

Montana Weather/Precipitation Summary

January 2012 by NOAA's National Weather Service Great Falls Montana

January temperatures averaged above normal across the state. Some areas were as much as 10 degrees above normal. The warmest departures were across the eastern portions of the state (Fig. 2). Some record warm temperatures were recorded during the first week of the month. Precipitation was generally below average, with a few pockets of above normal (Fig. 3). Winds were again a big factor again during January. Gusts to 123 mph were recorded at Logan Pass, with several locations having their highest January gust in several years. Upper air flow averaged northwesterly across Montana, with a ridge of high pressure along the west coast (Fig. 1). Usually, a weak ridge of high pressure dominates Montana. Because of the westerly flow, winds averaged stronger.

Temperatures across the state averaged 25.7F; 5.4 degrees above normal. This was the 15th warmest January, and the seventh consecutive month with above normal temperatures. This was also the warmest January since 2006. Temperatures averaged warmest over eastern Montana (Fig. 3). For the period October through January, temperatures averaged 32.2F, or 3.5F above normal (the 19th warmest of record). This was the warmest October through January period since 2004-05. The statewide average temperature for the past 12 months is right at normal.

Precipitation widely varied across the state, from very wet areas in the west and central, to nearly nothing in other parts. Overall, January averaged 0.01-inches above normal, or 0.83-inches. This was 101% of normal, and the 58th wettest January of record. The precipitation excess over the average in the past 12 months is 1.73 inches. Areas from west central through central Montana recorded above average precipitation (Fig. 4). For the period October through January, precipitation averaged 3.44 inches, or 0.09-inches below normal. January snowfall averaged 8.6 inches across the state, or 1.7 inches below normal. This was the 43rd lowest January total of record. This was also the lowest average January snowfall since 2007. For the October through January period, an average of 24.1 inches of snow has fallen. This is the 31st lowest of record and the lowest since 2003-04.

Wind speeds were above normal in January. The average of 9.8 mph was 0.9 mph above average, and the 36th windiest of record. This was the third consecutive month to record above normal wind speeds. For period from October through January, an average of 9.3 mph was 0.3 mph above normal, and the 33rd calmest of record.

January 1-15

Generally mild conditions prevailed during the first one-half of January. Temperatures were as much as 30 degrees above normal during the first week. The warmest temperatures of the month occurred on the fourth and fifth, with mid- to upper 60s recorded in portions of central Montana. Some record high temperatures were set at a few locations. Also, these high temperatures were approaching state records for this period, with records in the high 60s and near 70. Further, the warm temperatures were the warmest in Montana in January since 2006. Accompanying the warm temperatures was wind. A grass fire sparked from downed power lines in the Browning area caused one of the largest winter-time fires in memory in this area. Wind gusts to near 80 mph occurred during the fire. The fire burned about 18,000 acres, and was clearly visible on satellite imagery (Fig. 4). Winds gusted to 73 mph near Malta on the 5th. One snow event occurred during this period. On the 10th and 11th, up to 14 inches of snow fell in the Red Lodge area (Carbon) and a foot of snow over Marias Pass. Meanwhile, west of the divide, freezing rain in the Lolo and Missoula areas caused accidents and road closures. A cold front ushered in much colder air and a period of snow on the 15th. Up to 2.5 inches of snow fell near Nye (Stillwater), and five inches in the mountains south of Bozeman.

January 16-20

The coldest period of the month brought snow to varying portions of the state. Up to a foot of snow fell in the Helena valley, with one to three feet reported in the mountains. One point in the

Garnet Range in Powell County received 44 inches. There were periods of freezing rain in western Montana during this period. At Missoula, 15.9 inches of snow fell from the 17th to 19th. This was the highest three-day total since December 1996. High temperatures did not climb above -15F over portions of north central Montana on the 17th and 18th. The coldest temperature of -33F was observed at Gold Butte on the 18th. Winds and warmer temperatures returned to the state by the 21st.

January 21-31

The final period of January was mild, and generally dry. Very strong winds prevailed over the Rocky Mountain Front and adjacent plains. Gusts of over 70 mph occurred at Cut Bank on the 25th and 29th. Great Falls recorded their second strongest January gust, when winds reached 74 mph on the 25th. Gusts to 90 mph occurred along the Rocky Mountain Front on the 25th and 29th. Winds spread across the plains on the 25th, with gusts near 60 mph at Roundup. While warm conditions prevailed east of the divide, freezing rain was again reported west of the divide on the 29th.

Precipitation/convection

Severe convective weather occurred on zero days in January.

