

Under the Big Sky

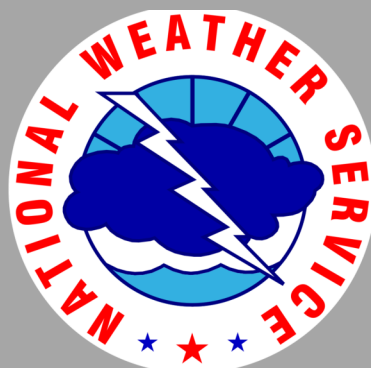
e-Letter

October 2022



Photo Credit: Jacob Zanker, Meteorologist at NWS Glasgow.

National Weather Service
Glasgow, MT



A Peak Inside:

- **CoCoRaHS/30 Day Temp & Precip...Page 1**
- **Hydro Summary...Page 2**
- **3 Month Outlooks...Page 3**
- **Drought Monitor...Page 4**
- **Climate Highlights...Page 5**
- **Winter Safety...Page 6**
- **Monthly COOP Numbers...Pages 7**
- **Trivia...Page 8**

National Weather Service

←—————→
Glasgow, MT



Join CoCoRaHS Today!

CoCoRaHS is a grassroots organization with a network of highly committed 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!

Cold Season Season Training 2022: Coming Soon!

We'll soon be announcing the details of our cold season CoCoRaHS training for 2022, so be on the lookout for that! Meanwhile, [check out the training](#) we did for the warm season and then sign up to [join](#) via the CoCoRaHS website to get started as a new observer!



Percent of Normal Precipitation (Montana)

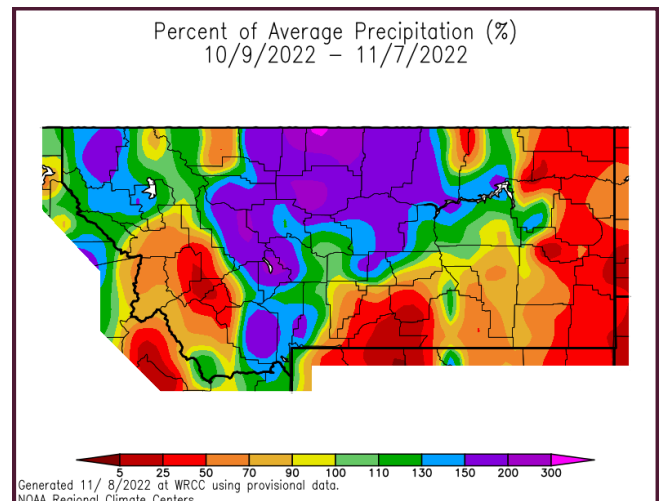


Figure 1: 30-day percent of normal precipitation across Montana.

Avg. Temp Departure from Normal (Montana)

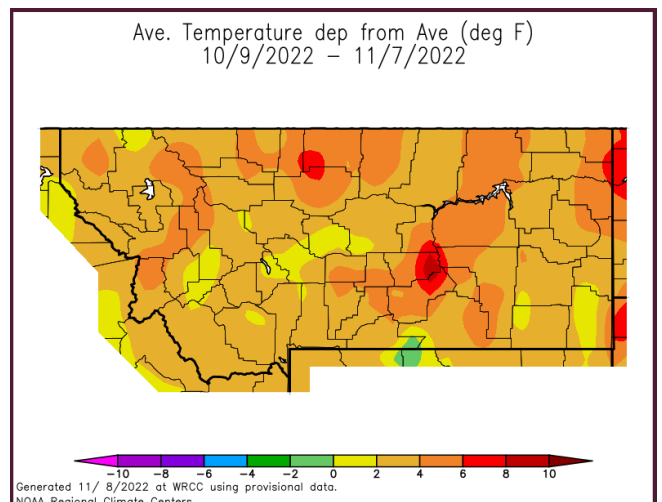


Figure 2: 30-day temperature anomalies across Montana.

Summary: The last 30 days brought temperatures that trended generally above normal across Montana. Precipitation varied widely across the state with southern and eastern Montana experiencing below normal precipitation and North Central portions of the state experiencing above normal precipitation.

