United States Department of Agriculture
Midwest Climate Hub

National Oceanic and Atmospheric Administration
U.S. Department of Commerce

# North Central Region Climate and Drought Outlook

## March 20, 2025

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NDMC NATIONAL DROUGHT MITIGATION CENTER
UNIVERSITY OF NEBRASKA

NIDIS

AASC AMERICAN ASSOCIATION OF STATE CLIMATOLOGISTS

REGIONAL CLIMATE CENTERS

KANSAS STATE UNIVERSITY

# General Information

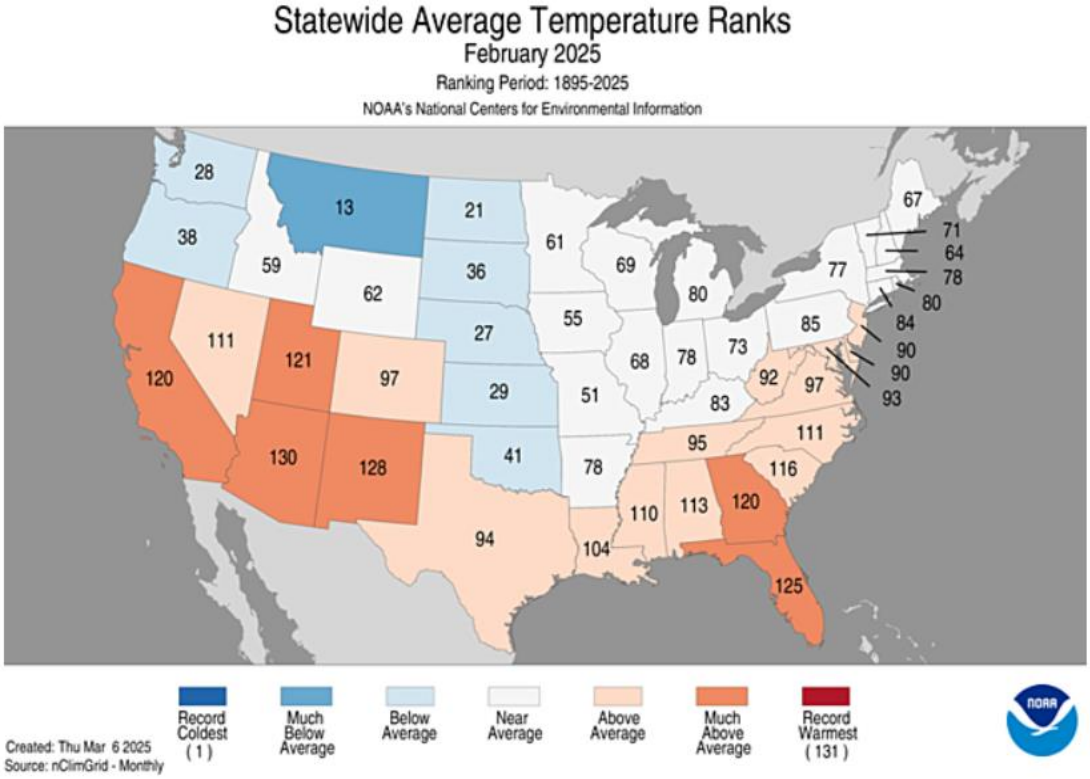
- Collaborative Effort of:
  - NOAA NCEI / NWS / OAR / NIDIS
  - AASC: American Association of State Climatologists
  - USDA Climate Hubs
  - MRCC: Midwest Regional Climate Center
  - HPRCC: High Plains Regional Climate Center
  - NDMC: National Drought Mitigation Center
- Next Regular Climate/Drought Outlook Webinar:
  - Thursday, April 17, 2025 @ 1 PM CDT / 12 PM MDT
  - Presenter: Dennis Todey, USDA Midwest Climate Hub
- Past Webinars:
  - https://mrcc.purdue.edu/webinars/
  - https://hprcc.unl.edu/webinars.php
- Questions?
  - Feel free to add questions into the questions window during and after the presentation.

# Presentation Outline

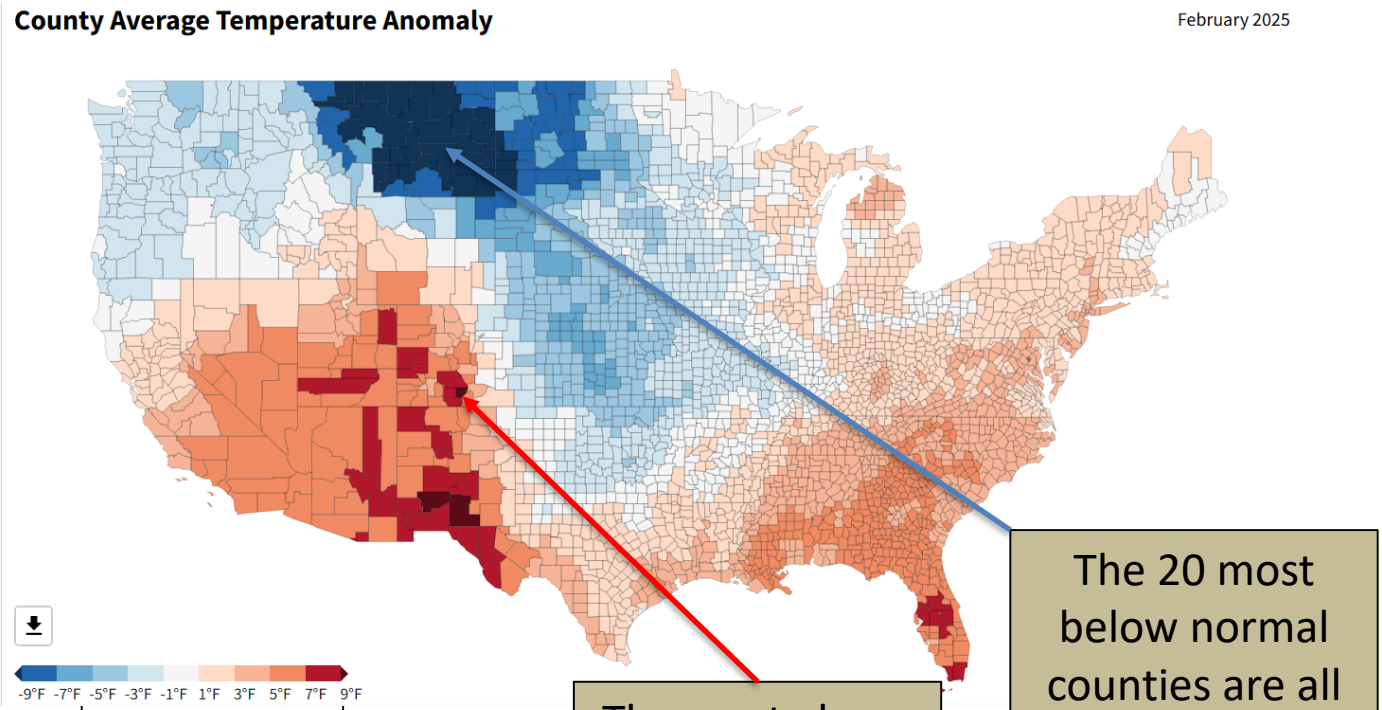
- Past Weather
  - February climate data
  - Meteorological Winter ‘24-’25
    - Dec-Jan-Feb
    - Temp./Precip. rankings
- Seasonal Snowfall
- Notable Events
- Future Weather/Climate Outlooks
  - Precipitation forecasts
  - Drought map
  - River flooding outlook
  - ENSO forecast

Daffodils, Manhattan, KS, Mar. 17

# February 2025 – Temperature Rankings



# February 2025– Temperature Departures




The most above normal county: Alamosa, CO

The 20 most below normal counties are all in Montana.

Source: https://www.ncei.noaa.gov/access/monitoring/us-maps/

# Top 10 Coldest/Warmest Februarys

| Location | Rank / Years | Avg. Dep. | Location | Rank / Years | Avg. Dep. |
|---|---|---|---|---|---|
| Billings, MT | 4 / 91 | 15.4° -14.0° | Alamosa, CO | 1 / 93 | 34.1° +9.9° |
| Sheridan, WY | 8 / 78 | 16.2° -9.8° | Leadville, CO | 1 / 45 | 25.5° +7.3° |
| Rapid City, SD | 9 / 83 | 17.5° -8.6° | Grand Jct, CO | 4 / 133 | 42.4° +7.1° |

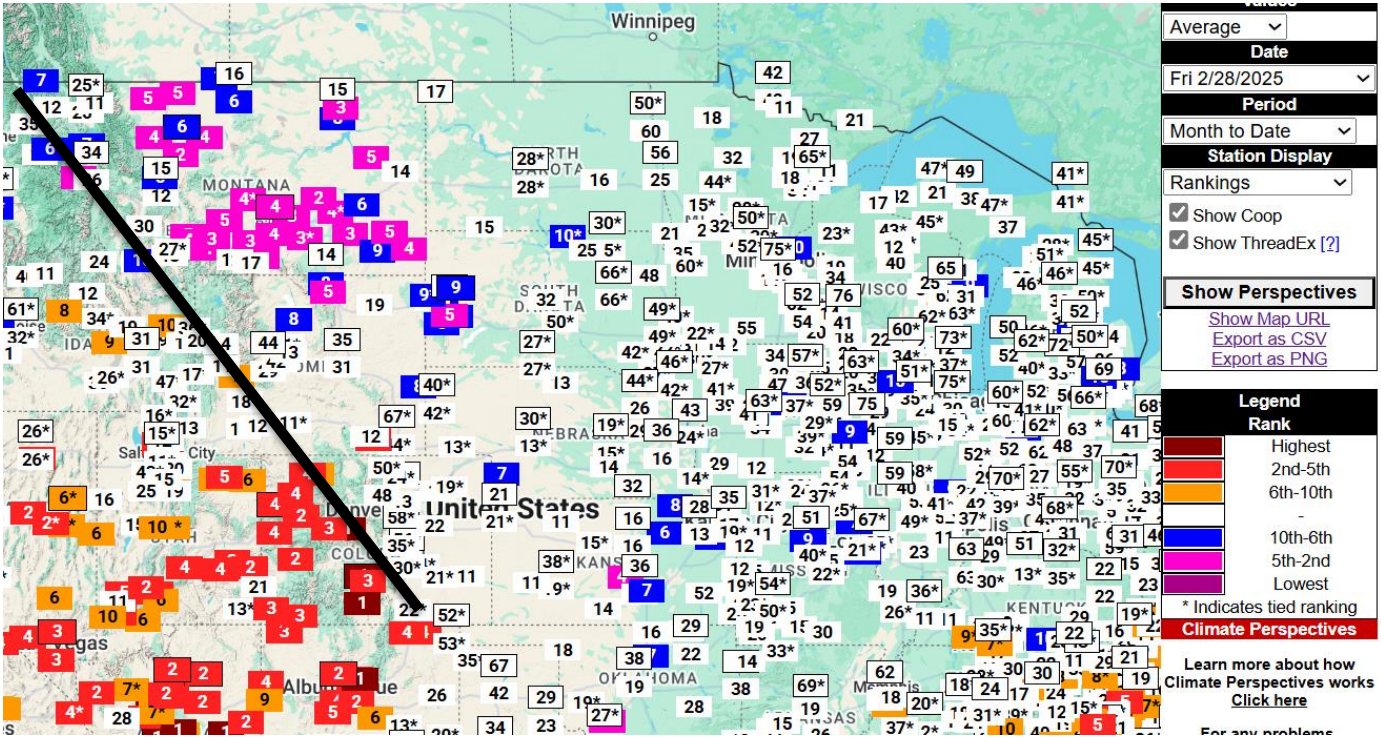
Avg. Feb. 2-21 Temp.: 4.4°
Normal Feb. 2-21 Temp.: 28.9°
Coldest 20 days since 1996

8 days with highs ≥ 65°
Old record: 4 (1995)
Average: 1 every 4 years



Source: https://sercc.com/climate-perspectives/

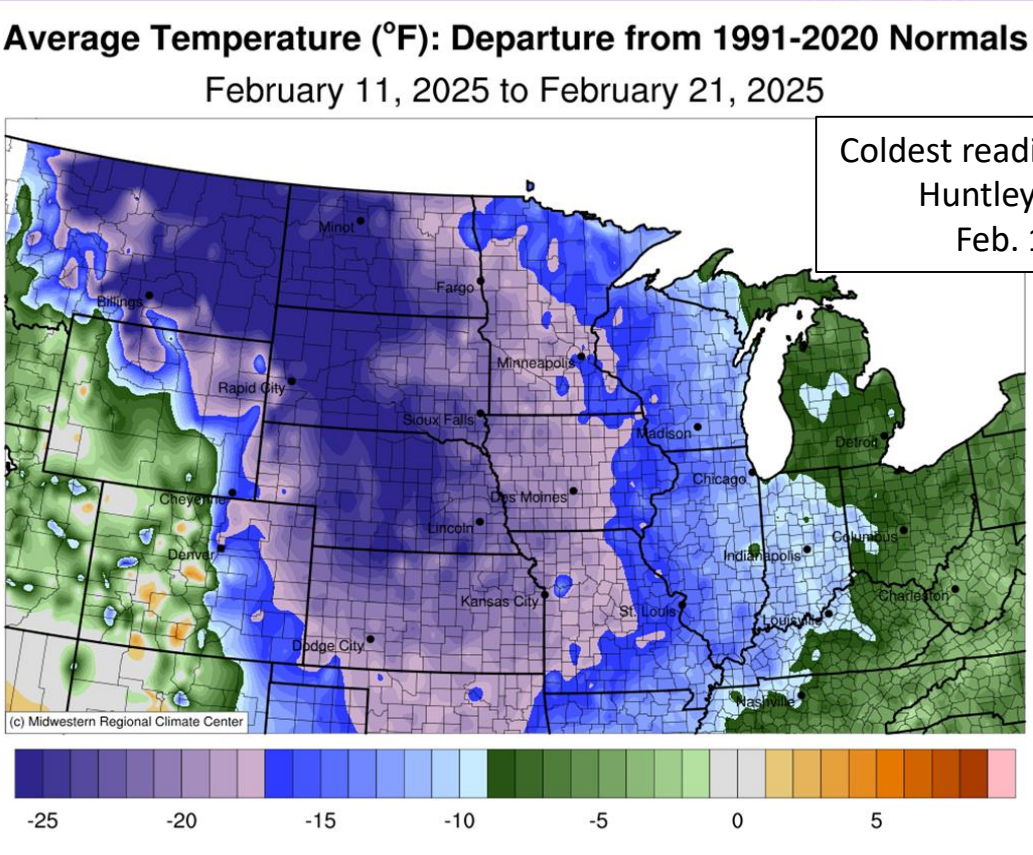
# February 2025 – Average Temperature Rankings






Source: https://sercc.com/climate-perspectives/

# February Arctic Outbreak



# New Monthly Record Lows for February

| Location | Temperature | Date | POR (years) |
|---|---|---|---|
| Circle, MT | -43° | Feb. 18 | 61 |
| Dickinson, ND | -36° * | Feb. 18 | 76 |
| Valentine, NE | -33° ^ | Feb. 20 | 77 |
| Manhattan, KS | -21° *^ | Feb. 20 | 65 |

1,269 daily record lows were set between Feb. 11 and Feb. 21!

