

## Montana Weather/Precipitation Summary

**June 2006** By NOAA's National Weather Service Great Falls Montana

June continued a trend of variable weather for the spring. Temperatures were above normal...ranging from near normal over the north central and northeast, to 3 degrees above normal in the southwest and west. Other than a couple of cooler periods, the month's temperatures averaged above normal. The coolest period was around the 10<sup>th</sup>, with a longer cool period from the 17<sup>th</sup>-24<sup>th</sup>. During the first week, spotty showers were recorded, but they were fairly light. It was very warm on the 2<sup>nd</sup>, Hardin peaked at 96°F. A major weather change around the 7<sup>th</sup> brought several days of heavy precipitation and local flooding. During this period, several daily precipitation records were set. Near Cascade received over four inches of rain over a three-day period with flooding and washed-out roads. West of the divide saw above normal precipitation, and this extended across the divide, but became more spotty as one moved towards the eastern border (Figure 2).

Cooler conditions prevailed through mid-month, though remaining mostly dry. The dryness continued through the hottest period of the month, when Havre reached 100°F on the 28<sup>th</sup>, and Miles City topped out at 101°F on the 29<sup>th</sup>. Many new record high temperatures were set on the 28<sup>th</sup>.

Severe weather occurred on 11 days across the state. This was a bit above the 8 day average for June. A line of thunderstorms produced strong winds through much of central Montana on the 4<sup>th</sup>. Great Falls had a gust of 71 mph and Havre reached 78 mph. This caused damage and power outages lasting several hours. On the 8<sup>th</sup>, baseball-size hail fell in the Colstrip and Crow Agency areas. On the 13<sup>th</sup>, an impressive looking tornado occurred west of Cut Bank, and on the 14<sup>th</sup>, this same weather system brought grapefruit-size hail around Terry and wind gusts over 90 mph to the Glendive and Bloomfield areas, again causing damage. Bloomfield recorded a 96 mph gust on the 14<sup>th</sup>. The warmest temperature for the month was in northern Petroleum County – Chain Buttes was 102°F on the 28<sup>th</sup>. Clover Meadow dropped to 20°F on the 19<sup>th</sup>.

To illustrate the variable conditions across the state, Miles City and Sidney recorded their 5<sup>th</sup> driest June's of record. Mullan Pass had their 3<sup>rd</sup> wettest June. At Miles City, it was the driest June since 1936. For temperatures, Billings had their 7<sup>th</sup> warmest June of record, and Helena saw their 8<sup>th</sup> warmest. Winds were generally on the lighter side for the month. Most areas reported below average wind speeds. However, north central and northeast Montana had wind speeds average 2 mph above normal.

Figures 1a and 1b show the average flow pattern during the first and last halves of June. An upper level ridge dominated the weather over the western US during the last half of June. It brought very warm and drier conditions to most of Montana. Though somewhat anomalous, the pattern had a bit stronger ridge than usual for late June than usual.

### **Month's summary information (to date):**

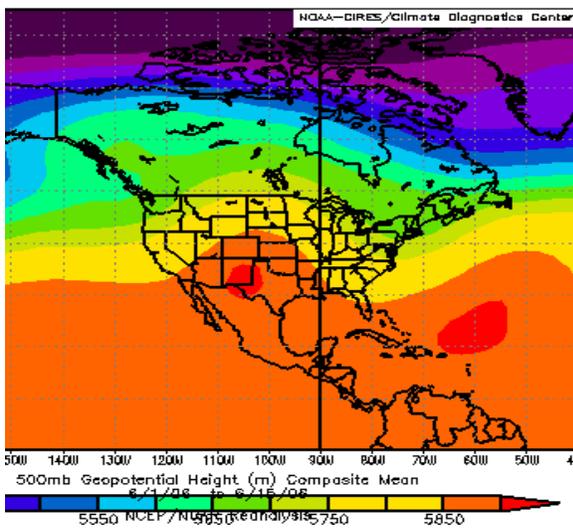
<b>High Temperature</b>	102°F at Chain Buttes (28 <sup>th</sup> )	<b>Greatest Precip</b>	5.62" at Fisher River (nw Montana)
<b>Low Temperature</b>	20°F at Clover Meadow (19 <sup>th</sup> )		5.90" at Flattop Mtn
<b>Warmest Ave Temp</b>	68.5°F at Miles City	<b>Peak Wind Gust</b>	96 mph near Bloomfield (14 <sup>th</sup> )
<b>Coollest Ave Temp</b>	52.1°F at Cooke City		
<b>Range of Temp Departures</b>	+0.4°F at Sweet Grass to +3.5°F at Cooke City and Missoula	<b>Highest Ave Wind</b>	15.1 mph at near East Glacier

