

# Montana Weather/Precipitation Summary

**February 2010** by NOAA's National Weather Service Great Falls Montana

Temperatures ranged from well above normal northwest to well below normal in eastern Montana. An El Nino pattern kept much of the west dry and warm, as a deeper trough of low pressure persisted over the eastern portion of North America (Fig. 1). This contributed to the above normal temperatures west and below normal east (Fig. 2). This also caused snow cover to persist longer than is has since the snowy winter of 1978-79 over portions of central Montana. Billings had their fourth longest streak of one inch or more snow on the ground. This was the longest since 1978-79. Fog was also more dominant with lighter winds and cooler temperatures. Some areas over eastern Montana experience more dense fog days since 2001 over the winter. Precipitation was generally below normal. There were isolated pockets over the central and east that had above normal snowfall.

## **Feb 1-15**

This was generally a cooler period. Some areas of the northeast were 30 degrees below normal. Terry dropped to -30F on the 9<sup>th</sup>. Periods of lighter snow fell during this period, too. One storm brought up to five inches to the Miles City area on the 4<sup>th</sup>. On the 13<sup>th</sup> and 14<sup>th</sup>, another larger storm brought snow to much of the state. Up to a foot of snow fell over the south central mountains, with three to six inches common over the eastern plains. Temperatures remained near to above normal west of the divide. Again, period of lighter snow fell, but amounts were very light.

## **Feb 16-23**

This was a transitional period. The west remained warm for the first half, then dropped to slightly below normal during the latter half. Some cold air filtered into the southwest valleys. Elk Park dropped to -30F on the morning of the 21<sup>st</sup>. Sub-zero temperatures were felt across the northeast and temperatures were again 15 to 20 degrees below normal. Some light snow fell over many areas, but the heaviest was limited to the southern mountains. On the 18<sup>th</sup>, over a foot of snow fell in the Red Lodge area. One to four inch amounts were common over the eastern plains.

## **Feb 24-28**

This was the warmest period of the month. Great Falls rose to 56F, for the warmest temperature of the month. The warmest air stayed over the western half of Montana. Eastern portions remained in colder air, and temperatures struggled to reach the freezing point. In the colder air, fog was a common problem in many portions of the east.

## **Precipitation**

Severe weather occurred on zero days in February. Precipitation was generally below normal across the state. The heaviest precipitation was restricted to isolated areas of the central and east.

## **Other Information**

Many locations had their calmest February of record. The February statewide average wind speed of 5.6 mph was the lowest of record. The previous record low was 7.1 mph in 1941. Also, many locations recorded their calmest winter period of record. The statewide average of 6.7 mph was the calmest of record. The previous record low was 8.0 mph set in 1999-2000.

