

Under the Big Sky

e-Letter

March 2022



Photo Credit: Greg Forrester

National Weather Service
Glasgow, MT

Staff Changes: Thomas Clemmons, Science Operations Officer at NWS Glasgow, MT has accepted a position as Meteorologist In Charge at the forecast office in Elko, NV. He will be starting there at the end of April. We're thankful for his service and time in Big Sky country, and wish him well as he moves forward into his next exciting chapter!



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**From the Desk of Tanja Fransen, Meteorologist in Charge NWS Glasgow
Ruby Mountains and Sagebrush in Northern Nevada**

Hello everyone! It certainly has been nice to see some warmer days, but I wish it brought some snow or rain with it too! I was recently in Elko, NV for a month, filling in as the supervisor there, and it snowed several times. The first day it was almost 3 inches, all gone when I left the office at the end of the day! It was a great trip, with a staff as dedicated as that here in Glasgow and while they have mountains, and the sagebrush were bigger than some vehicles, it felt a lot like being here, friendly people and ag-centric, with a mining industry thrown in as well.

We've had some updates and changes around our office to share. This week we have a team here from Virginia installing our new upper air balloon and radiosonde system. The new instruments (radiosondes) transmit at a different frequency, and are much smaller. There's a lot less we have to do to get them ready to launch twice a day as well. The team was able to get out to Fort Peck Dam after Day 1 was done, see the Lewis and Clark Milk River Overlook and enjoy a meal (including walleye finger appetizers) out at the lake. They really loved seeing some of the area, something they don't often do on their deployments.

Lastly, and most importantly, we have had quite a few staff changes since last Fall. We had two lead forecasters get promoted to Warning Coordination Meteorologists in Hanford, CA and Billings, MT. That allowed us to promote two meteorologists into lead forecaster positions, Brad Mickelson, and Rich Maliawco. We are hiring our summer student from last year as a full time meteorologist soon (Jacob Zanker will be graduating from UND with his masters in a few weeks), and we are hiring two more as well. They will be on station by Memorial Day (we hope!). And our Science and Operations Office, Tom Clemmons, is moving to Elko, NV to be the new Meteorologist in Charge there, so we'll have a management vacancy soon as well. It's great to see people you work with getting further in their careers, but it also means we'll have some greener talent this summer. Be patient if you call for a forecast, they will be busily learning counties, towns and the climatology of the area! :)

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!

Stay alert for updates on our Spring CoCoRaHS Training in the near future! We will be focusing on warm season reporting where you'll learn how to submit rain and hail reports.

Percent of Normal Precipitation (Montana)

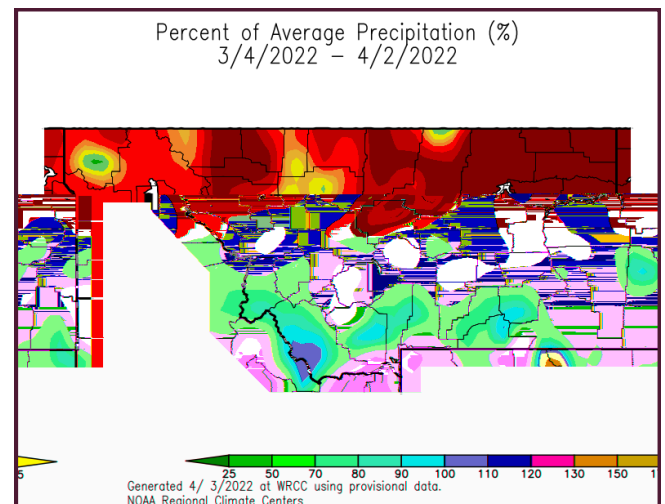


Figure 1: 30-day percent of normal precipitation across Montana.