* New all-time record low
^ tied an earlier record



Source: https://www.ncdc.noaa.gov/cdo-web/datatools/records

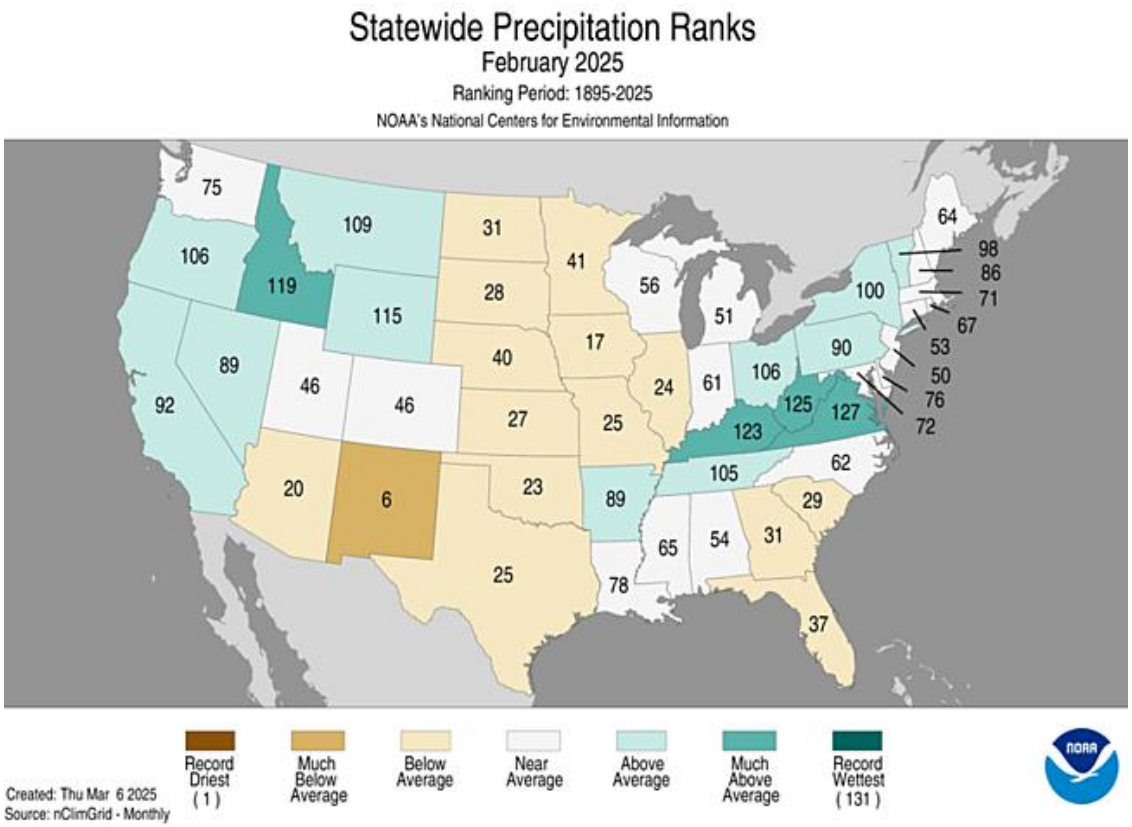
# Late February: From One Extreme to the Other!

| Location | Minimum | Maximum | Difference |
|---|---|---|---|
| Broken Bow, NE | -35° (20th) | 70° (26th) | **105°** |
| Valentine, NE | -33° (20th) | 71° (25th) | **104°** |
| McCook, NE | -24° (20th) | 76° (25th) | **100°** |
| Martin, SD | -34° (20th) | 66° (26th) | **100°** |
| Wolf Point, MT | -44° (19th) | 55° (27th) | 99° |
| Hill City, KS | -19° (20th) | 78° (25th) | 97° |
| Bismarck, ND | -39° (18th) | 56° (27th) | 95° |



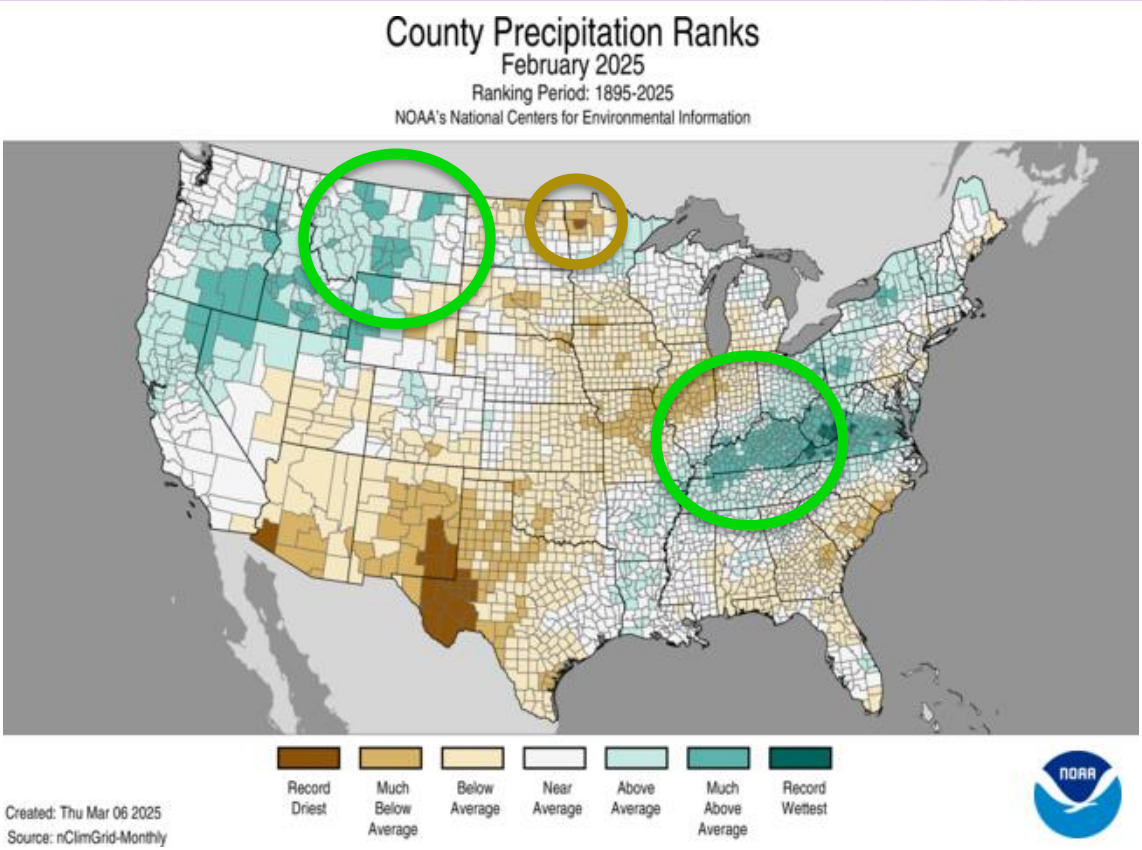
Source: https://scacis.rcc-acis.org/

# February 2025 – Precipitation Rankings




Source: https://www.ncei.noaa.gov/access/monitoring/us-maps/

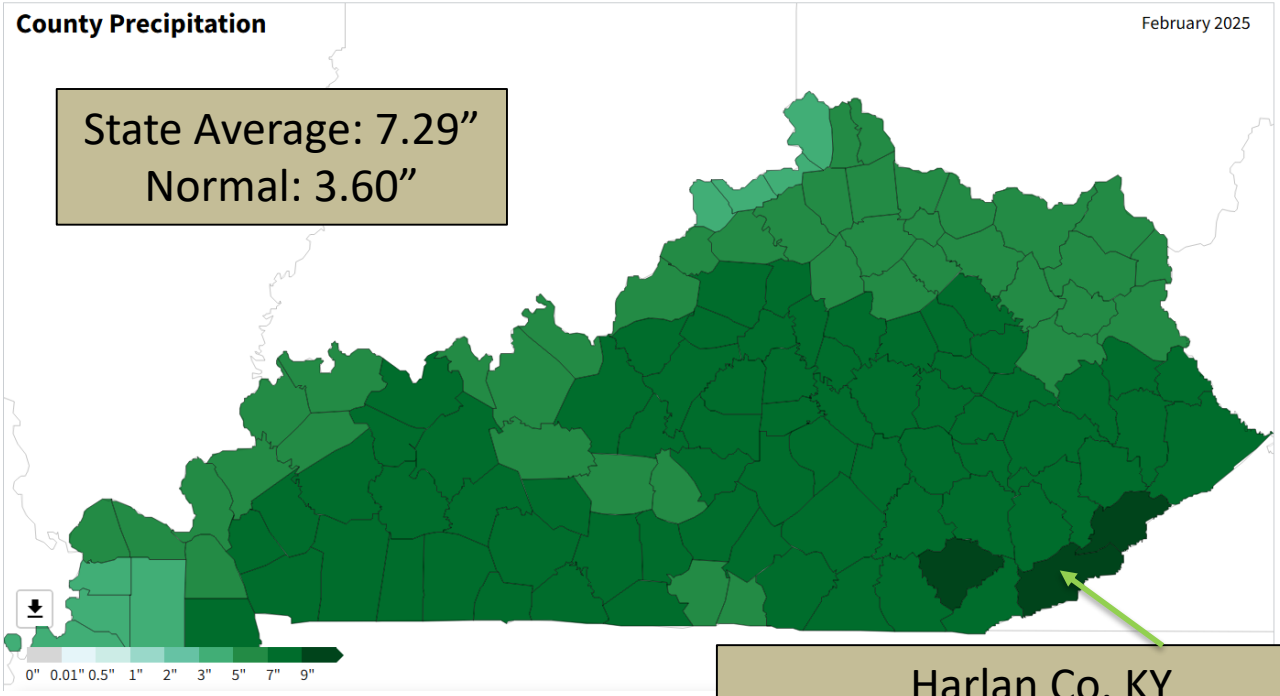
# February 2025 – Precipitation Rankings






Source: https://www.ncei.noaa.gov/access/monitoring/us-maps/

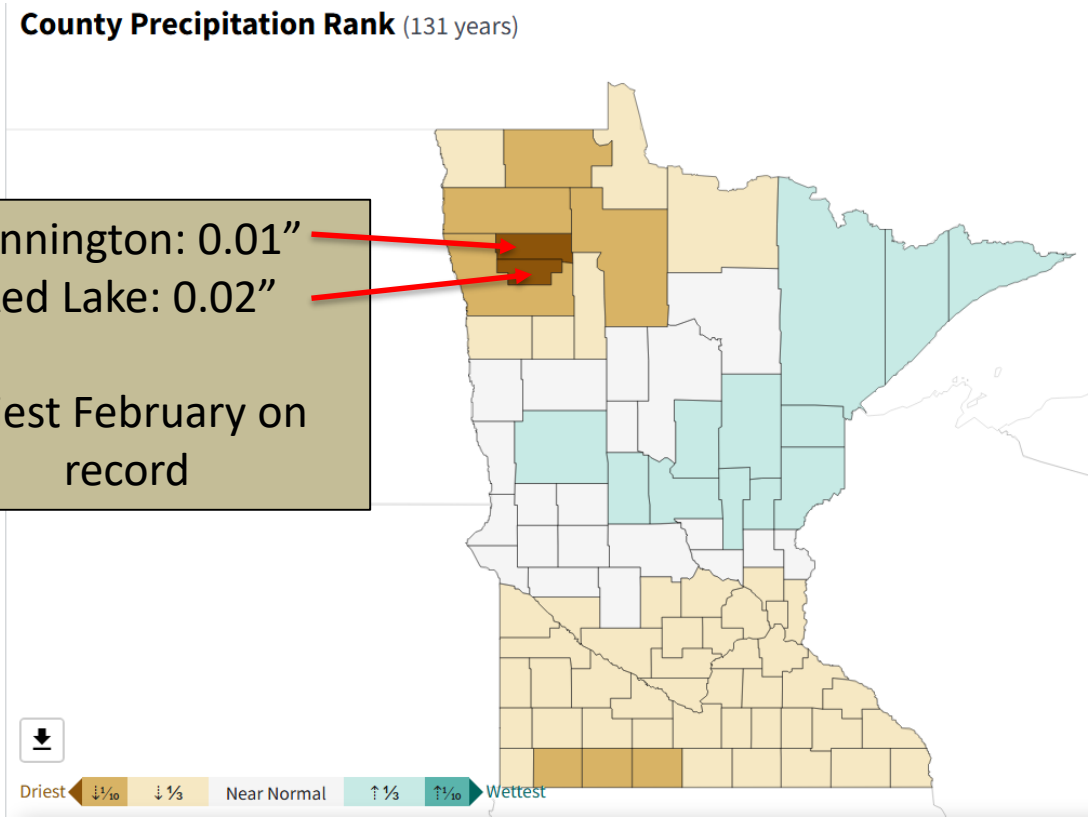
# Kentucky






Source: https://www.ncei.noaa.gov/access/monitoring/us-maps/

# Minnesota




Pennington: 0.01”
Red Lake: 0.02”

