

MAC-T Monthly Call

Midwest Agriculture and Climate Team

Sept 18, 2019

For more information:

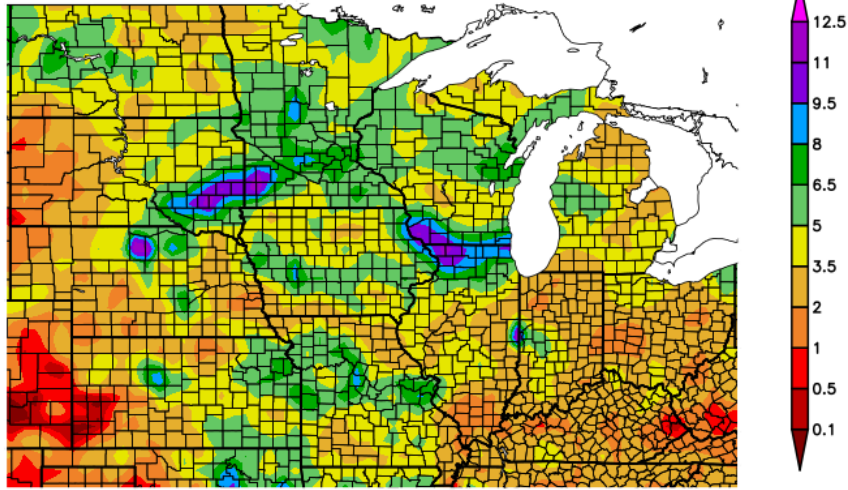
Dennis.todey@ars.usda.gov

Charlene.Felkley@ars.usda.gov



Midwest Climate Hub
U.S. DEPARTMENT OF AGRICULTURE

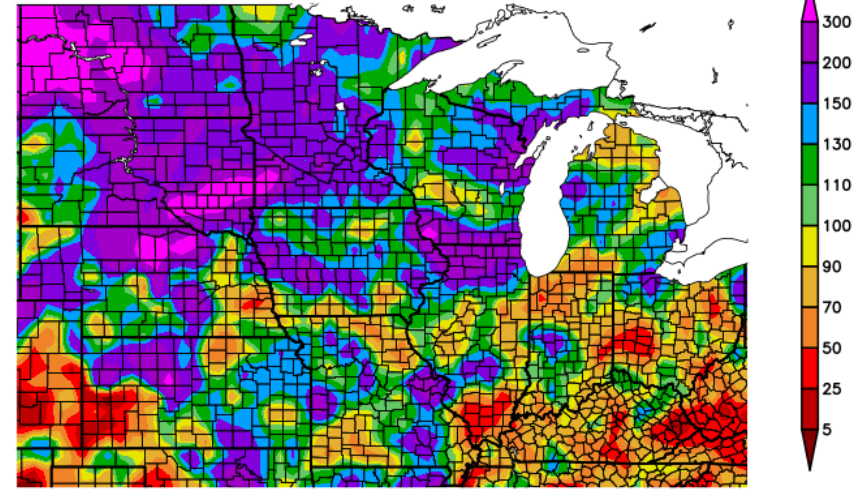
Precipitation (in)
8/18/2019 – 9/16/2019



Generated 9/17/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

Percent of Normal Precipitation (%)
8/18/2019 – 9/16/2019

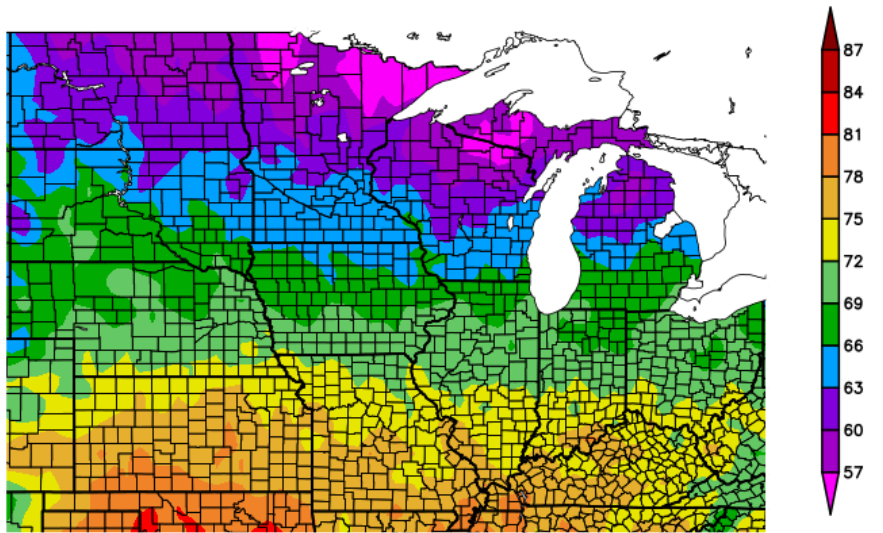


Generated 9/17/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

- Precipitation is returning to parts of the region
- Very wet across the northern plains – leading to flooding.
- Drying out in the southeast

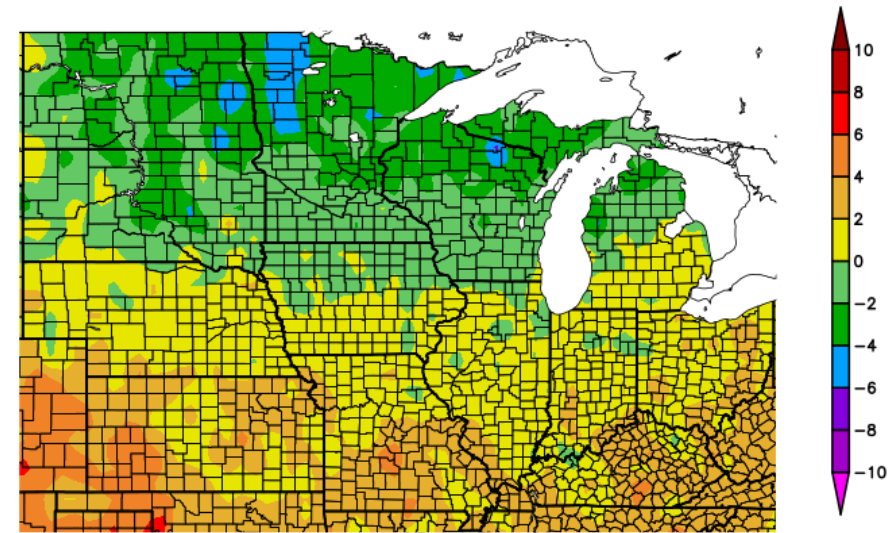
Temperature (F)
8/18/2019 - 9/16/2019



Generated 9/17/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Temperature (F)
8/18/2019 - 9/16/2019



