

# TOP 5 WEATHER EVENTS OF 2018



## **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: July 17: Severe Weather & Flooding at Billings

The most memorable thunderstorm in Billings in 2018 made number five on our list. Large hail along with strong winds caused damage to numerous vehicles on the west end. The hail ranged from pea to golf ball size, with the largest hail falling along a



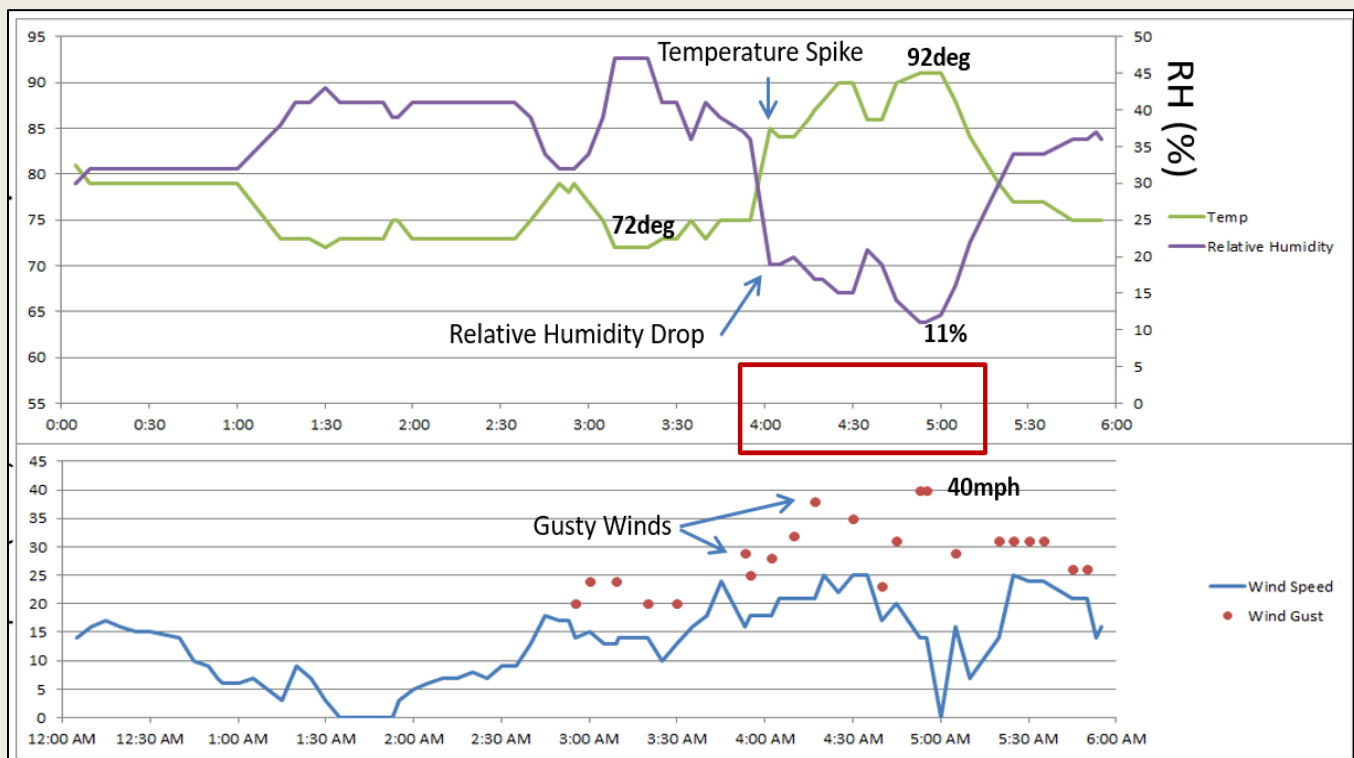
narrow swath on the west side of the city. A peak wind gust of 67 mph was measured by a storm spotter west of the airport. The storm also produced very heavy rain, and the NWS office on the west end of Billings received 1.11 inches of rain in about 30 minutes (the airport only saw 0.33 inches). The copious hail (mainly small) combined with the heavy rain

clogged storm drains across parts of the city. Several intersections and parking lots became flooded with at least a foot of water.