Preliminary Hydrologic Summary for October 2022, By Ted Jamba Lead Forecaster at NWS Glasgow:

October was a generally warm and wet month for northeast Montana. The driest place was the Sidney area where only 0.51 inch fell while the wettest location was at Zortman with 2.50 inches. Glasgow received 1.82 inches for the month which is 198% of normal. A few of the dry spots were Malta 7E with 0.56 inch, Terry with 0.60 inch, and Saco 1 NNW with 0.70 inch. Some wet spots were Glasgow 46 SW with 1.92 inches, Jordan Airport with 1.76 inches, and Culbertson with 1.74 inches.

Most of the reporting stations across northeast Montana came in above normal in October, with the coldest temperatures in the north with Medicine Lake and Bluff Creek (west of Opheim) reporting average temperatures of 45.1 and 45.9 degrees respectively. The warmest temperatures were near the CMR with South Sawmill (in northwest Garfield County) and Dry Blood Creek (in Northern Petroleum County) reporting average temperatures of 52.2 and 53.0 degrees respectively. Glasgow's average temperature was 50.1 degrees, which was 4.9 degrees above normal.

Despite the wet month, deep subsurface moisture remained quite low resulting in very little change to the drought conditions across the area. Moderate to extreme drought conditions remained.

The Milk River flows recovered in October to above normal. The Yellowstone and Poplar Rivers also experienced above normal flows, but the Missouri River remained below normal.

The Fort Peck Reservoir elevation fell to 2219.9 feet during the month.

CPC Outlook:

The Climate Prediction Center released its latest three month outlook for temperature and precipitation for November 2022 through January 2023 on October 20, 2022. The outlook shows below normal temperatures favored across much of Montana for the three month period. Meanwhile, precipitation is favored to be above normal across much of the state. Far eastern Montana has equal chances for below normal, normal, or above normal precipitation.

The latest outlook 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.

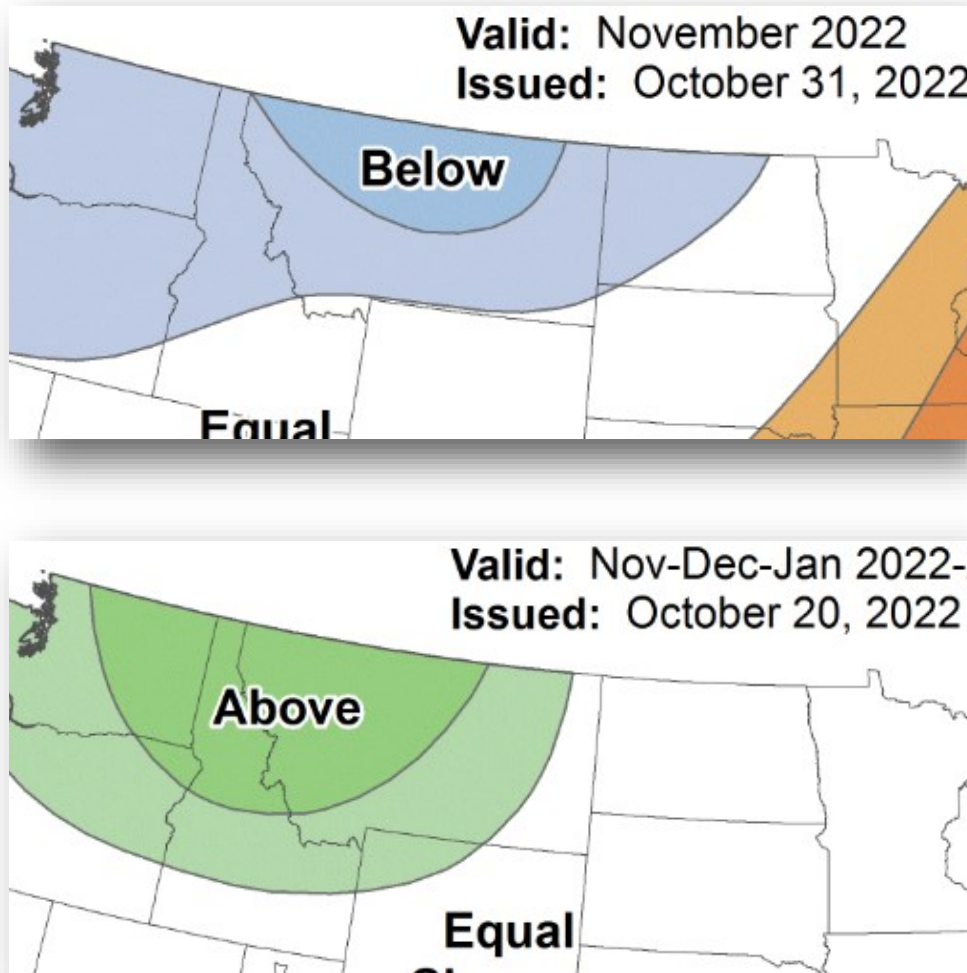


Figure 3: Climate Prediction Center three month outlook (November 2022 to December 2023) for temperature (top) and precipitation (bottom).