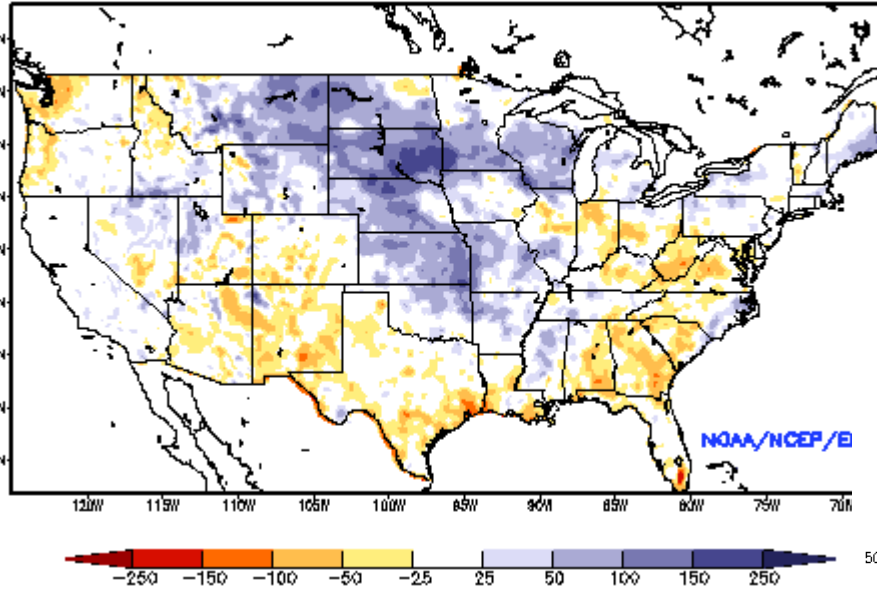
Generated 9/17/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

- Mainly cooler than average further north
- Warmer than average to the south

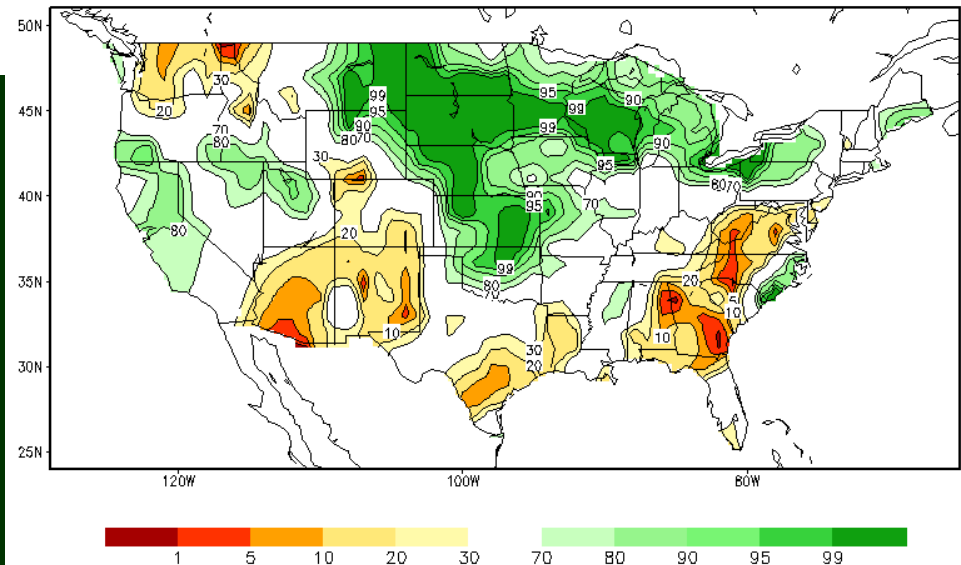
Soil Moisture

Ensemble-Mean - Current Total Column Soil Moisture Anomaly (mm)
NCEP NLDAS Products Valid: SEP 13, 2019



- Soils drying out from Iowa to Michigan and Ohio – some recent recovery.
- Historically wet in the plains with recent rainfalls adding to issues.

