Midwest and Great Plains Climate-Drought Outlook
17 May 2018

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Photo: Pete Boulay
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
• Current Conditions

• Impacts
  – Ag
  – Snow/water
  – Other

• Outlooks
  – El Niño in waiting
  – Planting/summer
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

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
- A few quite wet areas
- Large parts of region very dry (<25% average)
- Large ag impacts in both locations
Departure from Normal Temperature (F)
5/3/2018 – 5/16/2018

Generated 5/17/2018 at HPRCC using provisional data.
NOAA Regional Climate Centers
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

http://www.emc.ncep.noaa.gov/mmb/nldas/drought/
EDDI –
Evaporative Demand Index

https://www.esrl.noaa.gov/psd/eddi/
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
Average Soil Temperature (Deg. F, 4" Bare)

May 06 - 12, 2018

40 F Wheat can develop
50 F Corn can develop
60 F Cotton can develop

Based on preliminary data.

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 Agricultural Weather Network, West Texas Mesonet, South Dakota State Univ, Mesonet, Ohio Agricultural Research and Development Center, Univ. of Missouri and USDA/NRCS.

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

23.0” peaked on April 19
12.8” is 109% of average May 16
12.8” on May 16

Total Fort Peck to Garrison

20.1” peaked on April 15
12.4” is 107% of average May 16
12.4” on May 16

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

59% of average

60% of average

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
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
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.
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.
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
June Temperature and Precipitation Probabilities

Temperature
http://www.cpc.ncep.noaa.gov/products/predictions/30day/
3 Month Temperature and Precipitation Probabilities (June-August)

Temperature

Precipitation

3 Month Temperature and Precipitation Probabilities (July-September)

Temperature

Precipitation
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

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:
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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://mrcc.isws.illinois.edu/webinars.htm)
  - [http://www.hprcc.unl.edu](http://www.hprcc.unl.edu)

- NOAA’s National Climatic Data Center: [www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)

- NOAA’s Climate Prediction Center: [www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov)

- Climate Portal: [www.climate.gov](http://www.climate.gov)


- National Drought Mitigation Center: [http://drought.unl.edu/](http://drought.unl.edu/)

- State climatologists
  - [http://www.stateclimate.org](http://www.stateclimate.org)

- Regional climate centers
  - [http://mrcc.isws.illinois.edu](http://mrcc.isws.illinois.edu)
  - [http://www.hprcc.unl.edu](http://www.hprcc.unl.edu)
Thank You and Questions?

• Questions:
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