January summary information:

High Temperature	68°F at Dry Blood Creek (Petroleum) (4 th)	Greatest Precip	6.38" at West Glacier
Low Temperature	-33°F at Gold Butte 7N (18 th)		
Warmest Ave Temp	33.1°F at Hamilton	Peak Wind Gust	92 mph at Pendroy 14W (29 th) 123 mph at Logan Pass (25 th)
Coollest Ave Temp	14.1°F at West Yellowstone		
Range of Temp departures	0.0°F at Mullan Pass to +10.1°F at Westby	Highest Ave Wind	27.2 mph at Deep Creek RAWS; 24.3 mph at Livingston
21 city mean monthly Temperature/Normal	25.7/20.3; 15 th warmest of record (since 1880)	20 city mean monthly wind speed/Normal	9.8 mph/9.1 mph; 36 th windiest of record. (since 1936)
22 city mean monthly precipitation/Normal	0.83/0.82" – 101% normal; 58 th wettest of record. (since 1880)	19 city mean monthly snow/Normal	8.6/10.3; 43 rd lowest of record. (since 1881)

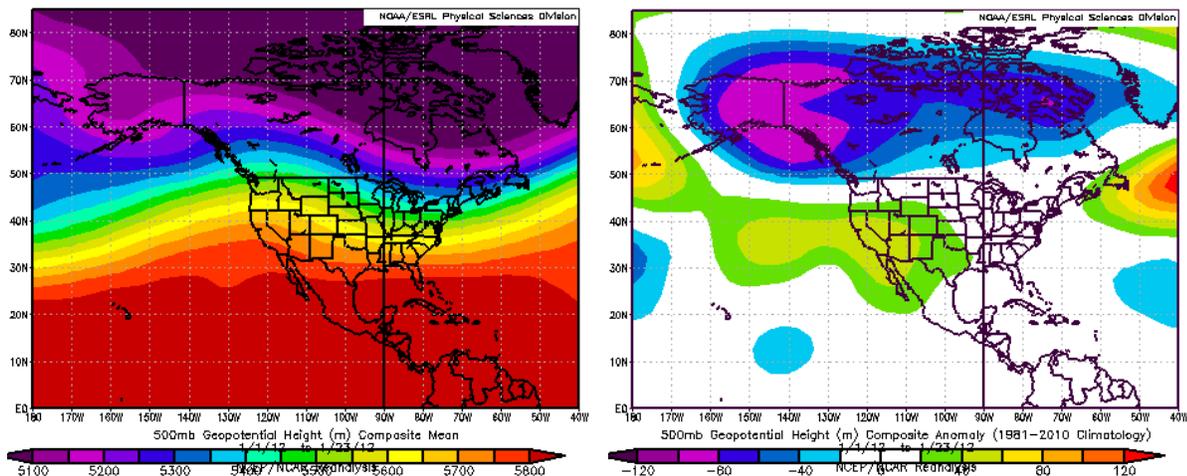
**Historical Rank of Precipitation (inches)
for the Current Month and Water Year to Date**

Location	Jan	% of Norm	Rank	Pcntl	Oct 1 – Jan 31	% of norm	Rank	Pcntl	Years
Baker	0.18	96%			1.54	72%			14
Billings	0.61	75%	71	62	2.94	84%	66	59	111
Belgrade	0.10	20%	4	4	1.65	57%	6	7	75
Butte	0.11	23%	8	6	1.37	58%	21	17	118
Cut Bank	0.36	180%	74	70	2.08	173%	84	80	105
Dillon	0.04	15%	8	10	1.27	79%	31	42	72
Glasgow	0.15	41%	20	17	1.94	101%	58	50	114
Great Falls	0.30	59%	30	24	3.09	123%	73	61	120
Havre	0.29	88%	48	36	1.09	63%	15	11	132
Helena	1.28	356%	117	87	2.67	138%	80	59	134
Jordan	0.37	161%			2.17	121%			14
Kalispell	1.37	103%	67	56	4.39	82%	39	32	118
Lewistown	0.58	102%	52	44	4.00	130%	85	73	116
Livingston	0.15	31%	26	23	2.29	80%	34	31	109
Miles City	0.33	103%	52	38	1.52	79%	39	28	135
Missoula	1.64	193%	108	80	5.46	143%	104	79	132
Mullan Pass	5.86	104%	44	62	19.96	111%	44	61	71
Wolf Point	0.10	32%			1.44	80%			14
Glendive	0.11	31%	18	15	1.42	63%	32	28	113
Sidney	0.10	24%	10	13	0.89	34%	6	7	71
BZN-MSU	0.36	43%	14	10	3.82	82%	53	39	133

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); 1b (right). Mean flow at 500 millibars (~18,000 ft) for January (left). The ridge was stronger than usual across the southwest US, but a trough over Alaska was much stronger than normal (right).