Calculated Soil Moisture Ranking Percentile
SEP 16, 2019

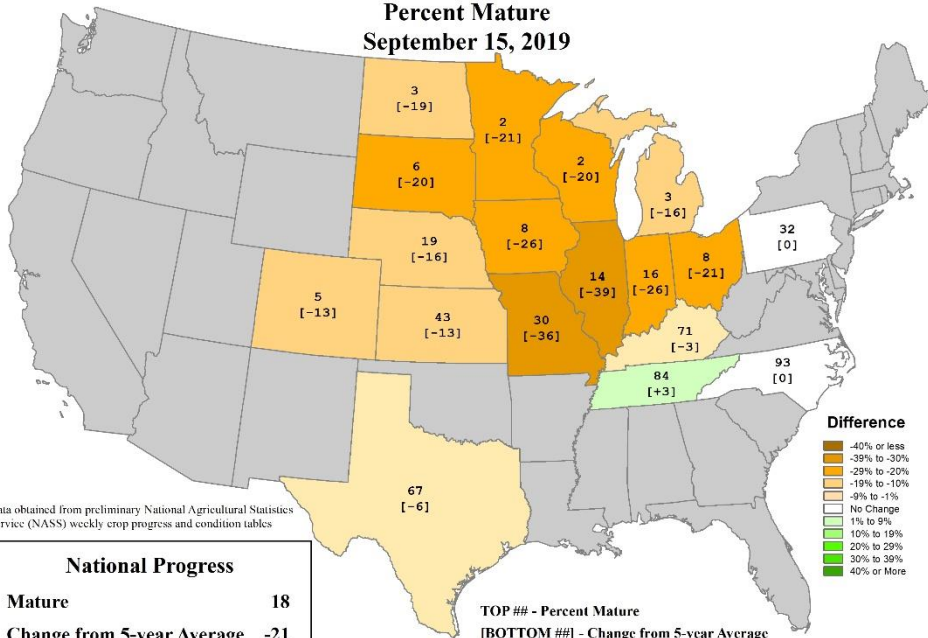


<http://www.emc.ncep.noaa.gov/mmb/nldas/drought/>

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

U.S. Corn Progress

Percent Mature
September 15, 2019



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

National Progress	
Mature	18
Change from 5-year Average	-21

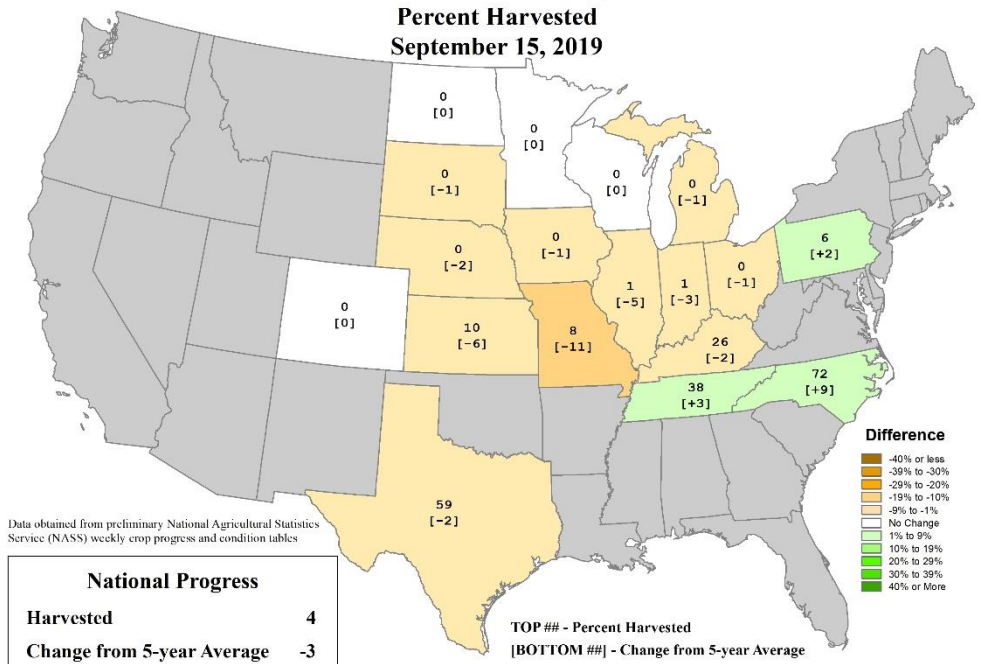
TOP ## - Percent Mature
[BOTTOM ##] - Change from 5-year Average



USDA NASS Crop Progress (through September 15)

U.S. Corn Progress

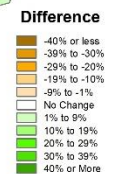
Percent Harvested
September 15, 2019



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

National Progress	
Harvested	4
Change from 5-year Average	-3

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

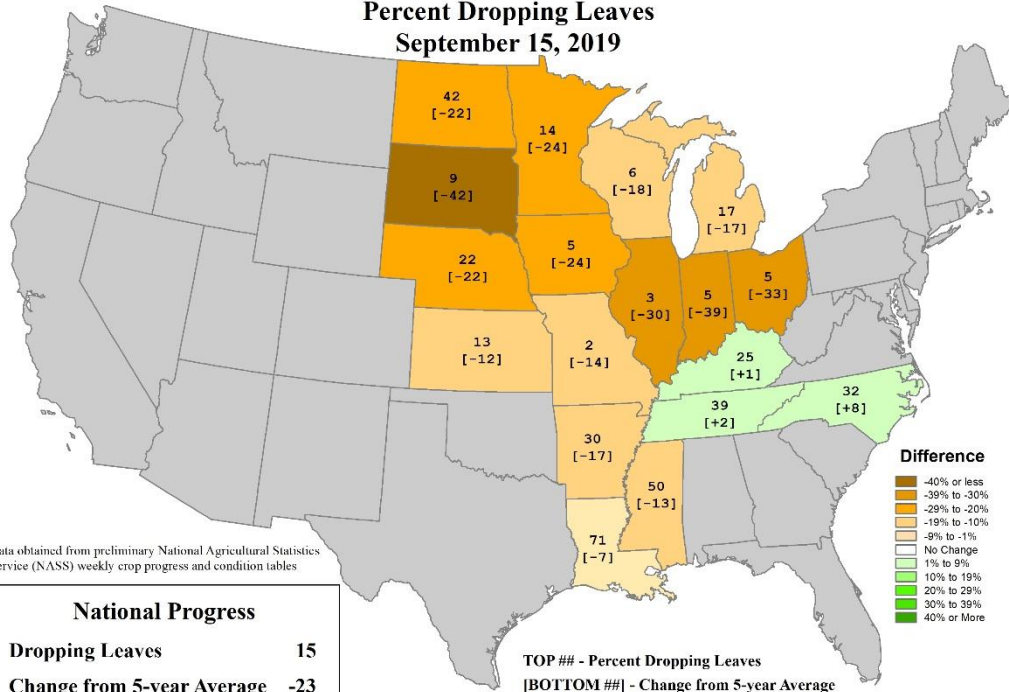


Corn progress through Sept. 15 mature (national 18% - 22%)

All states at least double digit behind – IL/MO more than 30% down.

U.S. Soybeans Progress

Percent Dropping Leaves
September 15, 2019



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

National Progress

Dropping Leaves	15
Change from 5-year Average	-23

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

USDA NASS Crop Progress (through September 15)

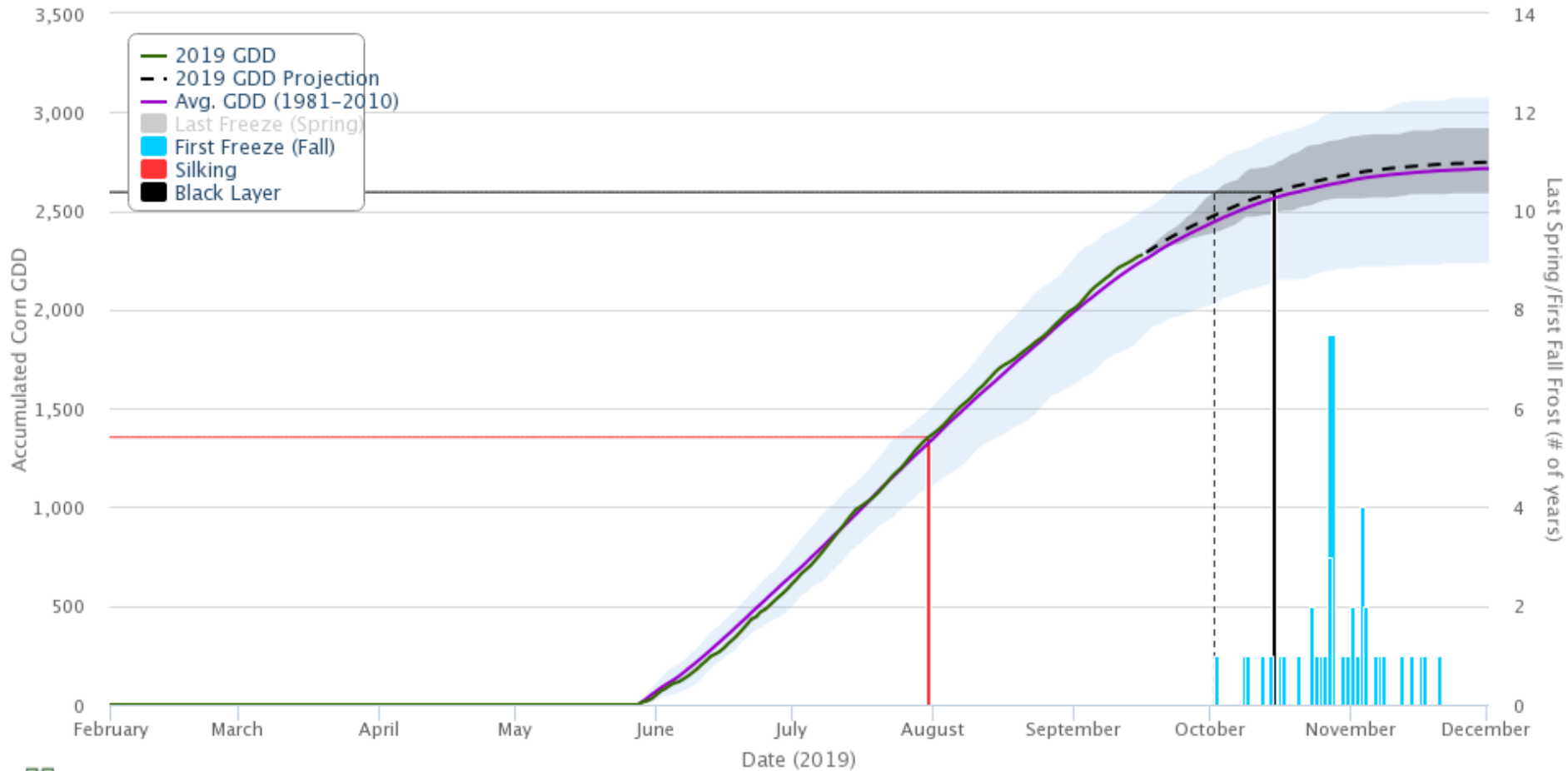
Soybean progress through Sept. 15 dropping leaves (national 15% -23%).

