

TOP 5 WEATHER EVENTS OF 2019

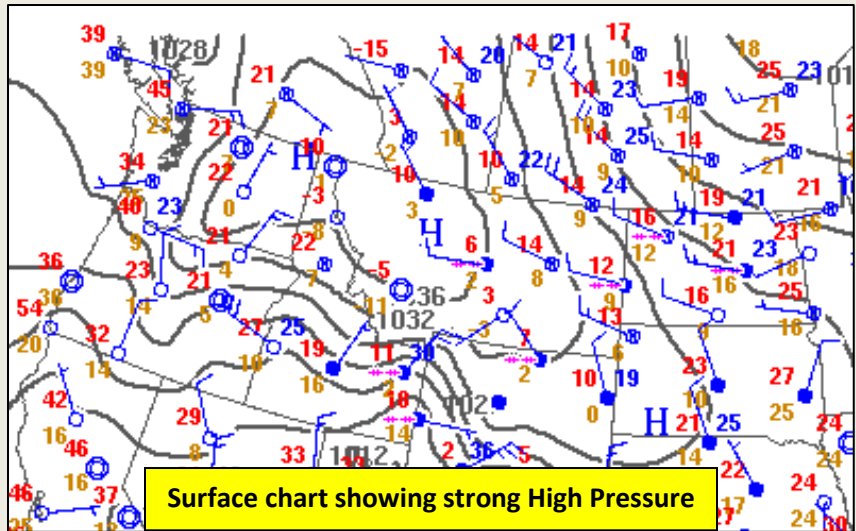


National Weather Service – Billings, MT

These weather events were voted upon by several of our meteorologists and deemed the five most intriguing in our forecast area. Obviously, there were other impactful weather events that occurred throughout the course of the year. We apologize if there were some that you felt were more meaningful and not on this list. Enjoy!

#5: October 27-29: Cold Snap

This was a remarkably cold stretch of weather for late October as strong high pressure built out of Canada and across the northern Rockies. Coldest temperatures in our region were along the western foothills, but the cold air extended westward to include all of Montana. Livingston's low temperature of -12° on the 29th was a record for October, and the high was only 12° (above zero). Billings' low of 0° and high of 16° on the 29th were each daily records. Sheridan's high of only 14° on the 29th was also a daily record. A modest snow cover along with the cold air mass helped to drive temperatures down to these early season record levels. This



October 29 Low Temperatures	
Wilsall	-16°
Springdale	-14°
Livingston	-12°
Huntley	-12°
Melville	-11°
Nye	-7°
Dayton	-7°
Big Timber	-5°
Sheridan	-5°
Joliet	-4°
Ryegate	-2°
Red Lodge	-1°
Billings	0°

concluded what was a very cold month overall, with temperatures ranging from 6 to 9 degrees below normal, though it did moderate a bit by Halloween. It was the coldest October on record at Miles City, 2nd coldest at Livingston and Billings, and 3rd coldest at Sheridan.

#4: December 13-14: Dense Fog at Billings Airport

The combination of a nearly stationary front just west of Billings, light upslope winds, some snow cover, and very short days, produced an extended period of fog in the



Fog on the Rims (Billings Gazette)

Billings area. The ridges surrounding the city were obscured, while the Yellowstone River valley itself was mostly fog-free. Billings Logan Airport reported visibility of a quarter mile or less for a whopping 20 consecutive HOURS, from 3 pm on the 13th through 11 am on the 14th. It was the longest period of dense fog at Billings that our

NWS meteorologists could remember, and had significant impacts to aviation. Many flights were delayed or cancelled due to the very poor visibility. Also, I-90 between Arrow Creek and Hardin was closed as the poor visibility and icy roads resulted in multiple accidents near Arrow Creek Hill.



Fog on the Rims, seen from NW Billings

#3: May 26-27: Flash Flooding

A stationary thunderstorm over rural southern Yellowstone County (south-southeast of Billings) produced an unknown amount of very heavy rain over a 3-hour period during the evening of Sunday May 26. Making matters worse for forecasters at WFO



Woody Creek south of Hardin (Rhett Gibson)

Billings was the fact that the local radar was inoperable at the time. Surrounding radars estimated the rainfall to be up to 5 inches during this short time, but due to distance from other radars this value was likely too low, and 6 to 7 inches could be closer to the truth. As a result of its torrential rainfall, this storm produced significant flash flooding

