

Midwest and Great Plains Climate- Drought Outlook 21 September 2017

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Author
Photo



United States Department of Agriculture
Midwest Climate Hub

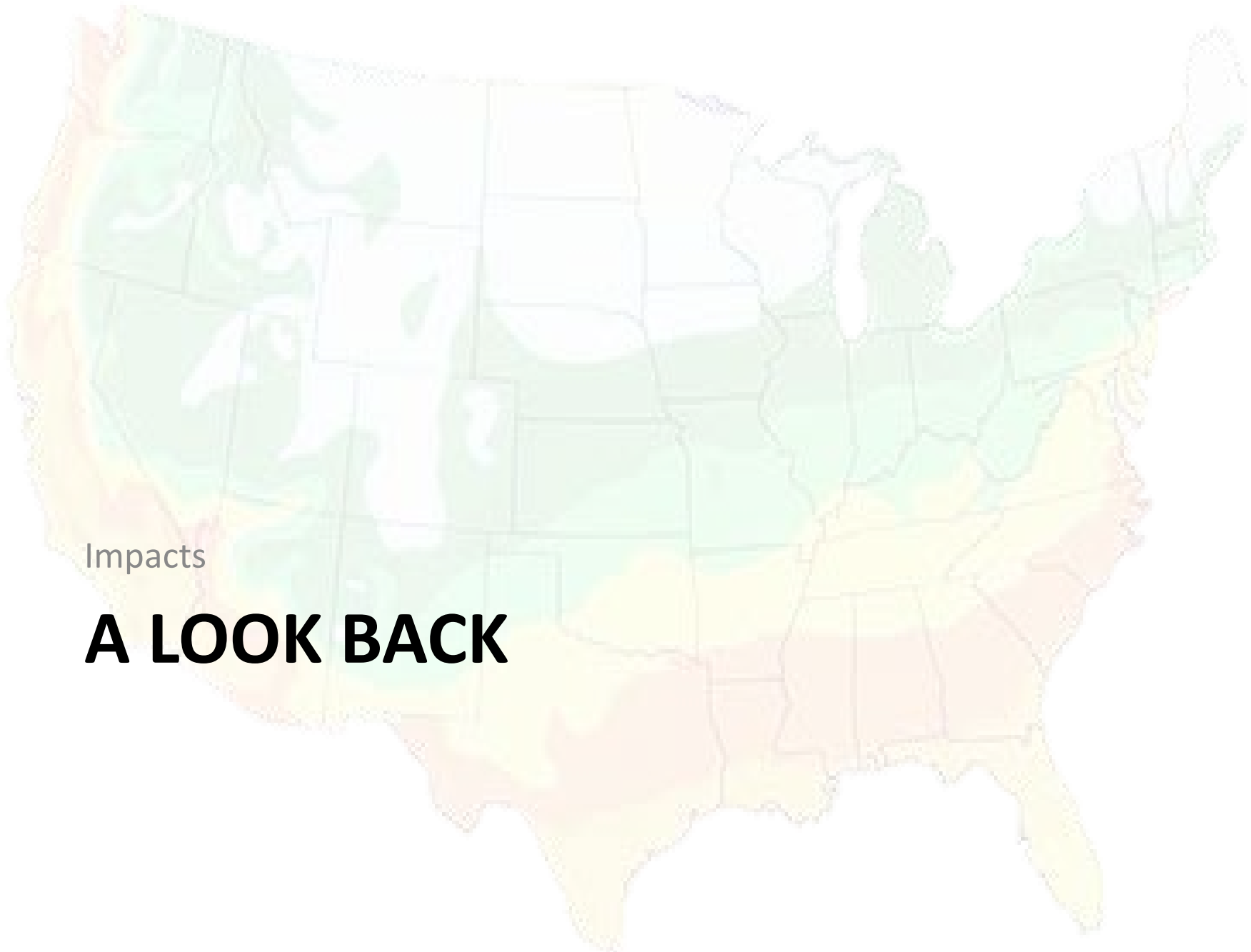
General Information

- **Providing climate services to the Central Region**
 - Collaboration Activity Between:
 - State Climatologists/American Association of State Climatologists
 - NOAA NCEI/NWS/OAR/NIDIS/
 - USDA Climate Hubs
 - Midwest and High Plains Regional Climate Centers
 - National Drought Mitigation Center/USDA
- **Next Regular Climate/Drought Outlook Webinar**
 - October 19, 2017 (1 PM CDT) Laura Edwards – South Dakota State Climatologist (SDSU) and Brad Rippey – (USDA-OCE)
- **Access to Future Climate Webinars and Information**
- <http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars>
- <http://mrcc.isws.illinois.edu/webinars.htm>
- <http://www.hprcc.unl.edu/webinars.php>
- **Open for questions at the end**

Agenda

- **Current Conditions**
- **Impacts**
 - Ag
 - Fire
 - Wildlife
- **Outlooks**
 - Heading for La Niña
 - Harvest/winter





