# Under the Big Sky

# e-Letter

# May 2021

Photo Credit: Greg Forrester, Lead Forecaster, taken on 5/14/2021

## National Weather Service

## Glasgow, MT

## A Peak Inside:



Figure 1: Mammatus cloud at NWS Glasgow.

**From the MIC (Meteorologist in Charge):**

**Severe Weather Readiness:**

***...Beeeeeeppppp, Beeeeeeppppp, Beeeeeeppppp...The National Weather Service in Glasgow has issued a Severe Thunderstorm Watch for Northeast Montana…***

Cooler temperatures have kept severe weather at bay so far this season, but it's knocking on our door. There's a few resources to help get you back into thinking about thunderstorm safety:

- Quick read/graphics: **NWS Weather Ready Nation Thunderstorm Safety**
- Short **NWS Glasgow 2021 Thunderstorm Safety Videos** on You Tube
- NWS Online Skywarn Training Course (You'll need to create an account, but you won't get spammed with tons of emails from doing so!)
- **Role of the Skywarn Spotter**
- **Skywarn Spotter Convective Basics**

We wish you a safe summer, but we know some of you will have to deal with severe weather. Here's a reminder of the reports we are looking for:

- Hail (any size)
- Wind gusts over 58 mph or causing damage (any speed)
- Rotation in the base of the clouds
- Funnel Clouds or Tornadoes
- Large Dust Devils
- Flooding/Flash Flooding

And, here's how best to report to us:

- Spotter Reporting Line: 800-775-5771
- Email: ggw.wxreport@noaa.gov (if sending from you phone, please include your name/location and time of event)
- Facebook: https://www.facebook.com/NWSGlasgow
- Twitter: @NWSGlasgow


**Figure 2: Thunderstorm and lightning safety infographic.**

**By Virginia Rux, Meteorologist & Space Weather Program Lead at NWS Glasgow**

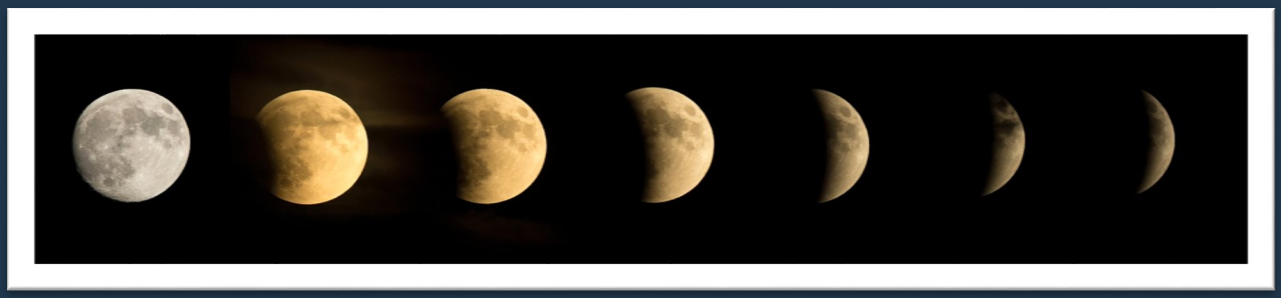


Photo Credit: NASA.

Northeast Montana is one of the few places in the entire country that has very low light pollution and it makes this place a unique and excellent location to watch the night sky! We hope that you will join us in Looking Up at the Big Sky! The space weather program at the National Weather Service in Glasgow, MT is partnering with the US Army Corps of Engineers at the Fort Peck Interpretive Center and Charles M. Russell National Wildlife Refuge to put together a virtual summer astronomy series. An introduction to the program and the first edition has already premiered on Facebook. Our first topic was about the supermoon and lunar eclipse on May 26th, 2021. We will talk about relevant night sky events, provide an educational background, and share with you the viewing forecast and recommended locations for the best view! Check facebook (National Weather Service Glasgow and US Army Corps of Engineers, Omaha District - Fort Peck Dam & Lake) for our June program and future events throughout this summer!

Photo Credit: NWS SWPC.

## Join CoCoRaHS Today!

CoCoRaHS is a grassroots organization with a network of dedicated observers who report daily precipitation such as rain, hail, or snow from all across the country. The data are used by meteorologists, insurance adjusters, mosquito control, and even by those in academia.

