

Midwest and Great Plains Climate- Drought Outlook 17 May 2018

Photo:
Pete
Boulay

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Climate Hub
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515-294-2013



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



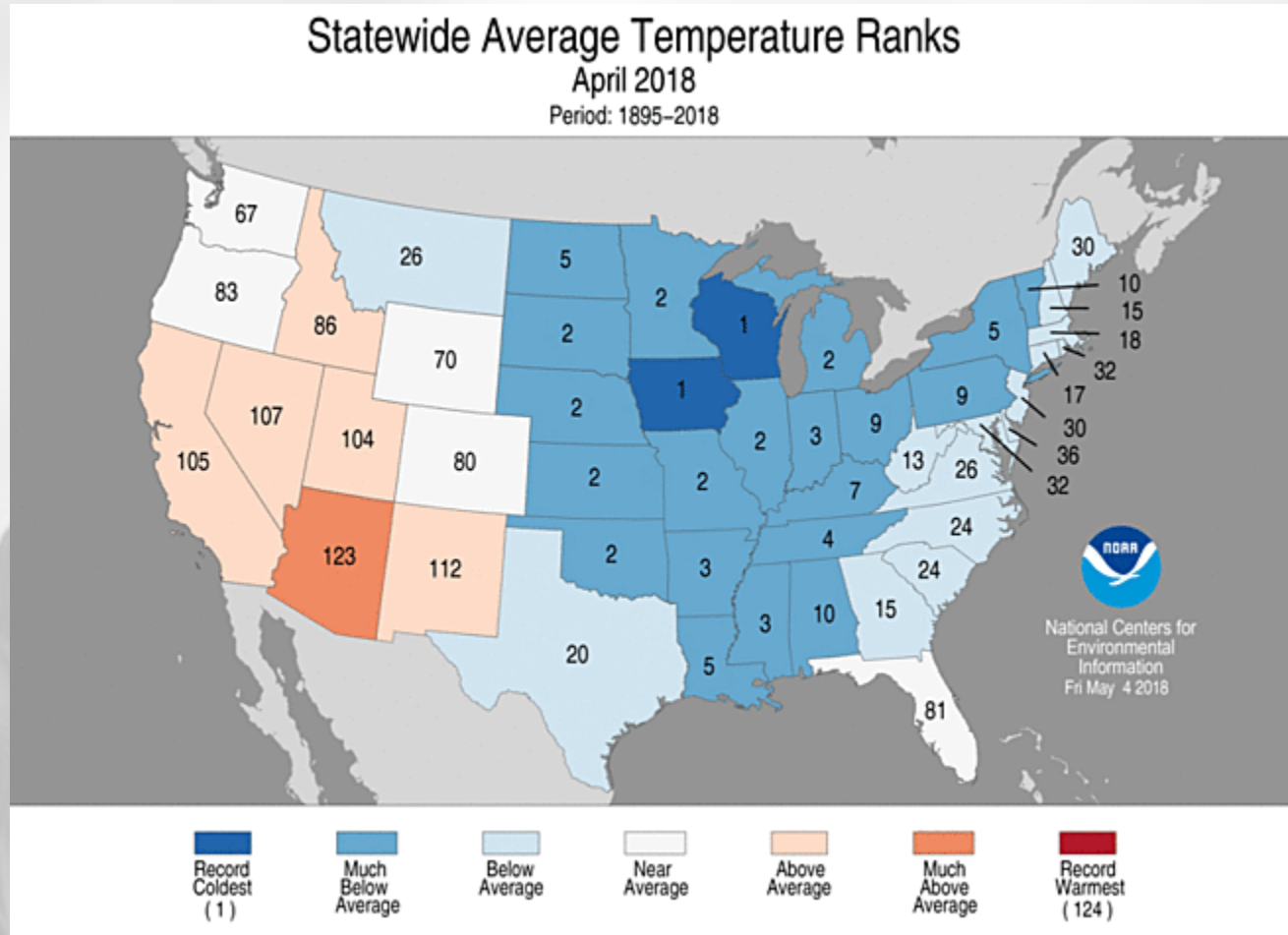
A grayscale photograph of a cornfield. The corn plants are in the foreground and middle ground, with their leaves and tassels visible. The background is a bright, hazy sky. The text "REVIEW/CURRENT CONDITIONS" is overlaid in the center of the image in a bold, black, sans-serif font.

REVIEW/CURRENT CONDITIONS

April Temperature Recap

Much colder than average eastern 2/3 US

Top 5 most of plains and Midwest

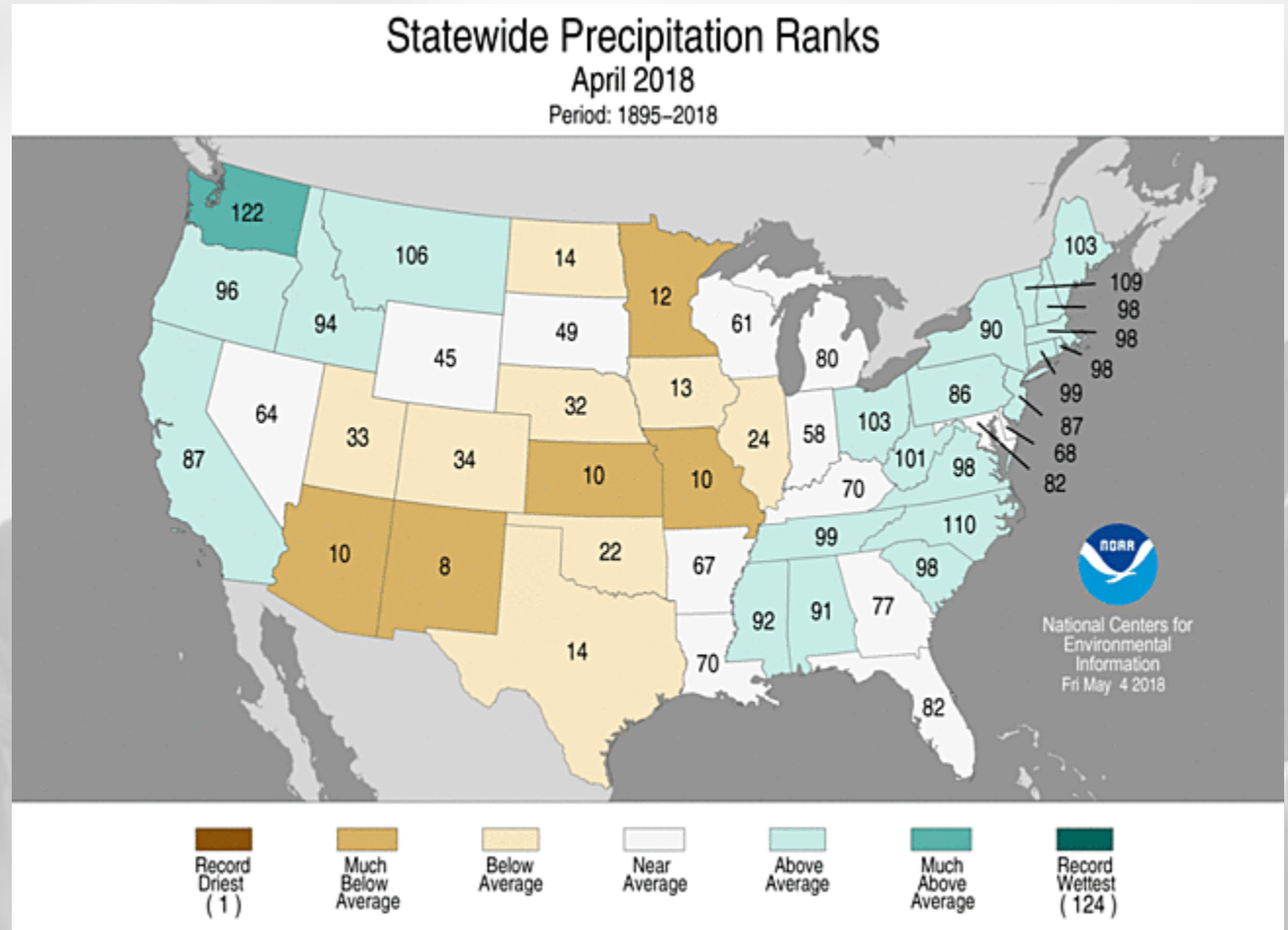


April Precipitation Recap

Mainly dry from April

Cold was probably beneficial because of the dryness

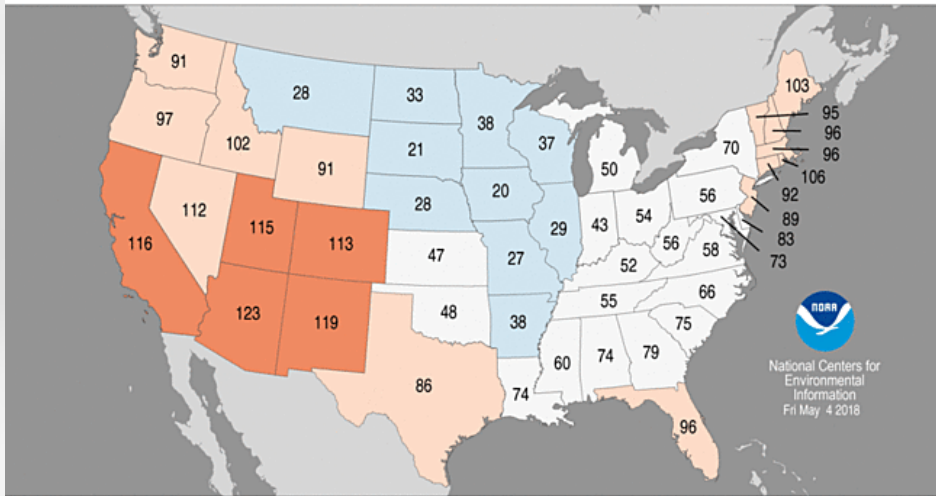
Only wetness Ohio and Montana



Statewide Average Temperature Ranks

January–April 2018

Period: 1895–2018

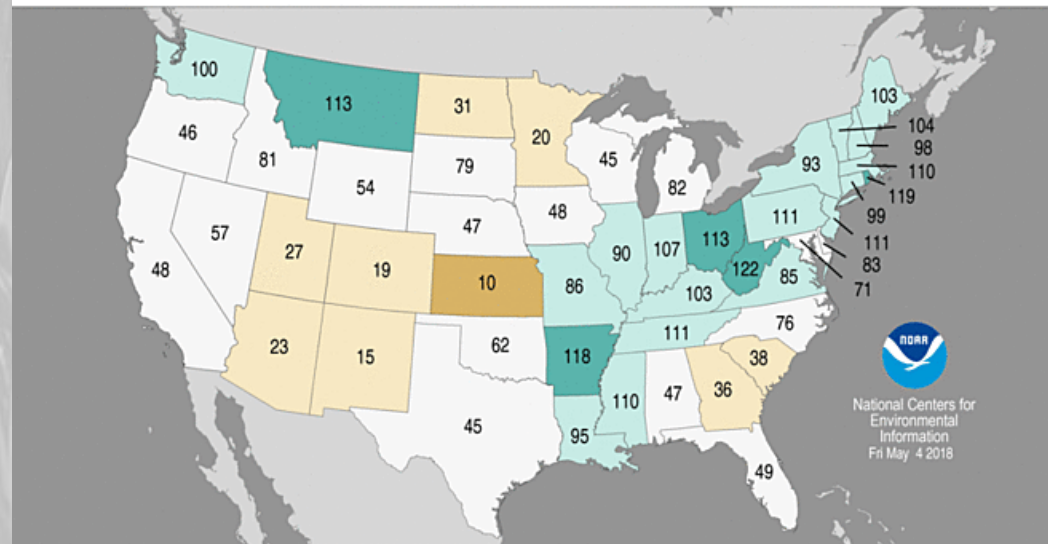


January - April ranks

Statewide Precipitation Ranks

January–April 2018

Period: 1895–2018

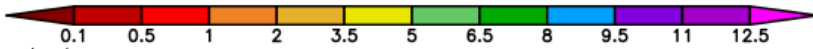
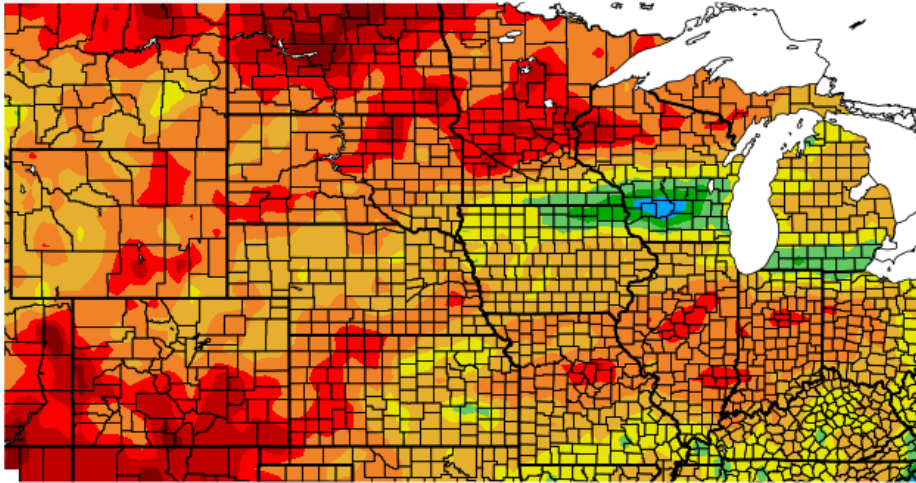


Cold but not as extreme as April
Warm in Rockies

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

Dry KS

Precipitation (in)
4/16/2018 - 5/15/2018

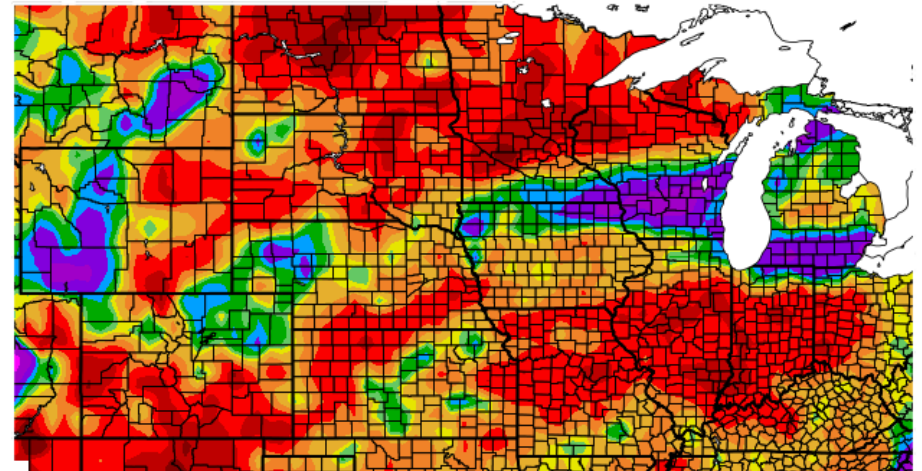


Generated 5/16/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

Last 30 days Precipitation

Percent of Normal Precipitation (%)
4/16/2018 - 5/15/2018

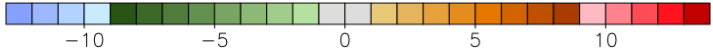
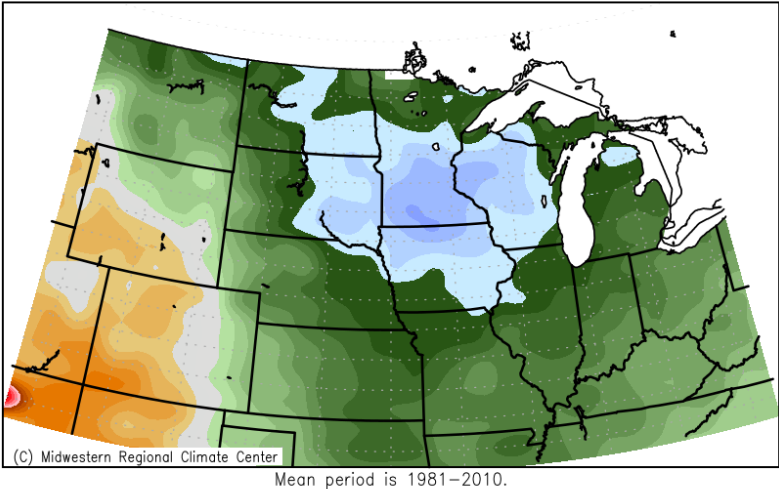


Generated 5/16/2018 at HPRCC using provisional data.

