Under the Big Sky

e-Letter

June 2022

Photo Credit: Jacob Zanker, Meteorologist at NWS Glasgow.

National Weather Service

Glasgow, MT

A Peak Inside:

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!

Warm Season Training 2022:

Date: Wednesday July 27, 2022

Time: 11:00-11:30am MDT

How: Facebook Live Event

Access: https://www.facebook.com/events/1282803812545462/

Percent of Normal Precipitation (Montana)

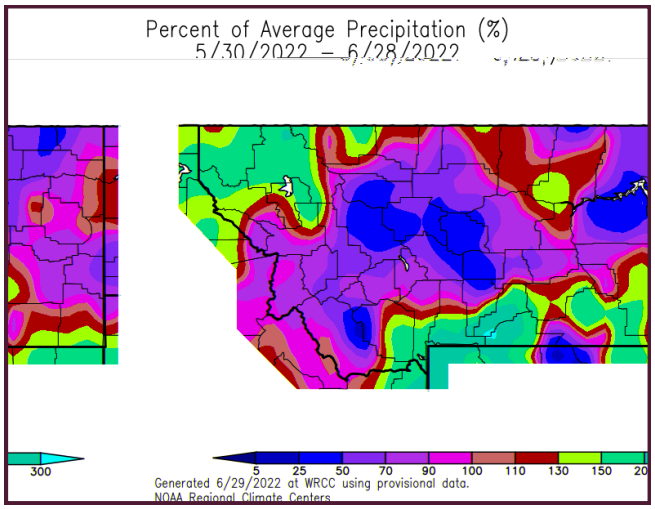

Figure 1: 30-day percent of normal precipitation across Montana.

Avg. Temp Departure from Normal (Montana)

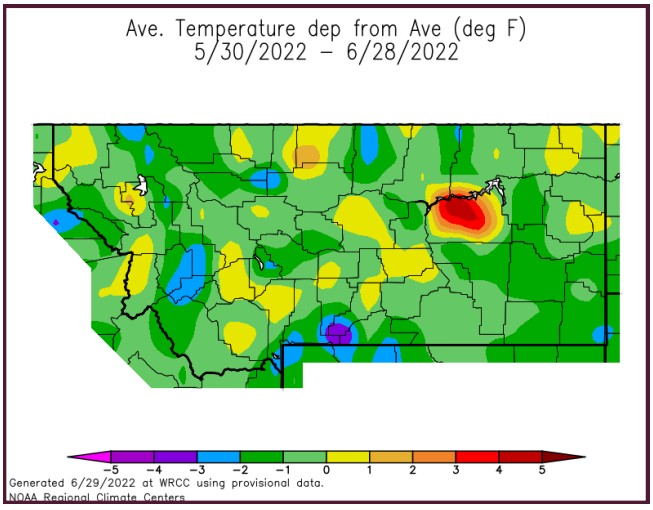

Figure 2: 30-day temperature anomalies across Montana.

Summary: The last 30 days brought near normal to slightly below normal temperatures across the state. Meanwhile, 30 day precipitation varied as a percent of normal with portions of southern and far northwestern Montana seeing above normal precipitation and most everywhere else seeing below normal precipitation. Note these graphics to not take into account the active first week of July.

Hydrologic Summary for May 2022, By Greg Forrester, Lead Forecaster at NWS Glasgow:

Some areas had well above normal precipitation in May while others were drier than normal. The wet spots for the month were Sidney with 5.15 inches, Carlyle 13NW with 3.95 inches, and Terry with 3.65 inches. The dry spots were Hinsdale 21SW with 0.92 inch, Content with 1.06 inches, and Cohagen with 1.15 inches. Glasgow received 2.11 inch which was 95 percent of normal. Temperatures varied from 2 above to 2 degrees below normal across the region. Glasgow averaged 68.2 degrees which was 0.5 degrees above normal.

The wet weather allowed for some improvement in the drought from extreme to severe at the beginning of the month to moderate drought in the east and severe drought in the west at the end of the month.

The Milk and Yellowstone Rivers had below normal streamflow for the entire month. The Missouri and Poplar Rivers had below normal the first 2 weeks of the month and near normal streamflow the remainder of the month.

The Fort Peck Reservoir elevation fell slightly to 2222.0 feet during the month. The reservoir was at 68 percent of capacity and 85 percent of the mean pool.

