Midwest and Great Plains Climate-Drought Outlook 17 May 2018

Photo: Pete Boulay

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515-294-2013

National Drought Mitigation Center

NOAA

Regional Climate Centers

AASC American Association of State Climatologists

USDA United States Department of Agriculture Midwest Climate Hub

General Information

- **Providing climate services to the Central Region**
  - Collaboration Activity Between:
    - 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**
  - June 21, 2018 (1 PM CDT) Aaron Wilson– Ohio State Climate Office (OSU Ext.)

- **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**
  - **Snow/water**
  - **Other**
- **Outlooks**
  - **El Niño in waiting**
  - **Planting/summer**

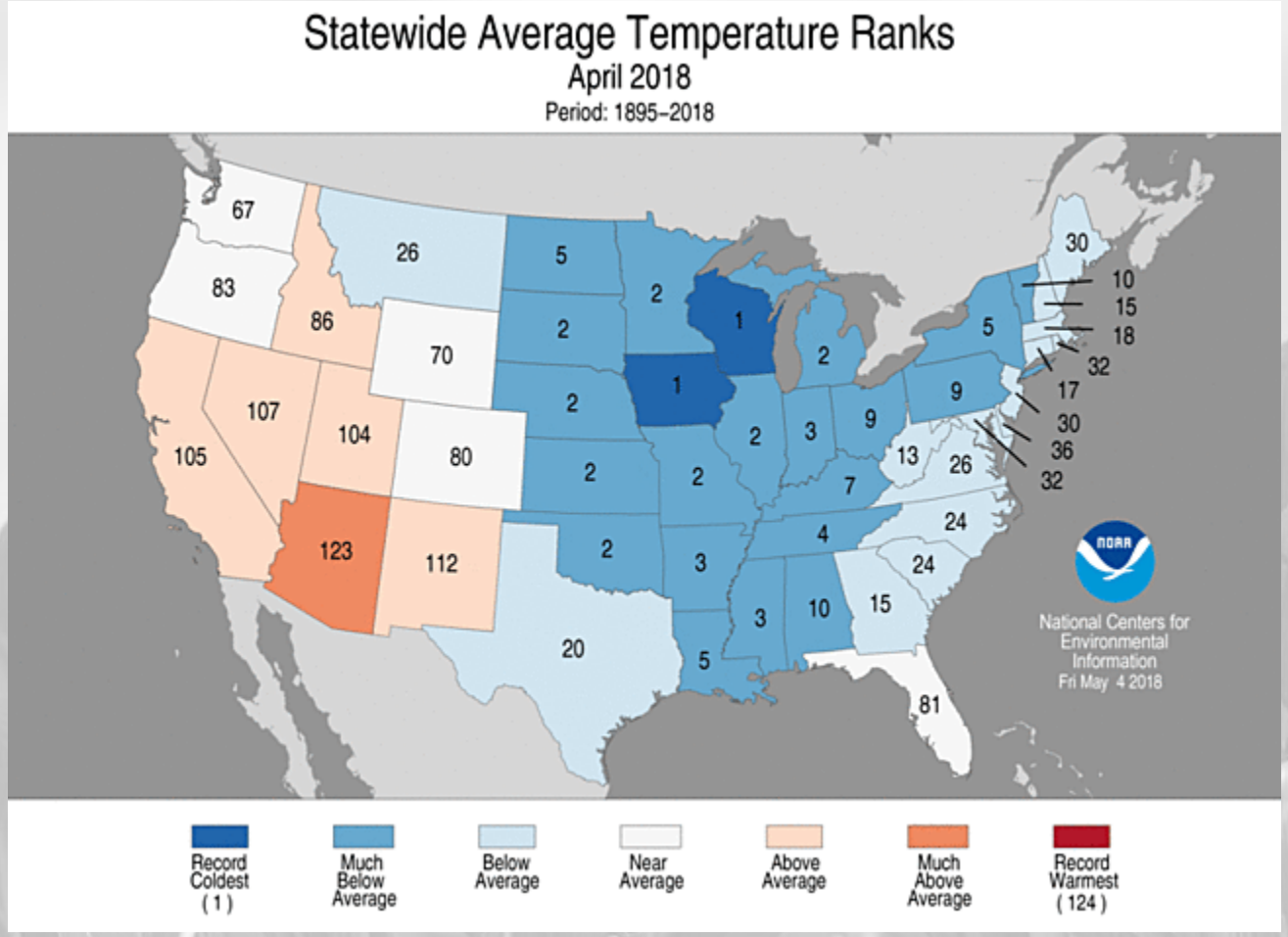
SD Bean Planting– Laura Edwards South Dakota State Climatologist (SDSU Ext.)

REVIEW/CURRENT CONDITIONS

April Temperature Recap

Much colder than average eastern 2/3 US

Top 5 most of plains and Midwest



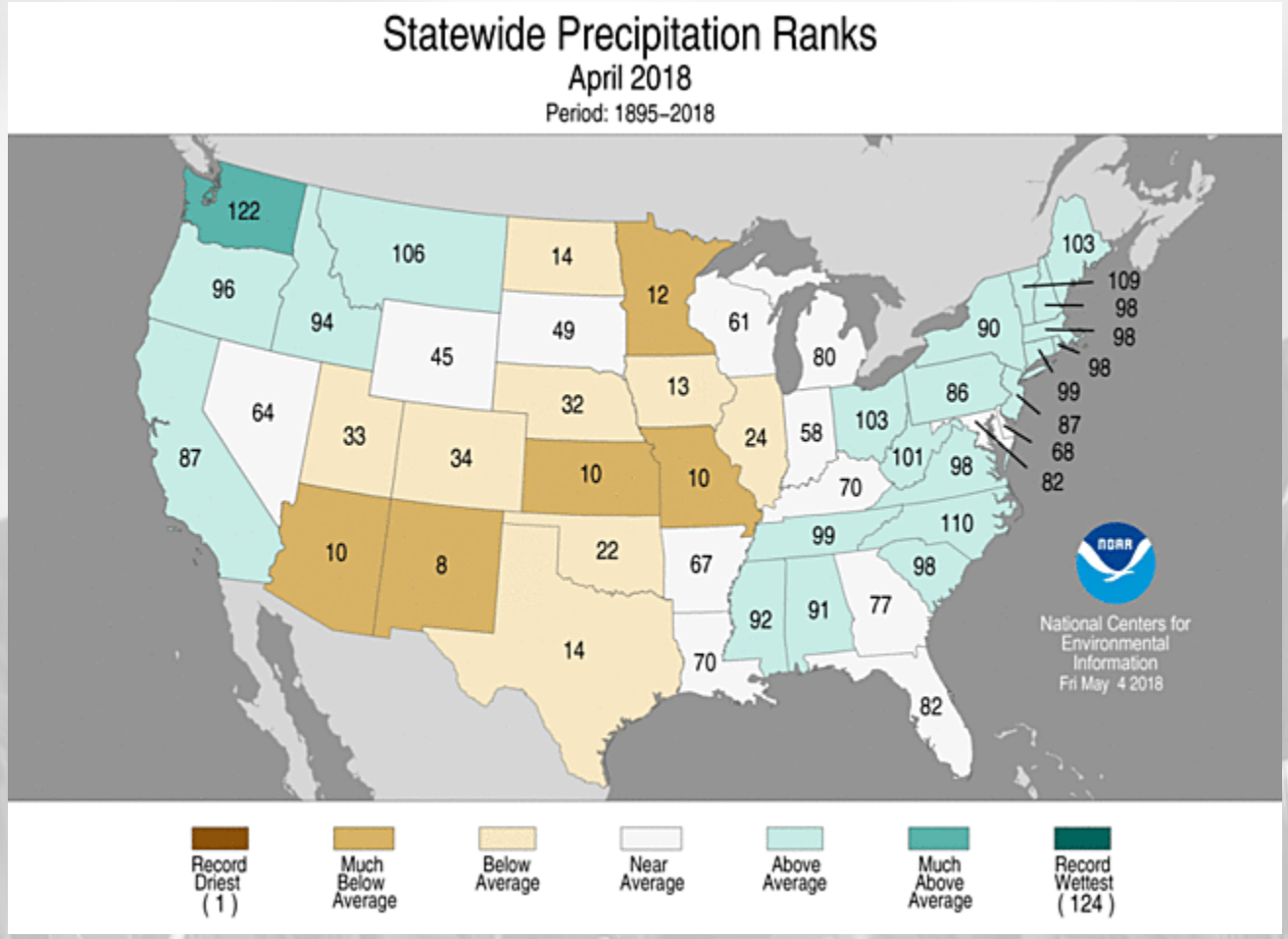
http://www.ncdc.noaa.gov/temp-and-precip/us-maps/

April Precipitation Recap

Mainly dry from April

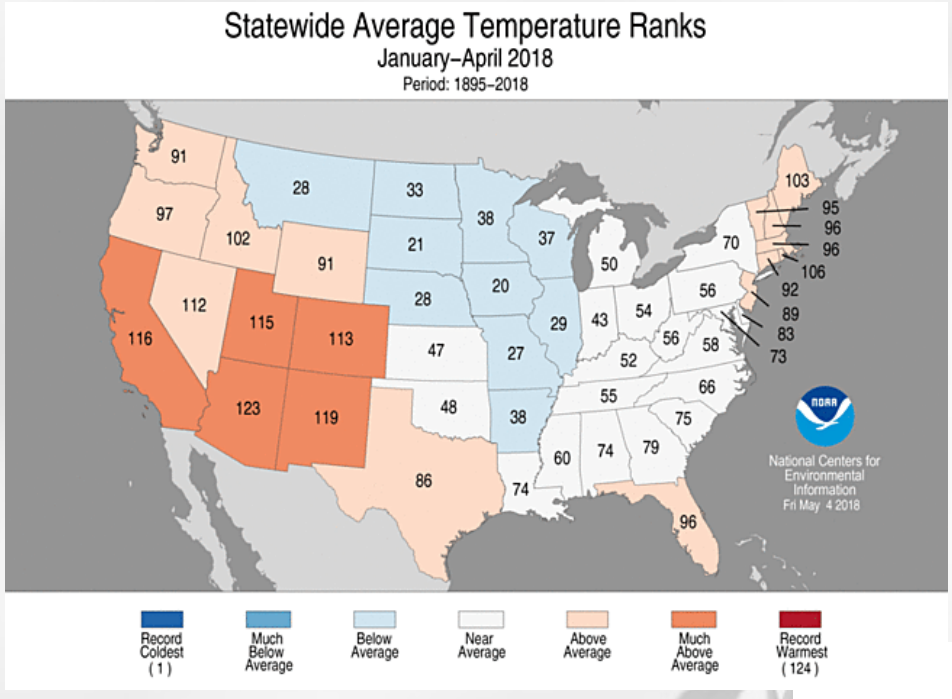
Cold was probably beneficial because of the dryness

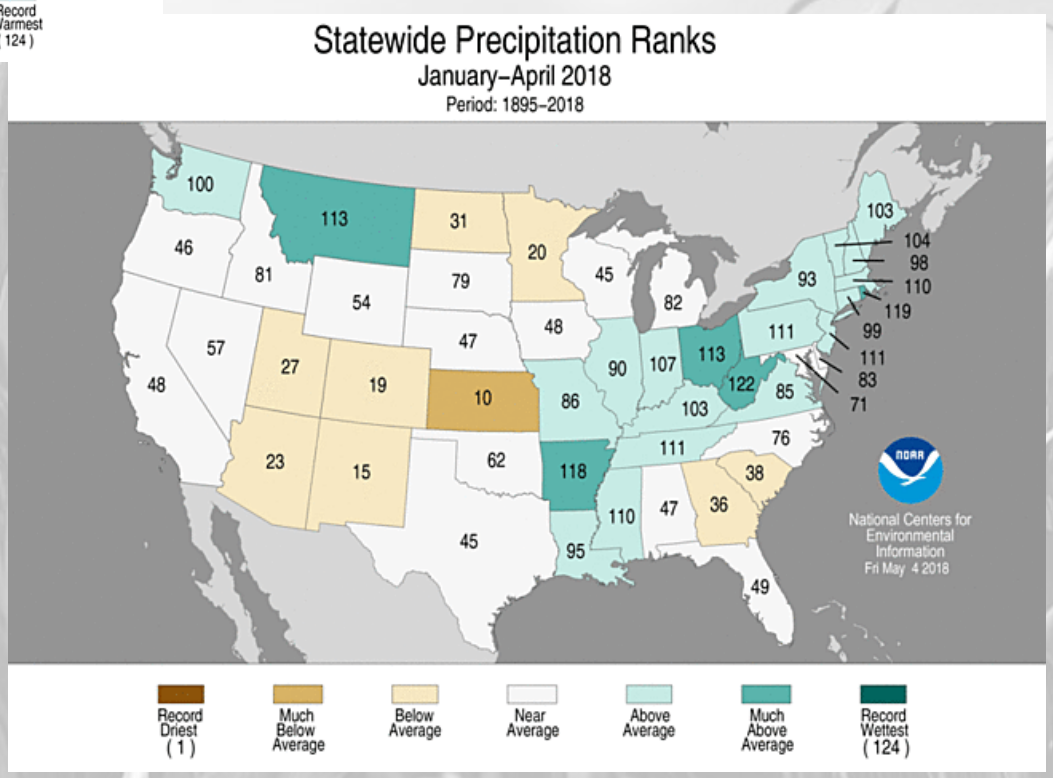
Only wetness Ohio and Montana



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

January - April ranks



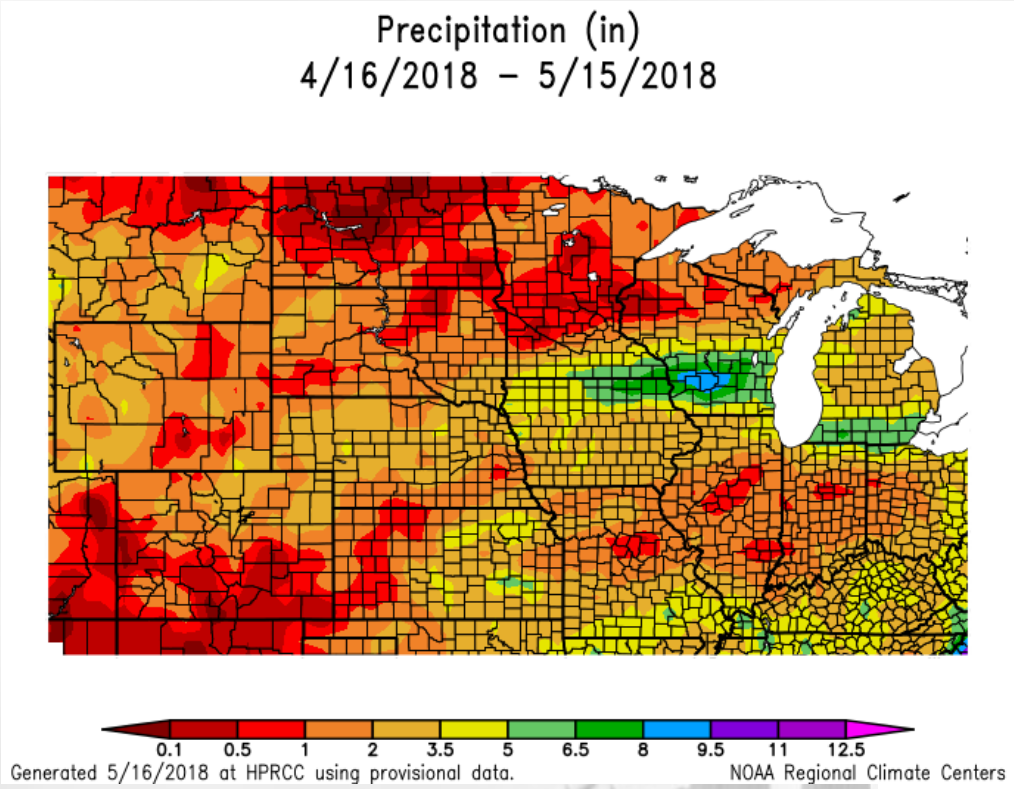


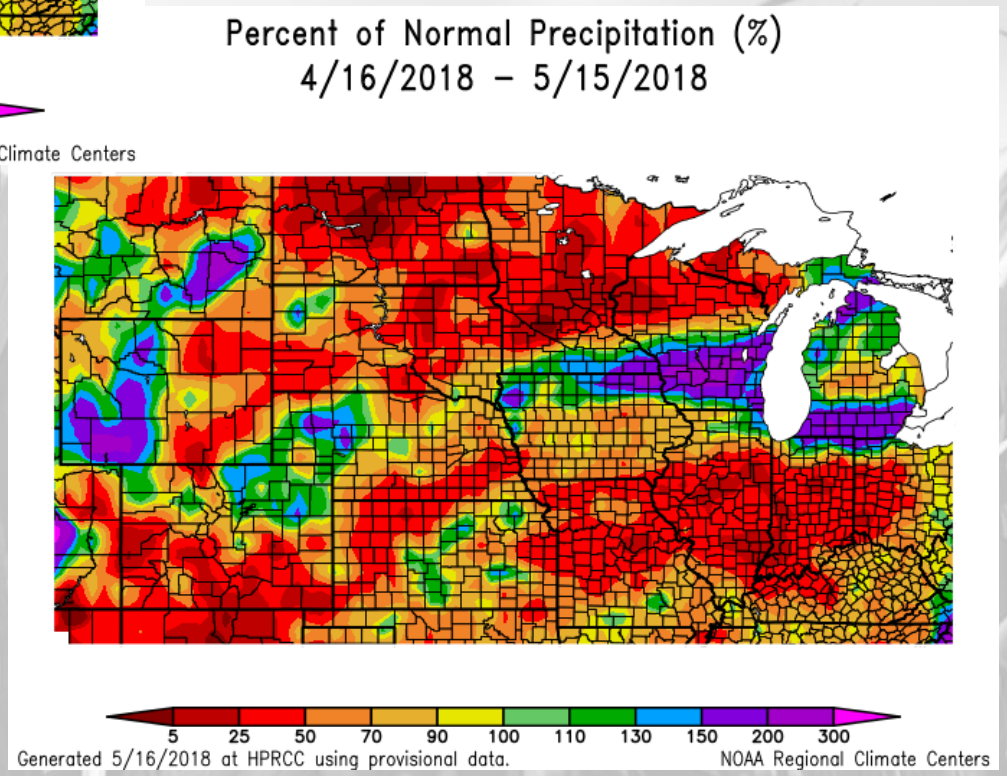
Cold but not as extreme as April
Warm in Rockies

Wet much of Corn Belt and MT. Dry nrn plains.