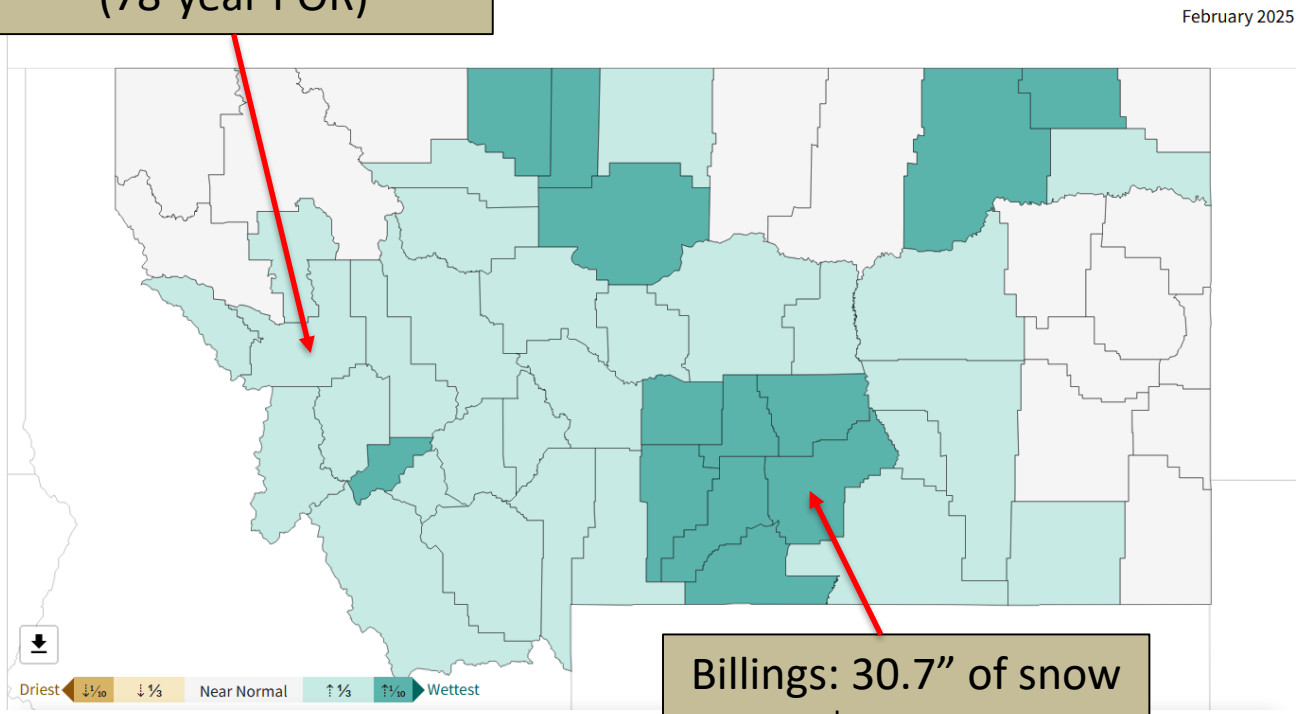
Driest February on record



Source: https://www.ncei.noaa.gov/access/monitoring/us-maps/

# Montana

Missoula: 23.7” of snow
3rd snowiest
(78-year POR)

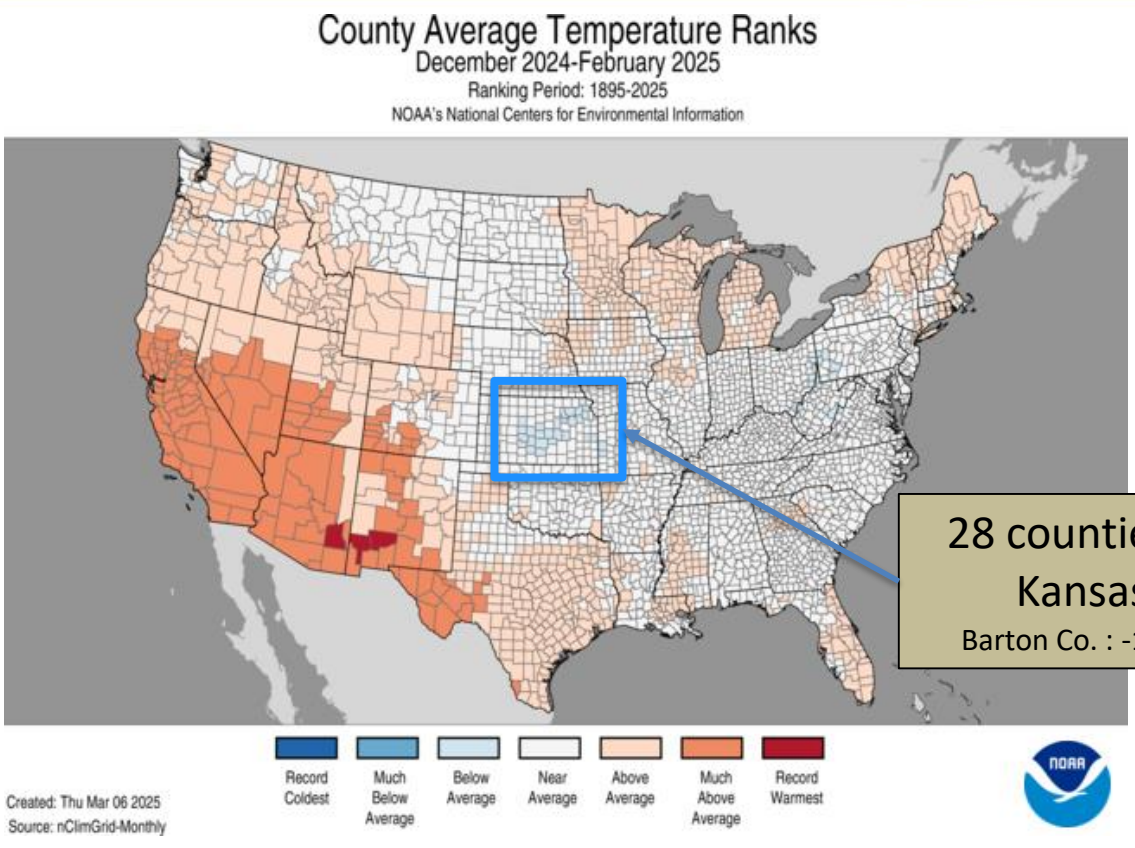



Billings: 30.7” of snow
3rd snowiest
(91-year POR)



Source: https://www.ncei.noaa.gov/access/monitoring/us-maps/

# Dec/Jan/Feb 2024-25 – Temperature Rankings



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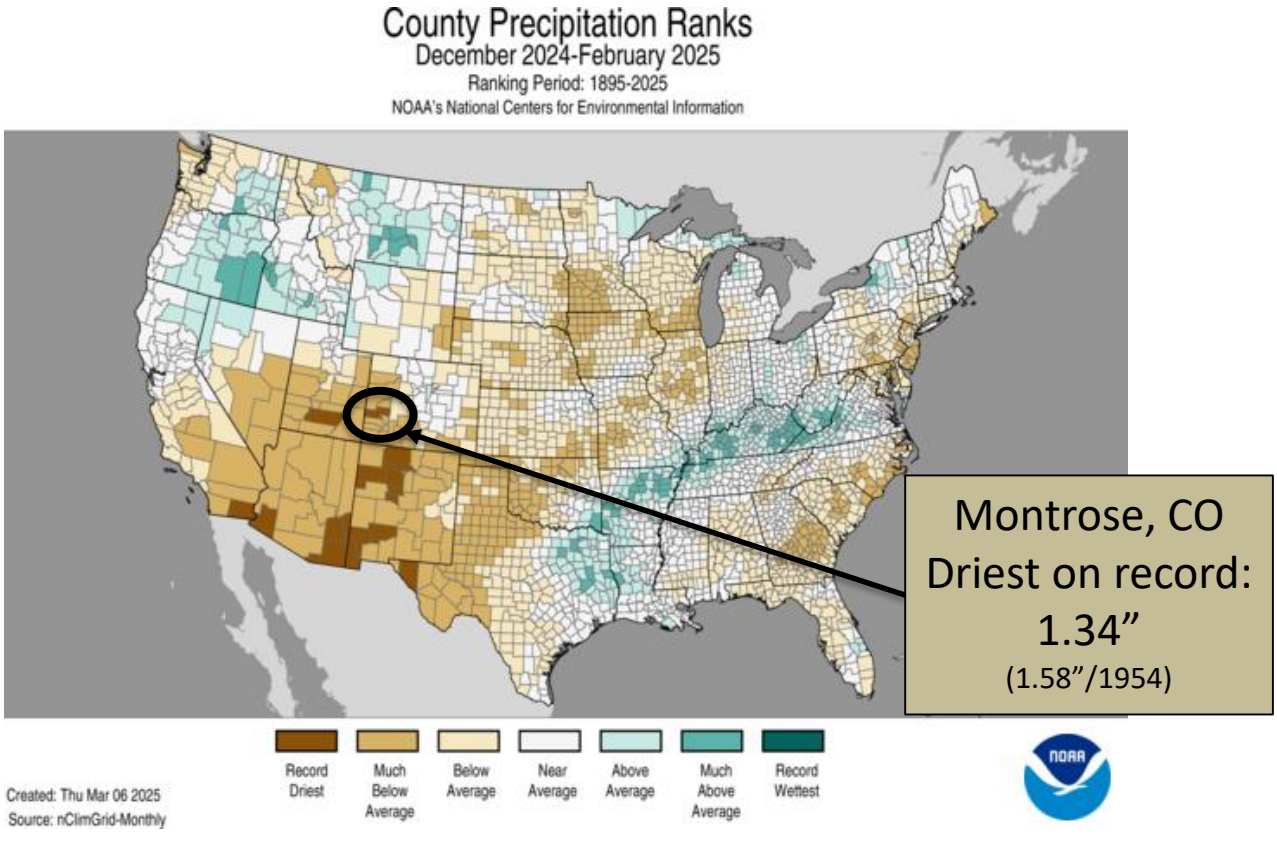
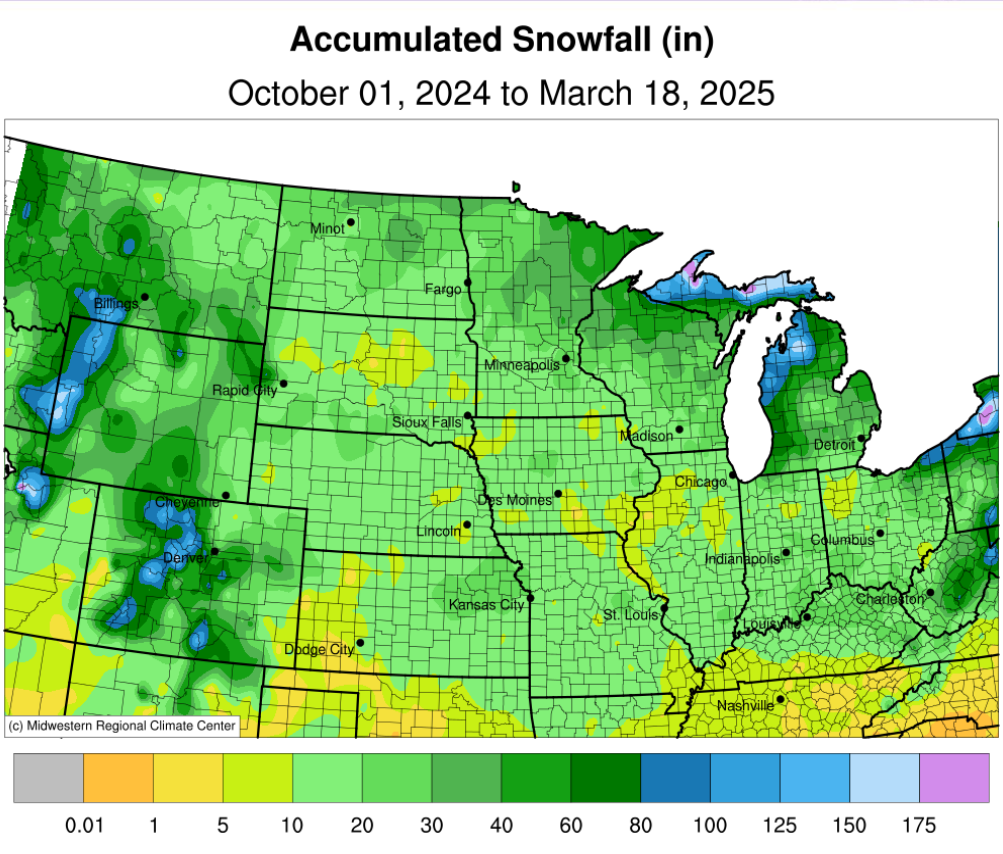