Participating in the CoCoRaHS program is a great way to make a difference in your community. Check out the CoCoRaHS main page to learn more! We are still accepting new observers so feel free to join through the main CoCoRaHS website today. All you'll need is a ruler and a rain gage to get started!

To access some starter training, check out the recent **warm season CoCoRaHS training** that was produced by NWS Glasgow for new and interested observers. If you are a current CoCoRaHS observer, this can be a great refresher session!

**30 Day Percent of Normal Precipitation (Montana)**

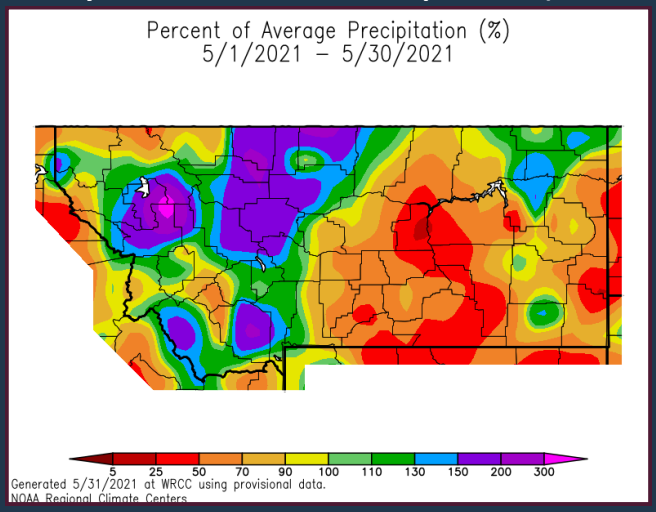



Figure 3: 30-day percent of normal precipitation across Montana.

**Avg. Temp Departure from Normal (Montana)**

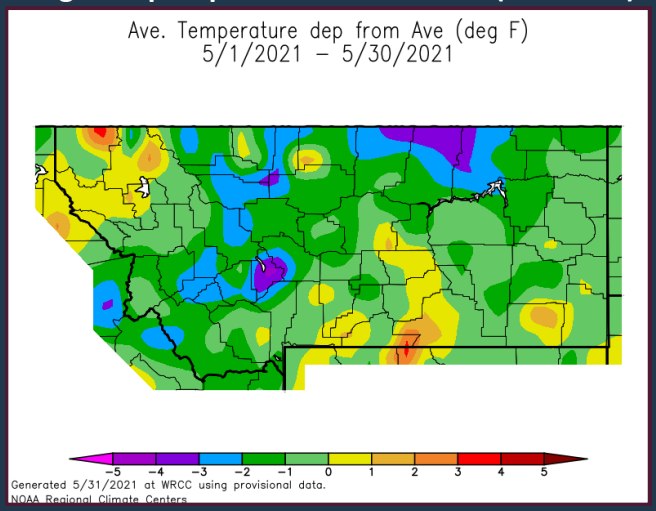



Figure 4: 30-day temperature anomalies across Montana.

**Summary:** Over the last 30 days precipitation has trended above normal for portions of North Central Montana. However, much of eastern and southeastern parts of the state had near or below normal precipitation over the same period. Meanwhile, temperatures were within a couple of degrees of average across much of Montana.

**Hydrologic Summary for March 2021 by Greg Forester, Lead Forecaster at NWS Glasgow:**

It was a drier and warmer than normal month for temperatures over Northeast Montana. A few areas mainly in the southwest had near to above normal precipitation. The wet spots were Zortman with 1.56 inches, Glasgow 46SW with 0.95 inch, and Flatwillow and Carlyle with 0.83 inch. The dry spots were Opheim 12SE with 0.07 inch, Hoyt with 0.08 inch, and Scobey with 0.10 inch. Glasgow received 0.43 inch which was 53 percent of normal. Temperatures averaged between 3 degrees below and 2 degrees above normal across the region. Glasgow averaged 44.4 degrees which was 0.5 degrees below normal.

The dry weather has allowed extreme drought to develop over the northeast half of the region which includes areas east of Malta, Fort Peck, and Terry. The remainder of the region is in severe drought according to the Drought Monitor.