CPC Outlook:

The Climate Prediction Center released its latest three month outlook for temperature and precipitation for June, July, and August on June 16, 2022. The outlook calls for equal chances for normal, below normal, or above normal temperatures for northeastern portions of Montana. The context is though that these locations rest on the edge of favored above normal temperatures which cover the remainder of the state. Precipitation is also favored to trend below normal for the three month period over Montana, however, that does not mean there will not be periods over a shorter time interval that come in closer to normal or even above normal, it's just what is most likely to occur with the three month period as a whole.

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.

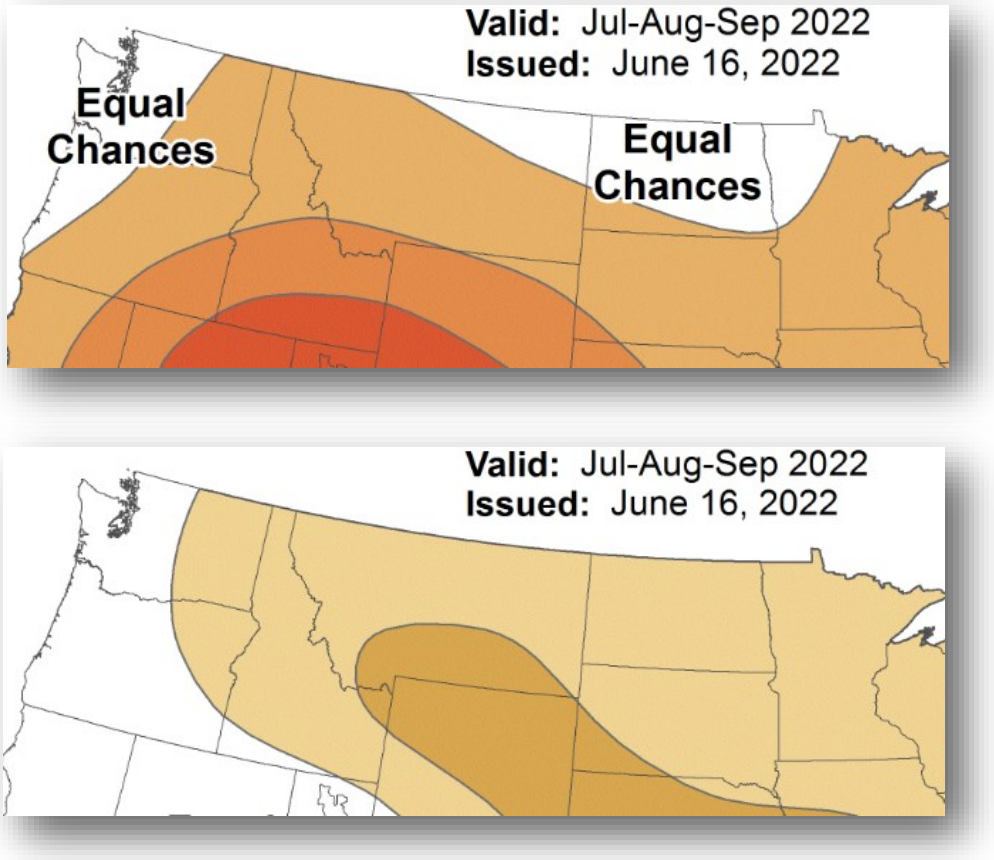

Figure 3: Climate Prediction Center three month outlook (July-September 2022) for temperature (top) and precipitation (bottom).

U.S. Drought Monitor:

The latest U.S. Drought Monitor was released on Thursday July 7, 2022. Thanks to increased precipitation in recent months, the drought across eastern and southern Montana has become somewhat less extreme over time. That said, much of NE Montana does remain in moderate to severe drought conditions, with portions of North Central Montana experiencing extreme to exceptional drought conditions. As a whole, drought impacts continue to be felt across the state even with recent increases in precipitation. This outlook is updated each Thursday. Please feel free to check out the latest **here**.

