

Montana Weather/Precipitation Summary

February 2015 by NOAA's National Weather Service Great Falls Montana

The few days of February were on the cool side, followed by a two week period with above normal temperatures, then the month ended with below normal temperatures. A persistent ridge of high pressure remained along the North American West Coast, while a deep trough was over the eastern portion. This brought above normal temperatures and generally dry conditions to most of the state. The northeast saw below normal temperatures and somewhat above normal precipitation. The mean monthly flow (Fig. 1) did show an anomalously strong high pressure ridge centered along the coast.

Statewide composite temperatures averaged 3.4°F above normal for the month. The temperature anomalies ranged from -6.0°F at Westby to +11.4°F at Wisdom. The warmest average monthly temperature was 38.2°F at Plains, and the coolest was 10.7°F at Plentywood. For the past 12-months, the statewide composite average temperature is 0.7°F above normal. The past three months have had warm departures of 3F or more.

The monthly departure from normal for precipitation across Montana is shown in Figure 3. Above normal precipitation was scattered across the state. There were also large areas with below normal values. The highest amount was 7.70-inches at Poorman Creek (Lincoln County) and 5.60-inches at Many Glacier. Statewide, this month averaged 0.54-inches, or 0.01-inches below normal. The statewide composite precipitation for the past 12 months is 2.33-inches above normal.

Snowfall was below normal. The statewide average was 4.7-inches, or 2.9-inches above normal. The heaviest amount was 44.3-inches near Red Lodge. Statewide seasonal snowfall averages are running 0.3 inches above normal.

The statewide average winds were below normal this month, ranking as the 32nd calmest February of record. The statewide composite average was 8.9 mph, 4.1 mph below normal. The 12-month average is running 0.5-mph below average. The fastest average speed was 18.96 mph at Deep Creek RAWS, while Livingston recorded an average of 16.2-mph. The fastest measured gust of the month, 78 mph, occurred at Heart Butte on the 6th.

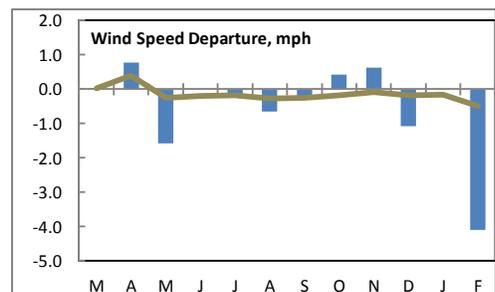
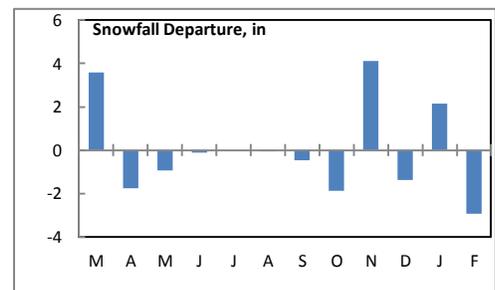
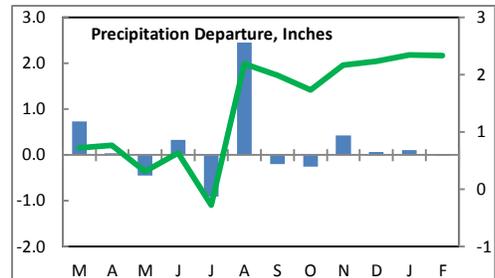
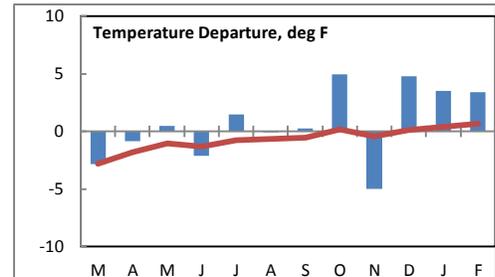
Refer to NCDC's State of the Climate report for the latest monthly discussion: <http://www.ncdc.noaa.gov/sotc/>.

Jan 1-4

With temperatures averaging below normal across the state during this period, a location near Poplar dipped as low as -26°F on the 4th. A storm system brought snow to much of the state, with amounts as high as six inches at Red Lodge on the 1st.