All states at least double digit behind – IL-OH more than 30% down. SD 42%

GDD Progress

Corn Growing Degree Day Tool

Location: 41.14, -86.31 in Fulton Co., IN, Start Date: May 28, Maturity Days: 108, Freeze Temp: 28°F, Variation: All Years



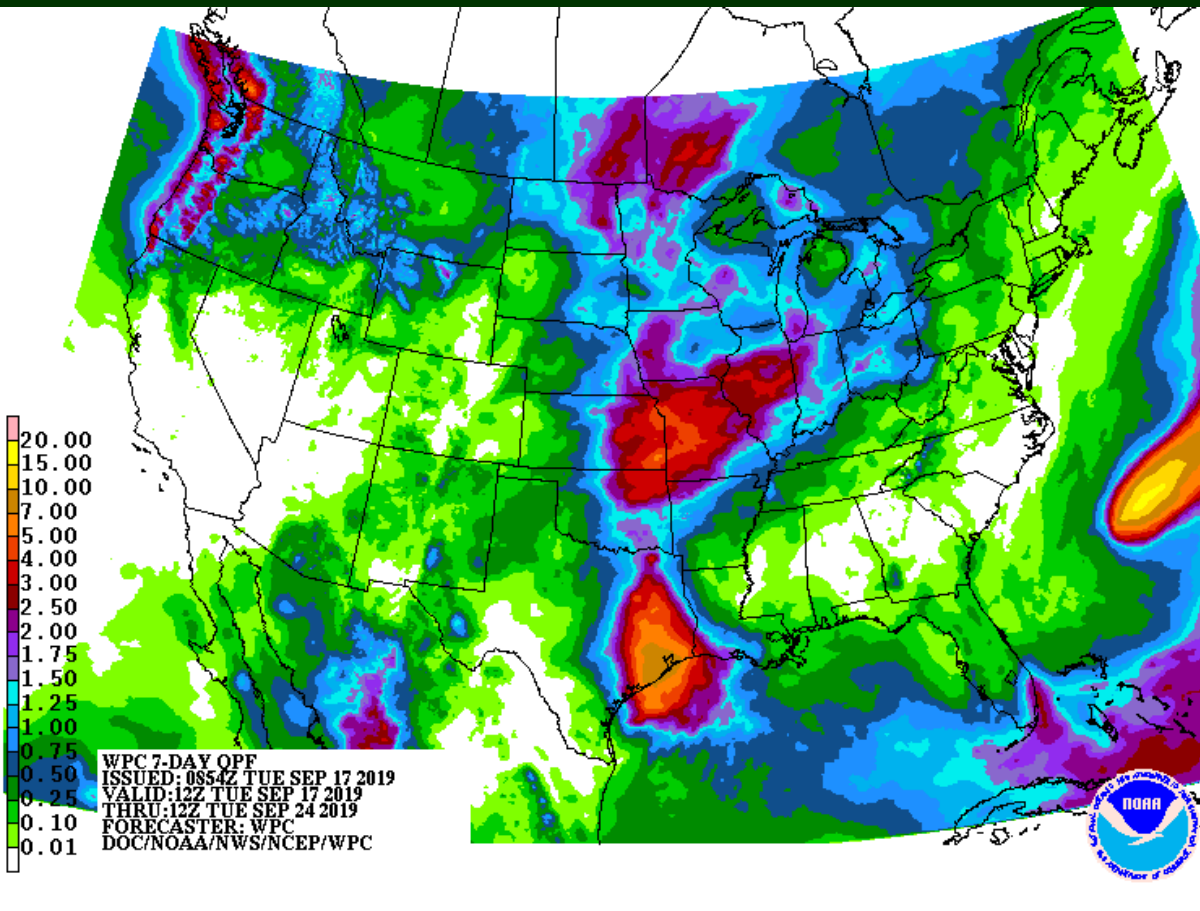
GDD Base 50/86 (degrees F); Created: 09/17/2019

- Reaching end of growing season needing to put GDDs behind before freeze.

Assorted AG Issues

- Dry areas eastern Corn Belt - probably some yield loss.
- May have helped shut down some crops early
- Very wet conditions SD-NE-MN leading to flooding and field inundation
- Will slow harvest more – many acres may have to wait for frozen soils or not even be harvested at all.
- Corn and beans making progress to maturity – warm temps helping. Need to get several more weeks in before a freeze to cover much of the region.
- Recent heat pushing through grain fill. May have lost some yield, but helping with maturity.

