Under the Big Sky e-Letter

August & September 2023

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, those in academia, etc.

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 gauge to get started!

Need a refresher?: Are you new to CoCoRaHS and need help getting started? Or, maybe you need help remembering how to take certain kinds of observations. The **CoCoRaHS webpage** has a number of available slide presentations that you can check out to learn more about these topics and more!

Are you looking to become a new CoCoRaHS observer? Then sign up to **join** today to get started! Just fill out the electronic form and the CoCoRaHS Coordinator from NWS Glasgow will follow up with you to help you get underway.

Fall Training: We'll be doing a facebook live style fall CoCoRaHS training for anyone interested in becoming a new weather observer. Please keep an eye out for coming announcements soon!

Percent of Normal Precipitation (Montana)

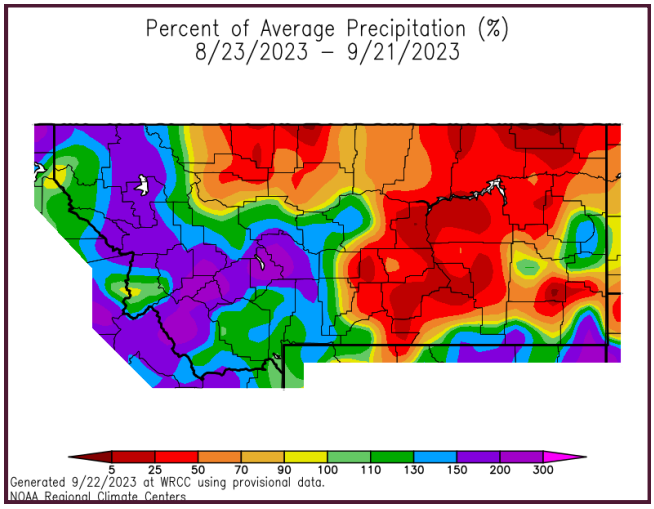

Figure 1: 30-day percent of normal precipitation across Montana.

Avg. Temp Departure from Normal (Montana)

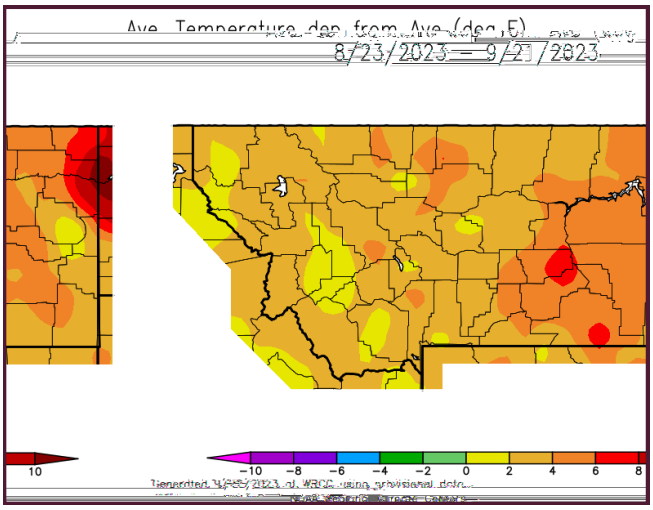

Figure 2: 30-day temperature anomalies across Montana.

Summary: During the last 30 days, most of Montana saw average temperatures that were above normal. Meanwhile, across western Montana, precipitation trended above normal while conditions were quite a bit drier than normal in eastern portions of the state.

Preliminary Hydrologic Summary for July 2023, By Greg Forrester ,Lead Forecaster at NWS Glasgow:

July was a month with temperatures near normal. Temperatures were 2 degrees below to 3 degrees above normal. Glasgow averaged 73.0 degrees which was 1.0 degree above normal.

