

Climatology of the United States

No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: KALISPELL GLACIER PK AP, MT

1971-2000

COOP ID: 244558

Climate Division: MT 1

NWS Call Sign: FCA

Elevation: 2,957 Feet Lat: 48° 18N

Lon: 114° 16W

Temperature (°F)																					
Mean (1)				Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
Month	Daily Max	Daily Min	Mean	Highest Daily(2)	Year	Day	Highest Month(1) Mean	Year	Lowest Daily(2)	Year	Day	Lowest Month(1) Mean	Year	Heating	Cooling	Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	28.9	13.8	21.4	56	1934	27	32.0	1994	-38+	1950	31	.2	1979	1359	0	.0	.0	.2	16.7	29.0	6.1
Feb	35.2	18.4	26.8	64	1995	24	33.7	1992	-36	1950	1	13.2	1989	1079	0	.0	.0	1.2	8.4	25.9	2.9
Mar	44.9	24.8	34.9	72	1986	27	40.3	1992	-29	1960	3	28.0	1985	933	0	.0	.0	9.1	2.4	27.2	.3
Apr	56.0	30.8	43.4	85	1936	18	47.9	1987	-8	1936	1	37.9	1982	640	0	.0	.0	22.2	.1	17.7	.0
May	64.7	37.9	51.3	95+	1936	30	57.0	1993	17	1899	1	47.0	1996	412	3	.0	.2	29.7	.0	5.5	.0
Jun	71.9	43.5	57.7	96	1955	22	63.4	1986	26	1999	7	52.9	1981	220	17	.0	.8	29.7	.0	.7	.0
Jul	80.2	46.7	63.5	104	1960	19	68.8	1975	30	1999	3	56.3	1993	88	57	.1	5.1	31.0	.0	.2	.0
Aug	80.5	45.8	63.2	105	1961	4	67.7	1971	30+	2000	28	58.3	1980	102	62	.0	5.8	31.0	.0	.3	.0
Sep	69.0	37.1	53.1	99	1967	1	59.3	1998	7	1926	24	47.0	1985	344	3	.0	.4	29.0	.0	5.6	.0
Oct	55.3	28.4	41.9	86	1992	2	47.6	1988	-4	1935	31	38.0	1984	705	0	.0	.0	22.8	.5	21.4	@
Nov	38.6	23.2	30.9	69	1999	12	37.5	1999	-28	1959	16	16.8	1985	1014	0	.0	.0	3.0	6.4	25.5	.9
Dec	30.1	16.1	23.1	58	1918	4	32.5	1979	-35+	1990	29	8.2	1983	1297	0	.0	.0	.3	17.3	28.9	4.0
Ann	54.6	30.5	42.6	105	Aug 1961	4	68.8	Jul 1975	-38+	Jan 1950	31	.2	Jan 1979	8193	142	.1	12.3	209.2	51.8	187.9	14.2

+ Also occurred on an earlier date(s)

@ Denotes mean number of days greater than 0 but less than .05

Complete documentation available from: www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1899-2001