1-7 Day Precip



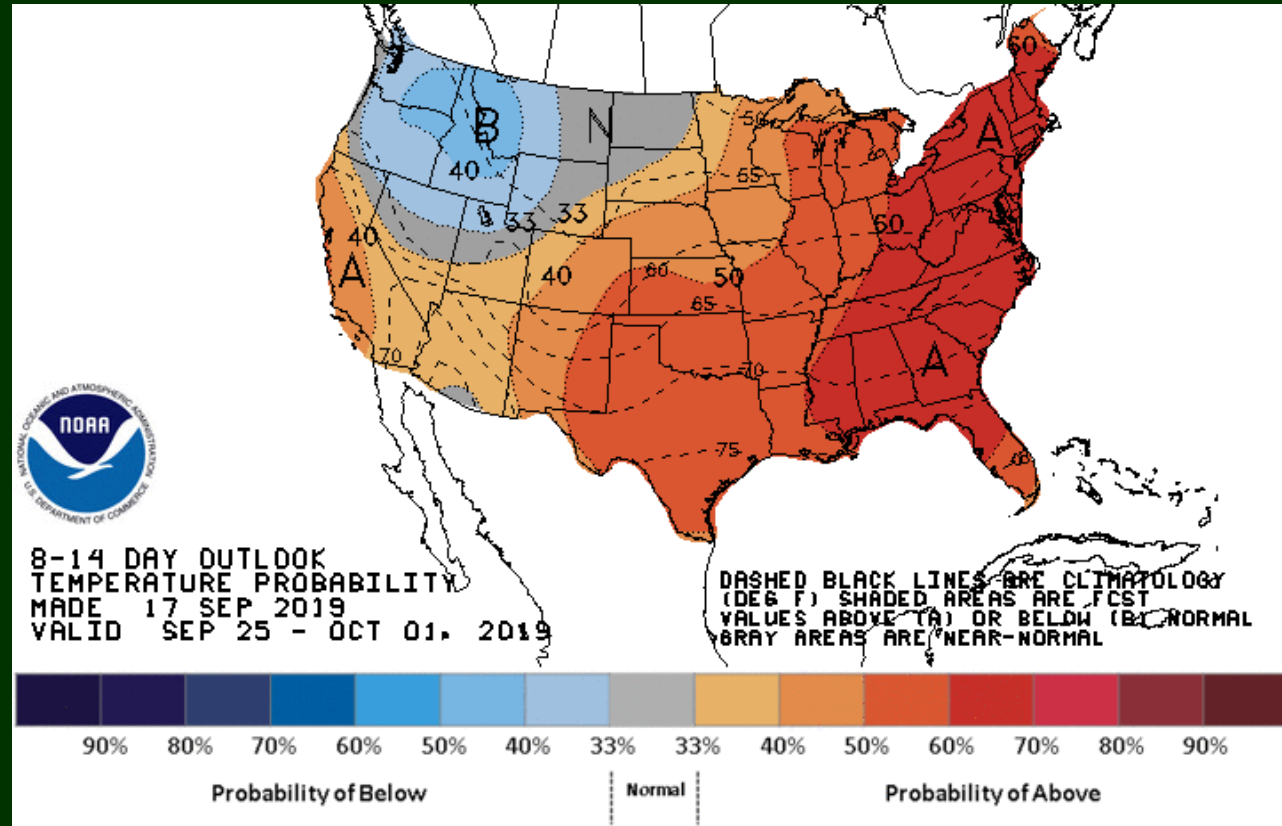
Pattern stays active for the next week. Could see some 1-2"+ amounts.

Too late for most crops. Soils can take more precip at this time – eastern Corn Belt.

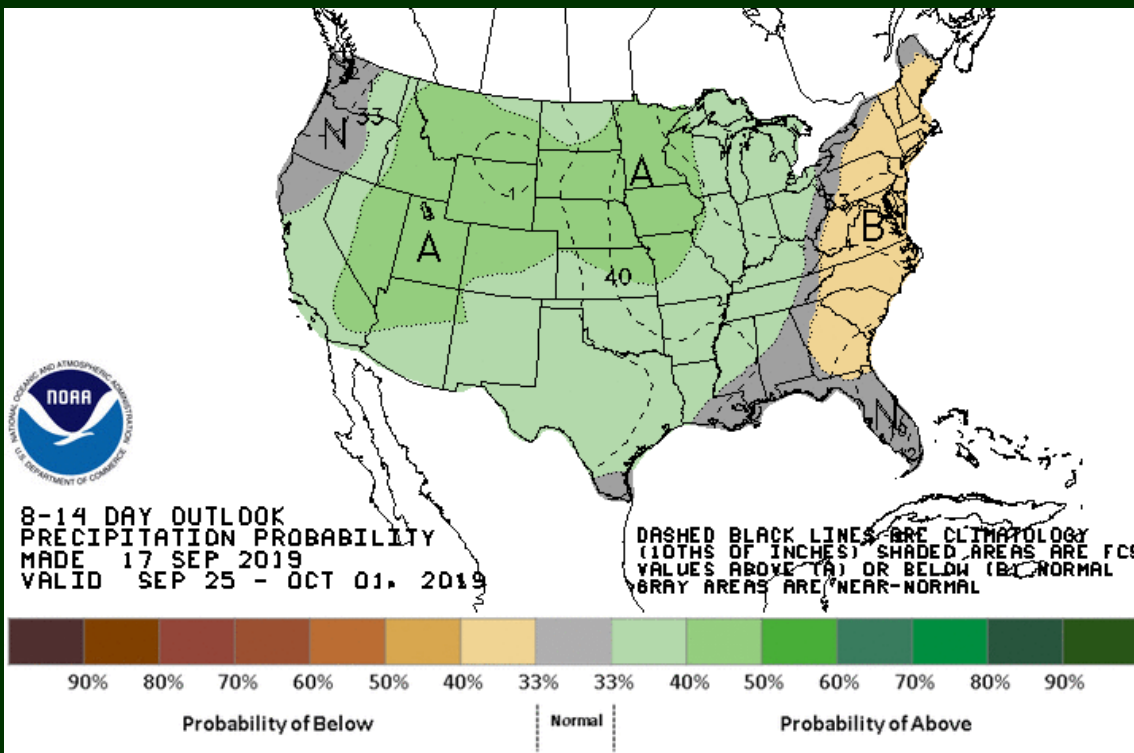
Western Corn Belt needs no more rain.

Temperature Outlook

- Warmer than avg. conditions fairly likely through the end of the month. Lesser chance in nrm plains.
- Will help continue with crop development.



