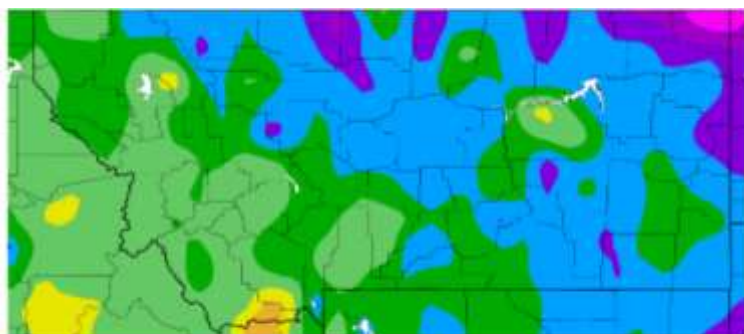


# Montana Weather/Precipitation Summary

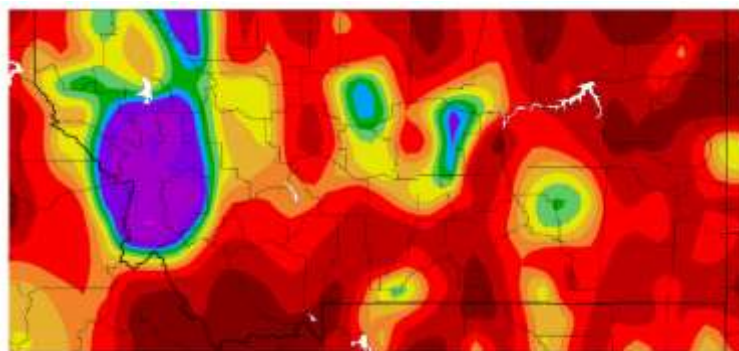
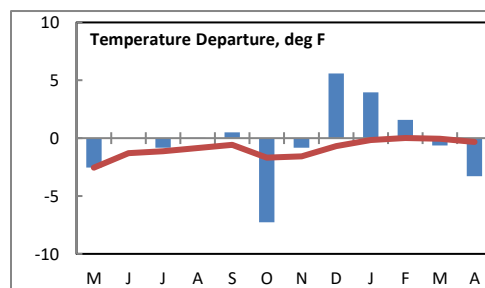
April 2020 NOAA's National Weather Service Great Falls Montana

For April, the upper level flow over Montana was generally from the northwest. There was a ridge off the western coast of North America, which was a little stronger than normal. The trough over central North America was much stronger than normal (Fig. 1). April's average temperatures were below normal. Precipitation amounts were mostly below normal, with areas of above normal in the west. Winds averaged slightly above normal.

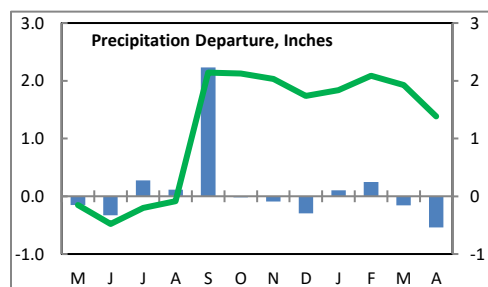
April temperature anomalies ranged from 5.1°F below normal at Havre and Miles City to 0.9°F below normal at Jordan. The map below shows the variation. The warmest average temperatures were in northwest Montana. The warmest average temperature was at Troy, with an average of 46.3°F, while the coolest was 25.6°F at Yellow Mule (Gallatin). The highest temperature was 83°F at Billings and Helena on the 29<sup>th</sup>. The coldest temperature was -24°F at Placer Basin on the 16<sup>th</sup>. The statewide temperature average of 39.6°F was the 22<sup>nd</sup> coolest of record. The red line on the graph shows the cumulative 12-month departure from normal, which was 0.3°F below normal. See the state summary and temperature tables below for more details.