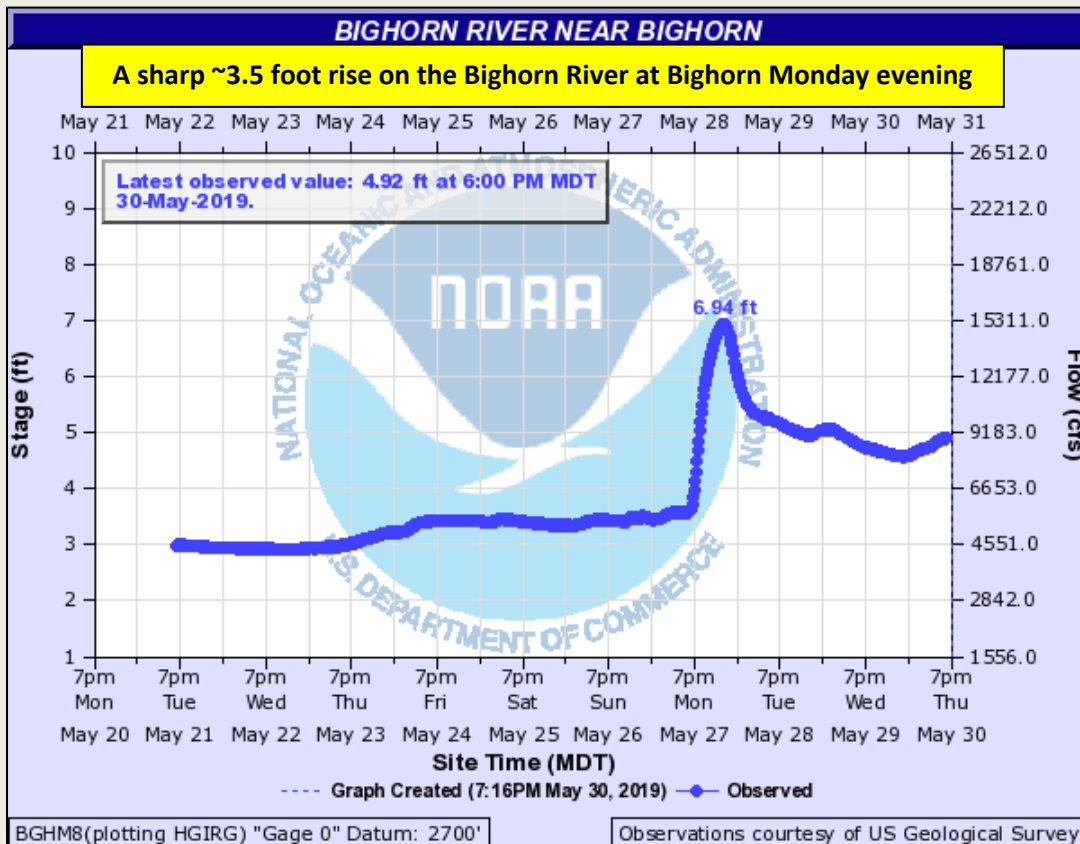


Fly Creek east of Billings (Nicole Molina Champlin)

during the evening of the 26th and through the 27th along Fly Creek to its confluence with the Yellowstone River at Pompey's Pillar, and Woody Creek to its confluence with the Bighorn River. A surge of high water was reported to

put much of the town of Pompey's Pillar under water by late afternoon on the 27th, far removed from the actual storm. Due to the rural locations impacted, reports of damage were scarce, but there were large culverts dislodged along Woody Creek, and very high water was seen under the bridges of Fly Creek along I-90 and Old Highway 87. Over the next several days, river gauges showed a rapid rise of approximately 10,000 to 12,000

cubic feet per second along the Yellowstone River from Forsyth through Sidney...almost entirely from this one storm!

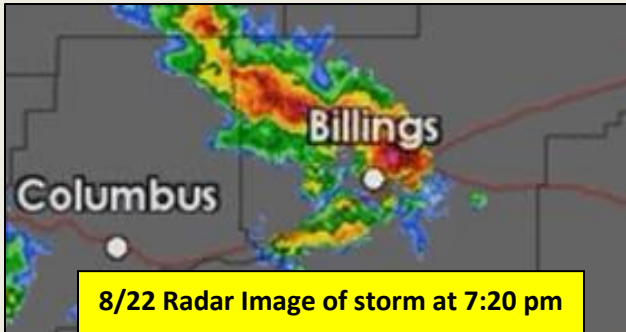


#2: August 11 & 22: Billings Hail Events

On August 11, an intense severe thunderstorm produced large hail (golf ball to baseball size) and damaging winds (peak gust of 71 mph at the airport) in Billings. Areas from Molt and Acton to Shepherd, Huntley and Worden were impacted by this storm. Impacts were widespread, and included downed large trees and damage to vehicles and homes. A few of the more significant damage reports:

- Shepherd schools had roof damage and there was extensive damage to the bus barn. Also, all of the west-side windows were broken due to wind-driven hail.
- At the Billings airport, Frontier and Alaska airlines had planes damaged by hail.
- Downed power lines resulted in a power outage to about 1500 residents.
- The storm destroyed 1/3 of the barley and wheat crop, approximately \$400,000 worth, at a farm in Molt.
- 11,000 to 13,000 waterfowl and wetland birds were killed or maimed at the Big Lake Management Area west of Molt. An estimated 20-30% of the birds at the lake were harmed.