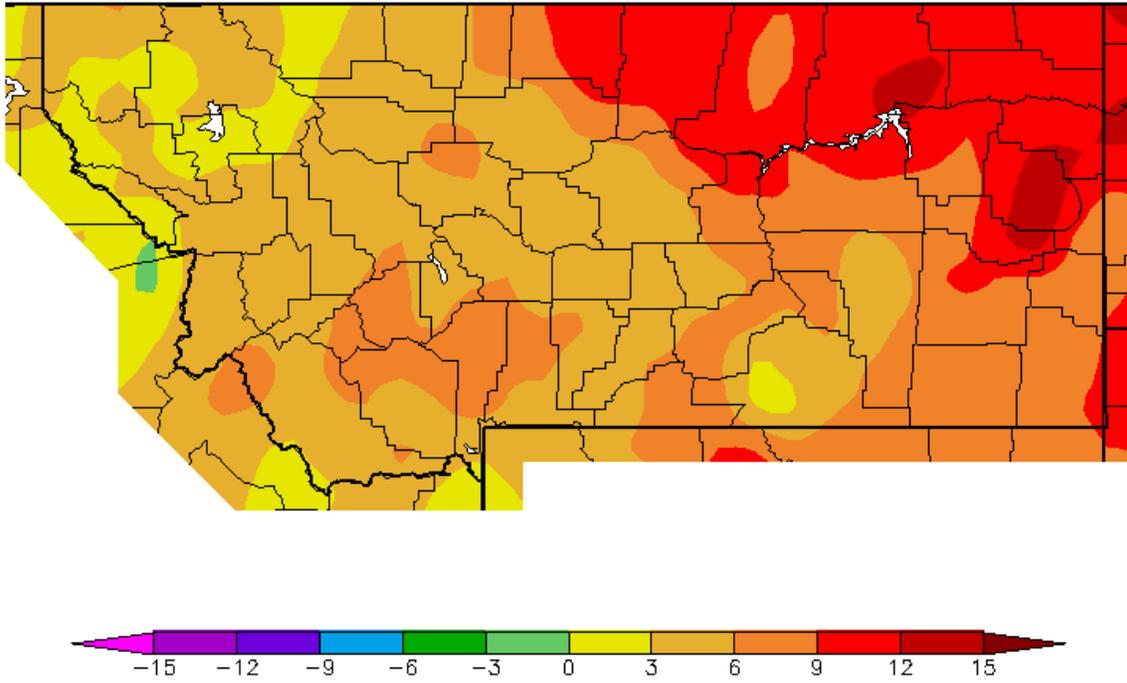


Figure 2. Temperature anomaly for January. Temperatures averages were above normal. (Western Region Climate Center).