Dry KS

Last 30 days Precipitation

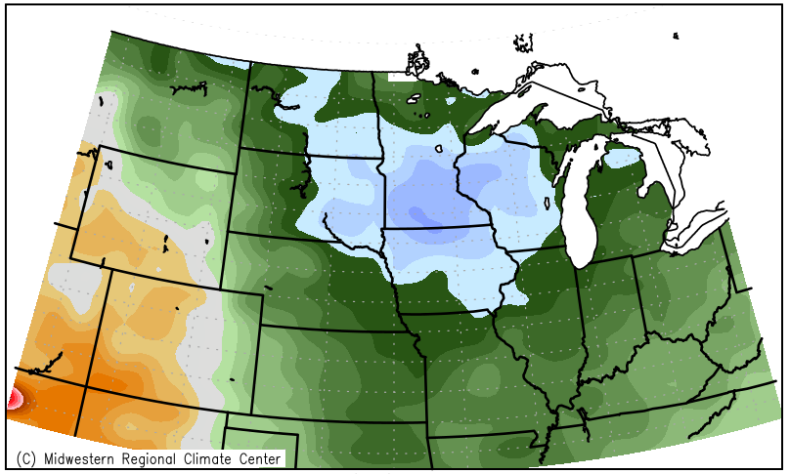




- A few quite wet areas
- Large parts of region very dry (<25% average)

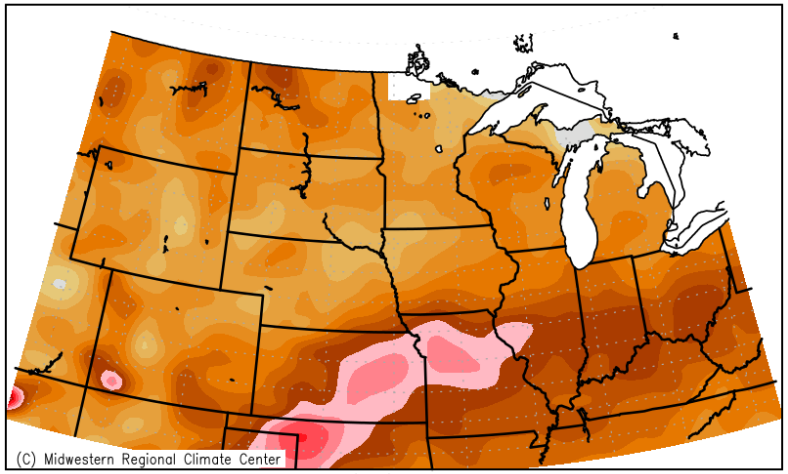
- Large ag impacts in both locations

Average Temperature (°F): Departure from Mean
April 1, 2018 to April 30, 2018



Mean period is 1981–2010.

Average Temperature (°F): Departure from Mean
May 1, 2018 to May 16, 2018

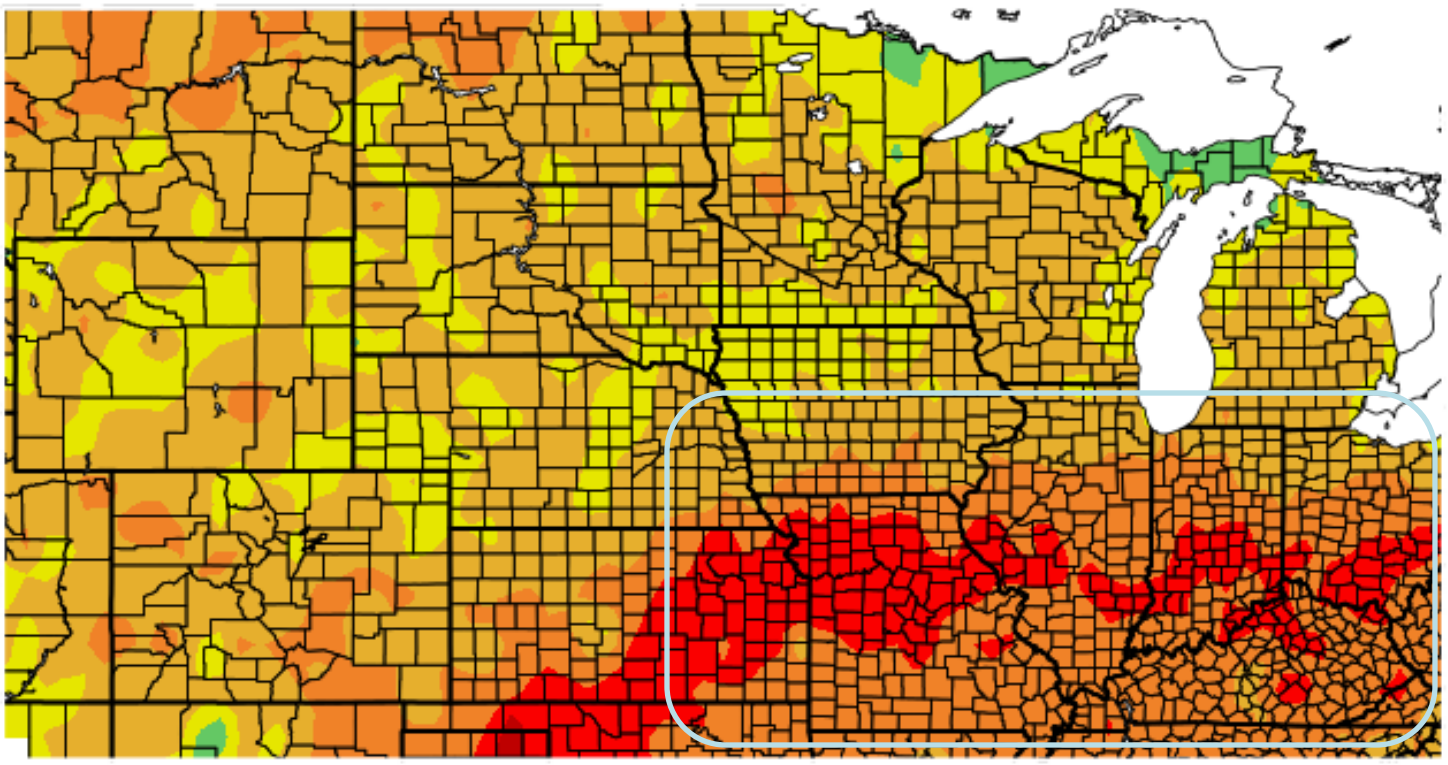


Mean period is 1981–2010.

Midwestern Regional Climate Center

cli–MATE: MRCC Application Tools Environment

Departure from Normal Temperature (F)
5/3/2018 – 5/16/2018



−15 −12 −9 −6 −3 0 3 6 9 12 15

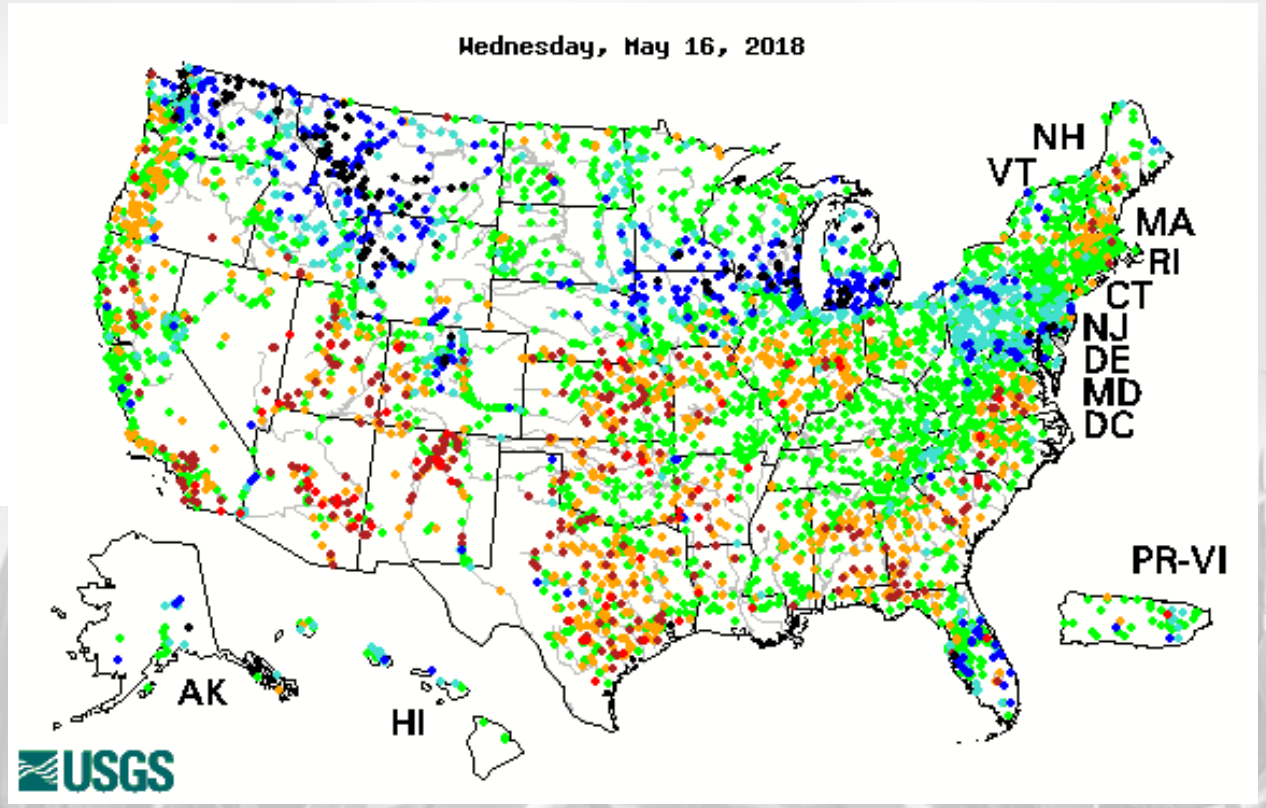
Generated 5/17/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

7-Day Average Streamflow

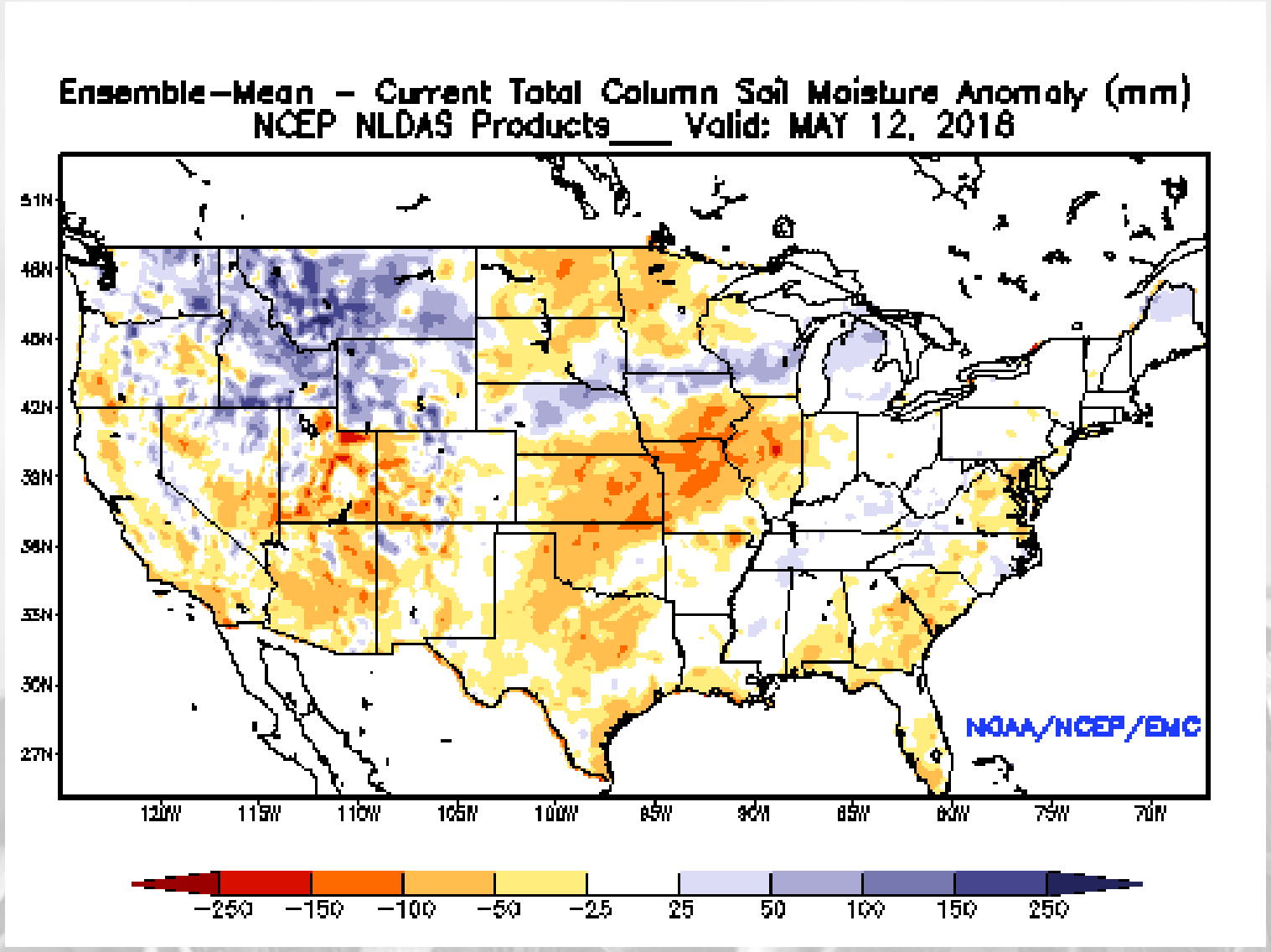
Wednesday, 16 May 2018

- Wet areas very clear
- Dry areas starting to show up
- Reminder average flows are higher in the spring – below average may not be awful. But is an indicator