# #4: August 2: Heat Burst

Between 4:00 and 5:30 am, Billings experienced a temperature spike called a Heat Burst. The temperature (green line) jumped from the lower 70s to a peak of 92° at 4:52 am. The relative humidity (purple line) dropped to just 11 percent. The culprit was downdraft winds from decaying overnight thunderstorms to the west of Billings that pushed wind gusts to 40 mph at the airport. A wind gust of 56 mph was reported at the MT DOT weather station on the I-90 Yellowstone River Bridge. Tree damage was reported in the Billings Heights from these strong gusts. In addition, a grass fire started just northwest of the city, burning about 320 acres during the early morning hours. For more information on Heat Bursts: <https://www.weather.gov/abq/localfeatureheatburst>





### #3: May 31: Damaging Hail & Flooding at Roundup

The most damaging hail storm of 2018 occurred during the late afternoon in Roundup



*Photo courtesy of Sanford*

on May 31<sup>st</sup>. Golf ball (1.75") to tennis ball (2.50") size hail along with strong wind gusts (around 60 mph) caused widespread significant damage, and a damage survey conducted by NWS Billings found that a majority of homes and businesses within Roundup experienced some type of hail damage. This included windows, siding and fences. Six county buildings as well as the hospital

and high school were damaged. Also, vehicles and campers across town were dented or had broken windshields, and trees were stripped of leaves. Heavy rain (over 3" was measured at a nearby weather station) produced flash flooding in the town and along the Musselshell River. Parts of Highway 87 had debris washed over the road from floodwaters. Bender Road was washed out between Log Cabin Road and County Road #4. The Musselshell River at Roundup peaked at about 11.5 feet, a foot and a half above flood stage, and the 6<sup>th</sup> highest crest on record. One home was evacuated due to it being surrounded by floodwaters.



*Photo courtesy of Goffena*

## #2: June 28: Carter County Tornado

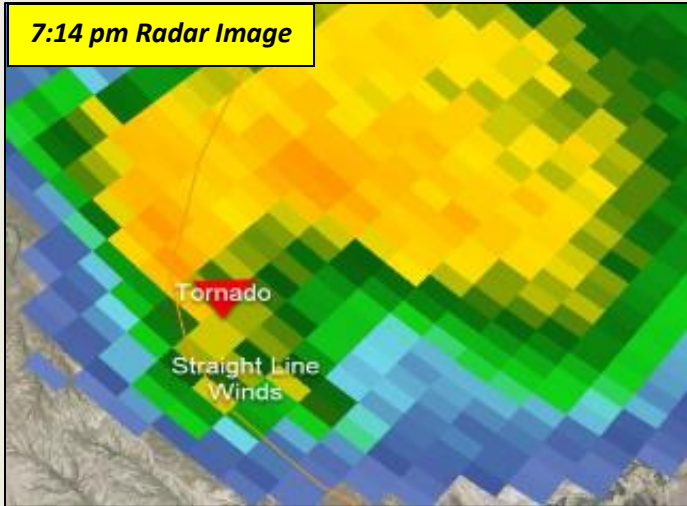
During the evening hours, a severe thunderstorm moved across Carter County producing golf ball or larger hail, straight line winds of 70-80 mph, and four tornadoes as it moved toward the South Dakota border.

- 1<sup>st</sup> tornado: Initially spotted crossing SR 323 about 12 miles north of Albion in the Finger Butte area. A nearby rancher sustained straight line wind damage on the south side of the storm, including: trees uprooted, a barn roof blown off, a shed destroyed, a horse trailer flipped over.
- 2<sup>nd</sup> & 3<sup>rd</sup> tornadoes: These were brief touchdowns in rural areas with no road access. No damage was reported.
- 4<sup>th</sup> tornado: Touched down just east of Camp Creek Road four miles south of Capitol. It intensified as it moved to the northeast toward the Little Missouri River. Wind speeds were estimated to be up to 120 mph (EF-2), and a swath of snapped trees increased in width to 100 yards. The tornado eventually crossed the river and moved into South Dakota.

