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|---|---|
| **NWS FORM E-5** U.S. DEPARTMENT OF COMMERCE<br>NOAA, NATIONAL WEATHER SERVICE<br><br>**MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS**<br><br>TO: NATIONAL WEATHER SERVICE (W/OH12x1)<br>HYDROMETEOROLOGICAL INFO CENTER<br>1325 EAST-WEST HIGHWAY, RM 7116<br>SILVER SPRING, MD 20910 | HSA OFFICE:<br>**Marquette, MI**<br><br>REPORT FOR (MONTH / YEAR):<br>**January 2020**<br><br>DATE: **February 3, 2020**<br><br>SIGNATURE:<br>**Robin J. Turner, MIC**<br>**Linda Gilbert, Hydrology Program co-Manager** |

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (WSOM E-41).

X An X inside this box indicates no flooding occurred within this Hydrologic Service Area.

## January Precipitation Summary

To start the year 2020, January continued the above normal precipitation trend for much of Upper Michigan, with an average of 140% to 150%. Despite the above normal temperatures also featured throughout the month of January, most of the precipitation fell in the form of snow, yielding to above normal snowfall for most locations (the notable exceptions in the list below are Ironwood and Marquette City). The combination of above normal temperatures yet still cold enough to remain in the form of snow attributed to the wetter, denser snow events that occurred, as opposed to the "fluffier" snow that tends to be more common in the area during the heart of the winter season. Additionally, Lake Superior remains "open" in ice-coverage, adding to the complexity of this winter season thus far.

Although there were a number of snow events that occurred throughout the month of January, the most notable occurred in the middle of the month, stretching over the weekend of January 17th through the 19th. Heavy snow associated with a system moving through the region transitioned to lake-effect toward the latter half of the weekend, with lower snow to liquid ratios early on, rising toward the end of the event. In Calumet/Tamarack (CO-OP station CLUM4), nearly 2' (23.5") of snow was measured over a 48-hour period, ending the morning of January 19th. At WFO Marquette during that same weekend/event, 14.9" of snow was measured in a 48-hour period, also through the morning of January 19th. Across Upper Michigan, snowfall for a 48-hour period ending 12Z on January 19th ranged from around 6" to 18", with locally higher amounts, as noted.

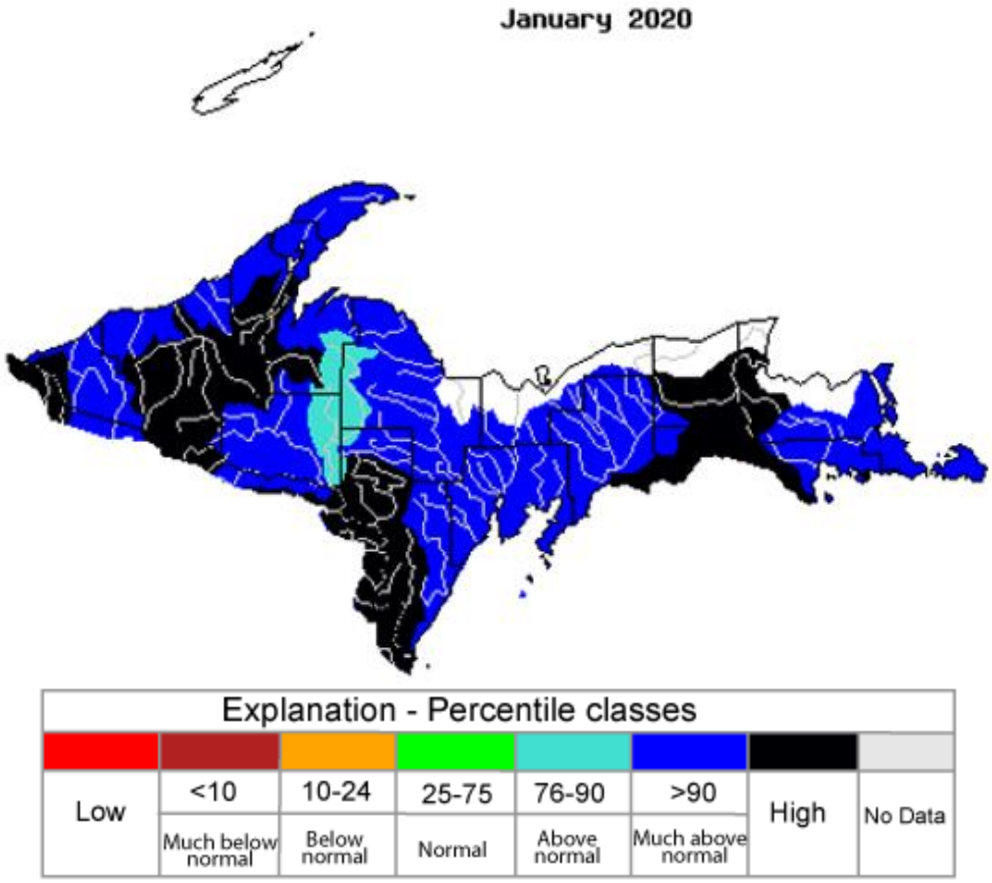
| Location | Precipitation | % of Normal | Snowfall |
|---|---|---|---|
| WFO Marquette | 3.18" | 132% | 51.6" |
| Marquette City | 2.87" | 157% | 18.4" |
| Quincy Hill | 3.22" | 125% | 54.9" |
| Ironwood | 2.43" | 126% | 33.4" |
| Iron Mountain | 1.90" | 154% | 21.5" |
| Manistique | 2.51" | 160% | 28.5" |
| Munising | 3.61" | 110% | 45.6" |
| Stambaugh | 1.83" | 187% | 21.0" |

