

Montana Weather/Precipitation Summary

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

After a fairly tranquil June, the first two weeks of July has been quite a turnaround. Severe thunderstorms have been observed over many sections of the state, with heavy precipitation and a few tornadoes reported. Temperatures have averaged on the cool side most areas east of the divide, with readings slightly above normal west of the divide (Fig. 1).

The heavier rain that has fallen in the east has been in the same area with the coolest average temperatures (Fig 2). Plentywood has recorded the most rainfall so far in July (2.52 inches). With thunderstorms affecting some portion of the state nearly every day of the month, a rapid succession of weather systems have kept warm spells to a minimum.

July 1-5

On the 1st, storms in the Brusett area dropped $\frac{3}{4}$ inch hail. A larger outbreak on the 2nd produced heavy rain and flash flooding near Harlowton, with 1.5 inch hail falling near Roundup. Golf-ball size hail fell over portions of Chouteau County. July 3rd brought funnel cloud sightings near Billings, Lloyd and Hogeland, with wind gusts to 69 mph near Glasgow. One inch hail fell near Peerless and Scobey. Nature produced an active July 4th. Again a funnel cloud was seen near Browning, with golf-ball size hail near Fort Benton. The 5th brought another round of afternoon strong and severe thunderstorms. Tornadoes were sighted near Glendive and Wibaux, with large hail reported in several counties along the eastern tier. Strong storms developed over north central Montana. During this 5 day period, temperatures were near normal. The warmest day was on the 5th, just ahead of a cold front that lingered over the state.

July 6-10

July 6th brought some of the most widespread severe weather to the state. From Ravalli County to Roosevelt County, severe weather was reported. Golf ball size hail fell over the southwest, with very strong winds in the central, to tornadoes near Nashua and near Bainville. Wind gusts to 85 mph were reported at Big Sandy. On the 7th, only isolated strong storms occurred in Fergus County. Temperatures cooled across the state on the 8th through 10th. Still, one inch hail fell over portions of southeast and central Montana, with golf-ball size hail in Garfield County. Cool temperatures and rain kept the high temperature at Butte at 57F, with record cool maximum temperatures set at Dillon and Bozeman. The cool conditions produced a record low temperature at Dillon on the 9th, with Wisdom dropping to 28F. Though cold, their record low for the date is 23F set in 1919.

July 11-15

A break in severe weather occurred from the 10th through 11th. Gates Park fell to 27F on the 11th, for the state's lowest temperature. Warm air building across southeast Montana produced temperatures in the 90s on the 11th and 12th. Hardin peaked at 96F on the 12th, for the highest temperature in the state. Strong storms again developed on the 12th. Golf ball size hail fell near Crow Agency, with wind gusts to 61 mph near Dearborn and 58 mph at Loma as a cluster of thunderstorms moved through north central Montana. This storm system moved into eastern Montana on the 13th with hail reported at several locations. The largest was golf-ball size in near Jordan and Valier. A tornado was sighted near Frazer. Heavy rainfall produced a debris flow on the Going to the Sun road in Glacier National Park on the 13th. A daily rainfall record was established at Kalispell as 1.33 inches of rain fell. July 15th brought a pleasant day across most of the state. An isolated thunderstorm developed in the Cut Bank area during the afternoon. As it moved near Shelby, one inch hail fell and a funnel cloud was sighted.

New Temperature Records for July 2009

Station	Record Type	New Record	Date	Previous Record	Year of Previous Record
Dillon	Low Daily Max	63	8	63	1983
Bozeman	Low Daily Max	64	8	64	1982
Livingston	Low Daily Max	64	8	69	1959
Martinsdale	Low Daily Max	63	8	64	1897
Butte	Low Daily Min	34	9	36	2004
Dillon	Low Daily Min	36	9	39	2004

Precipitation

Severe weather has been reported on 10 days in July, the normal is 11 days. Again, precipitation was highly variable across the state. Much of south central and pockets of western Montana had below average precipitation. Some of the driest areas were over Lewis and Clark and Big Horn Counties. The wettest areas were the Glasgow, Fort Benton and Kalispell areas (Fig. 2). For the water year, the northwest remains the driest (Fig. 3).