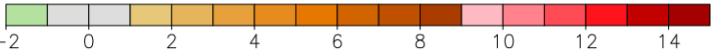
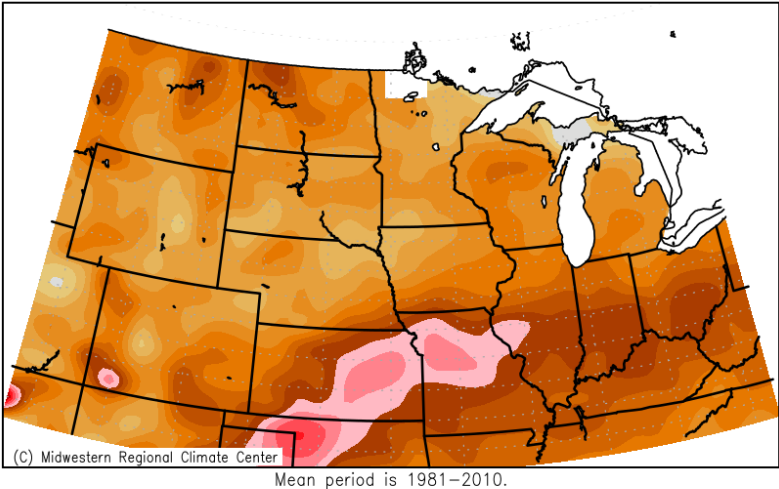
NOAA Regional Climate Centers

- A few quite wet areas
- Large parts of region very dry (<25% average)
- Large ag impacts in both locations

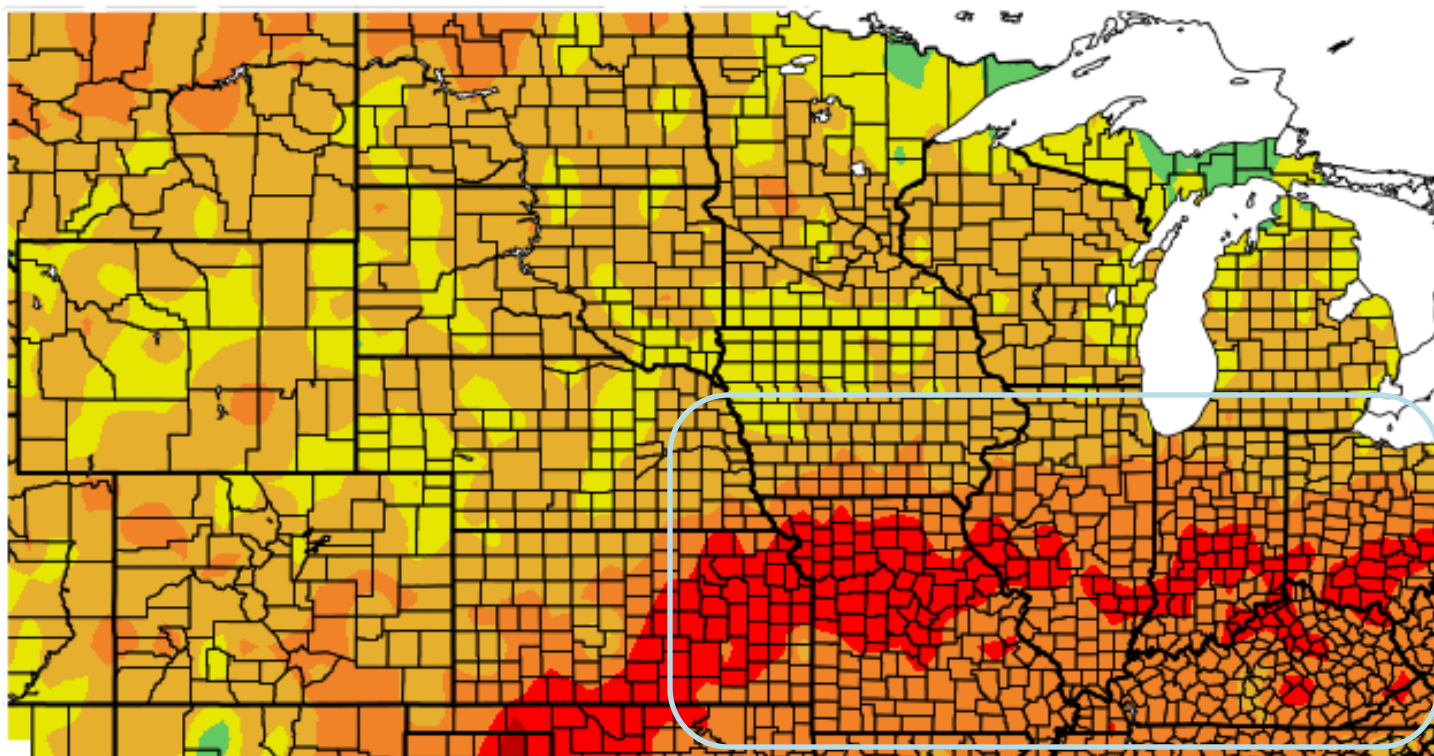
Average Temperature (°F): Departure from Mean
April 1, 2018 to April 30, 2018



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



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



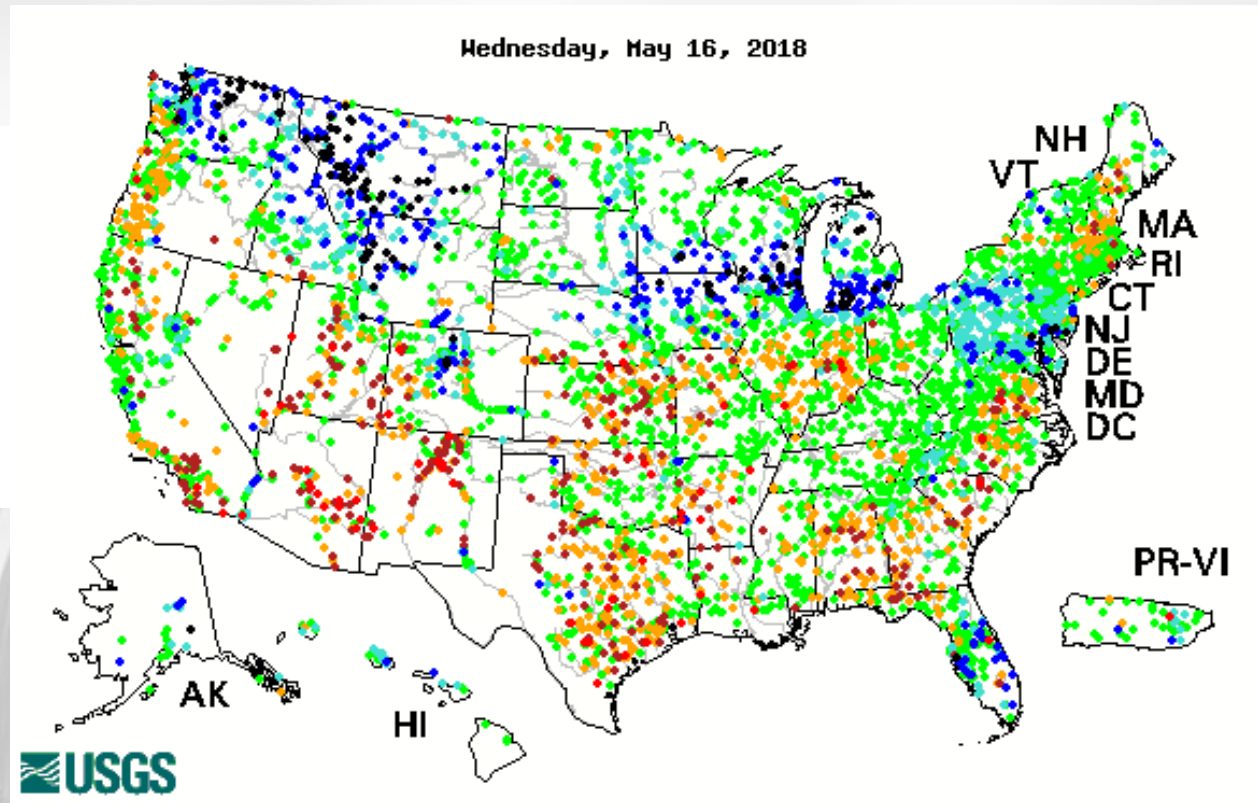
Generated 5/17/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

7-Day Average Streamflow

Wednesday, 16 May 2018

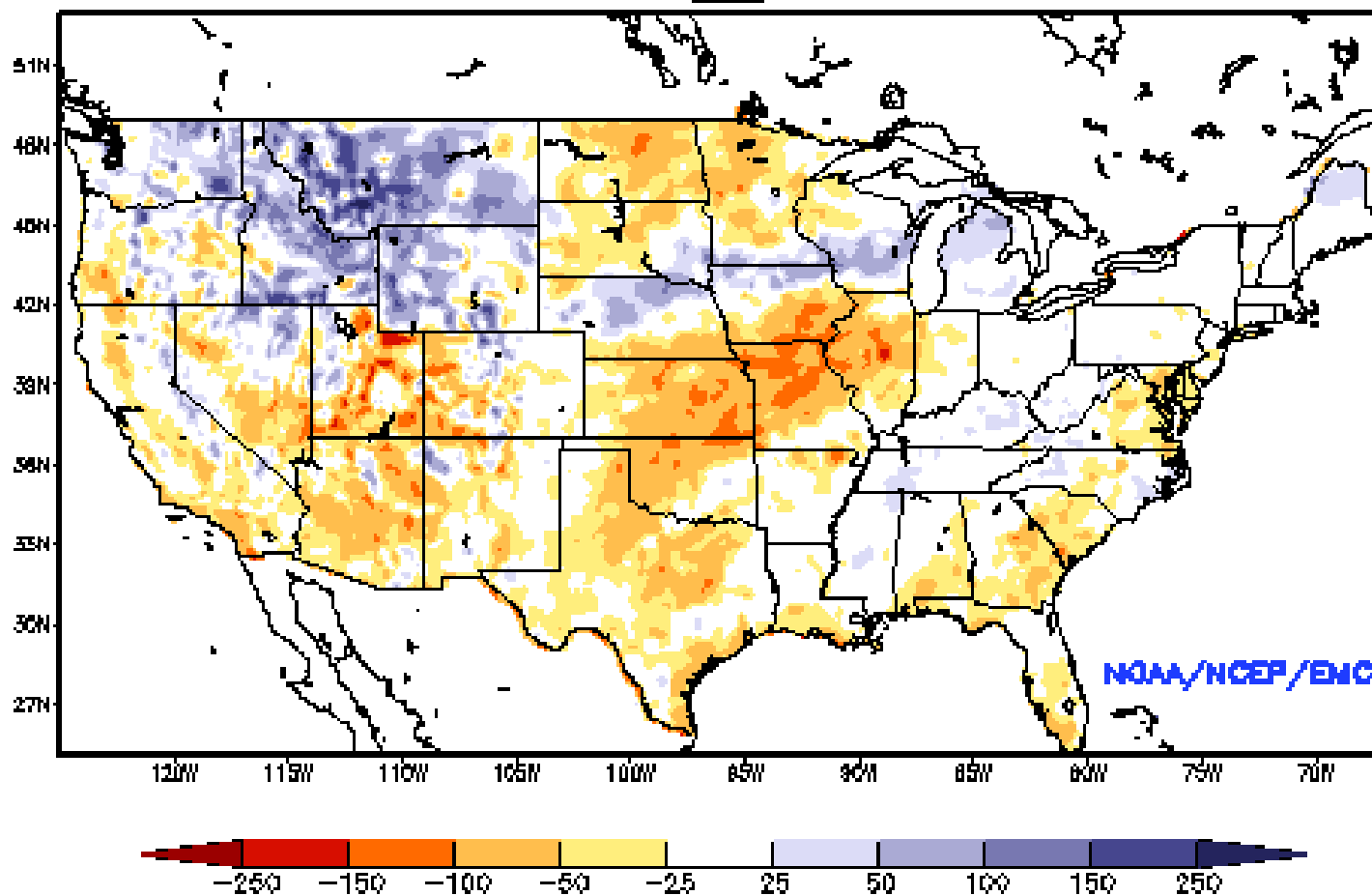
- Wet areas very clear
- Dry areas starting to show up
- Reminder average flows are higher in the spring – below average may not be awful. But is an indicator



