



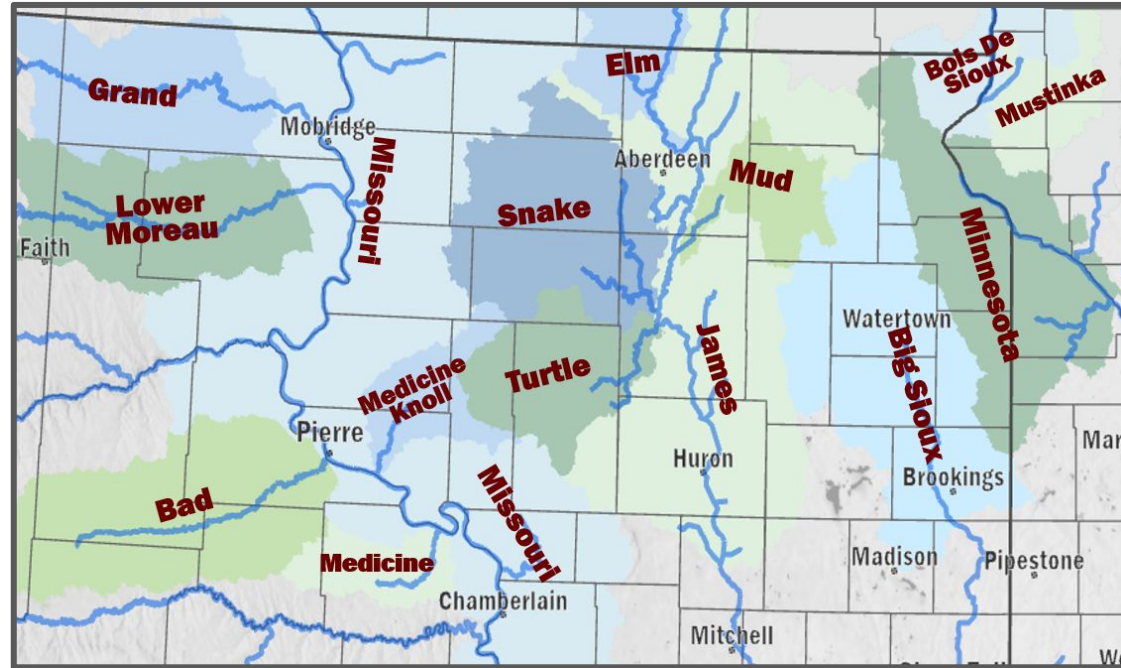
Spring 2024 Flood Outlook

90 Day Outlook Valid through mid June

Key Messages

- Below normal ($< 50\%$) chance of flooding the next 90 days
- Flooding Risk would increase if the following were to occur:
 - ◆ Significant additional snowfall
 - ◆ A heavy rain event
 - ◆ Ice jams

**This is the final
Spring Flood Outlook**





2024 Spring Flood Outlook (#3 of 3)

90 Day Outlook Valid through mid June

Key Messages

- A basic lack of snow cover, shallow frost depth, and normal soil moisture and river levels currently point toward a **below normal flood risk** this spring.
- Additional heavy precipitation events or cold outbreaks through early spring could change the flood risk.

	Short Term (Next 14 Days)	Long Term (through mid-May)
Snowpack/SWE	Below	Below
Frost Depth	Below	Below
River Ice	Below	Below
Soil Moisture	Normal	Normal
River Levels	Normal	Normal
Precipitation Outlook	Normal	Normal

Potential Impact
(On River Flooding)