On the 22nd of August, the 2nd severe thunderstorm in less than two weeks caused significant wind and hail damage in Billings, along with torrential rainfall, especially in the Heights with this storm. The storm intensified rapidly over the metro area as it interacted with an existing surface boundary. The Billings airport recorded a peak wind gust of 67 mph. Wind driven large hail (up to golf ball size) broke windows and damaged cars, roofs and siding. Street flooding occurred due to the very heavy rain. The Billings airport set a daily precipitation record with 0.97 inches.

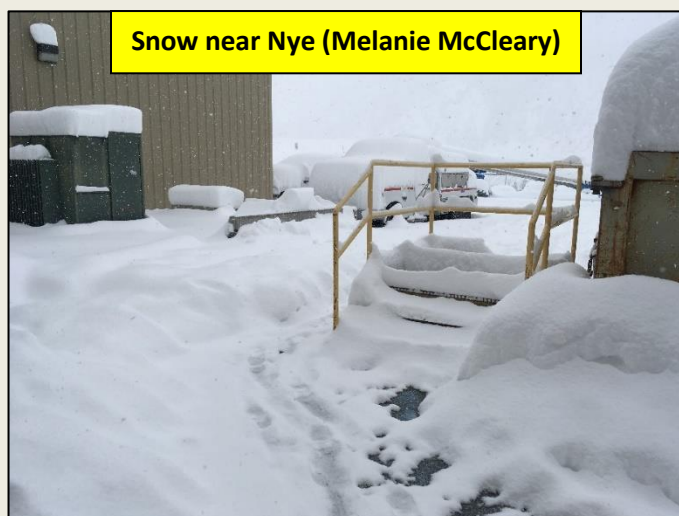


#1: February 3 – March 6: Snow & Very Cold

It was another in a series of memorable winters, and the brutal winter conditions that existed in the late winter of 2018-19 made the top spot on our list! January and the first two days of February were actually quite mild, then things changed with the arrival of a strong Canadian cold front on the evening of February 2. This signaled the beginning of a cold snap that would last through early March. In addition to the cold, there were several snow events, and snow cover piled up across the region during this 5-week period. The cold and snowy conditions adversely impacted travel conditions and agriculture. Here are some of the more significant weather events from February through the middle of March.

- On February 3-4, the initial cold surge brought a general 1-3 inch snowfall (locally higher) and the coldest air yet of the 2018-19 season. Some high temperatures on the 4th included: Melville -9°, Red Lodge -5°, Baker -4°, and Billings -3°. The high temperature at Billings on February 2nd was a balmy 52°.
- From February 16-18, heavy snow fell in southeast Montana. Amounts included: Baker 14 inches, Broadus area 8-14 inches, Miles City 12 inches, Ollie 12 inches, Ismay 11 inches, Ridge 9 inches.
- From February 23-28, several snow events occurred. Mystic Lake received a whopping 70 inches of

February 3 – March 6 Total Snowfall (inches)	
Mystic Lake	94.1
Melville 4W	66.1
Silver Gate	61.5
Livingston	54.7
McLeod	49.0
Rapelje	49.0
Big Timber	46.5
Judith Gap	44.0
Fishtail	42.2
Columbus	36.0
Joliet	31.8
Billings Airport	31.0



snow during this 6-day period. Other totals: McLeod 36 inches, Melville 33 inches, Fishtail 33 inches, Livingston 29 inches, Big Timber 29 inches, Columbus 24 inches, Billings 15 inches.

March 3-4 Low Temperatures (°F)	
Brandenberg	-41°
Mizpah	-40°
Pompey's Pillar 15N	-39°
Hysham	-36°
Broadus	-36°
Busby	-34°
Columbus	-33°
Livingston	-32°
Joliet	-32°
Miles City	-31°

- A frigid air mass settled over the region on March 3-4. Livingston set an all-time March record low with -28° on the 3rd, then then broke the record again with -32° on the 4th. Miles City also set a record low for March with -31° on the 3rd.
- By the third week in March, as temperatures finally moderated, the combination of lower elevation snow melt, frozen ground promoting run off, and ice jams on rivers and streams caused some low land flooding across much of the region.



Below is a summary of temperatures at our four main climate stations from February 3 through March 6. The average temperature at Miles City was approximately 27° below normal. As you can see in the table below, this specific period of time was the coldest on record at each station!

Feb 3 – Mar 6 Stats	Average Temp (°F)	Departure from Normal	Rank
Billings	5.0°	-26.2°	Coldest on Record
Livingston	6.8°	-24.3°	Coldest on Record
Miles City	-1.2°	-27.3°	Coldest on Record
Sheridan	9.1°	-19.2°	Coldest on Record

It was another snowy February at Billings, the 3rd snowiest on record in fact. The top three snowiest Februaries have all occurred in the past six years.

Billings Top 6 Snowiest Februaries	
2014	37.0 inches
2018	32.4 inches
2019	29.4 inches
1978	22.4 inches
1955	22.3 inches
The top three have occurred in the past six years!	

Thanks for reading. We wish everyone a happy 2020!