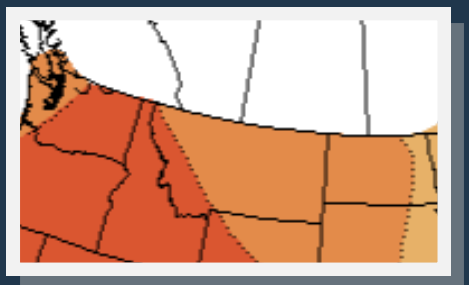
Stream flow on the Milk, Yellowstone, and Poplar Rivers was below normal for the entire month. The Missouri River had near normal stream flow for the entire month.

The Fort Peck Reservoir elevation fell slightly to 2233.0 feet during the month. The reservoir was at 78 percent of capacity and 99 percent of the mean pool.

## CPC Three Month Outlook:

The Climate Prediction Center released an update of its three month outlook for temperature and precipitation for June through August back on May 20, 2021. The outlook calls for increased odds of above normal temperatures across the state. Unfortunately, the outlook is also suggesting a dry summer ahead which is not good news for those with growing drought concerns. This does not mean there will not be periods that may run cooler or wetter, but, on the whole a warm and dry summer is expected to result.

The latest outlook in full detail is always available here. In addition, you can check out the Climate Prediction Center Interactive site! You can zoom in on our area, and navigate to see the climate outlook for your specific location. The pie charts on the left hand side can be particularly useful for assessing the outlook at your specific location.



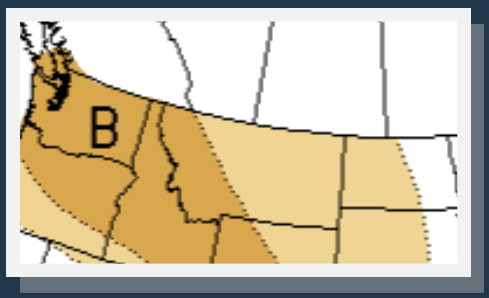
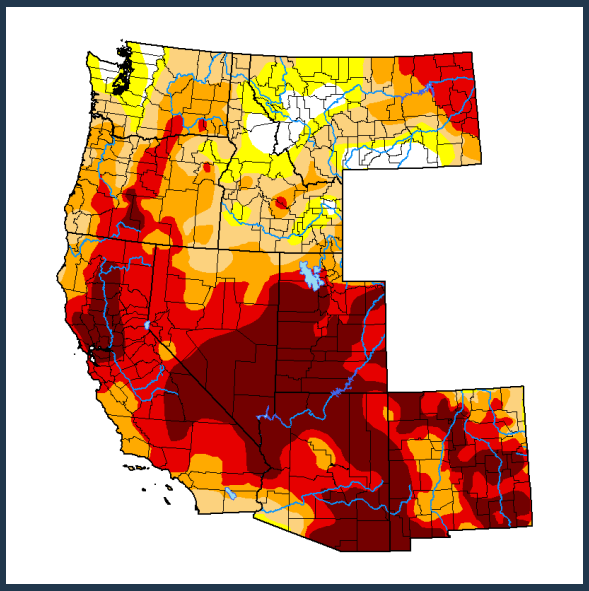



Figure 5: Climate Prediction Center three month temperature (top) and precipitation (bottom) outlook for June 2021 through August 2021.

## U.S. Drought Monitor:

The latest U.S. Drought Monitor was released on Thursday June 3, 2021. Much of NE Montana remains under the influence of a severe to extreme drought. This outlook is updated weekly. Please feel free to check out the latest here.



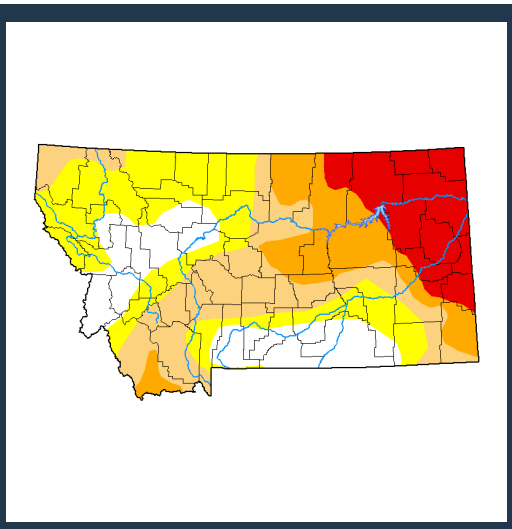



Figure 6: U.S. Drought Monitor updated June 3, 2021

**U.S. & Global Climate Highlights (April):** The U.S. & Global climate highlights for April 2021 have been released, the latest month for which data was available. A few points for you to take home are provided below.