Temperature departure from normal



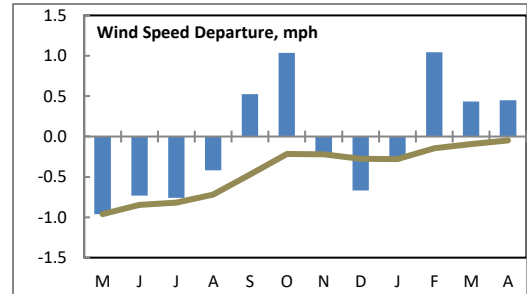
Percent of normal precipitation



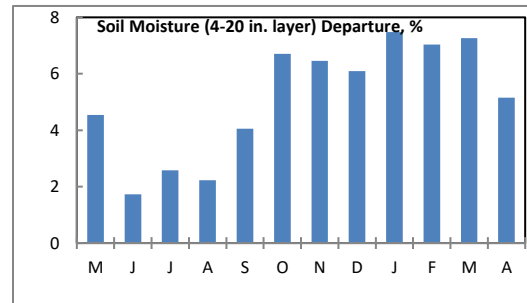
Precipitation was heaviest over the portions of northwest Montana. The highest amount (7.80-inches) fell at Moss Peak SNOTEL. Bigfork recorded the most at a lower elevation location (3.55"). The statewide composite of 0.79-inches was 0.54" below normal. This ranks as the 24<sup>th</sup> driest April of record for Montana. The green line on the precipitation graph shows the cumulative 12-month departure from normal, which is 1.38" above normal. See state summary and precipitation tables below for more details. Snowfall was above normal in many areas.

Bozeman airport (10.2-inches) had their 8<sup>th</sup> highest April amount. The heaviest monthly snowfall was 43.0-inches at Mystic Lake.

Wind speed averages were generally above normal. Statewide, the month ranked as the 35<sup>th</sup> calmest April, with an average speed of 10.0-mph. The strongest averages were in along the Rocky Mountain Front and Livingston areas. The composite statewide average was 0.2-mph above 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 0.1-mph below normal.



Statewide soil moisture averages continued above normal for April (right). This data is from 33 NRCS SCAN and SNOTEL, NOAA CRN and MT Mesonet stations. For April, this was the wettest of record, replacing 2007. 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/>

April began with very cold temperatures and snow. Temperatures were 25 to 30 degrees below normal with high temperatures in the teens. Low temperatures as low as -14°F were measured at Rocky Boy on the 2<sup>nd</sup>. Snow fell over the two days, with the heaviest in southern Montana. One to two feet of snow fell over the southern mountains. Much warmer air returned by the 3<sup>rd</sup>, with windy conditions returning by the 7<sup>th</sup>. On the 7<sup>th</sup>, gusts reached 62 mph near Fort Benton and 68 mph at Deep Creek RAWS. After a short warm period, temperatures cooled by the 11<sup>th</sup>, with another winter storm affecting the state. Over the 11<sup>th</sup> and 12<sup>th</sup>, heavy snow fell with amounts of up to two feet at Red Lodge. Areas around Helena picked up 17-inches, while central Montana, including Judith Gap measured 11-inches. The storm produced strong east winds west of the divide. On Mount Aeneas, winds gusted to 75 mph, which was one of the highest gusts for the month. The coldest temperatures of the month occurred during this period. Placer Basin dropped to -24°F on the 13<sup>th</sup>. Before warming again, another 18-inches of snow fell in the Red Lodge area on the 16<sup>th</sup>.

A storm system brought precipitation to western and southwest Montana on the 23<sup>rd</sup>. Precipitation amounts of over 1.5-inches fell over portions of western Montana. Windy conditions returned on the 27<sup>th</sup>, with gusts reaching 62 mph at East Glacier and 72 mph at Deep Creek RAWS. Thunderstorms west of the divide produced nickel-size hail at Rexford. A cold front moving through the state spawned thunderstorms in the east. Thunderstorm gusts reached 80 mph at Beaver Hill (west of Wibaux) on the 28<sup>th</sup>. Other high gusts in the area included 63 mph at Baker. On the last day, variable amounts of precipitation fell over state. Some areas in the southwest measured 1.3-inches of precipitation. Meanwhile, thunderstorms produced one-half inch hail at Helena and Butte. The warmest day of the month was also on the 30<sup>th</sup>.