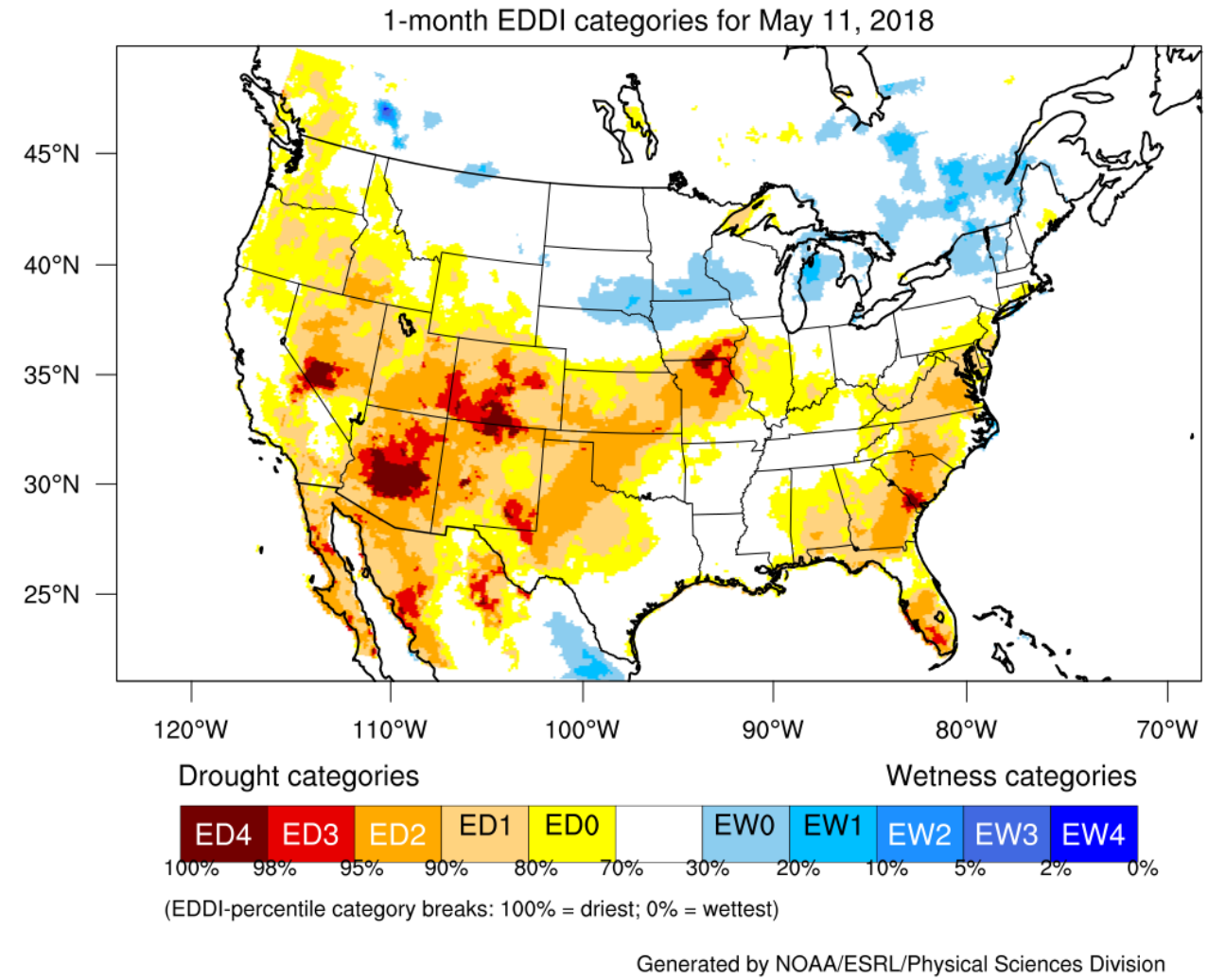
Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

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



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

EDDI – Evaporative Demand Index

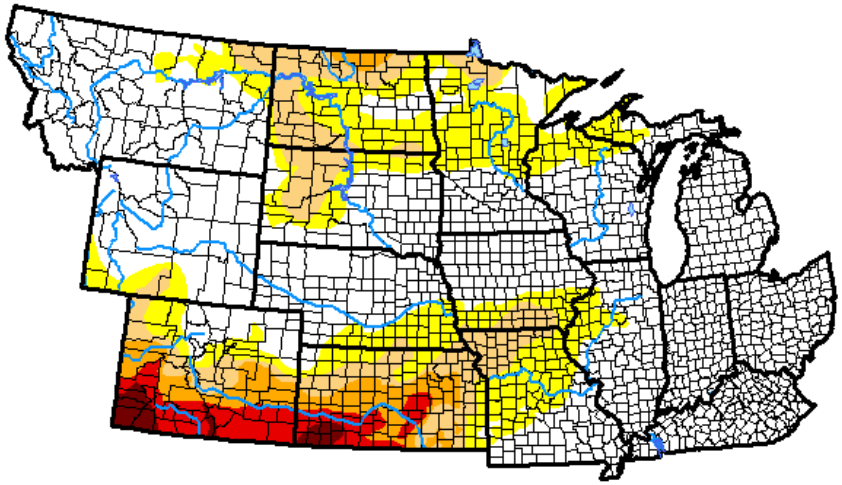


https://www.esrl.noaa.gov/psd/eddi/

US Drought Monitor

U.S. Drought Monitor

NWS Central Region



May 15, 2018

(Released Thursday, May. 17, 2018)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	62.48	37.52	18.45	8.53	4.33	1.03
Last Week *05-08-2018*	64.63	35.37	18.12	8.96	4.72	1.18
3 Months Ago *02-13-2018*	49.36	50.64	28.12	9.47	1.01	0.00
Start of Calendar Year *01-02-2018*	44.74	55.26	22.30	7.69	2.03	0.00
Start of Water Year *09-26-2017*	50.80	49.20	24.09	12.89	6.13	2.26
One Year Ago *05-16-2017*	92.57	7.43	0.05	0.00	0.00	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:

Eric Luebehusen

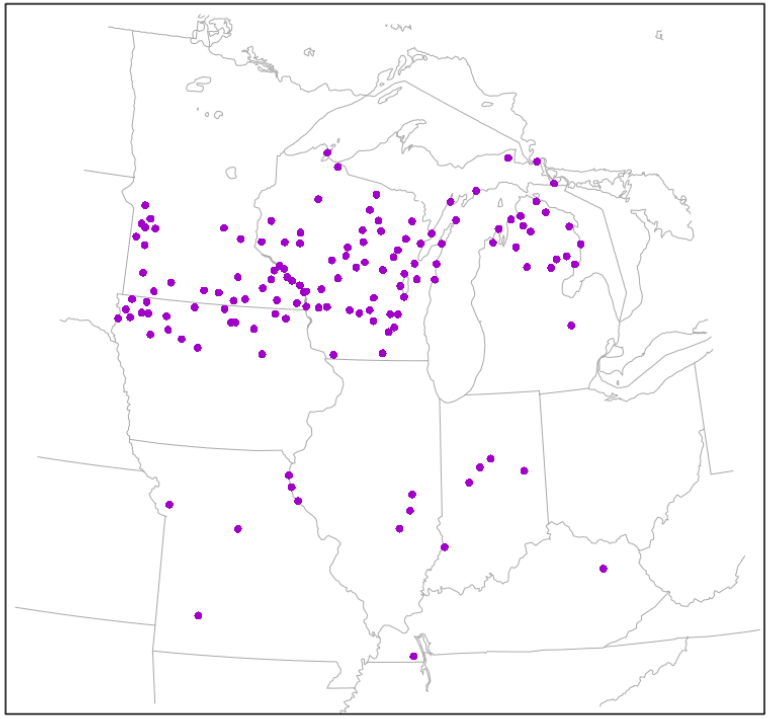
U.S. Department of Agriculture

http://droughtmonitor.unl.edu/

RECORDS

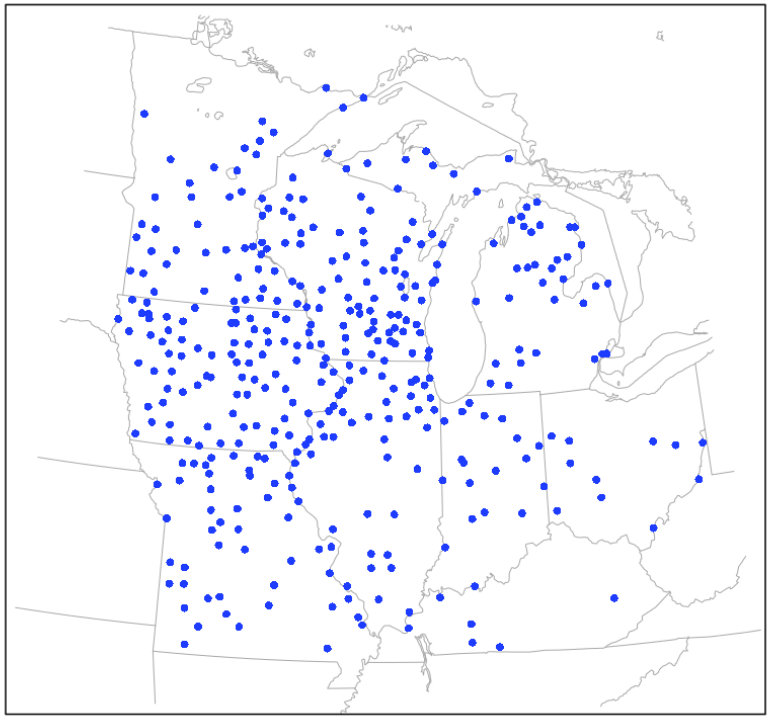
Record High Monthly Snowfall

April 2018

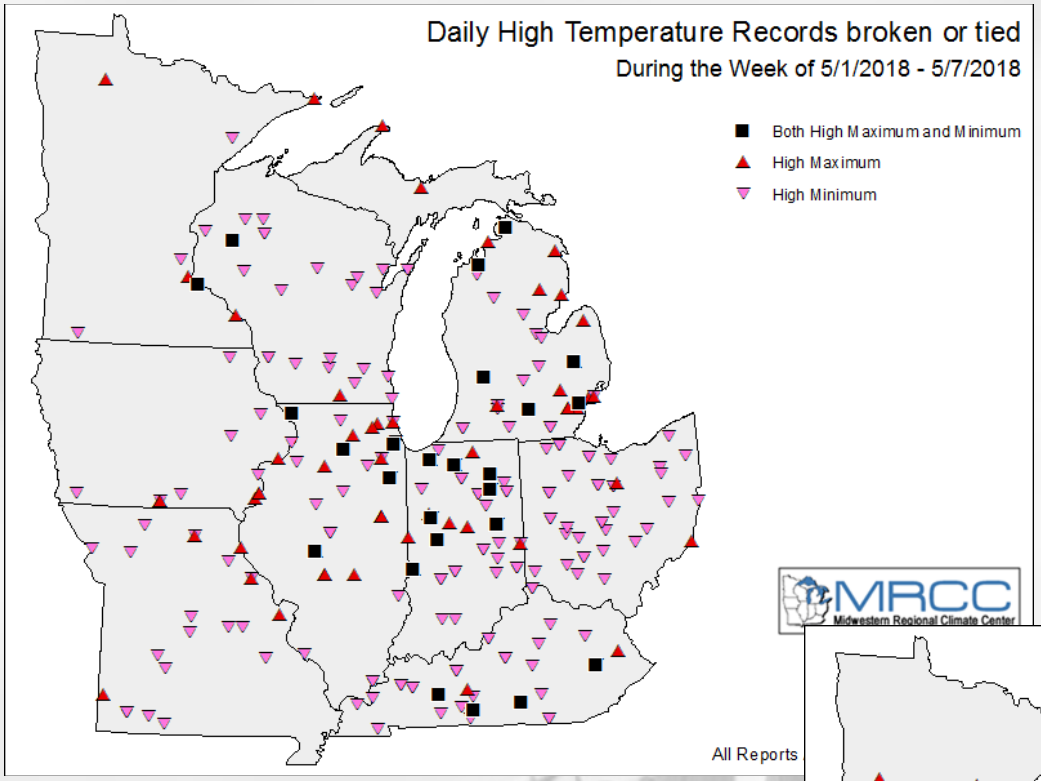


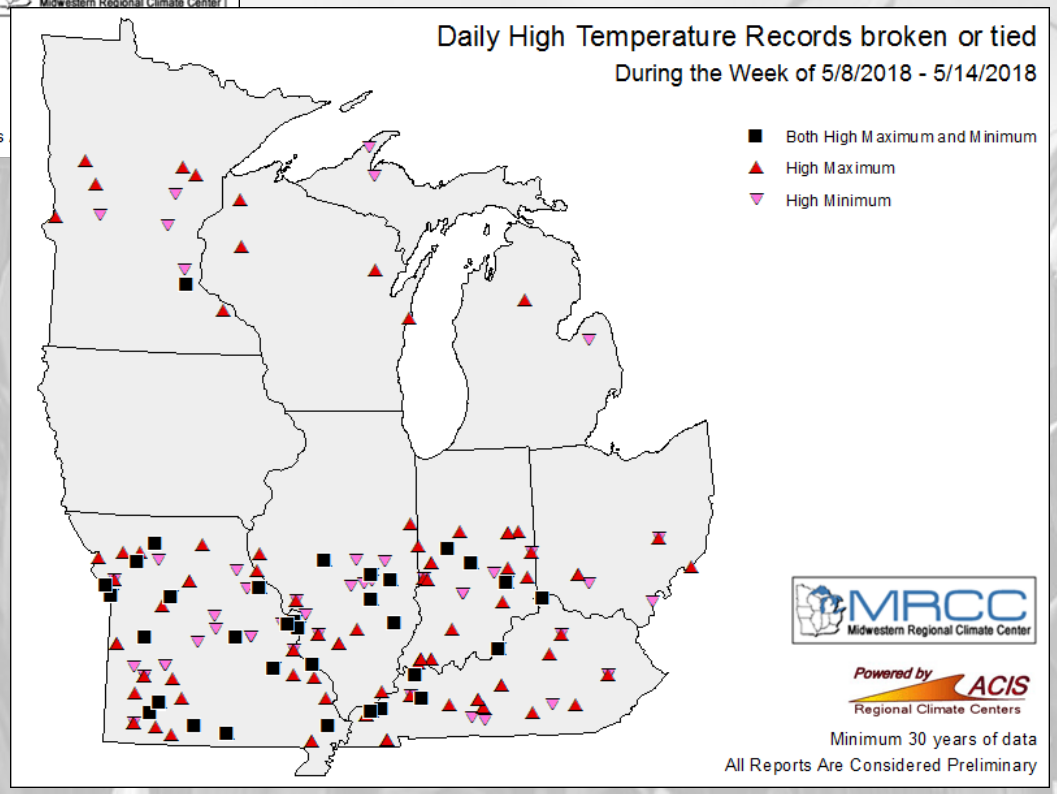
Record Low Monthly Temperatures

April 2018



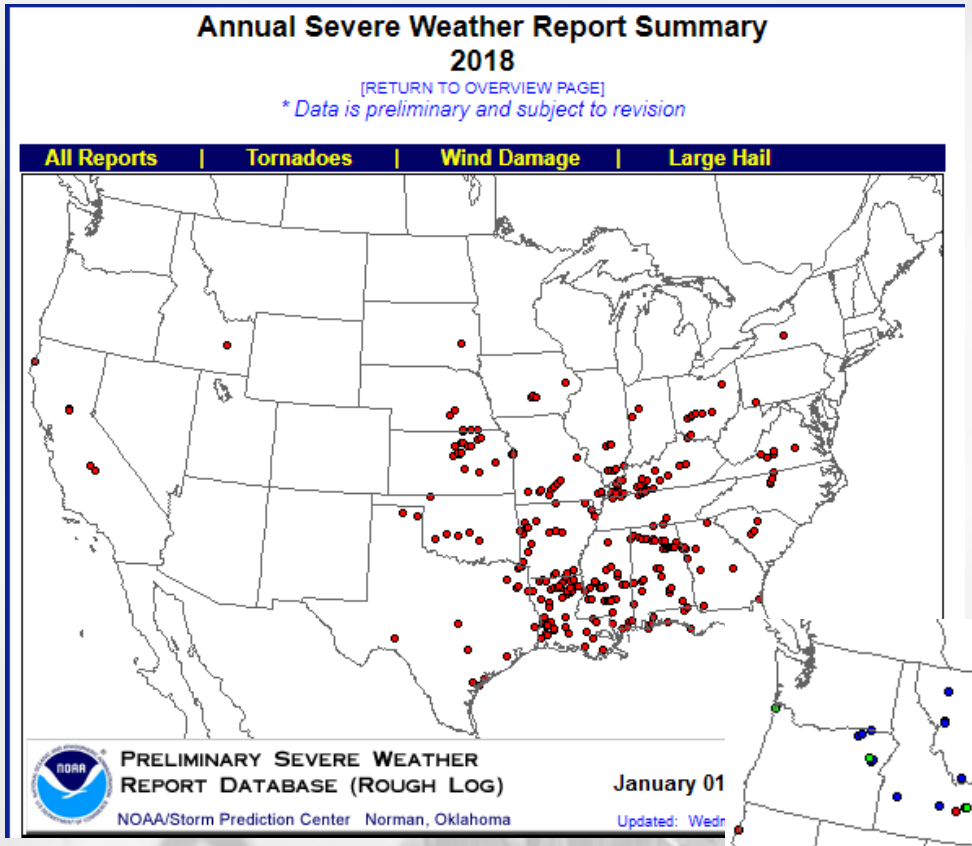
Courtesy MRCC – Mike Timlin

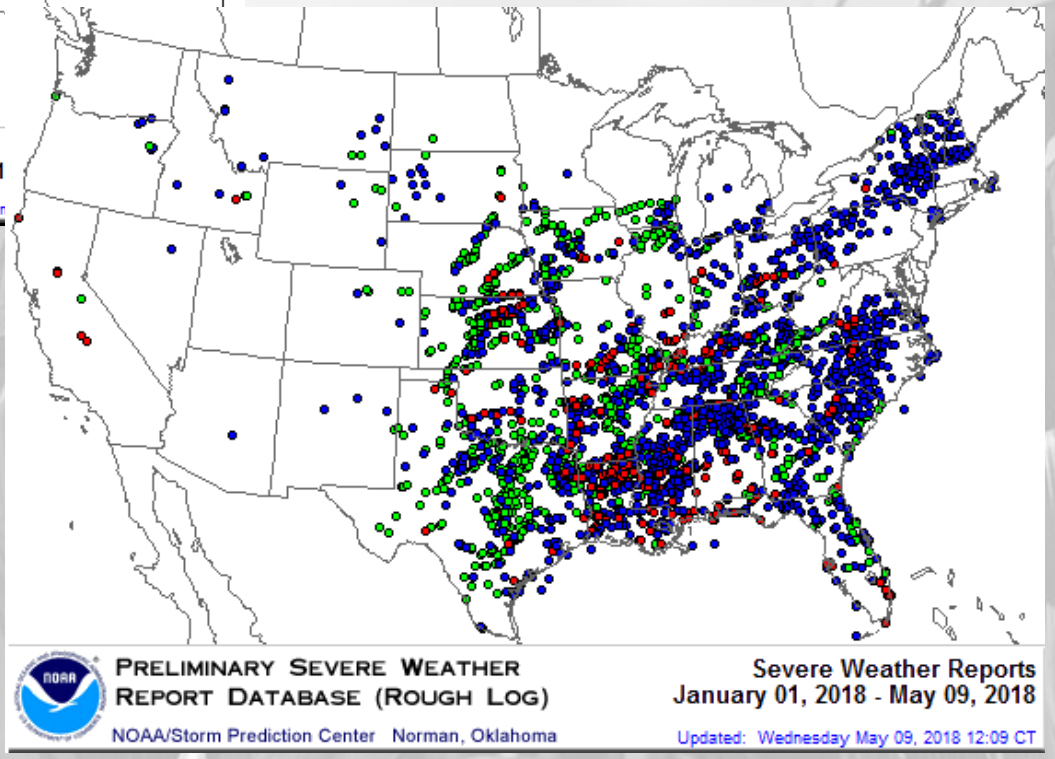




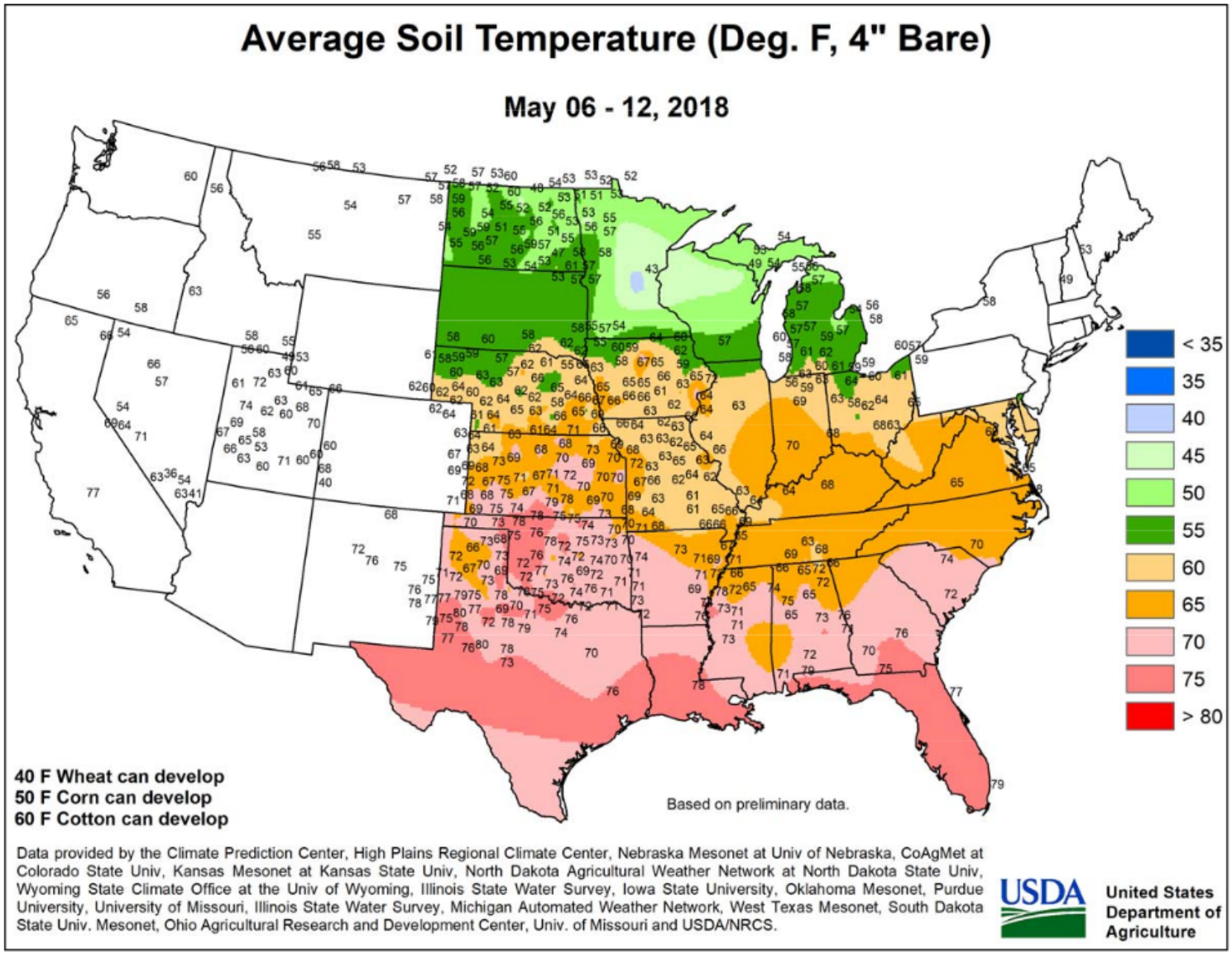
May temperature records
Week 1 and 2

Severe Weather? Not So Much



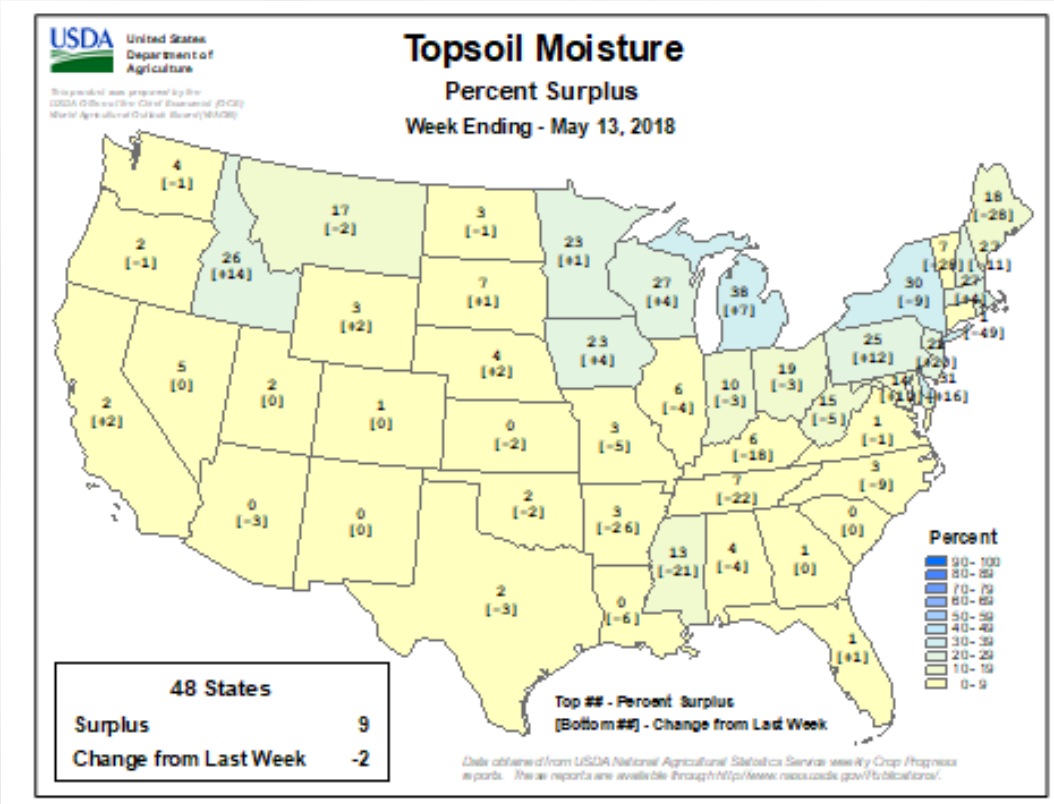


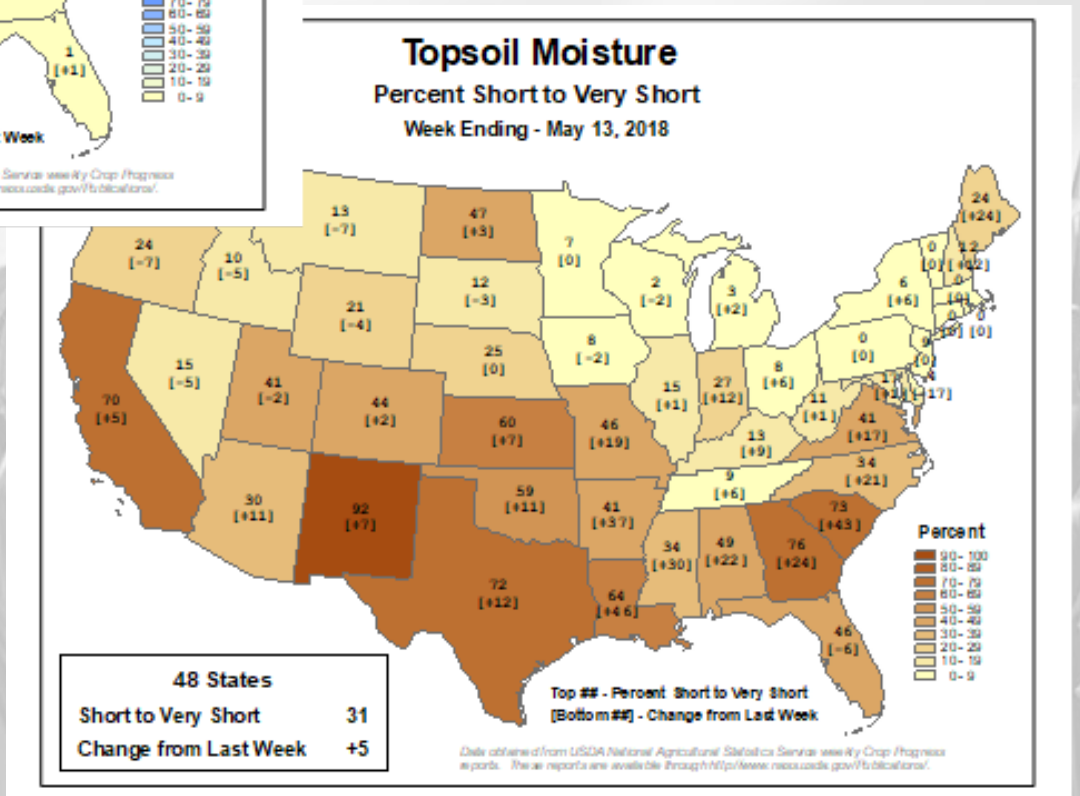
AGRICULTURE



https://www.usda.gov/oce/weather/pubs/Weekly/Wwcb/wwcb.pdf

NASS Topsoil moisture





Quiz Time

- NASS Corn and Soybean Crop Progress are:

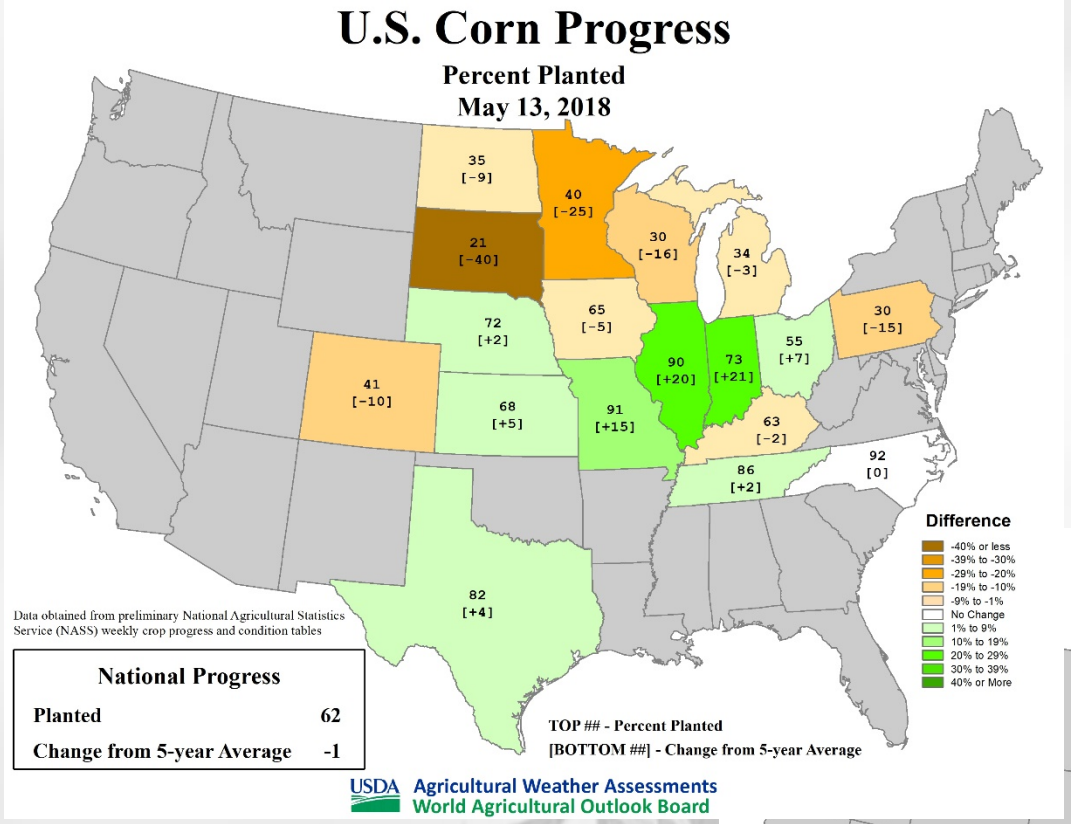
- Ahead
- Behind
- Depends
- Don’t care

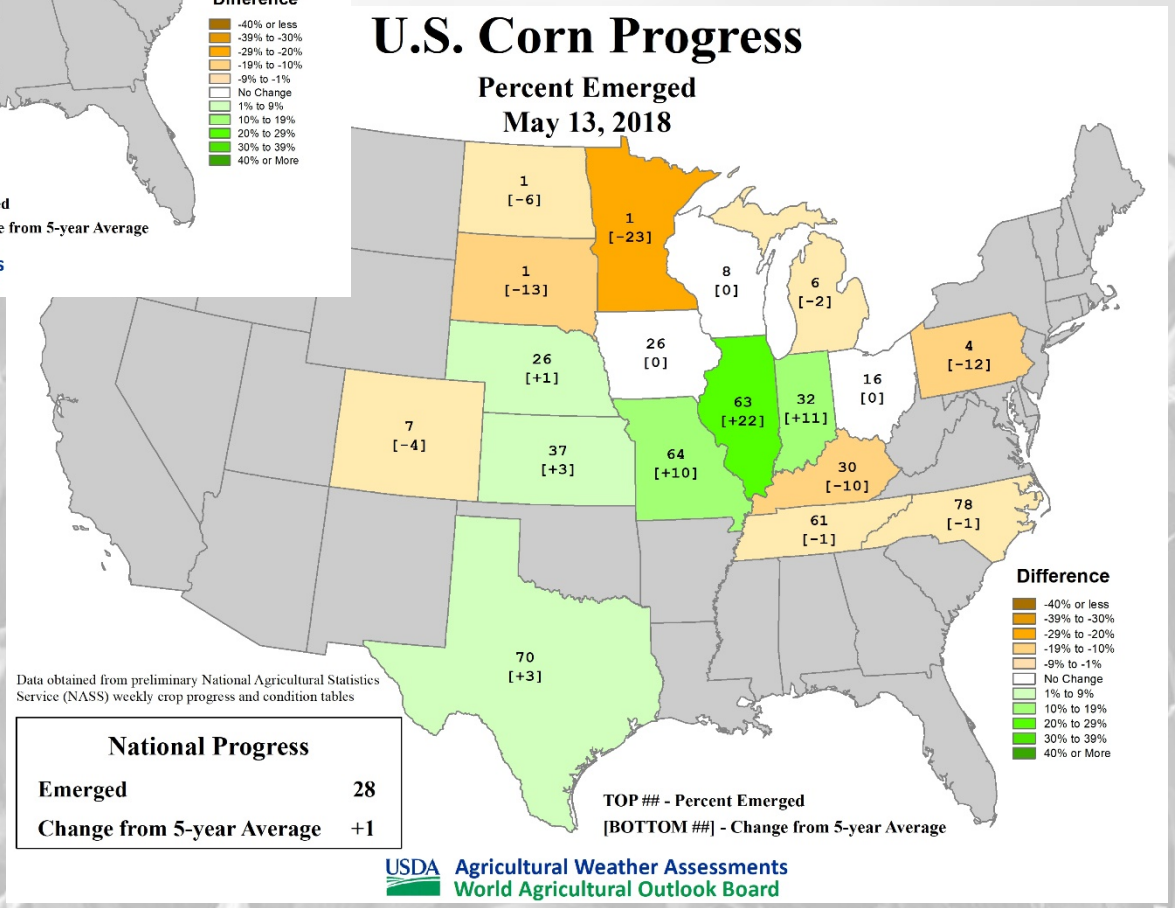
Quiz Time

- NASS Corn and Soybean Crop Progress are:

- Ahead (overall)
- Behind
- Depends (where you are)
- Don’t care

Corn

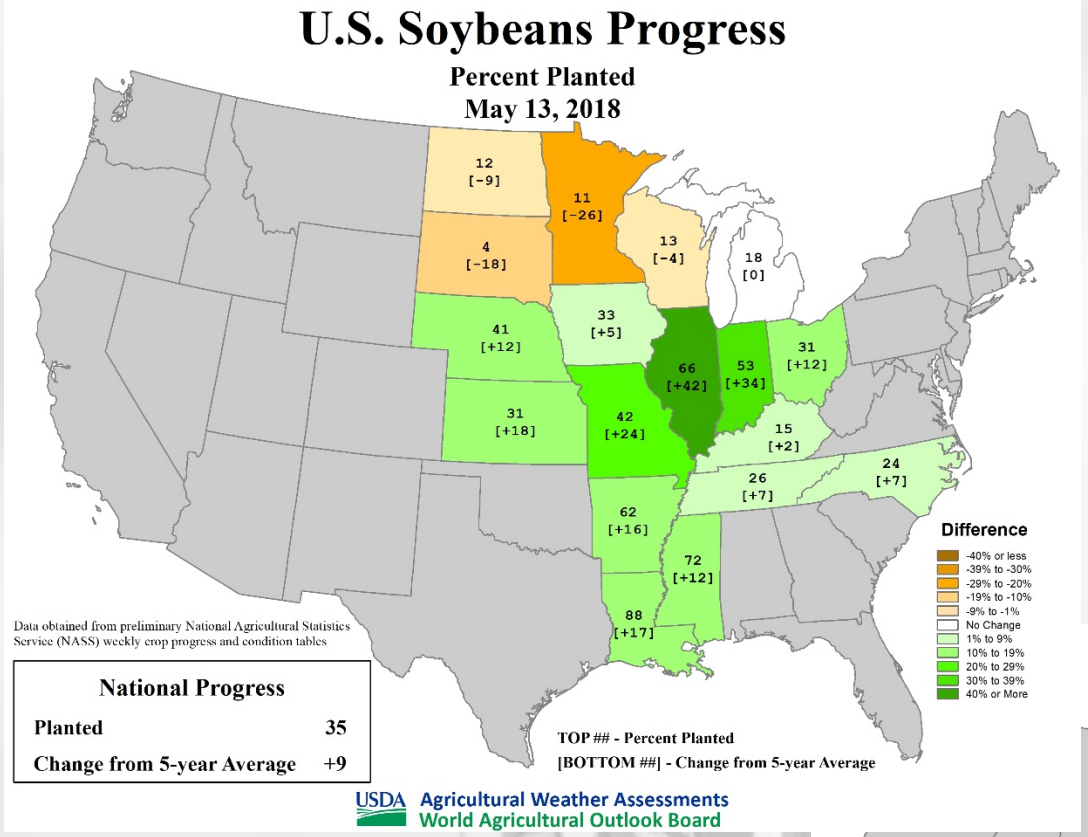




Behind planting
SD (-40) MN (-25)
Ahead
IL (+20) IN (+21)

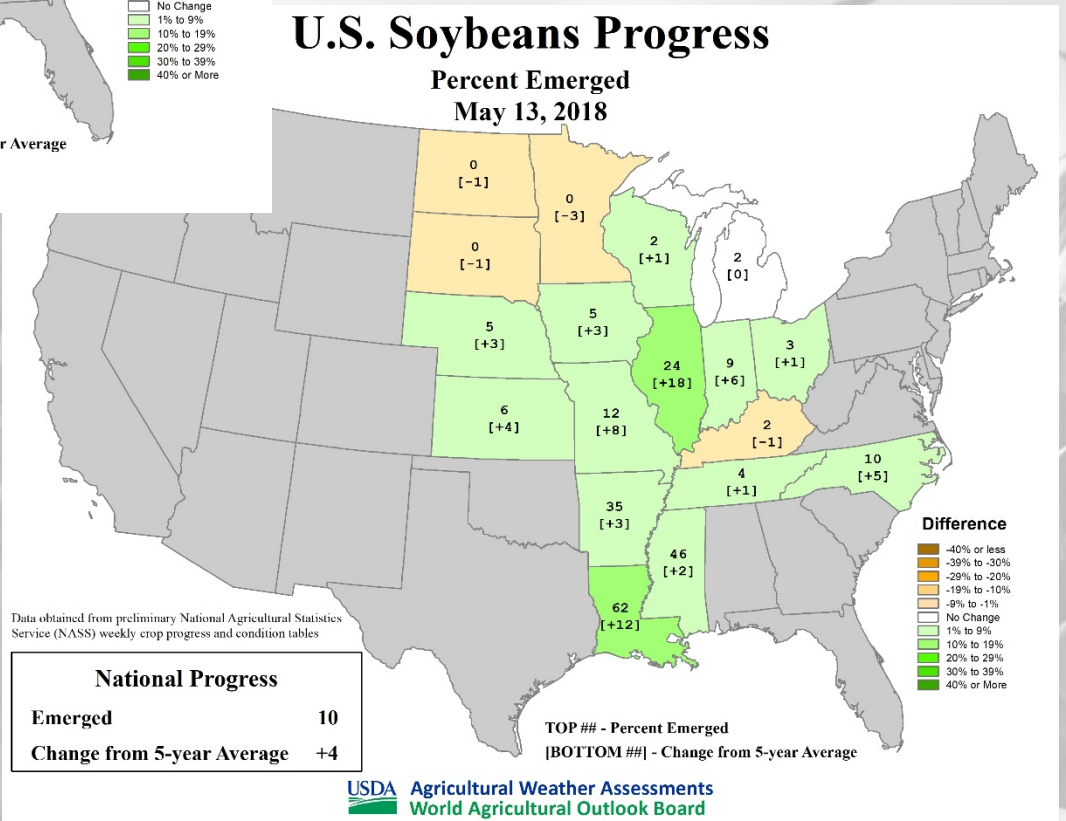
Emerged - similar situation

Soybean



Behind planting
SD (-18) MN (-26)
Ahead
IL (+42) IN (+34) MO (+24)

Emerged - similar situation



Various ag

- Cover crop termination issues
- Pastures ~2 weeks behind (cold) – Delaying livestock turnout
- Crop insurance (prevent plant) discussions
- Dry areas (NE) additional tillage (not good)
- Some fruit tree damage (MI/IN) – warm fall then very cold in winter

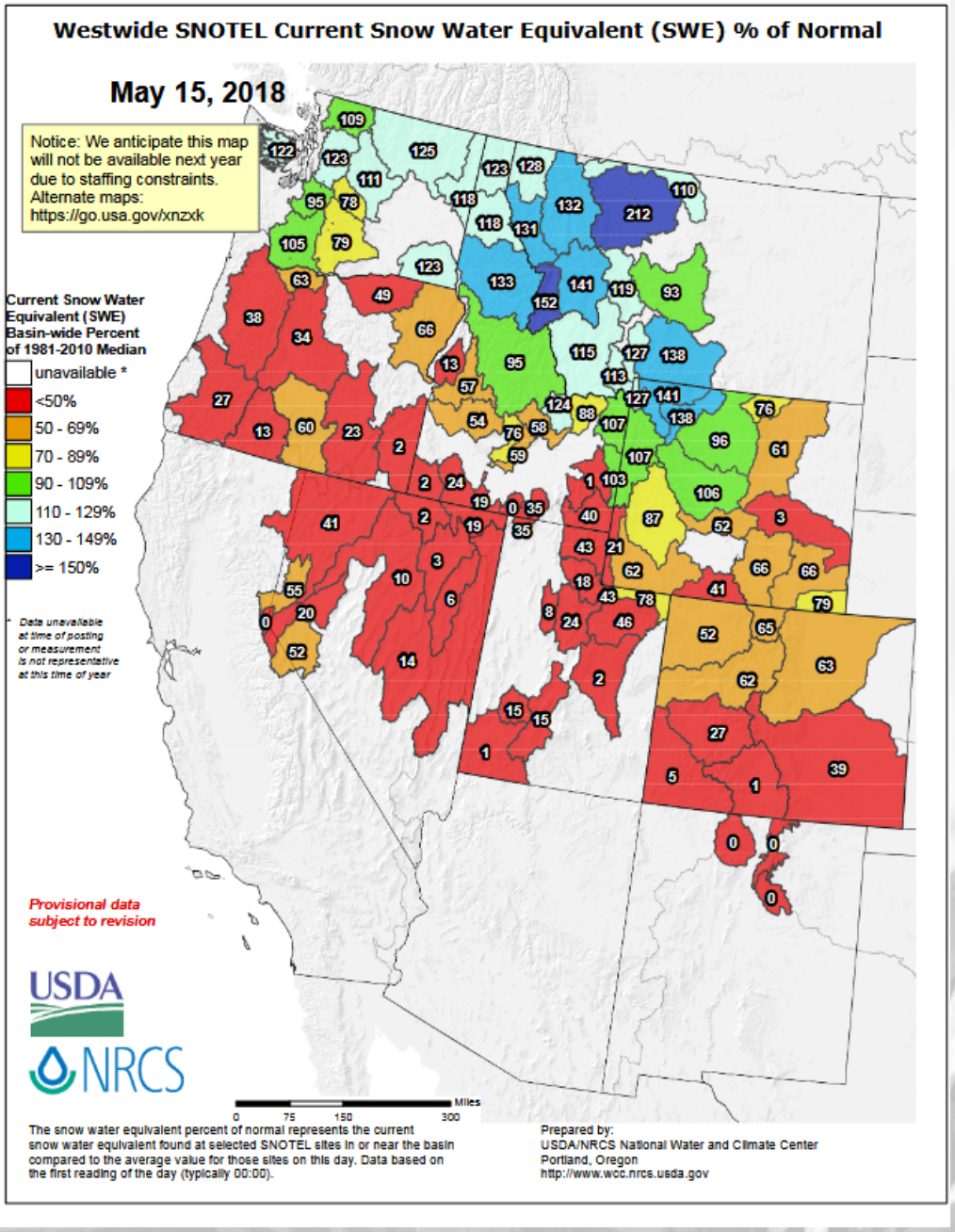
Ag Related to Transportation

Tilled fields combined with very dry and windy conditions led to blowing dust which caused multi-vehicle pile-ups, deaths and diversion of traffic on I-80 in Nebraska.

Farm fields Martin County MN

Photo: MN State Climate Office

WATER/SNOW



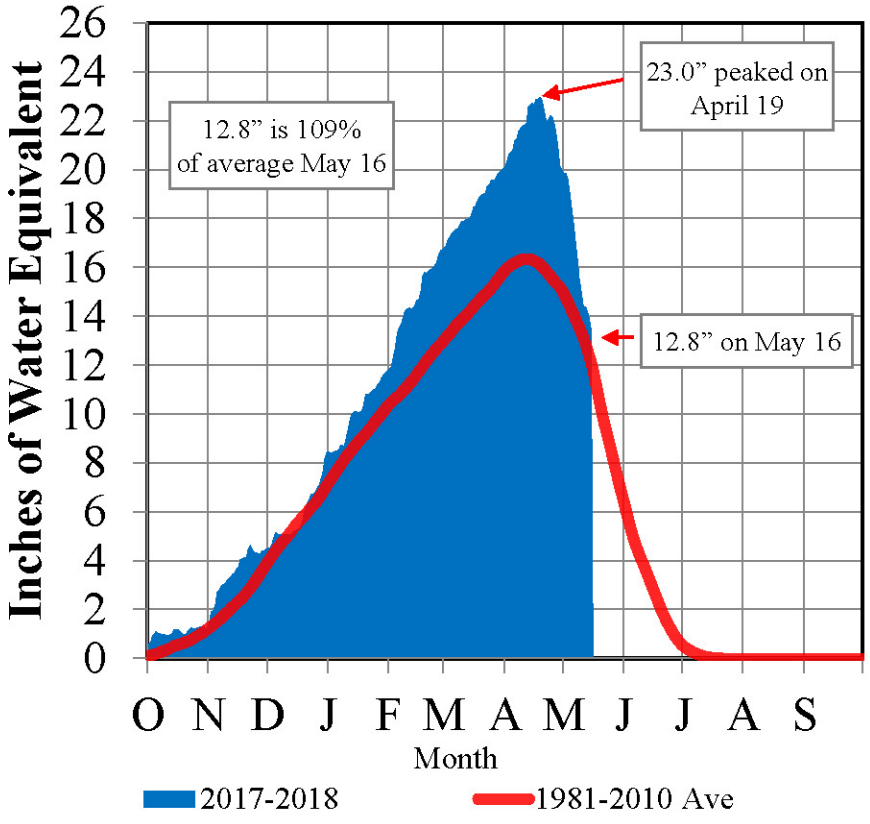
NRCS Snow Water Equivalent

- MT-WY – Missouri drainage still lots of snow
- CO – Platte drainage low snow pack