Avg. Temp Departure from Normal (Montana)

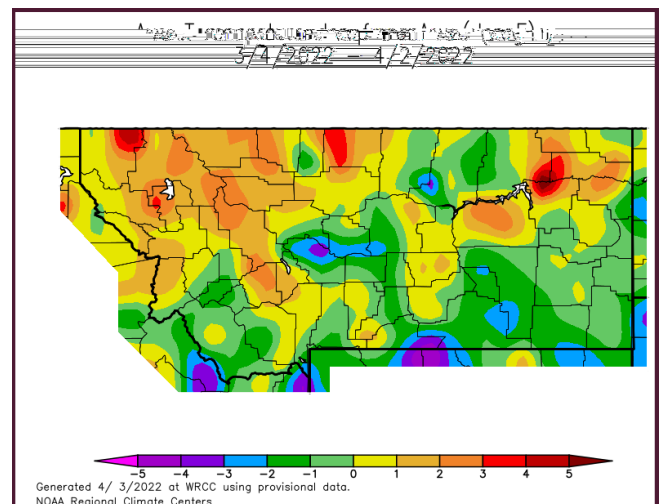


Figure 2: 30-day temperature anomalies across Montana.

Summary: Precipitation has trended well below average as a percent of normal across much of MT in the last month. In fact, most of NE Montana has had 25% of normal precipitation or less over the last 30 days. Temperatures have been a bit above normal for the northern half of the state, and near normal across the southern part of Montana.

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

It was a dry month for Northeast Montana. The wet spots for the month were Zortman with 0.68 inch, Hinsdale 4SW with 0.31 inch, and Port of Morgan with 0.30 inch. The dry spots were Brockway with 0.01 inch, Medicine Lake with 0.02 inch, and Malta 7E and Fort Peck with 0.03 inch. Glasgow received 0.11 inch which was 31 percent of normal. Temperatures varied from 1 to 6 degrees above normal across the region. Glasgow averaged 22.7 degrees which was 4.0 degrees above normal.

The dry weather allowed the severe to exceptional drought to continue across the area.

The Milk, Poplar, Yellowstone, and Missouri Rivers were all frozen during the month. Streamflow was not available for the month.

The Fort Peck Reservoir elevation fell to 2222.7 feet during the month. The reservoir was at 68 percent of capacity and 85 percent of the mean pool.

CPC Three Month Outlook:

The Climate Prediction Center released its latest three month outlook on March 17, 2022 for the months of April through June 2022.

The outlook calls for odds favoring below normal temperatures April through June for the Pacific Northwest, extending into Northwest and North Central Montana. Southern and Eastern Montana have equal chances for below normal, normal, or above normal temperatures. Precipitation is favored to trend below normal over Southern Montana. Meanwhile, look for equal chances for below normal, normal, or above normal precipitation across the northern half of the state.

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.