## January Flooding Conditions

Rivers did not reach flood stage in the Upper Peninsula.

## January River Conditions

Streamflows across the NWS Marquette Hydrologic Service Area ran high/above normal across all basins, except where no data was available in the Chocolay and Pictured Rocks/Two-Hearted basins along Lake Superior. The measurements of snow-water equivalents (SWE) for the upcoming spring melt period will be crucial in determining how rivers/basins will respond.




## January Drought Discussion

No drought conditions are depicted in the Upper Peninsula. For the latest drought status, please go to http://www.drought.gov.

## Media Links

None at this time.

## January Products Issued

1 – Hydrologic Outlook (ESF)
0 – Flood Watch (FFA)
0 – Flood Warning (FLW)
0 – Flood Advisories and Statements (FLS)
0 – Flash Flood Warning (FFW)
0 – Flash Flood Statement (FFS)
30 – Hydrologic Summary (RVA)
0 – Daily River Forecasts (RVD)

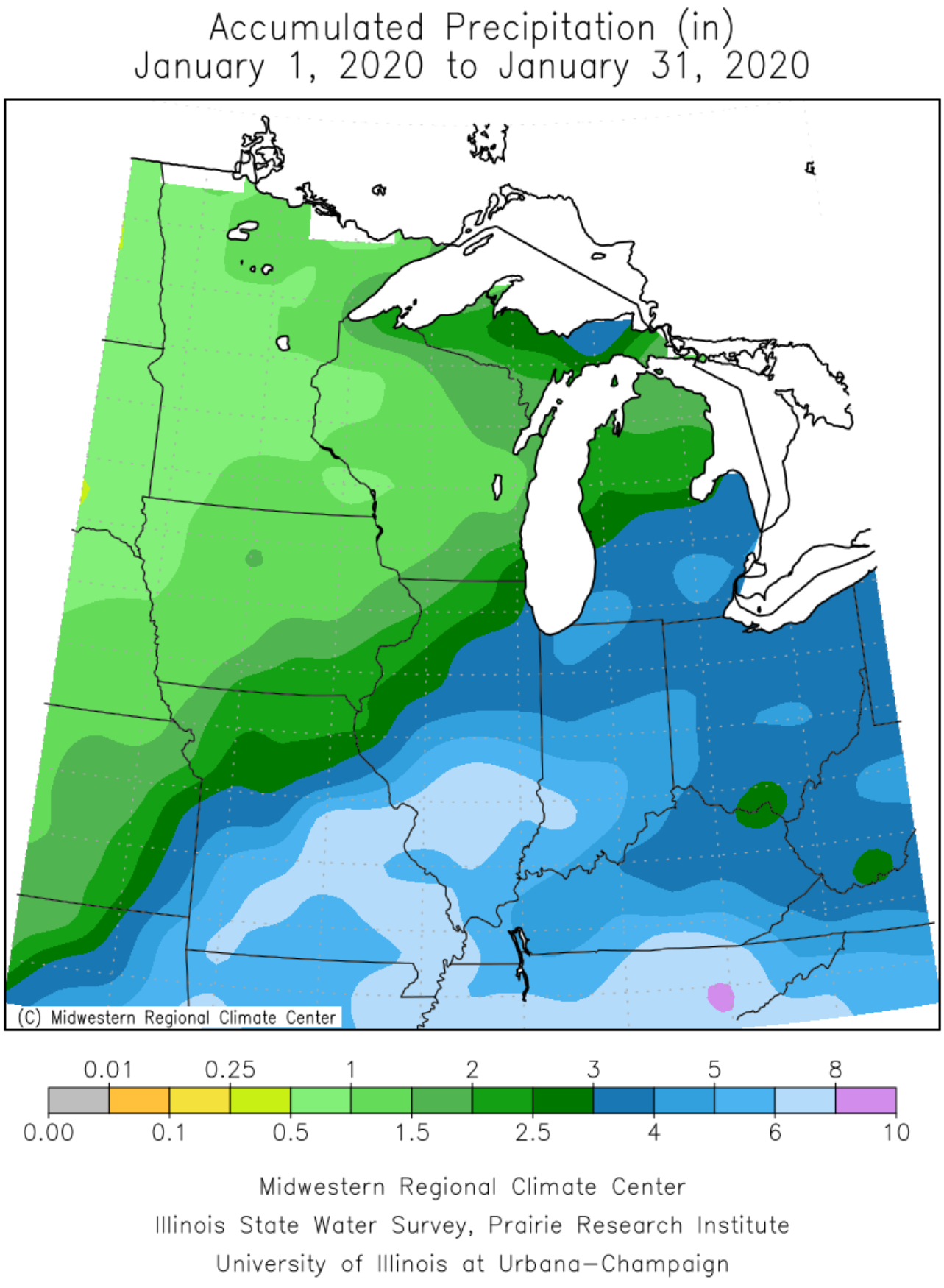



*Figure 1: January 2020 Monthly Precipitation Totals.*

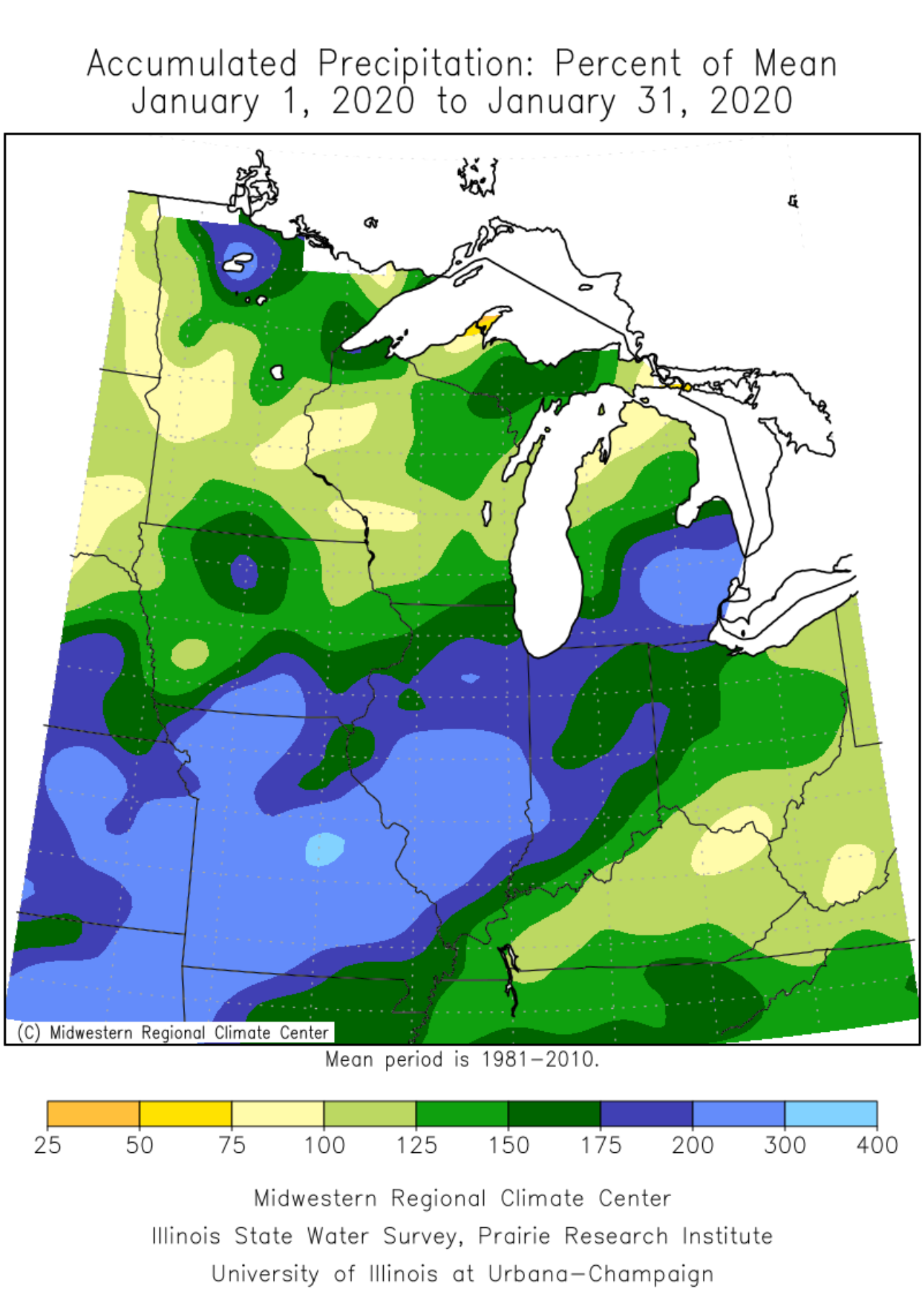



