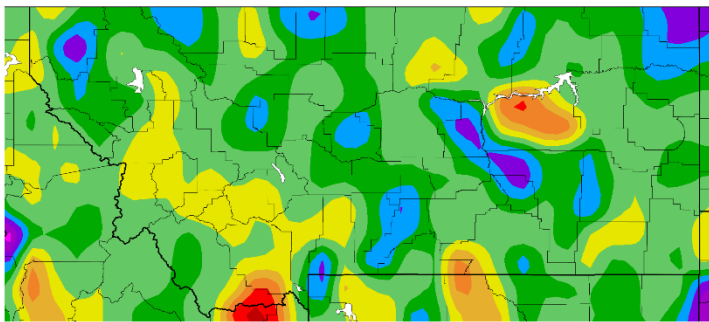


Montana Weather/Precipitation Summary

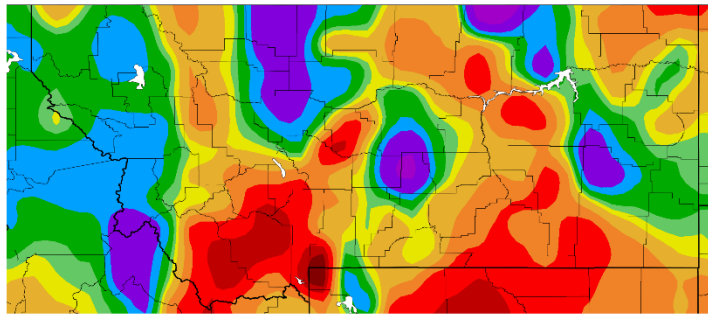
May 2020 NOAA's National Weather Service Great Falls Montana

For May, the upper level flow over Montana was generally from the west, which was normal for the month (Fig. 1). May's average temperatures were near to slightly below normal. Precipitation amounts were mostly below normal, with areas of above normal in the west and swaths in the east. Winds averaged above normal.

May temperature anomalies ranged from 1.8°F below normal at Miles City to 2.7°F above normal at Jordan. The map below shows the variation. The warmest average temperatures were in eastern Montana. The warmest average temperature was at Hardin, with an average of 57.5°F, while the coolest was 35.2°F at Point Six (Missoula). The highest temperature was 97°F at Hardin on the 31st. The coldest temperature was 12°F at Placer Basin on the 8th. The statewide temperature average of 52.1°F was the 22nd coolest of record. The red line on the graph shows the cumulative 12-month departure from normal, which was 0.1°F below normal. See the state summary and temperature tables below for more details.



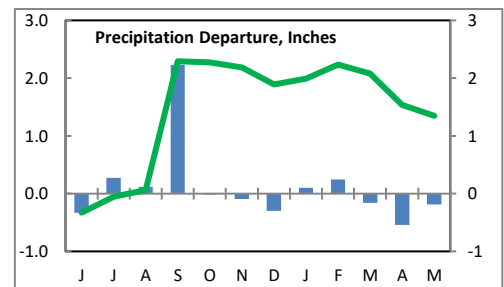
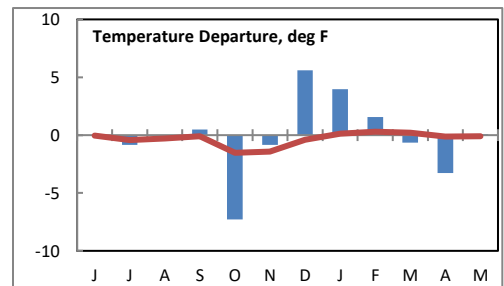
Temperature departure from normal



Percent of normal precipitation

Precipitation was heaviest over the portions of northwest Montana. The highest amount (9.80-inches) fell at Stahl Peak SNOTEL. A location near Ronan recorded the most at a lower elevation location (4.92"). The statewide composite of 2.12-inches was 0.19" below normal. This ranks as the 65th driest May of record for Montana. The green line on the precipitation graph shows the cumulative 12-month departure from normal, which is 1.35" above normal. See state summary and precipitation tables below for more details. Snowfall was below normal in most areas. Bozeman airport (10.2-inches) had their 8th highest April amount. The heaviest monthly snowfall was 21.0-inches at Mystic Lake.

