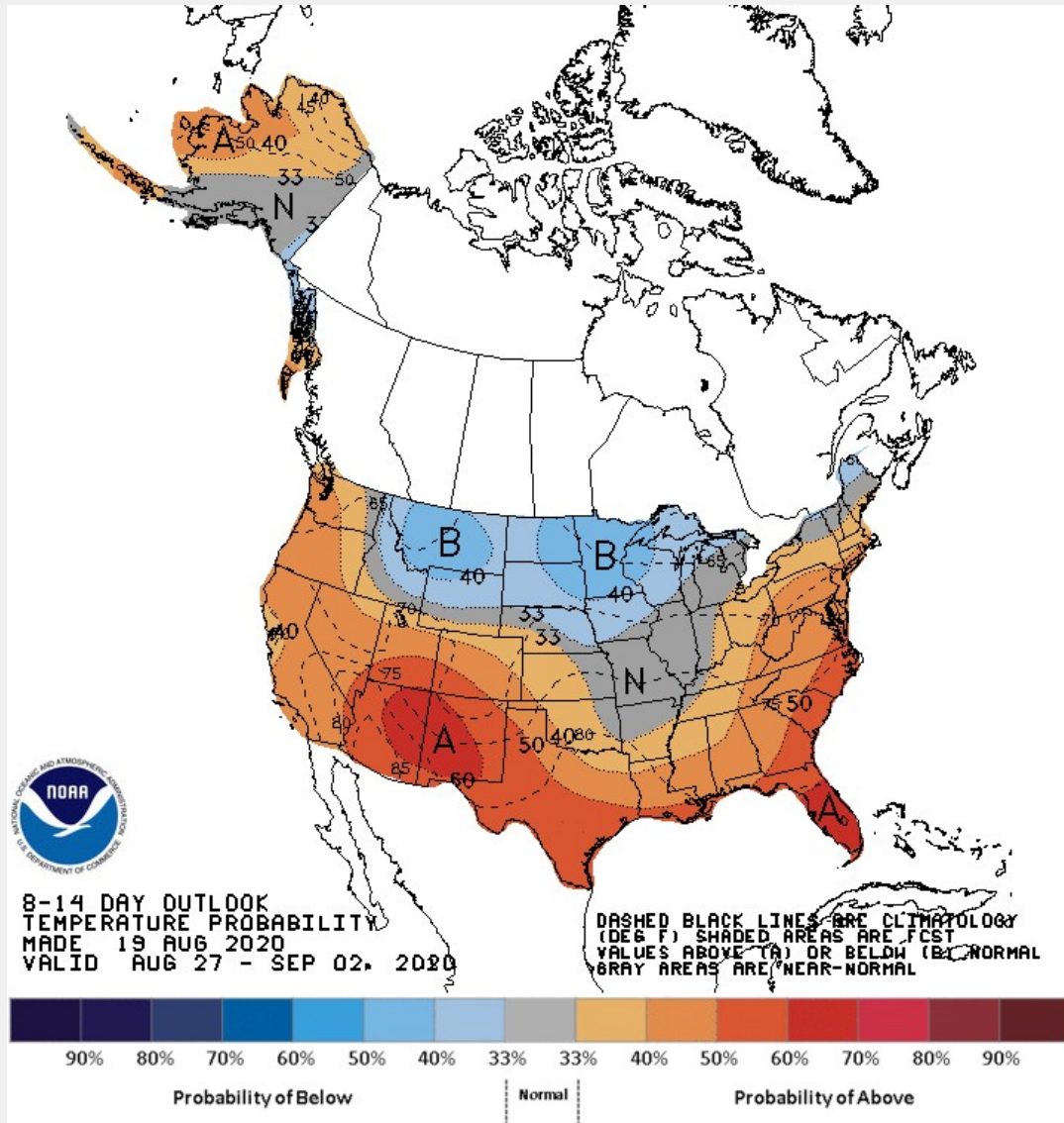


A La Niña Watch remains in effect, though the likelihood has decreased slightly.