Below Normal

Normal

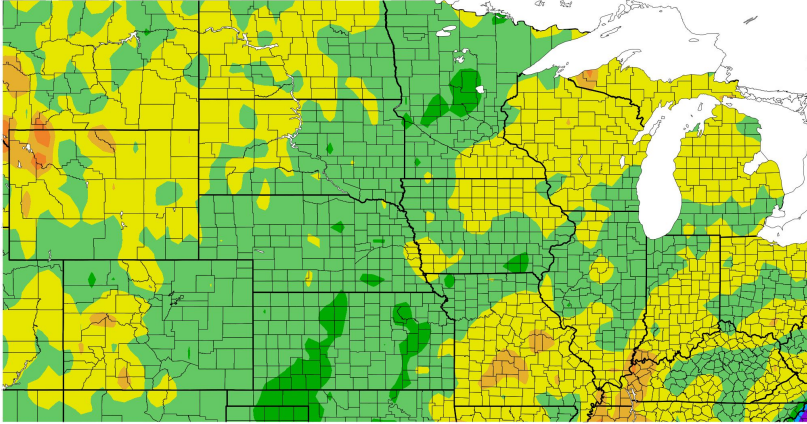
Above Normal





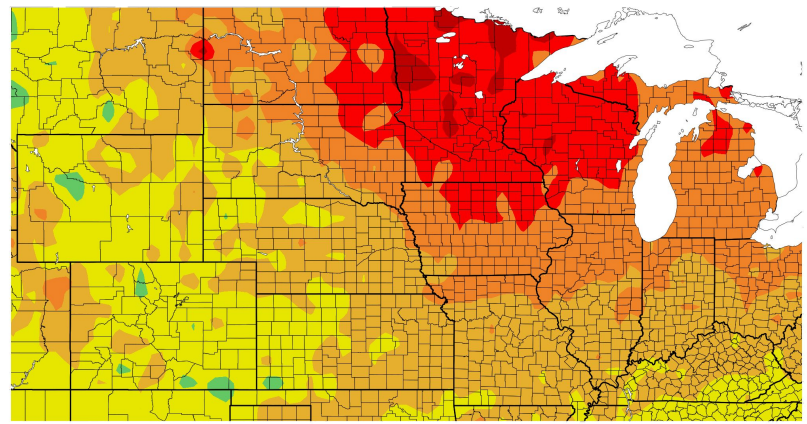
Departure From Normal Precipitation/Temperatures

90 Day - Departure From
Normal Precipitation



Generated 3/7/2024 at HPRCC using provisional data. NOAA Regional Climate Centers

90 Day - Departure From
Normal Temperatures



Generated 3/7/2024 at HPRCC using provisional data. NOAA Regional Climate Centers

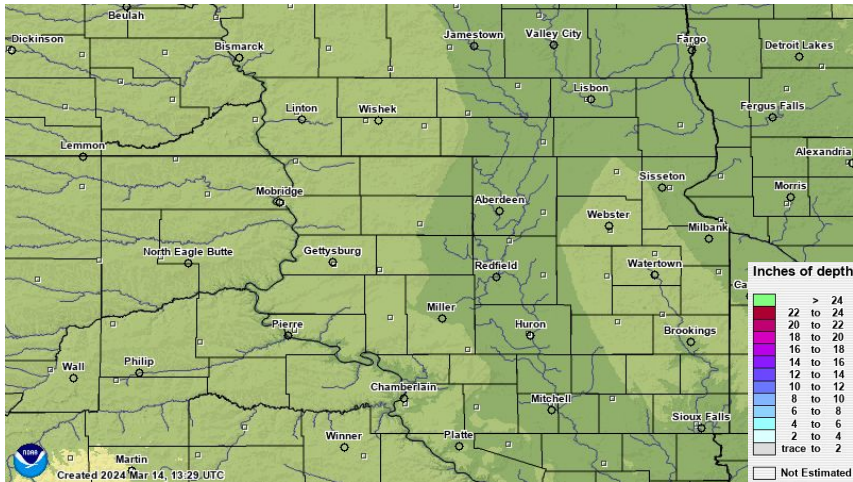
- Long term precipitation deficits have existed across most locations over the past several years. Recent precipitation over the past few months has shown values closer to or even above normal.
- Above normal temperatures over the past 90 days has allowed for decreasing river ice and thawing ground.