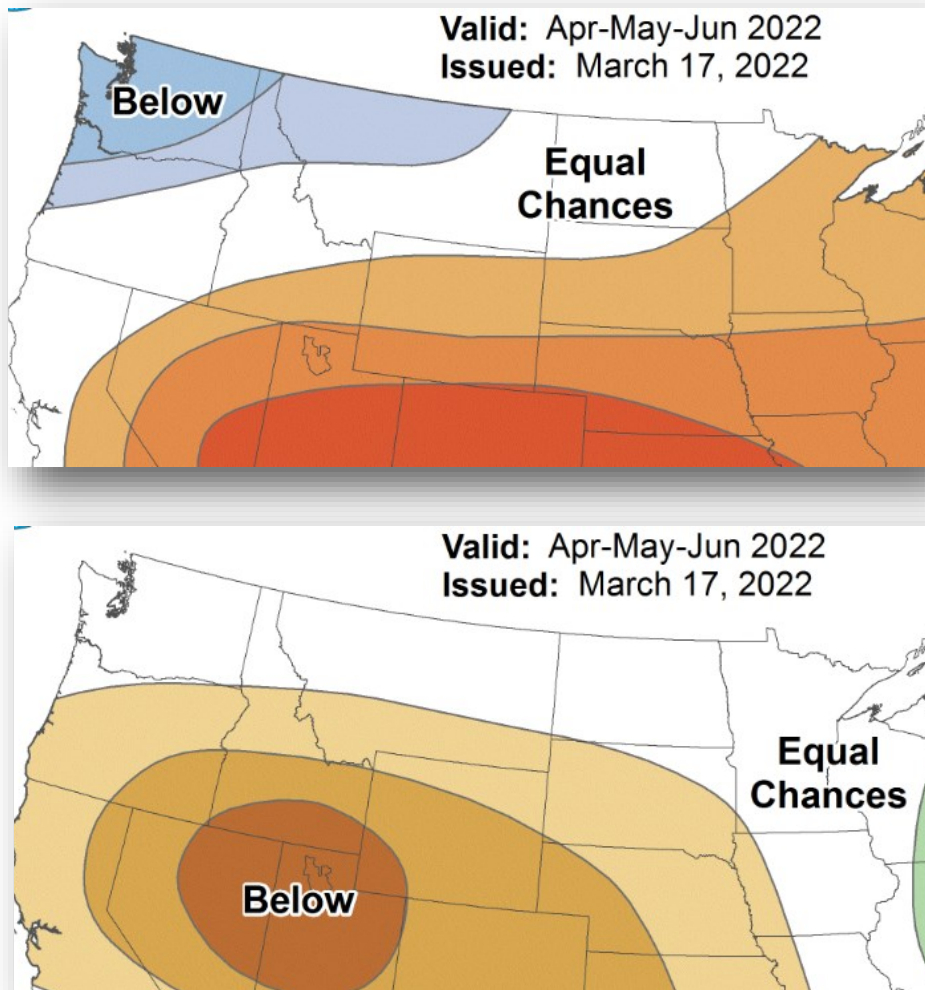


Figure 3: Climate Prediction Center three month temperature (top) and precipitation (bottom) outlook for April through June 2022.

U.S. Drought Monitor:

The latest U.S. Drought Monitor was released on Thursday April 7, 2022. Severe to extreme drought continues across much of Montana with a few areas of exceptional drought across central portions of the state. Only far NW parts of the state are void of any drought conditions at this time. This outlook is updated each Thursday. Please feel free to check out the latest [here](#).