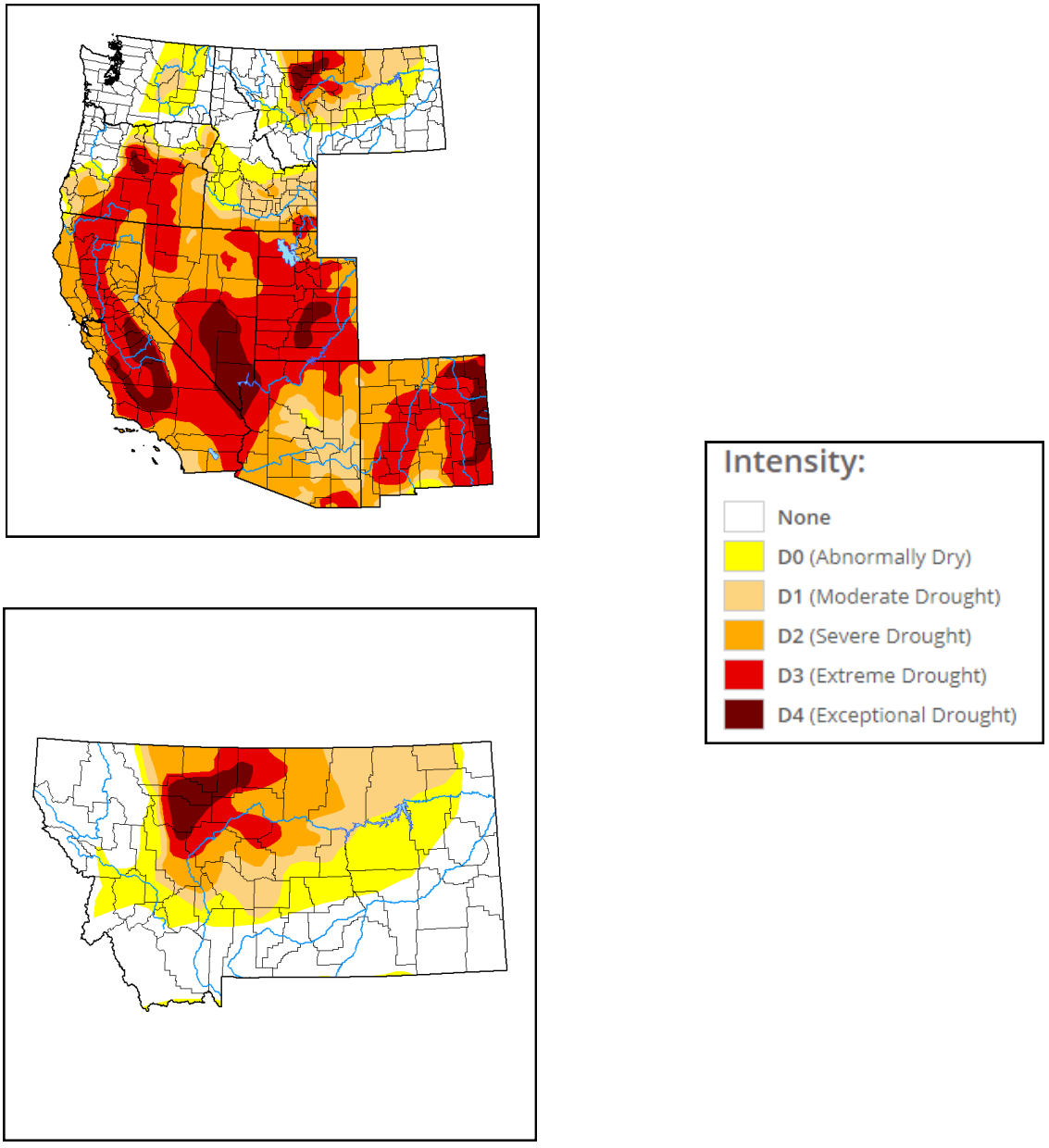

Figure 4: U.S. Drought Monitor updated July 7, 2022.