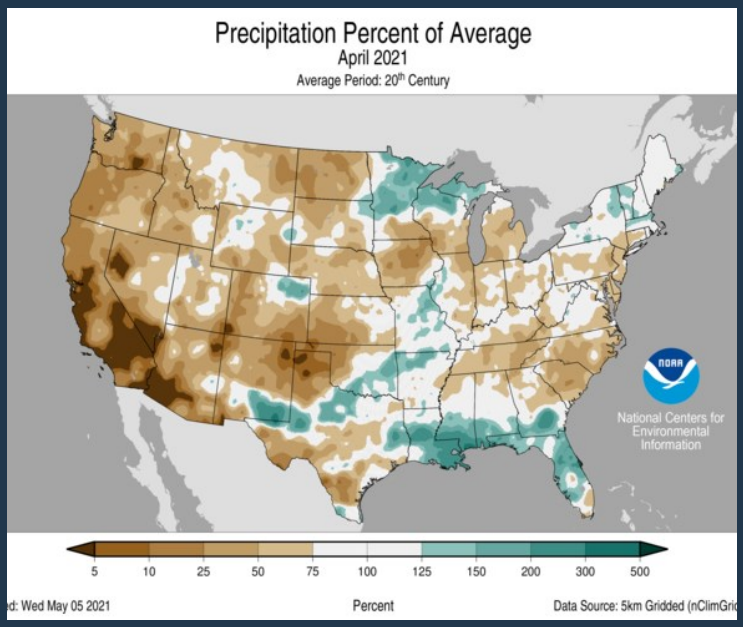



Figure 7: April 2021 Percent of Average Precipitation (U.S.).

## Heat Safety Reminders

Summer is on the way, and that means the risk of hot temperatures and heat-related stress. Here are some important reminders for you to stay safe this season.


Figure 8: Heat Safety graphic shared on 5/16 on NWS Glasgow social media accounts.

U.S. Highlights for April 2021

1) The contiguous U.S. average temperature for April 2021 was 51.9 °F, ranking within the middle warmest third of the climate record.
2) The average April precipitation total for the contiguous U.S. came in at 2.03 inches. This ranks as the 14th driest April on record, and driest since 1989.

Global Highlights for April 2021

1) The 2021 global land and ocean surface temperature was the 9th warmest on record.
2) The ocean surface temperature departure for April was the smallest since 2014 but the 8th highest on record.
3) La Niña began to weaken in April, with things progressing toward ENSO-neutral conditions. However, it is still strong enough to have an effect.

## Links You May Like:

May ENSO Update

Atlantic Hurricane Season—A New Normal

Fires of the Future

CO2 & Methane Rise in 2020

# COOP Precipitation Data (*Preliminary* April 2021)

| Station | Precipitation | Location |
|---|---|---|
| BAYM8 | 0.15 | Baylor |
| BRDM8 | 0.26 | Bredette |
| BTNM8 | M | Brockton 17 N |
| BKNM8 | M | Brockton 20 S |
| BKYM8 | 0.24 | Brockway 3 WSW |
| BRSM8 | 0.33 | Brusette |
| CLLM8 | 0.83 | Carlyle 13 NW |
| CIRM8 | 0.17 | Circle |
| CHNM8 | 0.42 | Cohagen |
| COM8 | 0.30 | Cohagen 22 SE |
| CNTM8 | 0.32 | Content 3 SSE |
| CULM8 | 0.33 | Culbertson |
| DSNM8 | 0.36 | Dodson 11 N |
| FLTM8 | 0.83 | Flatwillow 4 ENE |
| FPKM8 | 0.29 | Fort Peck PP |
| GLAM8 | 0.35 | Glasgow 14 NW |
| GGWM8 | 0.43 | Glasgow WFO |
| GGSM8 | 0.95 | Glasgow 46 SW |
| GNDM8 | 0.18 | Glendive WTP |
| HRBM8 | M | Harb |
| HINM8 | 0.76 | Hinsdale 4 SW |
| HNSM8 | 0.60 | Hinsdale 21 SW |
| HOMM8 | 0.18 | Homestead 5 SE |
| HOYM8 | 0.08 | Hoyt |
| JORM8 | M | Jordan |
| LNDM8 | 0.43 | Lindsay |
| MLAM8 | 0.41 | Malta |
| MLTM8 | 0.49 | Malta 7 E |
| MTAM8 | 0.42 | Malta 35 S |