The tornado strengthened further in Harding County, SD. Observed damage was consistent with an EF-3 tornado rating, with winds estimated at 136 mph.



*Photo courtesy of Kalbach*



# #1: January – Early April: Severe Winter

The first few months of 2018 will be remembered for the harsh winter that the entire region experienced, with record snowfall, cold temperatures, and a long period of snow cover. Total snowfall at Billings for the entire 2017-18 season ended up at 106.1 inches, establishing a new record for the second time in 5 years. Records at the Billings airport go back to 1934. Here are some of the higher seasonal snowfall totals, courtesy of several of our cooperative observers.

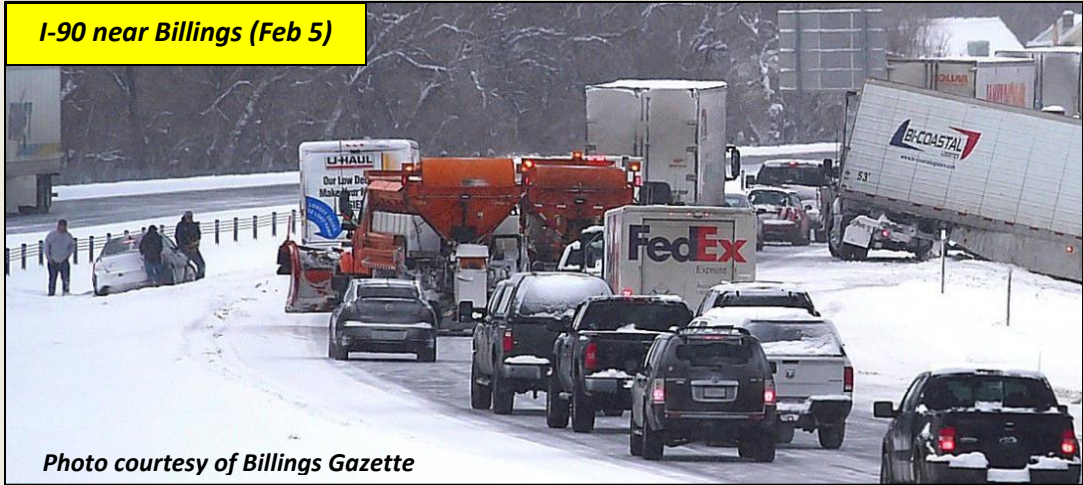
Site	2017-18 Snowfall (inches)
Mystic Lake	322.2
McLeod	195.2
Red Lodge	167.0
Rapelje	153.5
Melville	140.8
Roundup 15SW	126.0
Story	121.5
Columbus	109.6
Billings Airport	106.1
Dayton	102.4
Busby	96.9
Forsyth	93.2
Colstrip	92.5
Joliet	92.1
Sonnette	91.8
Yellowtail Dam	89.4

The New Year started very cold. Miles City's low of -30° and high of -15° were daily records, and the low temperature at Mizpah was a frigid -41°. From January through early April, several winter storms impacted the region, and the snow depths piled up. An especially cold and snowy period of weather occurred from February 3-19, as the weather pattern favored Canadian cold air being overrun by Pacific moisture. During these 17 days, Billings received a whopping 32.4 inches of snow. The entire region was 10-18 degrees colder than normal. Snow depths from Roundup to Billings eastward



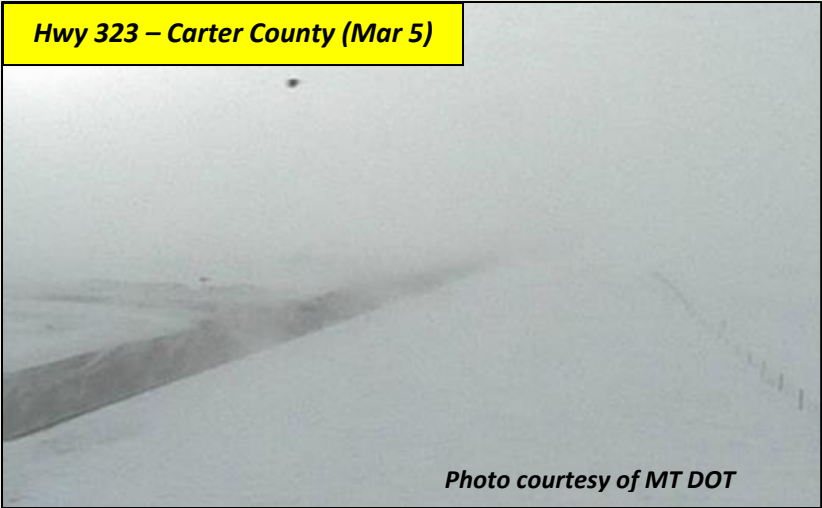
ranged from 1 to 2 feet by mid-February, with local snow depths of 30+ inches in the Bull Mountains and near Ashland.