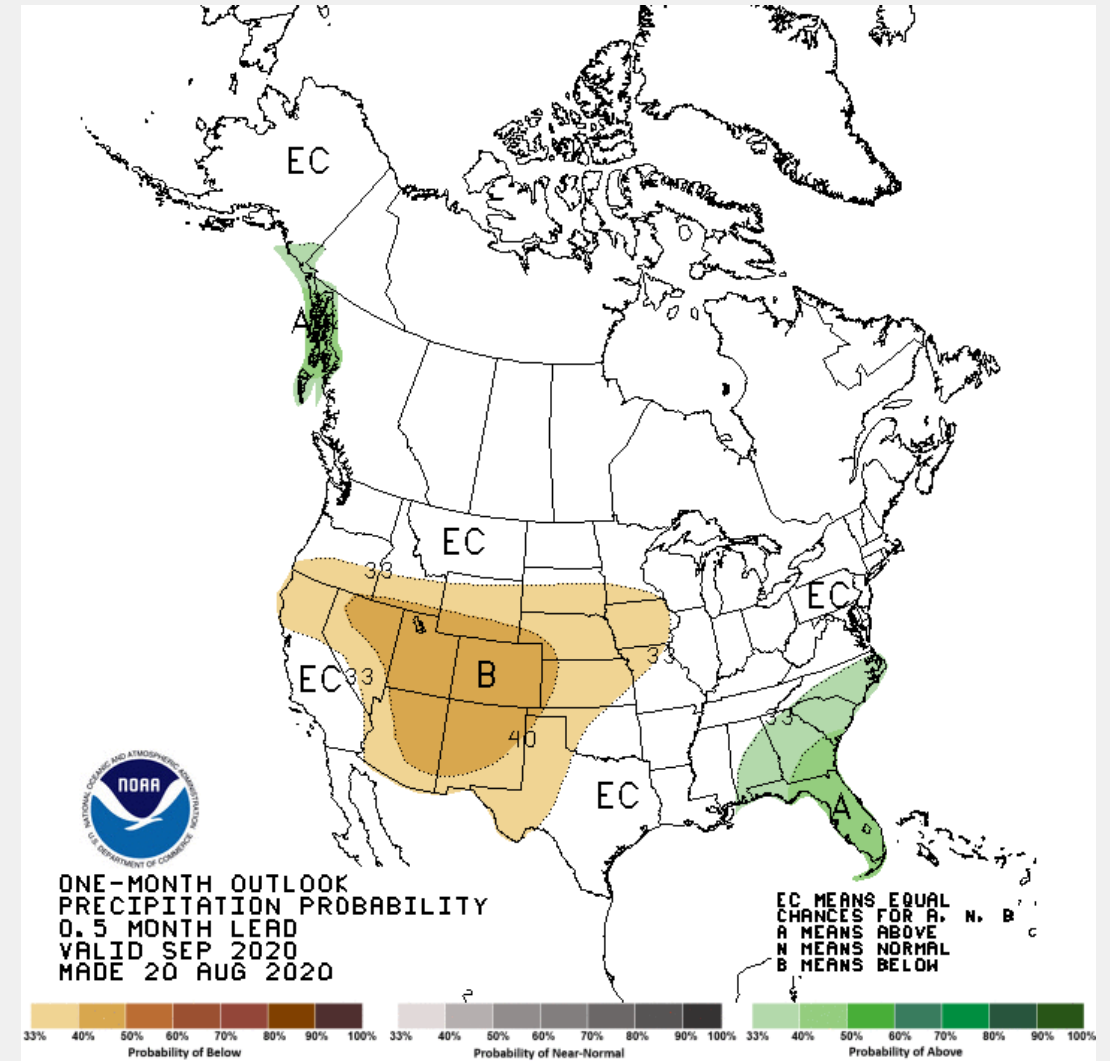
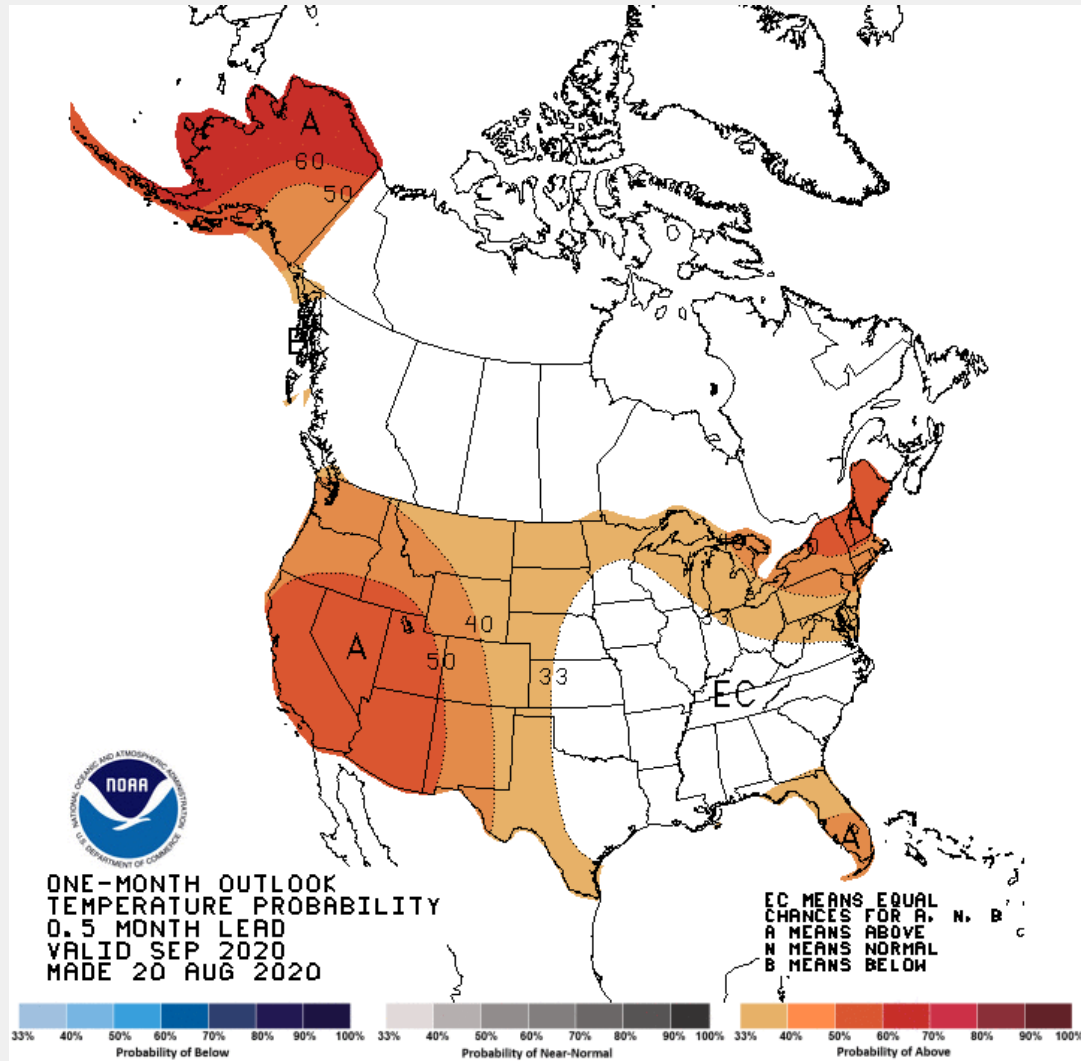
OUTLOOK