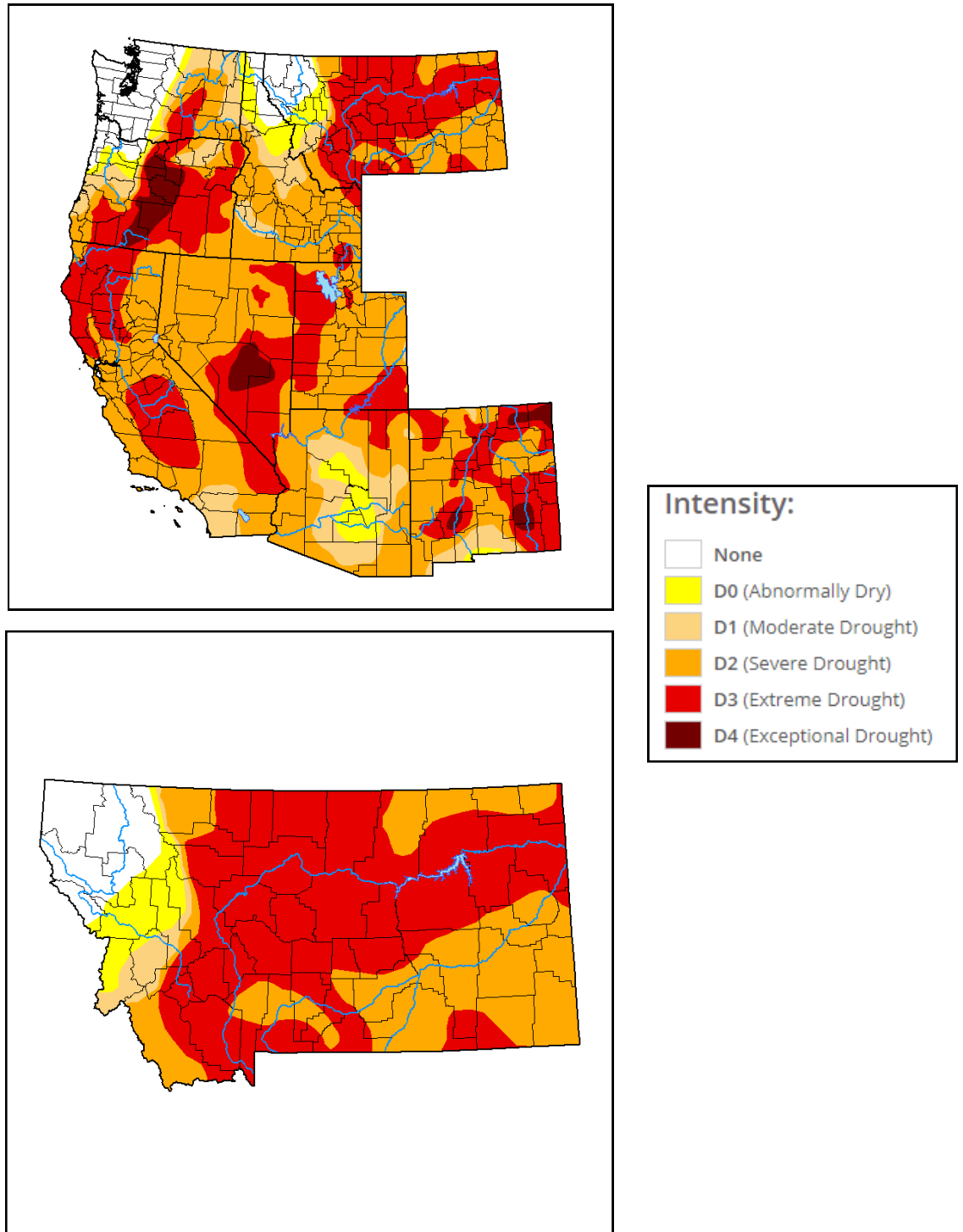


Figure 4: U.S. Drought Monitor updated April 7, 2022.