Wind speed averages were near normal. Statewide, the month ranked as the 25th calmest May, with an average speed of 9.5-mph. The strongest averages were in along the Rocky Mountain

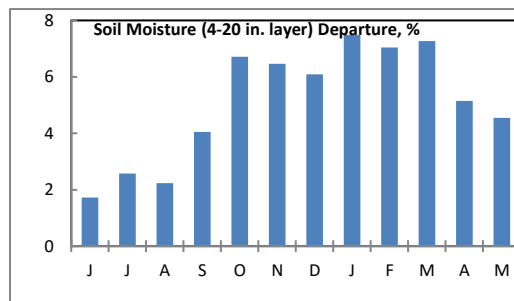
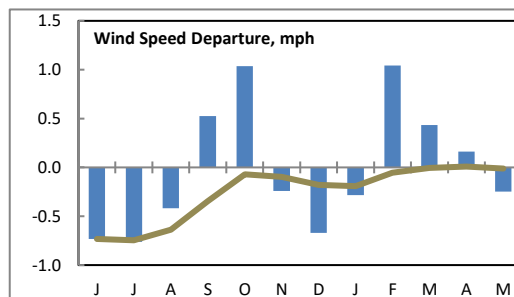


Front and Livingston areas. The composite statewide average was 0.2-mph below normal. The brown line of the wind graph to the right shows the 12-month cumulative statewide wind departure from normal. The 12-month average is running at normal.

Statewide soil moisture averages continued above normal for May (right). This data is from 33 NRCS SCAN and SNOTEL, NOAA CRN and MT Mesonet stations. For May, this was the wettest of record, replacing 2019. The record began in 1995.

Refer to NCEI's State of the Climate report for the latest monthly discussion:

<http://www.ncdc.noaa.gov/sotc/>



May began with near normal temperatures, cooling to a period of below normal temperatures through the 15th. Some severe thunderstorms dropped large hail in extreme eastern Montana on the 2nd and 2rd. Hail to 1.75" fell at Ridgeway (Carter) on the 3rd. Record low temperatures occurred at Great Falls (26F) and Kalispell (25F) on the 5th and 6th. Strong winds and heavy rain occurred from the 6th-8th. Gusts reached 65 mph near Molt and 60 mph at Dillon. Up to two inches of rain fell in central Montana. Heavy snow of a foot fell at Showdown, 11" at Lewistown and 10" near Highwood on the 8th. Another round of heavy precipitation brought over 1.5" of precipitation to the Clancy area on the 12th. On the 15th, 15" of snow fell near Georgetown Lake, with nearly 1.5" of water-equivalent precipitation in the area. A series of weather disturbances brought severe weather to eastern Montana from the 18th-20th. Thunderstorm gusts reached 73 mph near Hilger (Fergus) on the 18th. Hail to 1.75" fell in the Lavina (Golden Valley) area on the 19th. Very strong thunderstorm gusts to 75 mph hit the Rock Springs (Rosebud) region on the 20th, with gusts to 74 mph at Circle. A tornado caused damage in the Whately (Valley) area as well. Hail to 2.5" fell in the Miles City area. Strong winds and heavy precipitation moved in behind these days of severe weather. Heavy rain over 2.5" fell over the Rockies and adjacent plains on the 21st. Meanwhile, gusts reached 56 mph at Great Falls and 61 mph at Cut Bank. Cooler air with the precipitation brought 13" to the Red Lodge area on the 23rd and nearly 2-inches of precipitation over the southern Mountains. Very warm air moved in for the end of the month. Record high temperatures were set at Dillon and Ennis on the 20th, and at Billings on the 31st. Severe thunderstorms downed many trees in the Kalispell area on the 31st, with gusts to 78 mph near Kila. Severe thunderstorms across eastern Montana produced gusts to 81 mph at Sweeney Creek.

Precipitation/convection

Severe convective weather occurred on six days in May, which is one day above normal.

Water-year-to-Date (Oct-May)

The water-year average temperature for Montana was 33.3°F, which was 0.1°F below normal. This was the 67th coolest of record.

This season's composite precipitation was 7.65-inches, 0.95-inches below normal. This was the driest such period since 2002 and the 39th driest of record.

Seasonal snowfall (Jul-May) was 62.9-inches and 6.1-inches above normal. This was the 28th highest amount for the season and snowiest since 2017-18.

Winds averaged 9.3-mph, which was 0.1-mph above normal. This was the 29th calmest such period, but windiest since 2013.

Spring Season (Mar-May)

The average temperature for Montana was 41.4°F, which was 1.3°F below normal. This was the 51st coolest spring season of record.

This year’s composite precipitation was 3.69-inches, which was 0.89-inches below normal. This was the driest such period since 2001 and the 41st driest of record.

The season’s snowfall averaged 16.1-inches, which was 0.2” below normal. This was the 51st snowiest of record.

Winds averaged 9.7-mph, which was 0.1-mph above normal. This was the 36th calmest such period, but windiest since 2012.