8 TO 14 DAYS



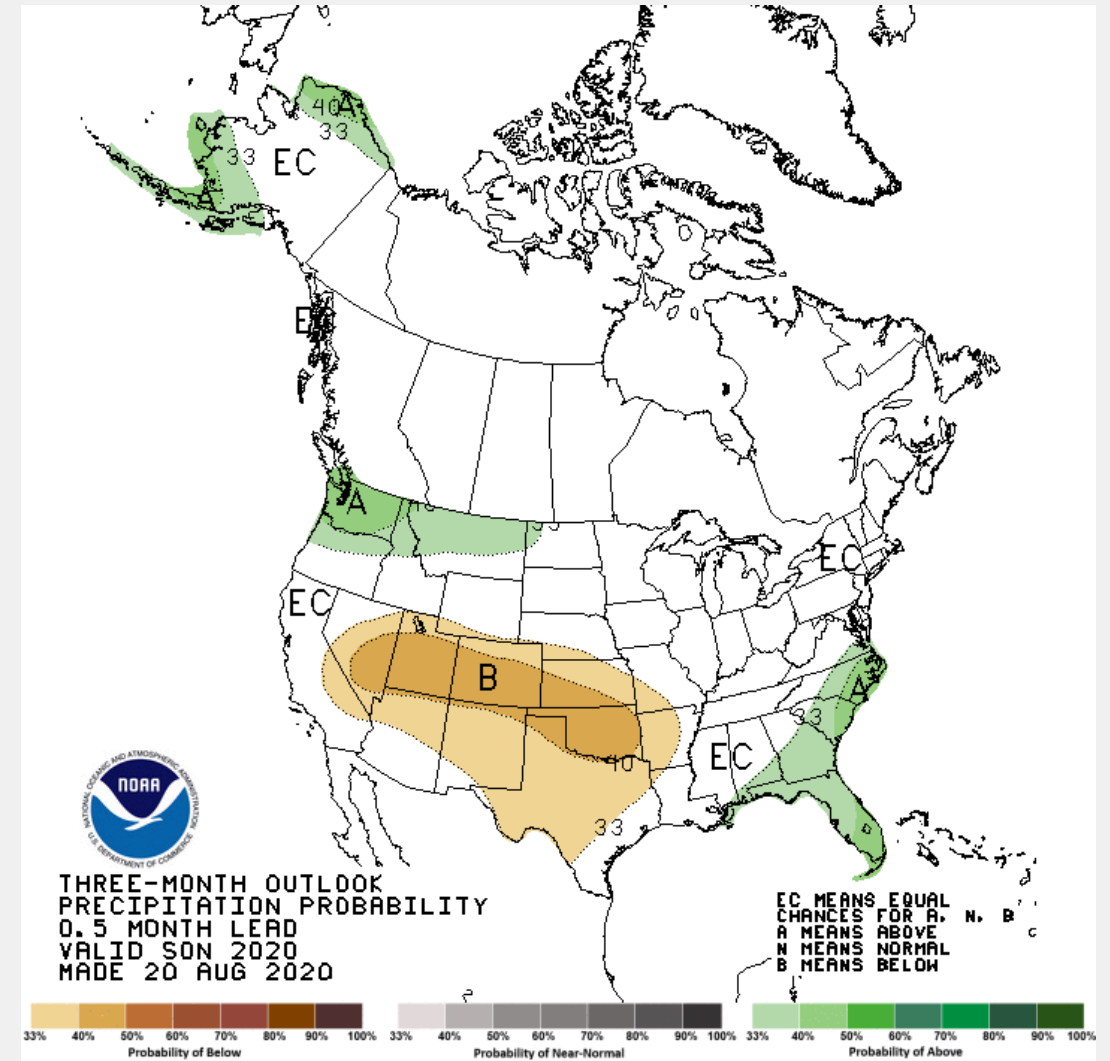