Precipitation amounts during July were below normal in most areas. Some locations north of the Missouri River and east of Highway 24 had above normal precipitation. The wet spots were Ompheim 12 SE with 4.09 inches, Homestead 5E with 3.82 inches, and Medicine Lake with 3.30 inches. The dry spots were Hoyt with 0.19 inch, Terry with 0.28 inch, and Mildred with 0.31 inch. Glasgow received 0.56 inch which was 29 percent of normal.

Drought returned to Northeast Montana in July with most of Valley and Phillips Counties in moderate drought by the end of the month.

Streamflow on the Missouri and Poplar Rivers was near normal for the entire month. Flow on the Milk River was near normal the first half of the month and fell to below normal by the end of the month. On the Yellowstone River, the flow was above normal for the first three weeks of the month and fell to near normal by the end of the month.

The Fort Peck Reservoir elevation fell to 2230.3 feet during the month. The reservoir was at 76 percent of capacity and 95 percent of the mean pool.

Preliminary Hydrologic Summary for August 2023, By Greg Forrester, Lead Forecaster at NWS Glasgow:

August was a warmer than normal month. Temperatures were 2 to 5 degrees above normal. Glasgow averaged 73.9 degrees which was 2.9 degrees above normal.

Most areas had below normal precipitation amounts during August. A few areas had above normal precipitation. The wet spots were Mildred 7NNW with 4.24 inches, Carlyle 13NW with 3.15 inches, and Hoyt with 2.93 inches. The dry spots were Hinsdale 21SW with 0.08 inch, Malta 7E with 0.47 inch, and Malta 35S with 0.48 inch. Glasgow received 0.53 inch which was 42 percent of normal.

The below normal precipitation increased drought with moderate to severe drought occurring at the end of the month in most areas north of the Missouri River.

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

The Fort Peck Reservoir elevation fell to 2229.4 feet during the month. The reservoir was at 75 percent of capacity and 94 percent of the mean pool.

CPC Outlook:

The Climate Prediction Center released its latest three month outlook for temperature and precipitation for October through December 2023 on September 21, 2023. The outlook favors above normal temperatures for western portions of Montana and equal chances of below normal, normal, or above normal temperatures elsewhere. Meanwhile, odds favor drier than normal conditions through the three month period for the northwest half of the state and equal chances exist for below normal, normal, or above normal precipitation over the southwest half of Montana.

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.