Jan 4-20

Much warmer temperatures prevailed during most of this period. Winds also increased. Gusts reached 76 mph west of Choteau on the 5th and 78 mph at Heart Butte on the 6th. Gusts to 77 mph in southern Montana (near Nye) downed trees near Red Lodge and caused power outages near Big Timber on the 7th. Record high temperatures were common across western and central



Montana on the 6th, 7th and 8th. After a short lull, gusty winds returned on the 12th. Warmer air accompanying the winds again produced record high temperatures over central and southwest Montana on the 13th, 14th and 15th. Snow came to the state on the 15th and 16th. Around a foot of snow fell at Red Lodge, with lesser amounts elsewhere.

Jan 21-31

The rest of the month was generally cooler than normal, with periods of snowfall. Up to a foot and on-half of snow fell around Red Lodge on the 21st. A brief warmup on the 24th brought gusty winds to the Rocky Mountain Front. As a cooler storm system passed on the 25th, up to a foot of snow fell over the Little Belts and in the Red Lodge area.

Precipitation/convection

Severe convective weather occurred on zero days in February. This is normal for the month.

December through February

The December through February seasonal temperature was above normal. The average of 25.6°F is the 12th warmest of record, and the warmest since 1999-2000. Precipitation averaged 2.31", and the 67th wettest of record. This puts the precipitation value in the middle of the pack, with 135 years of record. Seasonal snowfall of 26.2" is the 61st lowest of record, again near the middle. Winds averaged 8.7 mph, or the 6th calmest of record. This is the calmest such period since 2009-10.

February summary information:

| | | | |
|--|---|---|---|
| High Temperature | 71°F at Billings, Flatwillow, Roundup and Ryegate (6 th) | Greatest Precip | 4.76" near Noxon |
| Low Temperature | -29°F at Elk Park (24 th) | | 7.70" at Poorman Creek SNOTEL (Lincoln) |
| Warmest Ave Temp | 38.2°F at Plains | Peak Wind Gust | 78 mph at Heart Butte (6 th) |
| Coollest Ave Temp | 10.7°F at Plentywood | | |
| Range of Temp departures | -6.0°F at Westby to +17.4°F at Wisdom | Highest Ave Wind | 16.2 mph at Livingston 18.9 mph at Deep Creek |
| 21 city mean monthly Temperature/Normal | 27.6/24.6F 3.4F above normal. 28 th warmest of record (since 1880). 78 th percentile. Oct-Feb 30.2/27.9 2.5F above normal. 26 th warmest of record. Dec-Feb 25.6/21.7 4.9F above normal. 12 th warmest of record. | 20 city mean monthly wind speed/Normal | 8.9 mph/13.0 mph; 32 th calmest of record (since 1936). 39 th percentile. Oct-Feb 9.0 mph/9.8 0.8-mph below normal. 19 th calmest of record. Dec-Feb 8.7mph/10.4 1.3mph below normal. 6 th calmest of record. |
| 22 city mean monthly precipitation/Normal | 0.54/0.55" - 98% of normal. 42 nd driest of record (since 1880). 31 st percentile. Oct-Feb 4.43"/ 4.08" - 0.35" above normal. 59 th wettest of record. Dec-Feb 2.31"/2.14" - 0.17" above normal. 67 th wettest of record. | 20 city mean monthly Snow/Normal | 4.7"/7.6"; 25 th lowest of record (since 1880). 1964 th percentile. Oct-Feb 39.1"/39.0"; 0.1" above normal. 64 th snowiest of record. Dec-Feb 26.2"/28.4" 1.8" below normal. 61 st lowest of record. |

