

Montana Weather/Precipitation Summary

February 2009 by NOAA's National Weather Service Great Falls Montana

Above normal temperatures prevailed for most of February in all but the northeast. The upper air patterns supported the cooler than average conditions over the northeast (Fig. 1). Precipitation was variable, but mostly averaged below normal. For the first 10 days of February, temperatures were above normal. The temperature climbed to 71F at Mystic Lake on the 3rd, the highest temperature of the month. As usual, warm temperatures are accompanied by gusty winds along the east slopes and Livingston area. Gusts to near 60 mph occurred near Livingston on the 2nd through 5th. A gust to 72 mph was reported at Choteau on the 2nd. Minor weather systems brought light doses of precipitation to central Montana on the 6th and 7th. Belt reported 8 inches from a snow event on the 7th.

Thru 03/15

Mar 3 thunderstorms ringling...up to dime size hail

Mar 4 3-5 16-24" around cooke city

Mar 5 12" lookout pass west glacier. I90 closed

Mar 6 am...7-15" snow western mtns and southwest...copper camp 14.5"

Mar 7-10 4-14" sc 14" burnt mtn

Mar 6-7 8" bigfork with blizz conds.

Mar 7 97 mph babb

Mar 10 rec low max -1 at ggw; -7 ctb; -2 hvr; 0 gtf

Mar 10 rec daily max snowfall Kalispell 4"

Mar 11...-10 bil 3rd coldest mar temp of record. Coldest so late in season since 1965.

Mar 11 polebridge -27

Mar 2 70 yellowtail

Mar 11 -33 scobey

Temperatures cooled to below average across the state from the 10th through 20th. During this period the coldest temperature of -21F at Red Rock was observed on the 13th. This cold air followed another storm that dropped 2-6 inches over the Little Belts. Below normal temperatures continued, but a small scale storm affected the Seeley Lake area on the 18th. A small area around Seeley Lake reported up to 6 inches of snowfall. After a brief warm-up on the 19th, another stronger weather system affected the state on the 20th. Three to six inches of snow fell over a large swath of central and southeast Montana. Up to 9 inches fell near Red Lodge. The northeast came up drier, with only 1-2 inches falling. This cooler weather and snow was short-lived.

Temperatures gradually warmed, and on the 23rd, record high temperatures were set at Helena and Bozeman. Bozeman reached 61F. This warmer weather lasted through the 24th over southern Montana, with northern areas cooling by the 23rd. The cooler air overspread the state by the 26th, with low temperatures near -20F by the morning of the 27th. Again, the storm system that preceded the cold air brought significant snows to portions of the state. Great Falls and Helena had nearly 4 inches, while the southeast had much higher amounts. Alzada reported a foot of snow. The coldest air of the month spread across the state on the last two days. Whiskey Creek (in southwest Montana) recorded a low of -28F on the morning of the 28th.

The statewide mean temperature at 18 cities in February was 25.9F, slightly warmer than the normal of 24.9 (Fig. 2). The precipitation average was 0.36 inches or 75 percent of normal. The normal value is 0.48 inches. Much of the state recorded below average precipitation (Fig. 3). Winds were below average for the month. The state-wide wind average was 7.7 mph, below the normal of 9.3 mph.

Some other items of note for February 2009:

Bozeman had their 2nd calmest February of record. They have also recorded their 5th warmest water-year-to-date at 32.0. Normal is 26.9.

Glasgow recorded their 5th driest February of record.

Great Falls and Kalispell recorded the 4th calmest February of record.

Helena, Lewistown and Sidney all recorded their 5th calmest February's of record.

Livingston, even though recording an average wind speed of 16.8 mph, was the 3rd calmest February of record.

February summary information:

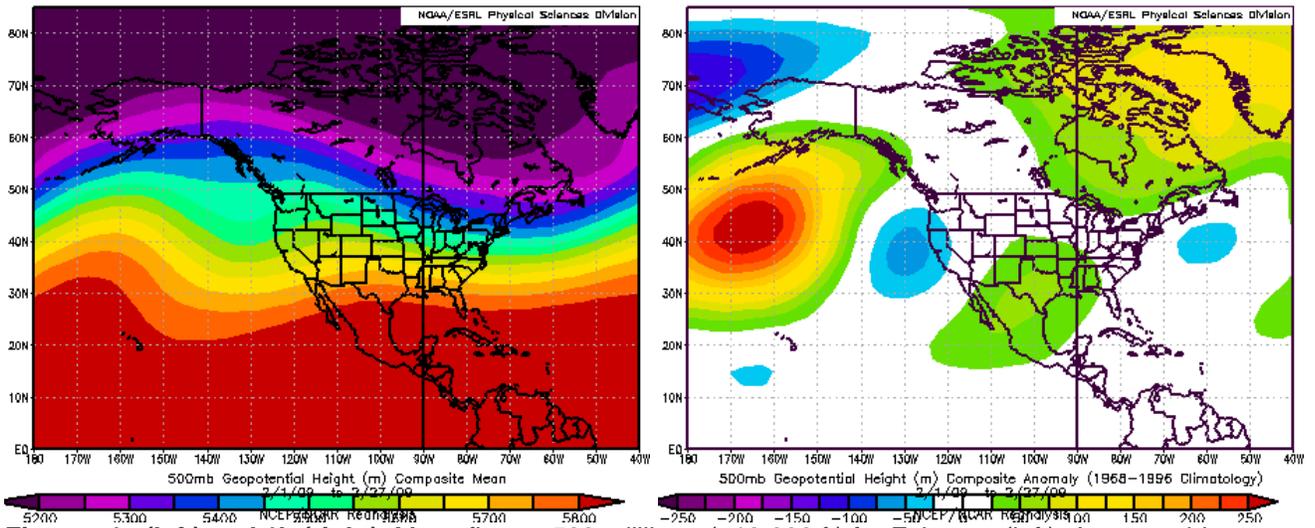
High Temperature	71°F at Mystic Lake (3rd)	Greatest Precip	1.72" at Superior
Low Temperature	-28F at Whiskey Creek Snotel (28th)		7.0" at Noisy Basin SNOTEL
Warmest Ave Temp	35.5°F at Billings Water Treatment Plant	Peak Wind Gust	78 mph at Logan Pass (3rd) and 72 mph at Choteau (2nd)
Coollest Ave Temp	6.1°F at Westby		
Range of Temp departures	-8.6°F at Westby to +7.0°F at Albion	Highest Ave Wind	21.0 mph at Logan Pass 16.8 mph at Livingston
18 city mean monthly Temperature/Normal	25.9/24.9	18 city mean monthly wind speed/Normal	7.7 mph/9.3 mph
18 city mean monthly precipitation/Normal	0.36"/0.48" – 75% of normal		

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

Location	Feb	% of Norm	Rank	Pcntl	Oct 1 – Feb 28	% of norm	Rank	Pcntl	Years
Baker	0.18	56%			2.41	98%			11
Billings	0.37	64%	50	49	4.12	101%	75	75	100
Belgrade	0.26	48%	14	18	2.29	63%	13	18	68
Butte	0.12	26%	12	10	2.80	96%	59	51	115
Cut Bank	0.27	96%	58	56	0.66	35%	9	8	102
Dillon	0.16	80%	32	45	1.04	62%	9	12	69
Glasgow	0.05	19%	5	4	3.42	164%	95	86	110
Great Falls	0.44	86%	53	44	3.59	106%	65	57	114
Havre	0.10	28%	13	9	2.29	95%	54	42	128
Helena	0.22	58%	34	26	2.63	105%	50	38	130
Jordan	0.07	20%			3.32	156%			10
Kalispell	0.96	83%	56	48	6.71	100%	13	11	114
Lewistown	0.12	21%	9	7	3.16	77%	33	29	113
Livingston	0.28	40%	37	33	1.45	34%	3	2	106
Miles City	0.04	12%	6	4	2.59	88%	67	50	132
Missoula	0.70	91%	67	50	5.33	112%	76	59	129
Mullan Pass	2.34	64%	18	26	14.49	76%	9	12	68
Wolf Point	T	1%			1.73	105%			11
Glendive	0.20	54%	41	35	2.83	107%	74	67	110
Sidney	0.13	36%	16	22	2.53	87%	40	58	68
BZN-MSU	0.27	39%	12	8	4.05	80%	35	26	130

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 off the west coast, with a strong trough dominated most of the northeast portion of the continent. This produced above average heights (right) over the region. This was a continuation of the pattern in January. This also contributed to the above normal temperatures across much of the state. Colder than average temperatures were felt in the northeast.