U.S. Drought Monitor:

The latest U.S. Drought Monitor was released on Thursday November 3, 2022. Drought persists across much of Montana with this latest monitor release. Far southern Montana is indicated by a void of drought conditions at this time and is the only exception, Much of the Hi-line is experiencing severe to extreme drought as of this time. The above normal precipitation outlook for the next three months is welcome news for those that have endured this persistent drought. Having said that, this outlook was likely influenced by the expectation for La Niña, and patterns can vary from one season to the next, so this forecast should be considered within the context of uncertainty.

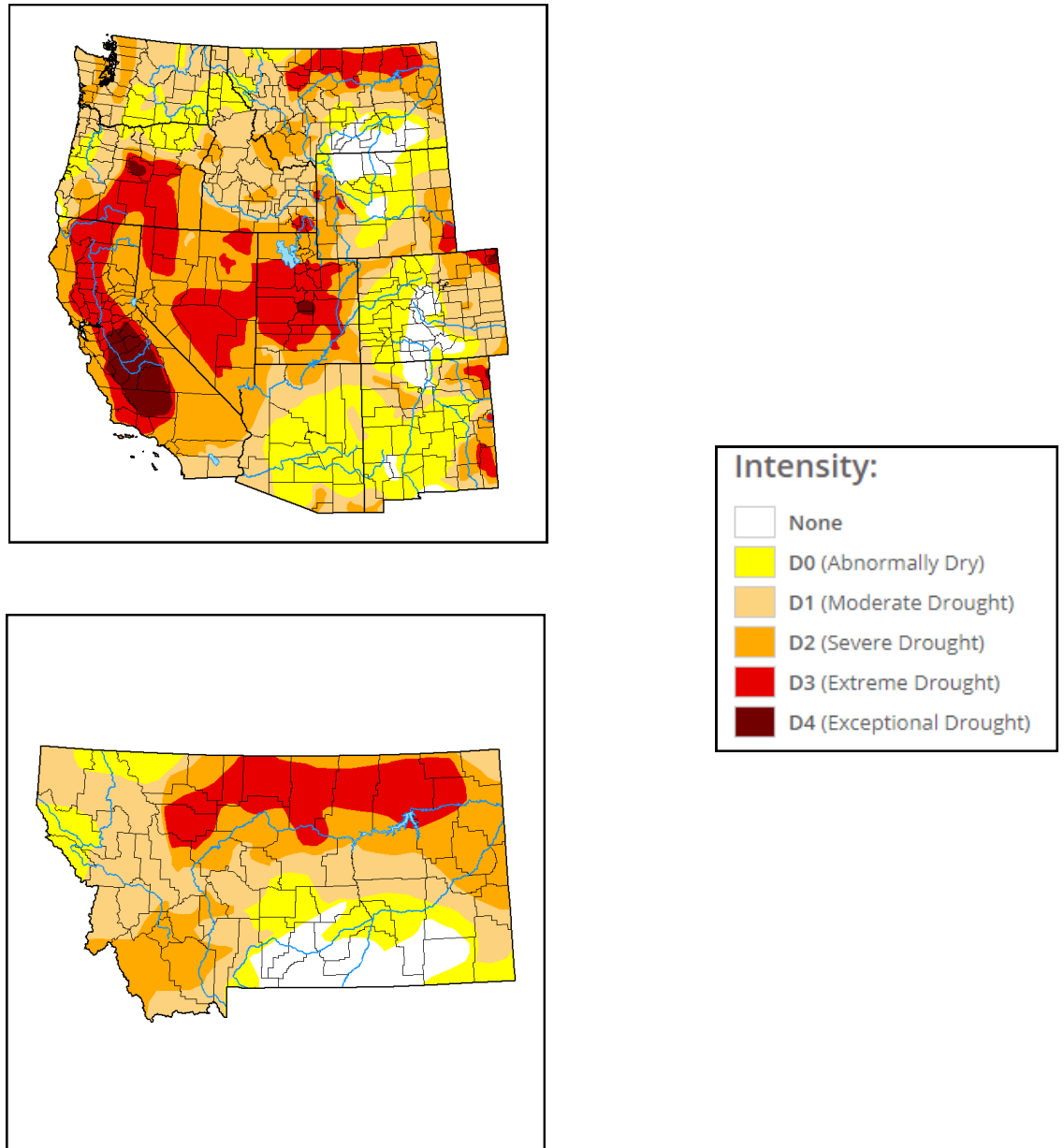





Figure 4: U.S. Drought Monitor updated October 13, 2022.