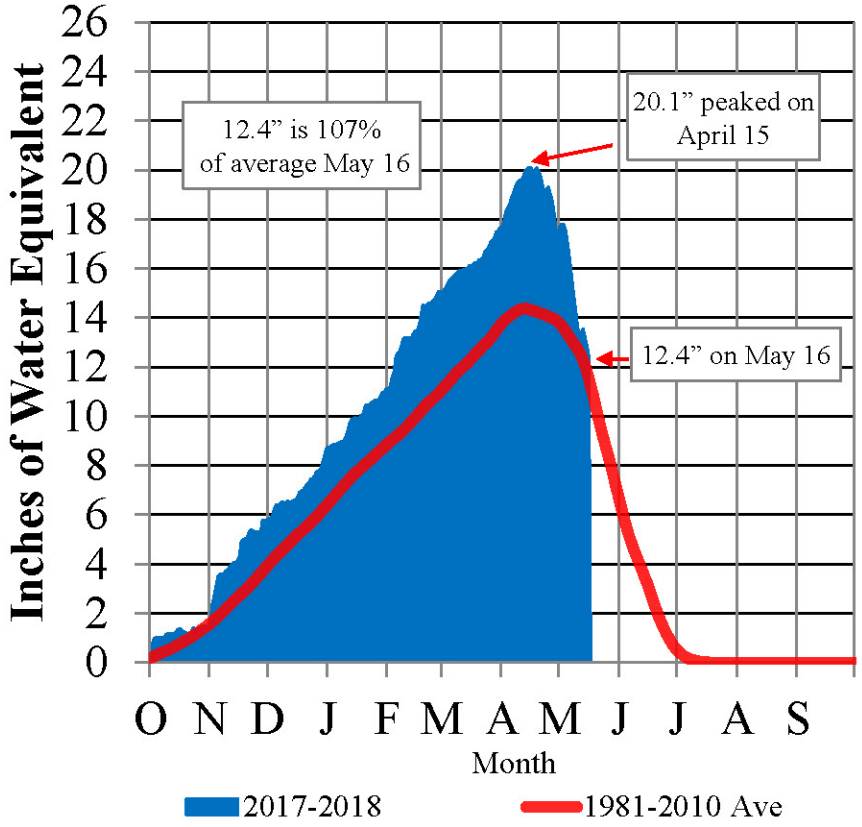
Mountain Snowpack

May 16, 2018

Total above Fort Peck



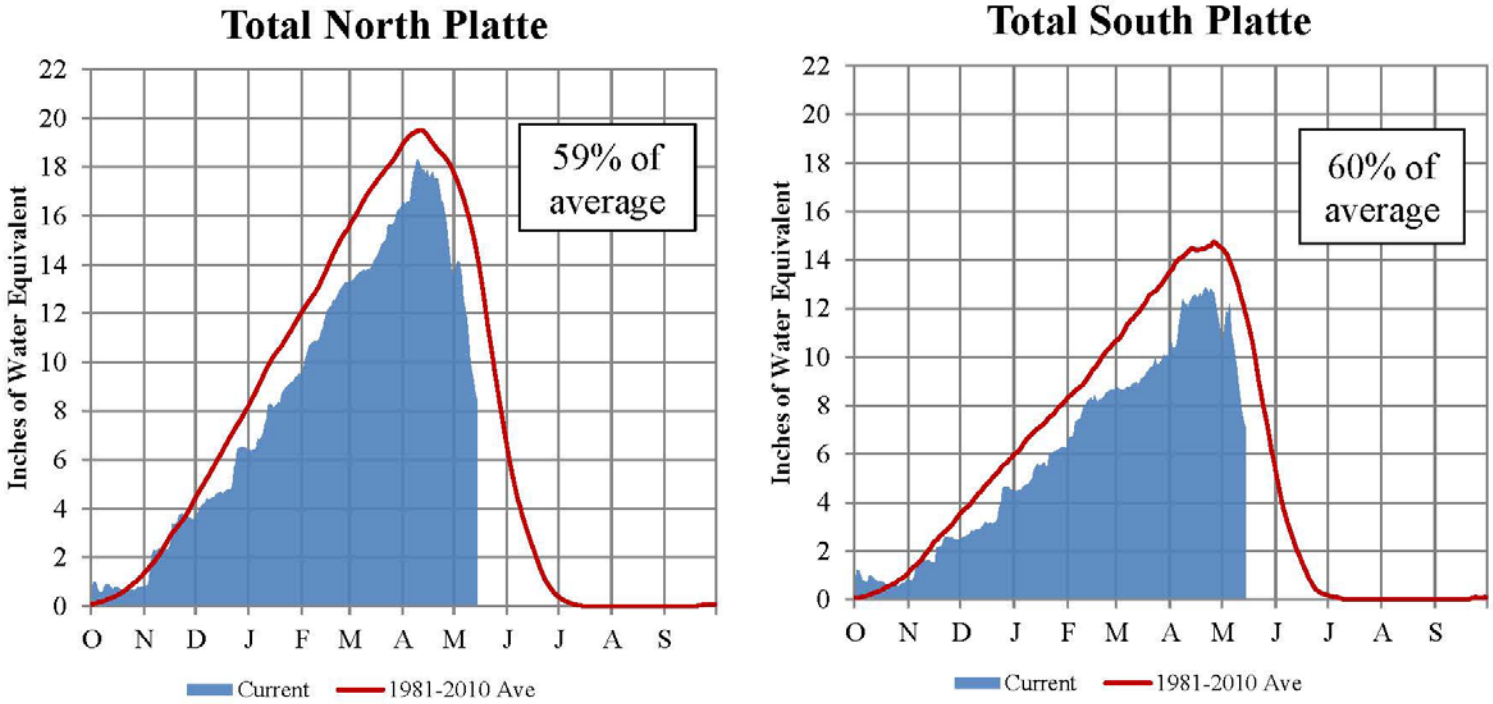
Total Fort Peck to Garrison



Normally by April 15 the peak mountain SWE has peaked in both reaches.

Source: USDA-NRCS

Platte River Basin - Mountain Snowpack Water Content
Water Year 2017-2018
May 15, 2018



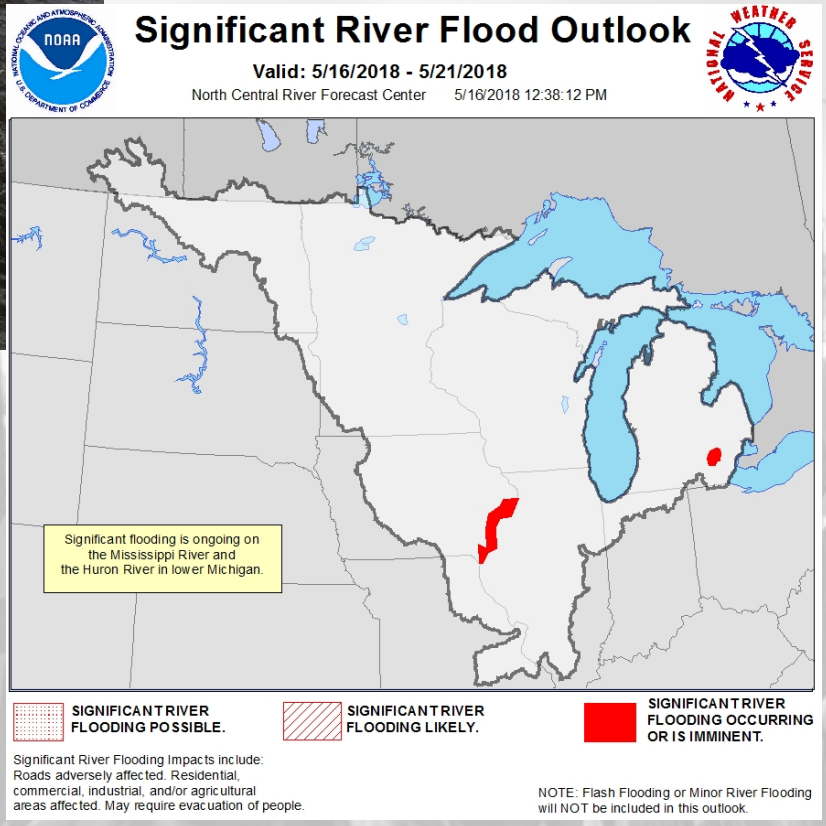
The North and South Platte River Basin mountain snowpacks normally peak near April 15 and the end of April, respectively. As of May 15, 2018, the mountain snowpack SWE in the "Total North Platte" reach is currently 8.5", 59% of average. The mountain snowpack SWE in the "Total South Platte" reach is currently 7.1", 60% of average.

Source: USDA, Natural Resource Conservation Service

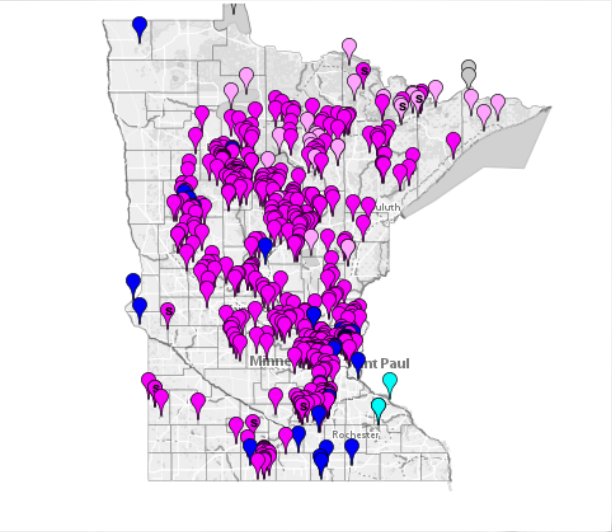
Provisional Data. Subject to Revision

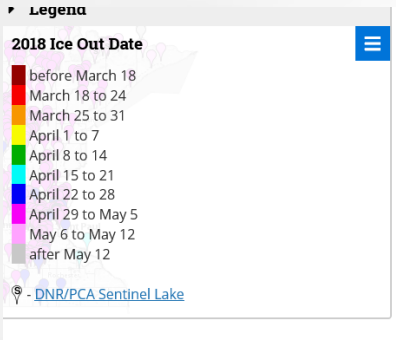
Flood Issues

Clark Fork River Flooding –
Missoula, MT
Courtesy - NWS



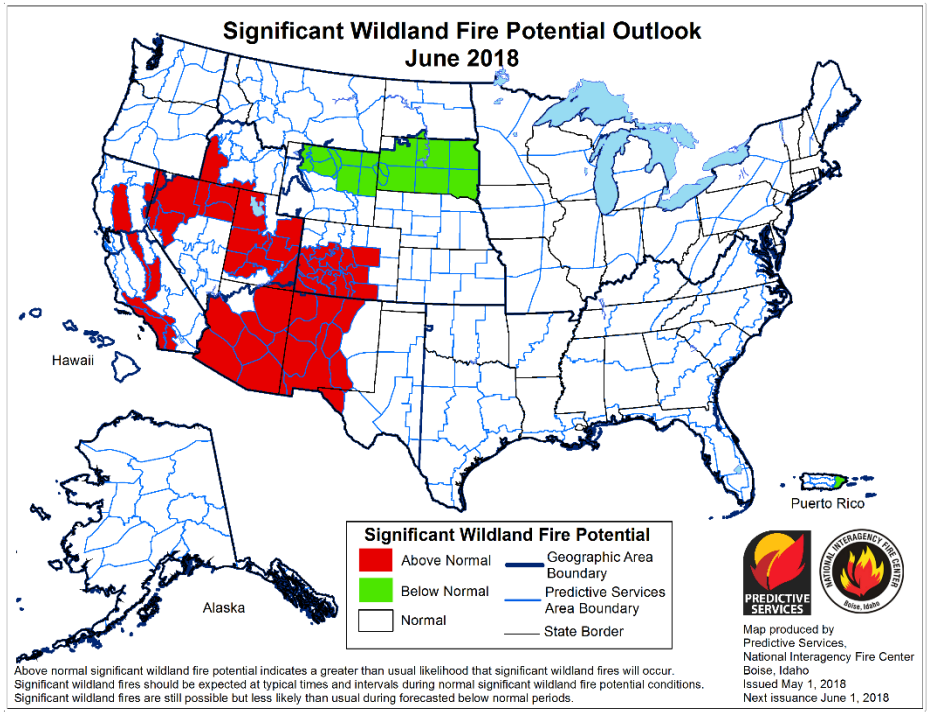
Lake Ice Out



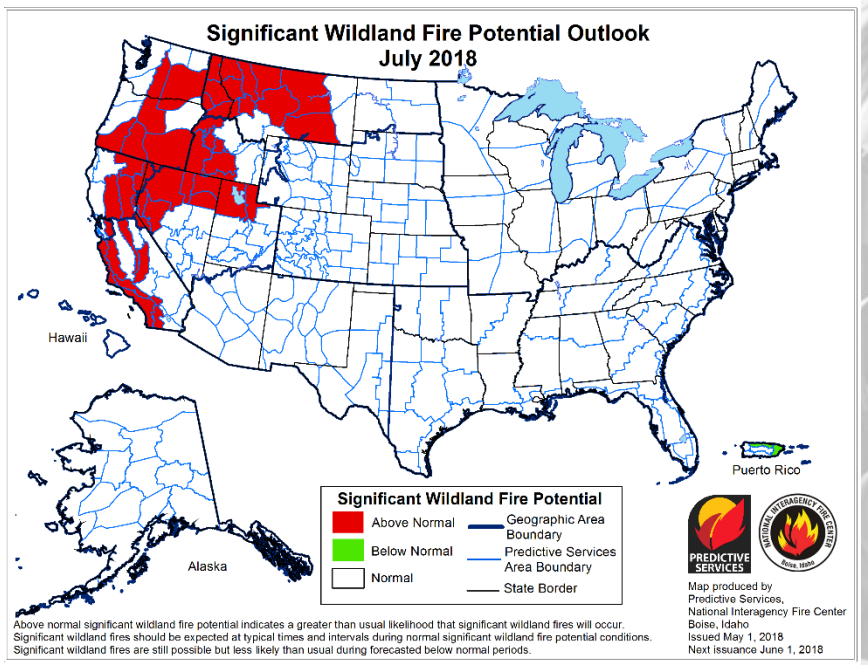


Several ice-outs were record latest MN and Iowa Great Lakes (NW Iowa)

Fire



Some current issues far north (MN/WI) where green-up has not occurred.



https://www.predictiveservices.nifc.gov/outlooks/outlooks.htm

OUTLOOKS

Montana Wetlands

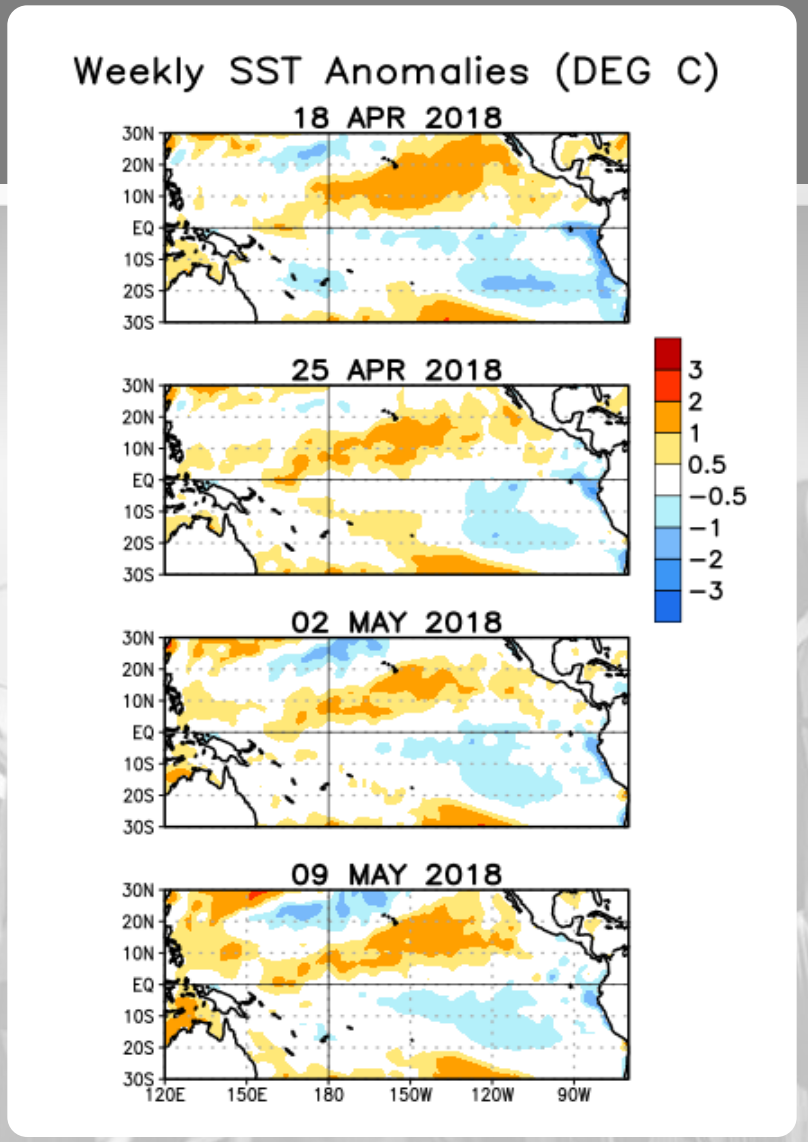
Photo: Kevin Hyde
MT Climate Office

Climate Outlooks

- **La Niña/El Niño in status…..**
- **7-day precipitation forecast**
- **8-14 day outlook**
- **June**
- **Summer/growing season**

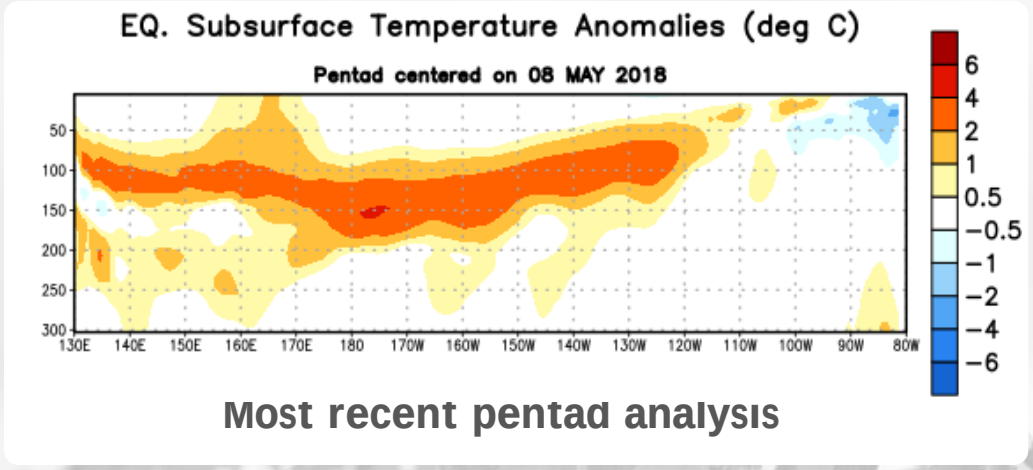
Weekly SST Departures during the Last Four Weeks

During the last four weeks, near-to-below average SSTs have persisted over the east-central equatorial Pacific Ocean. Negative SST anomalies persisted near the coast of South America.