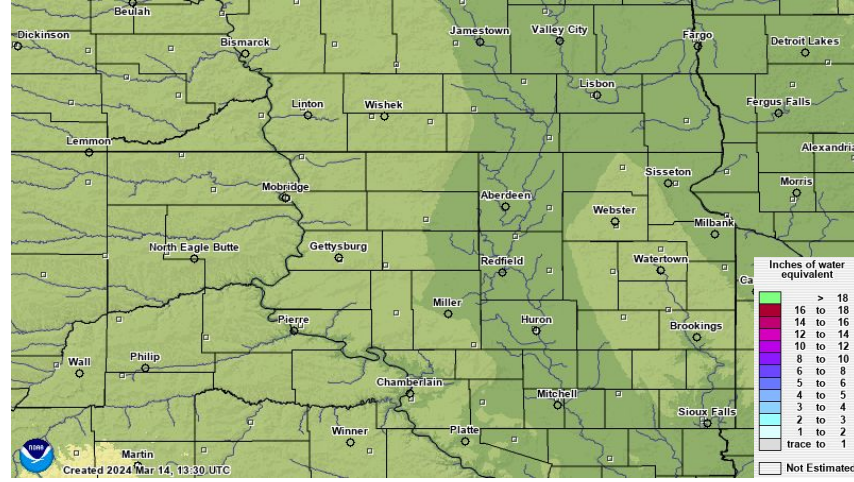


Snow Depth and Snow Water Equivalent (SWE)

Snow Depth



Snow Water Equivalent



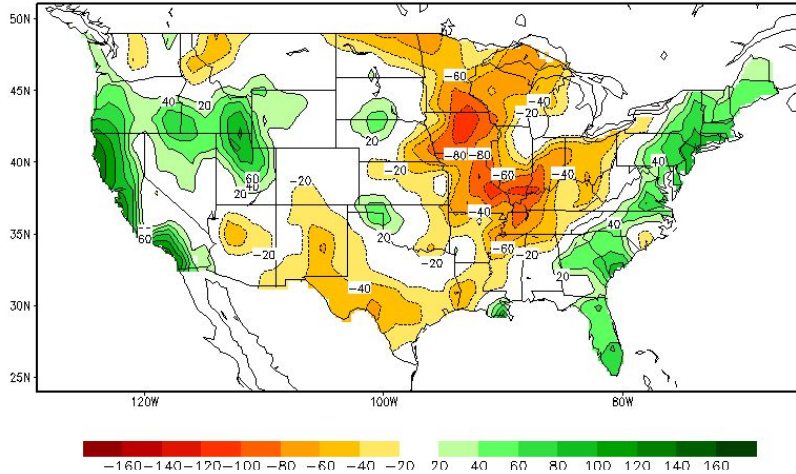
➔ Above normal temperatures allowed any remaining snow cover to melt in the past couple of weeks, with the entire area now snow free.



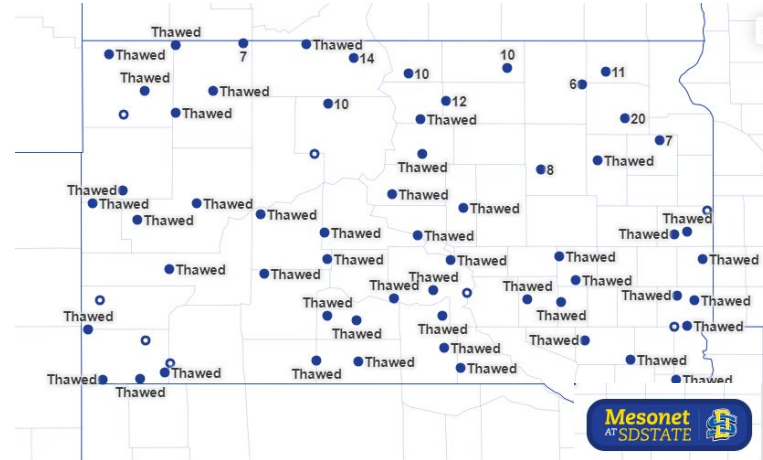
Soil Moisture and Temperatures/Frost Depth

Soil Moisture Anomaly

Calculated Soil Moisture Anomaly (mm)
MAR 13, 2024



Frost Depth



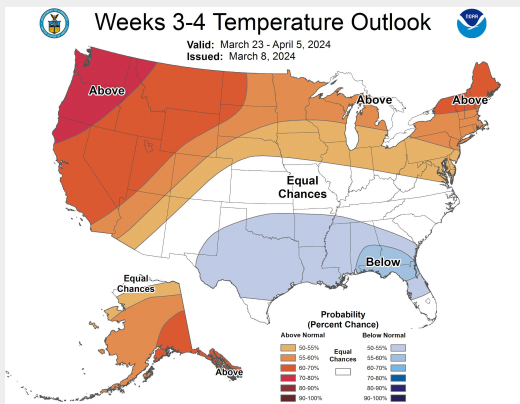
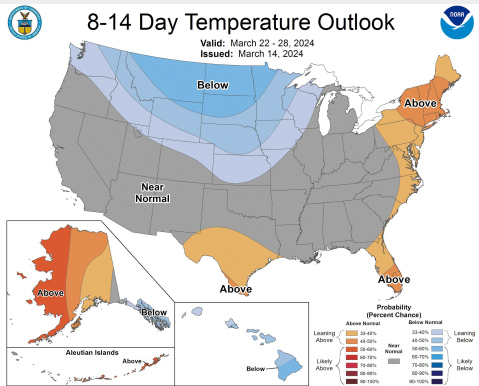
- The late autumn precipitation and an early snowmelt season have resulted in soil moisture profiles generally within normal ranges, slightly drier east and wetter west.
- Shallow frost depth still remains across north central and northeast South Dakota. Variable thaw freeze cycles have been noted across the region.