(3) Derived from 1971-2000 serially complete daily data

091-A

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COOP ID: 244558

Climate Division: MT 1

NWS Call Sign: FCA

Elevation: 2,957 Feet Lat: 48°18N

Lon: 114°16W

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	1.47	1.39	1.04	1982	23	2.66	1982	.20	1985	14.3	5.2	.2	@	.54	.68	.88	1.04	1.20	1.36	1.53	1.73	1.99	2.39	2.75
Feb	1.15	1.12	1.70	1908	29	1.99	1981	.28	1998	11.3	4.2	.1	.0	.45	.55	.70	.83	.95	1.07	1.20	1.35	1.55	1.84	2.12
Mar	1.11	.97	1.00	1936	27	2.96	1987	.08	1994	11.8	4.2	.1	.0	.28	.39	.55	.69	.83	.98	1.14	1.34	1.59	1.99	2.37
Apr	1.22	1.19	1.59	1951	30	2.37	1978	.43	1977	10.2	3.7	.3	@	.44	.55	.72	.86	.99	1.12	1.27	1.44	1.66	1.99	2.30
May	2.04	1.72	1.38	1948	22	4.75	1990	.78+	1983	12.3	6.2	.9	.1	.63	.83	1.12	1.36	1.60	1.85	2.12	2.44	2.86	3.50	4.10
Jun	2.30	1.83	2.71	1982	29	5.30	1995	.43	1977	12.0	6.0	1.2	.3	.71	.93	1.25	1.53	1.80	2.08	2.39	2.75	3.22	3.94	4.62
Jul	1.41	1.00	2.09	1987	22	6.02	1993	.05	1973	8.1	4.2	.4	.1	.16	.26	.46	.66	.87	1.10	1.38	1.72	2.18	2.95	3.69
Aug	1.25	1.08	1.90	1947	22	3.78	1976	.05	1994	7.9	3.6	.5	.1	.19	.30	.48	.65	.83	1.03	1.25	1.53	1.90	2.50	3.08
Sep	1.20	1.10	1.27	1899	13	3.97	1985	.01	1990	7.7	3.9	.5	@	.14	.24	.41	.57	.75	.95	1.18	1.46	1.85	2.48	3.10
Oct	.96	.84	1.31	1914	4	2.51	1995	.05	1987	8.3	3.3	.2	.0	.10	.18	.31	.44	.58	.75	.93	1.17	1.49	2.01	2.53
Nov	1.45	1.43	2.00	1900	19	3.26	1989	.37	2000	13.2	4.9	.3	@	.37	.51	.72	.90	1.09	1.28	1.49	1.75	2.08	2.60	3.09
Dec	1.65	1.58	1.50	1927	28	4.38	1990	.52	1986	15.1	5.8	.4	.0	.50	.65	.89	1.09	1.29	1.49	1.72	1.98	2.32	2.86	3.35
Ann	17.21	16.61	2.71	Jun 1982	29	6.02	Jul 1993	.01	Sep 1990	132.2	55.2	5.1	.6	11.46	12.54	13.94	15.01	15.97	16.90	17.87	18.94	20.26	22.17	23.84

+ Also occurred on an earlier date(s)

Denotes amounts of a trace

@ Denotes mean number of days greater than 0 but less than .05

** Statistics not computed because less than six years out of thirty had measurable precipitation

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1899-2001

(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: KALISPELL GLACIER PK AP, MT

COOP ID: 244558

Climate Division: MT 1

NWS Call Sign: FCA

Elevation: 2,957 Feet

Lat: 48° 18N

Lon: 114° 16W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										Snow Fall ≥ Thresholds					Snow Depth ≥ Thresholds			
Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	14.5	11.1	7	5	11.6	1982	23	28.9	1980	52	1997	1	44	1997	12.0	4.9	1.4	.3	@	24.1	19.9	15.2	7.9
Feb	9.9	8.4	5	3	12.4	1997	27	21.2	1975	46	1997	28	41	1997	8.8	3.2	.6	.4	@	18.9	13.5	10.6	4.7
Mar	6.8	5.9	2	1	7.0	1996	4	21.0	1996	50	1997	16	34	1997	6.8	2.3	.5	.1	.0	8.7	4.3	2.3	1.2
Apr	2.3	1.8	#	0	7.1	1990	28	7.6	1990	3+	1990	29	#	1997	2.9	.8	.1	@	.0	.6	.1	.0	.0
May	.2	#	#	0	2.0	1996	3	2.1	1975	#+	1975	24	#	1999	.3	.1	.0	.0	.0	.0	.0	.0	.0
Jun	.2	.0	#	0	5.5	1995	6	5.5	1995	4+	1995	7	#	1995	.0	.0	@	@	.0	.1	.1	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	#	.0	0	0	#	1992	23	#	1992	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.0	.0	0	0	.2	1972	25	.2+	1992	0	0	0	0	0	.1	.0	.0	.0	.0	.0	.0	.0	.0
Oct	1.4	.2	#	0	4.8	1972	28	11.1	1984	5	1984	31	1	1984	1.5	.5	.1	.0	.0	.6	.2	@	.0
Nov	9.9	7.2	1	0	20.1	1996	19	48.6	1996	35	1996	26	10	1996	8.4	3.0	.8	.2	@	7.7	3.2	1.4	.5
Dec	16.8	14.0	4	2	12.2	1990	31	52.1	1990	61	1996	30	33	1996	12.6	5.2	1.4	.5	.1	18.5	12.6	8.1	2.5
Ann	62.0	48.6	N/A	N/A	20.1	Nov 1996	19	52.1	Dec 1990	61	Dec 1996	30	44	Jan 1997	53.4	20.0	4.9	1.5	.1	79.2	53.9	37.6	16.8