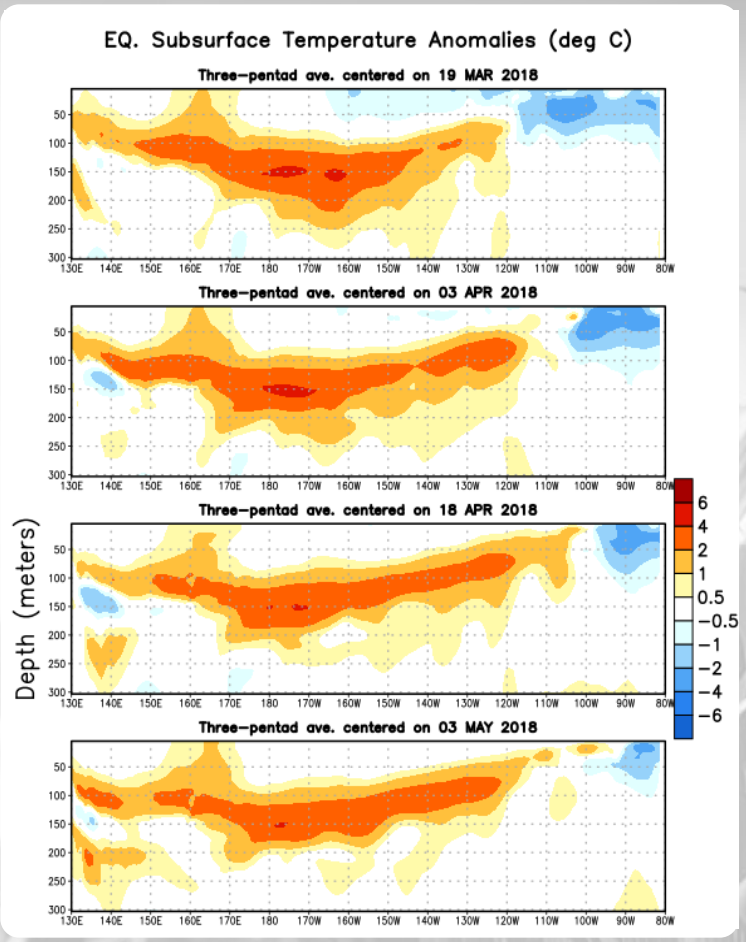
Sub-Surface Temperature Departures in the Equatorial Pacific

In the last two months, positive subsurface temperature anomalies have shifted eastward into the eastern Pacific Ocean.



Most recent pentad analysis

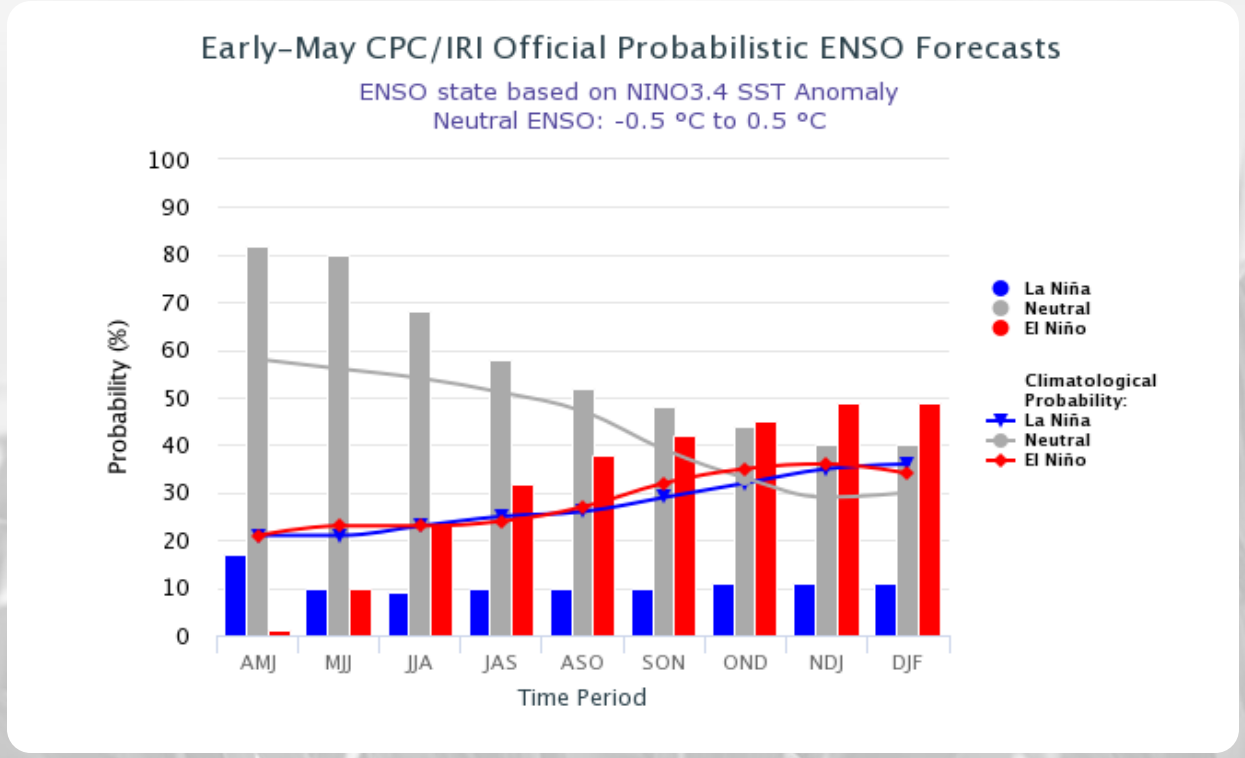
Recently, negative temperature anomalies have weakened in the far eastern Pacific Ocean.



CPC/IRI Probabilistic ENSO Outlook

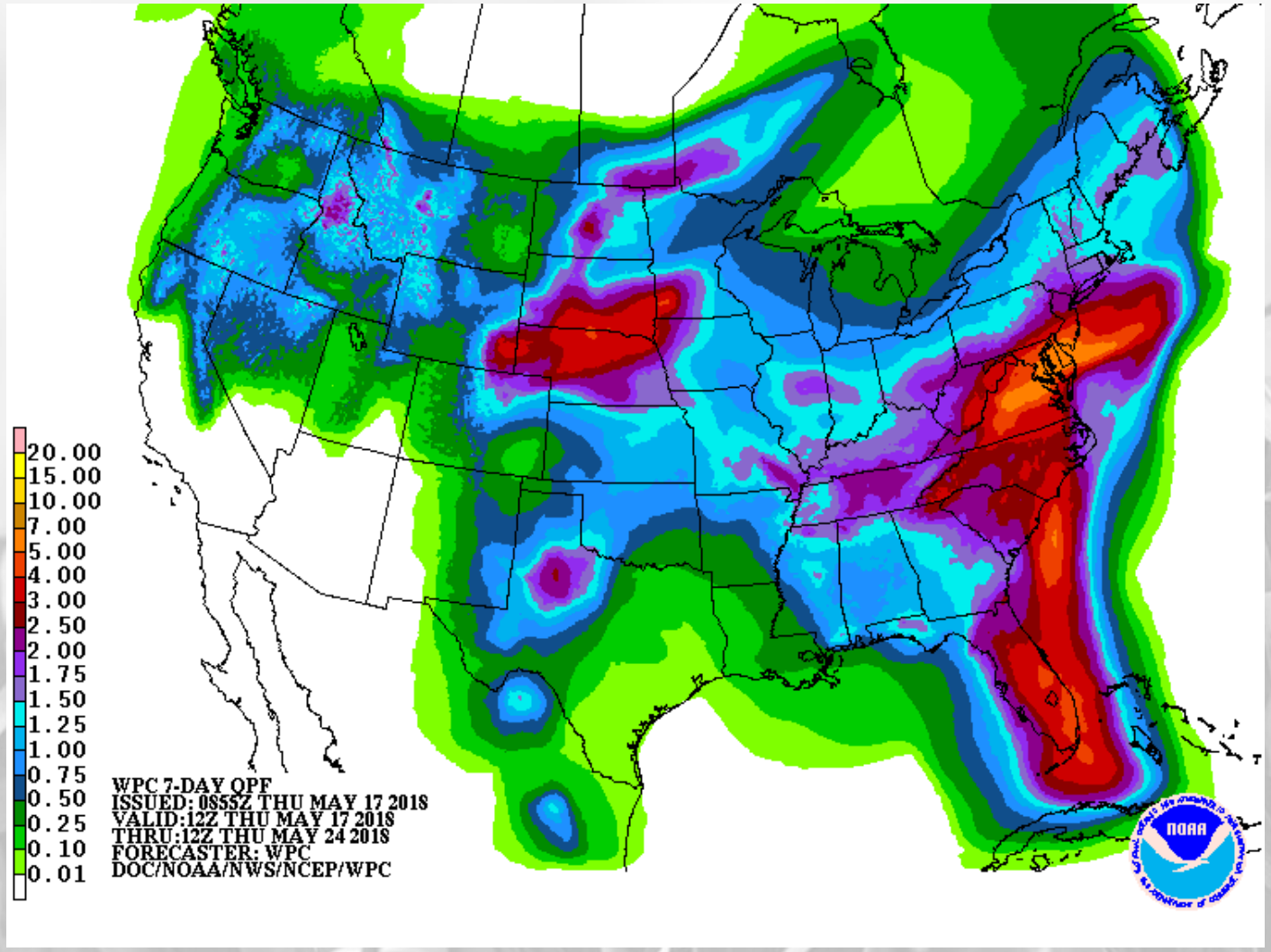
Updated: 10 May 2018

ENSO-neutral is favored through September-November 2018, with the possibility of El Niño nearing 50% by Northern Hemisphere winter 2018-19.



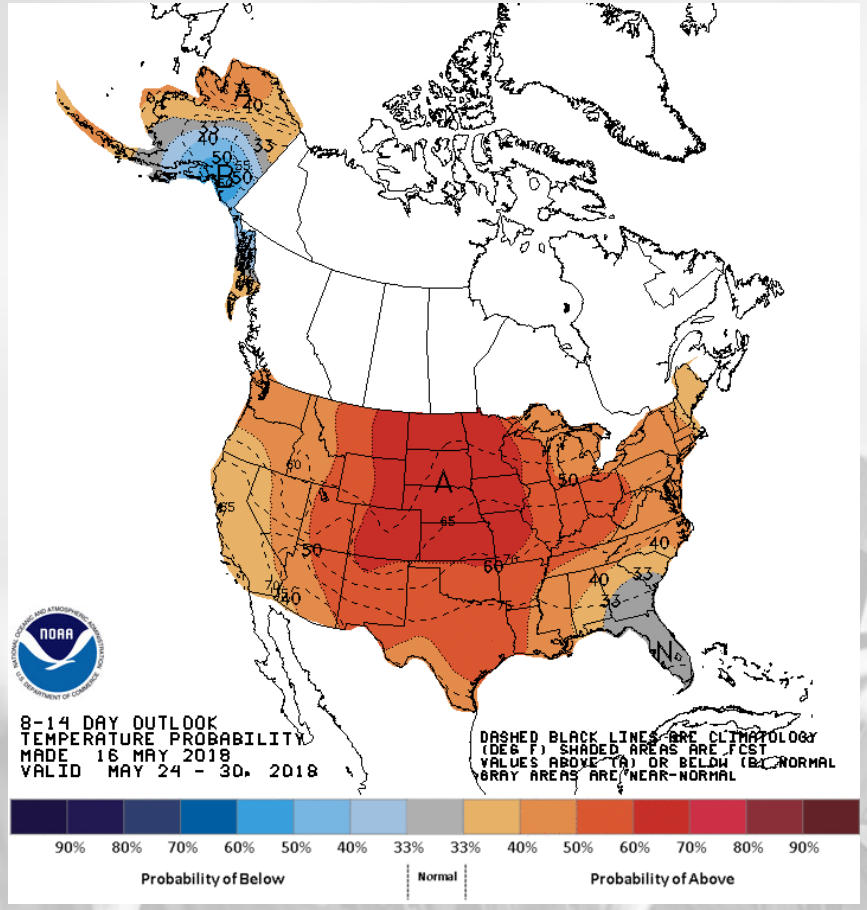
7-day Quantitative Precipitation Forecast