New Precipitation Records for July 2009

Station	Record Type	New Record	Date	Previous Record	Year of Previous Record
Fort Assinniboine	Daily Maximum Rainfall	0.87	6	0.81 inches	1993
Glasgow	Daily Maximum Rainfall	1.05	6	0.83 inches	2000
Kalispell	Daily Maximum Rainfall	1.33 inches	13	0.69 inches	1956

July 1-15 summary information:

High Temperature	96°F at Hardin (12 th)	Greatest Precip	2.52" at Plentywood
Low Temperature	27°F at Gates Park (11 th)		
Warmest Ave Temp	71.1°F at Miles City	Peak Wind Gust	85 mph at Big Sandy (6 th)
Coollest Ave Temp	56.4°F at Big Sky	Range of Temp departures	-5.0°F at Glendive to +1.2°F at Bozeman

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

Location	Jul 1-15	% of Norm	Oct1 – Jul 15	% of norm	Years
Baker	1.69	238%	11.53	131%	11
Billings	0.48	75%	9.98	84%	100
Bozeman	1.03	173%	9.83	85%	68
Butte	0.76	103%	9.55	100%	115
Cut Bank	0.98	124%	4.55	52%	101
Dillon	0.69	121%	7.69	105%	69
Glasgow	2.25	253%	8.69	107%	109
Great Falls	1.18	163%	10.54	93%	114
Havre	1.14	151%	6.84	81%	128
Helena	0.30	45%	6.58	79%	130
Jordan	1.31	156%	9.86	119%	10
Kalispell	2.10	298%	13.28	94%	114
Lewistown	2.02	192%	10.53	78%	113
Livingston	1.13	167%	10.41	86%	103
Miles City	0.62	77%	9.01	87%	132
Missoula	0.43	79%	9.87	89%	124
Mullan Pass	1.18	146%	26.83	86%	67
Wolf Point	1.79	176%	6.45	77%	11
Glendive	0.75	83%	9.51	96%	106
Sidney	1.64	153%	7.99	77%	68
BZN-MSU	1.44	200%	16.07	105%	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>

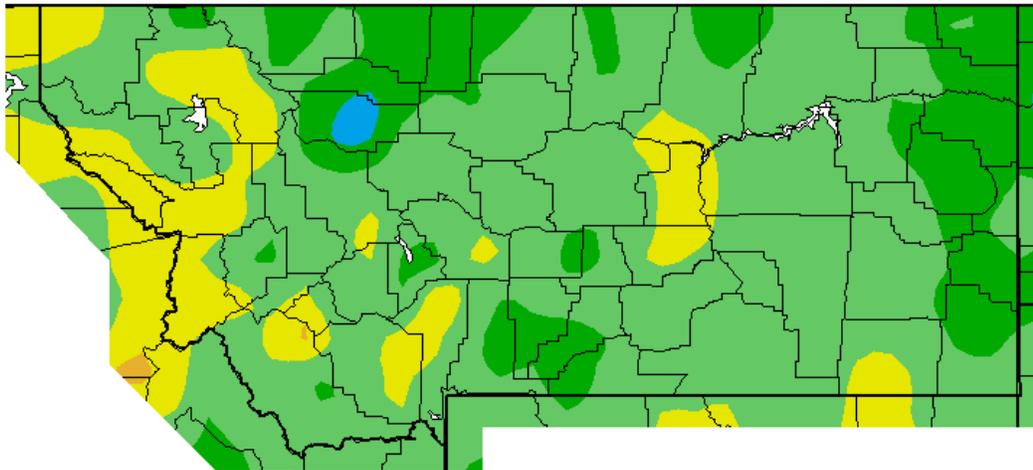


Figure 1. Average temperature departure from normal for July 1-15. Temperatures were below normal across eastern Montana. Above normal temperatures were mainly west of the continental divide (Western Region Climate Center).

