

Montana Weather/Precipitation Summary

October 2015 NOAA's National Weather Service Great Falls Montana

General northwest flow dominated October's weather as a weak ridge of high pressure parked along the west coast (Fig. 1). Temperatures were above normal, with widely variable precipitation. There were a few record warm high temperatures set during the month.

Statewide composite temperatures averaged 2.6°F above normal for the month. The temperature anomalies ranged from 2.0°F at Polebridge to +7.5°F at Mullan Pass (Fig. 2). The warmest average monthly temperature was 56.7°F at Gardiner, and the coolest was 39.7°F at Gates Park. This was the 15th warmest October of record and the warmest since 1965. For the past 12-months, the statewide composite average temperature is 2.4°F above normal.

Ten of the last 12 months have had warmer than normal temperatures.

The monthly departure from normal for precipitation across Montana is shown in Figure 3. Above normal precipitation was over central Montana, while other areas were dry. The highest amounts were 4.69-inches in the Pryor Mountains and 7.70-inches at Poorman (Cabinets). Statewide, this month averaged 1.21-inches, or 0.14-inches above normal. The statewide composite precipitation for the past 12 months is 0.77-inches below normal.

Snowfall was on the light side. Great Falls recorded the highest amount for the month – 3.7-inches – which fell on the 3rd and 4th. The statewide monthly average was the lowest since 1987.

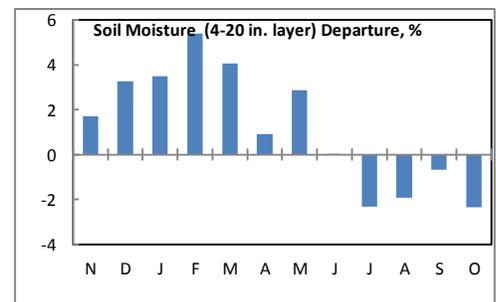
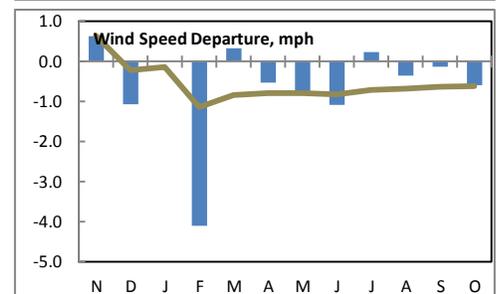
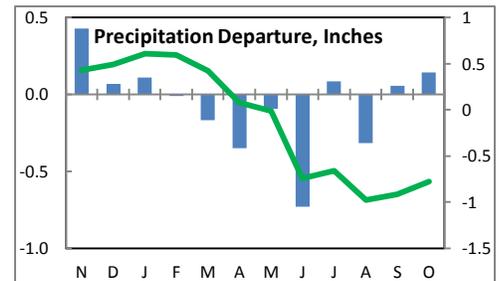
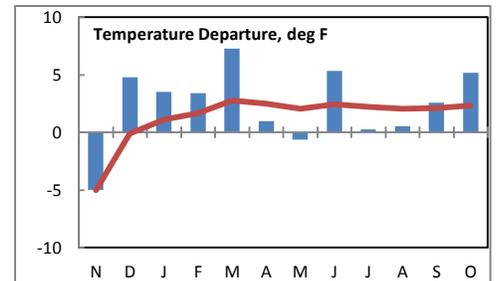
The statewide average winds were below normal this month, ranking as the 16th calmest October of record. The statewide composite average was 8.1 mph, 0.6 mph below normal. The 12-month average is running 0.6-mph below average. The fastest average speed was 12.6 mph at Sweet Grass, with a higher elevation location, Deep Creek, recording 17.6 mph. The fastest measured gust of the month, 83 mph, occurred near Pendroy on the 11th.

Even with heavy precipitation in central Montana, soil moisture values remained below average. The October average is 2.1 points below normal. This ranked as the 4th driest of record. The driest was October 2012. Records began in 1995.

Refer to NEIC's State of the Climate report for the latest monthly discussion:
<http://www.ncdc.noaa.gov/sotc/>.