Source: https://www.ncei.noaa.gov/access/monitoring/us-maps/

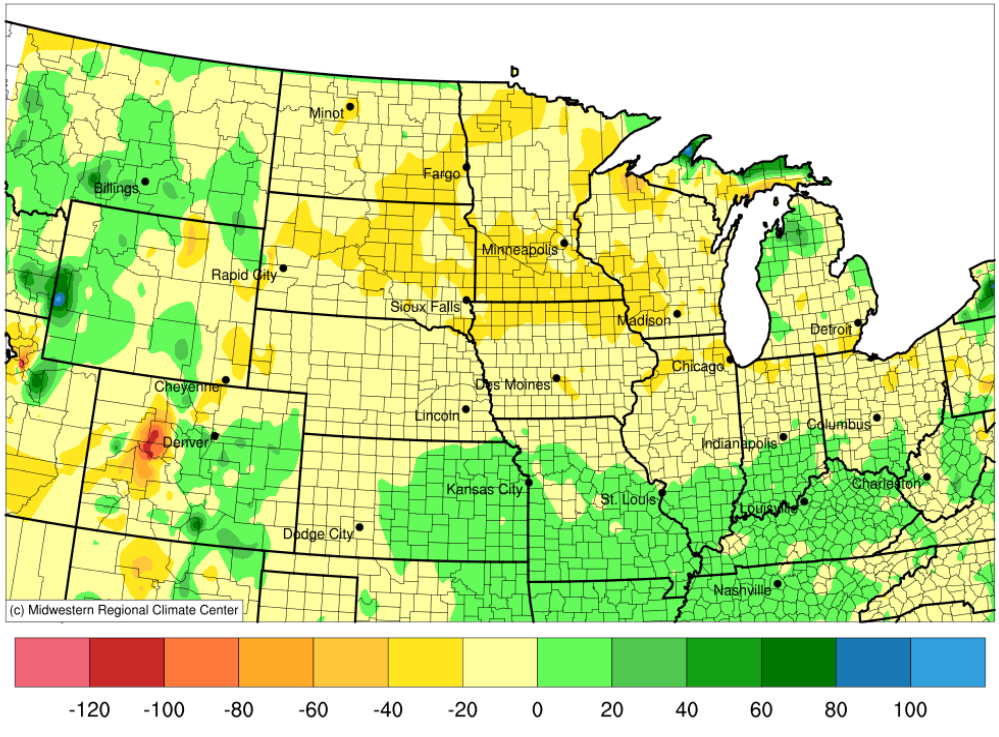
# 2024-25 Snowfall



# 2024-25 Snowfall

**Accumulated Snowfall (in): Departure from 1991-2020 Normals**

October 01, 2024 to March 18, 2025



# 2024-25 Snowfall: Winners and Losers

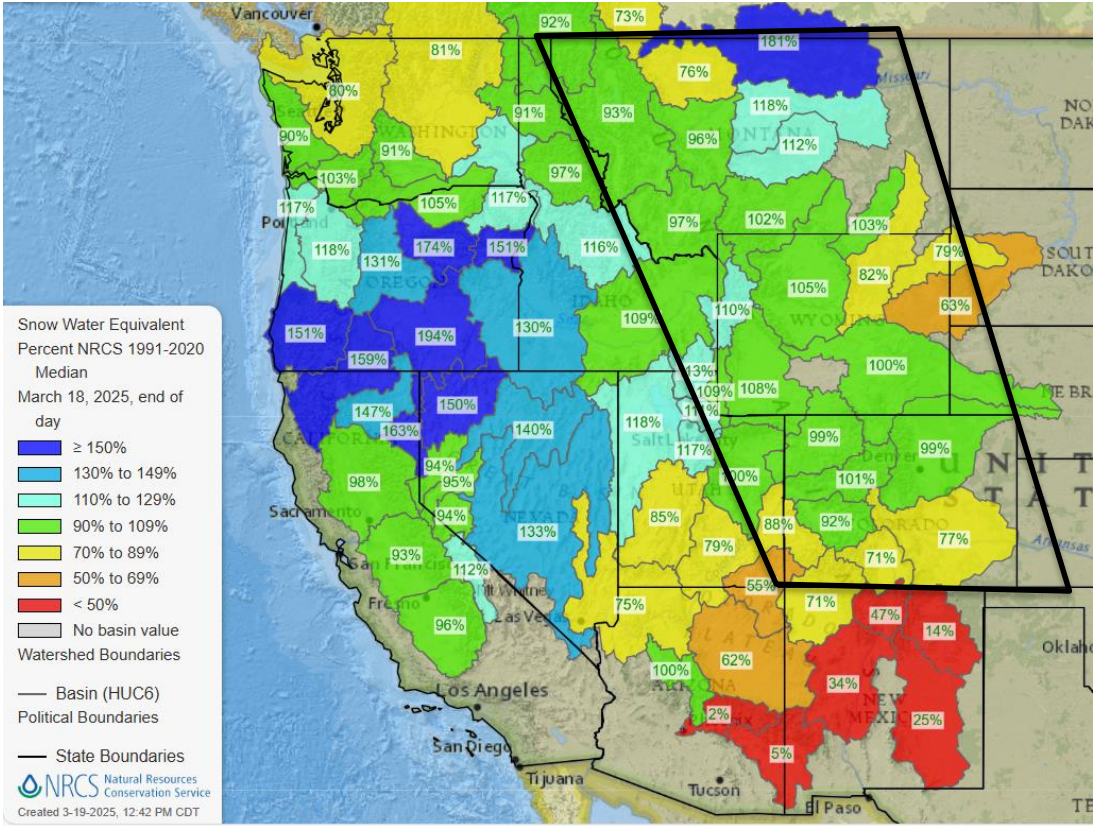
| Location | Snow / Dep. |
|---|---|
| Topeka, KS | 29.0” / +12.4” |
| Evansville, IN | 19.0” / +8.3” |
| Kansas City, MO | 22.0” / +4.4” |
| Springfield, MO | 16.0” / +2.9” |

| Location | Snow / Dep. |
|---|---|
| Madison, WI | 21.5” / -25.8” |
| Fargo, ND | 19.9” / -24.6” |
| Chicago, IL | 15.9” / -19.9” |
| Minneapolis, MN | 25.6” / -19.8” |



Source: NWS

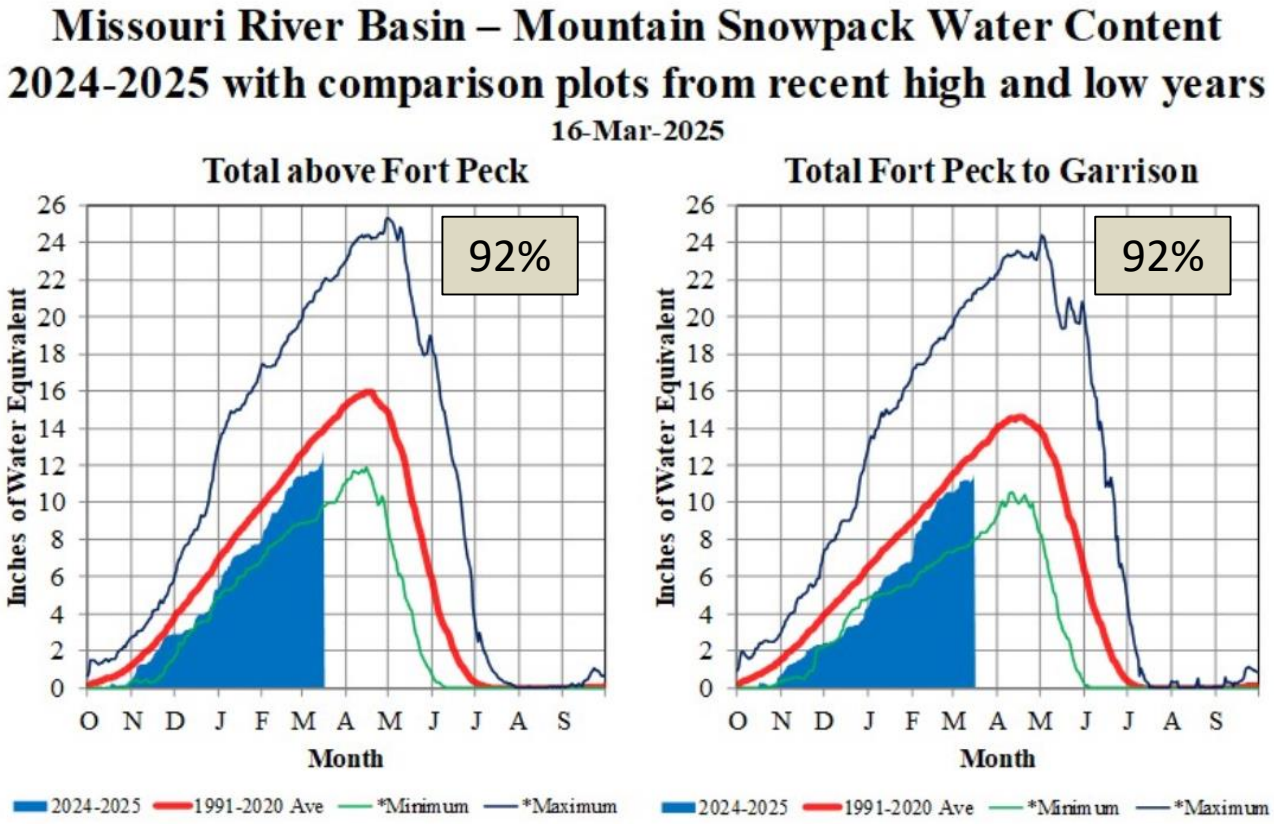
# Snow Water Equivalent – Percent of Average