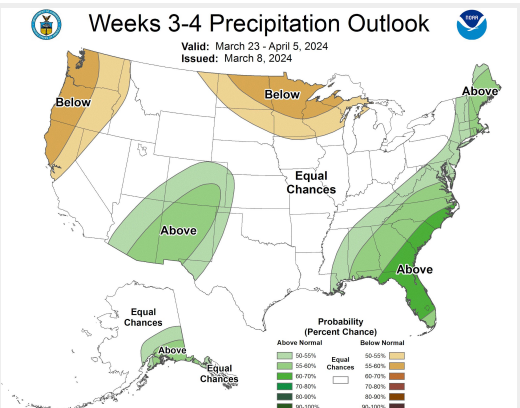
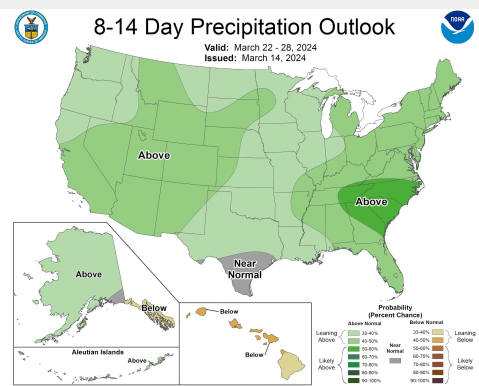
Precipitation and Temperature Outlook

Temperature



→ In the next 2 weeks, there are increased chances (40-60%) of above below temperatures and increased chances (33-50%) for above normal precipitation.

Precipitation



→ Late March to early April has increased chances (55-60%) of above normal temperatures and increased chances (50-55%) for below normal precipitation.





Flood Chances

90 Day Outlook Valid through mid June

Most Likely Flood Potential (50% Chance)