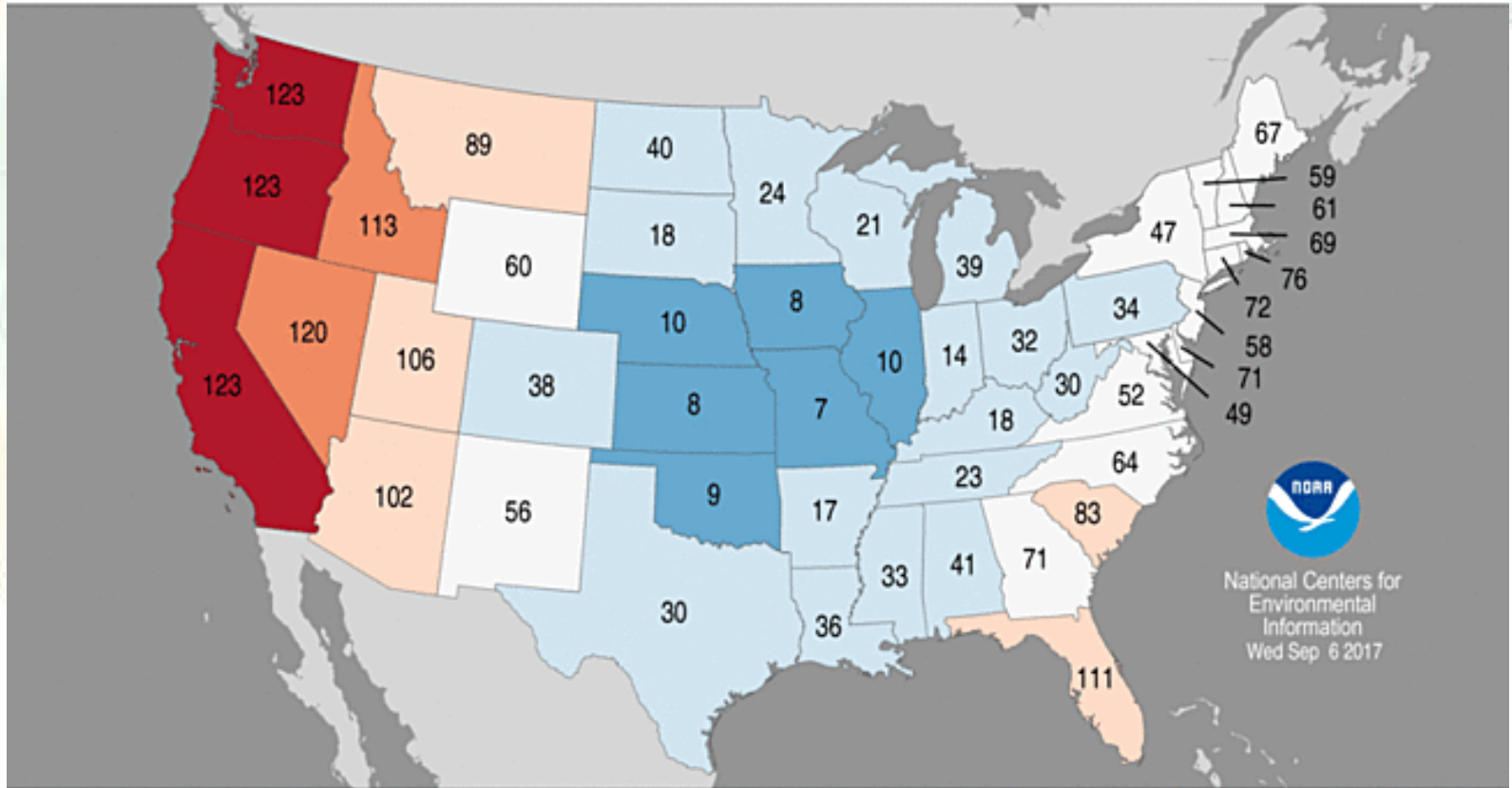
Impacts

A LOOK BACK

Statewide Average Temperature Ranks

August 2017

Period: 1895–2017

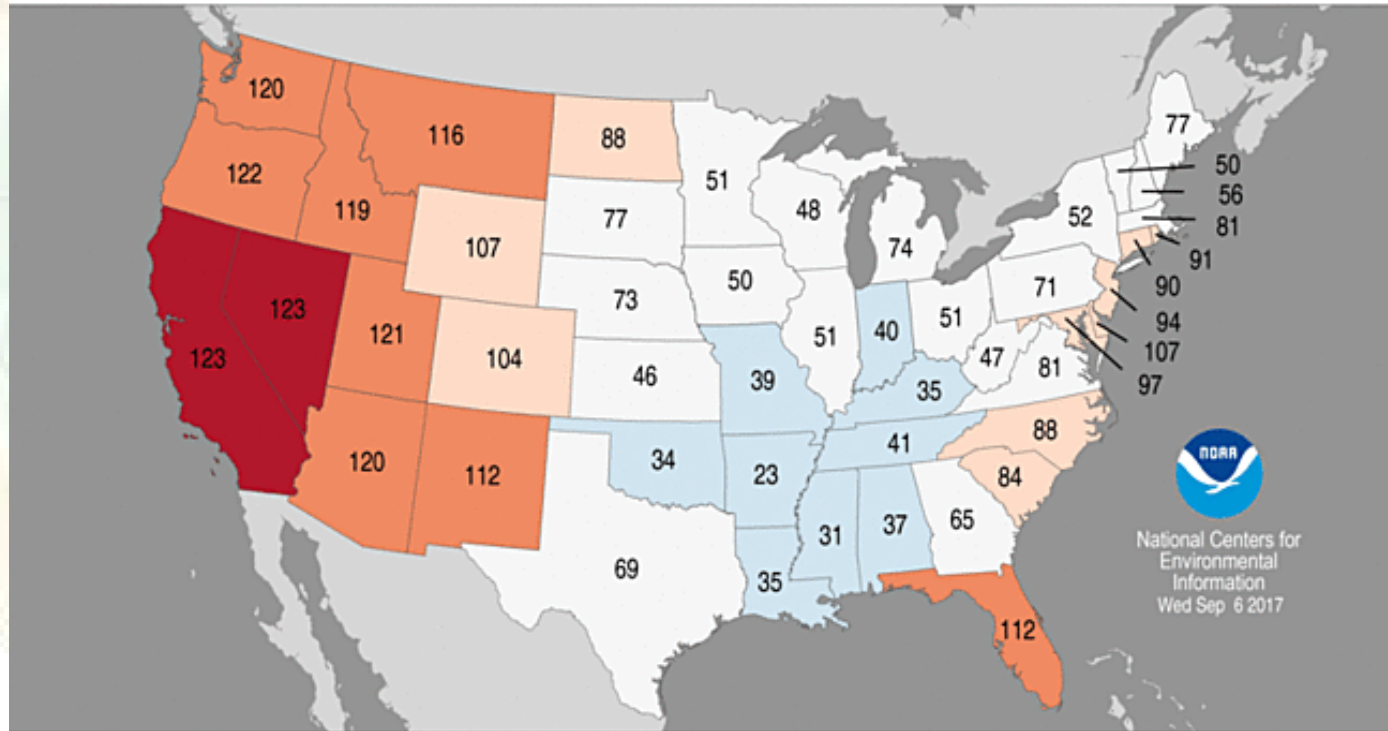


<http://www.ncdc.noaa.gov/temp-and-precip/us-maps/>

Statewide Average Temperature Ranks

June–August 2017

Period: 1895–2017

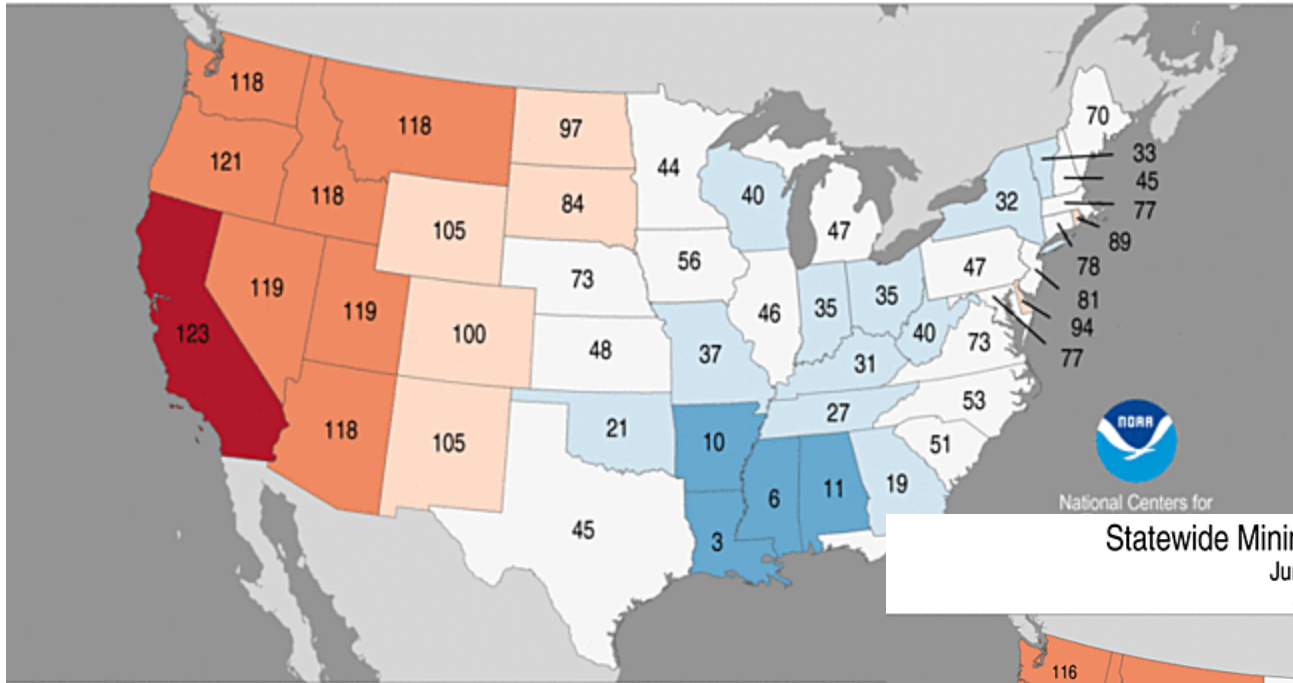


<http://www.ncdc.noaa.gov/temp-and-precip/us-maps/>

Statewide Maximum Temperature Ranks

June–August 2017

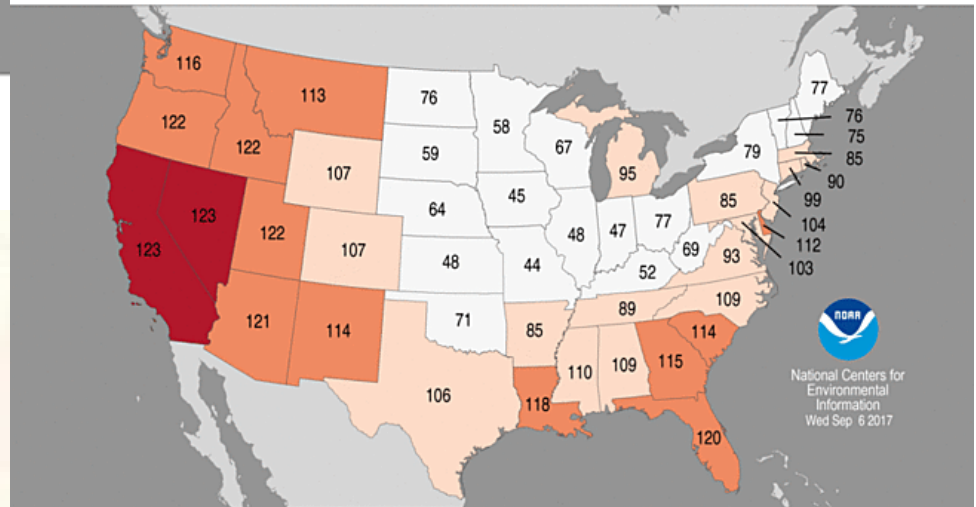
Period: 1895–2017



Statewide Minimum Temperature Ranks

June–August 2017

Period: 1895–2017



National Centers for

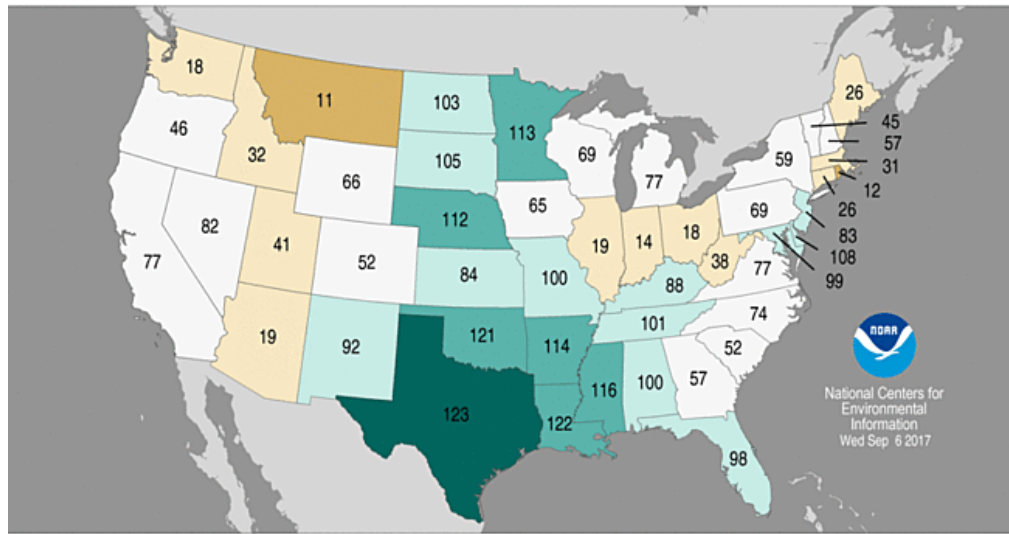


National Centers for Environmental Information
Wed Sep 6 2017

Statewide Precipitation Ranks

August 2017

Period: 1895-2017



National Centers for Environmental Information
Wed Sep 6 2017



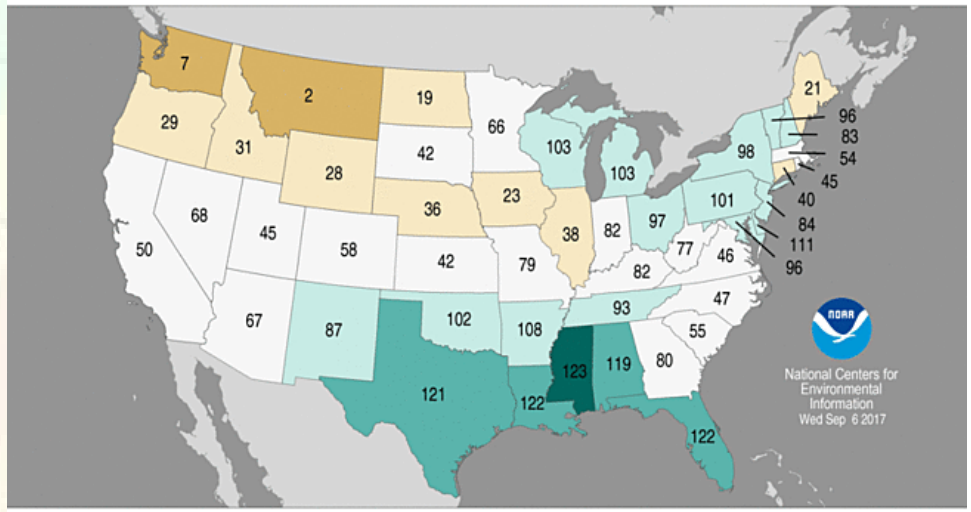
30 and 90 Day Precip Ranks



Statewide Precipitation Ranks

June-August 2017

Period: 1895-2017



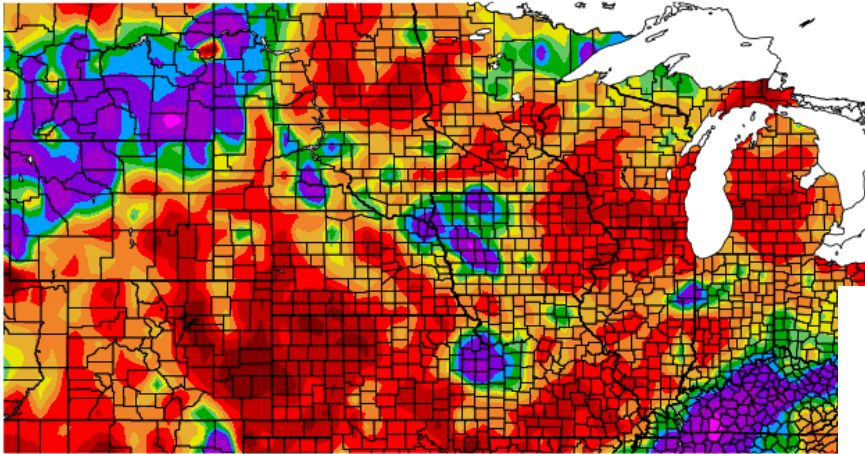
National Centers for Environmental Information
Wed Sep 6 2017



Different stories across the summer
Dakotas - Dry Early Wet later
Opposite Ohio
Montana very low overall

Last 30 Days

Percent of Normal Precipitation (%)
8/21/2017 - 9/19/2017

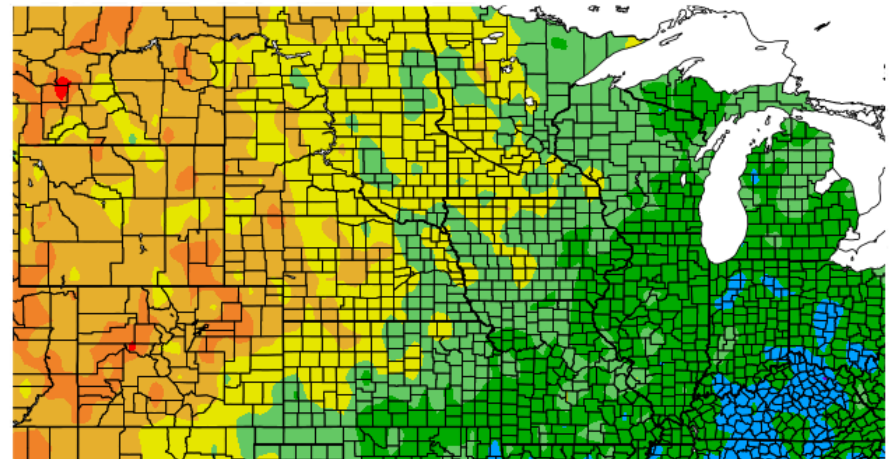


Generated 9/20/2017 at HPRCC using provisional data.

NOAA Regional Climate



Departure from Normal Temperature (F)
8/21/2017 - 9/19/2017

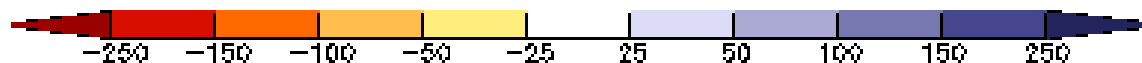
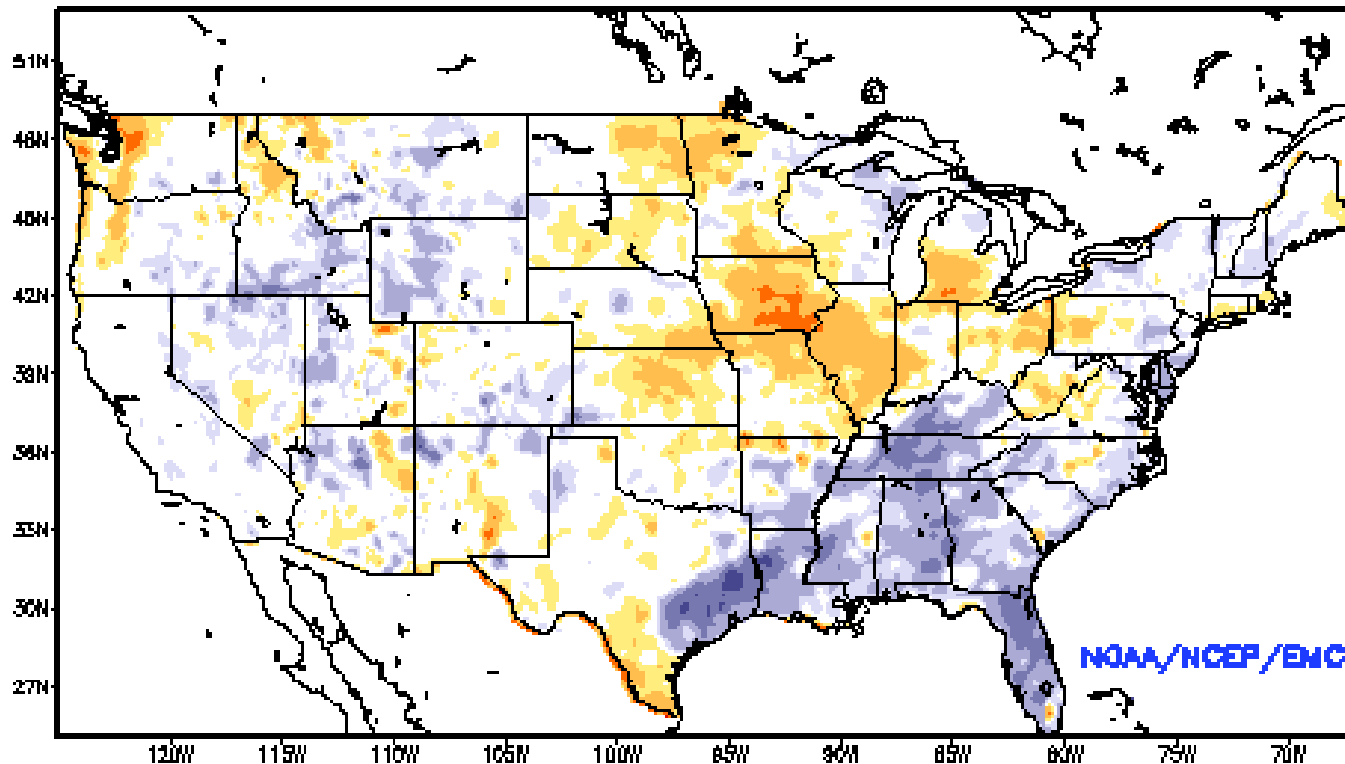


Generated 9/20/2017 at HPRCC using provisional data.