May information:

High Temperature	97°F at Hardin (31 st)	Greatest Precip	4.92” near Ronan
Low Temperature	12°F at Placer Basin (8 th)		9.80” at Stahl Peak SNOTEL
Warmest Ave Temp	57.5°F at Hardin	Peak Wind Gust	80 mph at Beaver Hill MDT (29 th) (tstm)
Coolest Ave Temp	35.2°F at Point Six RAWS		
Range of Temp departures	-1.8°F at Miles City to +2.7F at Jordan	Highest Ave Wind	15.2 mph at Deep Creek RAWS 12.8 mph at Cut Bank
21 city mean monthly Temperature/Normal	52.1/52.0F normal. 22 nd coolest of record (since 1880). 41 st percentile.	20 city mean monthly wind speed/Normal	9.3 mph/9.5 mph; 25 th calmest of record (since 1936). 31 st percentile.
22 city mean monthly precipitation/Normal	2.12”/2.31” – 91% of normal. 65 th driest of record (since 1880). 54 th percentile.	20 city mean monthly snowfall/Normal	0.8”/1.8” – 59 th lowest of record (since 1880). 46 th percentile

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

Location	May	% of Norm	Rank	Pcntl	Oct 1 - May	% of norm	Rank	Pcntl	Years
Baker	2.74	110%			5.42	74%			22
Billings	1.21	56%	84	68	5.39	66%	89	75	119
Belgrade	0.85	36%	81	96	5.35	66%	79	95	83
Butte	1.42	68%	85	67	3.74	55%	115	91	126
Cut Bank	1.92	98%	47	41	5.81	125%	39	34	113
Dillon	0.38	20%	78	96	2.28	42%	80	100	80
Glasgow	3.24	169%	18	14	6.72	125%	35	29	120
Great Falls	3.34	138%	26	19	8.14	105%	59	46	128
Havre	1.30	75%	76	54	5.17	101%	88	63	140
Helena	1.57	84%	81	57	5.39	95%	103	73	141
Jordan	1.14	50%			5.73	96%			22
Kalispell	3.16	160%	13	10	9.83	93%	72	57	126
Lewistown	3.76	132%	33	26	8.94	102%	63	50	124
Livingston	1.54	58%	92	78	6.33	73%	91	79	115
Miles City	3.84	176%	22	15	5.83	93%	89	62	143
Missoula	2.59	128%	27	18	8.65	99%	70	50	139
Mullan Pass	2.77	103%	32	39	33.50	107%	27	33	79
Wolf Point	0.81	46%			2.43	47%			22
Glendive	2.73	122%	35	27	5.90	88%	68	56	120
Sidney	1.63	80%	42	51	4.30	65%	61	76	80
BZN-MSU	1.78	56%	115	79	9.68	79%	110	77	143
W Yellowstone	2.85	127%	23	21	13.81	91%	61	63	97

Rankings and Percentiles are 1=wettest, higher numbers=drier.

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>

**Historical Rank of Average Temperature (°F)
for the Current Month and Water Year to Date**

Location	May	Normal	Rank	Pcntl	Oct 1 - May	Normal	Rank	Pcntl	Years
Baker	52.4	51.4	69	63	32.4	32.8	55	51	107
Billings	55.7	55.6	39	45	37.9	38.4	44	51	86
Belgrade	52.5	51.4	25	29	33.6	33.3	33	38	85
Butte	48.8	47.6	42	33	31.0	30.7	63	50	126
Cut Bank	50.0	49.9	52	46	31.3	33.0	67	60	111
Dillon	50.2	50.3	42	54	32.3	33.7	60	79	76
Glasgow	56.5	55.1	42	34	32.7	31.9	34	27	124
Great Falls	51.3	51.7	84	66	34.8	35.6	82	66	123
Havre	53.8	54.0	70	49	32.3	33.1	72	51	140
Helena	54.5	54.0	35	24	36.8	35.7	24	17	140
Jordan	55.4	52.7	43	42	35.2	32.9	28	28	97
Kalispell	52.0	51.8	56	45	35.6	34.8	28	23	120
Lewistown	50.1	50.0	55	45	32.9	34.1	71	60	117
Livingston	52.2	50.6	51	43	37.0	36.2	53	46	115
Miles City	54.2	55.9	106	75	34.9	34.9	63	45	138
Missoula	53.5	53.5	53	41	37.2	37.0	31	24	127
Mullan Pass	42.7	42.0	25	57	29.2	29.3	24	55	43
Wolf Point	54.6	54.2			31.5	30.6			22
Glendive	53.8	57.2	106	84	34.8	35.4	51	42	121
Sidney	54.4	58.0	62	64	32.0	34.6	32	33	97
W Yellowstone	44.7	43.7	32	34	24.6	24.6	61	66	93