**February summary information:**

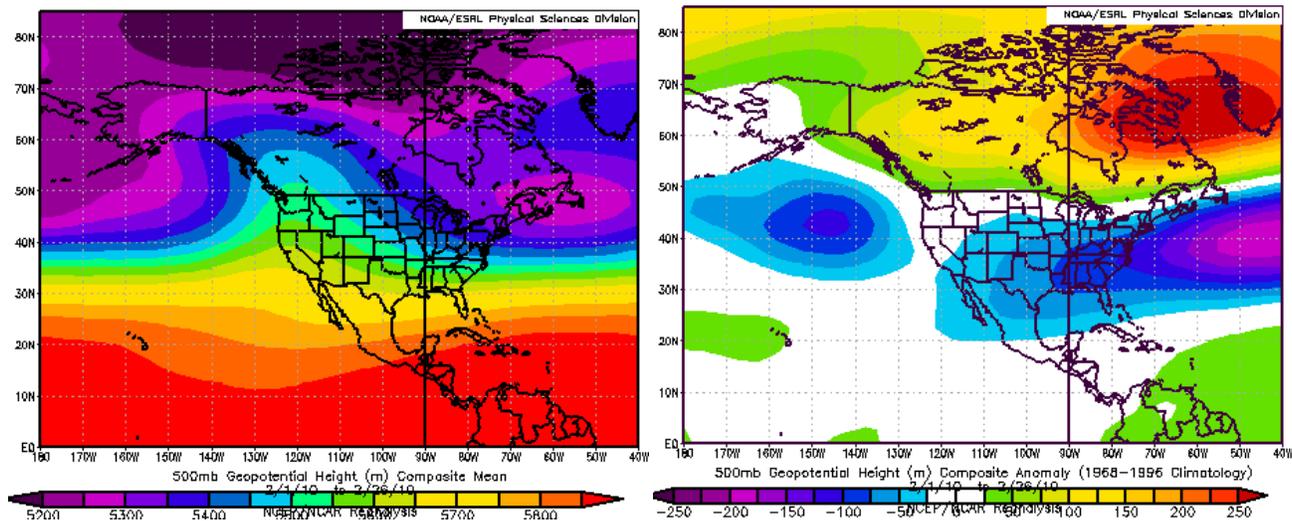
<b>High Temperature</b>	56°F at Great Falls (27 <sup>th</sup> )	<b>Greatest Precip</b>	0.96" at Big Sky
<b>Low Temperature</b>	-30°F at Terry (9 <sup>th</sup> ) and Elk Park (21 <sup>st</sup> )		5.10" at Noisy Basin SNOTEL
<b>Warmest Ave Temp</b>	38.7°F at Thompson Falls	<b>Peak Wind Gust</b>	65 mph at Deep Creek (16 <sup>th</sup> )
<b>Coollest Ave Temp</b>	6.5°F at Westby		
<b>Range of Temp departures</b>	-11.6°F at Jordan to +6.3°F at Libby	<b>Highest Ave Wind</b>	15.1 mph at Logan Pass; 13.7 mph at Norris
<b>18 city mean monthly Temperature/Normal</b>	20.2/23.5; 58 <sup>th</sup> coolest of record	<b>18 city mean monthly wind speed/Normal</b>	5.6 mph/9.3 mph; calmest of record
<b>18 city mean monthly precipitation/Normal</b>	0.24"/0.57" – 42% of normal; 6 <sup>th</sup> driest		