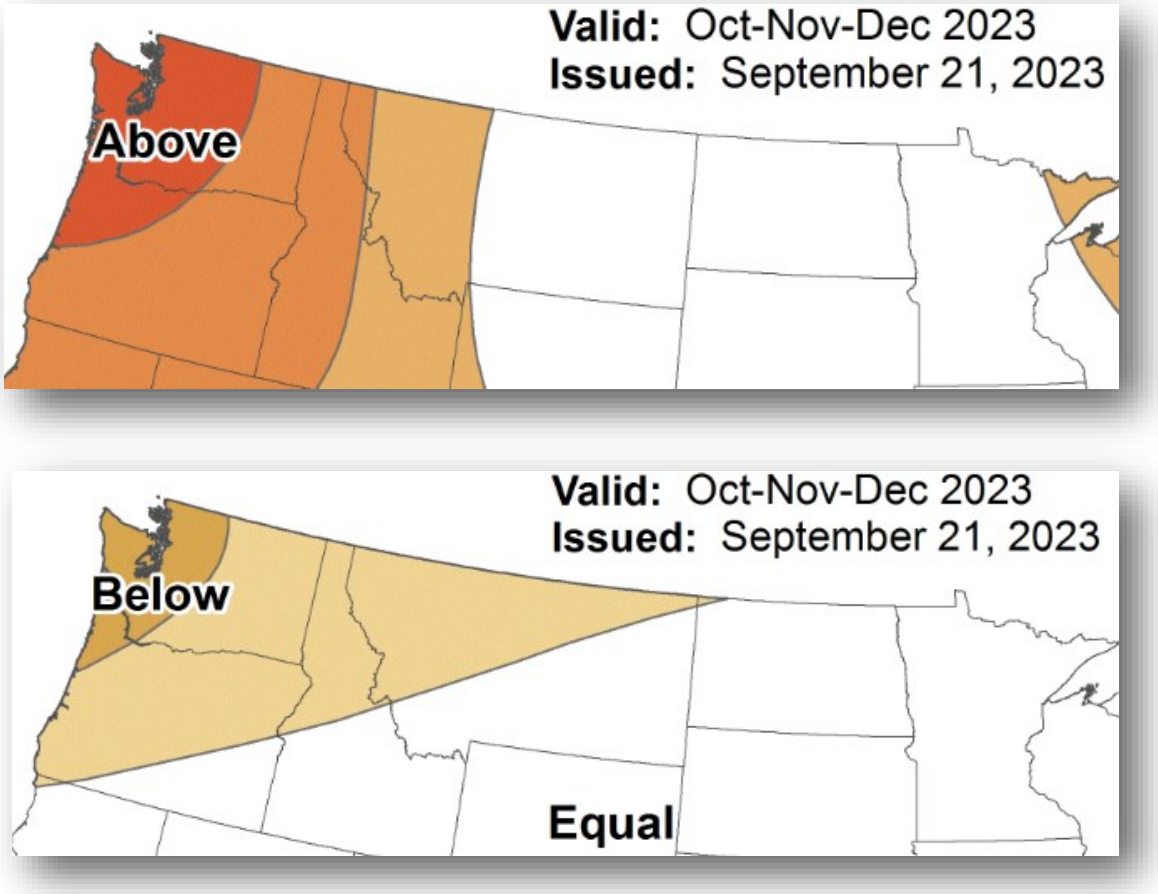

Figure 3: Climate Prediction Center three month outlook (October through December 2023) for temperature (top) and precipitation (bottom).

U.S. Drought Monitor:

The latest U.S. Drought Monitor was released on Thursday September 28, 2023. Drought conditions are making a comeback across the area. Northwestern and portions of north central Montana are under extreme drought conditions. Meanwhile, portions of NE Montana are under moderate to severe drought. The southern half of the state is currently void of drought conditions at this time.