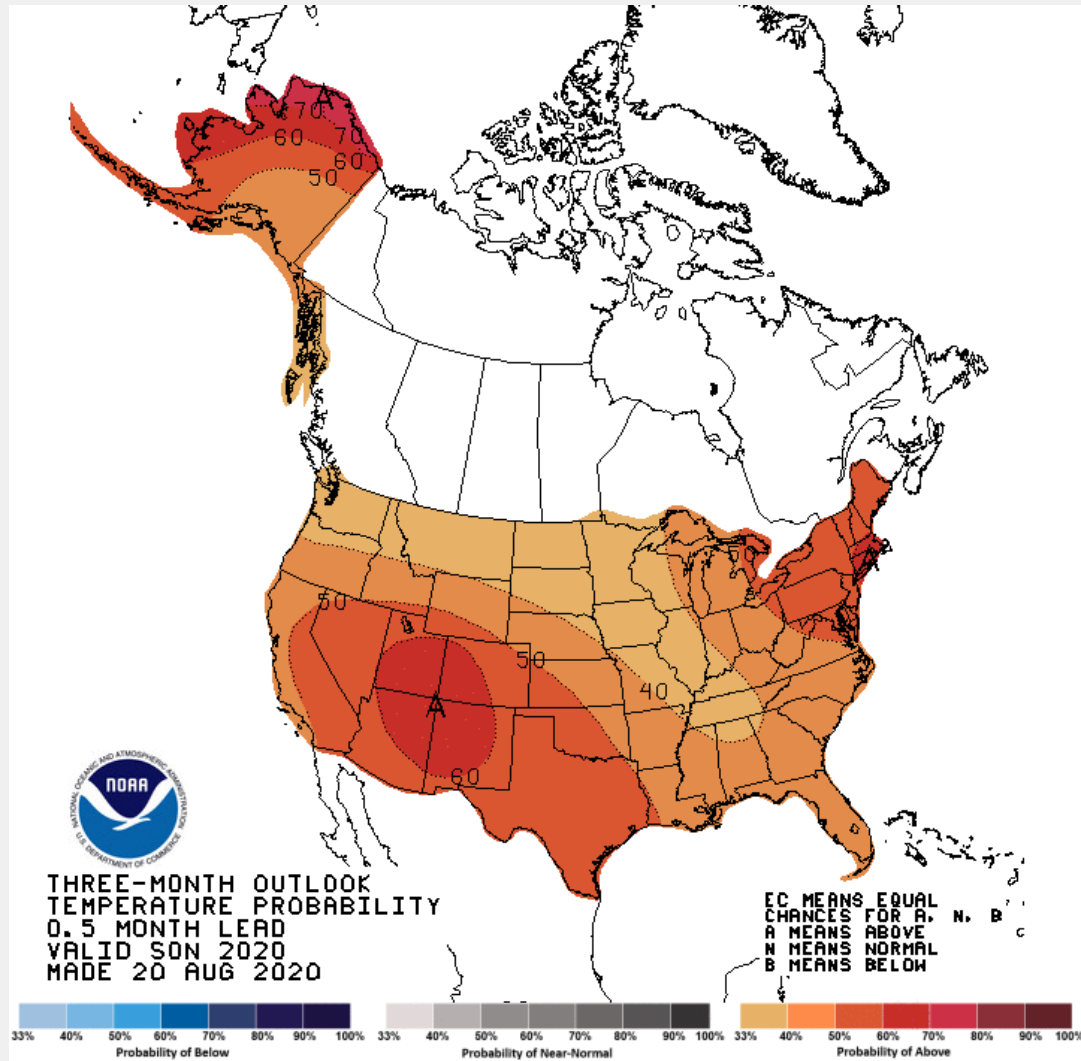
OUTLOOK