**Historical Rank of Precipitation (inches)  
for the Current Month and Water Year to Date**

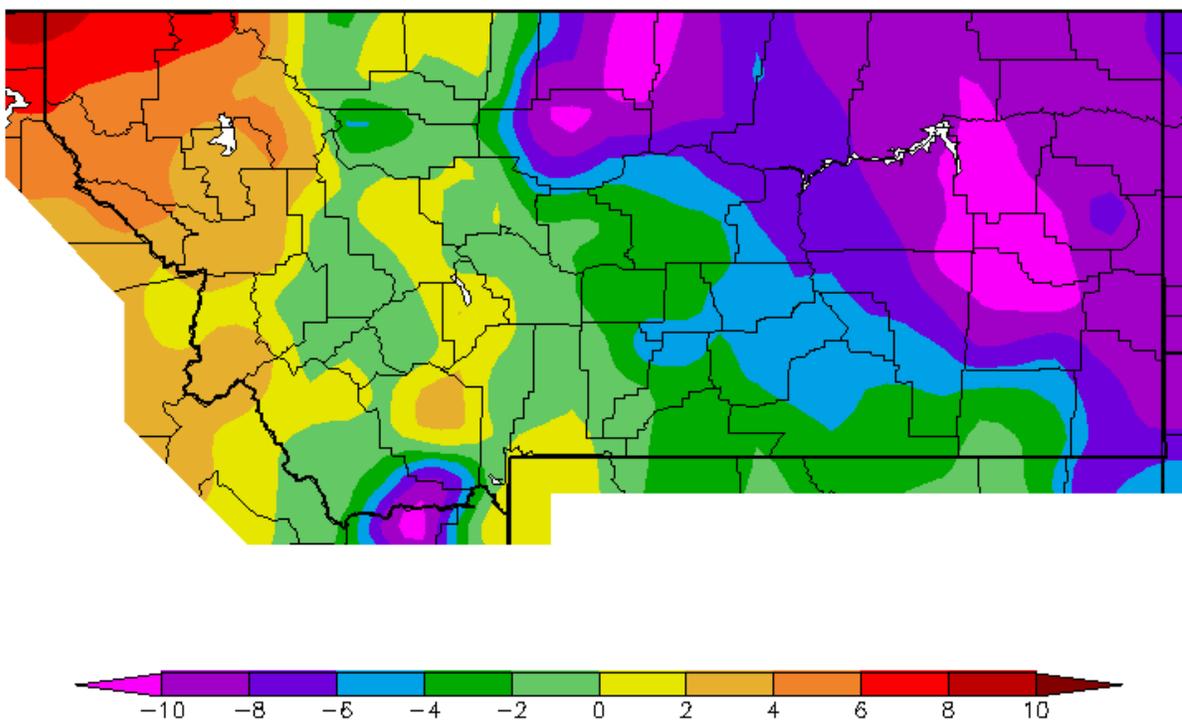
Location	3	% of Norm	Rank	Pcntl	Oct 1 - MM	% of norm	Rank	Pcntl	Years
Baker	0.11	34%			1.79	72%			12
Billings	0.39	67%	52	51	3.75	92%	70	69	101
Belgrade	0.39	72%	36	48	2.94	81%	32	43	73
Butte	0.24	51%	34	29	2.46	84%	43	37	116
Cut Bank	0.00	0%	1	1	0.42	22%	2	1	103
Dillon	0.21	105%	41	57	2.13	126%	52	74	70
Glasgow	0.14	54%	29	25	1.88	90%	34	30	111
Great Falls	0.55	108%	68	57	4.06	120%	86	73	118
Havre	0.23	64%	40	30	1.97	82%	41	31	130
Helena	0.14	37%	19	14	1.97	79%	29	21	132
Jordan	0.45	128%			3.29	154%			12
Kalispell	0.43	37%	16	13	5.02	75%	13	10	116
Lewistown	0.15	26%	14	11	3.29	80%	38	33	114
Livingston	0.25	36%	31	28	2.24	52%	19	17	107
Miles City	0.13	38%	23	17	1.57	53%	26	19	133
Missoula	0.20	26%	14	10	2.43	51%	5	3	130
Mullan Pass	0.36	10%	1	0	7.82	41%	1	0	69
Wolf Point	0.02	17%			1.12	68%			12
Glendive	0.28	76%	58	49	3.50	133%	94	85	111
Sidney	0.35	97%	46	64	3.94	135%	62	90	69
BZN-MSU	0.61	87%	57	43	5.57	111%	84	64	131

Rankings and Percentiles are 1=driest, higher numbers=wetter.

For an automated version of this chart, updated daily, go to <http://www.wrh.noaa.gov/tfx/dx.php?wfo=tfx&type=&loc=products&fx=PCPNTOTALS>



**Figures 1a (left) and 1b (right).** Mean flow at 500 millibars (~18,000 ft) for February (left). A strong ridge persisted over western North America, while a strong trough dominated the eastern portion of the continent. This pattern contributed to the above normal temperatures across western Montana. Colder than average temperatures were felt in the north central and east.