| 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>

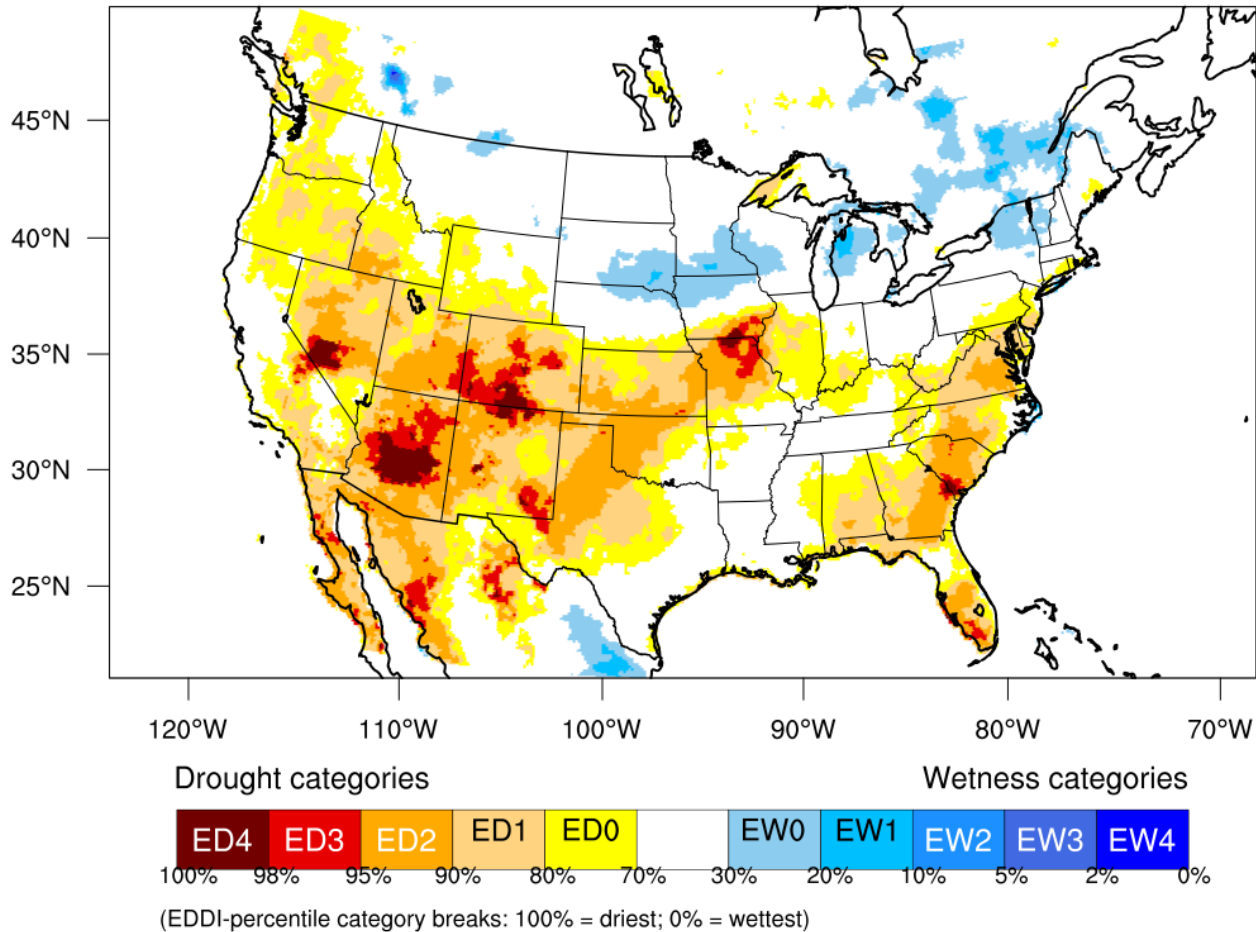
Ensemble-Mean - Current Total Column Soil Moisture Anomaly (mm)
NCEP NLDAS Products Valid: MAY 12, 2018



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

EDDI – Evaporative Demand Index

1-month EDDI categories for May 11, 2018



Generated by NOAA/ESRL/Physical Sciences Division

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

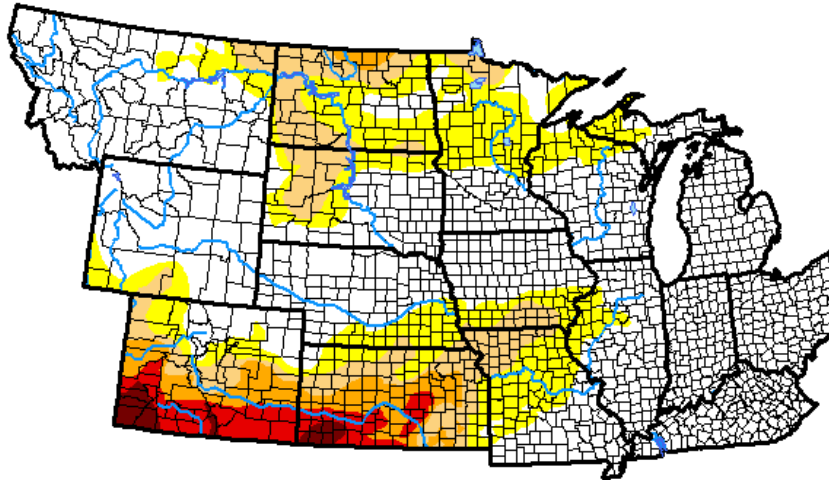
US Drought Monitor

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 <i>05-08-2018</i> | 64.63 | 35.37 | 18.12 | 8.96 | 4.72 | 1.18 |
| 3 Months Ago <i>02-13-2018</i> | 49.36 | 50.64 | 28.12 | 9.47 | 1.01 | 0.00 |
| Start of Calendar Year <i>01-02-2018</i> | 44.74 | 55.26 | 22.30 | 7.69 | 2.03 | 0.00 |
| Start of Water Year <i>09-26-2017</i> | 50.80 | 49.20 | 24.09 | 12.89 | 6.13 | 2.26 |
| One Year Ago <i>05-16-2017</i> | 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



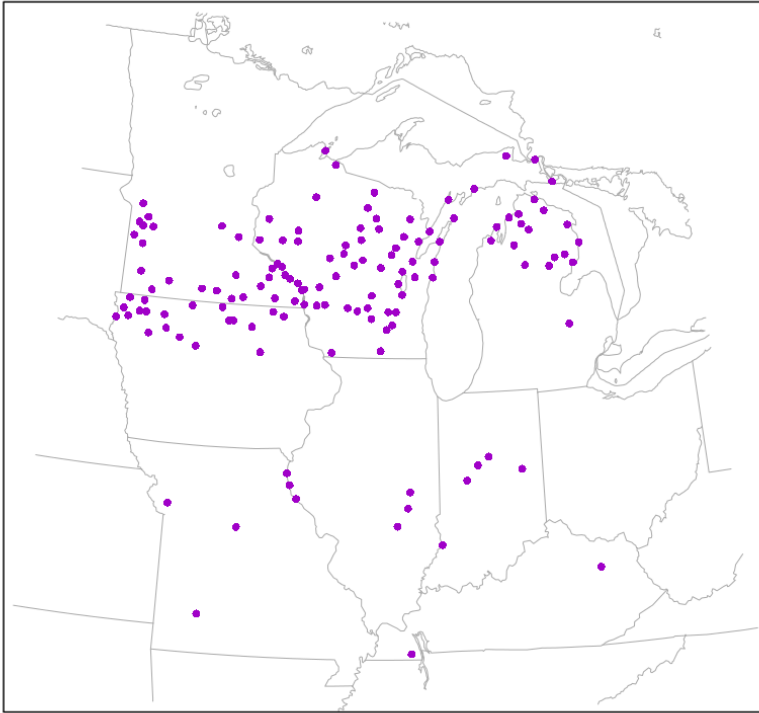
<http://droughtmonitor.unl.edu/>

A grayscale photograph of a cornfield. The corn plants are in the foreground and middle ground, with their long, pointed leaves and tassels visible. The background is a bright, hazy sky. The word "RECORDS" is written in a bold, black, sans-serif font on the left side of the image, partially overlapping the corn plants.

RECORDS

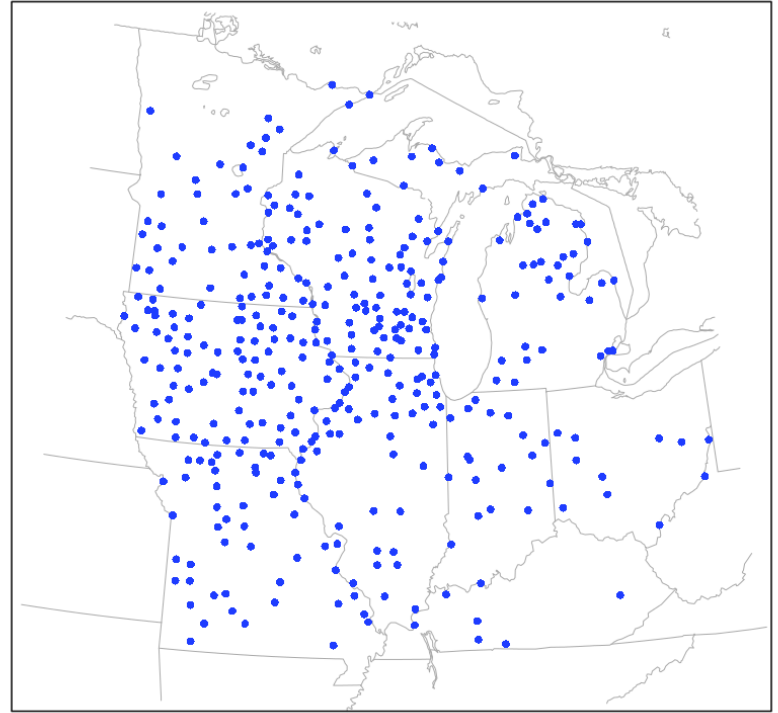
Record High Monthly Snowfall

April 2018



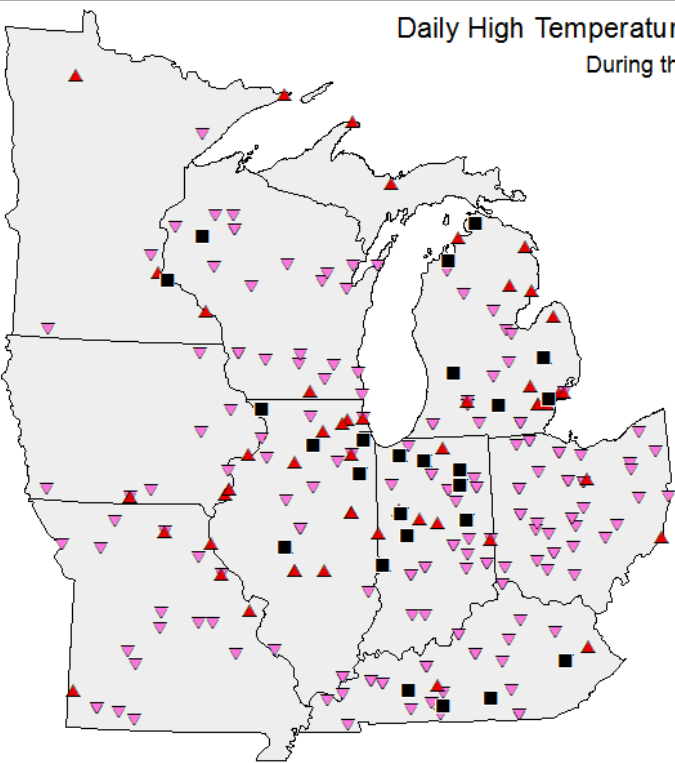
Record Low Monthly Temperatures

April 2018



Courtesy MRCC – Mike Timlin

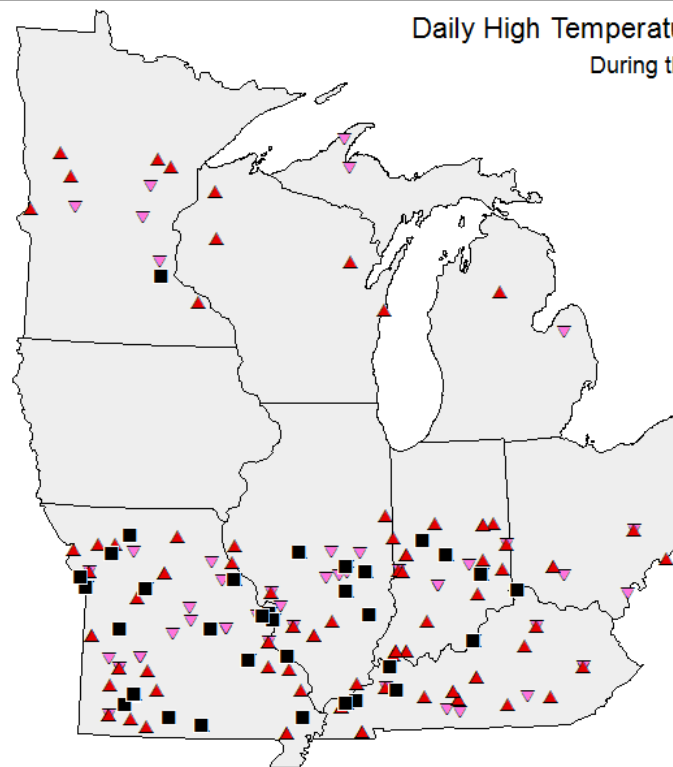
Daily High Temperature Records broken or tied During the Week of 5/1/2018 - 5/7/2018



All Reports

May temperature records Week 1 and 2

Daily High Temperature Records broken or tied During the Week of 5/8/2018 - 5/14/2018



Powered by **ACIS**
Regional Climate Centers

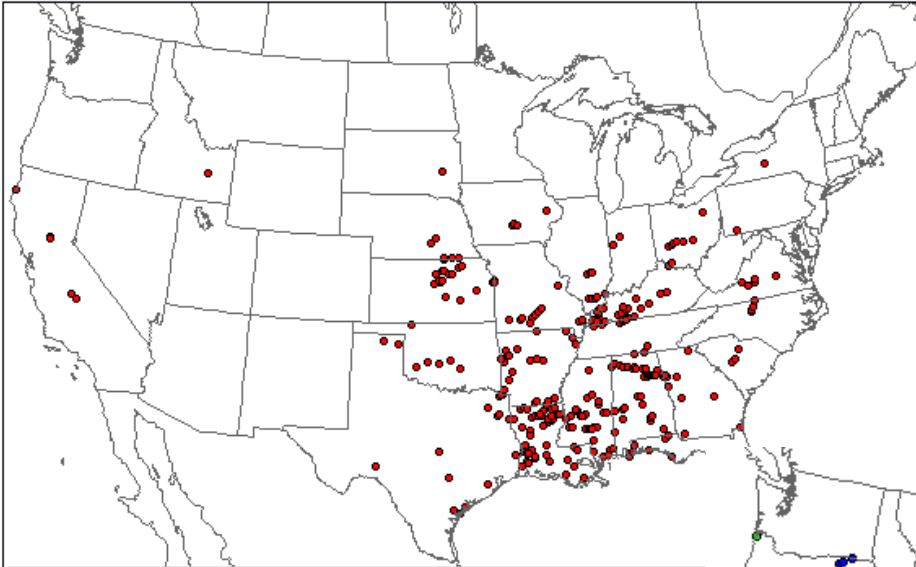
Minimum 30 years of data
All Reports Are Considered Preliminary