Source: https://nwcc-apps.sc.egov.usda.gov/imap/

# Missouri River Basin - Snowpack

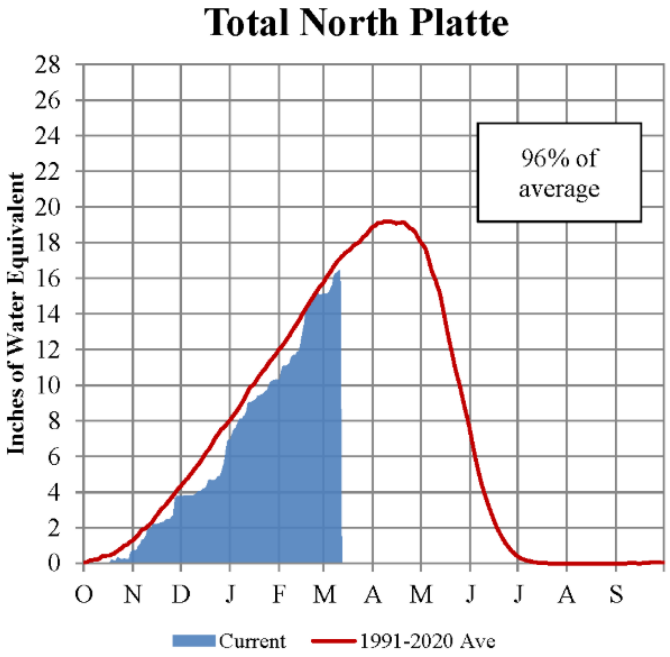


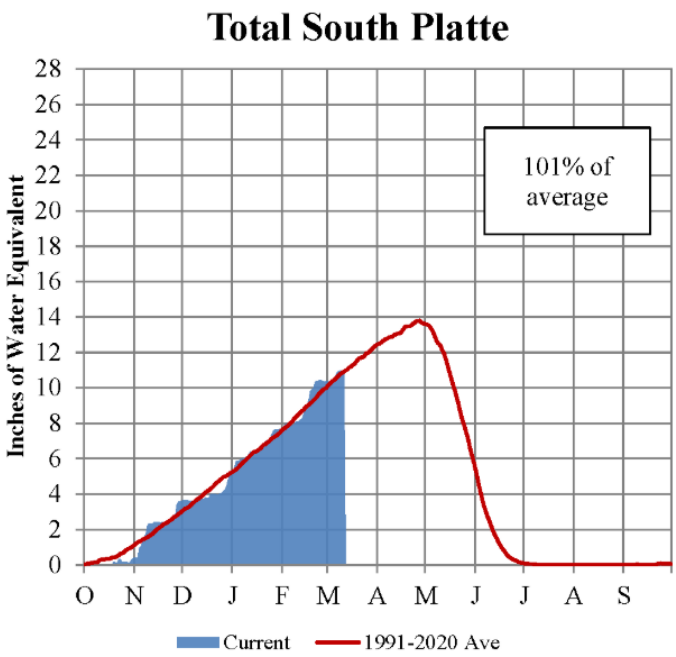



Source: https://www.nwd-mr.usace.army.mil/

# Platte River Basin - Snowpack

## Platte River Basin - Mountain Snowpack Water Content
## Water Year 2024-2025
### March 11, 2025

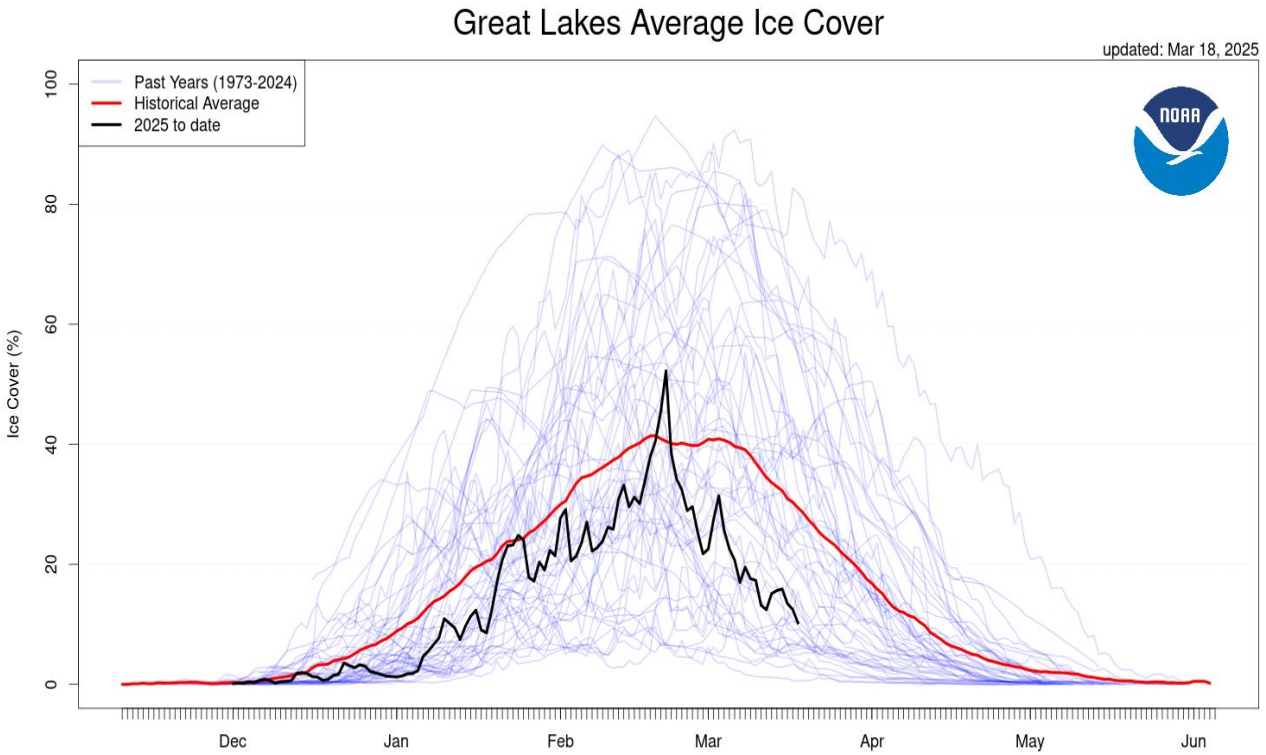





Source: https://www.nwd-mr.usace.army.mil/

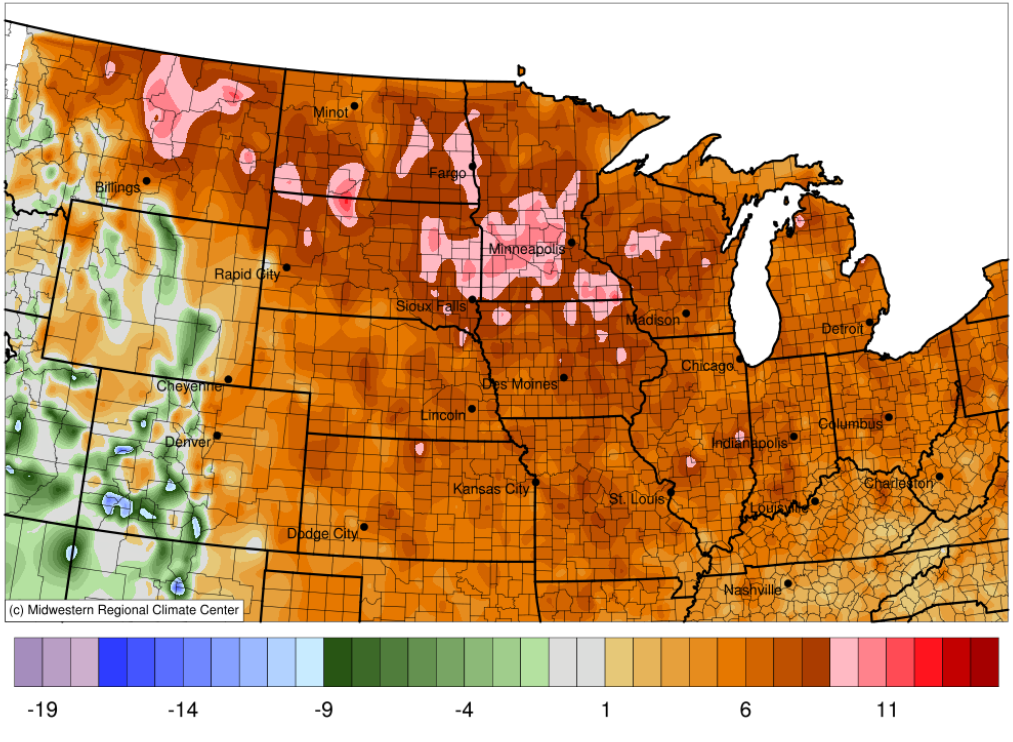
# Great Lakes Ice Coverage






Source: https://www.glerl.noaa.gov/data/ice/spaghetti/

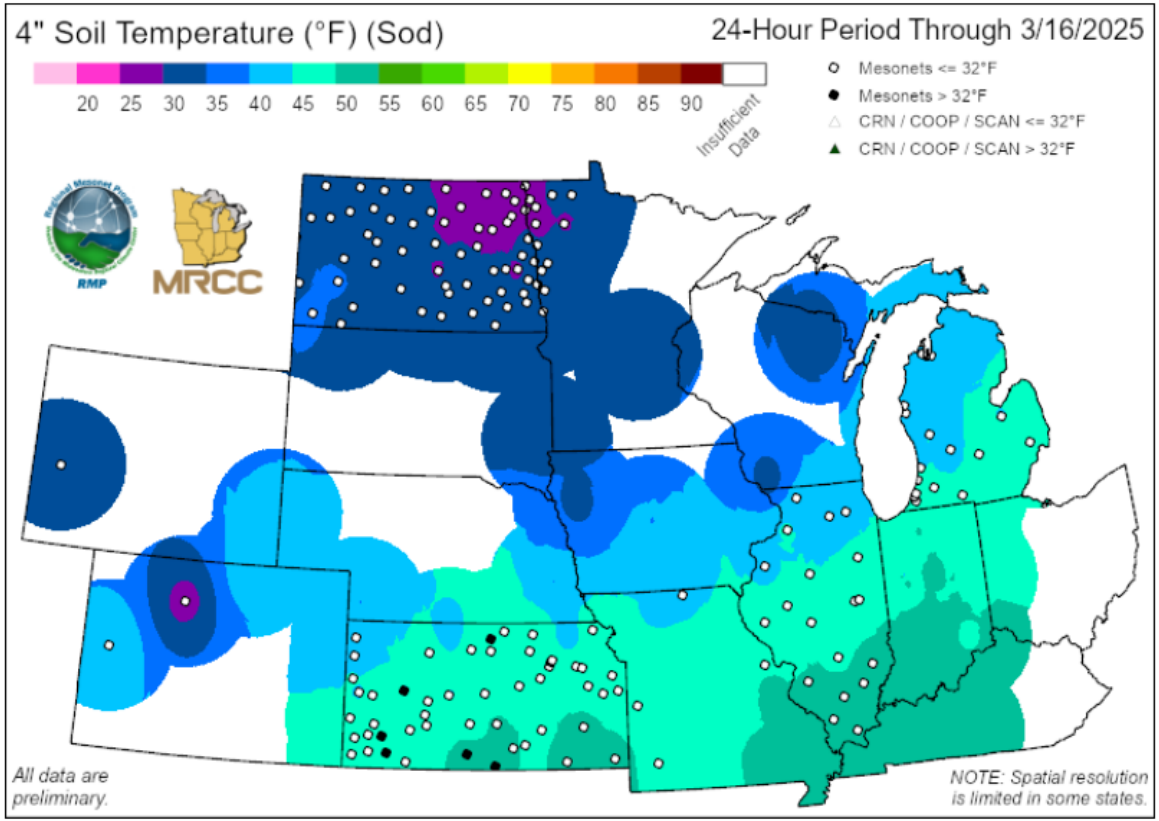
# March 2025 – Average Temperature so far






Source: https://mrcc.purdue.edu/CLIMATE/

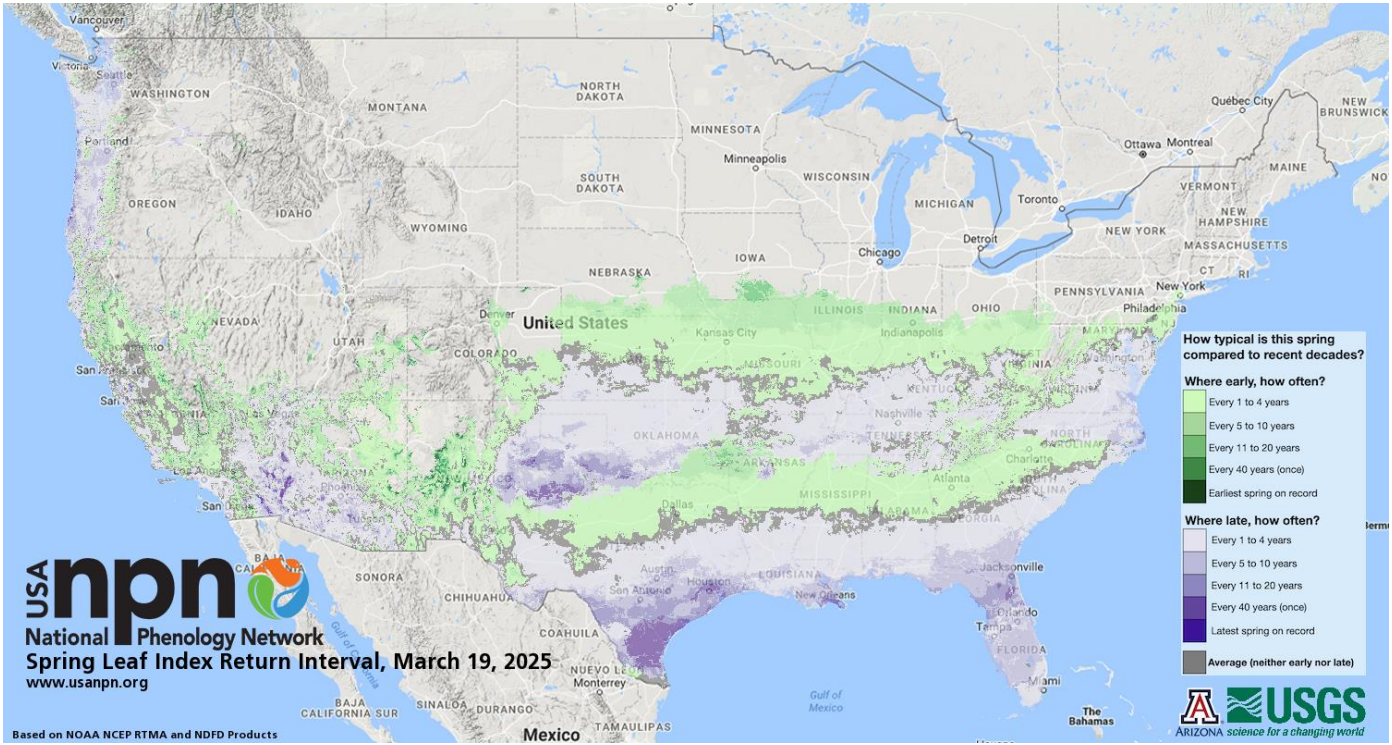
# Soil Temperature – Mar. 16






Source: https://mrcc.purdue.edu/RMP/currentMaps

# Spring Leaf Index (Lilac/Honeysuckle)




Source: https://www.usanpn.org/data/maps/spring

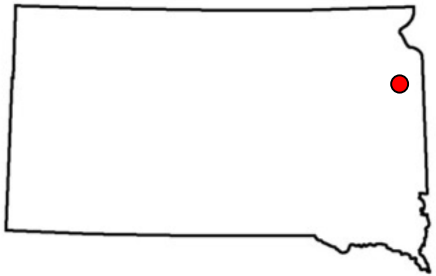
# Notable Events



Iron Co. MI, Feb. 2025. Bridgette Mason.

# South Dakota's First February Tornado

Feb. 24, 4:11 PM CST
Location:
Kranzburg 5 SSW
(Codington County)
Rating:
EF-Unknown



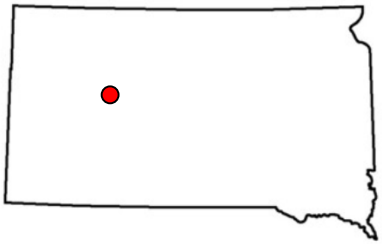

No damage reported.
Earliest on record by nearly one month!



Sources: Alex Resel, NWS-Aberdeen, SD

# Wildfire in South Dakota – Mar. 10

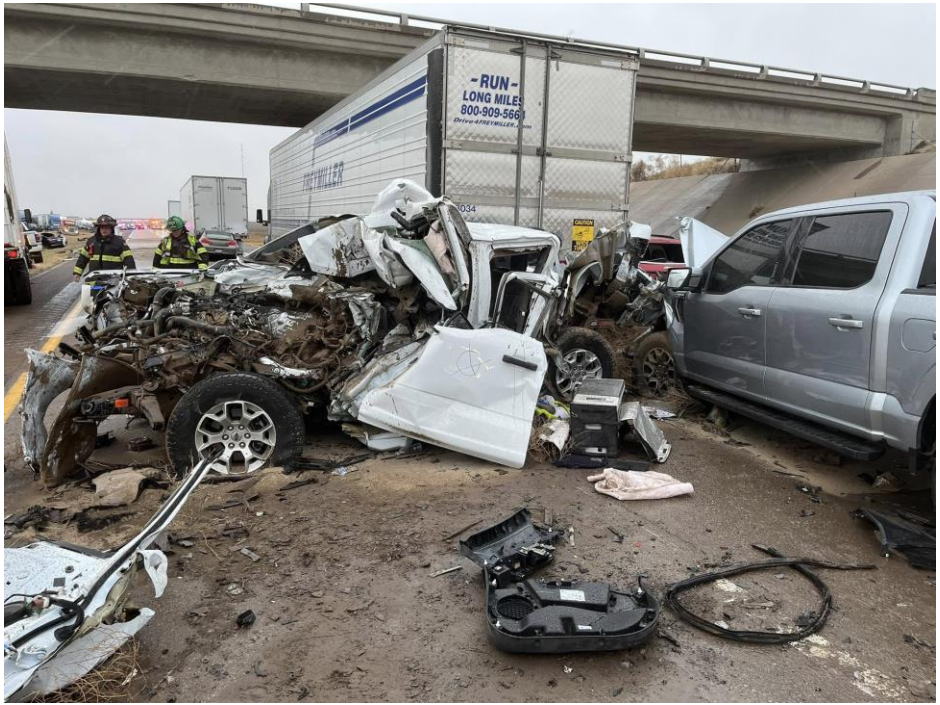
- Cheyenne River Reservation
- ~34,000 acres
- Three fires merged into one
- 17 mile length
- 95% contained as of Mar. 18





Source: https://inciweb.wildfire.gov/

# Dust Storm in Kansas, Mar. 14

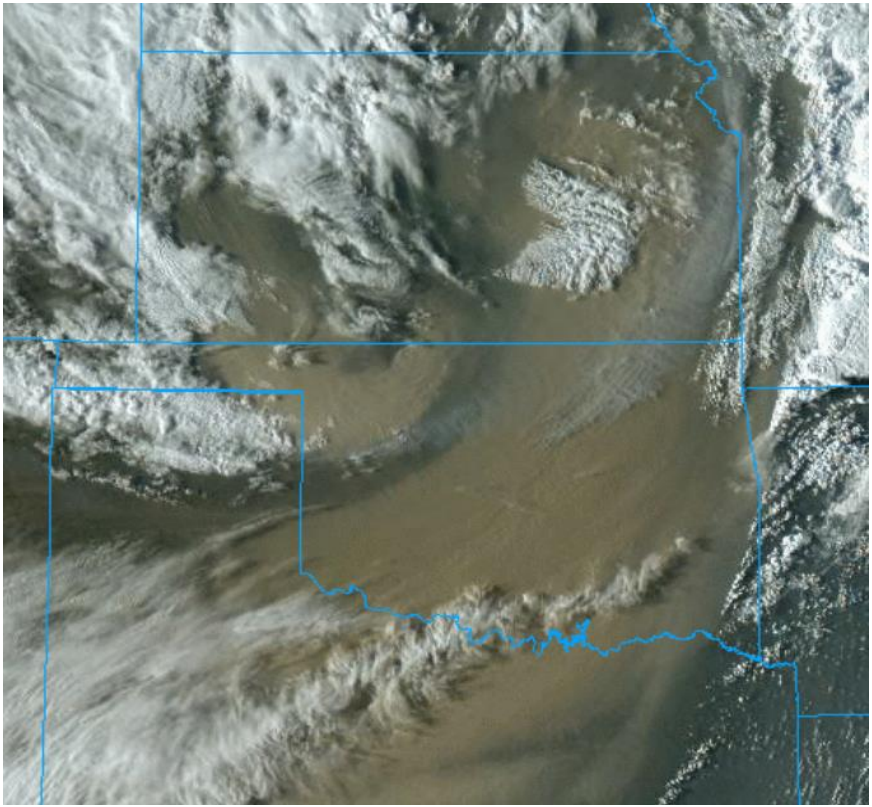



- Interstate 70
- Sherman Co. (east of Goodland)
- 71 vehicles involved
- 8 fatalities
- 2-meter winds averaging 38 mph
- RH: 25%