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

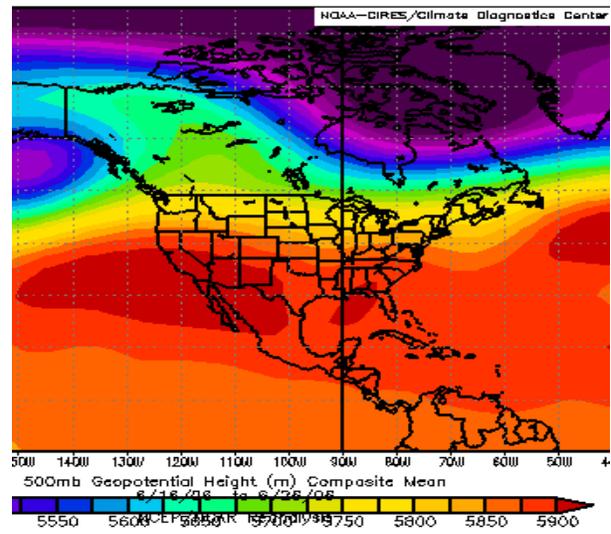
Location	June	% of Norm	Rank	Pcntl	Oct 1 – Jun 30	% of norm	Rank	Pcntl	Years
Baker	1.09	43%			8.32	103%			7
Billings	0.49	26%	11	11	9.76	86%	55	57	97
Belgrade	2.69	112%	38	54	11.60	106%	49	75	65
Butte	2.83	137%	83	73	11.19	126%	82	73	112
Cut Bank	0.72	29%	7	7	3.37	42%	2	2	98
Dillon	1.75	99%	31	46	7.63	113%	46	70	66
Glasgow	0.92	42%	9	8	7.00	97%	38	36	106
Great Falls	4.24	189%	93	82	15.28	145%	105	92	114
Havre	1.80	95%	47	37	7.31	95%	43	34	126
Helena	2.69	148%	86	67	10.81	141%	97	76	128
Jordan	1.53	60%			8.63	117%			7
Kalispell	3.49	152%	96	85	14.60	109%	76	68	112
Lewistown	3.21	110%	56	50	14.42	116%	82	75	110
Livingston	2.33	104%	60	58	10.76	94%	54	53	101
Miles City	0.51	21%	5	4	9.68	102%	70	54	129
Missoula	2.08	120%	79	62	13.87	132%	109	88	124
Mullan Pass	4.99	183%	66	97	41.80	137%	55	85	65
Wolf Point	2.91	107%			6.99	95%			8
Glendive	1.18	46%	12	11	10.44	115%	68	66	103
Sidney	0.73	26%	4	6	9.99	107%	42	65	65
BZN-MSU	2.12	74%	35	27	15.98	110%	100	79	126

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>

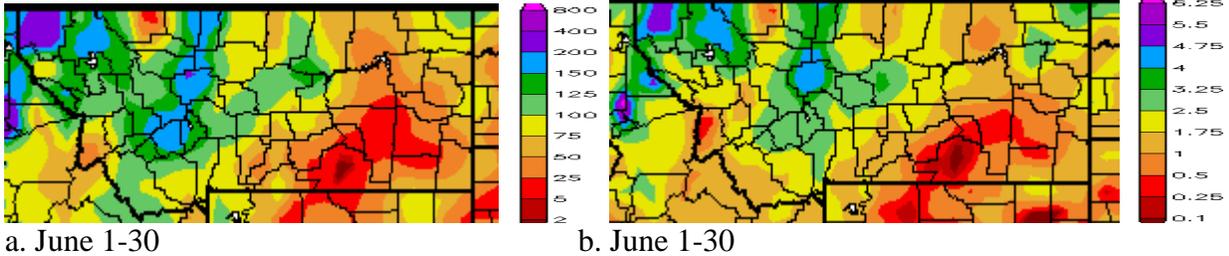


a. June 1-15



b. June 16-30

**Figure 1.** Mean flow at 500 millibars (~18,000 ft), (a) June 1-15 2006. (b) June 16-30 2006. The strength of the ridge over the western U.S. was slightly above the normal for late June.



a. June 1-30

b. June 1-30

**Figure 2.** Precipitation anomaly (% of normal) for (a) June. (b) Total precipitation for June. (courtesy High Plains Climate Center).

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=tfx&type=data&loc=hydro&fx=watyr\\_pcnorm.png](http://www.wrh.noaa.gov/tfx/image.php?wfo=tfx&type=data&loc=hydro&fx=watyr_pcnorm.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>

All reported data is preliminary. Further inquiries about the moisture conditions can be directed to Dave Bernhardt or Gina Loss at (406) 453-2081. Many more links can be found on the Drought Information Page of the NWS Great Falls web site at  
<http://www.wrh.noaa.gov/tfx/main/drought.php?wfo=tfx>