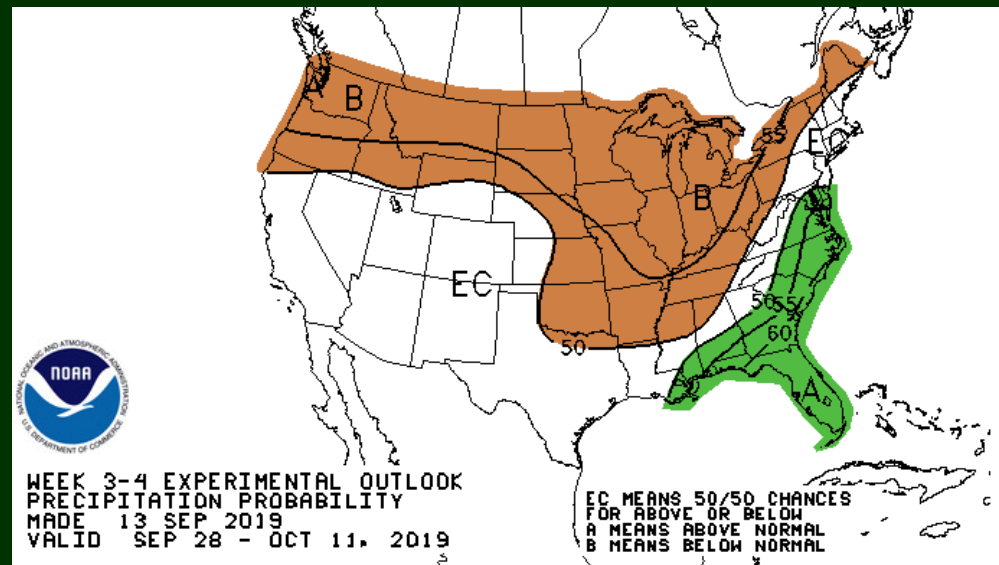
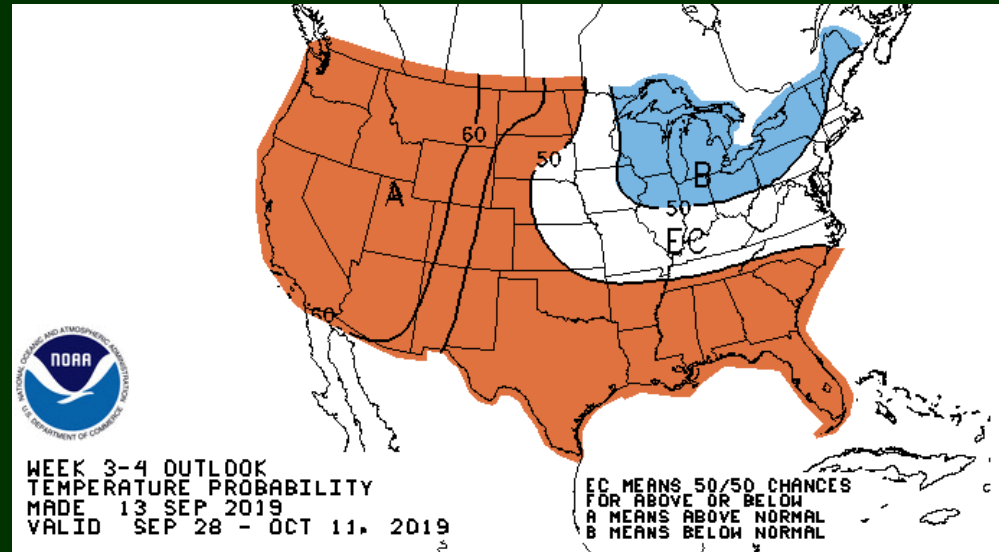
Precipitation Outlook



- Patterns continues to stay active also through the end of the month.
- Not a good situation for nrn plains.

1-Month Outlook

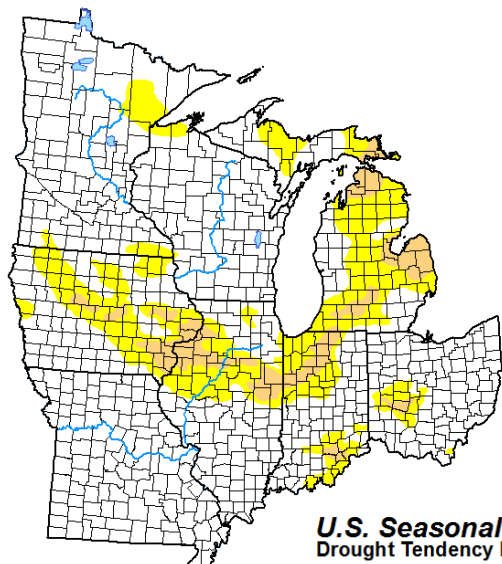
- *Will be updated tomorrow (Thursday)*
- 3-week outlook (from Friday)
- Decent chance of drying out into early October.
- Some cooler conditions possible Great Lakes.



Drought in the Midwest

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

U.S. Drought Monitor USDA Midwest Climate Hub



September 10, 2019

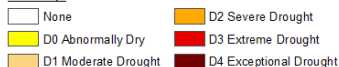
(Released Thursday, Sep. 12, 2019)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	76.76	23.24	5.80	0.00	0.00	0.00
Last Week 09-03-2019	74.47	25.53	5.47	0.00	0.00	0.00
3 Months Ago 06-11-2019	97.88	2.12	0.00	0.00	0.00	0.00
Start of Calendar Year 01-01-2019	99.21	0.79	0.00	0.00	0.00	0.00
Start of Water Year 09-25-2018	79.61	20.39	9.31	1.86	0.40	0.01
One Year Ago 09-11-2018	78.75	21.25	9.39	1.87	0.40	0.01

Intensity:



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

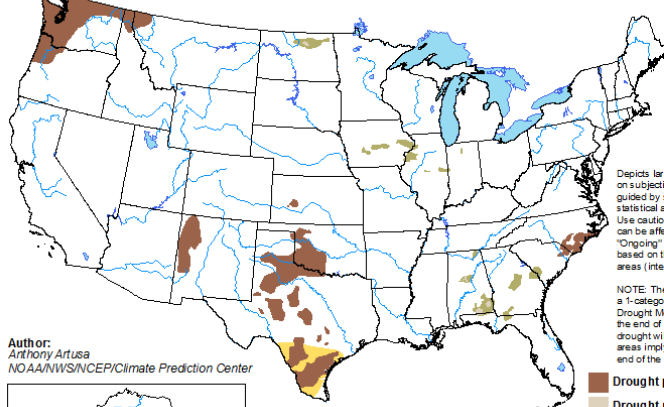
Author:

David Miskus
NOAA/NWS/NCEP/CPC

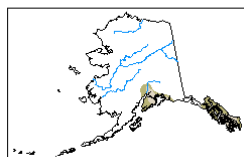
U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for August 15 - November 30, 2019

Released August 15



Author:
Anthony Artusa
NOAA/NWS/NCEP/Climate Prediction Center



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).