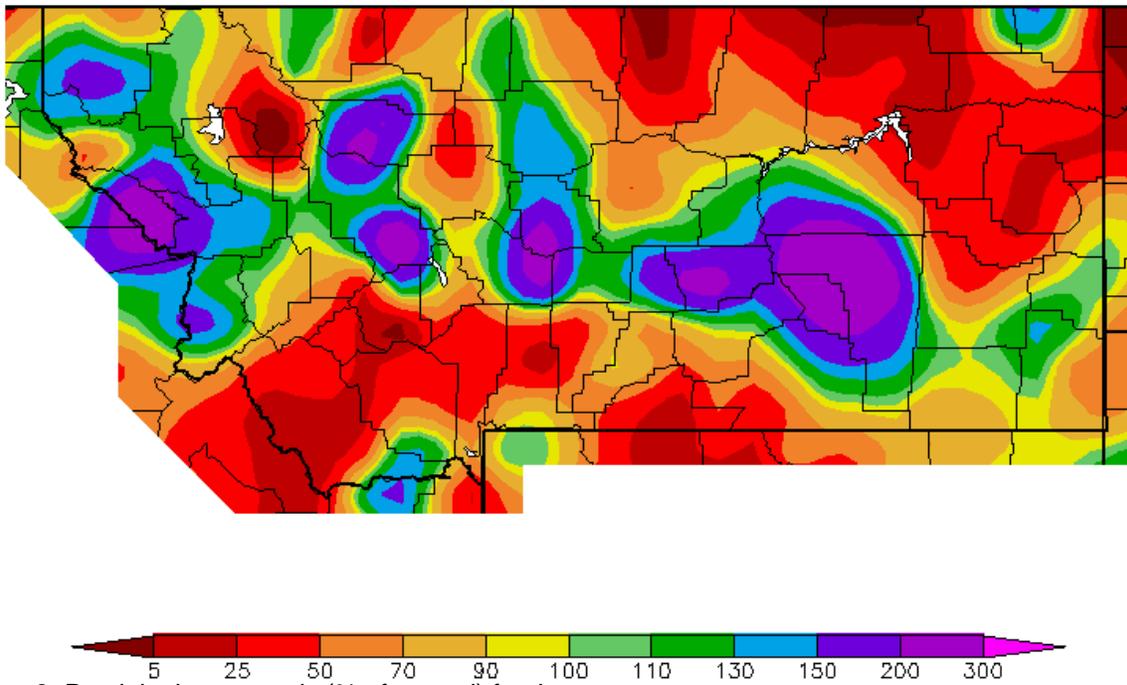


Figure 3. Precipitation anomaly (% of normal) for January.

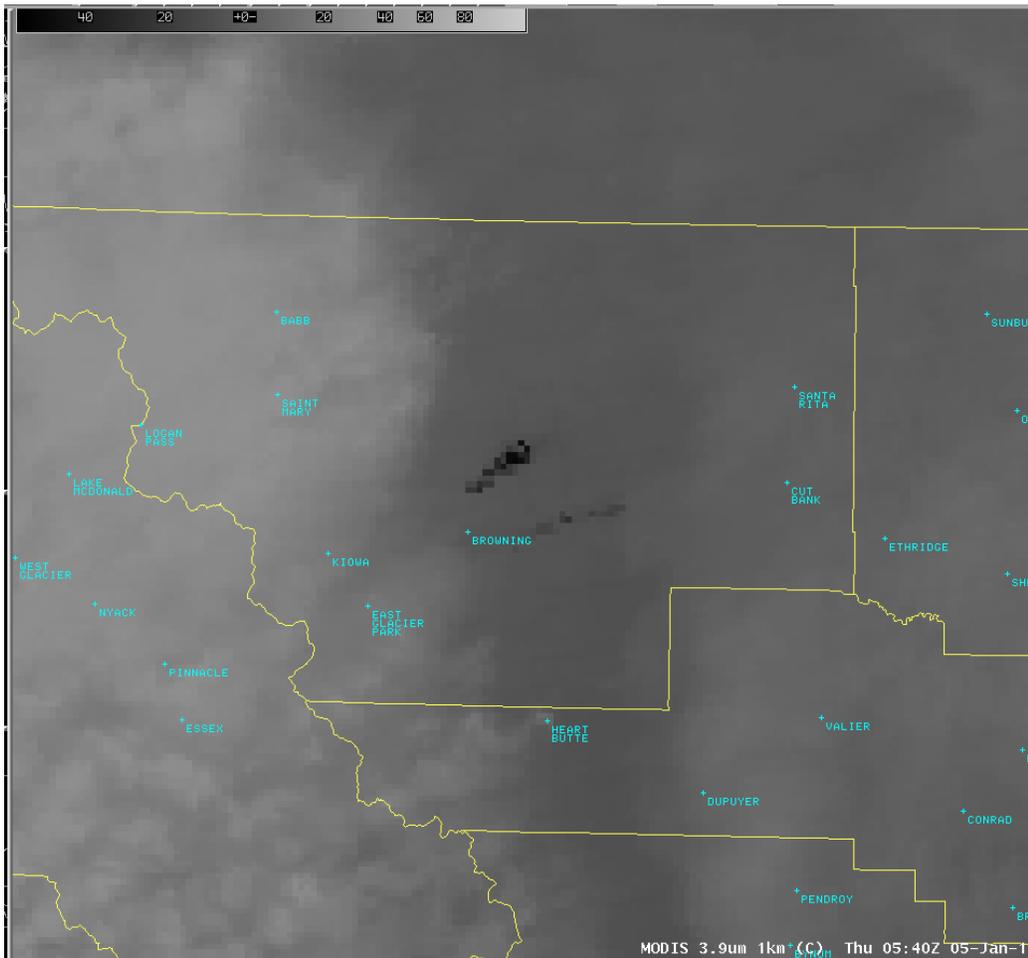


Figure 4. MODIS satellite imagery showing the extent of the two fires in the Browning area on the evening of January 4, 2012.

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>. The climatological record for normals is 1981-2010. The ranking period for temperature, precipitation and snowfall is since 1880. The ranking period for wind speeds is since 1936. The ranking period for soil moisture is since 1995.