Valid: 7 AM Thu 17 May– 7 AM Thu 24 May

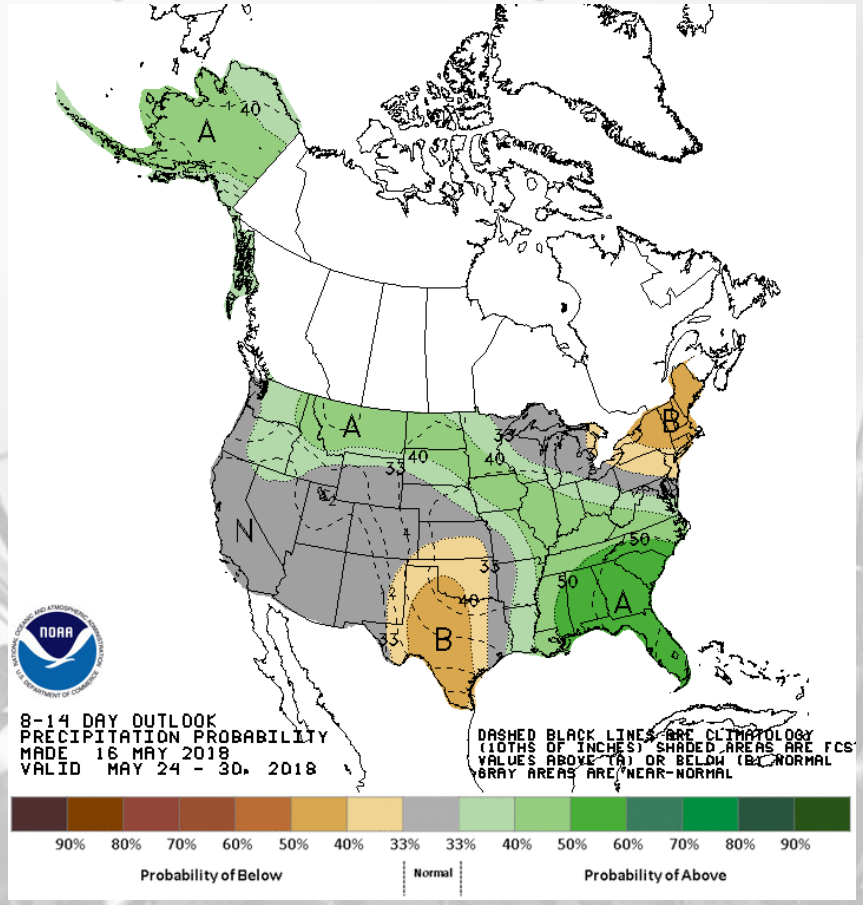


http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml

Temperature and Precipitation Probabilities for 24 May – 30 May 2018



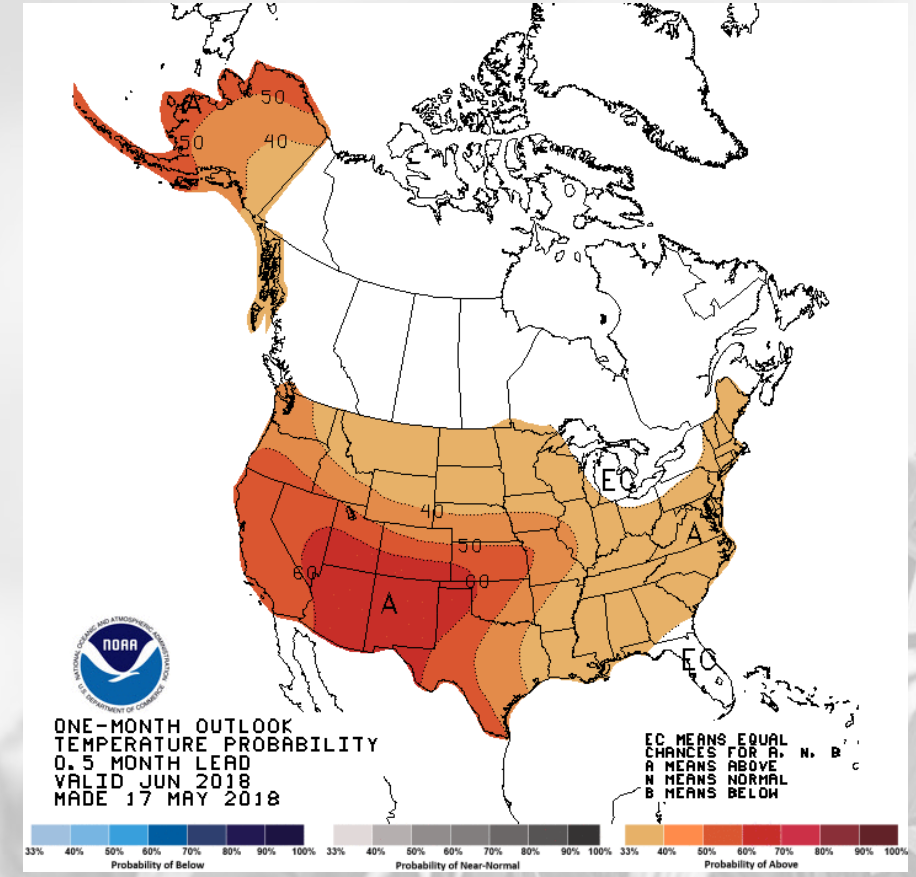
Temperature

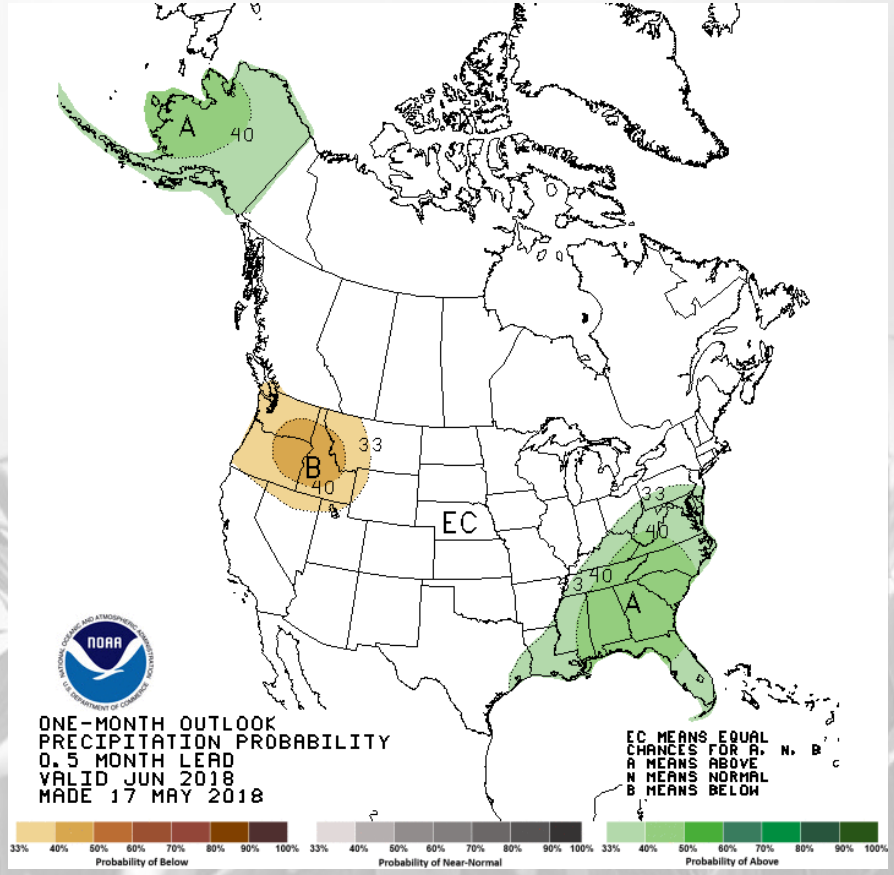


Precipitation

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

June Temperature and Precipitation Probabilities



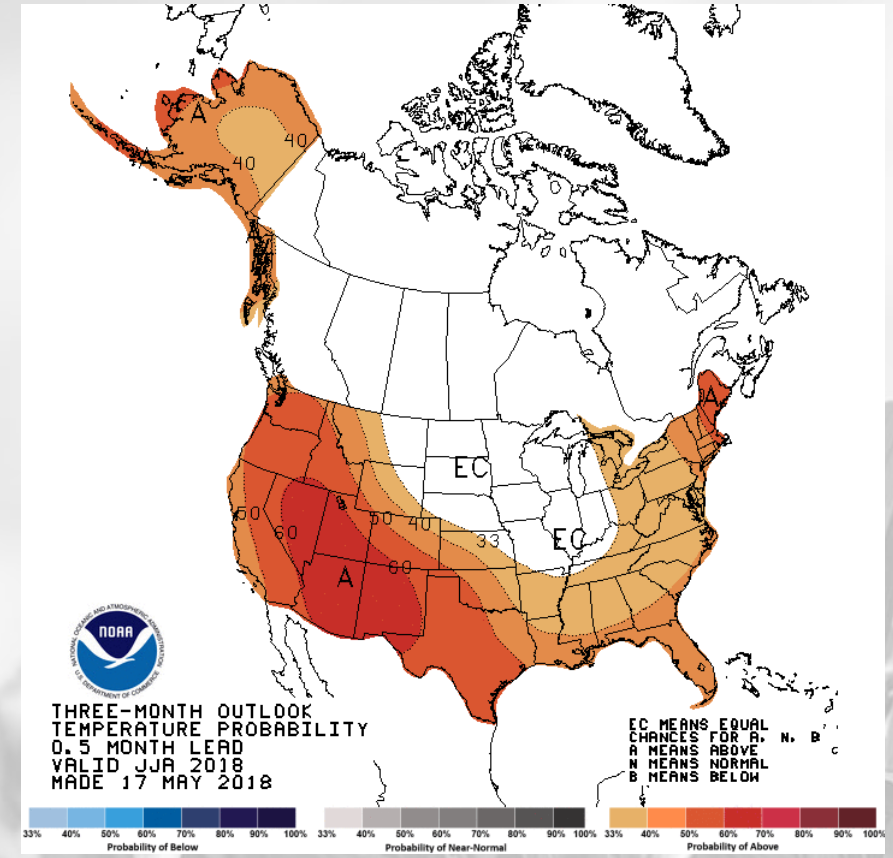


Temperature **Precipitation**

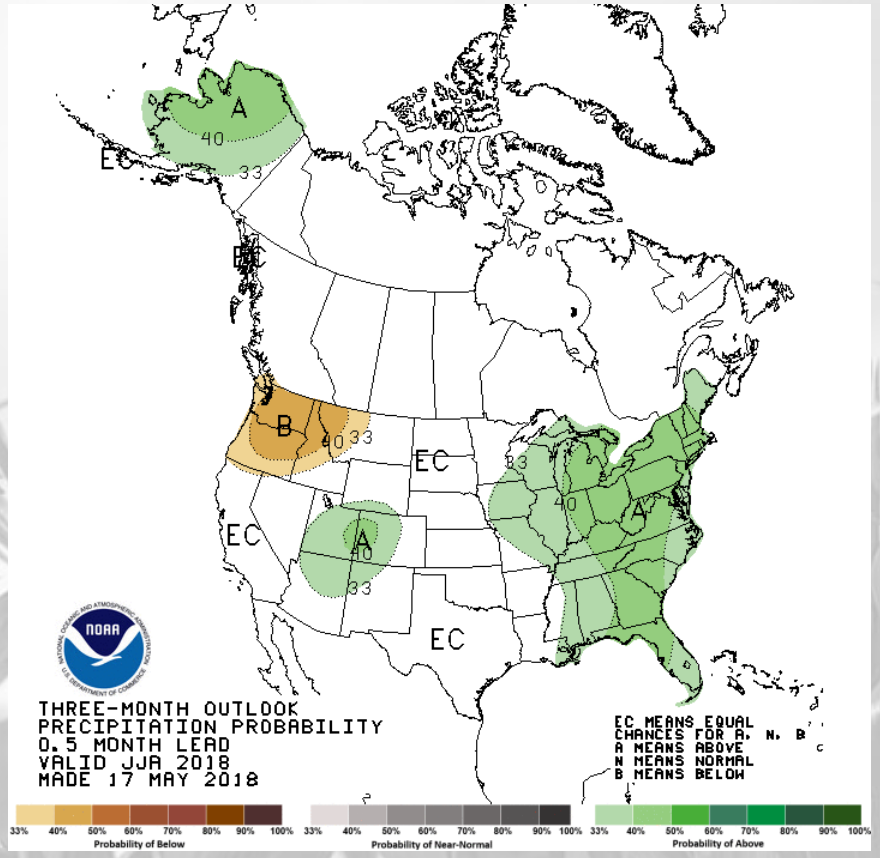
http://www.cpc.ncep.noaa.gov/products/predictions/30day/

3 Month Temperature and Precipitation Probabilities

(June-August)



Temperature

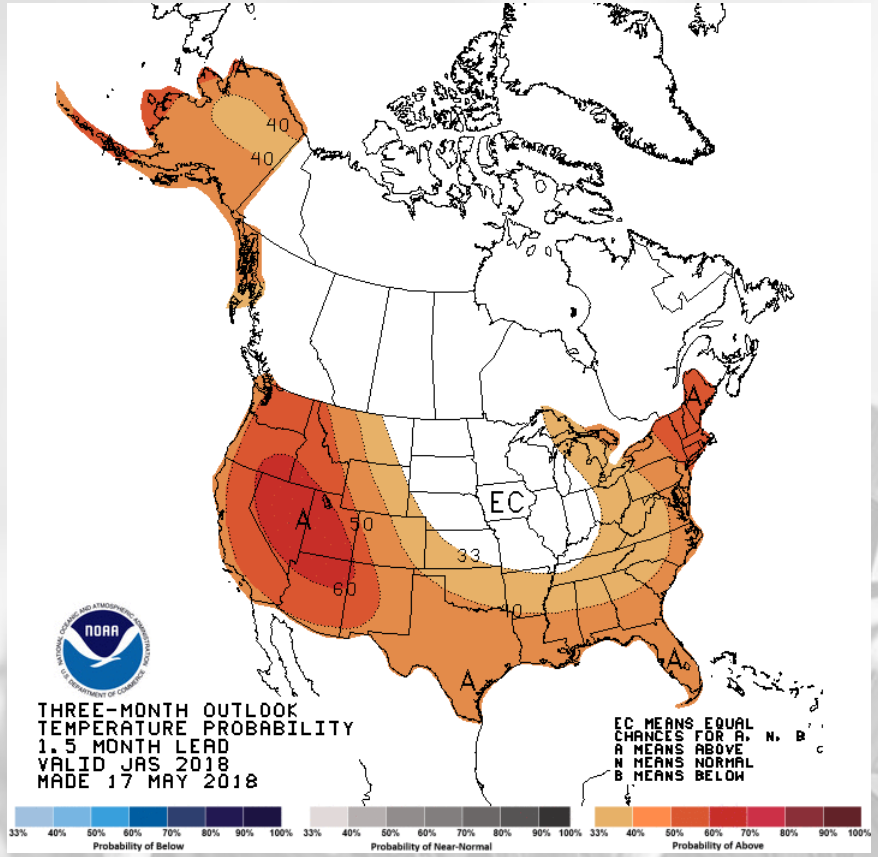


Precipitation

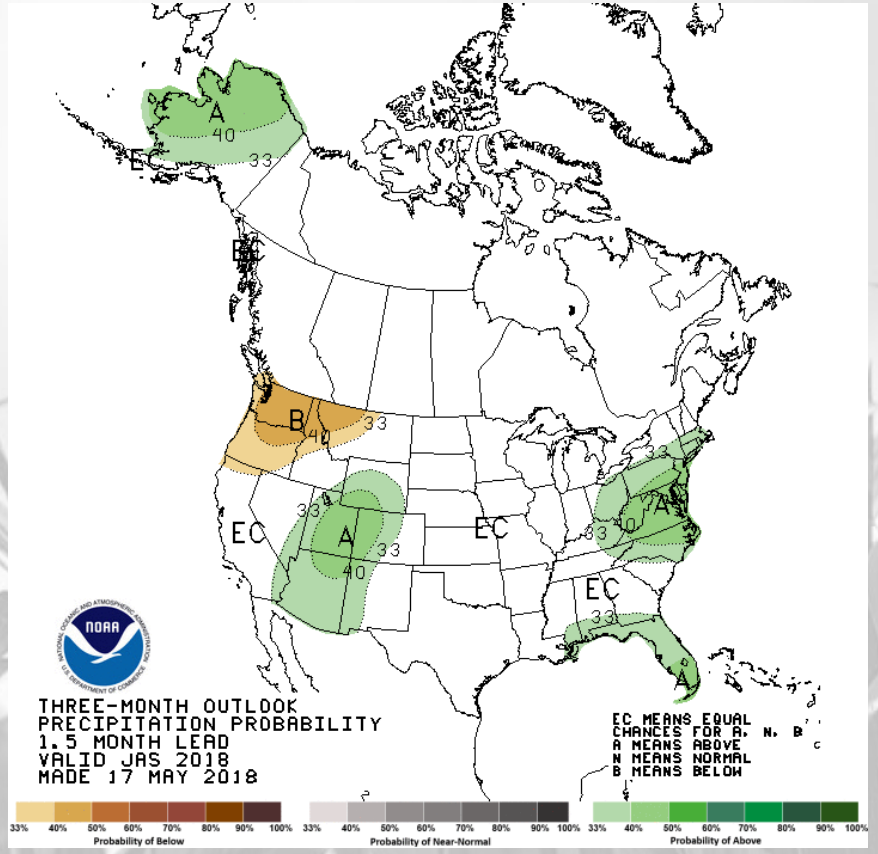
http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=2

3 Month Temperature and Precipitation Probabilities

(July-September)



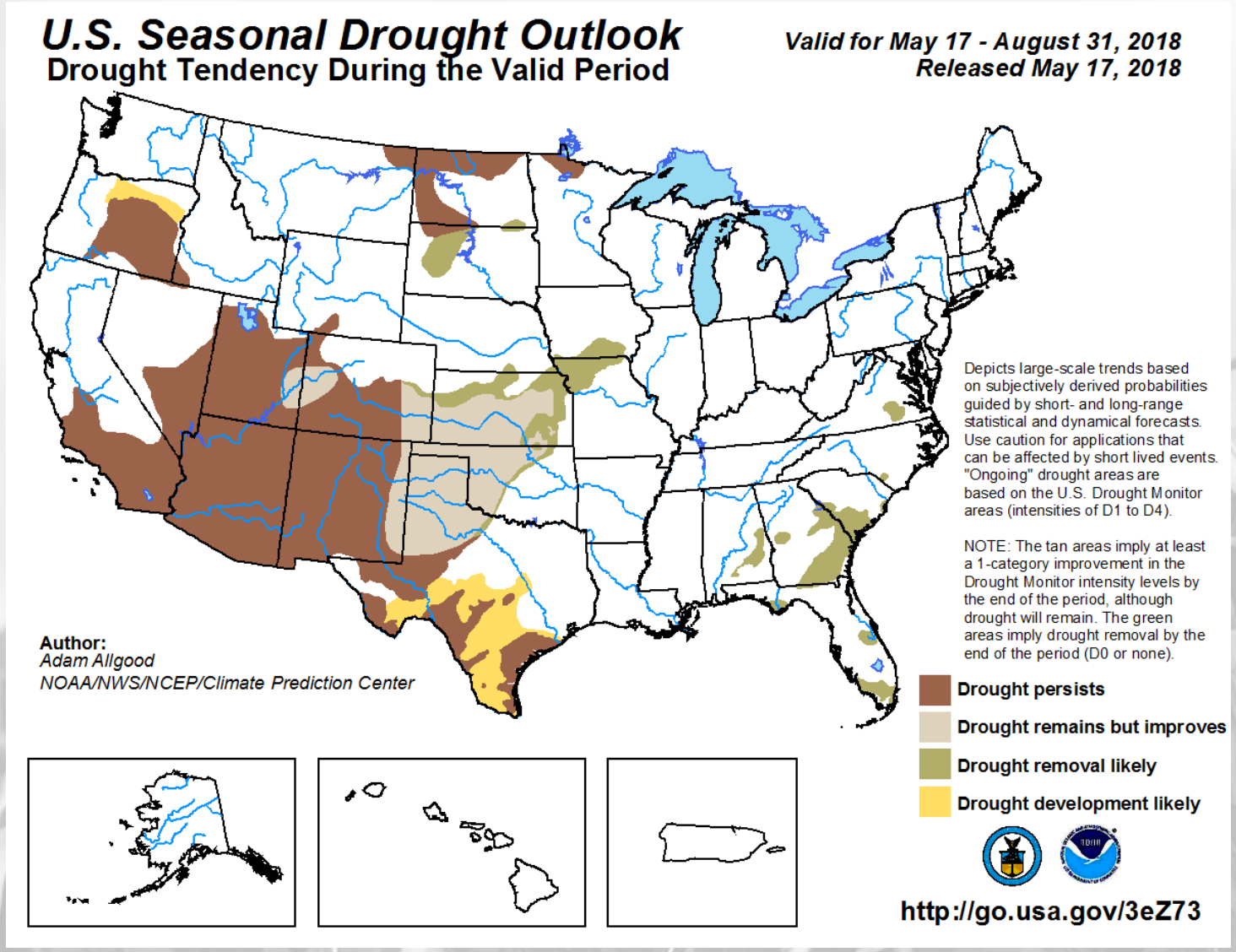
Temperature



Precipitation

http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=2

Drought Outlook through 31 August



http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.gif/

Summary - Conditions

* Very cold April – set numerous records (cold and snow) Not precip records
* Flipped to very warm conditions impacting agriculture and snow melt

* Cold avoided many crop issues perennials
* Less severe weather
* Drought issues moderate to expanding

Summary - Outlooks

* La Niña done – will watch for El Niño transition into late fall
* Lack of ENSO leaves outlooks to trend and models

* Warmer likely for the whole region June with large EC into summer
* June wet chances east – decreasing coverage through summer
* No specific dryness in outlooks. But will need to monitor for changes

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?

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  - **Weather:**
  - crhroc@noaa.gov

For More Information

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