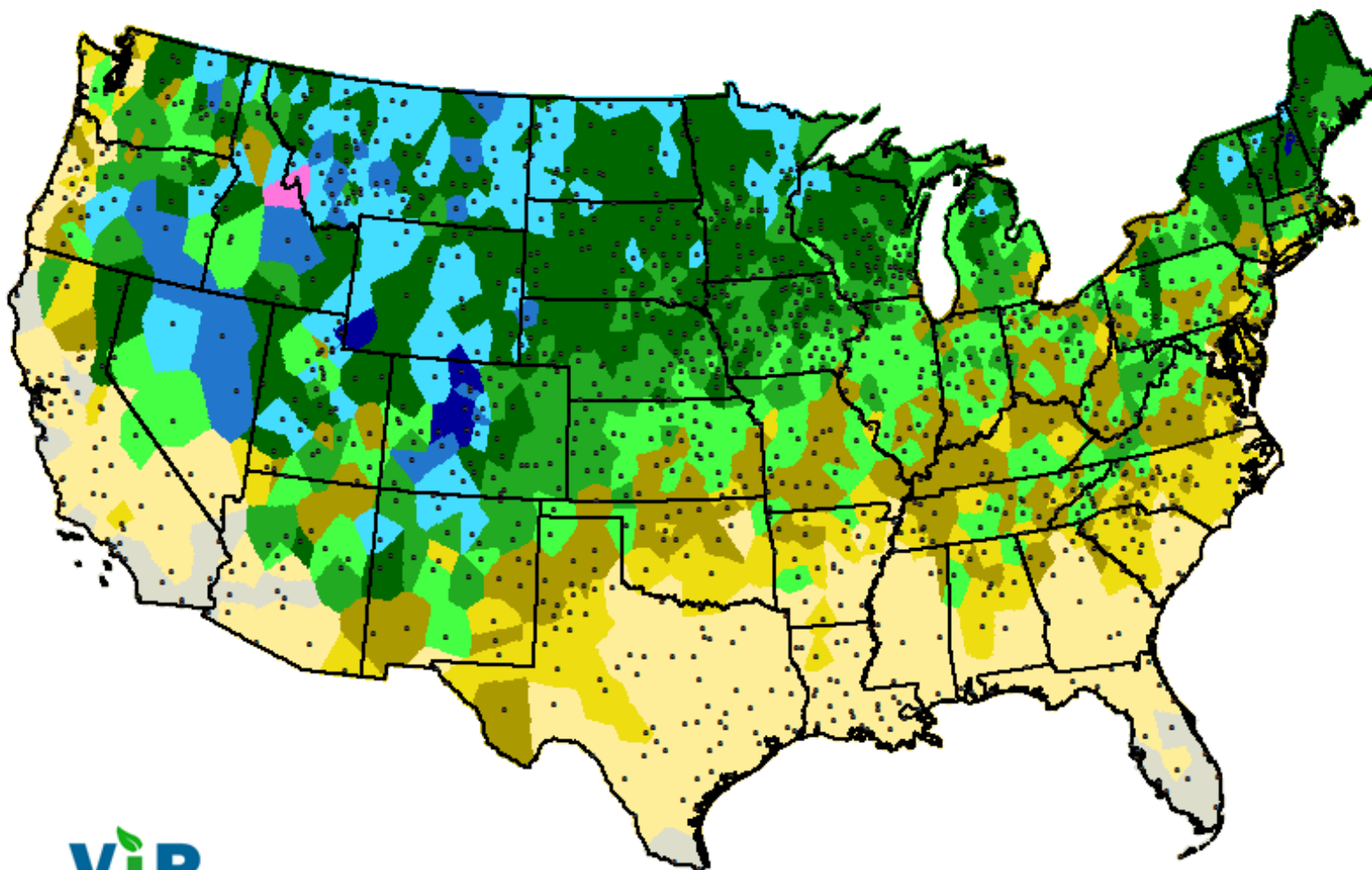
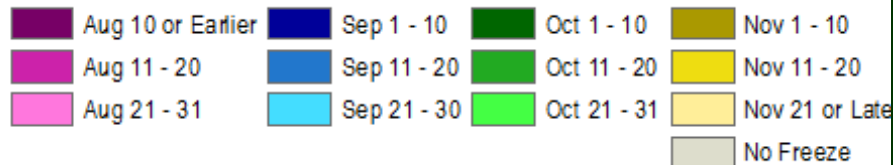
NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).



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

Widespread light to moderate rains (0.5-2 inches) fell across the western and northern sections of the Midwest as several frontal systems dove southeastward out of Canada. The heaviest rains (1.5-3.5 inches) were reported across western and northern Minnesota, while bands of scattered thunderstorms moved across parts of Iowa, southern Wisconsin, northern Illinois, and the UP of Michigan. In contrast, little or no rain fell across southern and eastern portions of the Midwest (southern Missouri and Illinois, most of Indiana, southern lower Michigan, and much of Ohio and Kentucky). Not surprisingly, some improvement was made where the greatest totals occurred that greatly reduced or alleviated short-term deficits. This included around Duluth, MN; southwestern, central, and northeastern Iowa; northern Illinois; and the eastern UP of Michigan. Dry weather meant deterioration, and this occurred in northwestern Indiana and southern lower Michigan (D1 expansion); new D1 areas in southwest Ohio, southern Indiana, and central Kentucky; and D0 increase across central and eastern Kentucky. 60-day shortages reached 3-6 inches in the new D1 areas, while most of the D0 areas only received 50-70% of normal precipitation. Kentucky had the highest percent short to very short topsoil moisture value (61%), with Iowa, Michigan, Illinois, Indiana, and Ohio not far behind (between 30-42%). Although the dry weather is good for crop maturation and corn dry down, the wet spring delayed planting, so some crops may be behind schedule and could use rain for filling (mainly soybeans).

Climatological Date of Median First 28°F Freeze
For years 1980-81 to 2009-10
Freeze year beginning July 1st
Median defined as the 50th Percentile

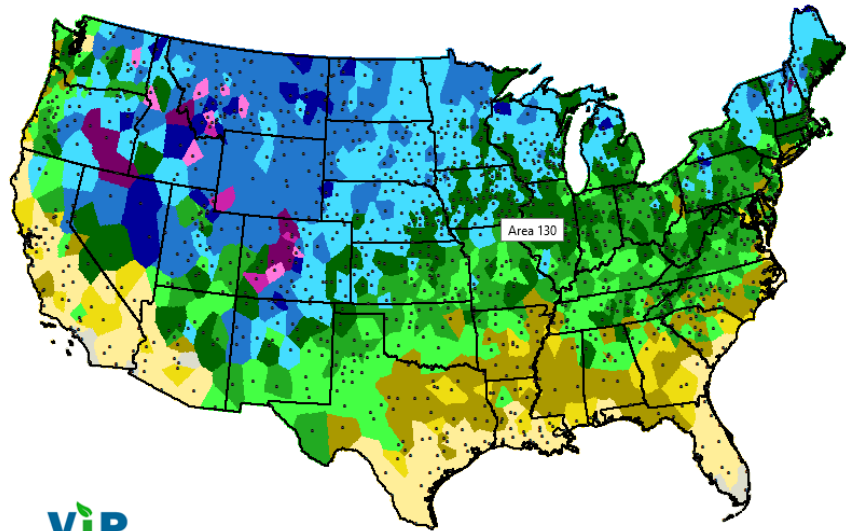
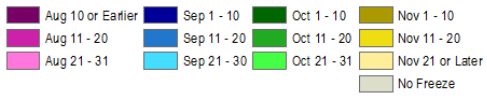