| Station | Precipitation | Location |
|---|---|---|
| MDCM8 | 0.42 | Medicine Lake 3 SE |
| MLDM8 | 0.24 | Mildred 5 N |
| MSBM8 | 0.32 | Mosby 4 ENE |
| OPNM8 | 0.17 | Opheim 10 N |
| OPMM8 | 0.07 | Opheim 12 SSE |
| PTYM8 | 0.53 | Plentywood |
| PTWM8 | 0.13 | Plentywood 1 NE |
| POGM8 | 0.16 | Port of Morgan |
| RAYM8 | M | Raymond Border Station |
| SAOM8 | 0.45 | Saco 1 NNW |
| SMIM8 | 0.22 | St. Marie |
| SAVM8 | M | Savage |
| SCOM8 | 0.10 | Scobey 4 NW |
| SDYM8 | 0.38 | Sidney |
| SIDM8 | 0.23 | Sidney 2S |
| TERM8 | 0.39 | Terry |
| TYNM8 | 0.85 | Terry 21 NNW |
| VIDM8 | M | Vida 6 NE |
| WSBM8 | M | Westby |
| WTRM8 | 0.22 | Whitewater |
| WHIM8 | M | Whitewater 18 NE |
| WBXM8 | 0.63 | Wibaux 2 E |
| WTTM8 | 0.34 | Winnett |
| WNEM8 | 0.26 | Winnett 6 NNE |
| WNTM8 | 0.50 | Winnett 8 ESE |
| WITM8 | M | Winnett 12 SW |
| WLFM8 | 0.17 | Wolf Point |
| ZRTM8 | 1.56 | Zortman |

**Monthly Trivia:**

Last time we asked…

Convective thunderstorm season is upon us! This month we ask: What's the difference between a watch and a warning? We'll share the answer to this as well as some additional important safety information in the next newsletter edition!


**Answer:** The differences between a watch and a warning , as well as safety actions you should take, are summarized nicely in the table below.

| Watch | Warning |
|---|---|
| Conditions are favorable for the development of severe thunderstorms in and near the watch area. This generally is for the next 0-6 hours. | The severe thunderstorm (1" or larger hail and/or wind gusts to 58 mph or higher) or a tornado is either occurring or will be soon. This generally has a lead time of 0 to 60 minutes. |
| **Watch Actions:**<br>⇒ Know where your safest place to shelter will be **(not a mobile or modular home)**<br>⇒ Monitor radar, be prepared to go to a safe place before storms or warnings get to you<br>⇒ Have at least two ways to receive future warnings (local radio, TV, text messages, NOAA Weather Radio, etc.)<br>⇒ Put away outdoor items that could blow away<br>⇒ Put away vehicles in sheltered locations<br>⇒ As storms get closer, even before warnings may be issued, go to your "safe" location, bring family, friends, pets | **Warning Actions:**<br>⇒ Seek immediate shelter in your safe location<br>⇒ Lowest level of safe structure, away from windows and chimneys<br>⇒ Have as many walls between you and the outside as possible<br>⇒ Have a radio, smart phone, tablet/laptop with you to monitor situation<br>⇒ In a car, wear seatbelt, and try to go south then west of the storm. If you cannot avoid it, pull over, lay down and protect head with a blanket |

Figure 9: Graphical depiction of a severe weather watch vs. warning and actions you can take.

**New Question:** You've decided to seek shelter due to a Severe Thunderstorm Warning issued for your area. How long after the storm has passed do you have the all clear to resume outdoor activities?

**Hint:** The answer is somewhere in this newsletter!

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