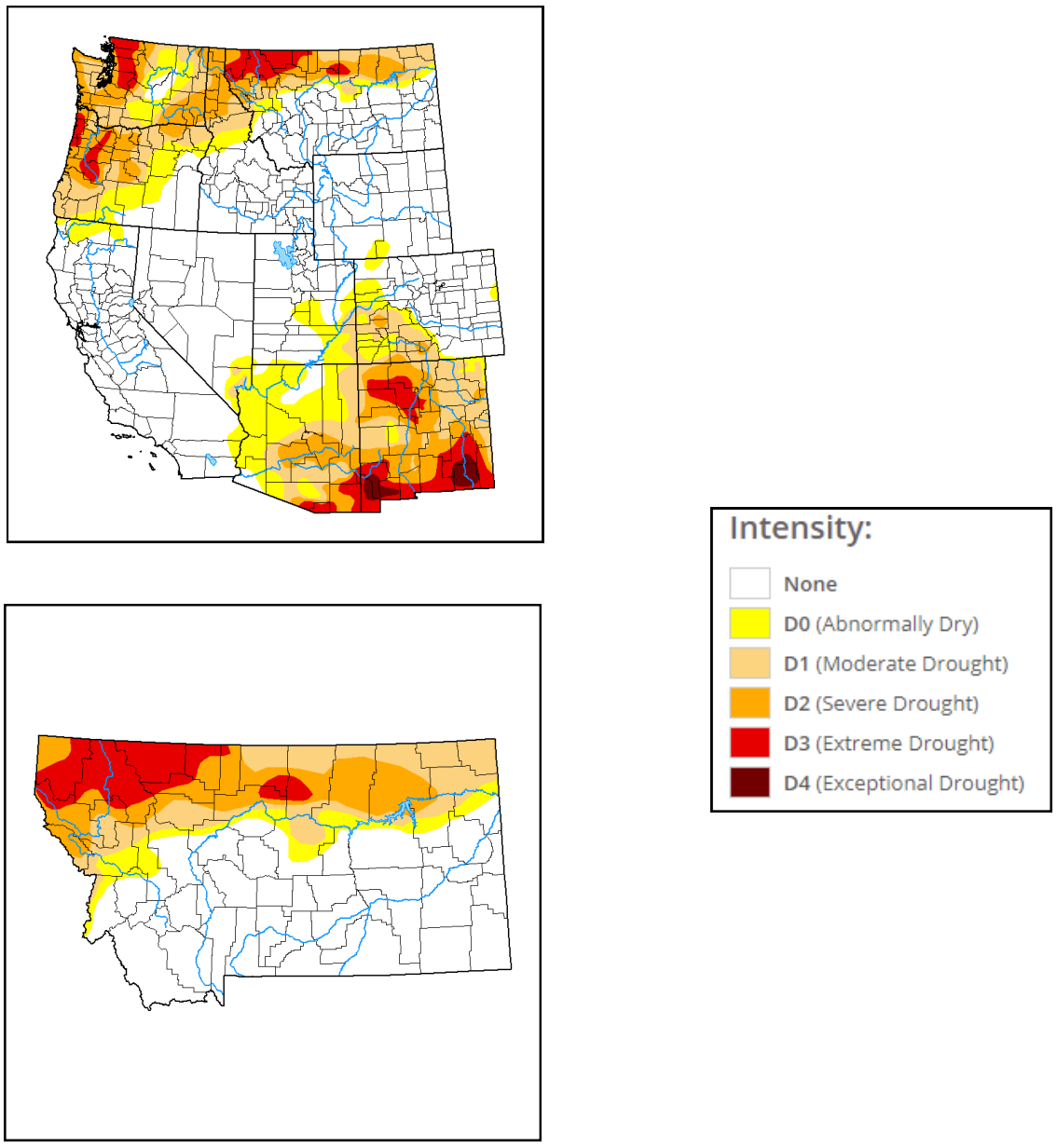

Figure 4: U.S. Drought Monitor updated September 28, 2023.

U.S. & Global Climate Highlights (August): The U.S. & Global climate highlights for August 2023 have been released, the latest month for which data was available. A few points for you to take home are provided below.