SEPTEMBER



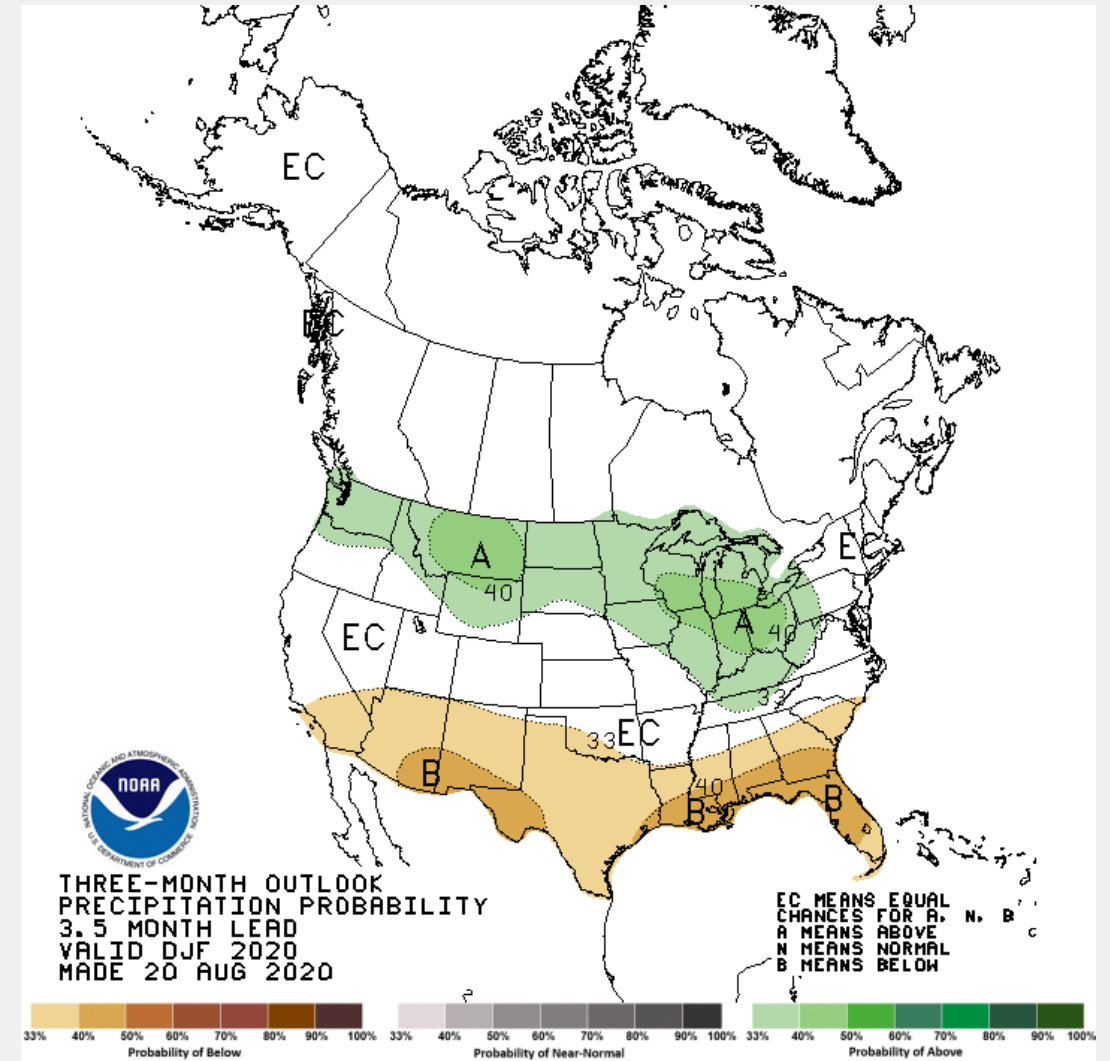