Annual Severe Weather Report Summary 2018

[RETURN TO OVERVIEW PAGE]

* Data is preliminary and subject to revision

All Reports | Tornadoes | Wind Damage | Large Hail



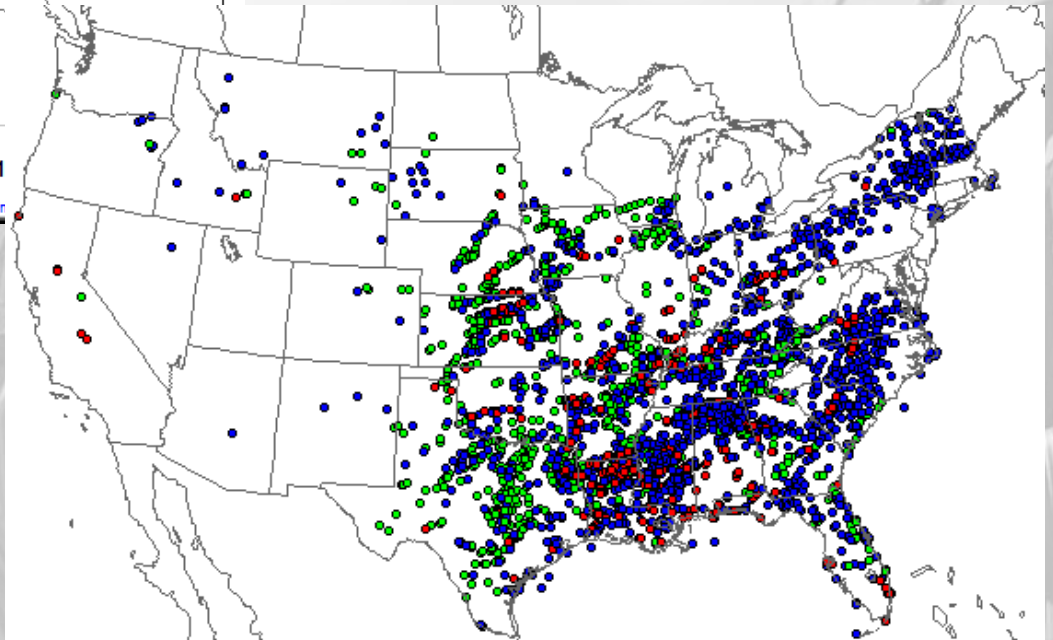
PRELIMINARY SEVERE WEATHER
REPORT DATABASE (ROUGH LOG)

NOAA/Storm Prediction Center Norman, Oklahoma

January 01

Updated: Wedr

Severe Weather? Not So Much



PRELIMINARY SEVERE WEATHER
REPORT DATABASE (ROUGH LOG)

NOAA/Storm Prediction Center Norman, Oklahoma

Severe Weather Reports
January 01, 2018 - May 09, 2018

Updated: Wednesday May 09, 2018 12:09 CT

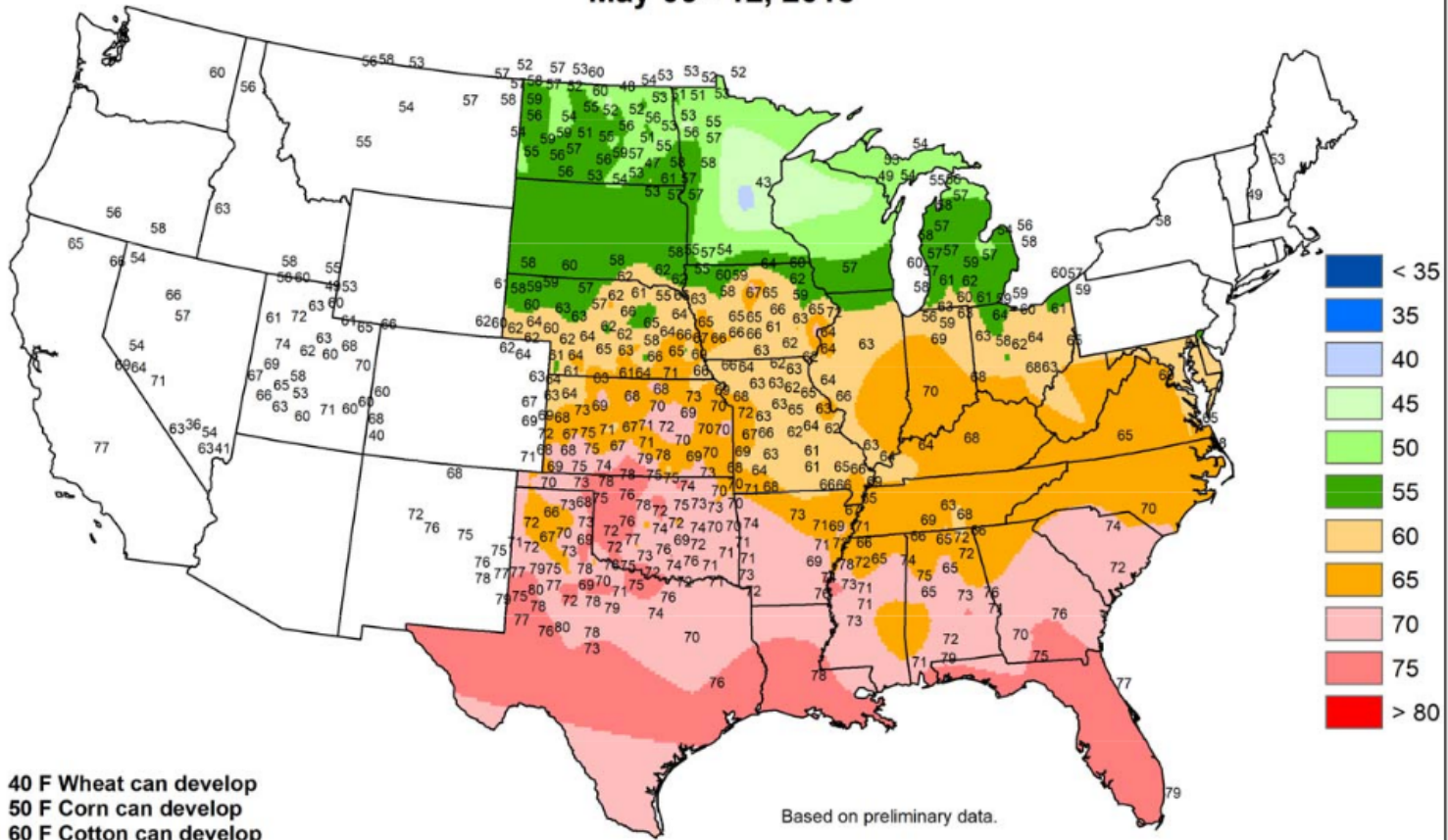


A grayscale photograph of a cornfield. The corn plants are in the foreground and middle ground, with their long, pointed leaves and tassels visible. The background is a bright, hazy sky. The word "AGRICULTURE" is written in a bold, black, sans-serif font across the lower-left portion of the image.

AGRICULTURE

Average Soil Temperature (Deg. F, 4" Bare)

May 06 - 12, 2018



Data provided by the Climate Prediction Center, High Plains Regional Climate Center, Nebraska Mesonet at Univ of Nebraska, CoAgMet at Colorado State Univ, Kansas Mesonet at Kansas State Univ, North Dakota Agricultural Weather Network at North Dakota State Univ, Wyoming State Climate Office at the Univ of Wyoming, Illinois State Water Survey, Iowa State University, Oklahoma Mesonet, Purdue University, University of Missouri, Illinois State Water Survey, Michigan Automated Weather Network, West Texas Mesonet, South Dakota State Univ. Mesonet, Ohio Agricultural Research and Development Center, Univ. of Missouri and USDA/NRCS.



Quiz Time

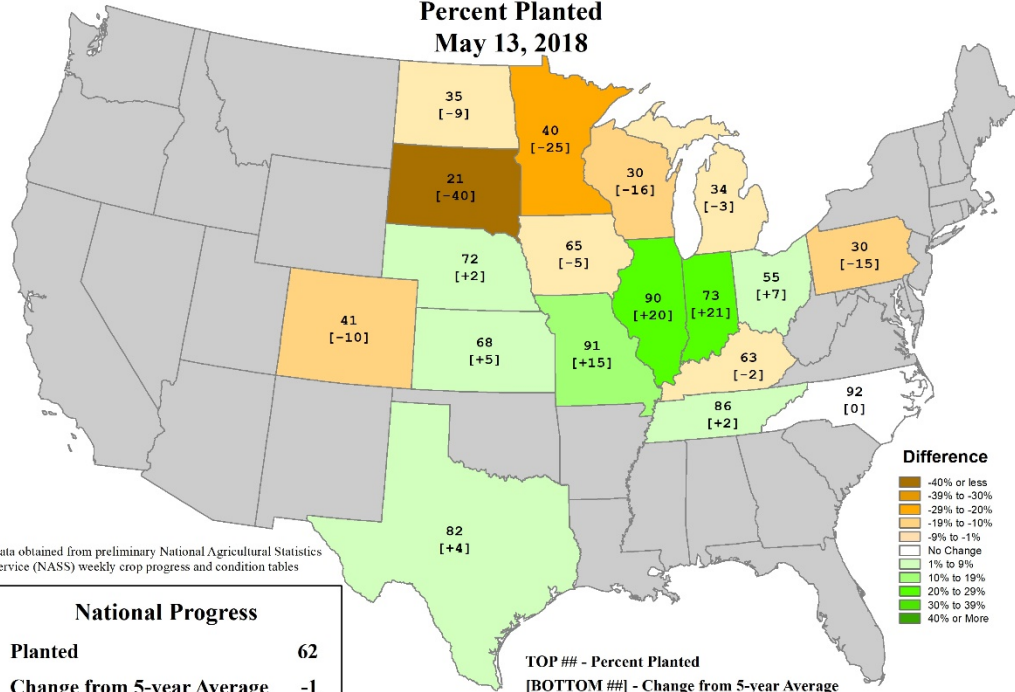
- NASS Corn and Soybean Crop Progress are:
- Ahead
- Behind
- Depends
- Don't care

Quiz Time

- NASS Corn and Soybean Crop Progress are:
 - Ahead (overall)
 - Behind
 - Depends (where you are)
 - Don't care

U.S. Corn Progress

Percent Planted
May 13, 2018



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

| National Progress | |
|----------------------------|----|
| Planted | 62 |
| Change from 5-year Average | -1 |

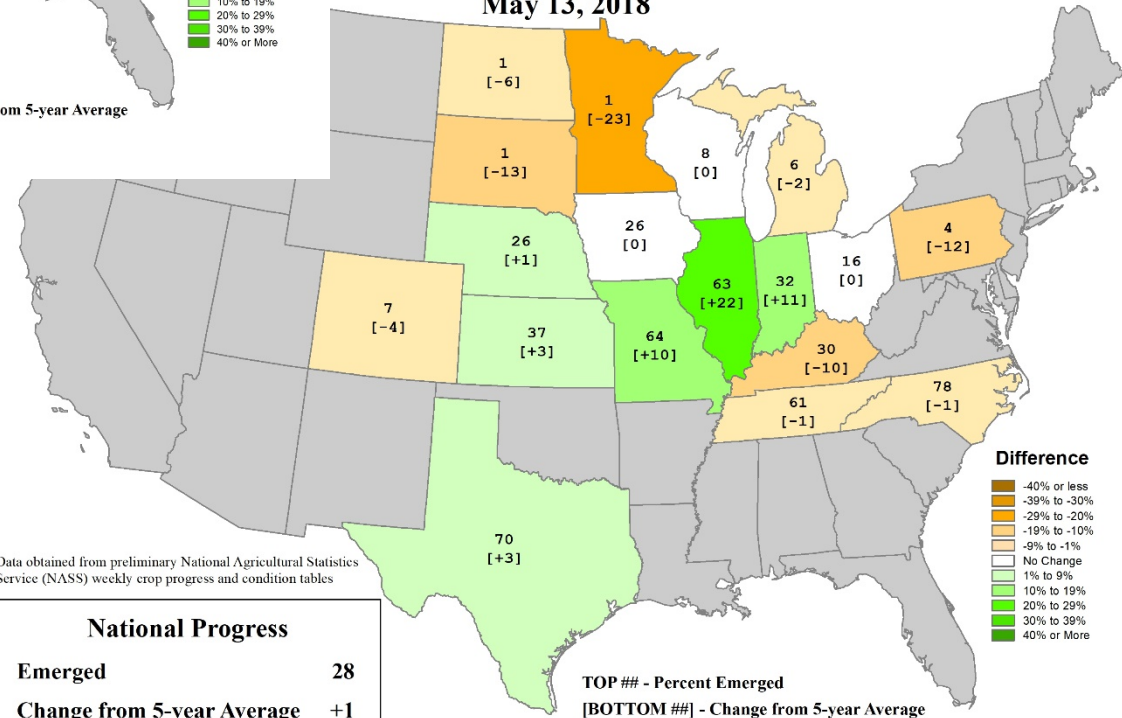
TOP ## - Percent Planted
[BOTTOM ##] - Change from 5-year Average

USDA Agricultural Weather Assessments
World Agricultural Outlook Board

Corn

U.S. Corn Progress

Percent Emerged
May 13, 2018



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

| National Progress | |
|----------------------------|----|
| Emerged | 28 |
| Change from 5-year Average | +1 |