Climatological Date of Early First 28°F Freeze

For years 1980-81 to 2009-10

Freeze year beginning July 1st

Early defined as the 10th Percentile



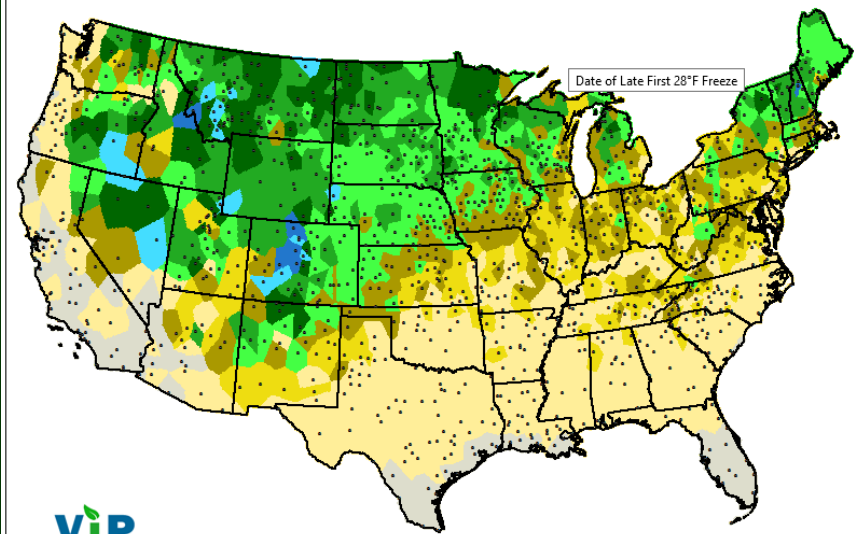
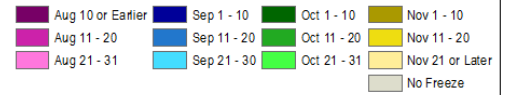
ViP
MIPCC
Vegetation Impact Program

Climatological Date of Late First 28°F Freeze

For years 1980-81 to 2009-10

Freeze year beginning July 1st

Late defined as the 90th Percentile

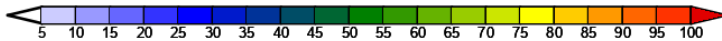
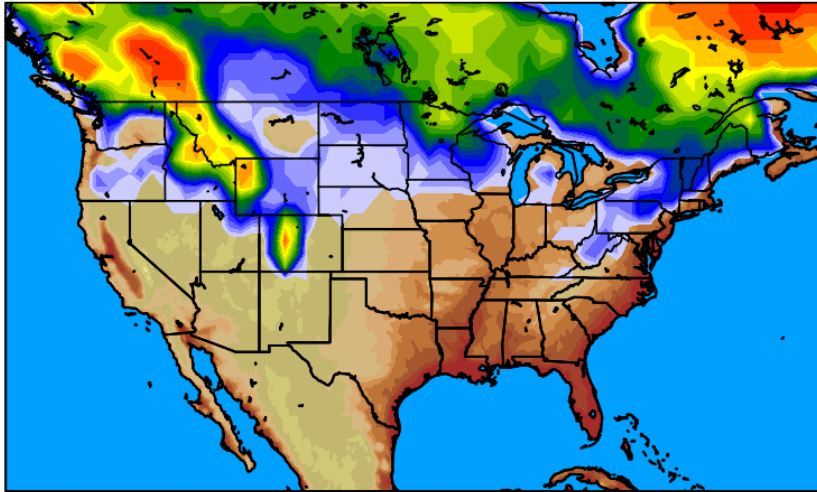


ViP
MIPCC
Vegetation Impact Program

Computer Model Forecast - Freeze

Latest Model Cycle Used: 00 UTC 17 Sep 2019

CFS 20-member Ensemble (00/06/12/18 UTC Control Runs - Last 5 Days)
Probability of a Daily Minimum Temperature < 32 F during Week 3 (%)
12 AM CST Tue, Oct 01, 2019 - 12 AM CST Tue, Oct 08, 2019

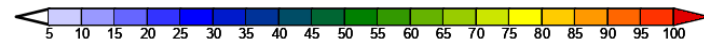
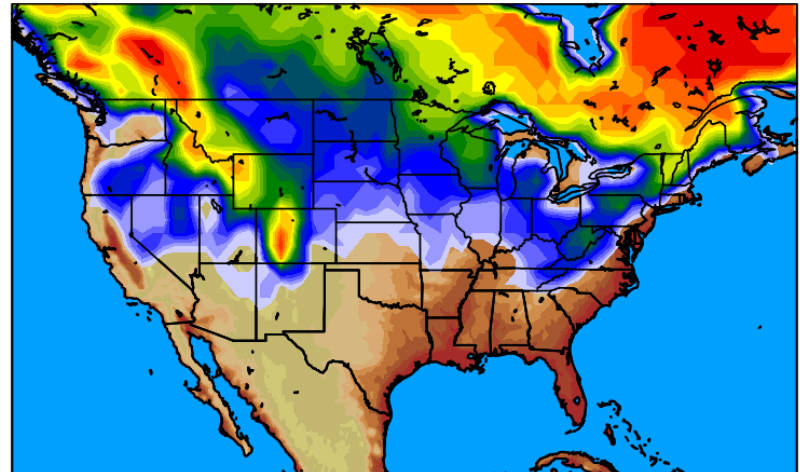


Being a little weather geeky looking at freeze chances.

Shows chance of being below freezing (according to a computer model) for first and second weeks of October. Increasing chance of freeze (<32 F) in 2nd week of October ~25% chance.

Latest Model Cycle Used: 00 UTC 17 Sep 2019

CFS 20-member Ensemble (00/06/12/18 UTC Control Runs - Last 5 Days)
Probability of a Daily Minimum Temperature < 32 F during Week 4 (%)
12 AM CST Tue, Oct 08, 2019 - 12 AM CST Tue, Oct 15, 2019



Summary

- New outlooks will be released tomorrow (Thursday).
- Looking better for getting most crop by freeze right now.
- Warmth will help progress and drydown

Next MAC-T Monthly Call

Next Call **Wednesday, Oct 2th.**