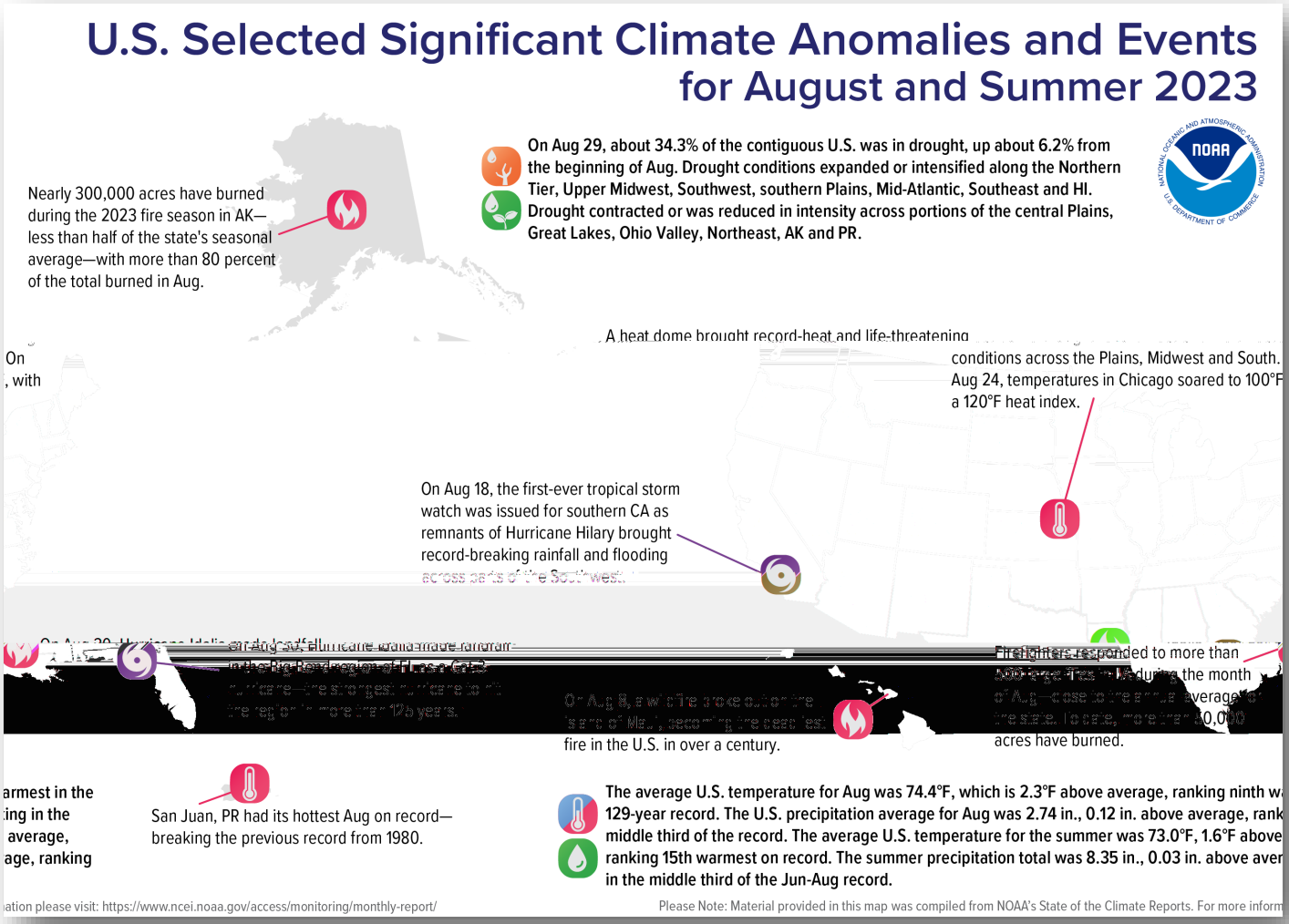

Figure 5: Significant Climate anomalies and events in August 2023.

U.S. Highlights for August 2023

1) The contiguous U.S. average temperature for August 2023 was 74.4 °F, ranking as the nineth warmest on record.
2) The average August 2023 precipitation was 2.74 inches, ranking within the middle third on record.

Global Highlights for August 2023

1) The August 2023 average global surface temperature was the warmest since records began in 1850.
2) El Niño conditions continued during the month of August and there is a 95% chance that this will continue through the Northern Hemisphere winter.

Wildfire Safety Reminders

- As we edge closer to the winter season, the typical wildfire season will come to an end. However, there's still a chance that a dry/windy day this fall can generate fire weather impacts and/or hazards from smoke. Here's some reminders to help keep you and your loved ones safe.

Figure 6: NOAA Infographic with wildfire smoke safety reminders.

Links You May Like:

[Hottest August Ever]

[September ENSO Update]

[Hottest Summer Day]

[State of the Climate 2022]

[Amazon Forests Face Uncertain Recovery]

[NOAA/NASA Air Quality Research Campaign]

COOP Precipitation Totals for July 2023 (Preliminary)