### Precipitation/convection

Severe convective weather occurred on one day in April, which is normal.

### New Snowfall Records established this season...

Although December, January and February have had below to much below normal snowfall, several locations have exceeded their seasonal average snowfall. Snowfall in September, October and November was heavy. Following is a table showing several sites with their snowfall through April, along with their seasonal normal snowfall. If they have already exceeded their seasonal

normal, the amount in the current season is denoted with an \*. If they have set a new seasonal record, it is denoted with ^^.

Location	Current Season Snow (in)	Normal for whole season	Record for season (inches)
Bozeman	69.9*	40.2"	97.8 (1947-48)
Bozeman MSU	99.3*	91.0"	158.5 (1996-97)
Chinook	51.0*	31.2"	66.0 (2010-11)
Choteau	110.3^^	39.8"	92.9 (2017-18)
Cut Bank	99.3^^	33.6"	76.2 (1946-47)
Dillon	47.5*	37.9"	90.8 (1988-89)
East Glacier	227.8*	176.6"	319.0 (1971-72)
Great Falls	99.6*	63.5"	117.5 (1988-89)
Havre	74.7*	39.5"	93.3 (1981-82)
Helena	40.4*	38.1"	112.8 (1880-81)
Lewistown	77.4*	63.1"	111.1 (1927-28)
Loma	78.6*	38.4"	91.0 (1977-78)
Sun River	89.4*	23.5"	93.8 (1966-67)
Turner	82.2^^	24.6"	74.2 (2010-11)
W Yellowstone	130.4	162.7"	316.6 (1994-95)

#### Water-year-to-Date (Oct-Apr)

The water-year average temperature for Montana was 30.7°F and 0.1°F below normal. This was the 67<sup>th</sup> coolest of record.

This season's composite precipitation was 5.54-inches and 0.75-inches below normal. This was the driest such period since 2005 and the 23<sup>rd</sup> driest of record.

Seasonal snowfall (Jul-Apr) was 62.1-inches and 7.1-inches above normal. This was the 24<sup>th</sup> highest amount for the season and snowiest since 2017-18.

Winds averaged 9.3-mph, which was 0.2-mph above normal. This was the 29<sup>th</sup> calmest such period, but windiest since 2014.

#### Calendar-year-to-Date (Jan-Apr)

The average temperature for Montana was 30.6°F and 0.6°F above normal.

This year's composite precipitation was 3.24-inches and 0.36-inches below normal. This was the driest such period since 2015 and the 37<sup>th</sup> driest of record.

Winds averaged 9.6-mph, which was 0.3-mph above normal. This was the 37<sup>th</sup> calmest such period, but windiest since 2014.

**April information:**

<b>High Temperature</b>	83°F at Billings & Helena (29 <sup>th</sup> )	<b>Greatest Precip</b>	3.55" at Bigfork
<b>Low Temperature</b>	-24°F at Placer Basin (13 <sup>th</sup> )		7.80" at Moss Peak SNOTEL
<b>Warmest Ave Temp</b>	46.3°F at Troy	<b>Peak Wind Gust</b>	80 mph at Beaver Hill MDT (29 <sup>th</sup> ) (tstm)
<b>Coollest Ave Temp</b>	25.6°F at Yellow Mule RAWS		
<b>Range of Temp departures</b>	-4.1°F at Havre and Miles City to -0.9F at Jordan	<b>Highest Ave Wind</b>	17.7 mph at Deep Creek RAWS 14.1 mph at Livingston
<b>21 city mean monthly Temperature/Normal</b>	39.6/42.8F normal. 22 <sup>nd</sup> coolest of record (since 1880). 16 <sup>th</sup> percentile.	<b>20 city mean monthly wind speed/Normal</b>	10.0 mph/9.8 mph; 35 <sup>th</sup> calmest of record (since 1936). 42 <sup>nd</sup> percentile.
<b>22 city mean monthly precipitation/Normal</b>	0.79"/1.33" – 59% of normal. 24 <sup>th</sup> driest of record (since 1880). 18 <sup>th</sup> percentile.	<b>20 city mean monthly snowfall/Normal</b>	6.7"/5.6" – 33 <sup>rd</sup> highest of record (since 1880). 76 <sup>th</sup> percentile