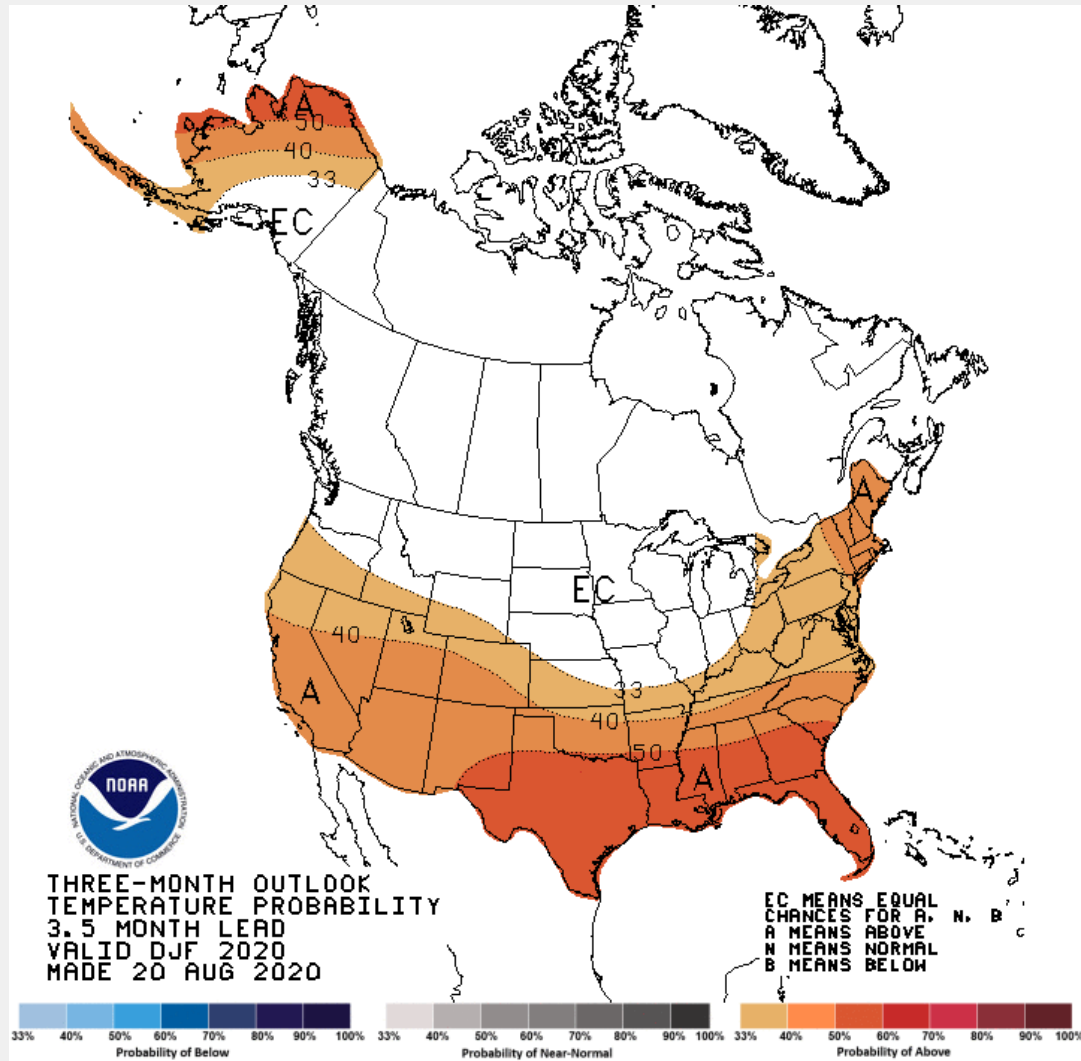
OUTLOOK