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

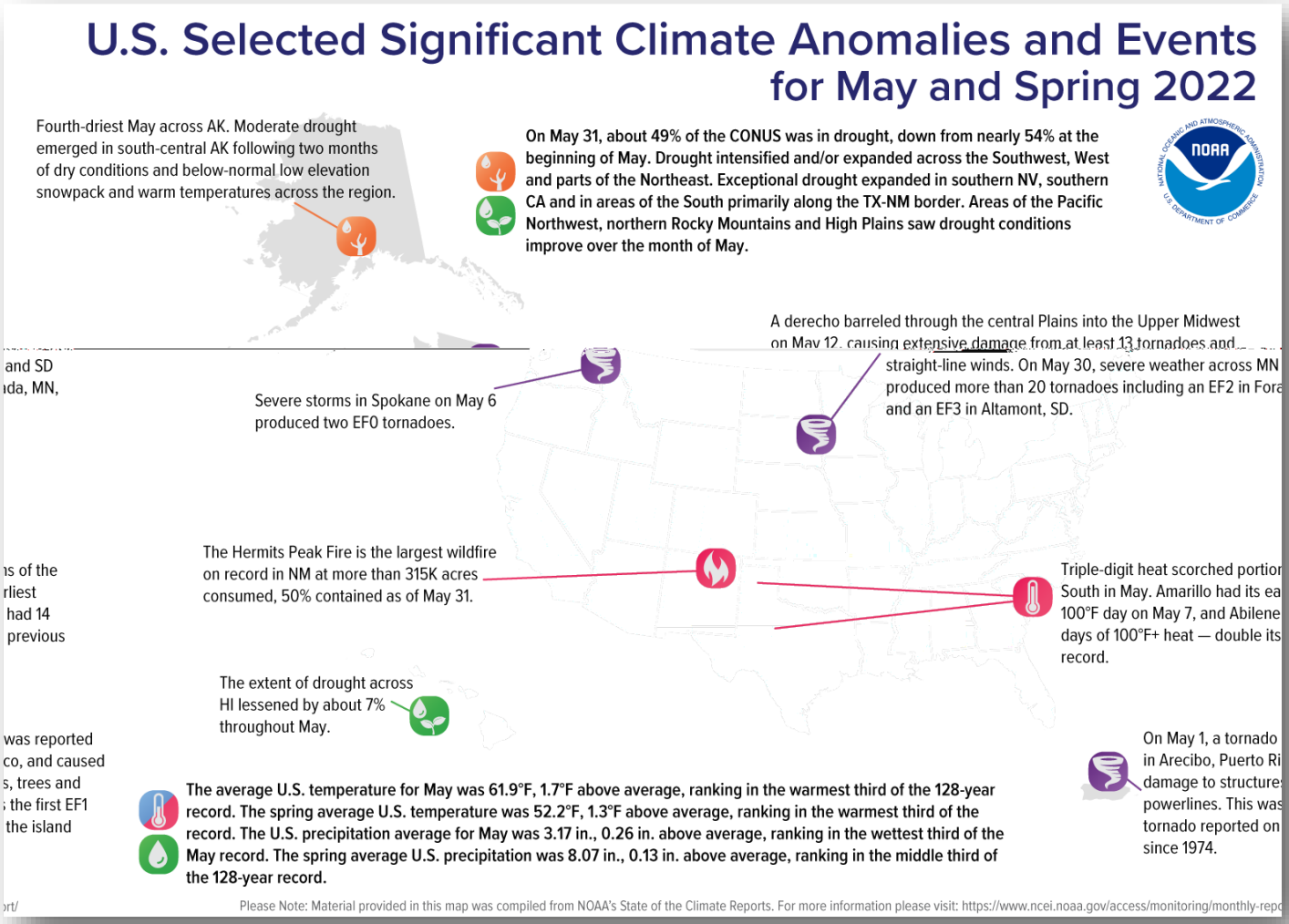

Figure 5: Significant Climate anomalies and events in May 2022

U.S. Highlights for May 2022

1) The contiguous U.S. average temperature for May 2022 was 61.9 °F, ranking in the warmest third on record.
2) The average May precipitation total for the contiguous U.S. came in at 3.17 inches, ranking in the wettest third of the period of record.

Global Highlights for May 2022

1) The May 2022 global surface temperature came in as the 9th highest for April on record.
2) Interestingly, as much as 7% of the world's surface experienced a record high temperature in May, and this is the third highest May percentage dating back to 1951.
3) Precipitation anomalies varied considerably around the world in May 2022, which is fairly typical.

Warm Season Boating Safety Reminders on Fort Peck Lake

- Summertime has arrived and that means it is severe weather season. Check out our **safety page** for important tips on how to prepare for severe weather **before the watches and warnings are issued**. When thunder roars, go indoors! See a flash, dash inside!

Figure 6: National Weather Service lightning safety infographic for summer 2022.