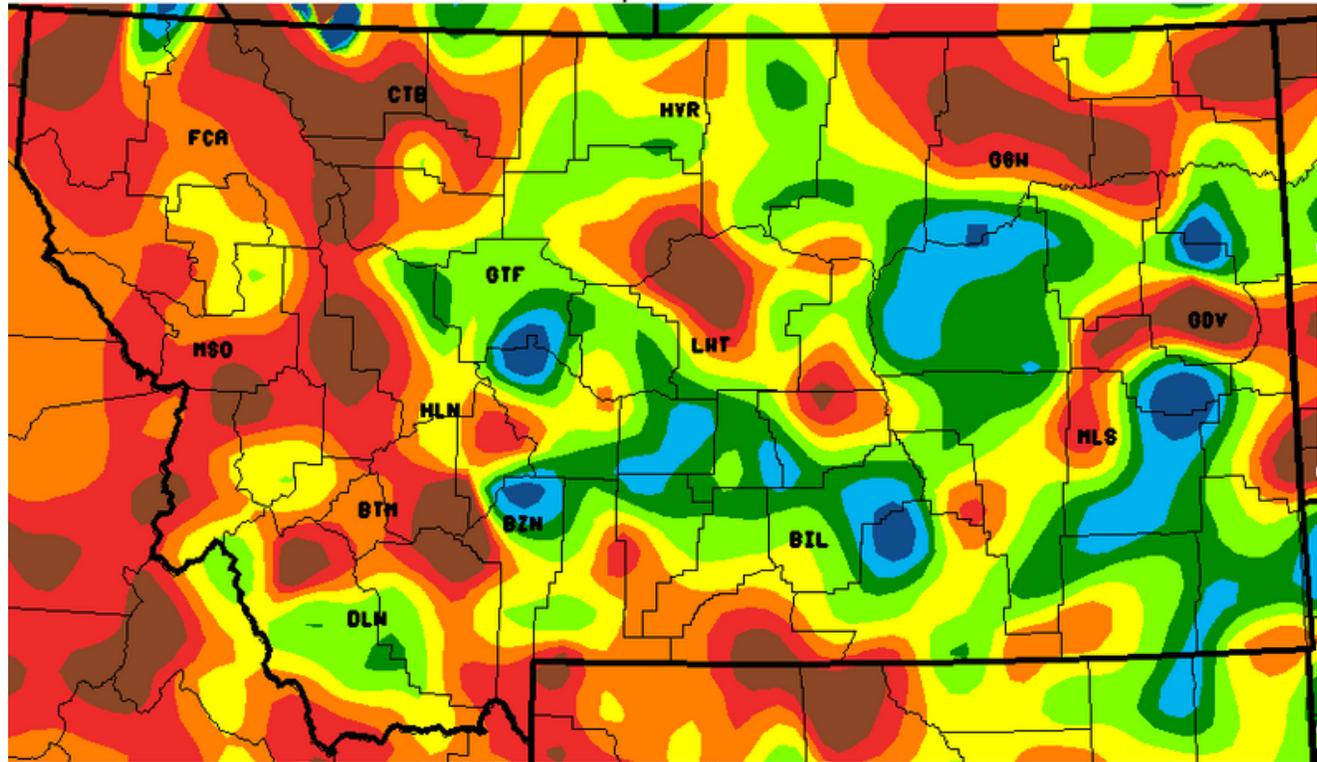
**Figure 2.** Temperature anomaly for February. Temperatures were above below normal east, and above normal west. (Western Region Climate Center).



## National Weather Service - Great Falls, MT



### Montana Precipitation for the Month



February 2010 Percent of Normal Precipitation  
Period of Normal: 1971-2000

20 40 60 85 115 150 200

NOTE: Data used to generate this image are  
PROVISIONAL AND SUBJECT TO CHANGE.

<http://www.wrh.noaa.gov/Greatfalls>

**Figure 3.** Precipitation anomaly (% of normal) for February.

For a state map of % of normal water year precipitation (updated around the 7<sup>th</sup> of each month), go to:  
[http://www.wrh.noaa.gov/tfx/image.php?wfo=tx&type=data&loc=hydro&fx=watyr\\_pcntnorm.png](http://www.wrh.noaa.gov/tfx/image.php?wfo=tx&type=data&loc=hydro&fx=watyr_pcntnorm.png)

For the latest information on mountain snow pack from the NRCS, go to:  
<http://www.mt.nrcs.usda.gov/snow/index.html>

For the latest U.S. Drought Monitor, issued weekly by the Climate Prediction Center (CPC), go to:  
<http://www.drought.unl.edu/dm/monitor.html>

These data are preliminary and have not undergone final QC by NCDC. Therefore, these data are subject to revision. Final and certified climate data can be access at the National Climatic Data Center (NCDC) <http://www.ncdc.noaa.gov>. Many more links are on the Drought Information Page of the NWS Great Falls web site at <http://www.wrh.noaa.gov/tfx/main/drought.php?wfo=tx>