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

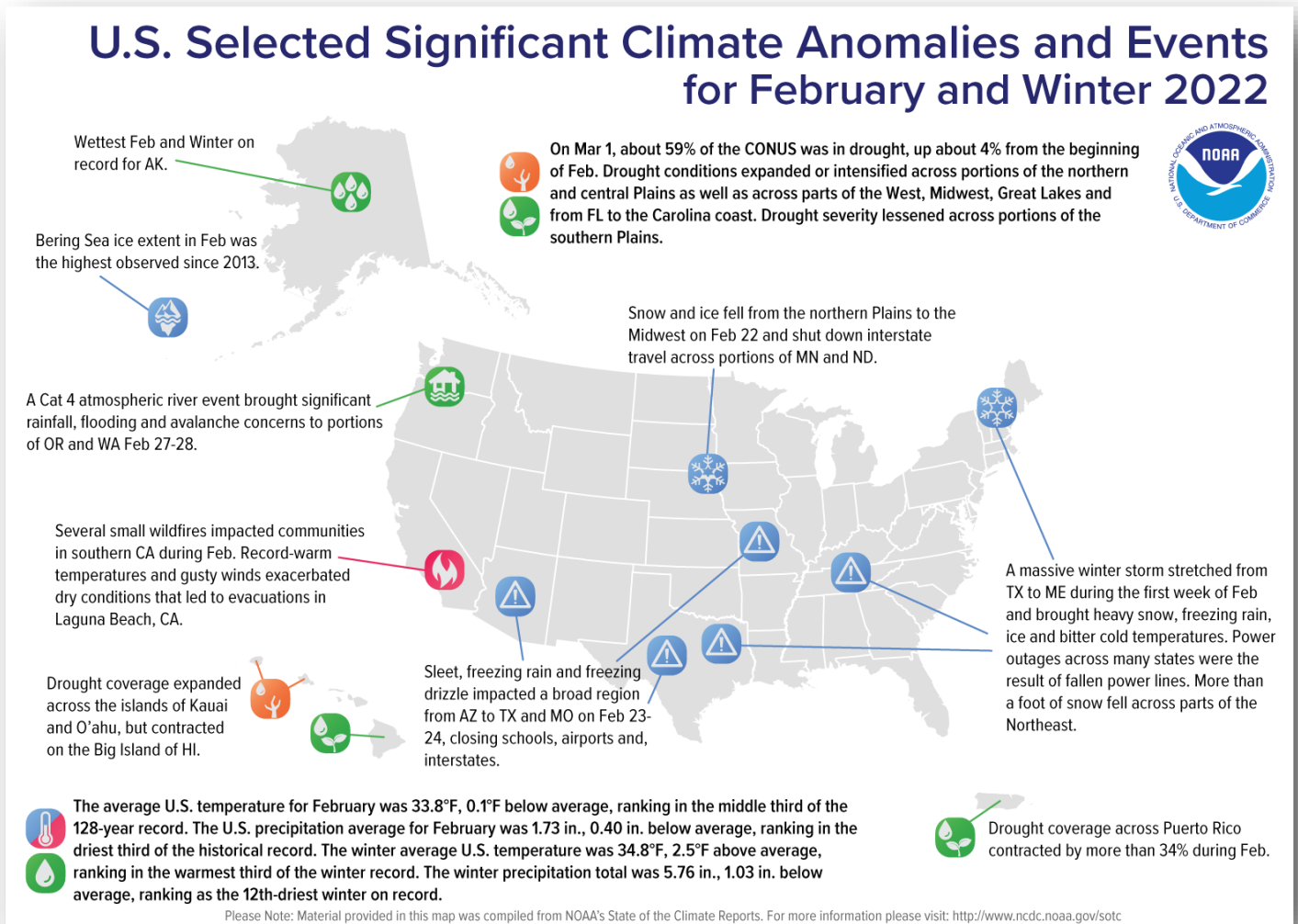


Figure 5: Significant Climate anomalies and events in February 2022

U.S. Highlights for February 2022

- 1) The contiguous U.S. average temperature for January 2022 was 33.8 °F, ranking in the middle third on record.
- 2) The average February precipitation total for the contiguous U.S. came in at 1.73 inches, within the driest third of the period of record.

Global Highlights for February 2022

- 1) The February 2022 global surface temperature came in as the seventh highest for January on record.
- 2) February 2022 was the 46th February in a row and the 446th consecutive month with temperatures above the 20th century average.
- 3) Precipitation anomalies varied considerably around the world in January 2022, which is fairly typical.

Boating Safety on Fort Peck Lake

- ◆ Spring has sprung! Summer will be here before you know it, and that means it'll be time to head out on the lake once again. But, before you do, keep [boating safety](#) in mind. You can always get the latest forecast [here](#).



Figure 6: Boating safety graphic from The National Safe Boating Council as they partnered with the National Weather Service.

Links You May Like:

[ENSO Update](#)

[Assessing The 2021-2022 Winter Outlook](#)

[Climate Change and Atmospheric Rivers](#)

[ENSO and volcanism](#)

[Dust and Icy Cirrus Clouds](#)

COOP 2021 Precipitation Totals for February 2022 (Preliminary)

Station	Precipitation	Location
BAYM8	M	Baylor
BRDM8	0.20	Bredette
BTNM8	M	Brockton 17 N
BKNM8	0.36	Brockton 20 S
BKYM8	0.01	Brockway 3 WSW
BRSM8	0.20	Brusette
CLLM8	0.27	Carlyle 13 NW
CIRM8	0.34	Circle
CHNM8	0.10	Cohagen
COM8	0.07	Cohagen 22 SE
CNTM8	M	Content 3 SSE
CULM8	0.06	Culbertson
DSNM8	0.12	Dodson 11 N
FLTM8	0.26	Flatwillow 4 ENE
FPKM8	0.03	Fort Peck PP
GLAM8	0.05	Glasgow 14 NW
GGWM8	0.11	Glasgow WFO
GGSM8	0.28	Glasgow 46 SW
GNDM8	0.27	Glendive WTP
HRBM8	M	Harb
HINM8	0.31	Hinsdale 4 SW
HNSM8	0.09	Hinsdale 21 SW
HOMM8	0.12	Homestead 5 SE
HOYM8	0.08	Hoyt
JORM8	M	Jordan
LNDM8	0.20	Lindsay
MLAM8	0.06	Malta
MLTM8	0.03	Malta 7 E
MTAM8	M	Malta 35 S