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 | 0.17 | 53% | | | 1.89 | 76% | | | 17 |
| Billings | 0.21 | 36% | 34 | 28 | 2.87 | 71% | 45 | 39 | 114 |
| Belgrade | 0.15 | 33% | 5 | 5 | 2.30 | 69% | 16 | 19 | 78 |
| Butte | 0.13 | 30% | 12 | 9 | 2.69 | 96% | 60 | 49 | 121 |
| Cut Bank | 0.15 | 71% | 32 | 29 | 3.39 | 240% | 100 | 93 | 108 |
| Dillon | 0.19 | 79% | 42 | 55 | 1.35 | 73% | 23 | 30 | 75 |
| Glasgow | 0.26 | 100% | 57 | 48 | 2.32 | 106% | 61 | 52 | 116 |
| Great Falls | 0.38 | 81% | 46 | 37 | 4.34 | 146% | 97 | 79 | 123 |
| Havre | 0.33 | 118% | 64 | 47 | 3.20 | 158% | 96 | 71 | 135 |
| Helena | 0.38 | 127% | 66 | 47 | 3.30 | 148% | 85 | 62 | 137 |
| Jordan | 0.40 | 160% | | | 2.39 | 117% | | | 17 |
| Kalispell | 1.12 | 115% | 78 | 64 | 9.61 | 153% | 115 | 95 | 121 |
| Lewistown | 0.69 | 157% | 74 | 61 | 3.81 | 109% | 53 | 44 | 119 |
| Livingston | 0.65 | 130% | 87 | 75 | 3.13 | 93% | 43 | 38 | 112 |
| Miles City | 0.13 | 57% | 25 | 18 | 1.36 | 63% | 19 | 13 | 138 |
| Missoula | 1.01 | 144% | 95 | 68 | 7.53 | 166% | 124 | 92 | 135 |
| Mullan Pass | 3.58 | 114% | 37 | 50 | 23.98 | 113% | 42 | 56 | 74 |
| Wolf Point | 0.23 | 110% | | | 0.87 | 43% | | | 17 |
| Glendive | 0.31 | 97% | 65 | 53 | 2.53 | 98% | 65 | 56 | 116 |
| Sidney | 0.19 | 58% | 25 | 32 | 2.19 | 75% | 33 | 43 | 75 |
| BZN-MSU | 0.55 | 71% | 54 | 39 | 5.48 | 101% | 86 | 63 | 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>

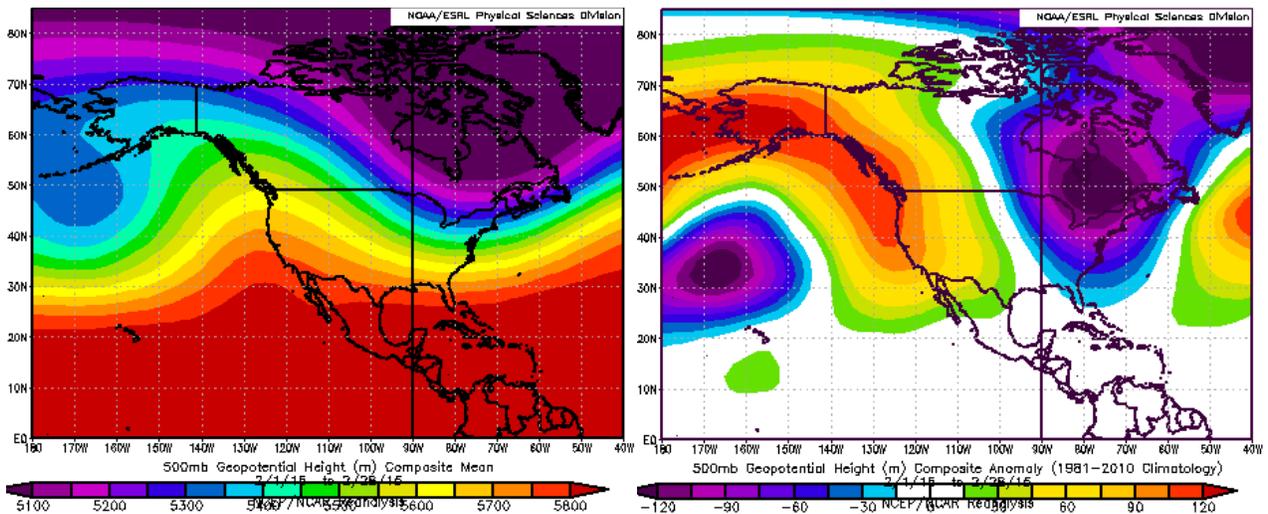


Figure 1. Mean flow at 500 millibars (~18,000 ft) for this month (top-left) and departure from normal (top-right).