NOAA Regional Climate Centers

Modeled Soil Moisture

Ensemble-Mean - Current Total Column Soil Moisture Anomaly (mm)
NCEP NLDAS Products Valid: SEP 16, 2017

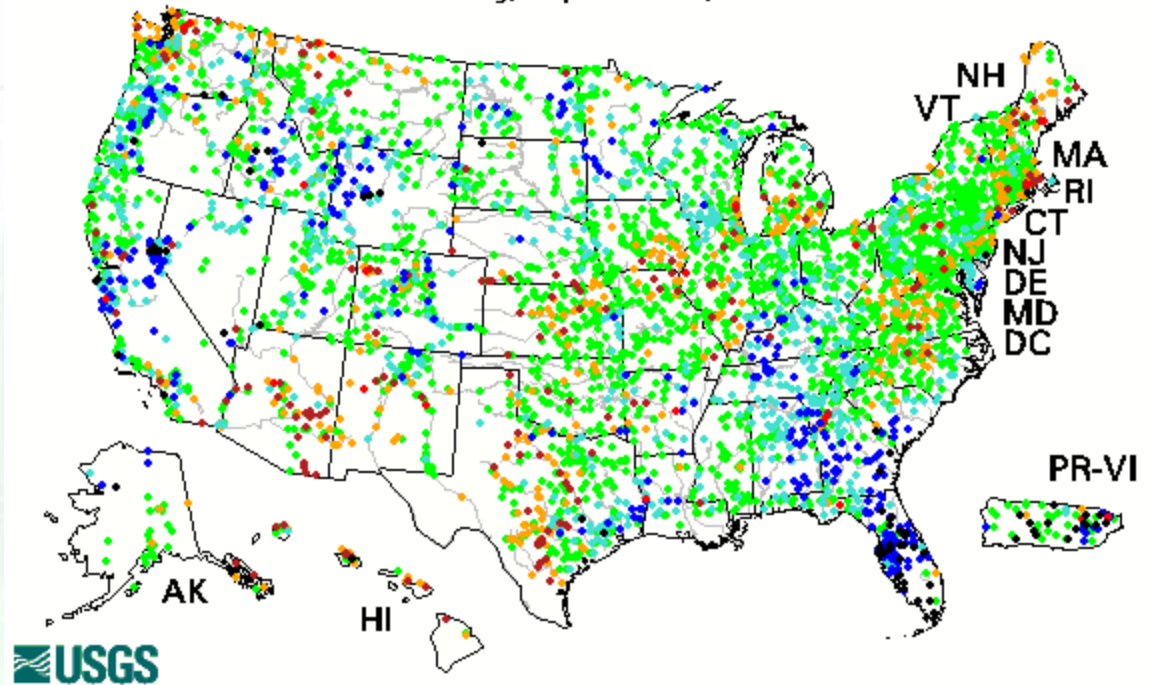


7-Day Average Streamflow

Wednesday, September 20, 2017

Wednesday, 20 September 2017

- Low flows KS-MI
- Some recovery nrn plains (typically low flow time of year)

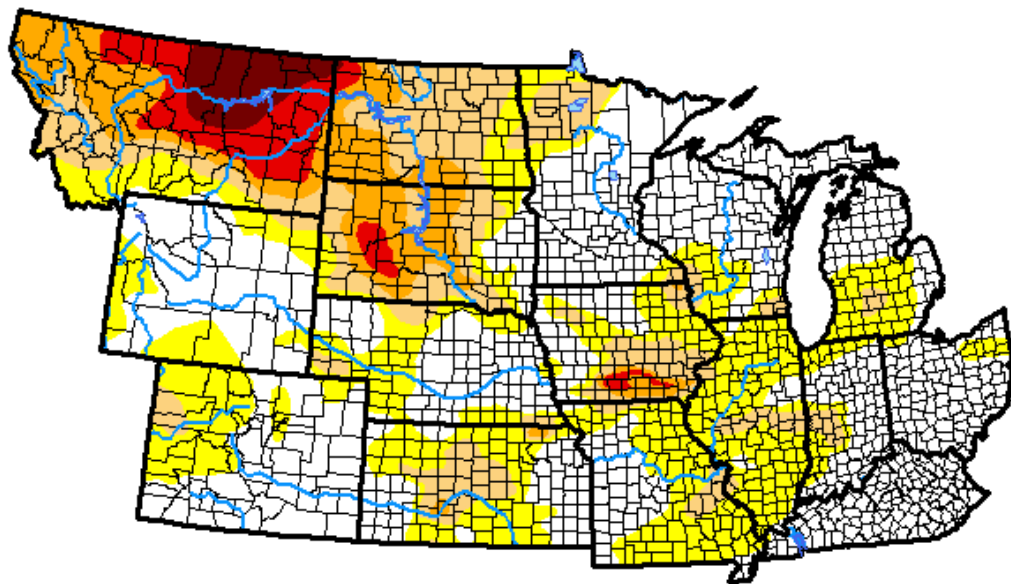


Explanation - Percentile classes						
	●	●	●	●	●	●
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

<http://waterwatch.usgs.gov/index.php?id=pa07d>

U.S. Drought Monitor NWS Central Region

September 19, 2017
(Released Thursday, Sep. 21, 2017)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	44.82	55.18	28.25	14.24	6.21	2.26
Last Week <i>09-12-2017</i>	46.76	53.24	28.09	15.98	8.14	3.33
3 Months Ago <i>06-20-2017</i>	74.46	25.54	11.83	5.37	1.42	0.00
Start of Calendar Year <i>01-03-2017</i>	65.79	34.21	12.04	1.70	0.00	0.00
Start of Water Year <i>09-27-2016</i>	76.71	23.29	7.36	1.93	0.12	0.00
One Year Ago <i>09-20-2016</i>	76.72	23.28	8.89	2.13	0.12	0.00

Intensity:

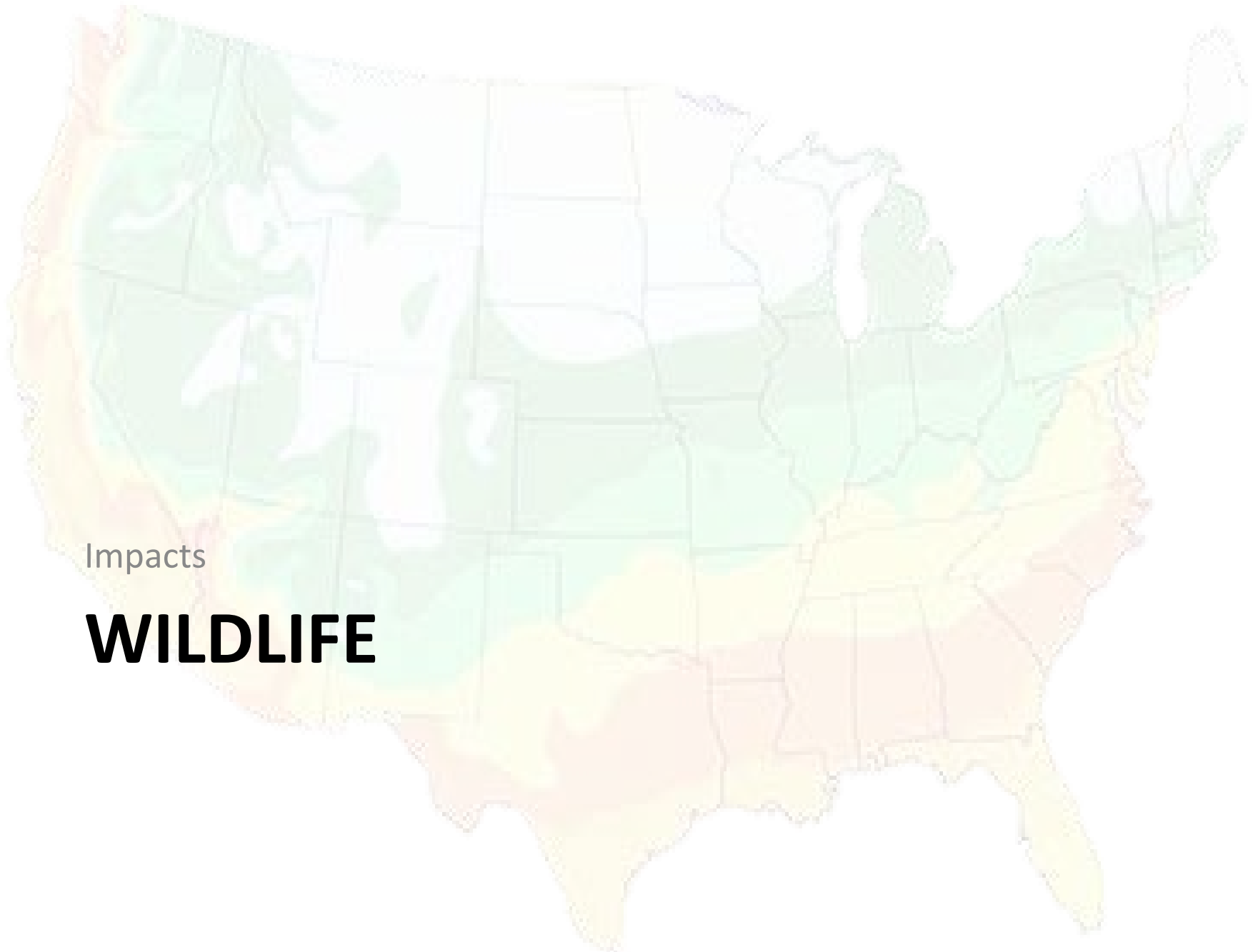
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

Author:

Brad Rippey
U.S. Department of Agriculture





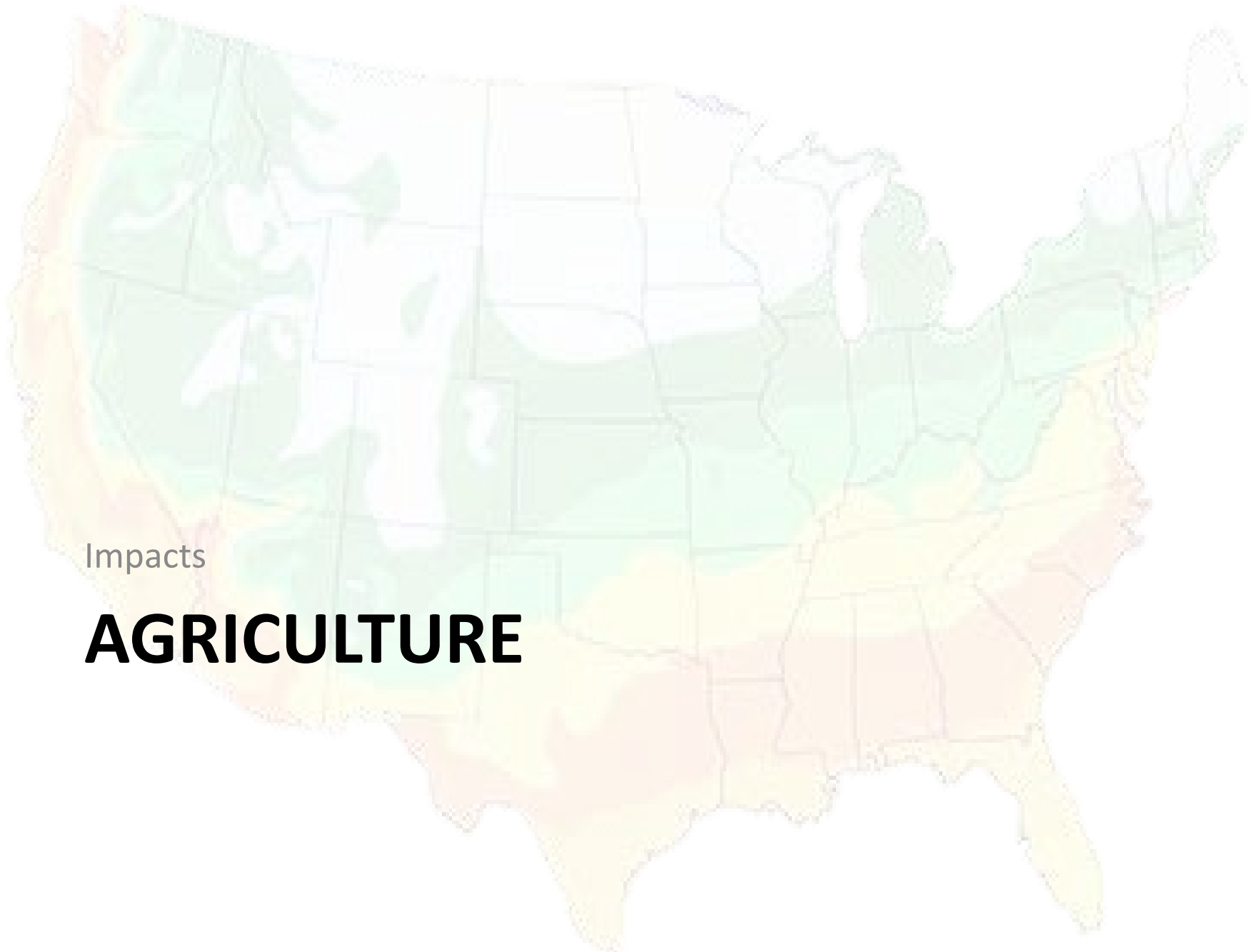
Impacts

WILDLIFE

Environmental Issues



- SD Pheasant counts down 45% from last year
- North Dakota reportedly worse
- MT – Fort Belknap Reservation – lack of water in prairie pothole water areas breeding waterfowl
- Several fish kills in low water regimes several locations