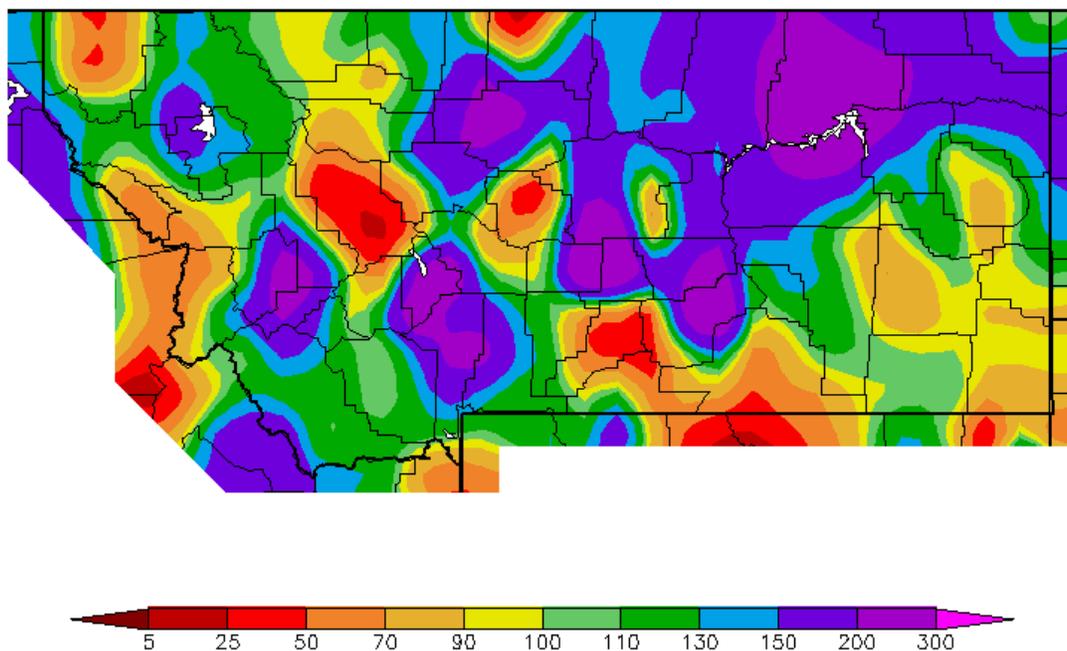
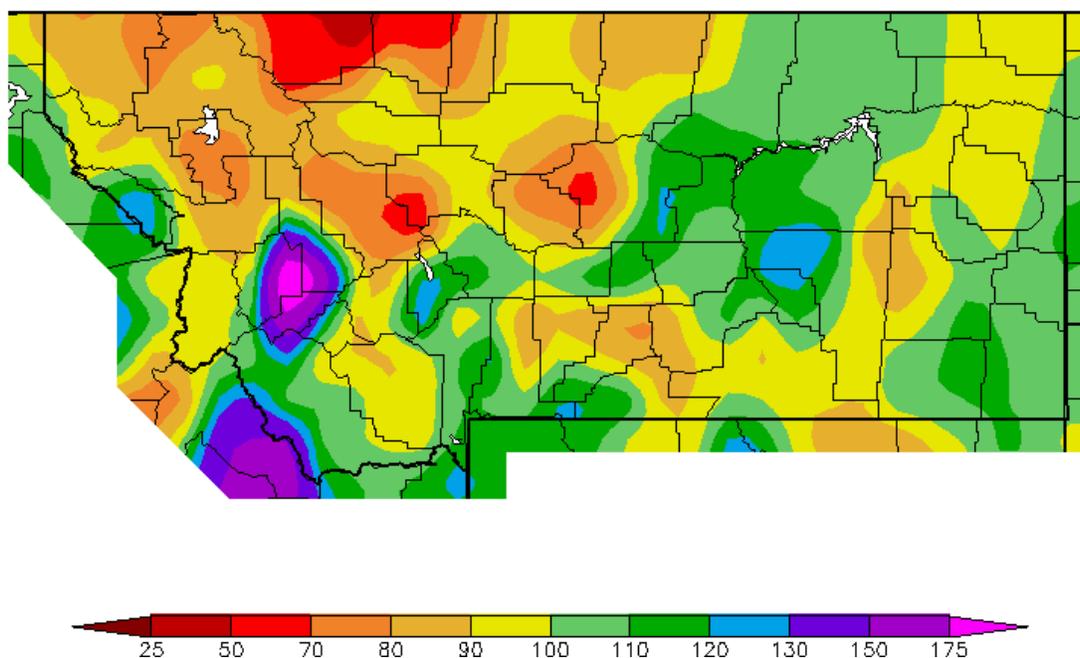


Figure 3. Precipitation anomaly (% of normal) for July 1-15. (Western Region Climate Center).



Precipitation percentage of normal for the Water Year (Oct 1 – Jul 15) (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=tfx&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 accessed 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>