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

Location	Apr	% of Norm	Rank	Pcntl	Oct 1 – Apr 30	% of norm	Rank	Pcntl	Years
Baker	0.59	42%			2.68	56%			22
Billings	0.40	24%	102	84	4.18	70%	88	74	119
Belgrade	0.74	47%	66	78	4.50	78%	66	79	83
Butte	0.64	55%	92	72	2.32	49%	113	90	126
Cut Bank	0.55	71%	71	62	3.89	145%	30	26	113
Dillon	0.15	14%	78	96	1.90	55%	75	94	80
Glasgow	0.43	51%	72	56	3.48	101%	68	56	120
Great Falls	0.73	51%	95	73	4.80	90%	85	66	128
Havre	0.42	50%	104	74	3.87	114%	85	60	140
Helena	0.72	73%	84	59	3.82	101%	104	74	141
Jordan	0.61	56%			4.59	126%			22
Kalispell	1.23	99%	45	35	6.67	77%	100	79	126
Lewistown	0.91	65%	82	65	5.18	88%	85	68	124
Livingston	0.64	36%	103	85	4.79	80%	87	74	117
Miles City	0.68	50%	95	66	1.99	48%	138	96	143
Missoula	1.81	150%	20	13	6.06	90%	92	66	139
Mullan Pass	3.07	102%	31	38	30.73	107%	34	42	79
Wolf Point	0.38	40%			1.62	47%			22
Glendive	0.51	40%	93	74	3.17	71%	95	78	121
Sidney	0.14	13%	73	90	2.67	59%	67	84	80
BZN-MSU	1.12	49%	112	77	7.90	87%	83	58	143
W Yellowstone	0.81	50%	85	79	10.96	85%	65	65	99

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	Apr	Normal	Rank	Pcntl	Oct 1 – Apr 30	Normal	Rank	Pcntl	Years
Baker	38.1	42.7	100	92	29.5	30.2	54	50	107
Billings	43.1	46.2	63	73	35.4	36.0	45	52	86
Belgrade	41.0	42.7	51	60	30.9	30.7	35	40	85
Butte	38.0	39.0	82	64	28.5	28.3	69	54	126
Cut Bank	37.1	41.0	88	78	28.6	30.6	69	62	111
Dillon	40.0	41.6	54	70	29.7	31.4	61	80	76
Glasgow	41.3	44.9	94	78	29.3	28.6	35	28	124
Great Falls	39.1	43.1	112	88	32.5	33.3	83	67	123
Havre	39.3	44.4	123	87	29.3	30.1	70	50	140
Helena	43.8	44.9	71	50	34.2	33.1	29	20	140
Jordan	43.1	44.0	65	64	32.3	30.0	28	28	97
Kalispell	41.5	43.6	91	75	33.3	32.4	29	24	120
Lewistown	37.1	41.4	105	85	30.5	31.8	75	63	118
Livingston	41.1	42.1	88	74	34.8	34.1	61	52	117
Miles City	40.9	46.0	131	93	32.2	31.9	57	41	138
Missoula	44.5	45.7	66	51	34.8	34.6	33	25	127
Mullan Pass	32.9	34.6	27	62	27.3	27.5	24	55	43
Wolf Point	39.3	43.8	19	86	28.2	27.2	8	33	22
Glendive	39.3	47.0	122	97	32.1	32.3	45	37	123
Sidney	39.2	47.3	82	85	28.8	31.3	29	30	97
W Yellowstone	30.9	33.6	70	75	21.7	21.8	66	70	94