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

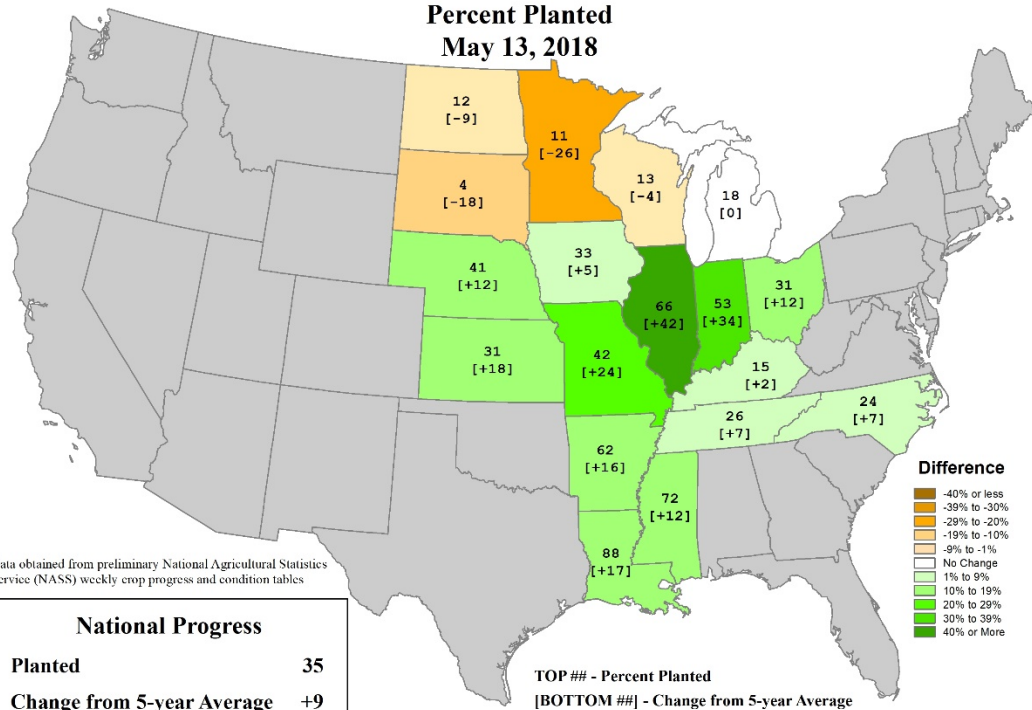
USDA Agricultural Weather Assessments
World Agricultural Outlook Board

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

Emerged - similar situation

U.S. Soybeans Progress

Percent Planted
May 13, 2018



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

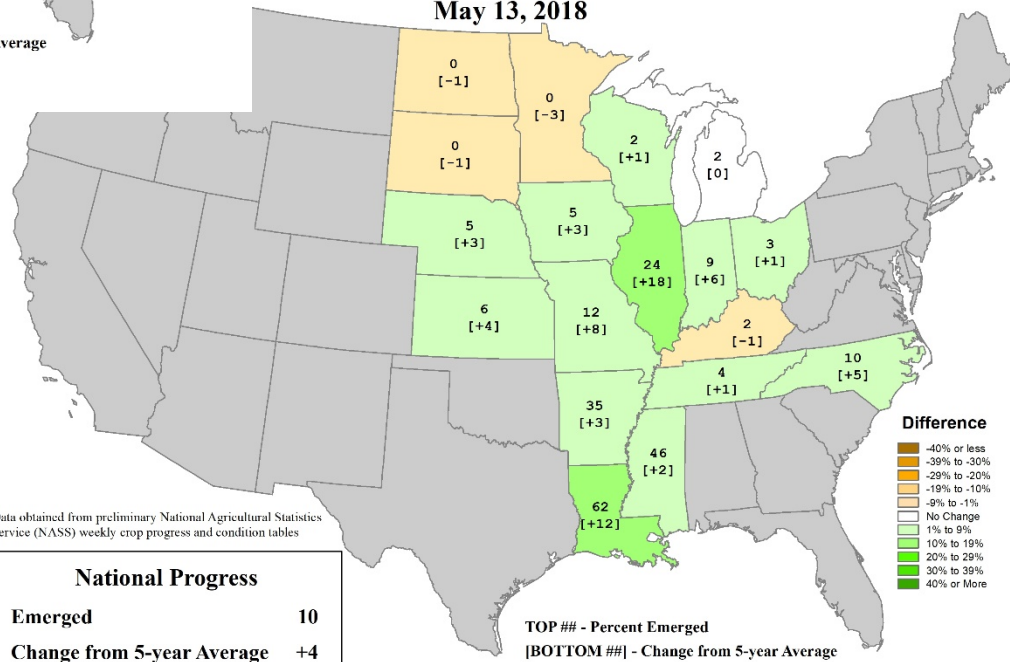
| National Progress | |
|----------------------------|----|
| Planted | 35 |
| Change from 5-year Average | +9 |

USDA Agricultural Weather Assessments
World Agricultural Outlook Board

Soybean

U.S. Soybeans Progress

Percent Emerged
May 13, 2018



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

| National Progress | |
|----------------------------|----|
| Emerged | 10 |
| Change from 5-year Average | +4 |

USDA Agricultural Weather Assessments
World Agricultural Outlook Board

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

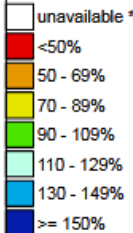
WATER/SNOW

Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

May 15, 2018

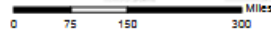
Notice: We anticipate this map will not be available next year due to staffing constraints. Alternate maps: <https://go.usa.gov/xnzxk>

Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median



* Date unavailable at time of posting or measurement is not representative at this time of year

Provisional data subject to revision



The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by: USDA/NRCS National Water and Climate Center Portland, Oregon <http://www.wcc.nrcs.usda.gov>

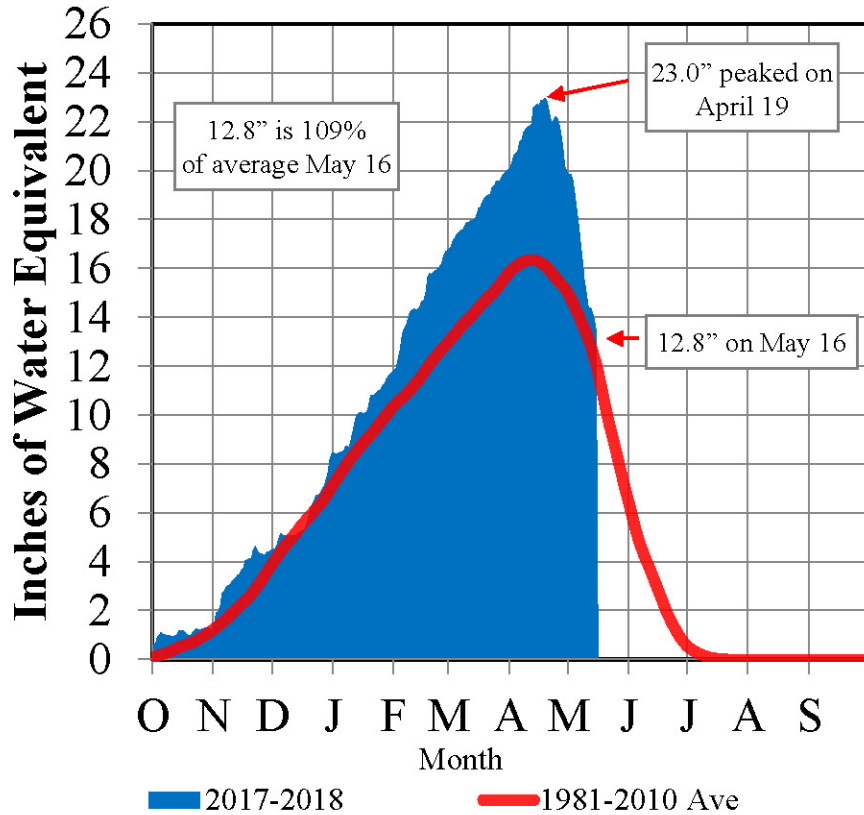
NRCS Snow Water Equivalent

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

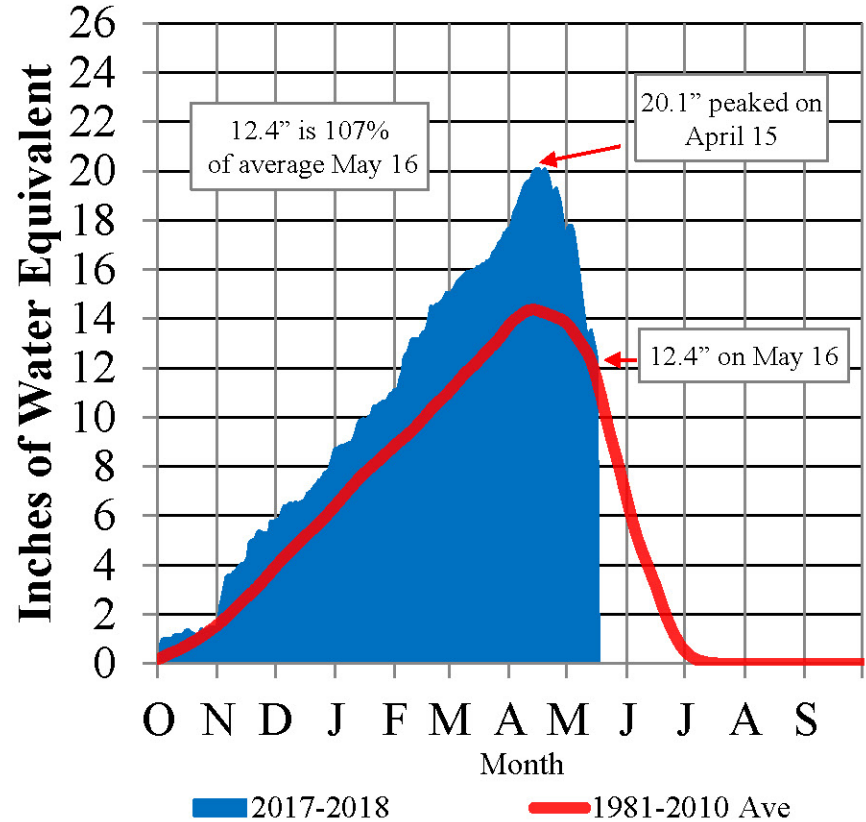
Mountain Snowpack

May 16, 2018

Total above Fort Peck



Total Fort Peck to Garrison



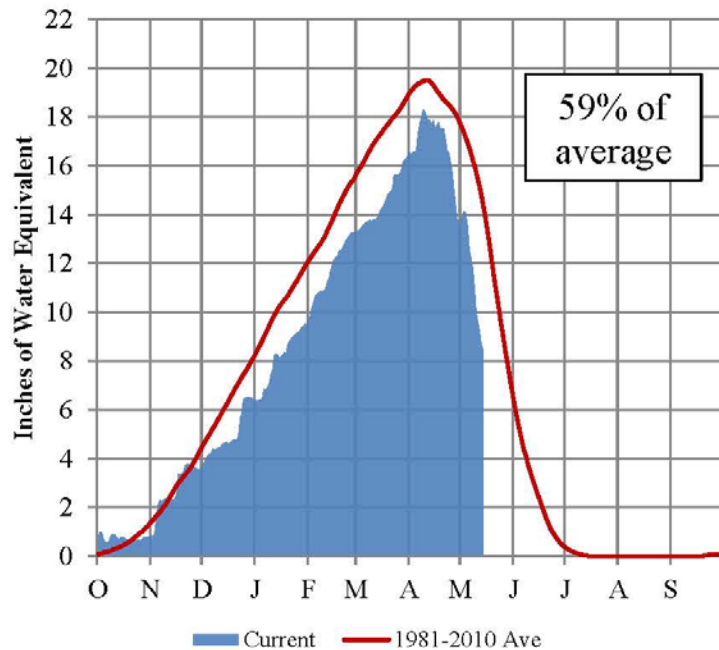
Normally by April 15 the peak mountain SWE has peaked in both reaches.

Source: USDA-NRCS

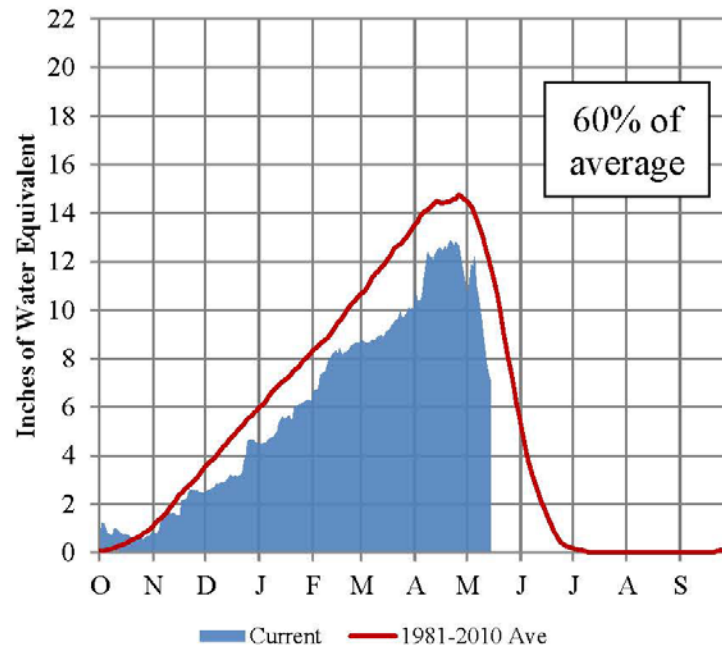
Platte River Basin - Mountain Snowpack Water Content Water Year 2017-2018

May 15, 2018

Total North Platte



Total South Platte

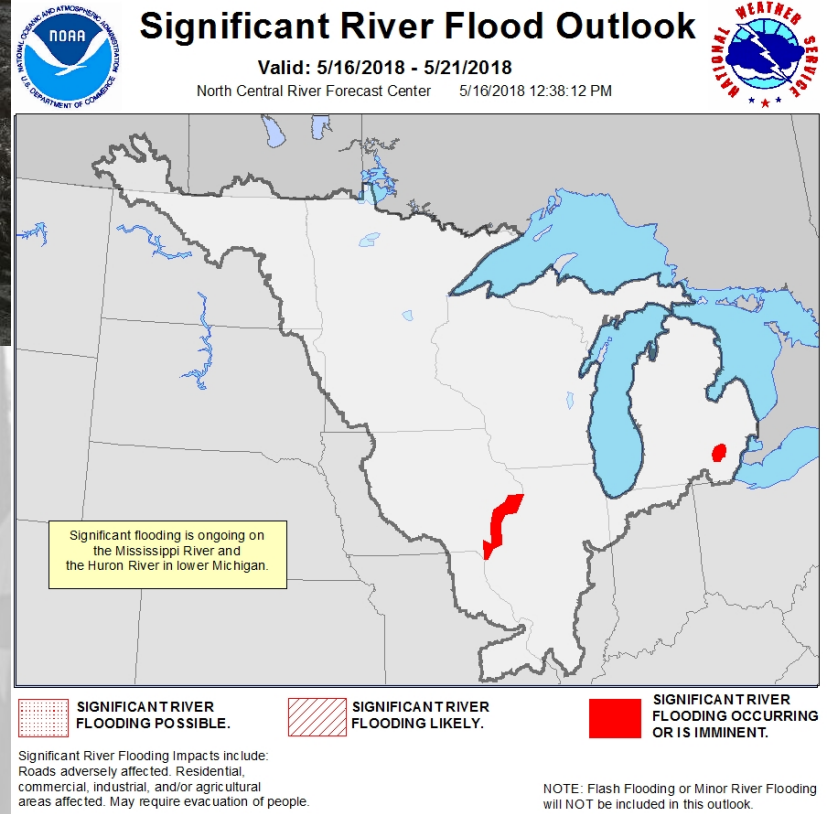


The North and South Platte River Basin mountain snowpacks normally peak near April 15 and the end of April, respectively. As of May 15, 2018, the mountain snowpack SWE in the "Total North Platte" reach is currently 8.5", 59% of average. The mountain snowpack SWE in the "Total South Platte" reach is currently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