October 1-5

A short period of below normal temperatures accompanying a large storm system visited Montana. High temperatures remained in the 30s over portions of central Montana on the 4th, while heavy rain fell across much of the state. Amounts of over three inches were reported in the Great Falls and Geraldine areas. Many amounts of more than one inch were reported across the state. At Great Falls, the event ended with 3.7-inches of snowfall.



October 6-24

A period of near to above normal temperatures covered mid-month. Temperatures warmed to 92°F at Brandenburg on the 10th, the month's warmest. Several record high temperatures were set on this date. A strong cold front brought very windy conditions across the state on the 11th. Gusts reached 70 mph at several locations across eastern Montana. The month's highest gust of 83 mph was recorded on this date at a location west of Pendroy. A couple of semi-trailers were blown over during this event. From the 20th-21st, an area of heavy rain fell across southern Montana. Amounts over one inch were recorded. A point near Wilsall reported 1.80-inches.

October 25-31

The month closed out with near normal temperatures. The last couple of days were very windy, but little precipitation fell.

Precipitation/convection

Severe convective weather occurred on zero days in October, which is normal.

Calendar year to-date

The calendar year through October has averaged the second warmest of record. Precipitation is running about one and one-quarter inches below normal, with the winds continuing below the long-term average.

October summary information:

High Temperature	92°F at Brandenburg (10 th)	Greatest Precip	4.69" in Pryor Mountains
Low Temperature	8°F at Mizpah (Custer) (29 th)		7.70" at Poorman Creek
Warmest Ave Temp	56.7°F at Gardiner	Peak Wind Gust	83 mph near Pendroy (11 th)
Coollest Ave Temp	39.7°F at Porphory Pk		
Range of Temp departures	2.0°F at Polebridge to +7.5° at Mullan Pass	Highest Ave Wind	12.6 mph at Sweet Grass 17.6 mph at Deep Creek
21 city mean monthly Temperature/Normal	49.0/43.8F 5.2F above normal. 15 th warmest of record (since 1880). 88 th percentile. Jan-Oct 49.6/46.8 2.8F above normal. 2 nd warmest of record.	20 city mean monthly wind speed/Normal	8.1 mph/8.7 mph; 16 th calmest of record (since 1936). 20 th percentile. Jan-Oct 8.6 mph/9.3 0.7-mph below normal. 12 th calmest of record.
22 city mean monthly precipitation/Normal	1.21/1.07" – 113% of normal. 48 th wettest of record (since 1880). 88 th percentile. Jan-Oct 11.94"/13.22" – 1.28" below normal. 44 th driest of record.		

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

Location	Oct	% of Norm	Rank	Pcntl	Oct 1 - 31	% of norm	Rank	Pcntl	Years
Baker	0.90	75%			0.90	75%			
Billings	1.80	143%	94	82	1.80	143%	94	82	115
Belgrade	1.22	111%	52	65	1.22	111%	52	65	79
Butte	0.87	112%	78	64	0.87	112%	77	63	122
Cut Bank	0.30	68%	49	44	0.30	68%	49	44	109
Dillon	0.63	91%	48	63	0.63	91%	48	63	76
Glasgow	1.67	223%	111	93	1.67	223%	111	93	119
Great Falls	2.48	288%	119	96	2.48	288%	119	96	124
Havre	1.06	183%	114	84	1.06	183%	113	83	136
Helena	0.21	31%	28	20	0.21	31%	28	20	136
Jordan	2.04	229%			2.04	229%			
Kalispell	1.14	113%	78	64	1.14	113%	78	64	122
Lewistown	0.78	69%	45	37	0.78	69%	45	37	120
Livingston	1.70	135%	86	76	1.70	135%	86	76	113
Miles City	1.01	110%	91	65	1.01	110%	91	65	139
Missoula	0.88	98%	72	53	0.88	98%	72	53	136
Mullan Pass	3.26	106%	40	52	3.26	106%	40	52	76
Wolf Point	1.15	142%			1.15	142%			
Glendive	0.46	43%	42	34	0.46	43%	42	35	119
Sidney	0.54	49%	27	35	0.54	49%	27	35	76
BZN-MSU	1.74	101%	92	67	1.74	101%	92	67	136