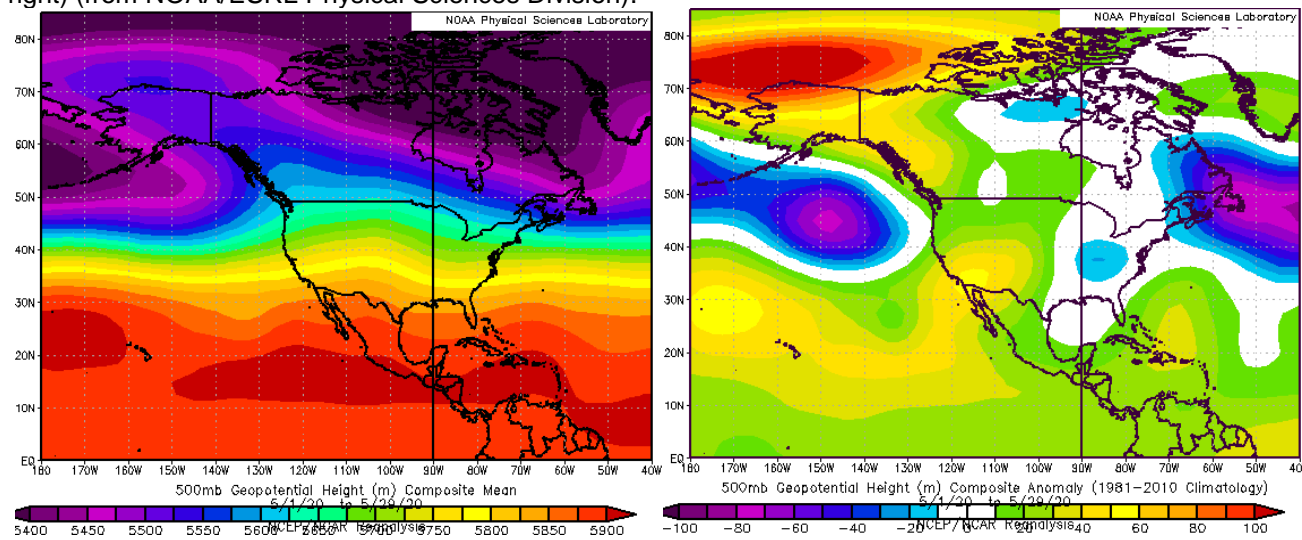
Rankings and Percentiles are 1=coldest, higher numbers=warmier.

Historical Rank of Average Wind Speed (mph) for the Current Month and Water Year to Date

Location	May	Normal	Rank	Pcntl	Oct 1 - May	Normal	Rank	Pcntl	Years
Baker	12.0	12.4			11.0	11.3			22
Billings	9.5	9.9	70	81	12.1	11.3	31	36	84
Belgrade	6.9	6.8	25	44	5.8	5.7	29	52	55
Butte	7.5	8.0	38	66	5.4	6.4	41	73	56
Cut Bank	12.8	12.9	35	45	14.7	13.5	15	18	78
Dillon	10.0	9.3	20	29	10.3	9.5	17	25	66
Glasgow	11.2	11.9	25	32	10.4	10.4	37	49	75
Great Falls	10.8	11.2	44	52	13.0	13.0	43	52	82
Havre	10.9	9.9	21	15	11.0	9.4	8	5	130
Helena	8.6	8.2	69	49	7.1	6.9	100	71	140
Jordan	9.4	9.7	20	54	8.7	8.0	6	14	36
Kalispell	7.1	6.8	53	43	5.8	5.4	110	91	121
Lewistown	9.4	9.4	38	48	10.2	9.8	32	40	78
Livingston	12.5	11.8	27	48	17.3	15.9	15	27	53
Miles City	9.6	11.6	73	56	10.0	10.3	47	36	129
Missoula	6.5	6.8	59	69	4.8	5.3	69	81	85
Mullan Pass	4.8	5.4	19	60	5.1	5.8	27	93	29
Wolf Point	8.5	9.6			8.1	8.2			22
Glendive	10.3	11.6	24	86	10.0	10.5	19	68	28
Sidney	9.8	10.5	18	57	8.9	9.4	25	81	31
W Yellowstone	6.5	6.0			6.3	6.6			6

Rankings and Percentiles are 1=winiest, higher numbers=calmer.

Figure 1. Mean flow at 500 millibars (~18,000 ft) for this month (upper left) and departure from normal (upper right) (from NOAA/ESRL Physical Sciences Division).



For the latest information on mountain snowpack from the NRCS, go to: <https://www.wcc.nrcs.usda.gov/gis/snow.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.ncei.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=tfx>. 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.