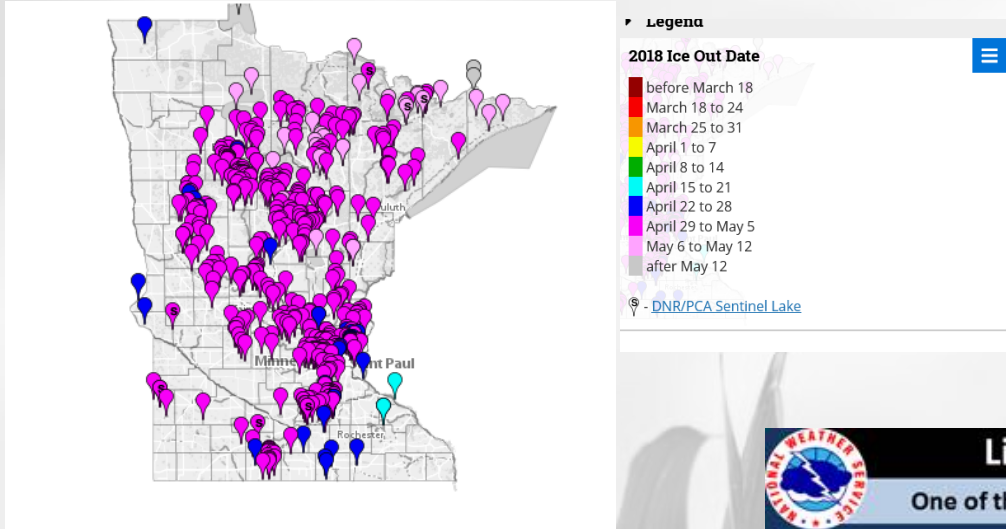
Flood Issues



Clark Fork River Flooding –
Missoula, MT
Courtesy - NWS



Lake Ice Out



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

Little Ice Remains on Lake Superior

One of the Last Bigger Concentrations of Ice is around Marquette

Aqua MODIS
May 12, 2018

Ice

Marquette -- May 12, 2018

Marquette -- May 12, 2018

Marquette -- May 12, 2018

National Weather Service
Marquette, Michigan

weather.gov/up

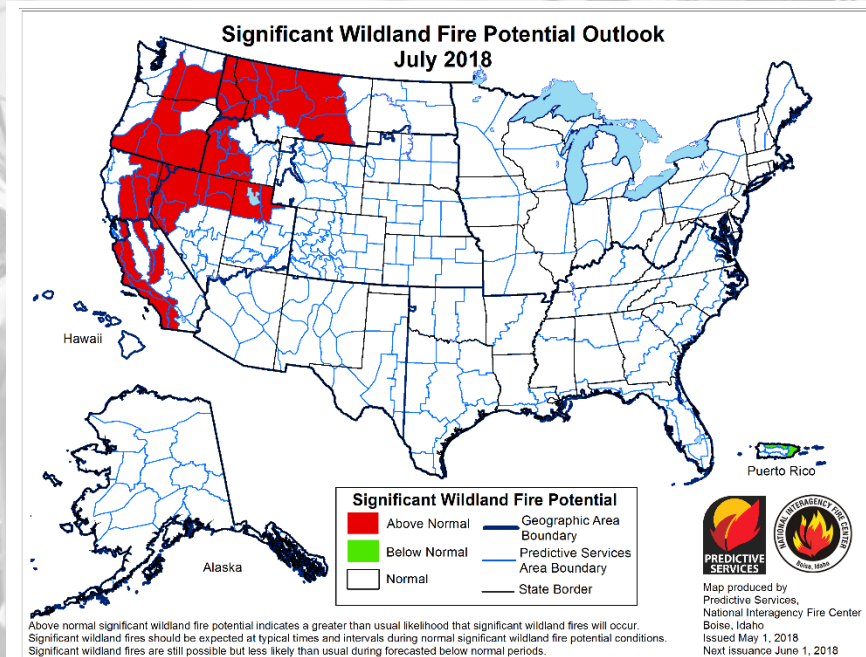
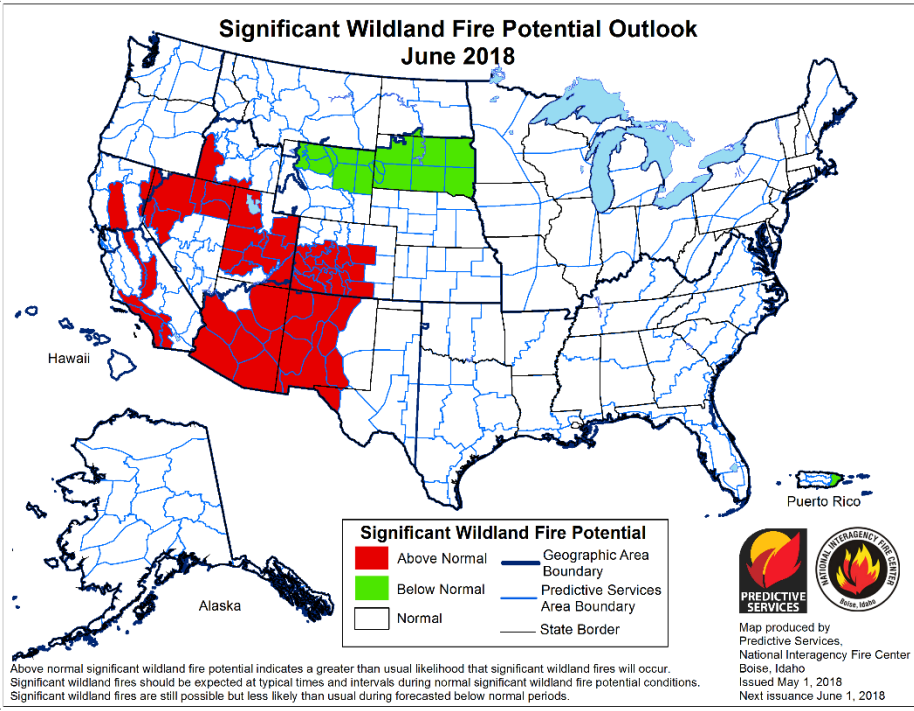
[f](#) NWSMarquette

[t](#) @NWSMarquette

Issued:
5/12/2018 6:34 PM

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

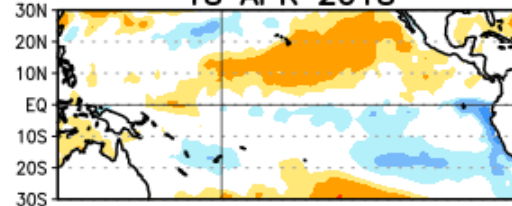
- **La Niña/El Niño in status.....**
- **7-day precipitation forecast**
- **8-14 day outlook**
- **June**
- **Summer/growing season**

Weekly SST Departures during the Last Four Weeks

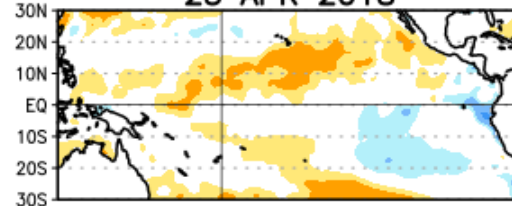
During the last four weeks, near-to-below average SSTs have persisted over the east-central equatorial Pacific Ocean. Negative SST anomalies persisted near the coast of South America.

Weekly SST Anomalies (DEG C)

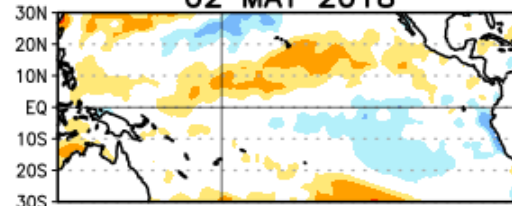
18 APR 2018



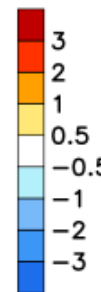
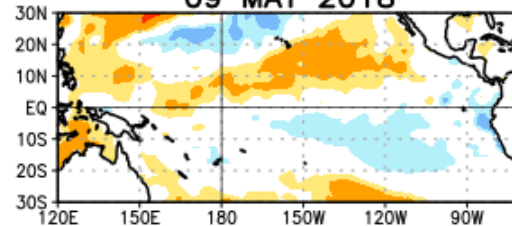
25 APR 2018



02 MAY 2018

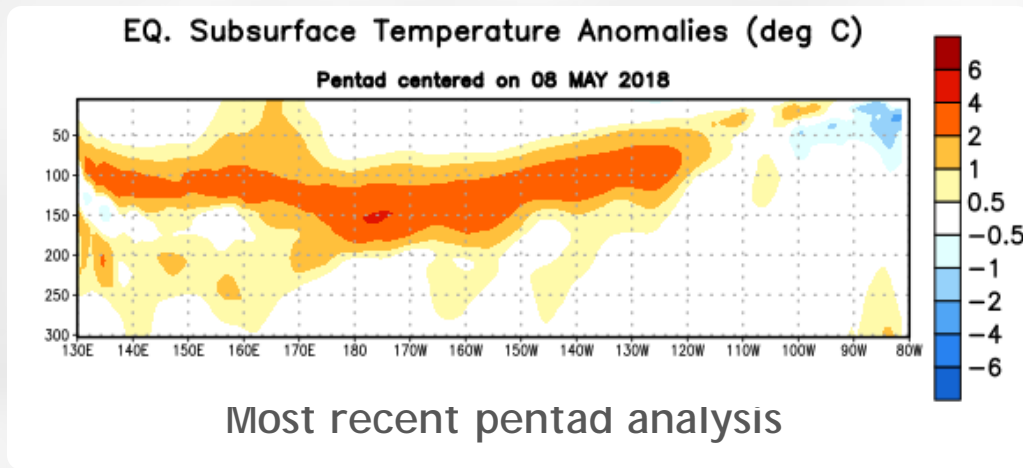


09 MAY 2018

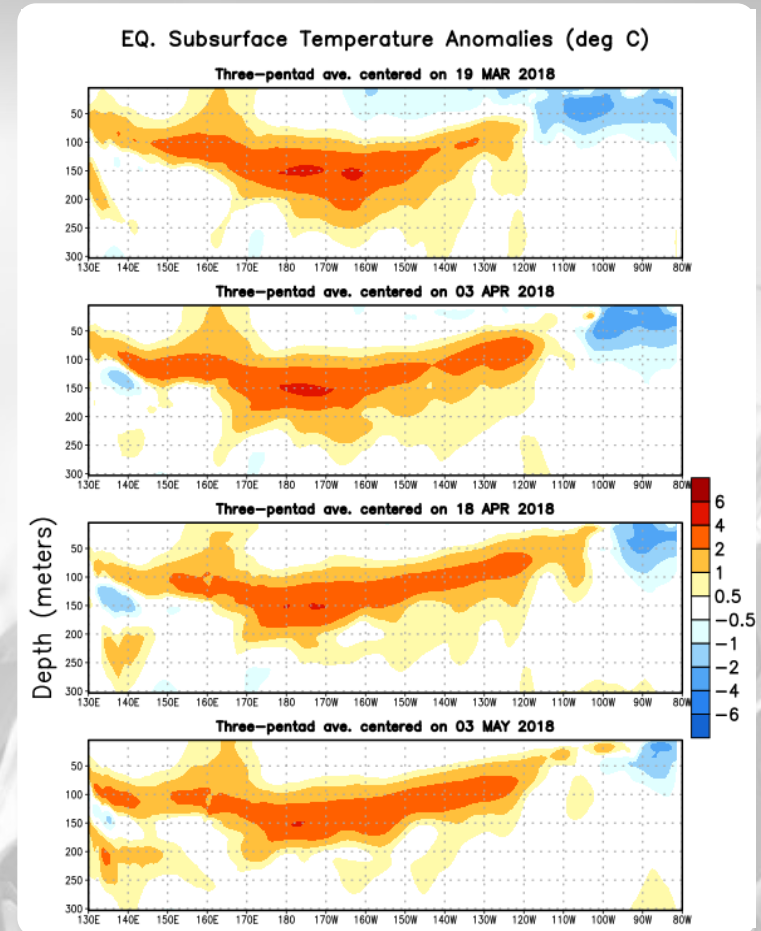


Sub-Surface Temperature Departures in the Equatorial Pacific

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



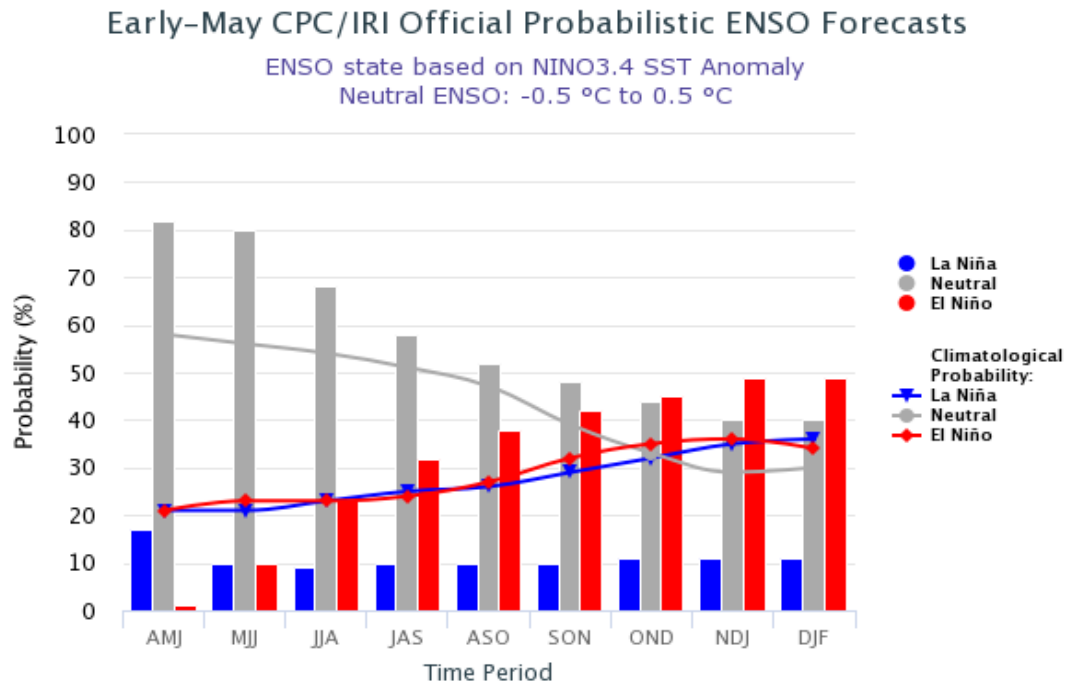
Recently, negative temperature anomalies have weakened in the far eastern Pacific Ocean.