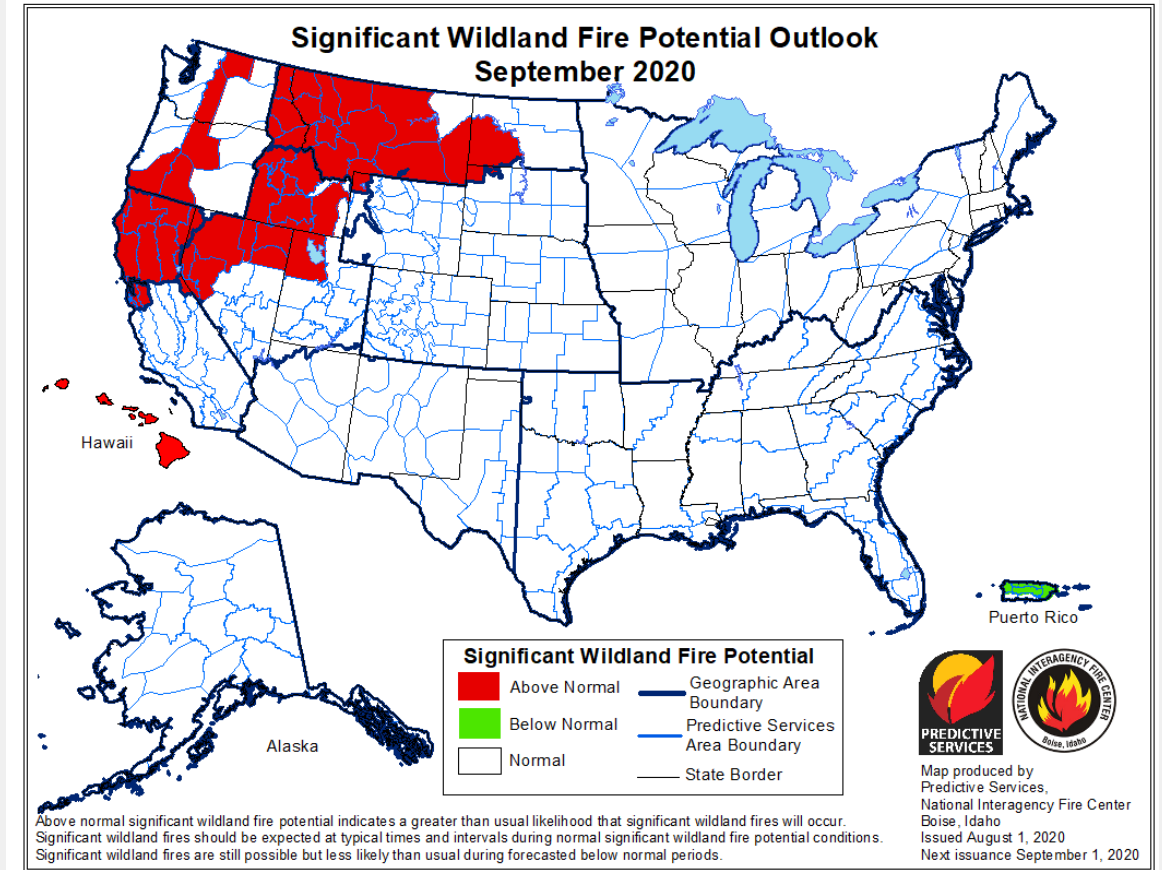
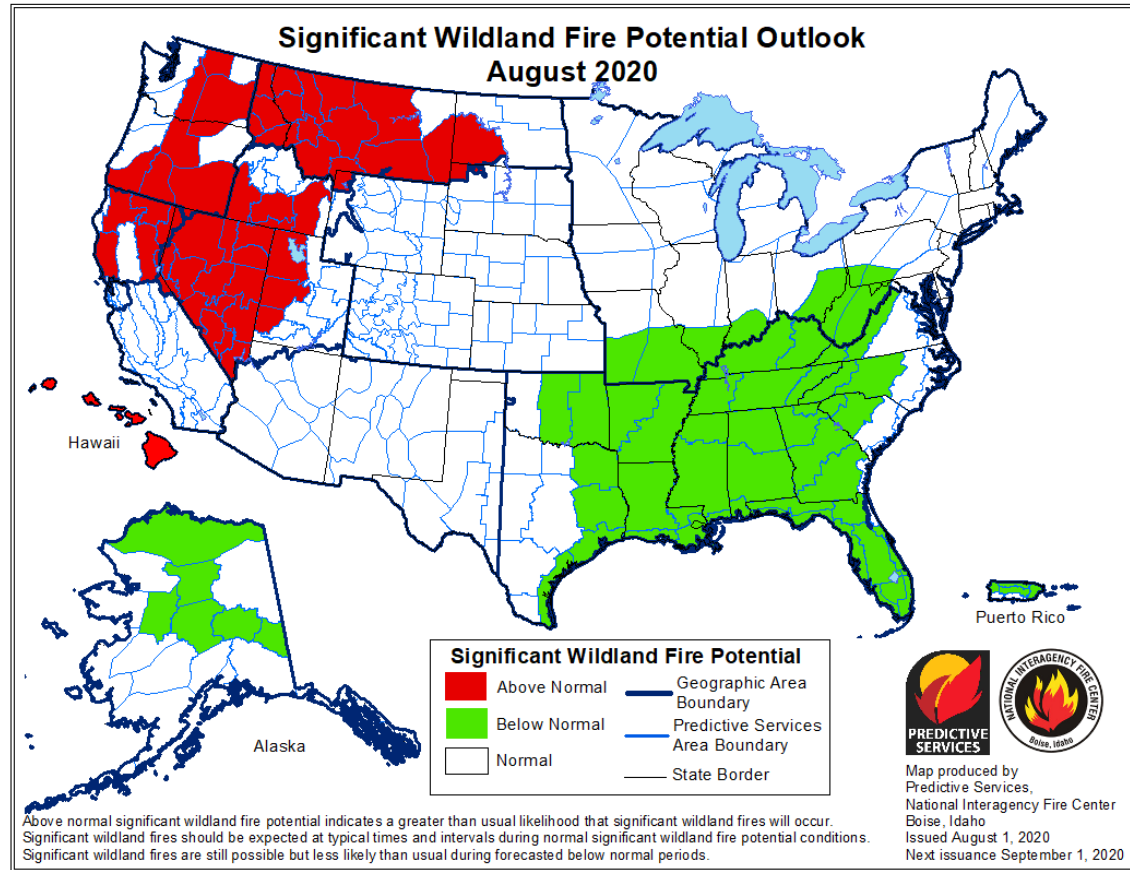
SEASONAL: SEP-OCT-NOV