Links You May Like:

ENSO Update

NOAA Drought & Heat Webinars

Space Travel & The Ozone Layer

Climate Change and Carbon Dioxide

Prediction of Western Wildfires

U.S. Supercomputers for Weather & Climate Forecasts

COOP 2021 Precipitation Totals for May 2022 (Preliminary)

Station	Precipitation	Location
BAYM8	M	Baylor
BRDM8	M	Bredette
BTNM8	M	Brockton 17 N
BKNM8	3.42	Brockton 20 S
BKYM8	1.88	Brockway 3 WSW
BRSM8	M	Brusette
CLLM8	3.95	Carlyle 13 NW
CIRM8	2.49	Circle
CHNM8	1.15	Cohagen
COM8	1.55	Cohagen 22 SE
CNTM8	1.06	Content 3 SSE
CULM8	2.70	Culbertson
DSNM8	0.95	Dodson 11 N
FLTM8	1.92	Flatwillow 4 ENE
FPKM8	2.92	Fort Peck PP
GLAM8	1.48	Glasgow 14 NW
GGWM8	2.11	Glasgow WFO
GGSM8	2.10	Glasgow 46 SW
GNDM8	3.28	Glendive WTP
HRBM8	M	Harb
HINM8	1.80	Hinsdale 4 SW
HNSM8	0.92	Hinsdale 21 SW
HOMM8	2.12	Homestead 5 SE
HOYM8	3.34	Hoyt
JORM8	M	Jordan
LNDM8	3.56	Lindsay
MLAM8	1.03	Malta
MLTM8	1.31	Malta 7 E
MTAM8	1.21	Malta 35 S

Station	Precipitation	Location
MDCM8	2.68	Medicine Lake 3 SE
MLDM8	3.08	Mildred 5 N
MSBM8	1.02	Mosby 4 ENE
OPNM8	1.43	Opheim 10 N
OPMM8	1.74	Opheim 12 SSE
PTYM8	M	Plentywood
PTWM8	2.08	Plentywood 1 NE
POGM8	1.12	Port of Morgan
RAYM8	M	Raymond Border Station
SAOM8	1.48	Saco 1 NNW
SMIM8	2.18	St. Marie
SAVM8	M	Savage
SCOM8	2.25	Scobey 4 NW
SDYM8	5.13	Sidney
SIDM8	4.73	Sidney 2S
TERM8	3.65	Terry
TYNM8	M	Terry 21 NNW
VIDM8	M	Vida 6 NE
WSBM8	M	Westby
WTRM8	1.27	Whitewater
WHIM8	M	Whitewater 18 NE
WBXM8	M	Wibaux 2 E
WTTM8	1.25	Winnett
WNEM8	1.25	Winnett 6 NNE
WNTM8	1.43	Winnett 8 ESE
WITM8	1.33	Winnett 12 SW
WLFM8	2.05	Wolf Point
ZRTM8	1.99	Zortman

COOP 2021 Precipitation Totals for June 2022 (Preliminary)

Station	Precipitation	Location
BAYM8	2.44	Baylor
BRDM8	M	Bredette
BTNM8	M	Brockton 17 N
BKNM8	2.88	Brockton 20 S
BKYM8	1.64	Brockway 3 WSW
BRSM8	M	Brusette
CLLM8	2.72	Carlyle 13 NW
CIRM8	3.14	Circle
CHNM8	0.81	Cohagen
COM8	0.82	Cohagen 22 SE
CNTM8	3.14	Content 3 SSE
CULM8	2.93	Culbertson
DSNM8	2.08	Dodson 11 N
FLTM8	M	Flatwillow 4 ENE
FPKM8	1.67	Fort Peck PP
GLAM8	1.85	Glasgow 14 NW
GGWM8	1.43	Glasgow WFO
GGSM8	4.05	Glasgow 46 SW
GNDM8	2.40	Glendive WTP
HRBM8	M	Harb
HINM8	M	Hinsdale 4 SW
HNSM8	3.36	Hinsdale 21 SW
HOMM8	2.56	Homestead 5 SE
HOYM8	1.84	Hoyt
JORM8	M	Jordan
LNDM8	2.36	Lindsay
MLAM8	2.99	Malta
MLTM8	1.92	Malta 7 E
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MLDM8	1.65	Mildred 5 N
MSBM8	1.30	Mosby 4 ENE
OPNM8	M	Opheim 10 N
OPMM8	2.61	Opheim 12 SSE
PTYM8	2.16	Plentywood
PTWM8	M	Plentywood 1 NE
POGM8	1.40	Port of Morgan
RAYM8	M	Raymond Border Station
SAOM8	4.02	Saco 1 NNW
SMIM8	2.62	St. Marie
SAVM8	M	Savage
SCOM8	1.71	Scobey 4 NW
SDYM8	2.07	Sidney
SIDM8	2.89	Sidney 2S
TERM8	1.70	Terry
TYNM8	M	Terry 21 NNW
VIDM8	M	Vida 6 NE
WSBM8	M	Westby
WTRM8	1.57	Whitewater
WHIM8	M	Whitewater 18 NE
WBXM8	M	Wibaux 2 E
WTTM8	M	Winnett
WNEM8	2.79	Winnett 6 NNE
WNTM8	M	Winnett 8 ESE
WITM8	M	Winnett 12 SW
WLFM8	2.36	Wolf Point
ZRTM8	5.68	Zortman