CPC/IRI Probabilistic ENSO Outlook

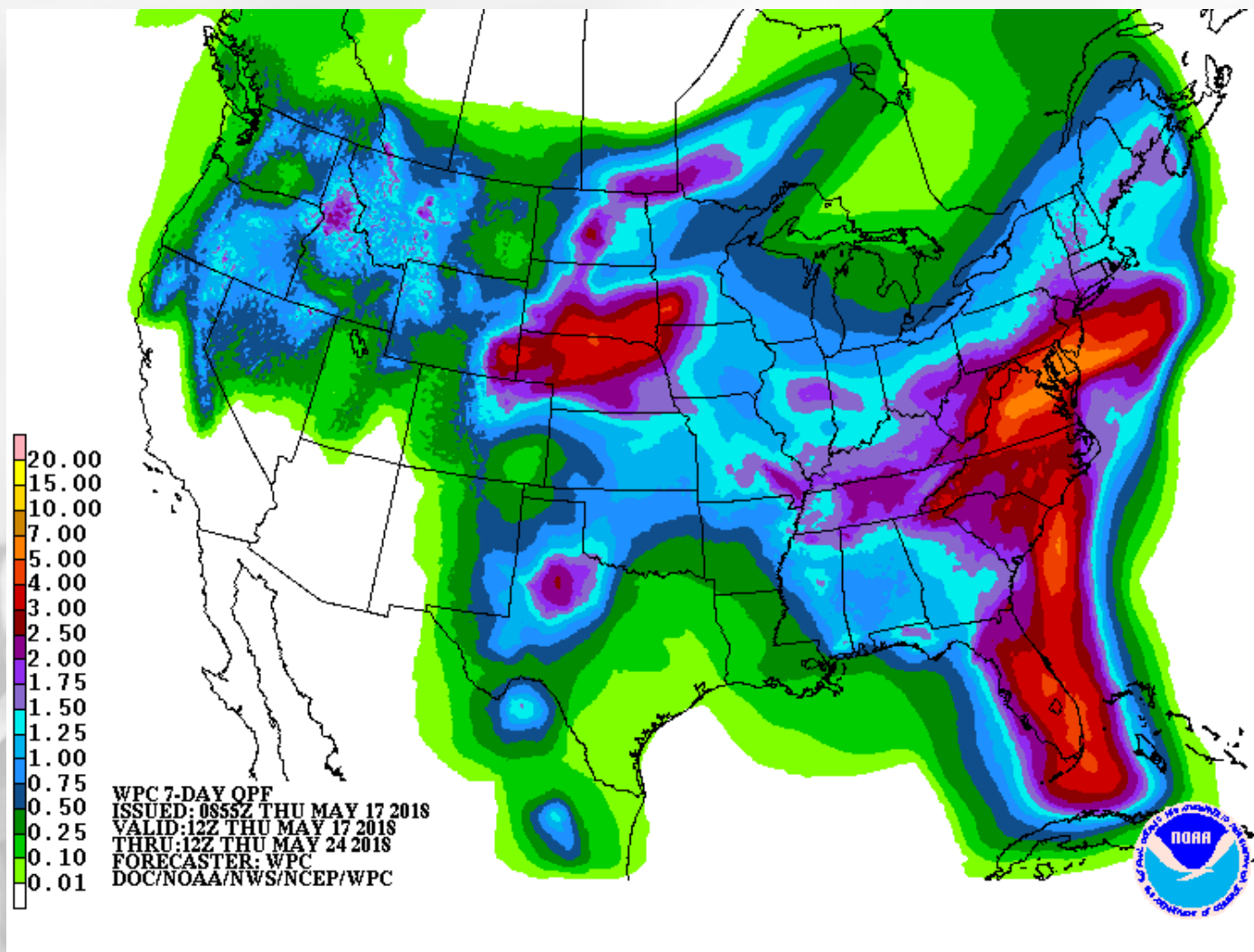
Updated: 10 May 2018

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



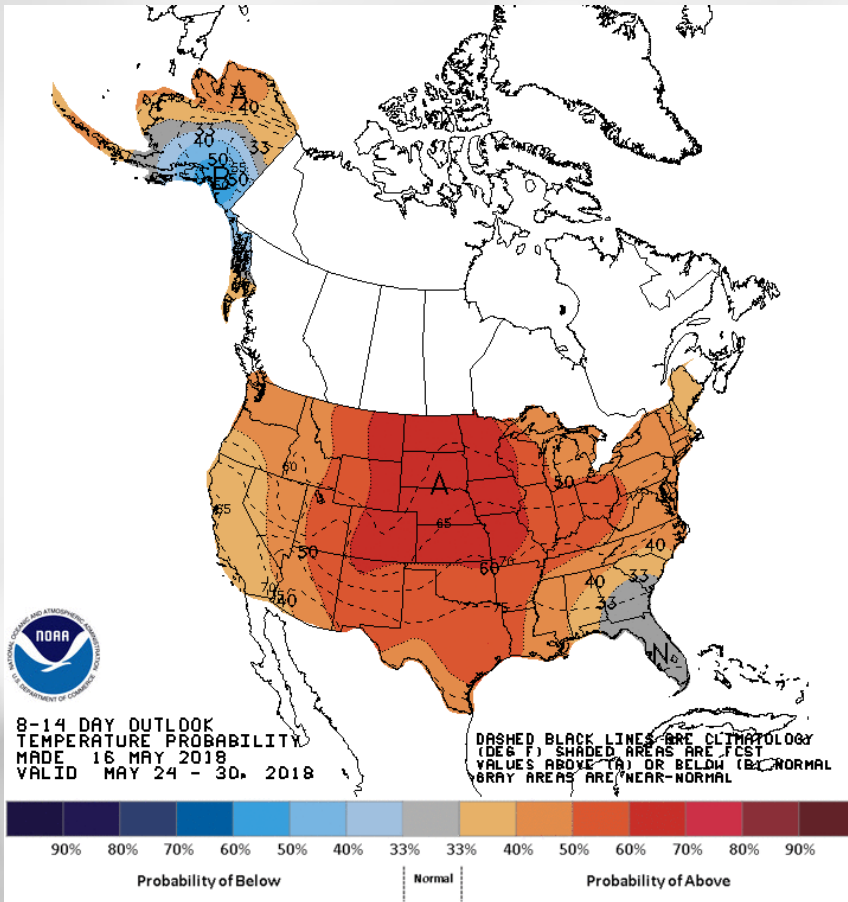
7-day Quantitative Precipitation Forecast