Station	Precipitation	Location
MDCM8	0.02	Medicine Lake 3 SE
MLDM8	0.11	Mildred 5 N
MSBM8	0.43	Mosby 4 ENE
OPNM8	M	Opheim 10 N
OPMM8	0.12	Opheim 12 SSE
PTYM8	0.26	Plentywood
PTWM8	0.07	Plentywood 1 NE
POGM8	0.30	Port of Morgan
RAYM8	0.06	Raymond Border Station
SAOM8	0.11	Saco 1 NNW
SMIM8	0.03	St. Marie
SAVM8	M	Savage
SCOM8	0.05	Scobey 4 NW
SDYM8	0.21	Sidney
SIDM8	0.20	Sidney 2S
TERM8	0.03	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	0.23	Winnett
WNEM8	0.18	Winnett 6 NNE
WNTM8	0.43	Winnett 8 ESE
WITM8	0.46	Winnett 12 SW
WLFM8	0.06	Wolf Point
ZRTM8	0.68	Zortman

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BKYM8	0.01	Brockway 3 WSW
BRSM8	M	Brusette
CLLM8	0.38	Carlyle 13 NW
CIRM8	0.16	Circle
CHNM8	0.06	Cohagen
COM8	M	Cohagen 22 SE
CNTM8	M	Content 3 SSE
CULM8	0.01	Culbertson
DSNM8	M	Dodson 11 N
FLTM8	0.11	Flatwillow 4 ENE
FPKM8	0.16	Fort Peck PP
GLAM8	0.34	Glasgow 14 NW
GGWM8	0.26	Glasgow WFO
GGSM8	0.51	Glasgow 46 SW
GNDM8	0.38	Glendive WTP
HRBM8	M	Harb
HINM8	M	Hinsdale 4 SW
HNSM8	0.48	Hinsdale 21 SW
HOMM8	0.01	Homestead 5 SE
HOYM8	0.18	Hoyt
JORM8	M	Jordan
LNDM8	0.11	Lindsay
MLAM8	0.33	Malta
MLTM8	0.58	Malta 7 E
MTAM8	M	Malta 35 S

Station	Precipitation	Location
MDCM8	0.08	Medicine Lake 3 SE
MLDM8	0.34	Mildred 5 N
MSBM8	M	Mosby 4 ENE
OPNM8	M	Opheim 10 N
OPMM8	M	Opheim 12 SSE
PTYM8	0.07	Plentywood
PTWM8	M	Plentywood 1 NE
POGM8	0.45	Port of Morgan
RAYM8	M	Raymond Border Station
SAOM8	0.14	Saco 1 NNW
SMIM8	0.07	St. Marie
SAVM8	M	Savage
SCOM8	0.02	Scobey 4 NW
SDYM8	0.18	Sidney
SIDM8	0.06	Sidney 2S
TERM8	0.22	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	0.11	Winnett 6 NNE
WNTM8	M	Winnett 8 ESE
WITM8	M	Winnett 12 SW
WLFM8	0.04	Wolf Point
ZRTM8	0.75	Zortman

Monthly Trivia:

Last time we asked...

Spring is coming, and that may mean an increased risk of area river flooding due to snowmelt, ice jams, rainfall, or some combination of factors. This month we focus on ice jam awareness, since two-thirds of ice jams in Montana occur in February and March. We ask: How can you best monitor for ice jams using NWS products and services?