Sources: Brian James, KAKE-TV, Kansas Mesonet

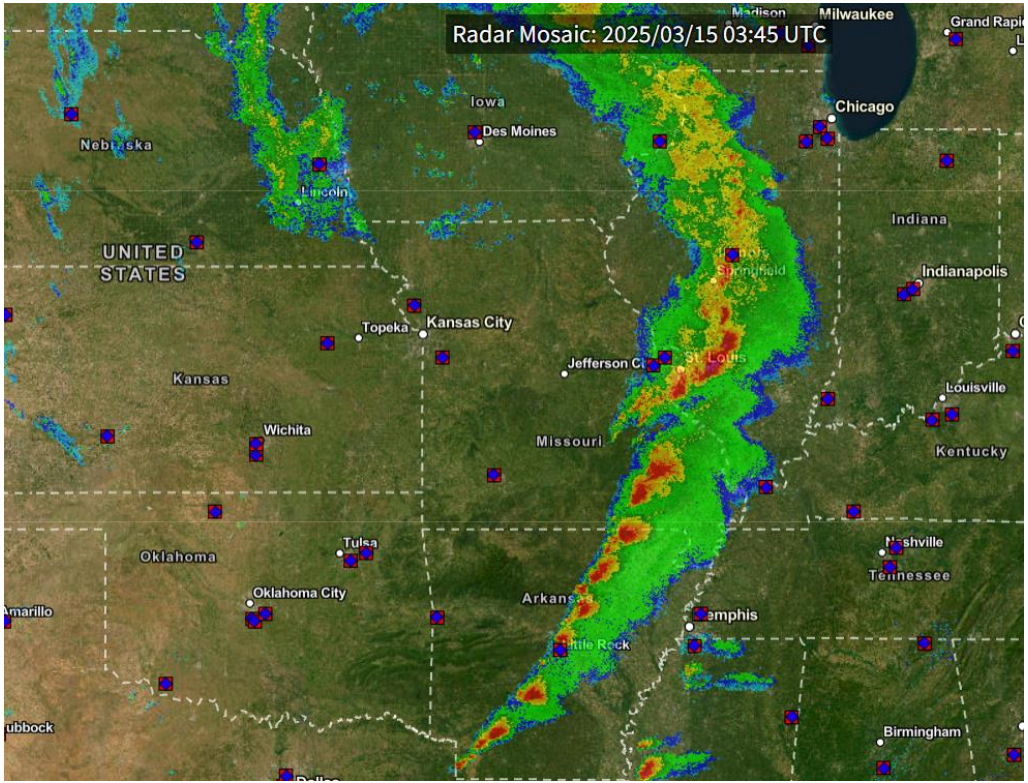
# Satellite Image of Dust, 6 pm CDT, March 14





Source: GOES-16 Satellite, NWS-Lubbock, TX

# Radar Image, 10:45 pm CDT, March 14






Source: https://www.ncei.noaa.gov/maps/radar/

# March 14-15 Severe Weather Summary

| | Missouri | Illinois | Indiana |
|---|---|---|---|
| Normal March Tornado Count (1999-2023) | 5 | 5 | 2 |
| March 14-15 Tornadoes (preliminary count) | 18 | 18 | 8 |
| Fatalities | 12 | 0 | 0 |

- Deadliest day in Missouri since May 22, 2011 (Joplin EF5)
- 7 of the Missouri tornadoes were rated EF3



Source: NWS storm surveys

# March 14 Tornado Damage – Neoga, IL (EF2)



Source: NWS, Lincoln, IL

# March 19 Storm – By The Numbers

- Heavy Snow
  - 14.5”: Lakota, IA
  - 12”: Waco, NE
  - 11.3”: Tomah, WI
  - 10.4”: Escanaba, MI
  - 10”: Gove, KS
- Power Outages
  - 106,000: Omaha, NE
- High Winds
  - 80 mph: Winona, KS
  - 74 mph: Lincoln, NE
- Tornadoes
  - 9 reports in Illinois



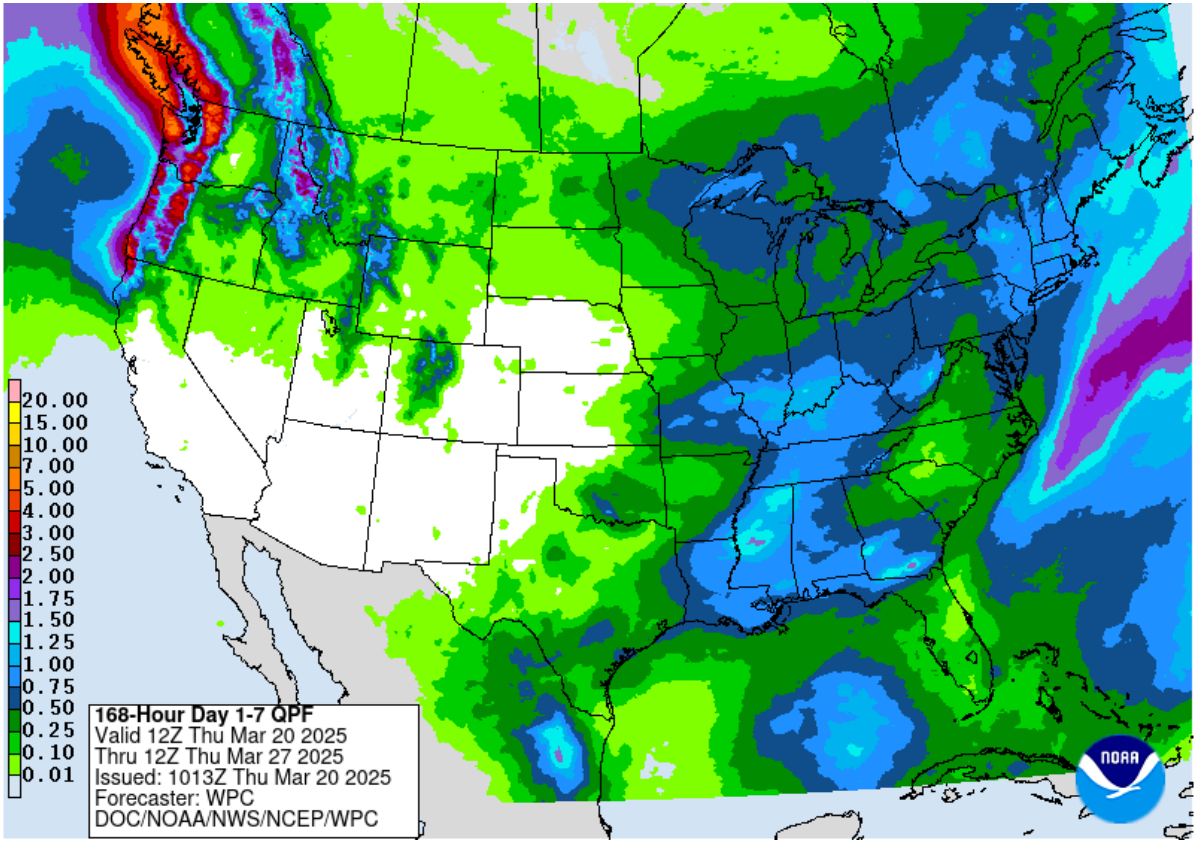

Image Sources: Kansas Mesonet, KMTV-Omaha, NE

# Outlooks



Chase County, KS. Matthew Sittel.