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

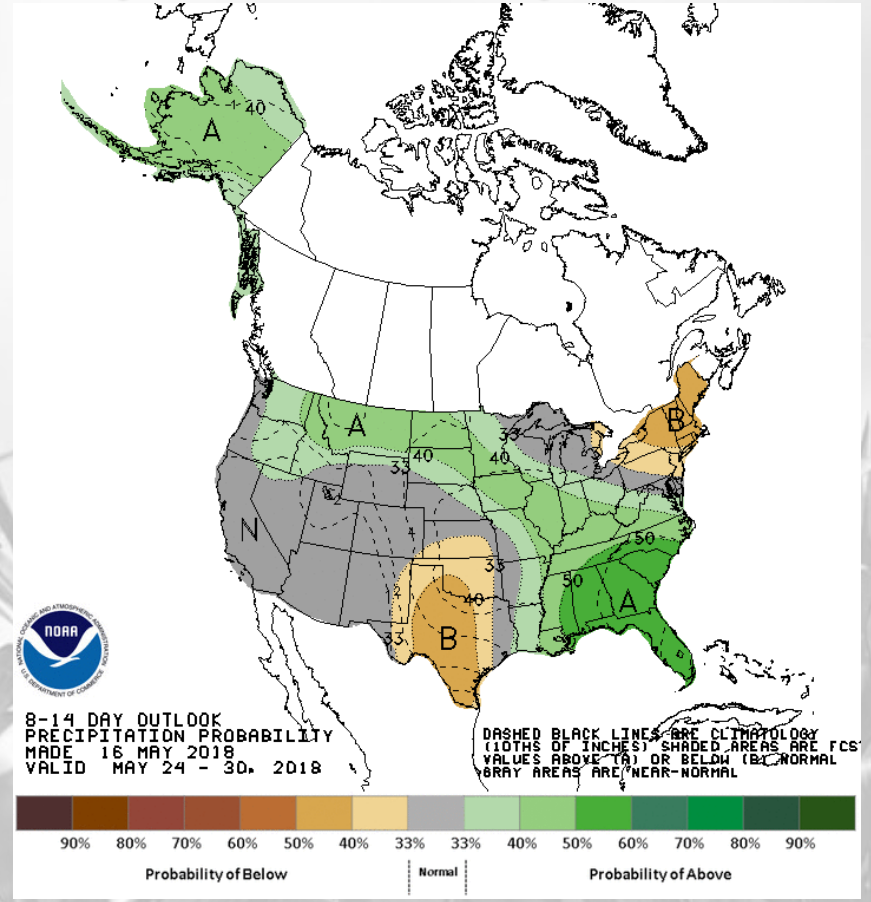


<http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml>

Temperature and Precipitation Probabilities for 24 May – 30 May 2018



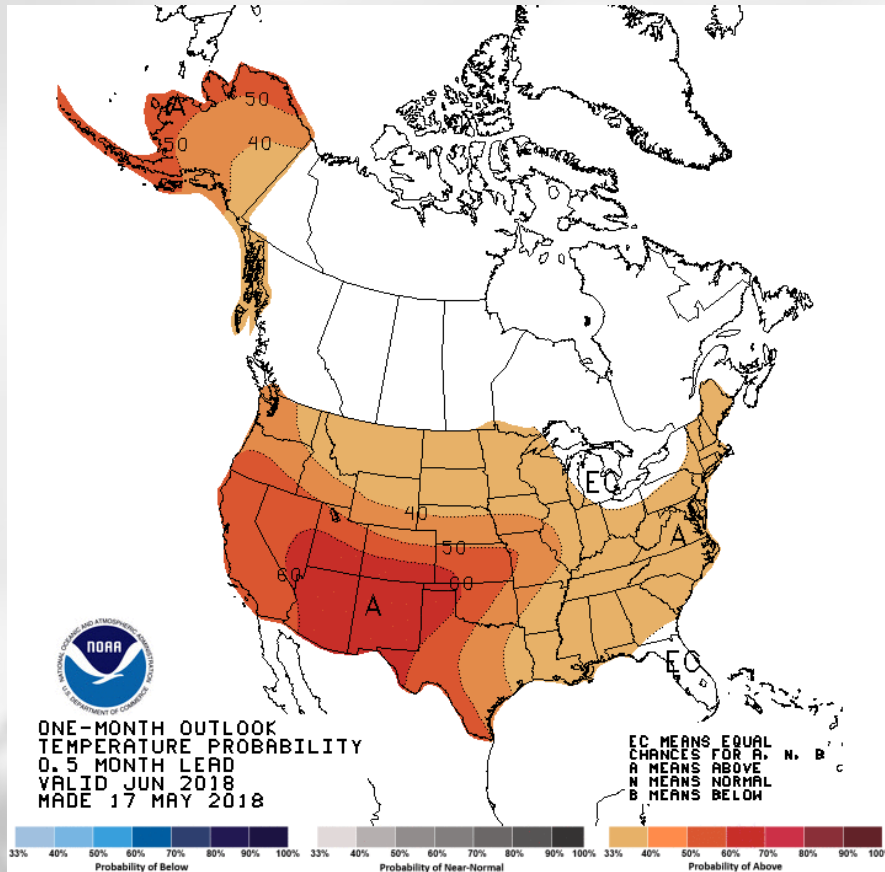
Temperature



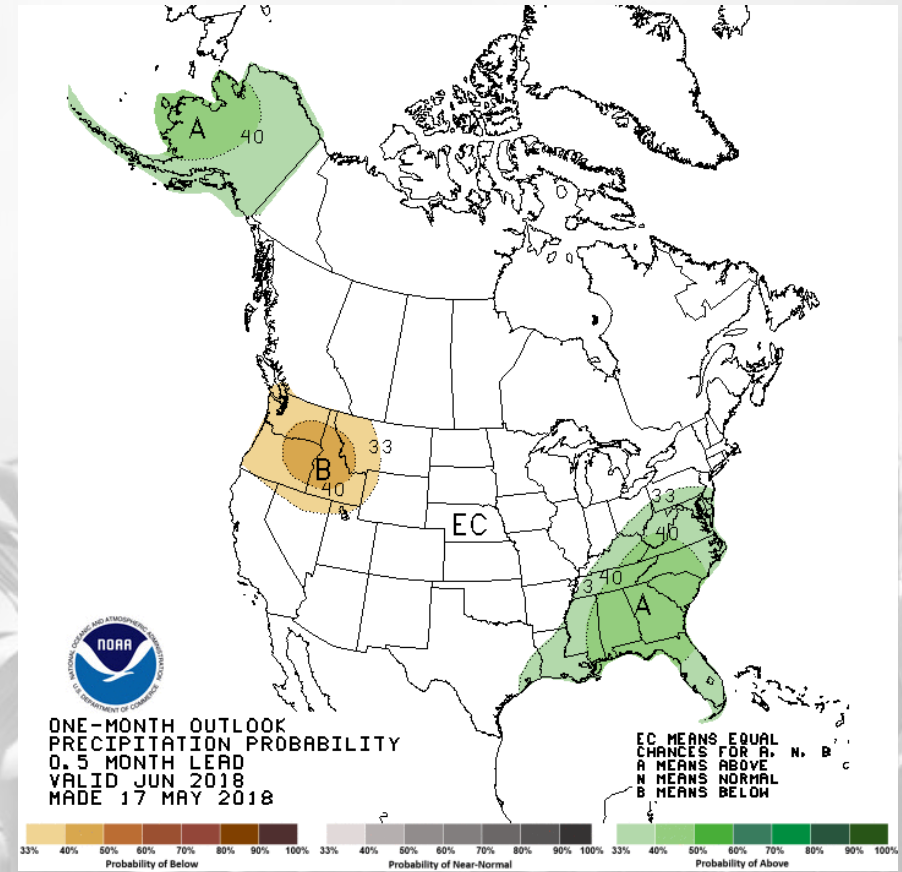
Precipitation

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

June Temperature and Precipitation Probabilities



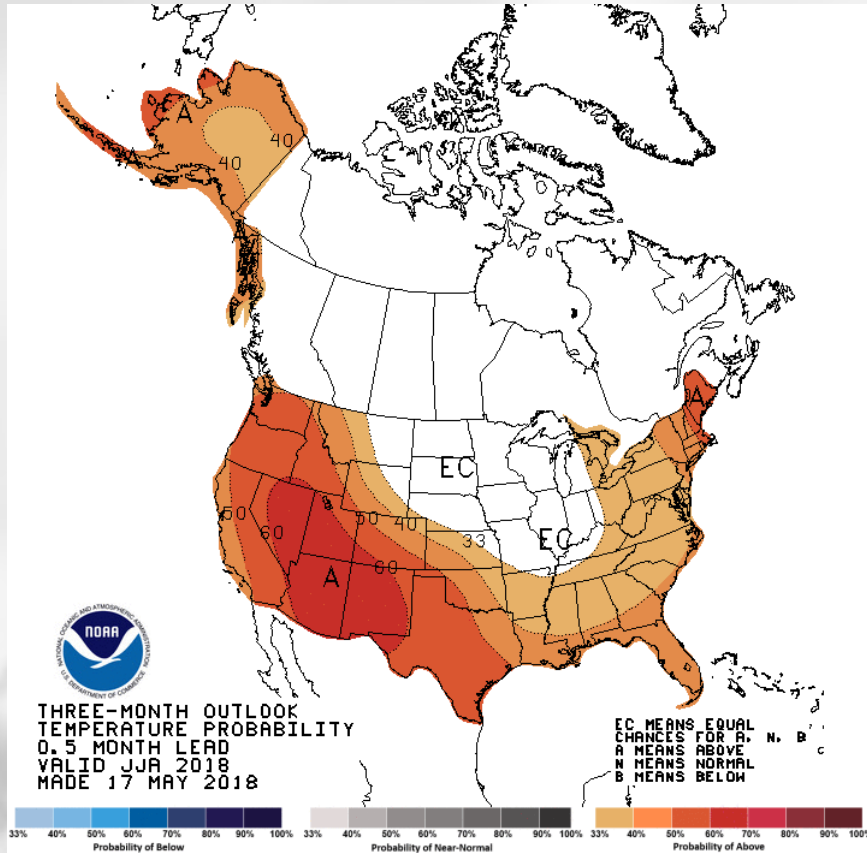
Temperature



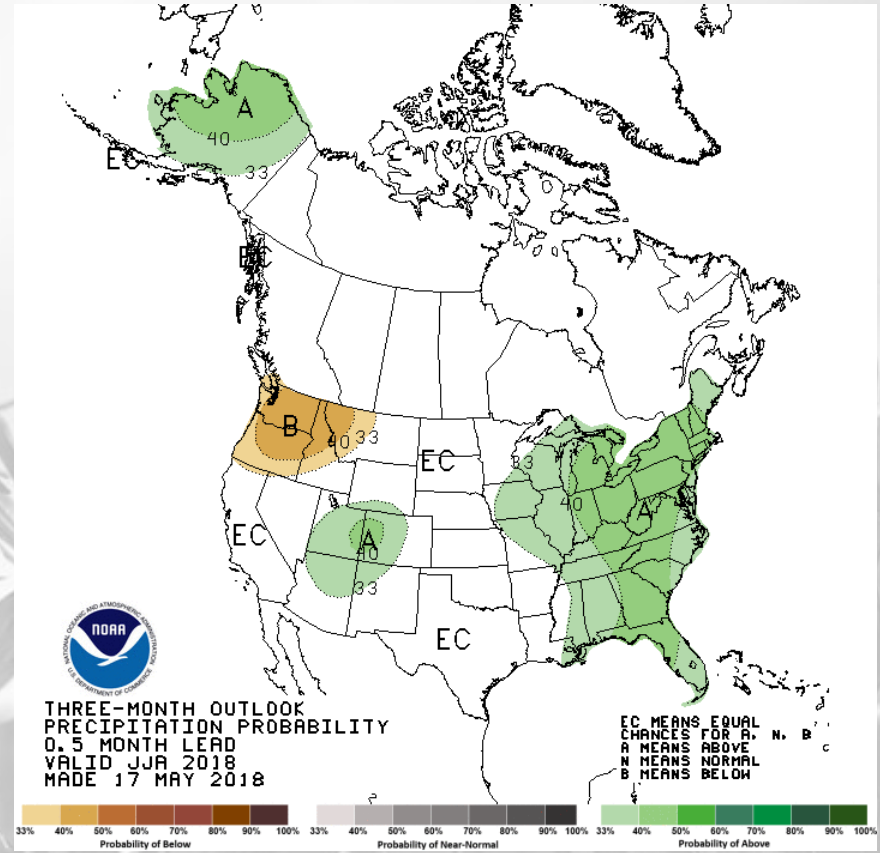
Precipitation

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

3 Month Temperature and Precipitation Probabilities (June-August)



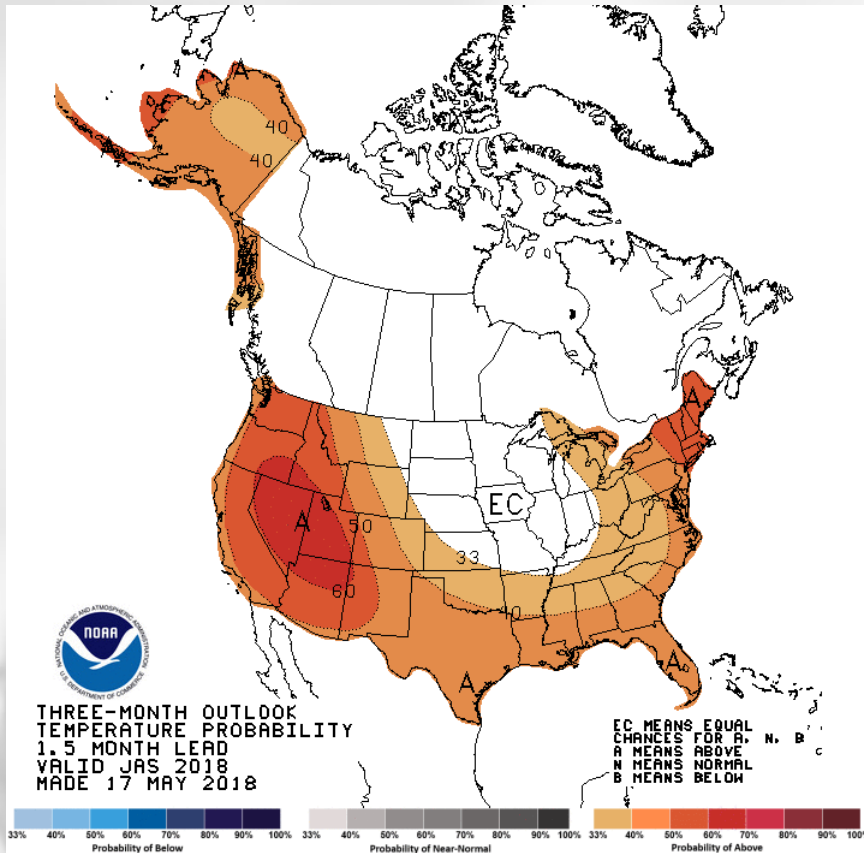
Temperature



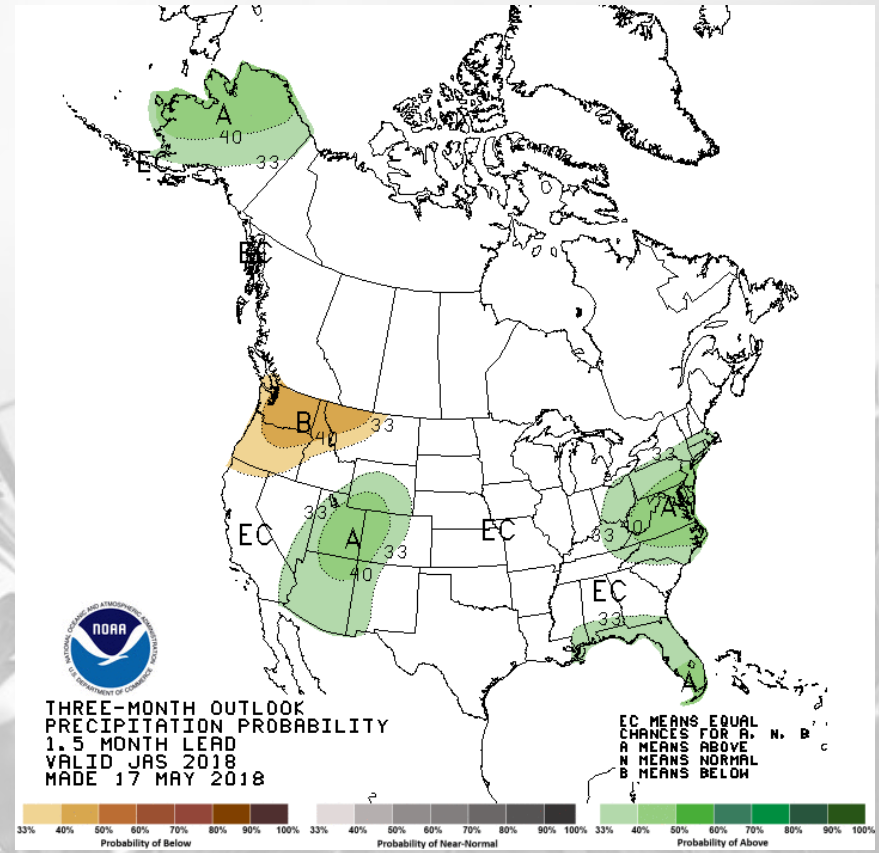
Precipitation

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

3 Month Temperature and Precipitation Probabilities (July-September)



Temperature



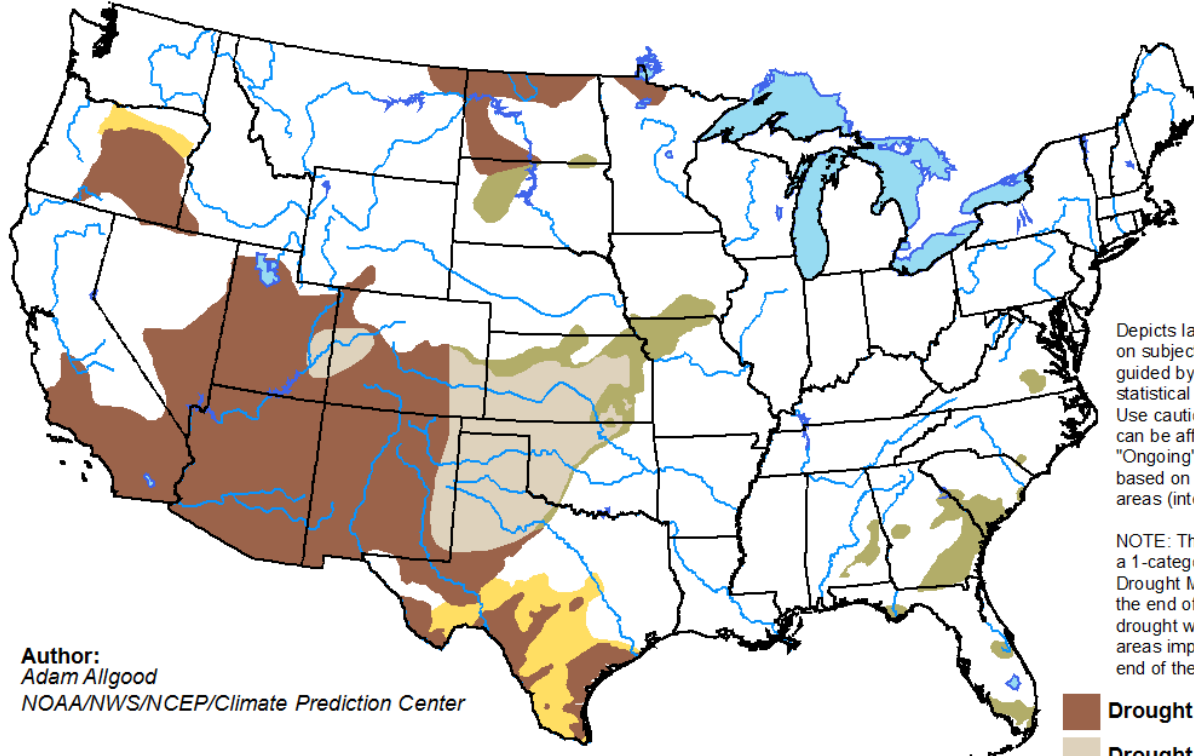
Precipitation

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

Drought Outlook through 31 August

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





Valid for May 17 - August 31, 2018
Released May 17, 2018

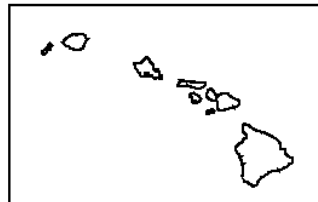
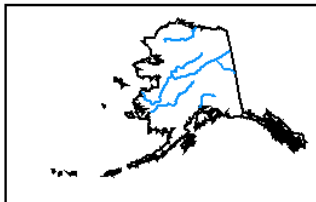


Author:
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NOAA/NWS/NCEP/Climate Prediction Center

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).

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



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

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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For More Information



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<https://www.climatehubs.ocs.usda.gov/hubs/midwest>



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