Station	Precipitation	Location
BAYM8	3.34	Baylor
BRDM8	2.15	Bredette
BTNM8	M	Brockton 17 N
BKNM8	0.95	Brockton 20 S
BKYM8	0.59	Brockway 3 WSW
BRSM8	M	Brusette
CLLM8	2.18	Carlyle 13 NW
CIRM8	0.64	Circle
CHNM8	1.34	Cohagen
COM8	0.56	Cohagen 22 SE
CNTM8	0.38	Content 3 SSE
CULM8	2.76	Culbertson
DSNM8	1.57	Dodson 11 N
FLTM8	1.34	Flatwillow 4 ENE
FPKM8	1.41	Fort Peck PP
GLAM8	M	Glasgow 14 NW
GGWM8	0.56	Glasgow WFO
GGSM8	0.97	Glasgow 46 SW
GNDM8	0.48	Glendive WTP
HRBM8	M	Harb
HINM8	M	Hinsdale 4 SW
HNSM8	1.21	Hinsdale 21 SW
HOMM8	3.82	Homestead 5 SE
HOYM8	0.19	Hoyt
JORM8	M	Jordan
LNDM8	1.05	Lindsay
MLAM8	1.02	Malta
MLTM8	0.66	Malta 7 E
MTAM8	0.79	Malta 35 S

Station	Precipitation	Location
MDCM8	3.30	Medicine Lake 3 SE
MLDM8	0.31	Mildred 5 N
MSBM8	M	Mosby 4 ENE
OPNM8	2.35	Opheim 10 N
OPMM8	4.09	Opheim 12 SSE
PTYM8	M	Plentywood
PTWM8	1.41	Plentywood 1 NE
POGM8	1.12	Port of Morgan
RAYM8	0.69	Raymond Border Station
SAOM8	0.58	Saco 1 NNW
SMIM8	0.55	St. Marie
SAVM8	M	Savage
SCOM8	2.64	Scobey 4 NW
SDYM8	1.15	Sidney
SIDM8	0.96	Sidney 2S
TERM8	0.28	Terry
TYNM8	M	Terry 21 NNW
VIDM8	M	Vida 6 NE
WSBM8	M	Westby
WTRM8	1.43	Whitewater
WHIM8	M	Whitewater 18 NE
WBXM8	M	Wibaux 2 E
WTTM8	0.51	Winnett
WNEM8	0.69	Winnett 6 NNE
WNTM8	0.78	Winnett 8 ESE
WITM8	0.40	Winnett 12 SW
WLFM8	0.53	Wolf Point
ZRTM8	1.26	Zortman

COOP Precipitation Totals for August 2023 (Preliminary)

Station	Precipitation	Location
BAYM8	1.08	Baylor
BRDM8	1.06	Bredette
BTNM8	M	Brockton 17 N
BKNM8	0.88	Brockton 20 S
BKYM8	1.59	Brockway 3 WSW
BRSM8	M	Brusette
CLLM8	3.15	Carlyle 13 NW
CIRM8	1.26	Circle
CHNM8	0.81	Cohagen
COM8	M	Cohagen 22 SE
CNTM8	1.05	Content 3 SSE
CULM8	1.11	Culbertson
DSNM8	0.29	Dodson 11 N
FLTM8	1.02	Flatwillow 4 ENE
FPKM8	0.52	Fort Peck PP
GLAM8	0.61	Glasgow 14 NW
GGWM8	0.53	Glasgow WFO
GGSM8	0.58	Glasgow 46 SW
GNDM8	2.64	Glendive WTP
HRBM8	M	Harb
HINM8	M	Hinsdale 4 SW
HNSM8	M	Hinsdale 21 SW
HOMM8	0.87	Homestead 5 SE
HOYM8	2.93	Hoyt
JORM8	M	Jordan
LNDM8	1.08	Lindsay
MLAM8	0.83	Malta
MLTM8	0.47	Malta 7 E
MTAM8	0.60	Malta 35 S