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>

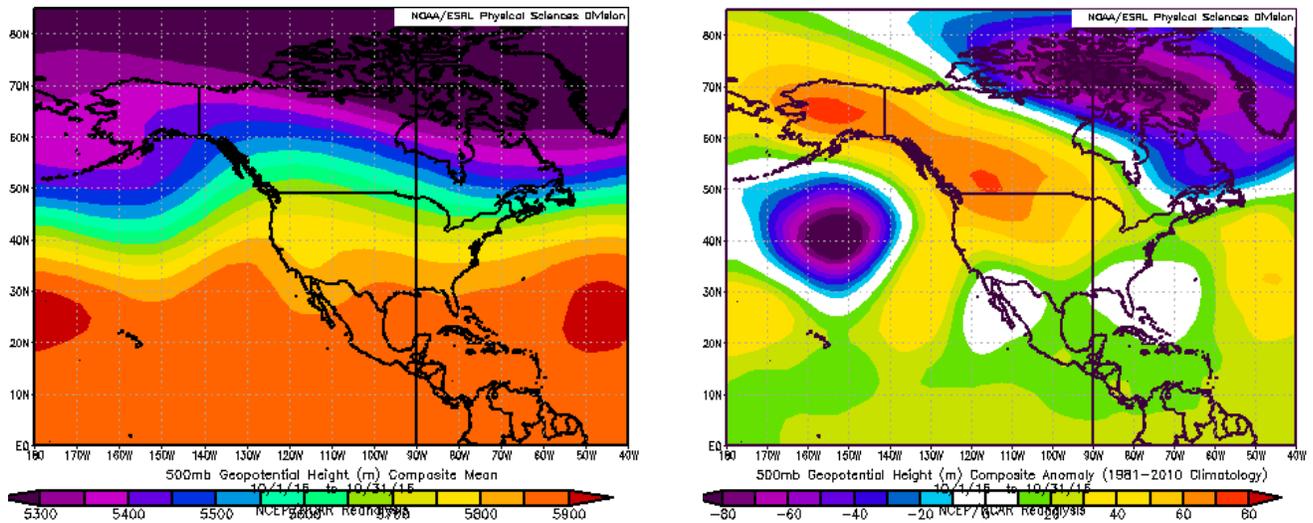


Figure 1. Mean flow at 500 millibars (~18,000 ft) for this month (left) and departure from normal (right).

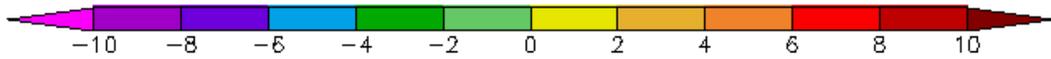
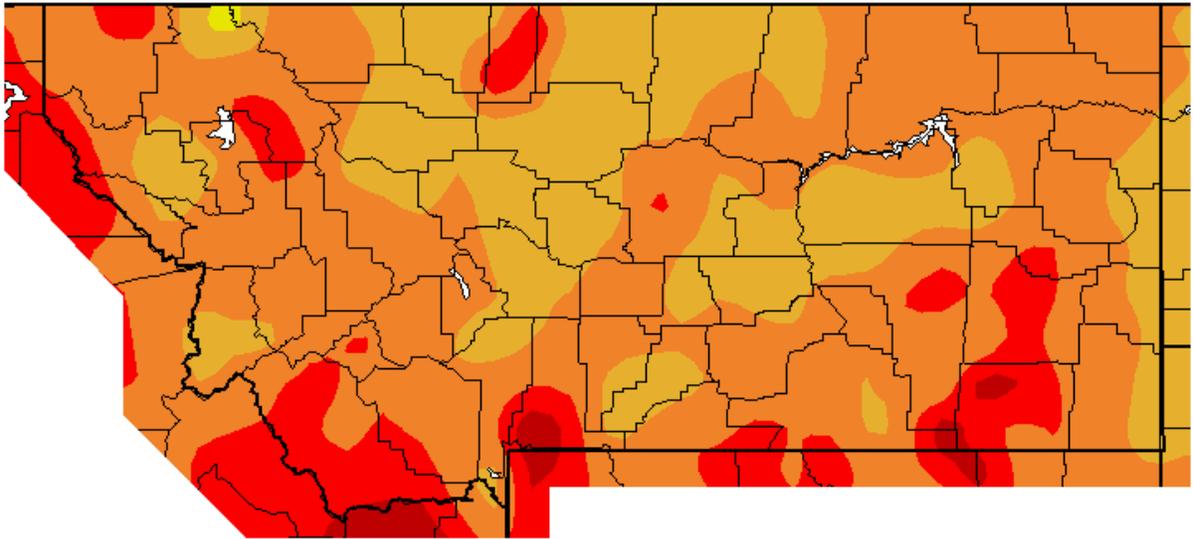