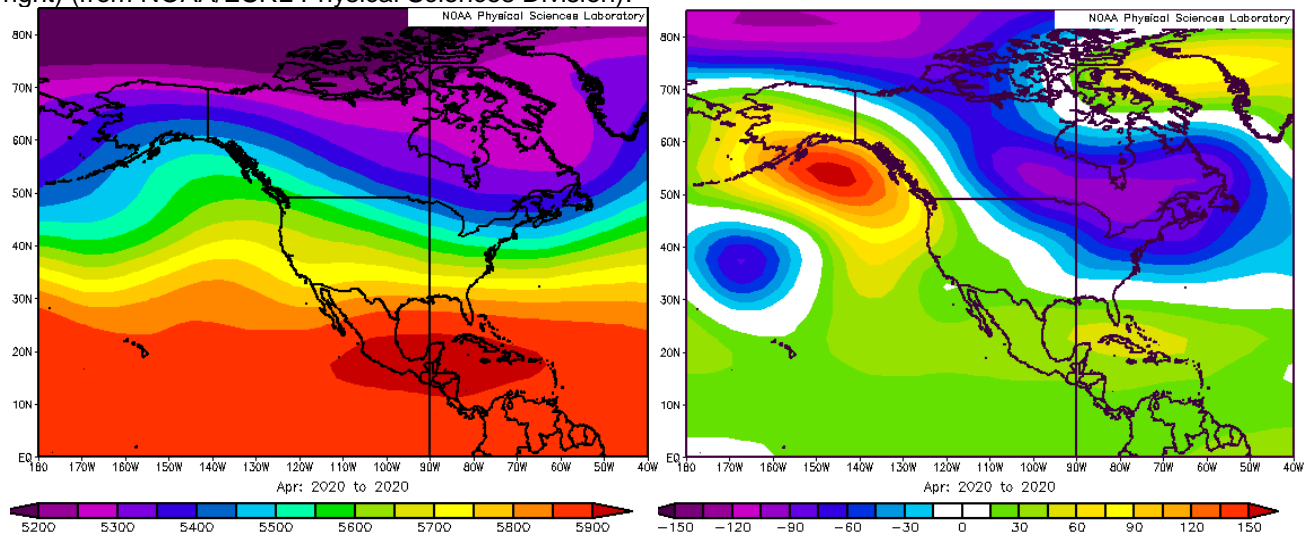
Rankings and Percentiles are 1=coldest, higher numbers=warmer.

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

Location	Apr	Normal	Rank	Pcntl	Oct 1 – Apr 30	Normal	Rank	Pcntl	Years
Baker	11.7	12.3			10.9	11.1			22
Billings	11.2	10.5	44	51	12.5	11.5	20	23	84
Belgrade	7.2	7.0	29	51	5.6	5.6	27	48	55
Butte	6.8	7.9	44	77	5.1	6.2	46	82	56
Cut Bank	13.9	13.5	32	41	15.0	13.5	15	18	78
Dillon	11.2	10.1	13	18	10.4	9.5	17	25	66
Glasgow	12.2	12.0	16	20	10.3	10.2	32	42	75
Great Falls	11.7	12.1	52	62	13.3	13.3	41	49	82
Havre	11.2	9.9	17	12	11.0	9.3	9	6	131
Helena	8.7	8.4	75	53	6.9	6.7	100	71	140
Jordan	10.6	9.3	5	11	8.6	7.8	6	14	36
Kalispell	8.0	7.0	29	23	5.6	5.1	108	89	121
Lewistown	10.0	9.8	43	55	10.3	9.9	34	43	78
Livingston	14.1	13.2	24	42	18.0	16.5	15	27	53
Miles City	11.3	11.4	40	30	10.0	10.1	39	30	129
Missoula	6.1	6.9	69	81	4.6	5.1	68	80	85
Mullan Pass	4.6	5.8	29	93	5.1	5.9	28	96	29
Wolf Point	9.8	10.0			8.0	8.0			22
Glendive	11.4	11.6	9	32	9.9	10.3	18	64	28
Sidney	11.2	10.1	4	10	8.7	9.2	26	84	31
W Yellowstone	6.2	7.0			6.2	6.7			6

Rankings and Percentiles are 1=windiest, 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=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.