U.S. & Global Climate Highlights (September): The [U.S.](#) & [Global](#) climate highlights for September 2022 have been released, the latest month for which data was available. A few points for you to take home are provided below.

U.S. Selected Significant Climate Anomalies and Events for September 2022



 The powerful remnants of Typhoon Merbok pounded Alaska's western coast on Sep 17, pushing homes off their foundations and tearing apart protective berms as water flooded communities. This was the strongest storm to enter the Bering Sea during Sep in 70 years.

 On Sep 27, about 50.9% of the CONUS was in drought, up about 5.4% from the end of Aug. Drought conditions expanded or intensified across portions of the MS Valley, central and northern Plains, Northwest, Southeast and parts of the Great Lakes.  Drought contracted or was eliminated across portions of the Southwest, southern Plains, Northeast, Florida and Puerto Rico.

As of Oct 5, there were 57 active wildfires in the Pacific Northwest (ID, MT and OR) that burned over 660,000 acres to date.



On Sep 4, torrential rains caused flooding in parts of IN and KY. Parts of southern IN were drenched by an excess of 9 in. of rain in a three-hour period causing significant flooding and washing away homes.

A heatwave settled over the West the first week of Sep and brought scorching temperatures that set all-time record highs. On Sep 9, nearly 1,000 heat records were broken.

On Sep 4, the GA governor declared a state of emergency in two counties after receiving an estimated 12 in. of rain. In Summerville, GA, some 8,000 homes and businesses lost access to running water due to flooding.

As of Sep 27, drought coverage reduced slightly over HI but intensified on the windward side of the Big Island over the month.

Between Sep 28-30, Hurricane Ian made landfall in FL as a strong Category 4 hurricane, resulting in major flooding, damage and loss of life. Ian created additional damage as it made landfall in SC as a Category 1 hurricane.

 The average U.S. temperature for September was 68.1°F, 3.2°F above average, ranking fifth warmest in the 128-year record.  The U.S. precipitation average for September was 1.83 in., 0.66 in. below average, ranking 10th driest in the historical record.

Hurricane Fiona brought massive flooding to Puerto Rico. One station reported 27.14 in. of rain in 24 hrs while other locations reported 12–18 in.

Please Note: Material provided in this map was compiled from NOAA's State of the Climate Reports. For more information please visit: <https://www.ncei.noaa.gov/access/monitoring/monthly-report/>

Figure 5: Significant Climate anomalies and events in September 2022.

U.S. Highlights for September 2022

- 1) The contiguous U.S. average temperature for September 2022 was 68.1 °F, ranking 5th warmest on record.
- 2) The average September precipitation total for the contiguous U.S. came in at 1.83 inches, ranking as the 10th driest on record.

Global Highlights for September 2022

- 1) The September 2022 global surface temperature anomaly came in as the 5th highest for September on record.
- 2) Interestingly, as much as 6.1% of the world's surface experienced a record high temperature in September.
- 3) Precipitation anomalies varied considerably around the world in September 2022, which is fairly typical.

Winter Weather Safety

- ◆ Winter months mean multiple weather hazards ranging from dangerously cold wind chills to heavy snow and even freezing rain. Below is an info graphic on how to stay safe if caught outdoors during a winter storm. Also check out our [winter safety page](#) to learn more winter safety information.

**CAUGHT OUTDOORS
IN A WINTER STORM?**

-  **Find shelter!** If there's no shelter, build a lean-to or snow cave for protection. Build a fire for heat.
-  **Cover exposed body parts,** and try to stay dry. This will help protect against hypothermia.
-  **Melt snow for drinking water.** Avoid eating un-melted snow, which can lower body temperature to deadly levels.
-  **Exercise occasionally.** Move limbs, fingers, and toes vigorously to keep you warm.