Monthly Trivia:

Last time we asked…

Nowadays, there's a heavier emphasis by the National Weather Service and its products in using ensemble guidance and probabilistic forecasting rather than the legacy deterministic forecasting. This month, we ask: What is the difference between a probabilistic forecast, and a deterministic forecast? We'll have a comprehensive look at this in the next newsletter!

Answer: A deterministic forecast comes from a single model run. This does not factor in uncertainties in observations considered by the model and it makes for a large amount of potential error. An ensemble allows for multiple runs of a model that allows us to capture the uncertainty that exists in initial observations. From this data we can determine the probability of a certain threshold being met (such as the odds of high temperatures above 90 degrees on a given day), and we can figure out what is most likely to occur, as well as reduce error and uncertainty.

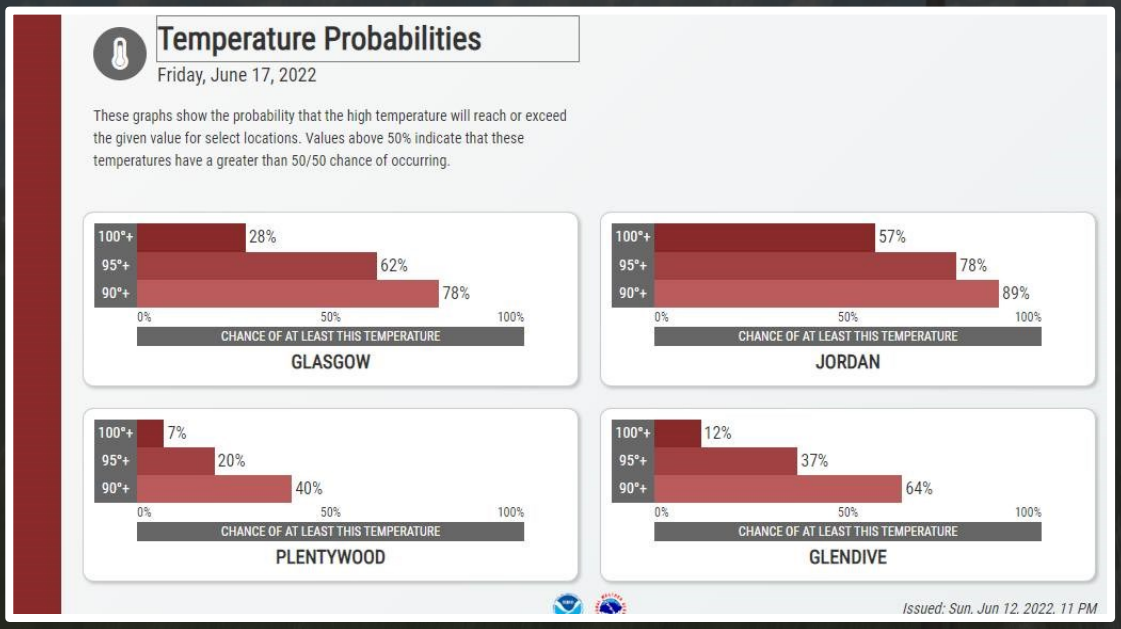

Figure 10: Temperature probabilities graphic shared on social media by NWS Glasgow on June 13, 2022 ahead of an expected heat impact period for NE Montana.

New Question: In this month's newsletter we highlighted some important safety tips when it comes to summertime thunderstorms. However, excessive heat can cause impacts this time of year too if you're outside with prolonged exposure and do not keep safety in mind— which brings us to our next trivia question. What are the potential first signs of heat-related illness? Hint: check out our complete list of heat safety reminders and information **here.**

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