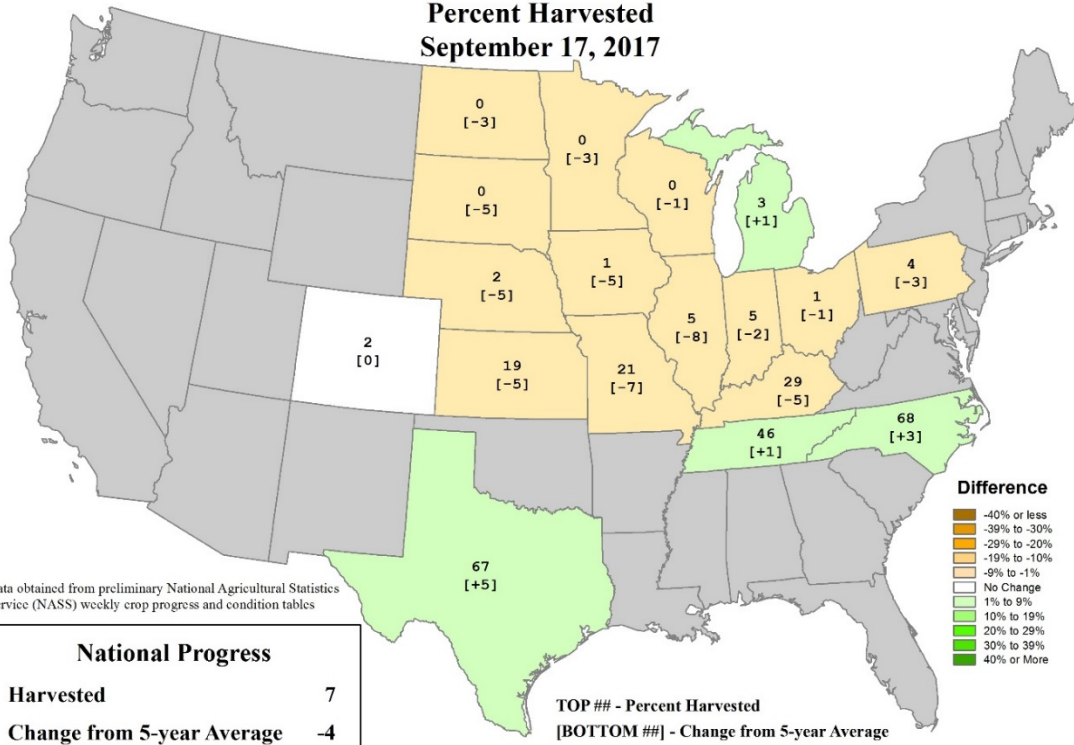


Impacts

AGRICULTURE

U.S. Corn Progress

Percent Harvested
September 17, 2017



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

National Progress	
Harvested	7
Change from 5-year Average	-4

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

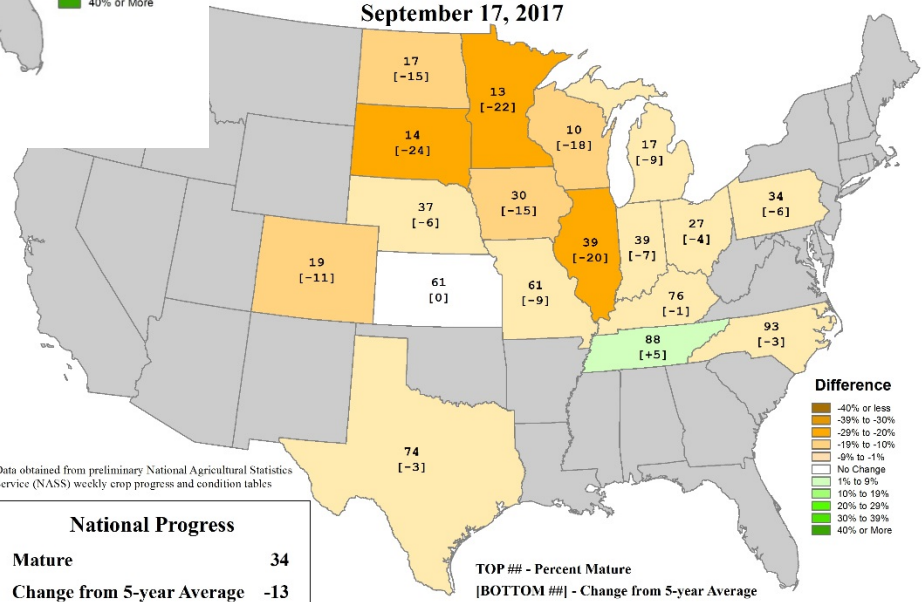
USDA Agricultural Weather Assessments
World Agricultural Outlook Board

Corn progress delayed (cool temps)
Late start to corn harvest
Frost risk getting smaller

US Corn

U.S. Corn Progress

Percent Mature
September 17, 2017



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

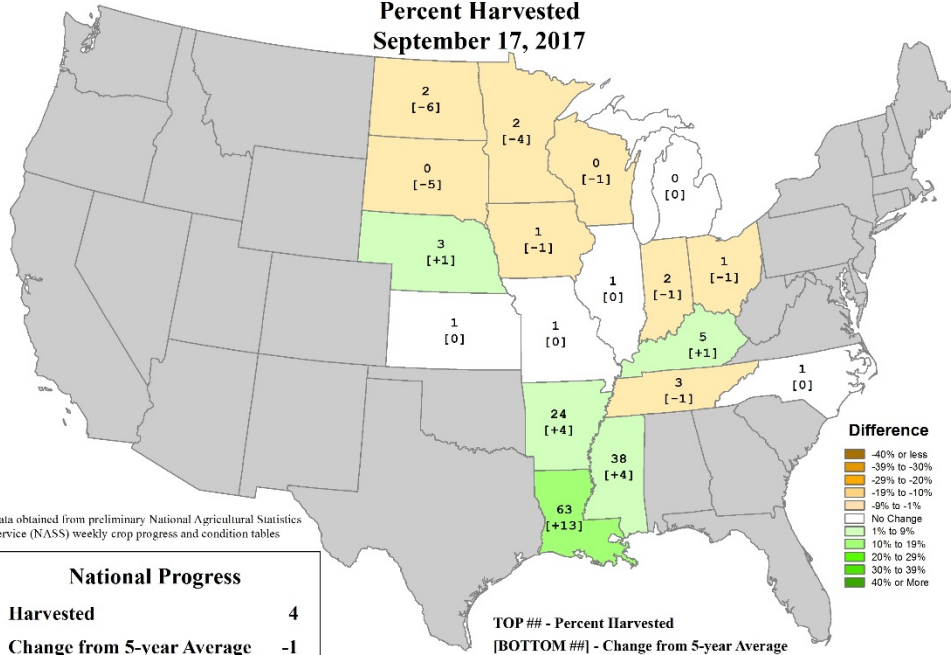
National Progress	
Mature	34
Change from 5-year Average	-13

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

USDA Agricultural Weather Assessments
World Agricultural Outlook Board

U.S. Soybeans Progress

Percent Harvested
September 17, 2017



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

National Progress	
Harvested	4
Change from 5-year Average	-1

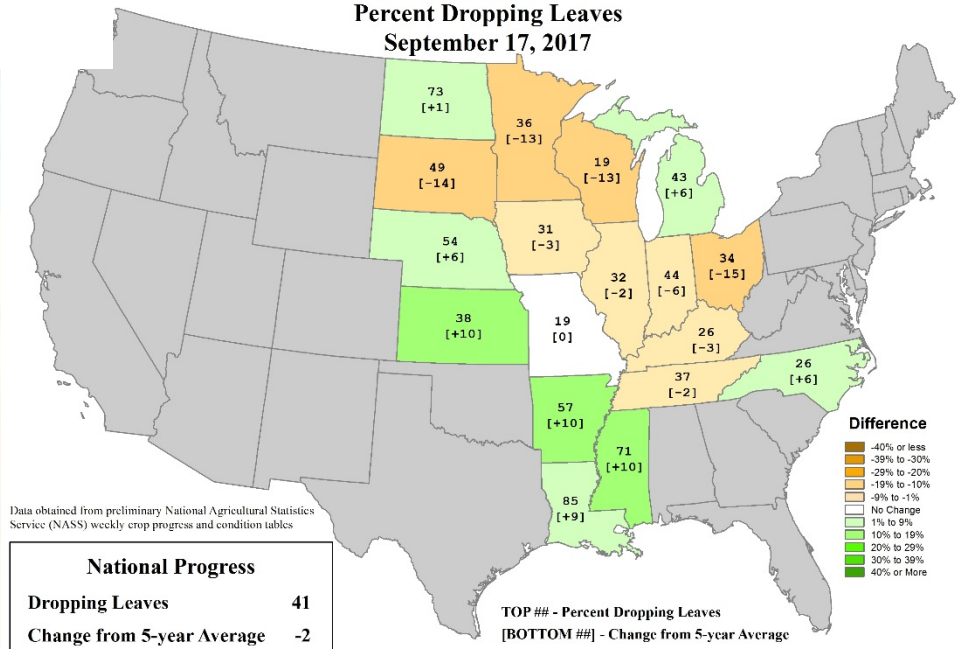
USDA Agricultural Weather Assessments
World Agricultural Outlook Board

US Soy



U.S. Soybeans Progress

Percent Dropping Leaves
September 17, 2017



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

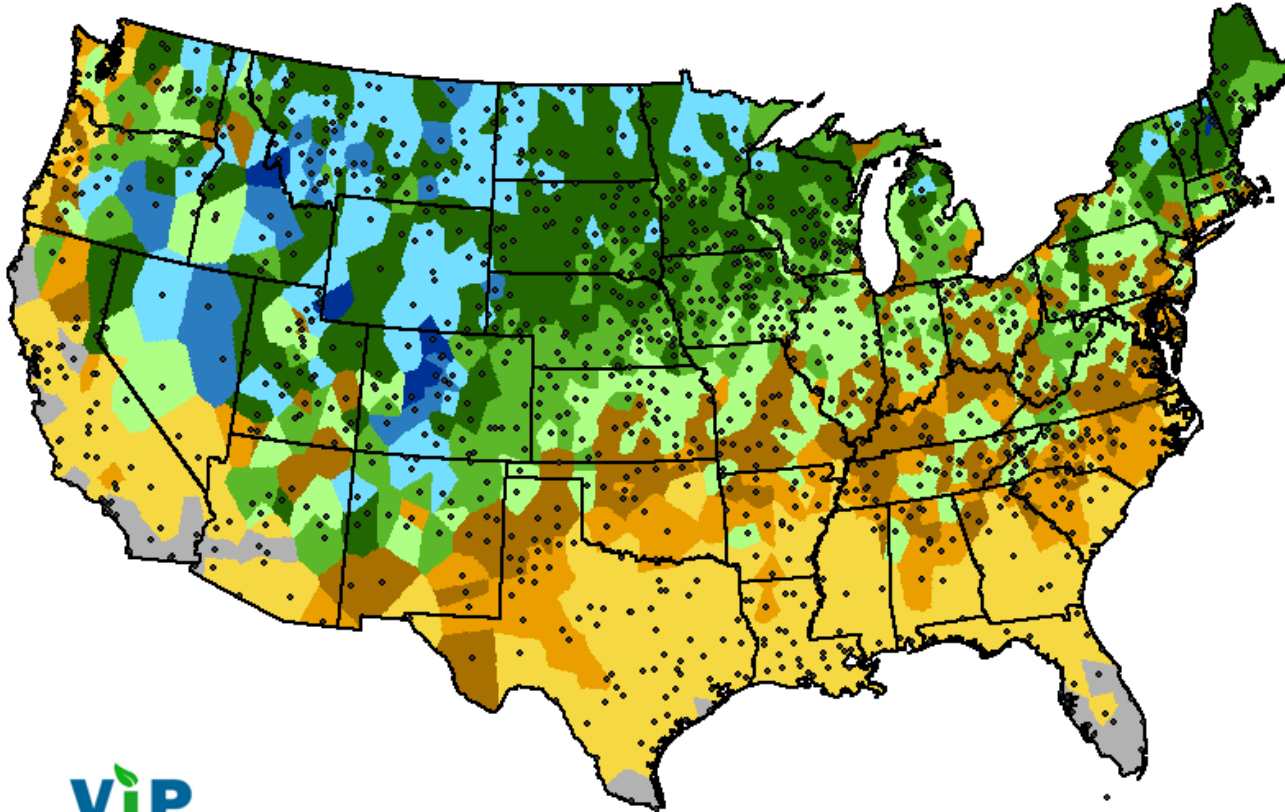
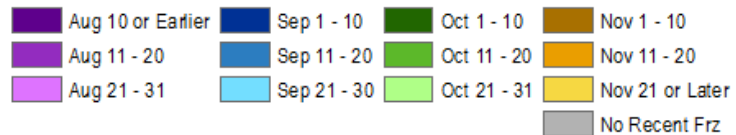
National Progress	
Dropping Leaves	41
Change from 5-year Average	-2

USDA Agricultural Weather Assessments
World Agricultural Outlook Board

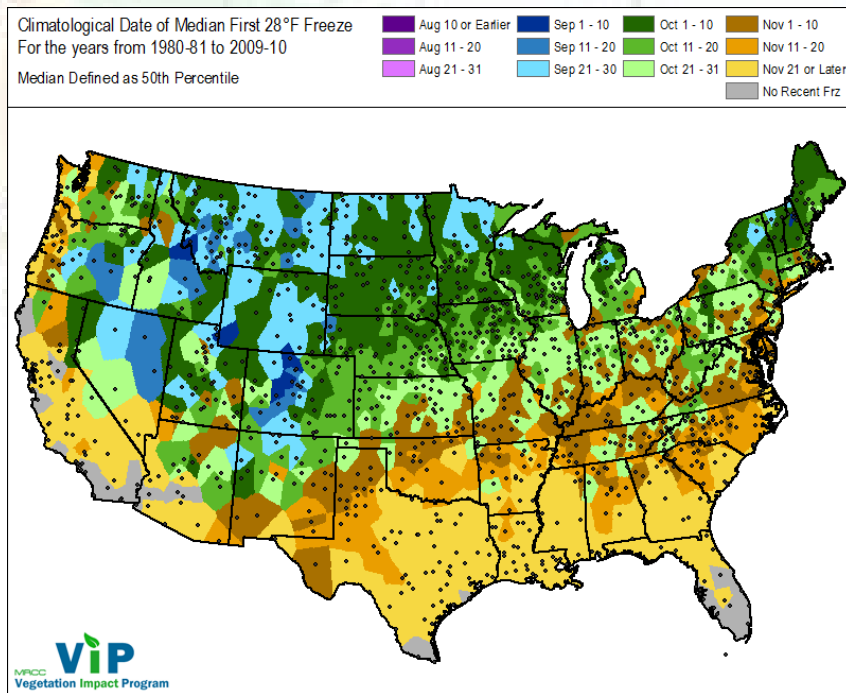
Soybeans delayed (not as much as corn)
Harvest starting more actively
Some white mold issues (NE-SD)

Median First Fall 28 F (Hard Freeze)

Climatological Date of Median First 28°F Freeze
For the years from 1980-81 to 2009-10
Median Defined as 50th Percentile



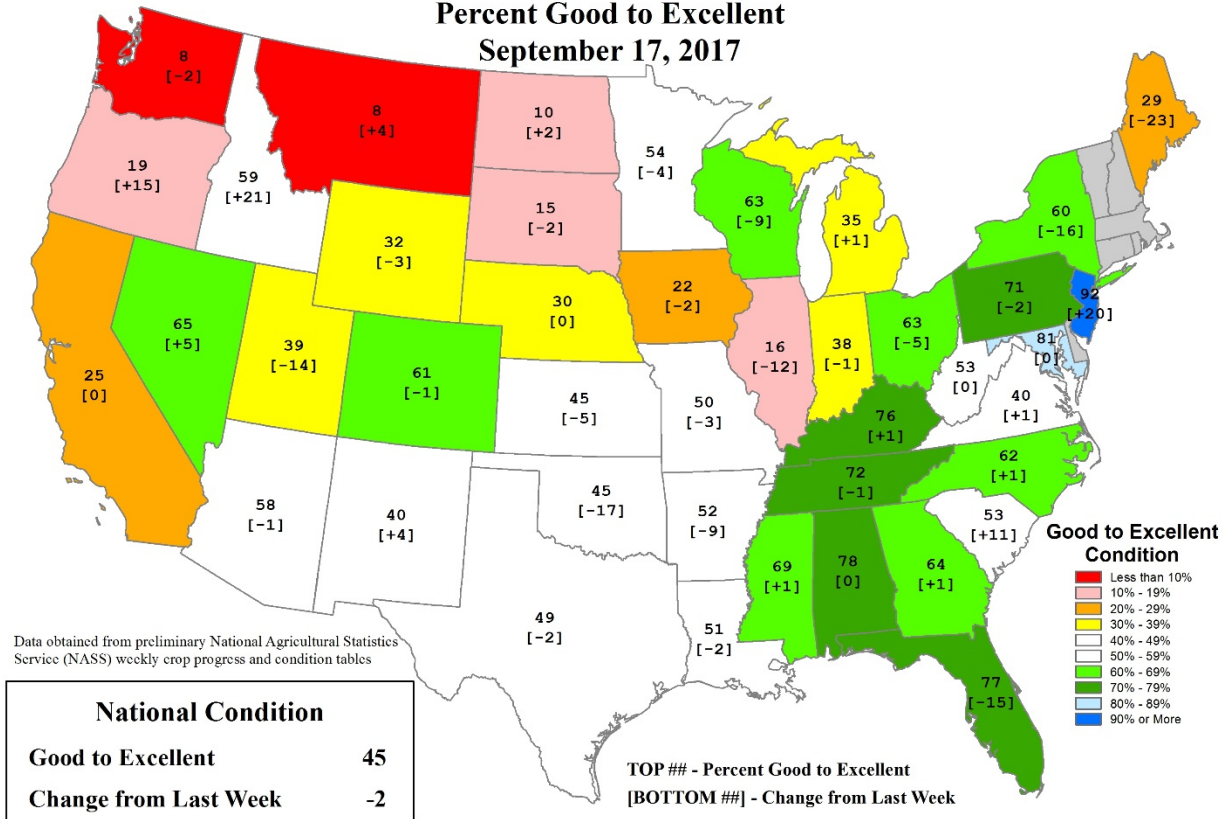
Frost-freeze issues



- Frost occurred in areas already. Minimal issues
- Concerns because of late/delayed crops
- No near-term chances for very cold temps
- Likely limited issue for crops now
- Why concern? Yield loss and cost.