Answer: First, have a way to receive any flash flood warnings that are issued, such as a NOAA Weather Radio. You can monitor the latest hydrologic conditions [here](#). Check out what a hydrograph will look like when an ice jam is occurring in the image below. For more ice jam information and safety recommendations, check out the [Montana River Ice and Ice Jam Awareness Page](#).

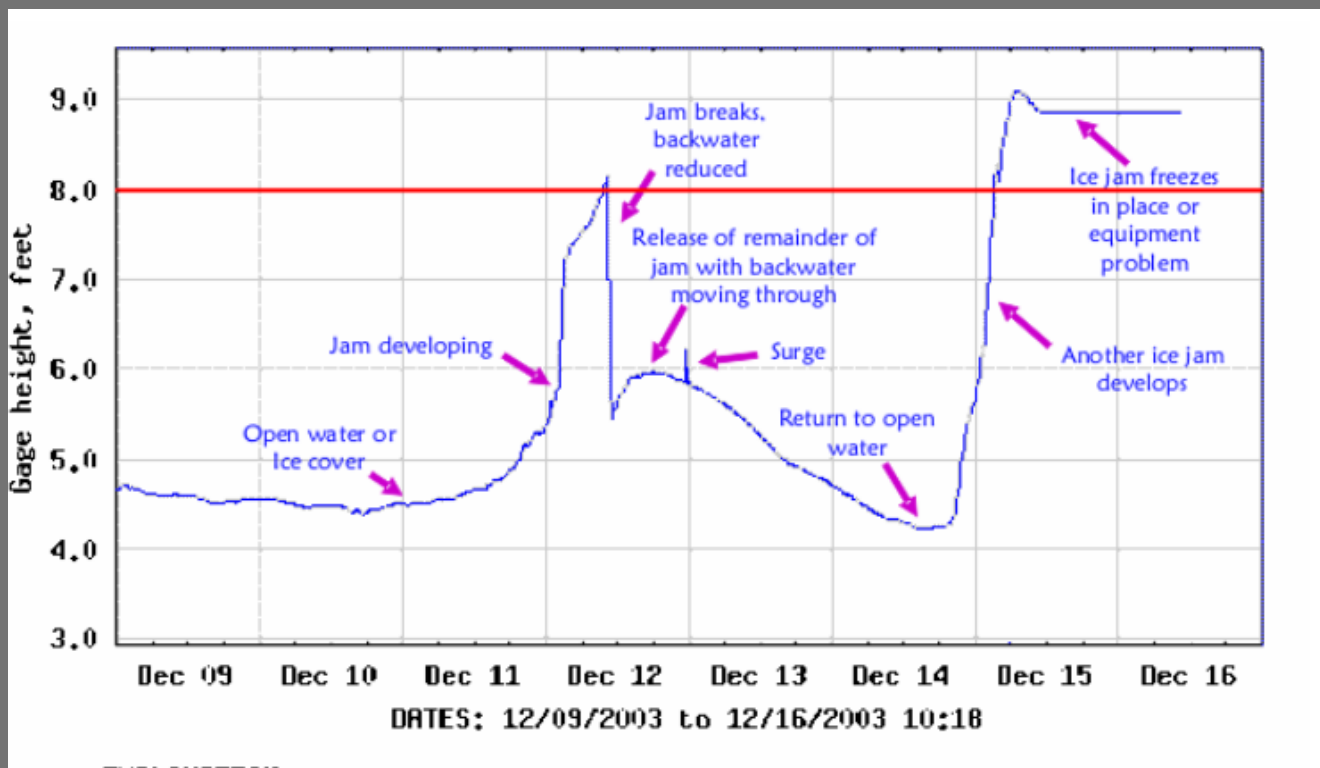


Figure 7: Sample of hydrograph during the ice jam cycle.

New Question: With warmer weather on the way, that means more time spent outdoors. As people spend more time outside, exposure to the sun's UV radiation increases. This month, we ask: how do clouds, elevation, surface type, and aerosols affect UV radiation? We'll discuss the science here as well as how you can protect yourself from the harmful effects of the sun in the next newsletter.

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