Station	Precipitation	Location
MDCM8	M	Medicine Lake 3 SE
MLDM8	4.24	Mildred 5 N
MSBM8	M	Mosby 4 ENE
OPNM8	M	Opheim 10 N
OPMM8	0.51	Opheim 12 SSE
PTYM8	M	Plentywood
PTWM8	1.21	Plentywood 1 NE
POGM8	0.72	Port of Morgan
RAYM8	M	Raymond Border Station
SAOM8	0.60	Saco 1 NNW
SMIM8	1.19	St. Marie
SAVM8	M	Savage
SCOM8	M	Scobey 4 NW
SDYM8	M	Sidney
SIDM8	1.65	Sidney 2S
TERM8	2.89	Terry
TYNM8	M	Terry 21 NNW
VIDM8	M	Vida 6 NE
WSBM8	M	Westby
WTRM8	0.83	Whitewater
WHIM8	M	Whitewater 18 NE
WBXM8	M	Wibaux 2 E
WTTM8	0.74	Winnett
WNEM8	0.86	Winnett 6 NNE
WNTM8	0.84	Winnett 8 ESE
WITM8	M	Winnett 12 SW
WLFM8	2.24	Wolf Point
ZRTM8	0.94	Zortman

Monthly Trivia:

Last time we asked…

What is a National Weather Service Spot Forecast? Learn more about this important fire weather product in our next newsletter!

Answer: A spot forecast is a National Weather Service product issued, often for a specific location for corresponding wildfires or prescribed burns. The product contains useful forecast information that can be used by fire officials to assist in containment efforts. The product contains a brief forecast summary followed by forecast information for selected time periods. This is a good place for those with interests to have a closer look at trends in wind speed and direction, humidity, or potential thunderstorm and dry lightning risks, among other impacts.

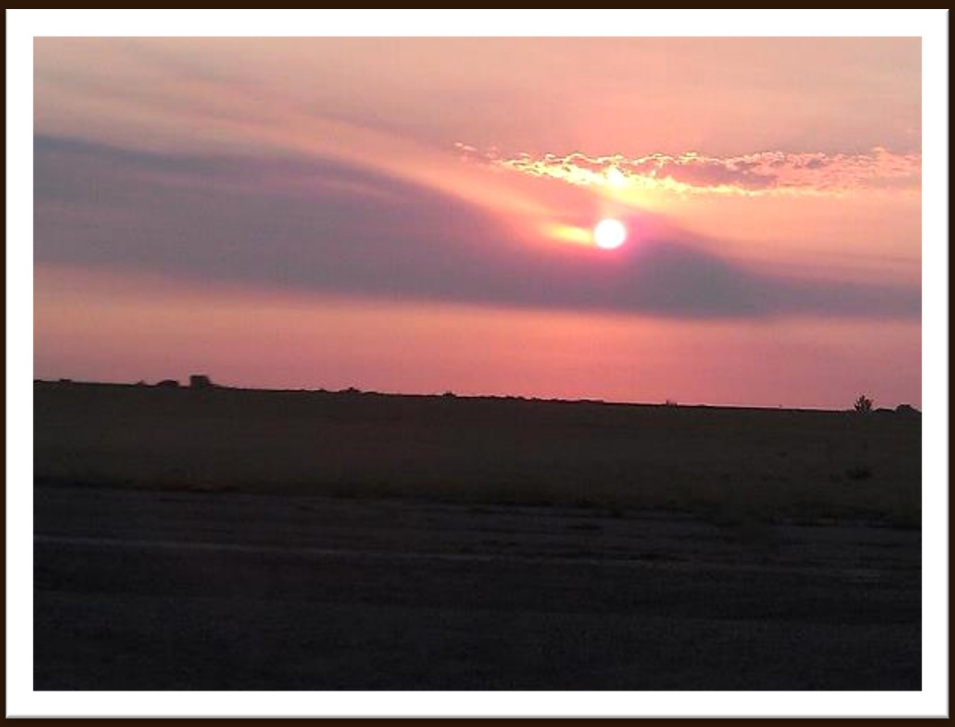

Figure 7: Photo of a smokey sunrise, taken by Tanja Fransen.

New Question: Winter is approaching, and that means the potential for mixed precipitation. Why is it that sometimes during the colder months, precipitation falls as snow versus sleet or freezing rain? Next month we'll cover the science of mixed precipitation!

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