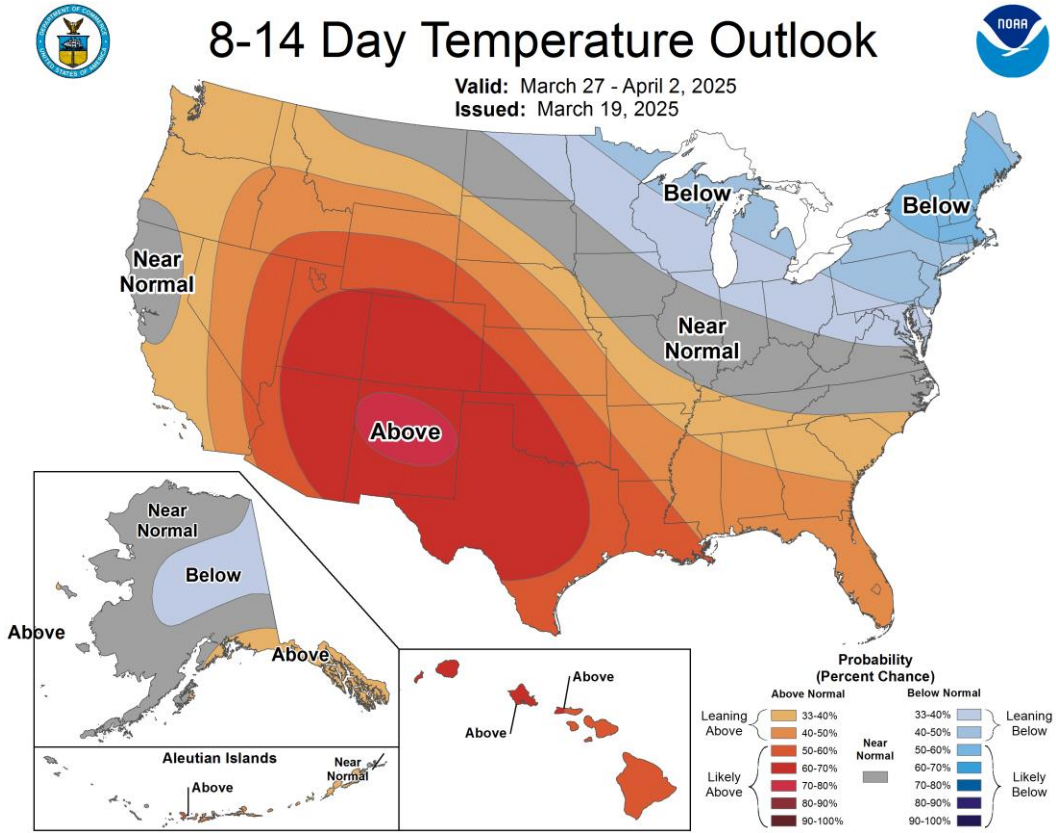
# 7-Day Precipitation Outlook






Source: https://www.cpc.ncep.noaa.gov/

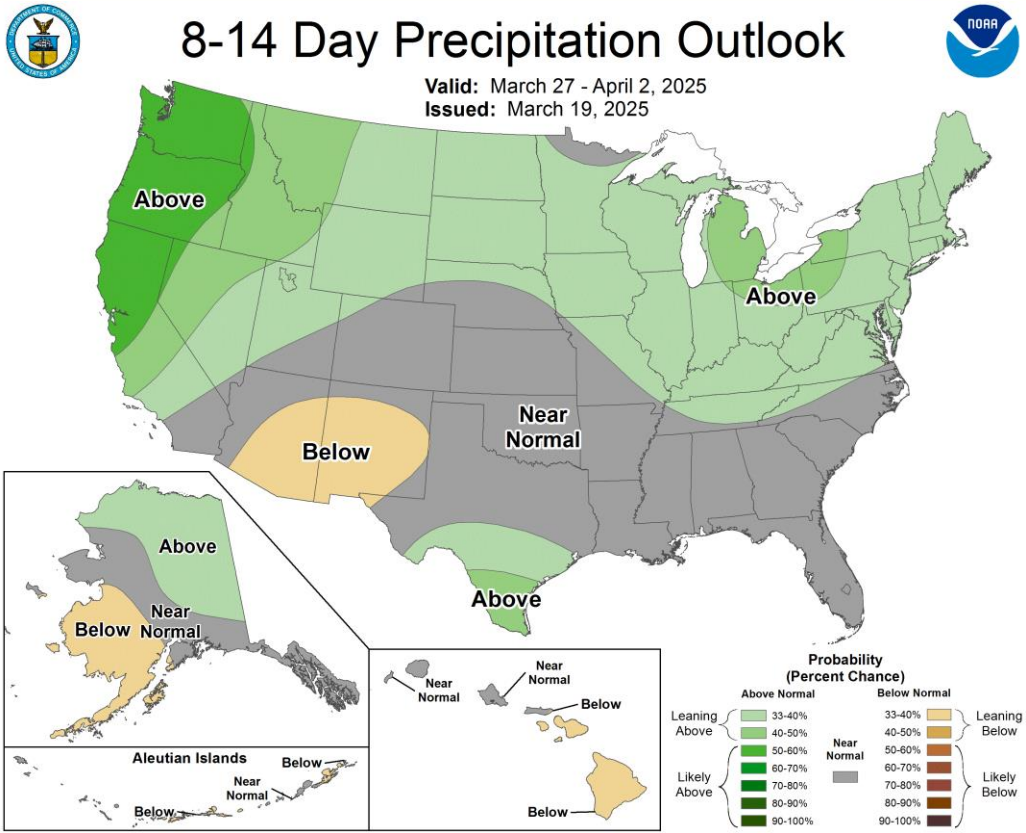
# Mar 27 – Apr 2 Temperature Outlook






Source: https://www.cpc.ncep.noaa.gov/

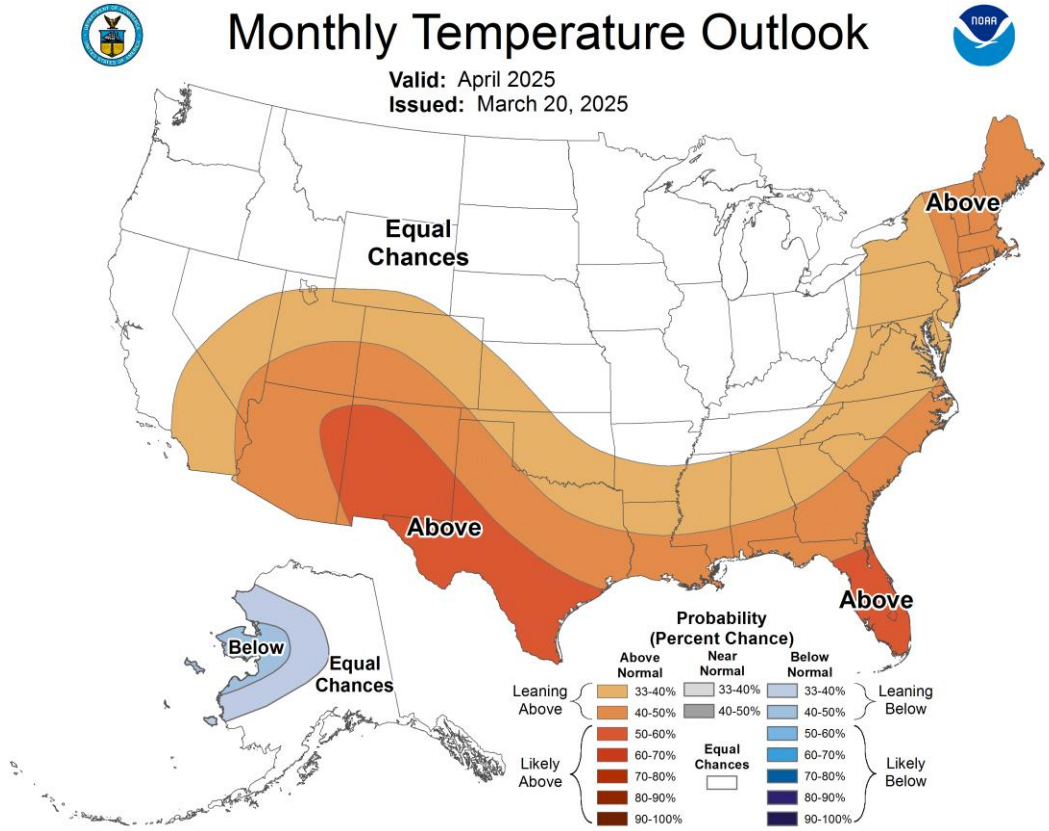
# Mar 27 – Apr 2 Precipitation Outlook






Source: https://www.cpc.ncep.noaa.gov/

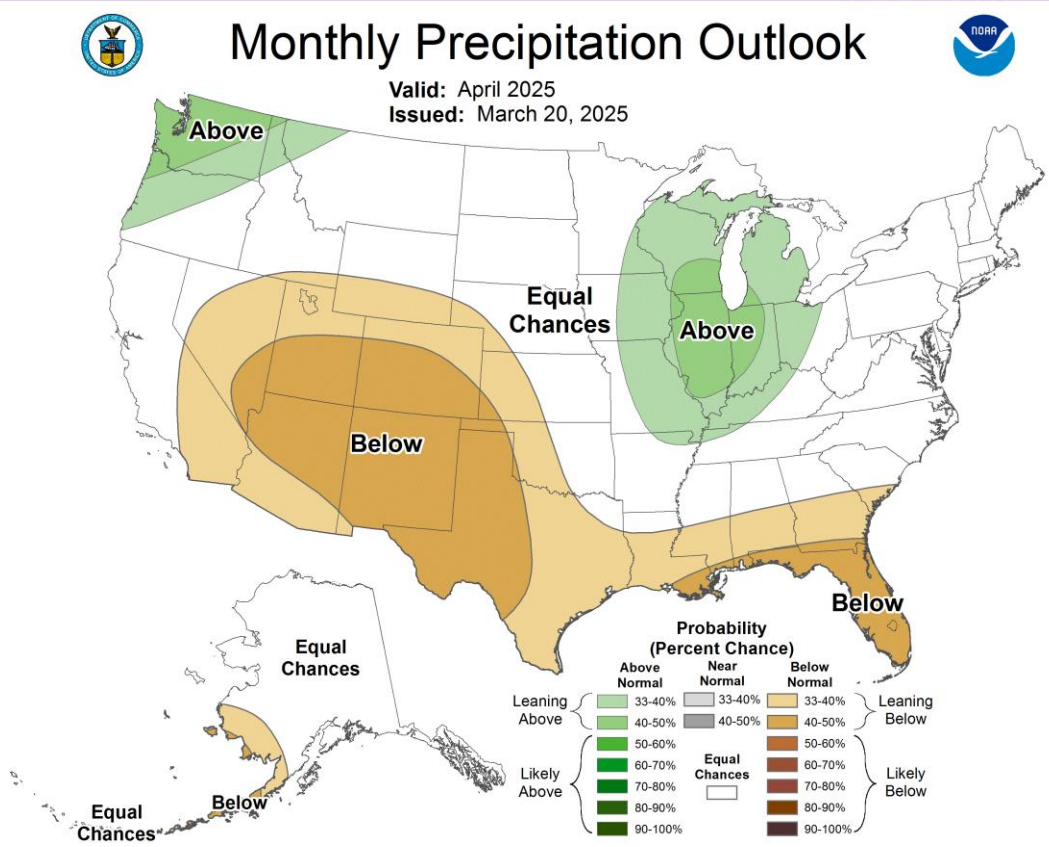
# April Temperature Outlook






Source: https://www.cpc.ncep.noaa.gov/

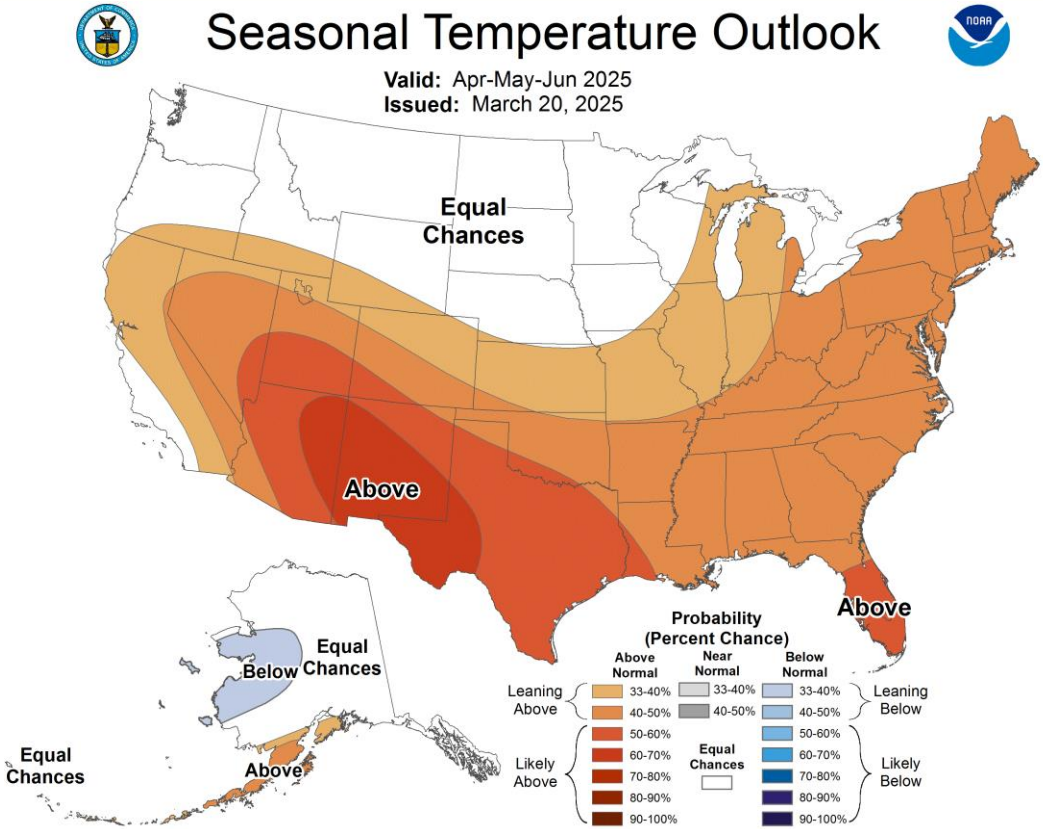
# April Precipitation Outlook






Source: https://www.cpc.ncep.noaa.gov/

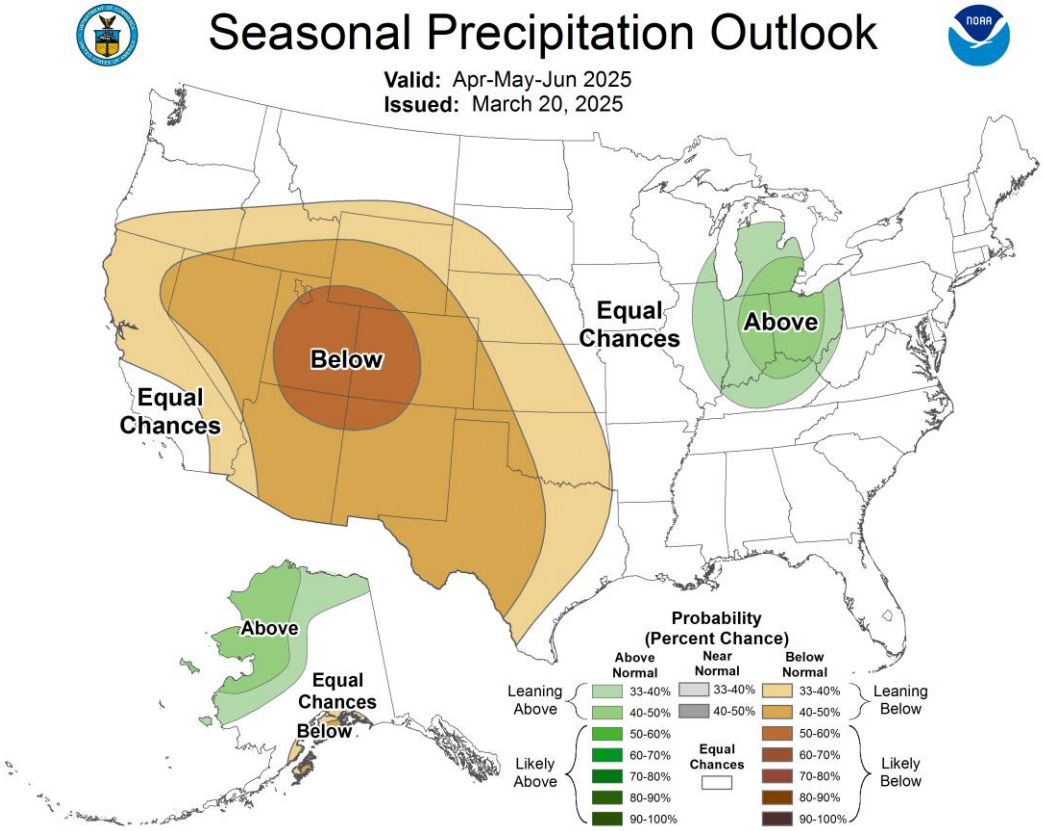
# Apr-May-Jun Temperature Outlook






Source: https://www.cpc.ncep.noaa.gov/

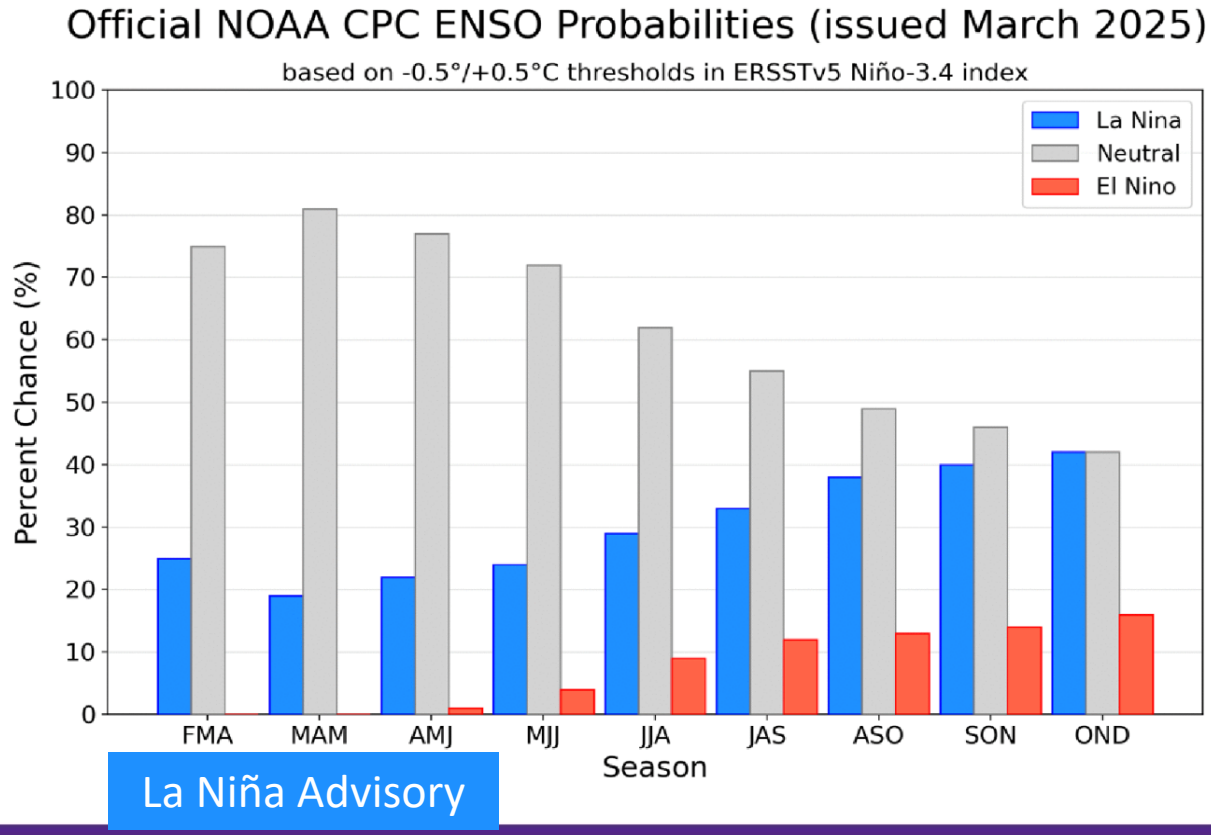
# Apr-May-Jun Precipitation Outlook






Source: https://www.cpc.ncep.noaa.gov/

# ENSO Forecast

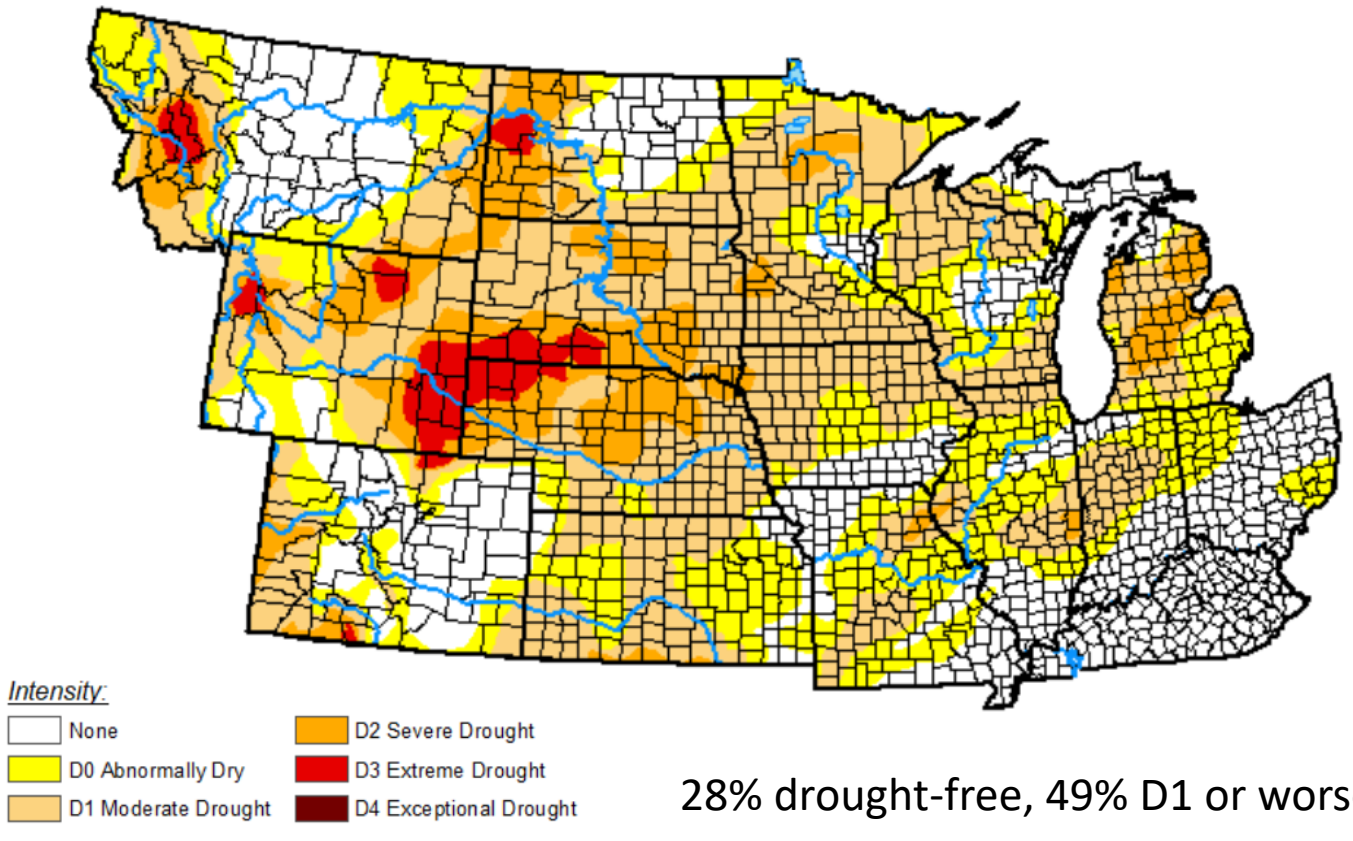



La Niña Advisory



Source: https://www.cpc.ncep.noaa.gov/