Figure 2. October 2015 temperature departures from normal (°F) (Western Region Climate Center).

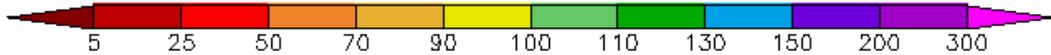
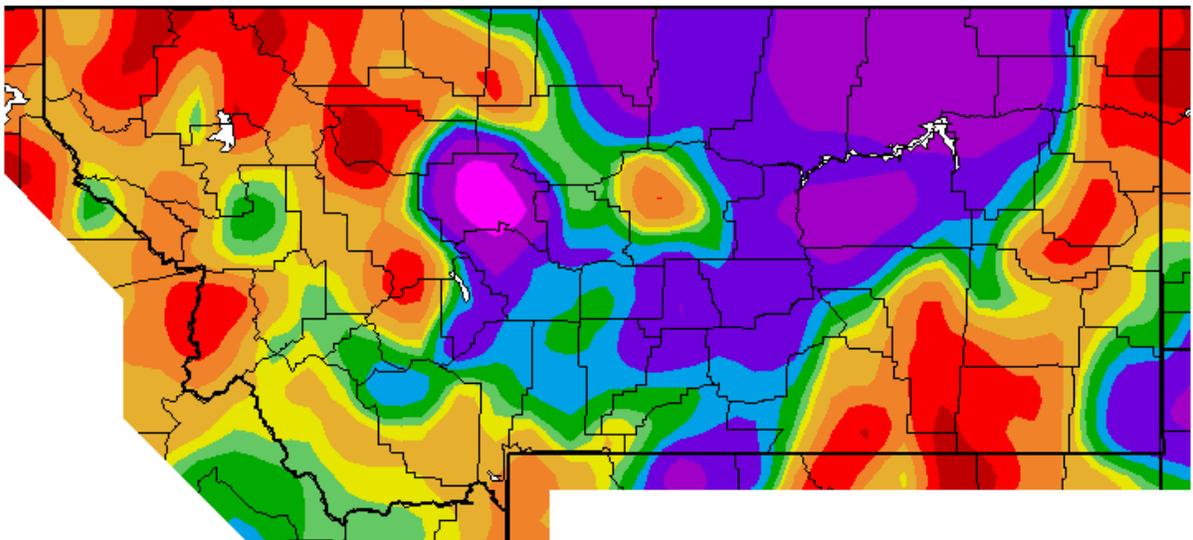


Figure 3. October 2015 precipitation departures from normal (percent) (Western Region Climate Center).

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/climate/monthlysum/climatesum.php?wfo=txf>

For the latest information on mountain snowpack from the NRCS, go to: <http://www3.wcc.nrcs.usda.gov/snow/index.html>

For the latest U.S. Drought Monitor, issued weekly by the National Drought Mitigation Center, USDA and NOAA, go to: <http://droughtmonitor.unl.edu/>

These data are preliminary and have not undergone final QC by NEIC. Therefore, these data are subject to revision. Final and certified climate data can be access at the National Environmental Information Center (NEIC) <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=txf>. 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.