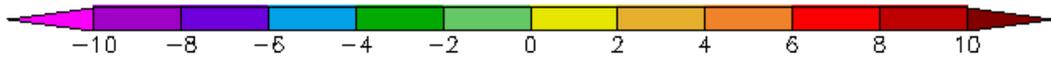
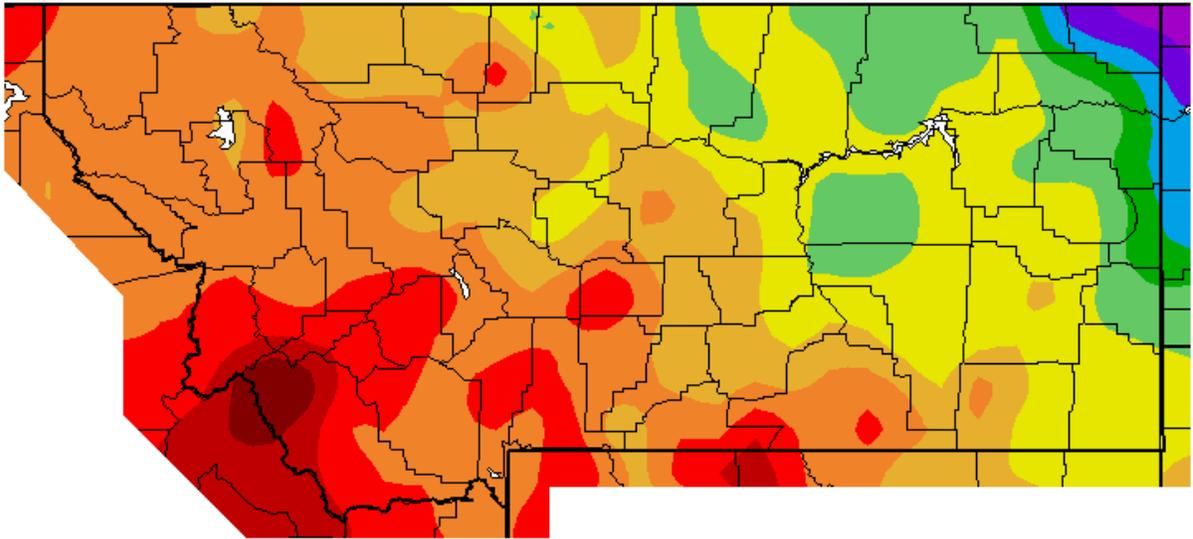


Figure 2. February 2015 temperature departures from normal (°F) (Western Region Climate Center).

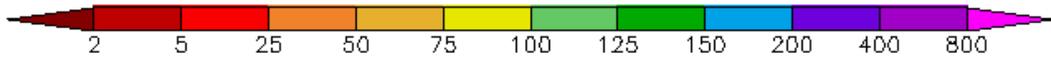
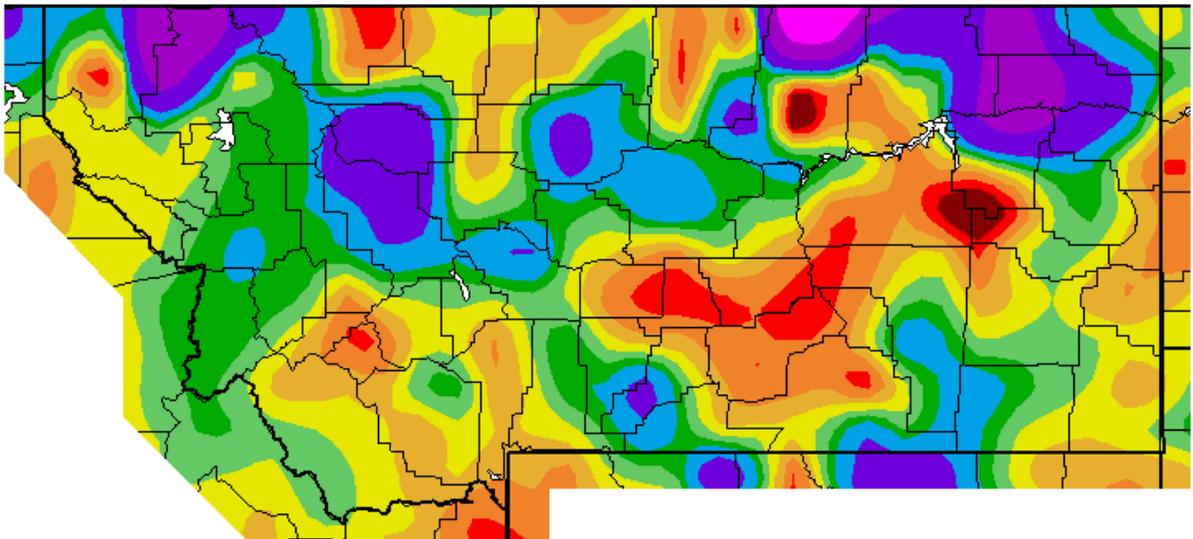


Figure 3. February 2015 precipitation departures from normal (percent) (Western Region Climate Center).

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=tx>

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 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>. 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.