OUTLOOK

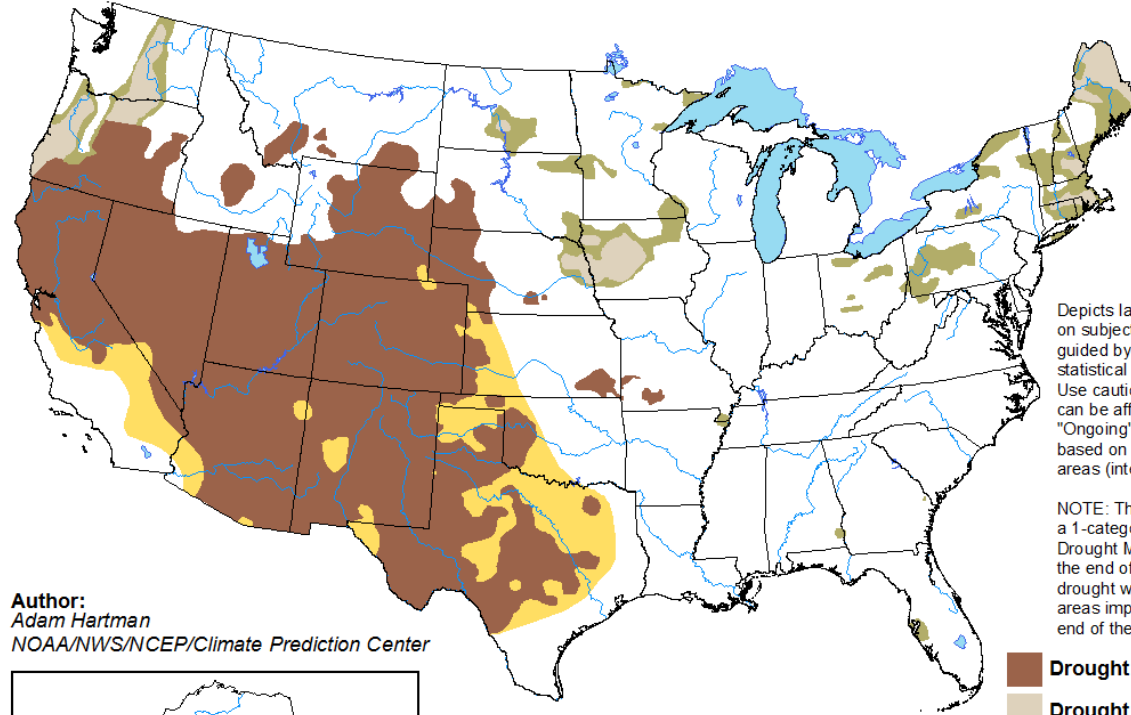
SEASONAL: DEC-JAN-FEB





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

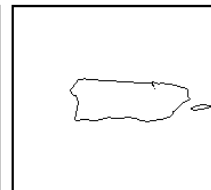
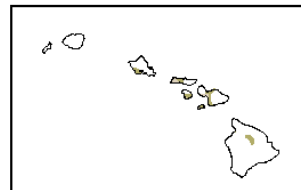
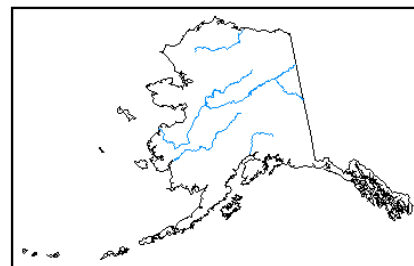
Valid for August 20 - November 30, 2020
Released August 20



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).

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



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

- Drought continues to expand in western areas and intensify in Iowa, while other areas in drought have shown improvement.
- Temperatures have continued to run well above normal, and combined with dry conditions, are increasing fire risk.
- A very active hurricane season is expected, with the potential to impact portions of the region.
- A La Nina Watch continues.
- Warmer and drier than normal conditions are likely to persist in western areas on a seasonal perspective, with drought persisting and expanding in area.
- Cooler and wetter than normal conditions are expected across much of the Midwest over the near term.

Presentations Archive

<http://www.hprcc.unl.edu>

<https://mrcc.illinois.edu/multimedia/webinars.jsp>

**NOAA's National Centers
for Environmental Information**

www.ncdc.noaa.gov

Monthly Climate Reports

www.ncdc.noaa.gov/sotc/

NOAA's Climate Prediction Center

www.cpc.ncep.noaa.gov

U.S. Drought Portal

www.drought.gov

National Drought Mitigation Center

drought.unl.edu

State Climatologists

www.stateclimate.org

Regional Climate Centers

www.hprcc.unl.edu

mrcc.illinois.edu

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