U.S. Pasture and Range Conditions

Percent Good to Excellent
September 17, 2017

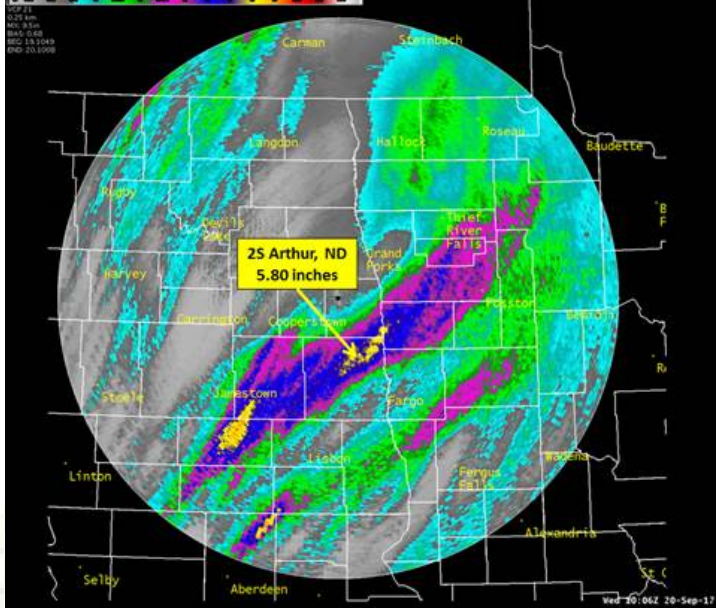


Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

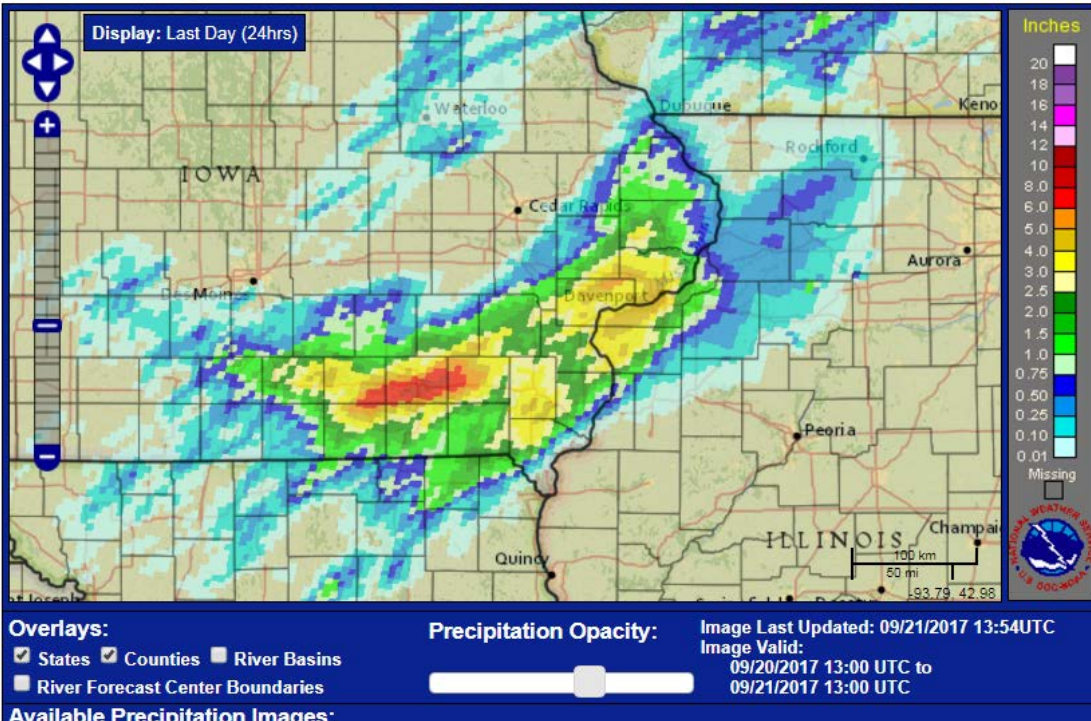
USDA Agricultural Weather Assessments
World Agricultural Outlook Board

Poor conditions well into NW (factor of spring/summer)
Best far-east

Spotty heavy late season rains



Precipitation Map | Download Shapefiles | About this Page | Other Useful Information | Survey & Feedback



Benji
@blonglet

Follow

6.06 inches for the evening. Almost have water touching the corn ears. And we almost doubled the yearly total.



9:02 PM - 19 Sep 2017 from North Dakota, USA

8 Retweets 29 Likes



Specialty Crops

- Pumpkins 1-3 weeks early IN-IA
- Apples early (MI) – some quality issues (IA)
- Storage concerns for apples (MI)
- Loss of dry beans (WY) possibly due to continued smoky conditions
- Concern winter wheat planting – dryness
- Also cover crops





Impacts

FIRE/SMOKE

Current Large Incidents

September 21, 2017



- 1 HORSE PRAIRIE
- 2 CHETCO BAR
- 3 ORLEANS COMPLEX
- 4 JONES
- 5 CA-KNF-006098
- 6 HIGH CASCADES COMPLEX
- 7 HELENA
- 8 SALMON AUGUST COMPLEX
- 9 MILLER COMPLEX
- 10 REBEL
- 11 UMPQUA NORTH COMPLEX
- 12 SPRUCE LAKE

- 13 HORSE CREEK COMPLEX
- 14 WHITWATER
- 15 EAGLE CREEK
- 16 BERRY
- 17 KELSEY CREEK
- 18 SAWMILL CREEK
- 19 NORSE PEAK
- 20 MILLI 0843 CS
- 21 EUREKA
- 22 AMERICAN
- 23 JOLLY MOUNTAIN
- 24 DIAMOND CREEK

- 25 UNO PEAK
- 26 DESOLATION
- 27 EASTMAN
- 28 PIER
- 29 WEST FORK
- 30 HIGHLINE
- 31 MOOSE PEAK
- 32 HIGHWAY 200 COMPLEX
- 33 MOOSE CREEK 1
- 34 GREEN RIDGE COMPLEX
- 35 LOLO PEAK
- 36 ADAIR PEAK

- 37 BLUE BAY
- 38 NELSON CREEK
- 39 LIBERTY
- 40 SAPPHIRE COMPLEX
- 41 MEYERS
- 42 RICE RIDGE
- 43 BLACKTAIL
- 44 DEER CREEK
- 45 KIRBY RANCH
- 46 HARVEY
- 47 HURRICANE IRMA



PR

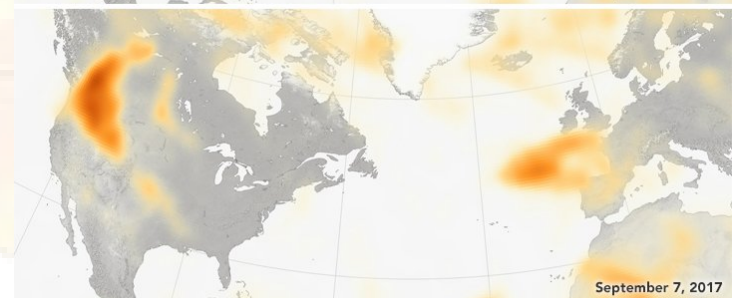
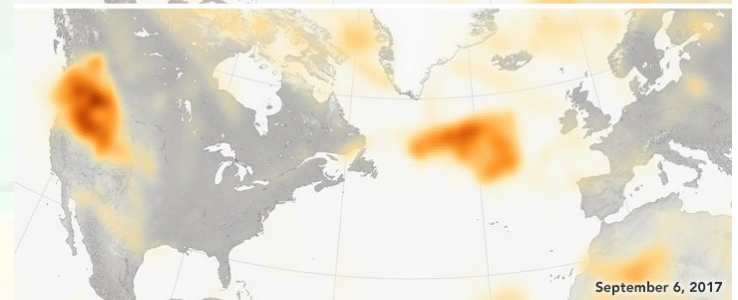
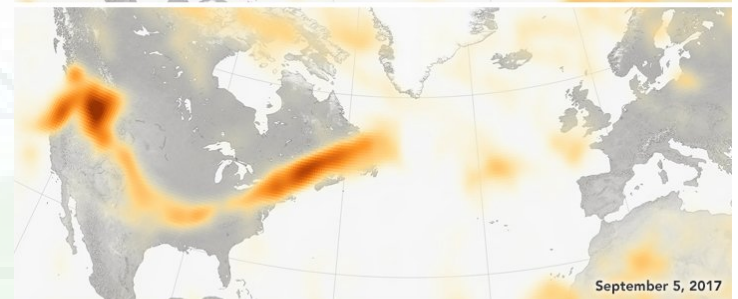
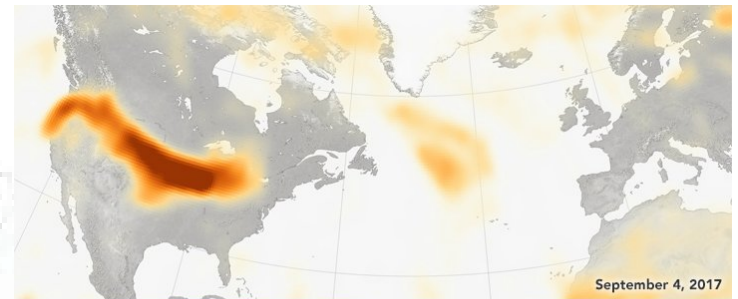
Fires



- Mostly confined to MT in our region some nrn plains
- Smoke plumes have limited solar radiation/sky cover and visibility periodically
- Created several air quality alert days
- May have impacted some dry bean crops in WY

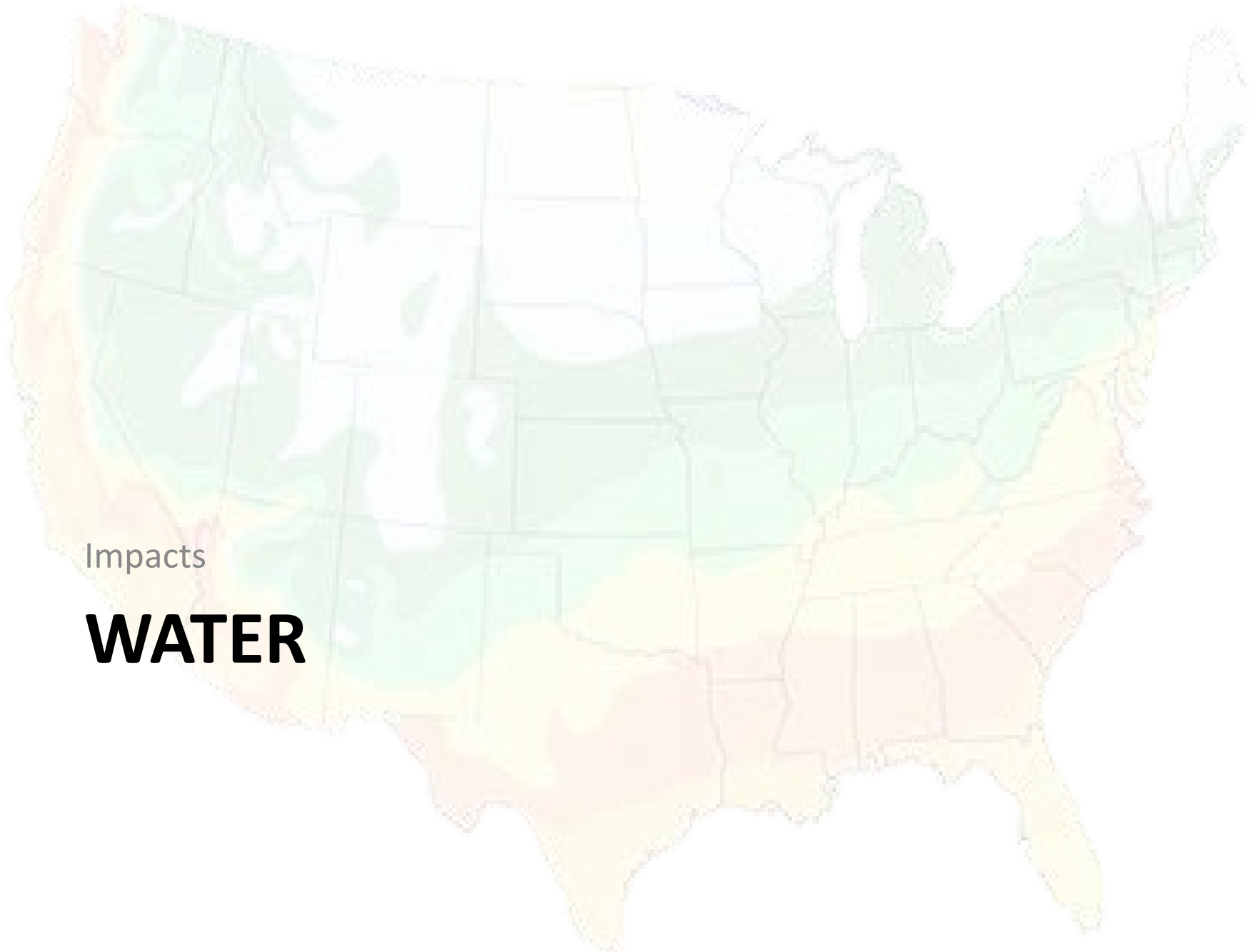
Smoke Plume

One of the worst days was over Labor Day Weekend (top image)