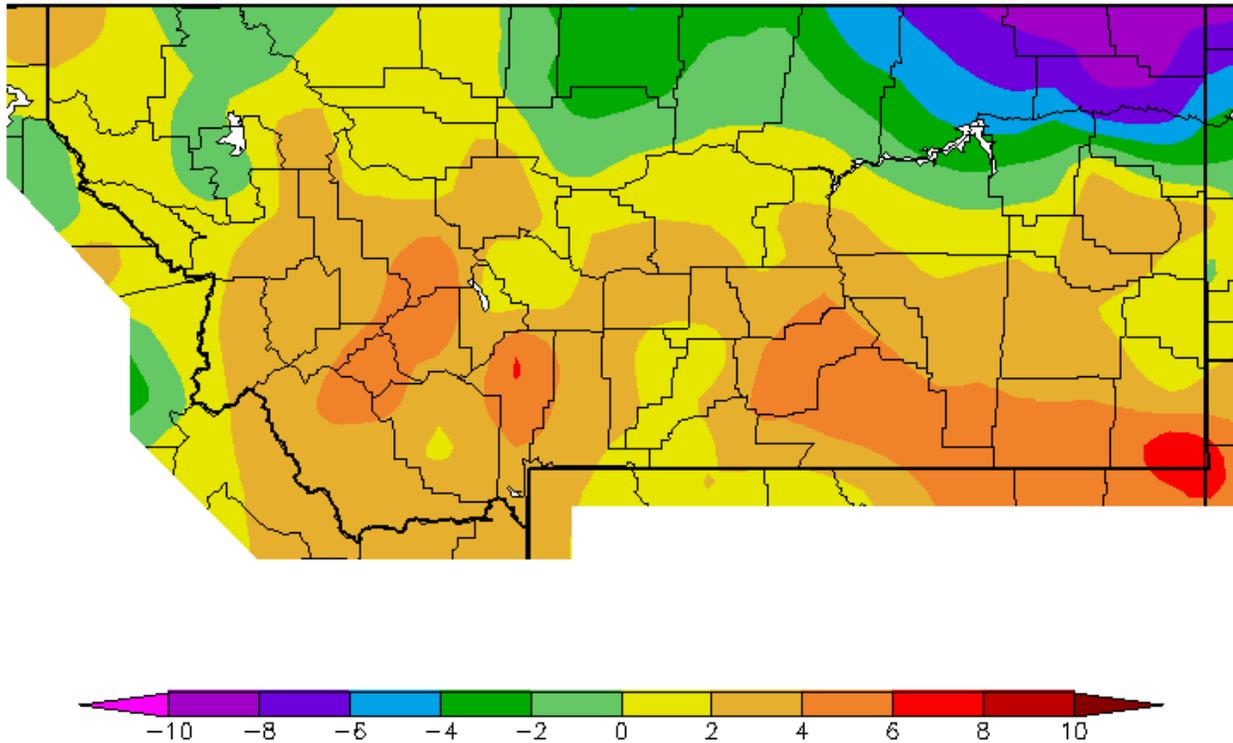


Figure 2. Temperature anomaly for February. Temperatures were above normal most areas, except the northeast. (Western Region Climate Center).

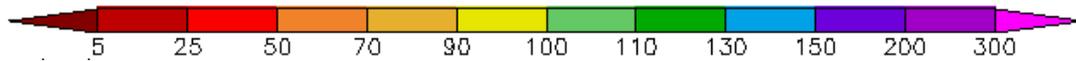
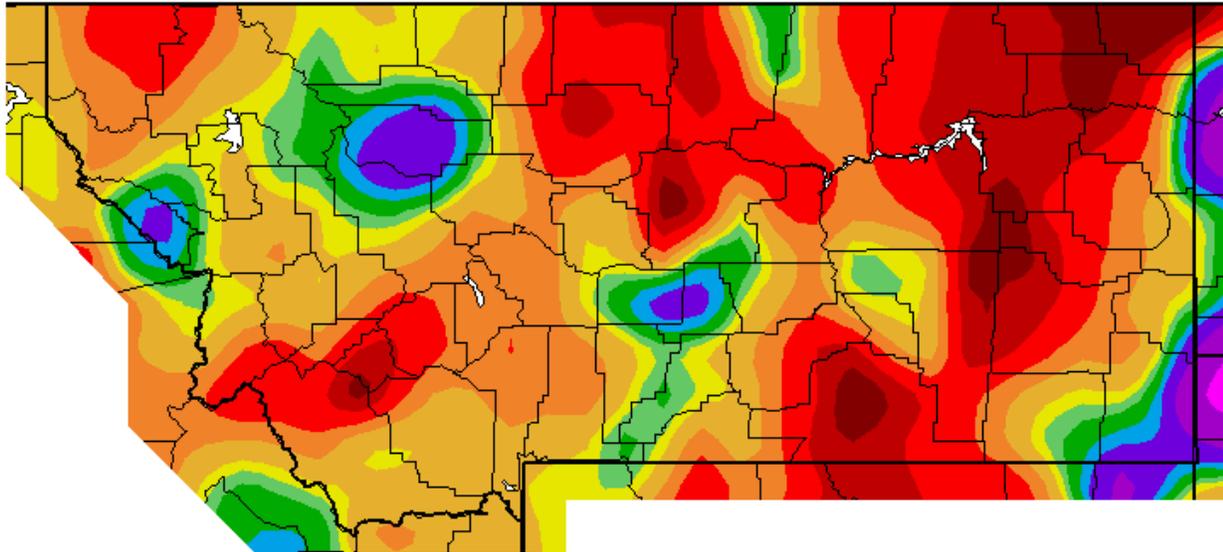


Figure 3. Precipitation anomaly (% of normal) for February. (Western Region Climate Center).

For a state map of % of normal water year precipitation (updated around the 7th of each month), go to:
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>