KNOW BEFORE YOU GO!
Avoid being caught in a storm by checking the forecast before venturing out.

weather.gov 

Figure 6: NOAA safety info graphic for getting caught outdoors in a winter storm.

Alt-Text: *Caught outdoors in a winter storm? Find shelter! If there's no shelter, build a lean-to or snow cave for protection. Build a fire for heat. Cover exposed body parts, and try to stay dry. This will help protect against hypothermia. Melt snow for drinking water. Avoid eating un-melted snow, which can lower body temperature to deadly levels. Exercise occasionally. Move limbs, fingers, and toes vigorously to keep you warm.*

Links You May Like:

[ENSO Update](#)

[Ozone Hole Shrinks](#)

[Climate Science & Community Resilience](#)

[U.S. Winter Outlook](#)

[Summer Minimum Arctic Sea Ice](#)

COOP 2021 Precipitation Totals for October 2022 (Preliminary)

Station	Precipitation	Location
BAYM8	M	Baylor
BRDM8	1.25	Bredette
BTNM8	M	Brockton 17 N
BKNM8	M	Brockton 20 S
BKYM8	1.34	Brockway 3 WSW
BRSM8	M	Brusette
CLLM8	M	Carlyle 13 NW
CIRM8	1.38	Circle
CHNM8	M	Cohagen
COM8	M	Cohagen 22 SE
CNTM8	M	Content 3 SSE
CULM8	1.74	Culbertson
DSNM8	M	Dodson 11 N
FLTM8	M	Flatwillow 4 ENE
FPKM8	M	Fort Peck PP
GLAM8	0.99	Glasgow 14 NW
GGWM8	1.82	Glasgow WFO
GGSM8	M	Glasgow 46 SW
GNDM8	1.43	Glendive WTP
HRBM8	M	Harb
HINM8	M	Hinsdale 4 SW
HNSM8	M	Hinsdale 21 SW
HOMM8	M	Homestead 5 SE
HOYM8	M	Hoyt
JORM8	M	Jordan
LNDM8	1.26	Lindsay
MLAM8	1.64	Malta
MLTM8	M	Malta 7 E
MTAM8	M	Malta 35 S

Station	Precipitation	Location
MDCM8	M	Medicine Lake 3 SE
MLDM8	1.11	Mildred 5 N
MSBM8	M	Mosby 4 ENE
OPNM8	M	Opheim 10 N
OPMM8	M	Opheim 12 SSE
PTYM8	M	Plentywood
PTWM8	M	Plentywood 1 NE
POGM8	M	Port of Morgan
RAYM8	M	Raymond Border Station
SAOM8	1.74	Saco 1 NNW
SMIM8	1.62	St. Marie
SAVM8	M	Savage
SCOM8	1.24	Scobey 4 NW
SDYM8	M	Sidney
SIDM8	1.61	Sidney 2S
TERM8	1.35	Terry
TYNM8	M	Terry 21 NNW
VIDM8	M	Vida 6 NE
WSBM8	M	Westby
WTRM8	M	Whitewater
WHIM8	M	Whitewater 18 NE
WBXM8	M	Wibaux 2 E
WTTM8	M	Winnett
WNEM8	1.60	Winnett 6 NNE
WNTM8	M	Winnett 8 ESE
WITM8	M	Winnett 12 SW
WLFM8	M	Wolf Point
ZRTM8	2.50	Zortman

Monthly Trivia:


Last time we asked...

October often means the first snow is right around the corner for much of NE Montana, which brings us to this month's trivia question. What is the earliest measurable first snowfall on record for Glasgow, MT?

Answer: There was measurable snowfall as early as September 13, 1970 when 0.1" was recorded at Glasgow, MT.



Figure 7: Photo of snow on the ground at Signal Hill by Jacob Zanker, Meteorologist at NWS Glasgow.

 **New Question:** Winter can bring a number of winter weather hazards ranging from snow to freezing rain, and mixed precipitation. That brings us to this month's trivia question. What determines the type of precipitation that hits the ground? We'll share the answer in the next newsletter.

Find us on Facebook, Twitter and YouTube! No account needed:

[Facebook.com/NWSGlasgow](https://www.facebook.com/NWSGlasgow)

[Twitter.com/NWSGlasgow](https://twitter.com/NWSGlasgow)

[YouTube.com/NWSGlasgow](https://www.youtube.com/NWSGlasgow)