Aerosols
Less More

<http://wildfiretoday.com/2017/09/17/wildfire-smoke-travels-to-paris/>



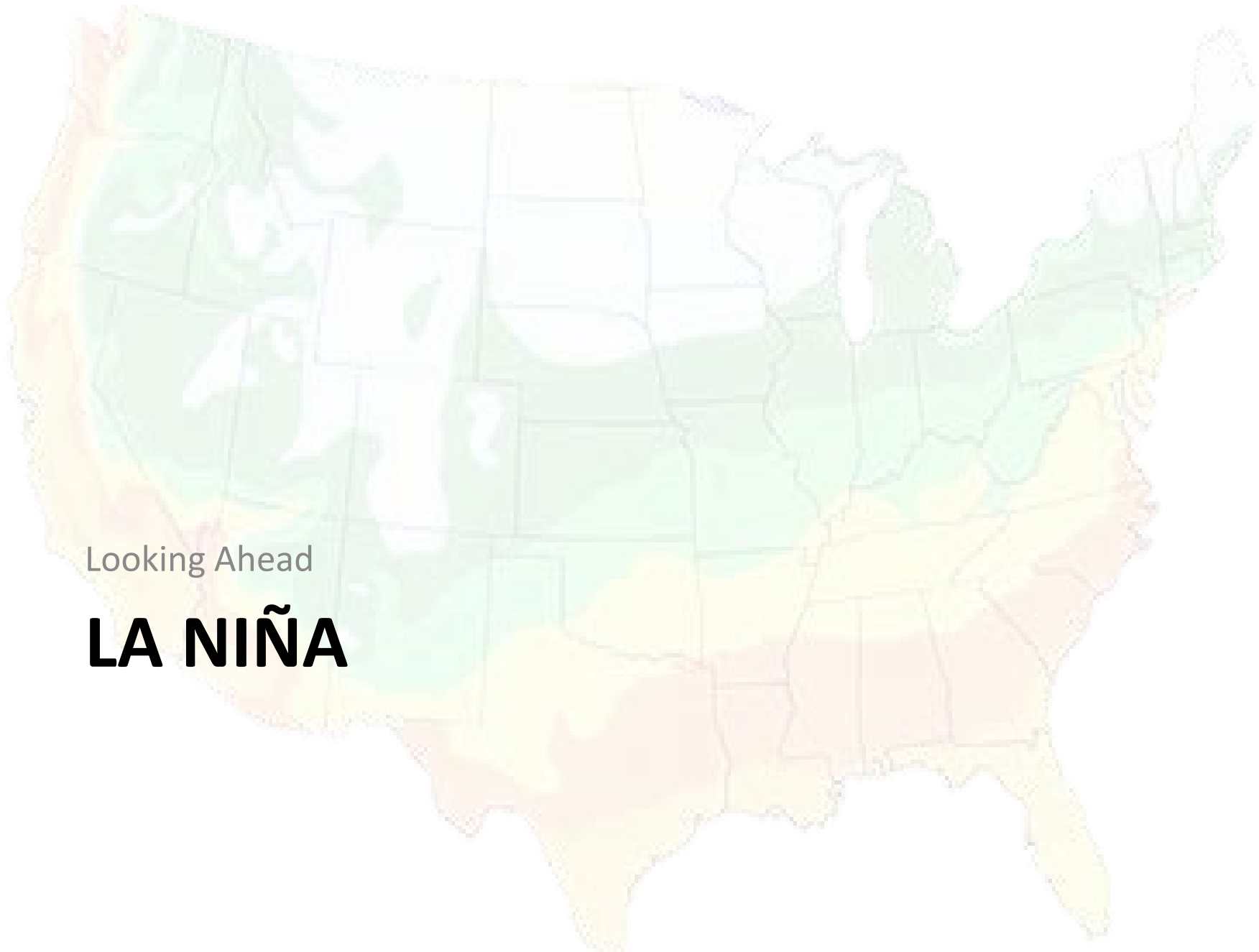
Impacts

WATER

Water issues



- Flooding in KC (late July)
- Some isolated field flooding IA/ND
- Missouri River few expected flooding issues
- USACE expects to have water evacuated for full flood control by spring

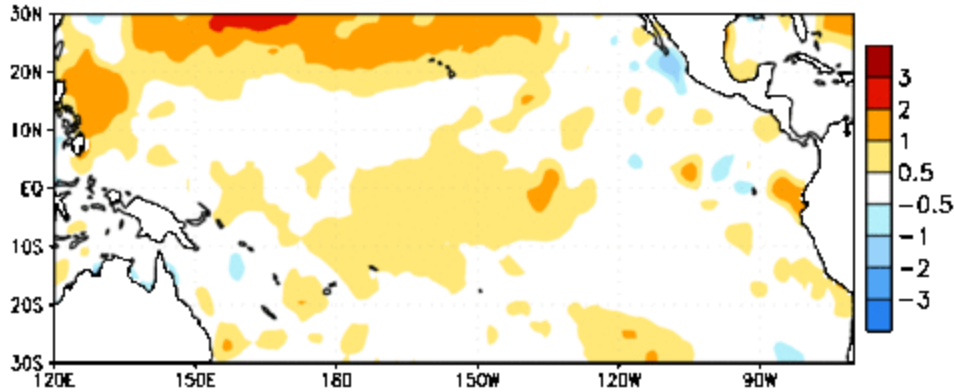


Looking Ahead

LA NIÑA

Pacific Sea Surface Temperatures

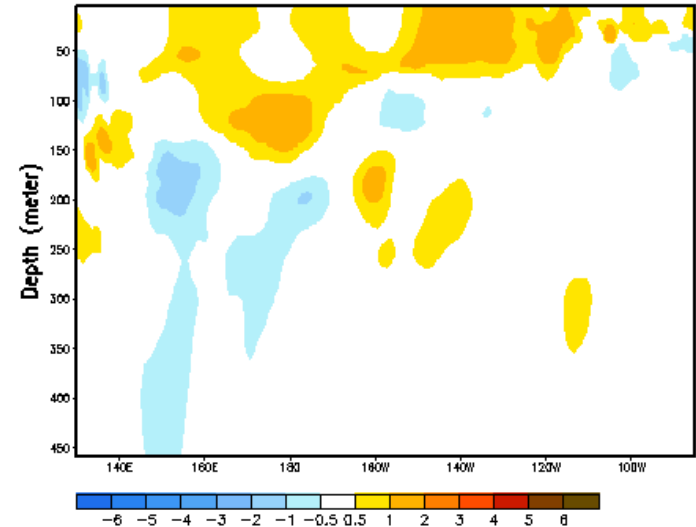
Week centered on 28 JUN 2017
SST Anomalies (°C)



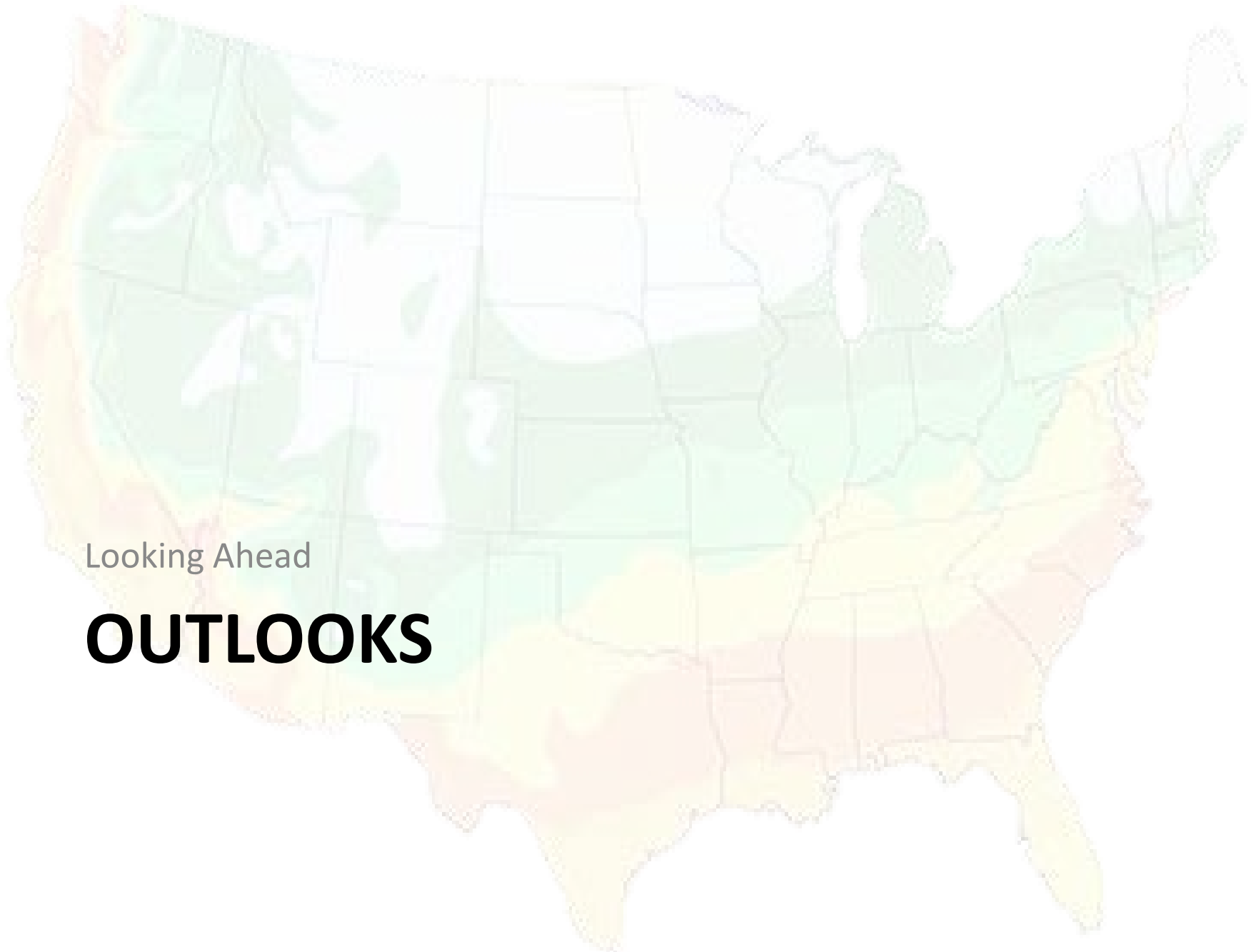
Surface temperatures (C)

La Nina has developed rapidly
Few hints of this a month ago

Equatorial Temperature Anomaly (°C)
Pentad centered on 17 JUL 2017



Sub-surface temperatures (C)



Looking Ahead

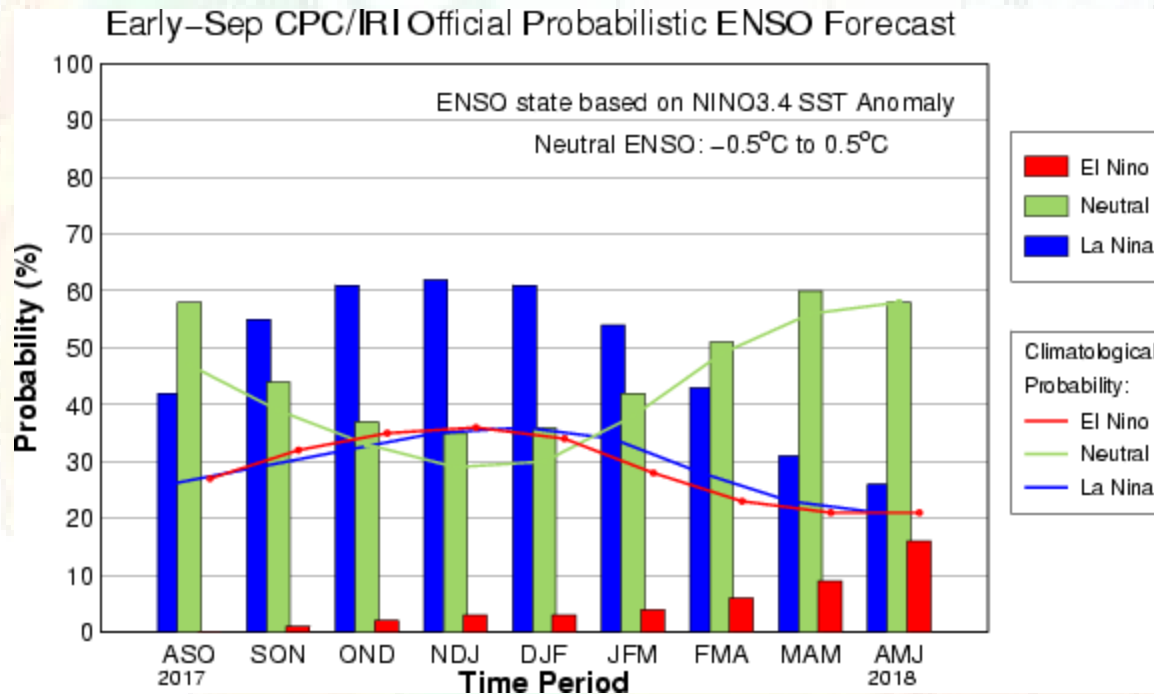
OUTLOOKS

Climate Outlooks



- **La Niña - chances increasing**
- **7-day precipitation forecast**
- **8-14 day outlook**
- **October**
- **Winter**