# US Drought Monitor – March 18, 2025

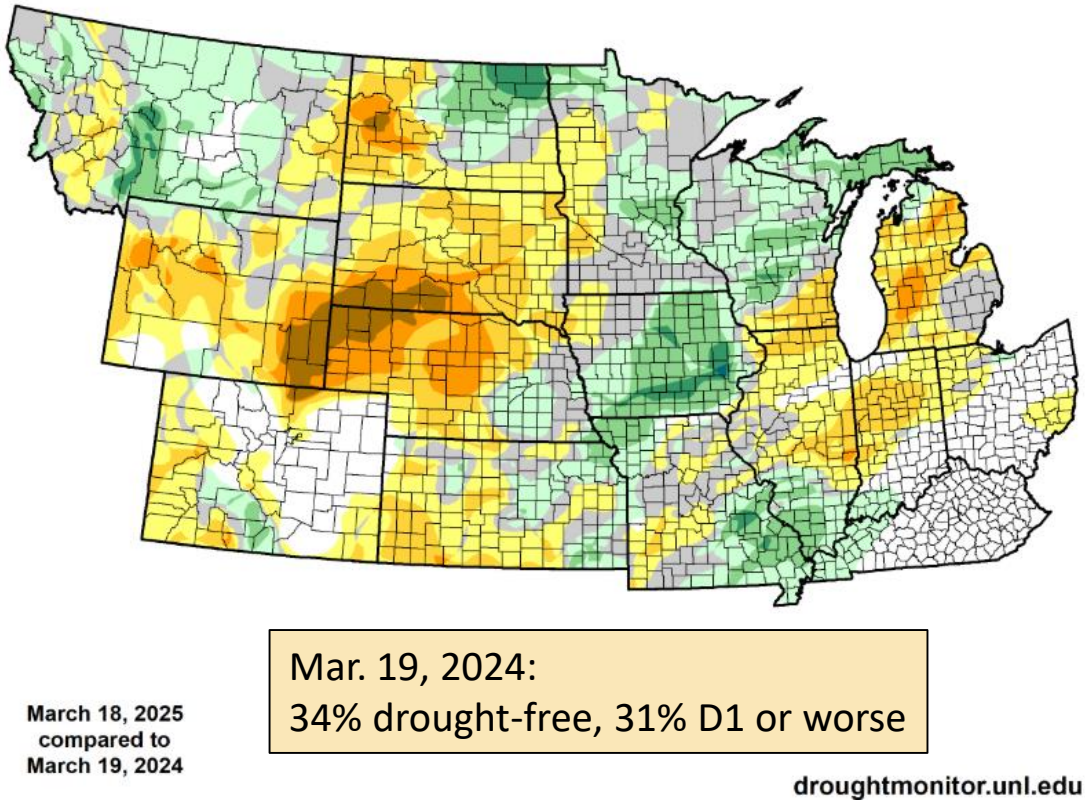



28% drought-free, 49% D1 or worse



Source: https://droughtmonitor.unl.edu/

# US Drought Monitor – 52 week Change

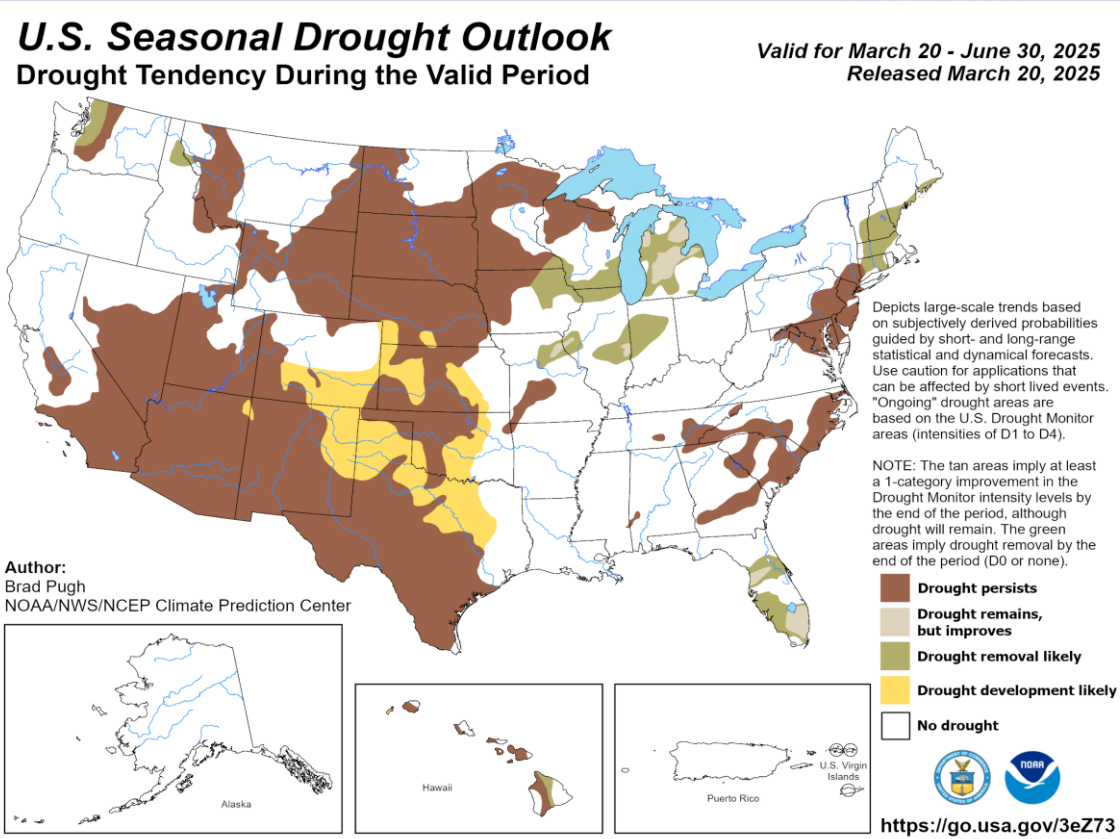



Mar. 19, 2024:
34% drought-free, 31% D1 or worse

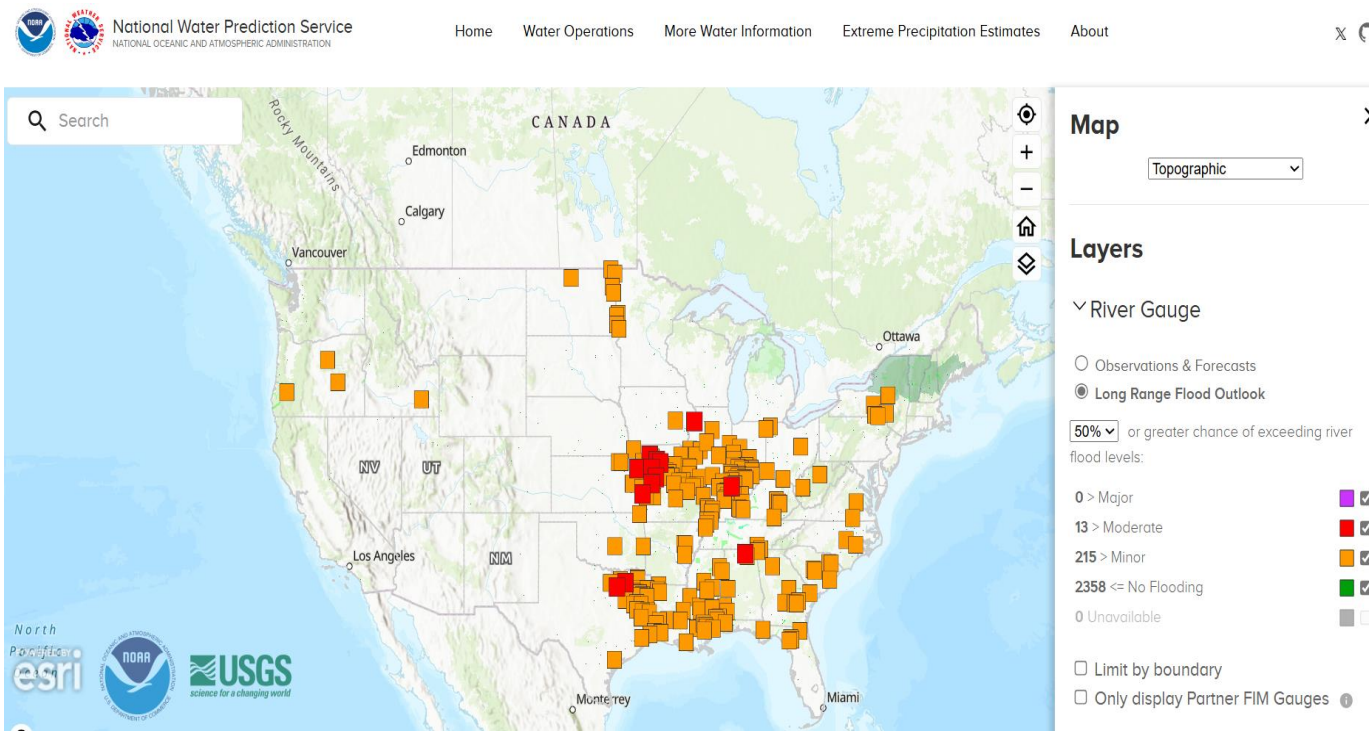


Source: https://droughtmonitor.unl.edu/

# Mar-Jun 2025 Drought Outlook



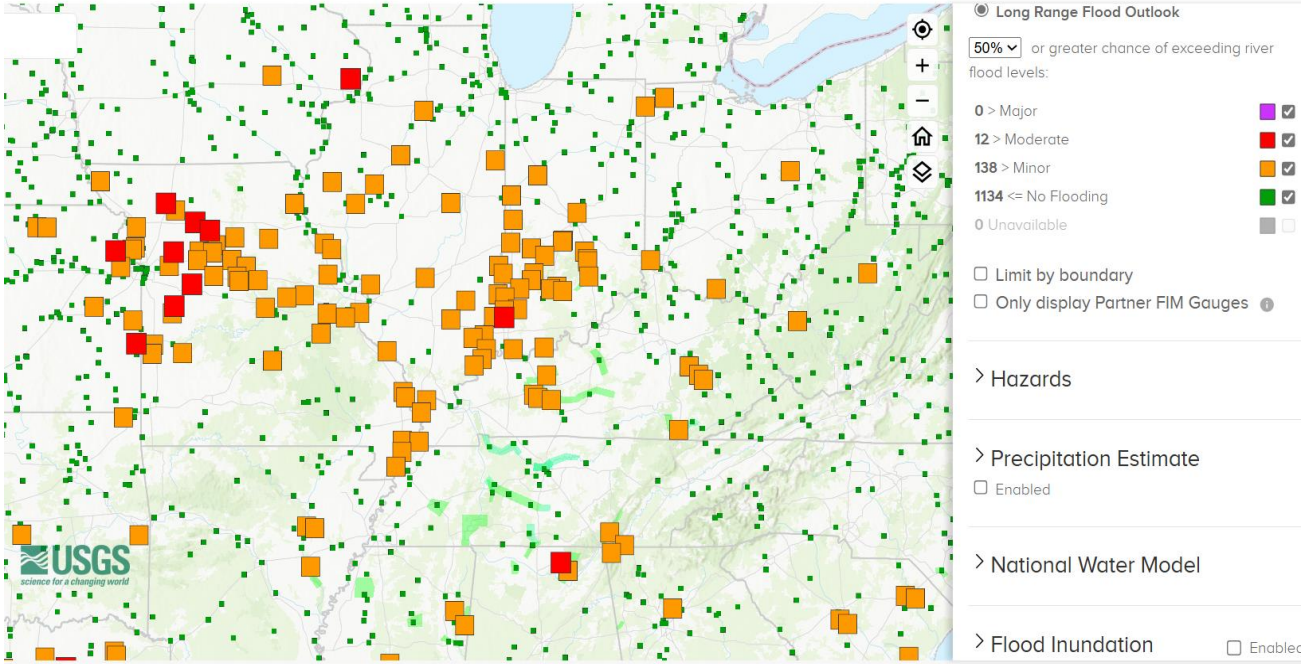
# March-June River Flood Outlooks






Source: https://water.noaa.gov/

# March-June River Flood Outlooks






Source: https://water.noaa.gov/

# Comments / Questions?

Contact: Matthew Sittel – msittel@ksu.edu
Dennis Todey - dennis.todey@usda.gov - (515) 294-2013
Doug Kluck - doug.kluck@noaa.gov - (816) 564-2417

Websites: weather.gov, climate.gov, heat.gov, drought.gov

Past Webinars: https://mrcc.purdue.edu/webinars/
https://hprcc.unl.edu/webinars.php



Marion County, KS. Matthew Sittel.