Here are a few of the more notable winter events:



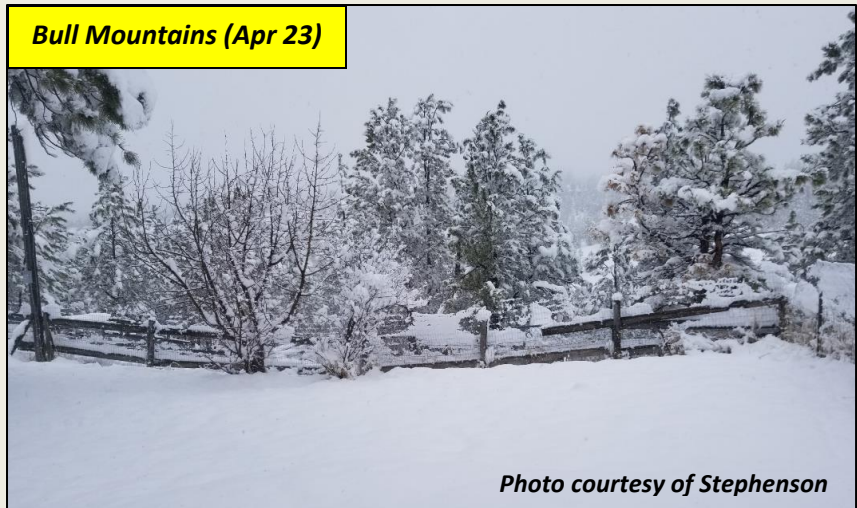
- From February 3-5, two feet of snow fell at Busby, with 12-24 inches in the Roundup area and 17 inches at Ashland.

- On February 8, much of the region received freezing rain. Highway 3 from Harlowton to Garneill was closed. In the Billings area, a six car pile-up involving four separate crashes caused an eastbound portion of I-90 to shut down for more than two hours (near the King Avenue exit). In Miles City, 0.13" of precipitation fell as freezing rain, producing a glaze of ice on cars. Surface temperatures were mostly in the teens as the rain fell.
- From February 15 – April 9, Miles City went 54 consecutive days with below normal temperatures.
- On March 5, snow and blowing snow, with wind gusts over 40 mph and visibility near zero in places, affected Fallon and Carter Counties. Numerous state highways and other roads were closed from Baker to Ekalaka and Alzada.





- From March 17-26, ice jams on the Musselshell River caused areas of low land flooding in Musselshell County.
- On April 1, Livingston dropped to  $-1^{\circ}$ , only the third time on record that the temp has fallen below zero in April.
- From April 1-3, 17.5 inches of snow fell at Rapelje and near Lame Deer.
- On April 5-6, Story, Rapelje and Harlowton each received a foot of snow.
- On April 23, Billings received its final snowfall of the season, 2.6 inches, pushing the winter total to a record-setting 106.1 inches.



TEMP STATS	Jan – Apr Average Temp	Departure from Normal	Rank	Period of Record Begins
Billings	29.5°	- 5.8°	13 <sup>th</sup> coldest	1934
Livingston	31.7°	- 3.2°	23 <sup>rd</sup> coldest	1948
Miles City	22.1°	- 9.8°	4 <sup>th</sup> coldest	1937
Sheridan	28.0°	- 4.8°	10 <sup>th</sup> coldest	1907
Baker	20.9°	- 7.9°	#1 coldest	1998