La Niña Probabilities

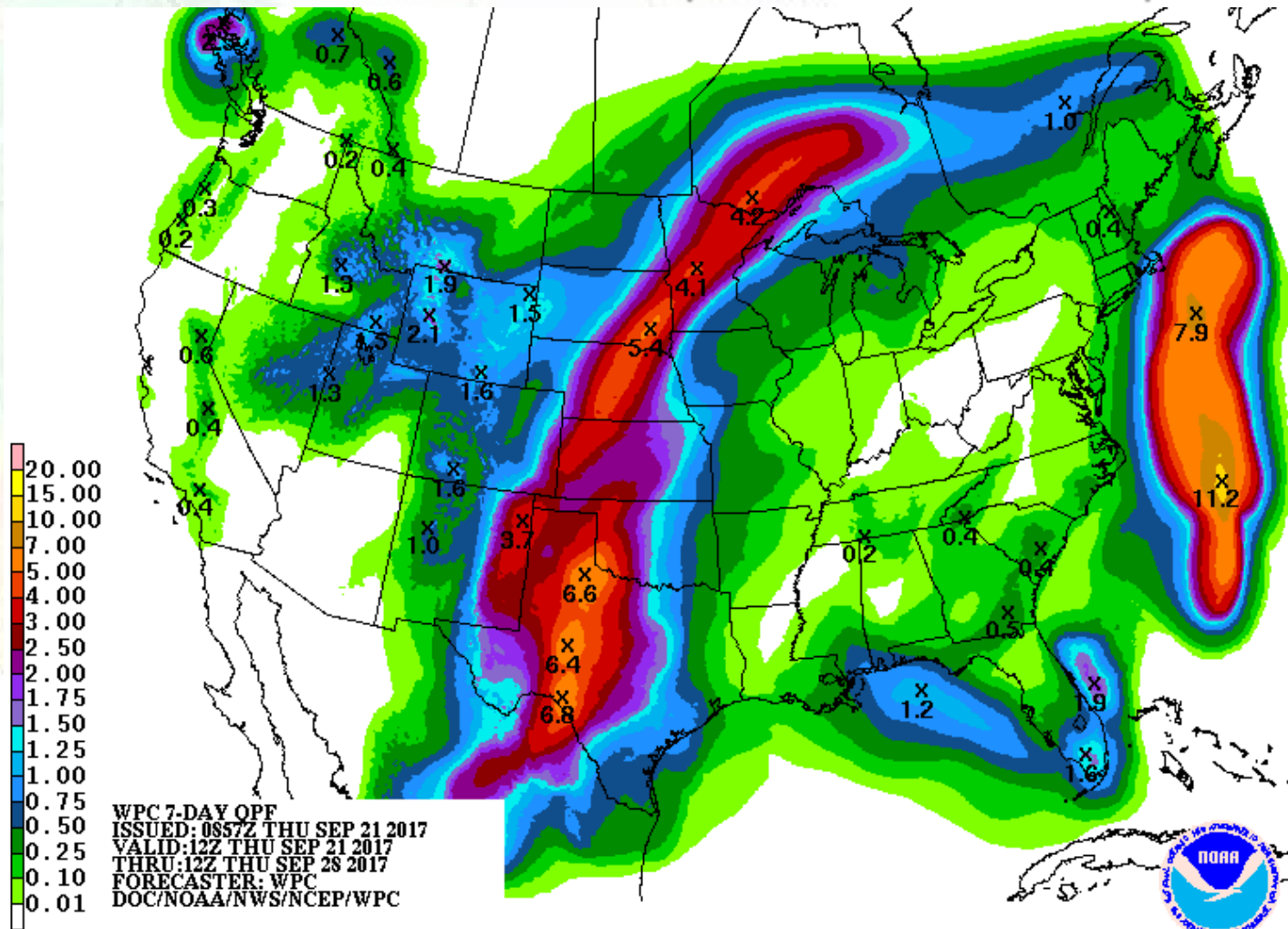


La Niña not guaranteed
Strength of potential La Niña is open question
Multiple other factors at play also

La Niña mostly likely for NH Winter - ~60%
Return to neutral spring 2018

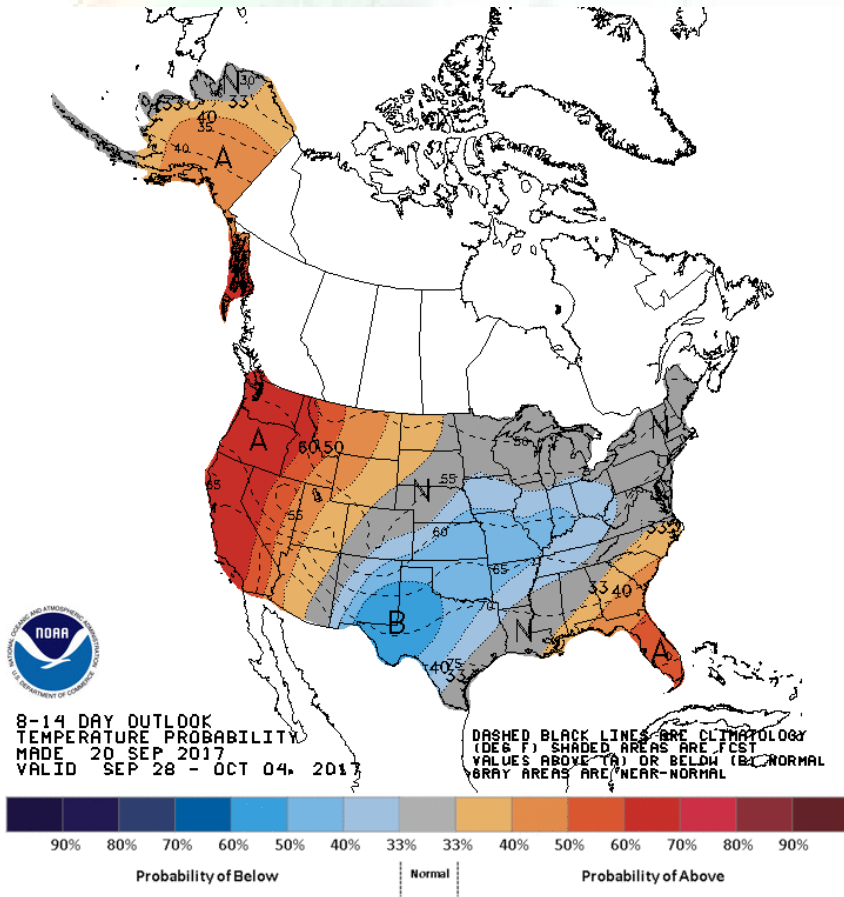
7-day Quantitative Precipitation Forecast

Valid: 7 AM Thu 21 Sep.– 7 AM Thu 28 Sep.