*Figure 2: January 2020 Percent of Mean of Accumulated Precipitation.*

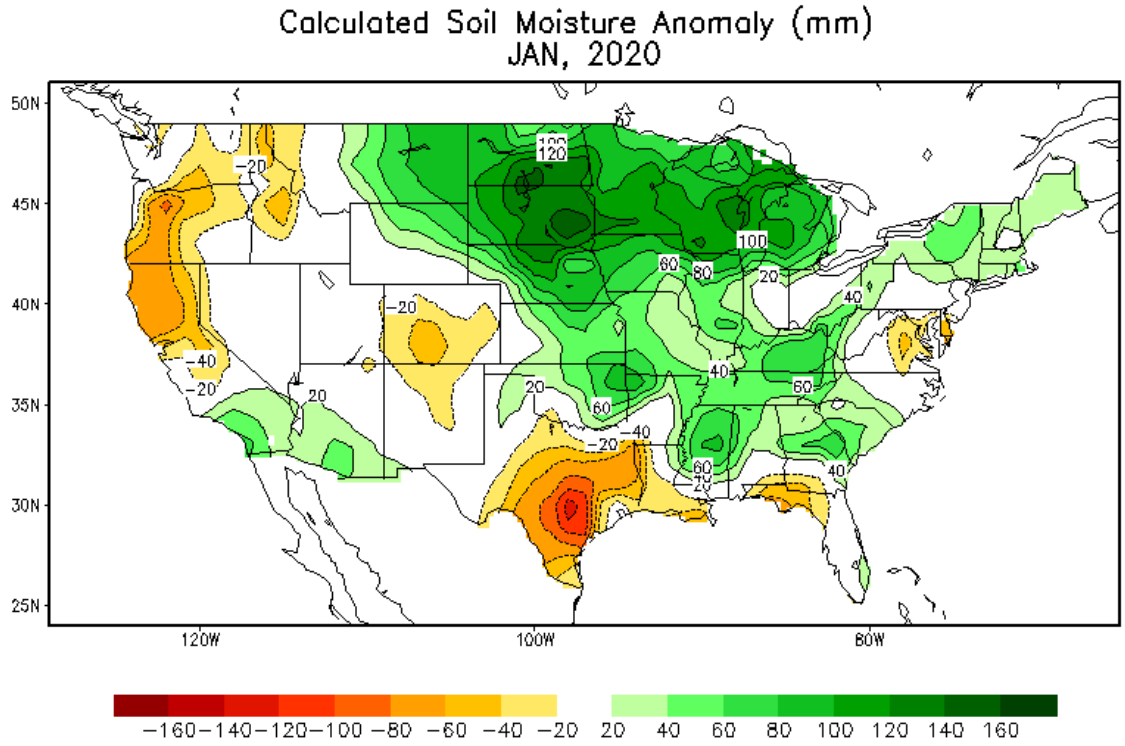



*Figure 3: January 2020 Monthly Soil Moisture Anomaly (courtesy of the Climate Prediction Center).*

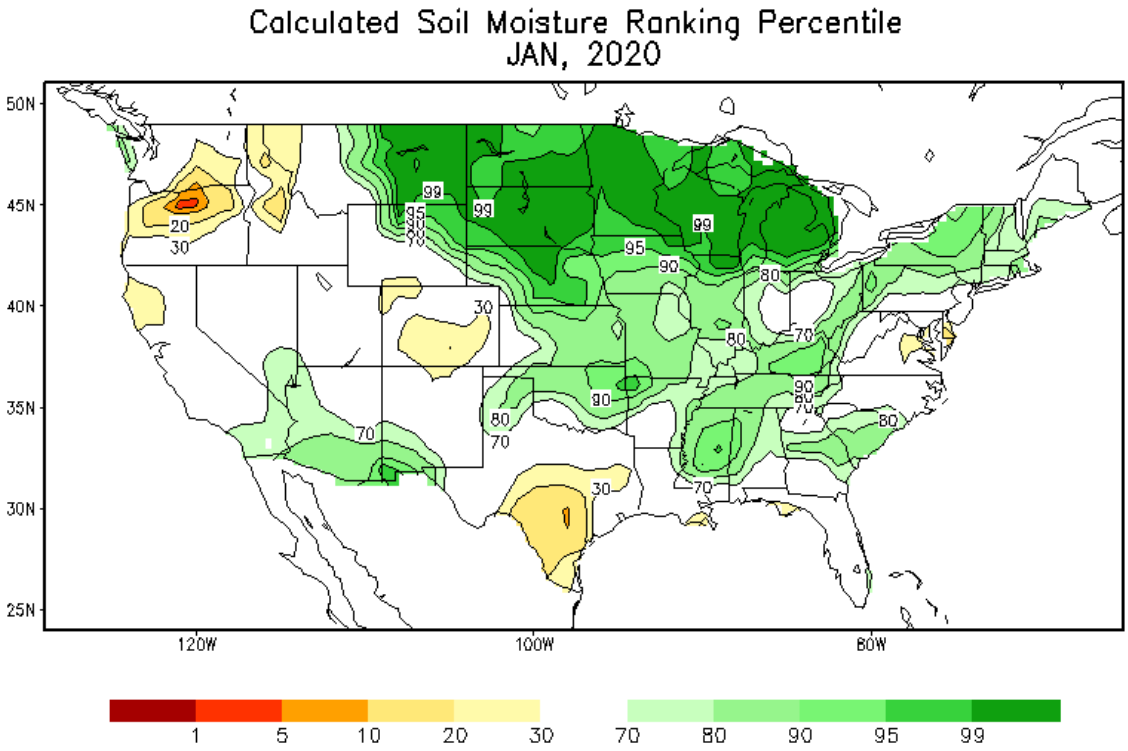



*Figure 4: January 2020 Monthly Soil Moisture Ranking Percentile (courtesy of the Climate Prediction Center).*