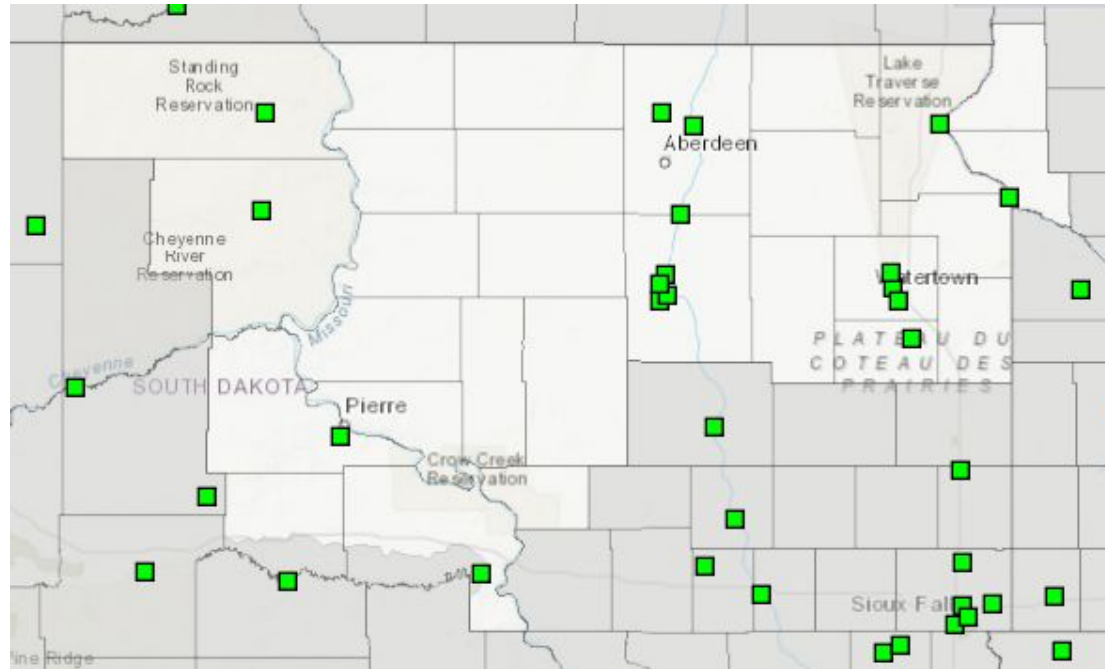
 <50% of
Flooding

 >50% of
Minor

 >50% of
Moderate

 >50% of
Major

- Current conditions across the area point toward a low spring flood threat as the most likely scenario.
- A less than 50% chance of reaching flood stage exists at all of the river forecast points in the area.





Flood Outlook Summary

90 Day Outlook Valid through mid June

Key Messages

- The **spring river flood risk is below normal** for the next 90 days across the immediate region.
- Future significant precipitation events could change the flood risk going into early spring.
- River ice will continue to carry a low-end ice jam risk.
- This is the last Spring Flood Outlook.

River	90 Day Flood Risk
Missouri	BELOW NORMAL
Grand	BELOW NORMAL
Moreau	BELOW NORMAL
Bad	BELOW NORMAL
Elm	BELOW NORMAL
James	BELOW NORMAL
Big Sioux	BELOW NORMAL
Minnesota	BELOW NORMAL





Flood and Outlook Resources

National Weather Service - Aberdeen

weather.gov/abr

Advanced Hydrologic Prediction Service Page

water.weather.gov/ahps/index.php?wfo=ABR

Snow Depth/SWE Information (NOHRSC)

nohrsc.noaa.gov/interactive/html/map.html

Climate Prediction Center Outlooks

cpc.ncep.noaa.gov/

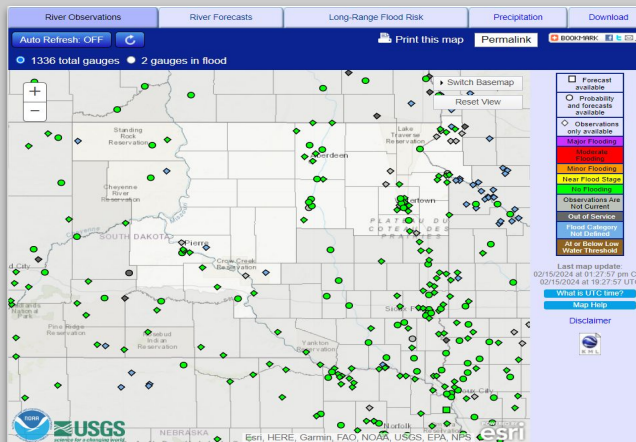
USGS WaterWatch

waterwatch.usgs.gov/

Flood Safety Information

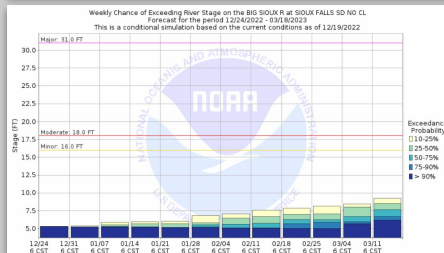
weather.gov/safety/flood

Additional Flood Outlook Info: weather.gov/ahps2/long_range.php?wfo=ABR

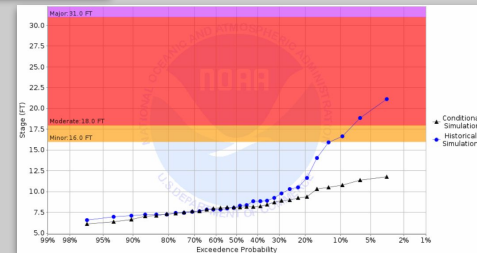


Flood Outlooks By River Point

- 1) Click river point of interest
- 2) Under “Probability Information”, choose desired information



Weekly Chance of Exceeding Levels



Chance of Exceeding Levels During Entire Period



National Oceanic and Atmospheric Administration

U.S. Department of Commerce

National Weather Service
Aberdeen, SD