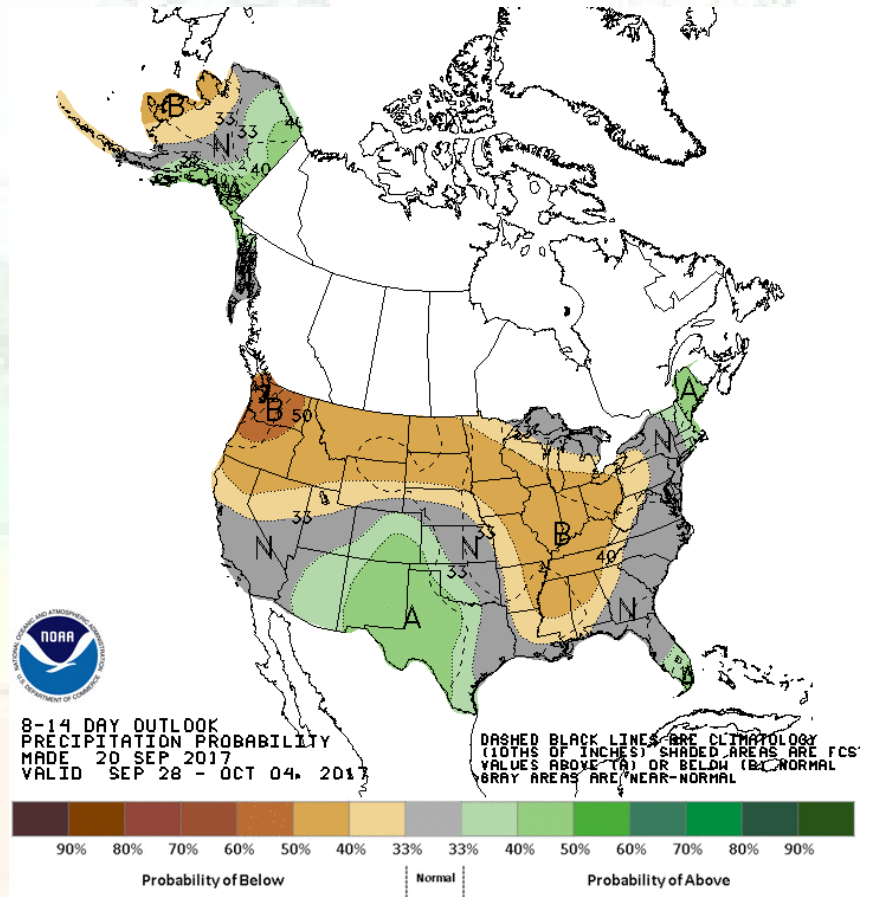


<http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml>

Temperature and Precipitation Probabilities for 28 Sep. – 4 Oct. 2017



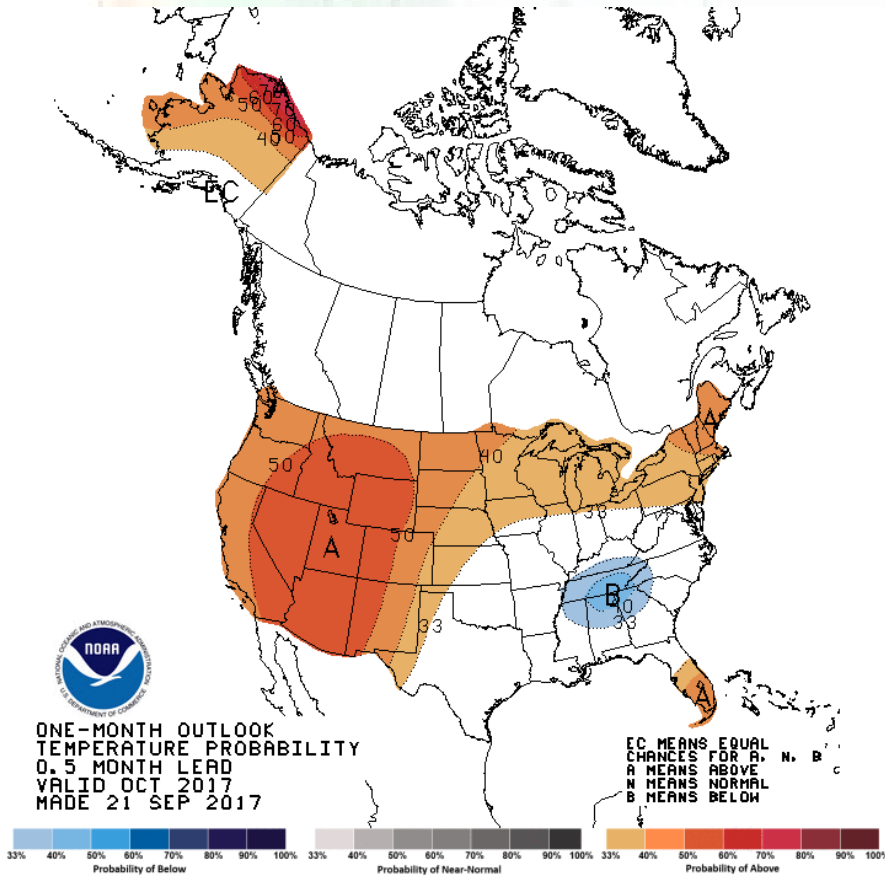
Temperature



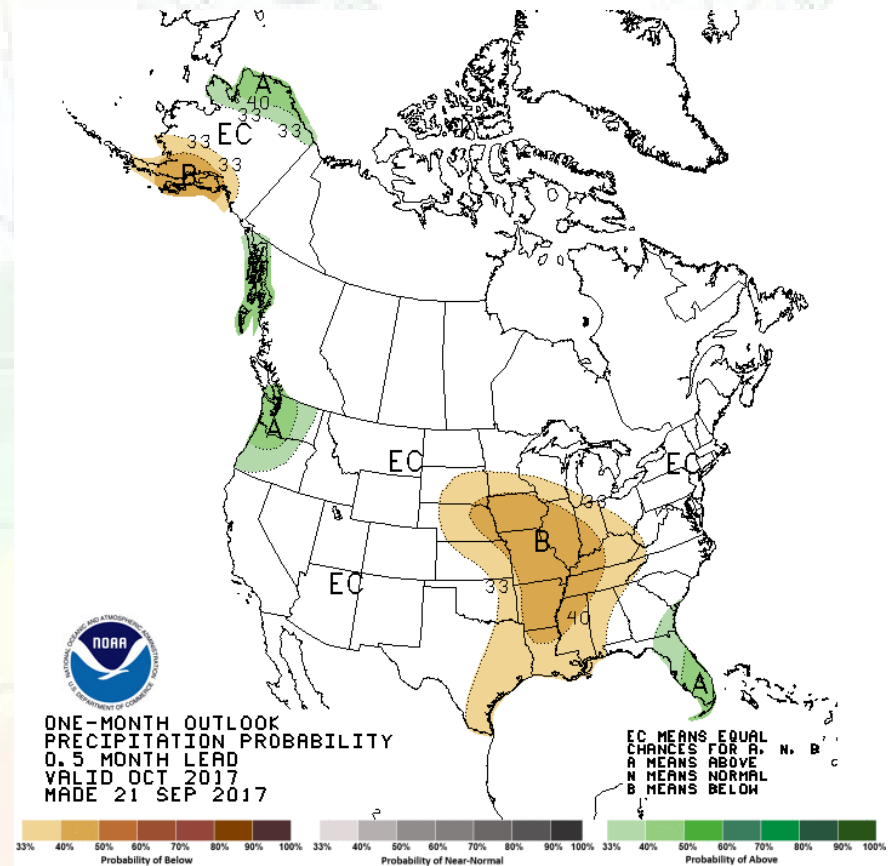
Precipitation

<http://www.cpc.ncep.noaa.gov/products/predictions/814day/index.php>

October Temperature and Precipitation Probabilities



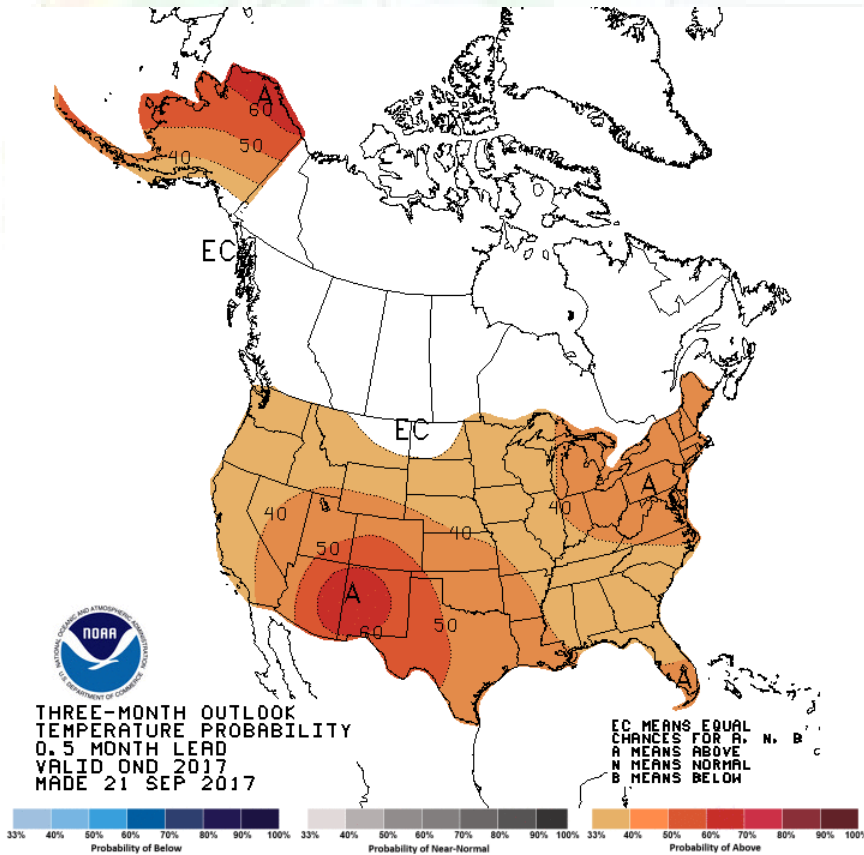
Temperature



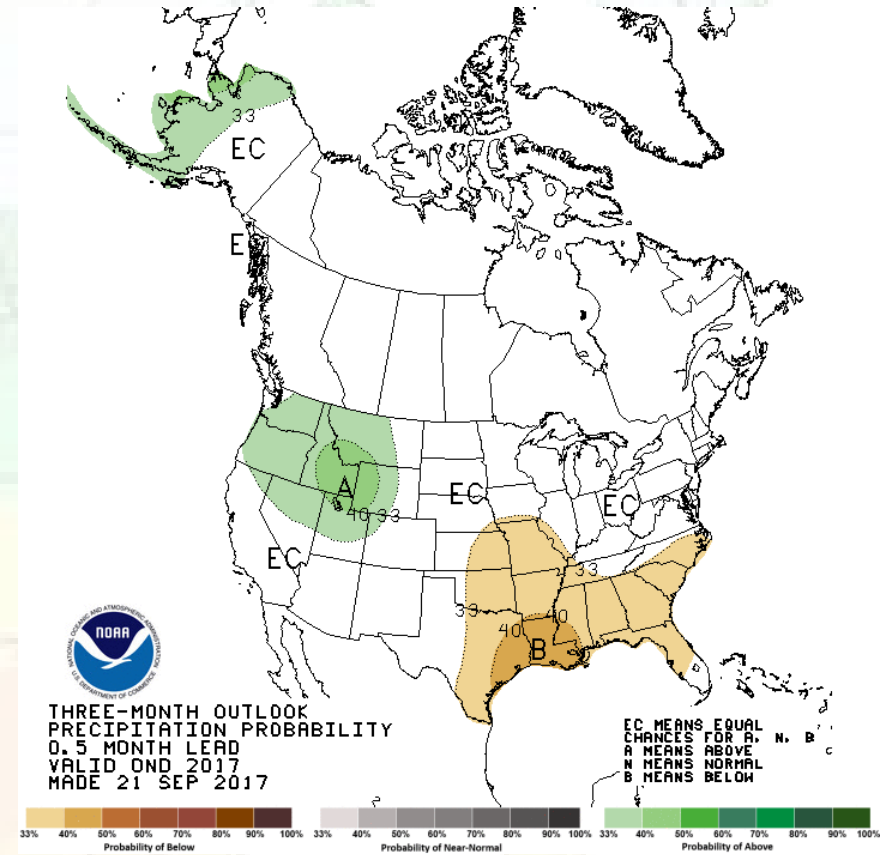
Precipitation

<http://www.cpc.ncep.noaa.gov/products/predictions/30day/>

3 Month Temperature and Precipitation Probabilities (October - December)

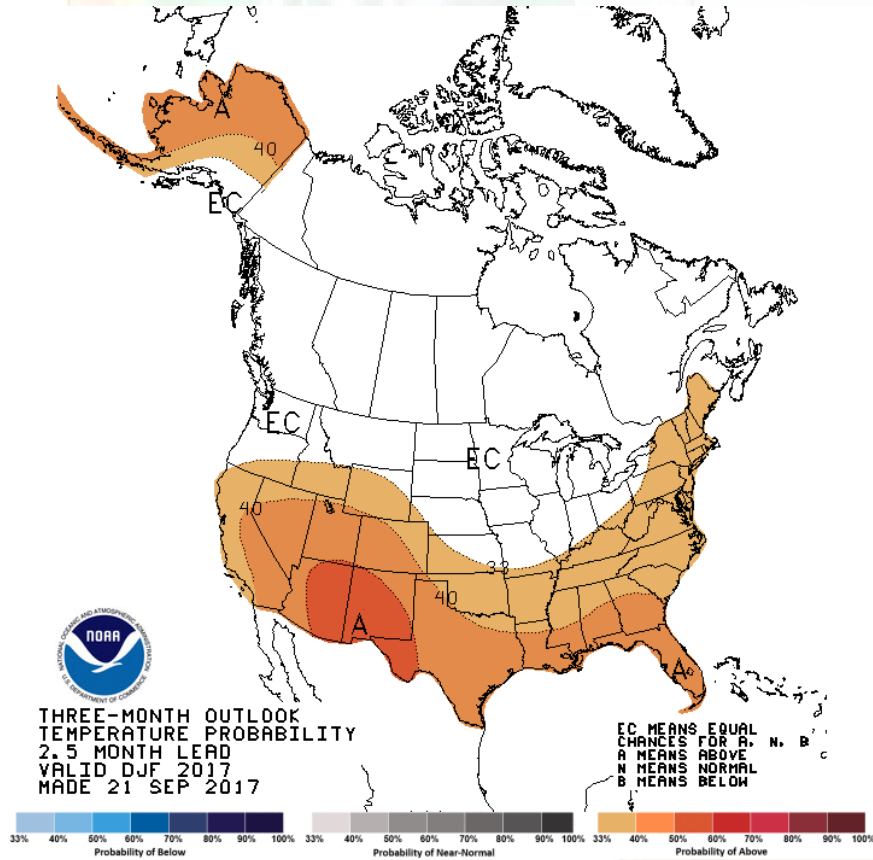


Temperature

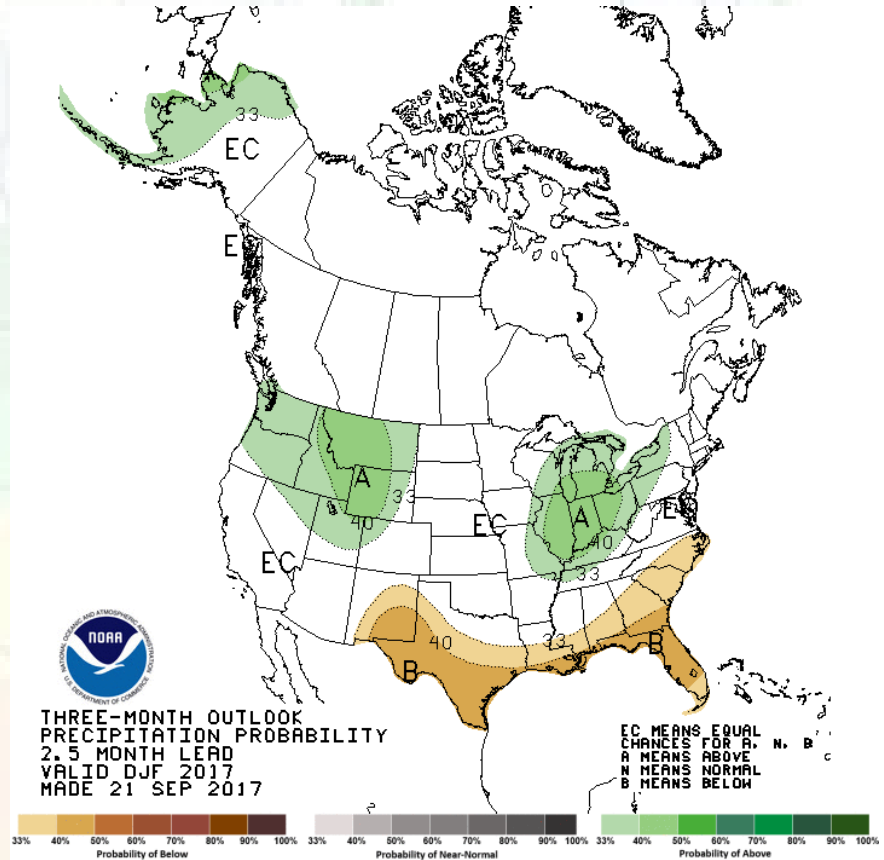


Precipitation

3 Month Temperature and Precipitation Probabilities (December - February)



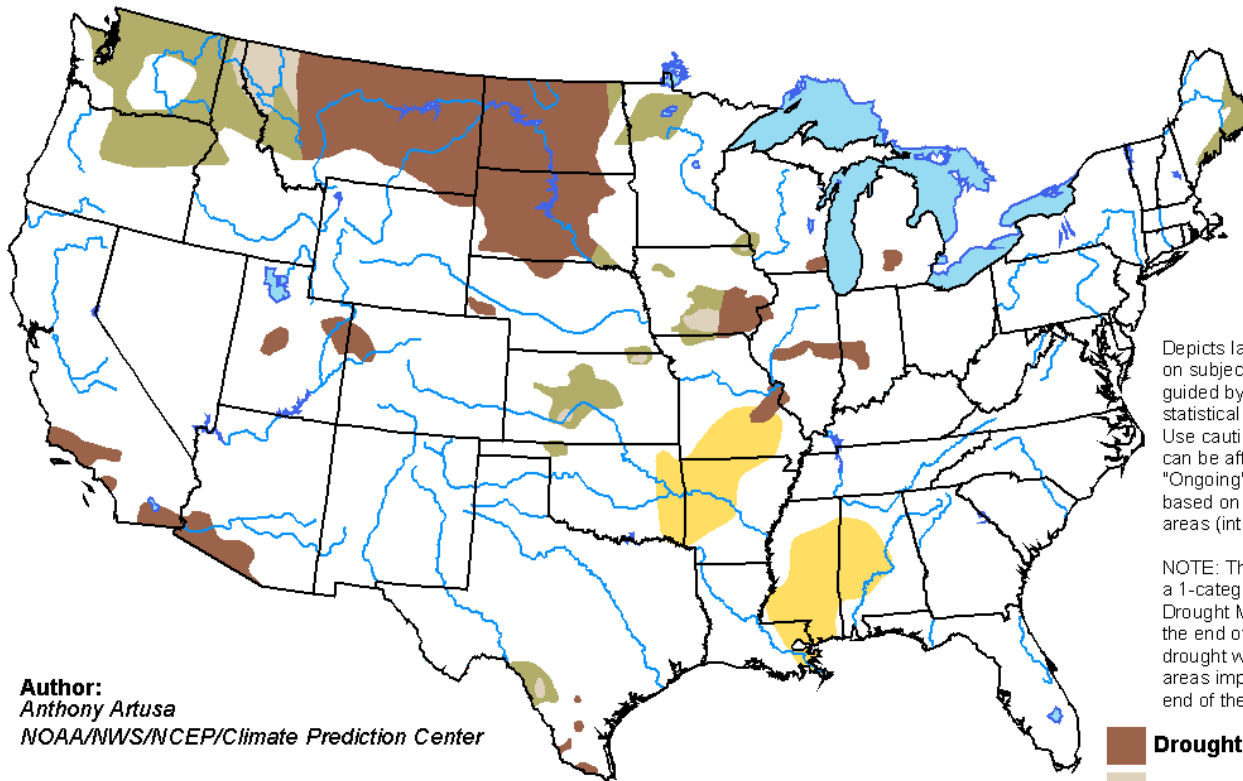
Temperature



Precipitation

Drought Outlook through 31 December

U.S. Seasonal Drought Outlook valid for September 21 - December 31, 2017
Drought Tendency During the Valid Period Released September 21, 2017

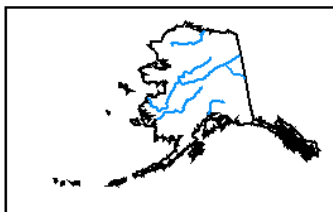


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to 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:
Anthony Artusa
NOAA/NWS/NCEP/Climate Prediction Center

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



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

Summary - Conditions

- * Summer cool overall – particularly latter summer
- * Dry west and parts of central Corn Belt
- * Some recovery later
- * Eastern corn belt wet early- drying out later
- * Ag crops some delays/some ahead – confusing issue
- * Wildlife impacted
- * Fires and smoke/haze ongoing

Summary - Outlooks

- * La Niña – La Niña watch – more likely into early winter
- * Limited frost impact potential
- * Dryness likely continues into fall (good for harvest – bad for soil moisture recharge)
- * La Niña-like winter outlook
 - * Less warm northward likely
 - * Precip better chances west and Ohio Valley

Further Information - Partners

- **Today's and Past Recorded Presentations and :**
- <http://mrcc.isws.illinois.edu/webinars.htm>
- <http://www.hprcc.unl.edu>
- NOAA's National Climatic Data Center: www.ncdc.noaa.gov
 - Monthly climate reports (U.S. & Global): www.ncdc.noaa.gov/sotc/
- NOAA's Climate Prediction Center: www.cpc.ncep.noaa.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:
 - **Climate:**
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 - Doug Kluck: doug.kluck@noaa.gov, 816-994-3008
 - Mike Timlin: mtimlin@illinois.edu; 217-333-8506
 - Natalie Umphlett: numphlett2@unl.edu ; 402 472-6764
 - Brian Fuchs: bfuchs2@unl.edu 402 472-6775
 - **Weather:**
 - crhroc@noaa.gov

For more Information on the Midwest Climate Hub



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Dennis Todey, Director

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Erica Kistner, Fellow

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United States Department of Agriculture
Midwest Climate Hub