+ Also occurred on an earlier date(s) #Denotes trace amounts

@ Denotes mean number of days greater than 0 but less than .05

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

(1) Derived from Snow Climatology and 1971-2000 daily data

(2) Derived from 1971-2000 daily data

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

Climatography of the United States

No. 20 1971-2000

Station: KALISPELL GLACIER PK AP, MT

COOP ID: 244558

Climate Division: MT 1

NWS Call Sign: FCA

Elevation: 2,957 Feet

Lat: 48° 18N

Lon: 114° 16W

Freeze Data									
Spring Freeze Dates (Month/Day)									
Temp (F)	Probability of later date in spring (thru Jul 31) than indicated(*)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	7/12	7/05	6/30	6/26	6/23	6/19	6/15	6/11	6/04
32	6/30	6/21	6/15	6/09	6/04	5/30	5/24	5/18	5/09
28	5/27	5/21	5/17	5/14	5/11	5/08	5/04	4/30	4/25
24	5/09	5/03	4/28	4/24	4/21	4/17	4/13	4/09	4/03
20	4/23	4/16	4/11	4/07	4/03	3/30	3/26	3/21	3/14
16	4/09	3/31	3/24	3/18	3/13	3/07	3/02	2/23	2/13
Fall Freeze Dates (Month/Day)									
Temp (F)	Probability of earlier date in fall (beginning Aug 1) than indicated(*)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	8/14	8/19	8/23	8/26	8/29	9/01	9/04	9/08	9/13
32	8/28	9/01	9/05	9/08	9/11	9/14	9/17	9/21	9/25
28	9/12	9/16	9/19	9/22	9/25	9/27	9/30	10/03	10/08
24	9/20	9/25	9/29	10/02	10/05	10/07	10/11	10/14	10/19
20	10/04	10/10	10/14	10/17	10/20	10/23	10/27	10/31	11/05
16	10/12	10/19	10/24	10/28	11/01	11/05	11/10	11/15	11/22
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	91	83	77	71	66	61	56	50	41
32	130	119	111	105	98	92	85	78	67
28	159	151	146	141	136	132	127	121	113
24	193	184	177	171	166	161	155	149	139
20	227	217	210	205	199	194	188	181	172
16	269	257	248	240	233	226	218	209	196

* Probability of observing a temperature as cold, or colder, later in the spring or earlier in the fall than the indicated date.

0/00 Indicates that the probability of occurrence of threshold temperature is less than the indicated probability.

Derived from 1971-2000 serially complete daily data

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

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No. 20
1971-2000**

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COOP ID: 244558

Climate Division: MT 1

NWS Call Sign: FCA

Elevation: 2,957 Feet Lat: 48°18N Lon: 114°16W

Degree Days to Selected Base Temperatures (°F)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1359	1079	933	640	412	220	88	102	344	705	1014	1297	8193
60	1199	930	780	499	279	123	46	52	237	564	873	1145	6727
57	1106	846	687	410	199	75	21	26	170	471	783	1052	5846
55	1044	790	625	351	153	50	12	15	131	409	723	990	5293
50	896	650	472	215	65	13	1	3	58	260	573	835	4041
32	411	233	77	3	0	0	0	0	0	5	149	349	1227

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	25	44	147	353	614	792	1000	991	651	326	88	30	5061
55	0	0	0	7	46	137	291	285	65	2	0	0	833
57	0	0	0	4	30	100	233	231	42	1	0	0	641
60	0	0	0	1	14	57	157	157	19	0	0	0	405
65	0	0	0	0	3	17	57	62	3	0	0	0	142
70	0	0	0	0	1	2	14	14	0	0	0	0	31

Growing Degree Units (2)																								
Base	Growing Degree Units (Monthly)												Growing Degree Units (Accumulated Monthly)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
40	0	0	21	150	375	559	759	755	419	127	14	1	0	0	21	171	546	1105	1864	2619	3038	3165	3179	3180
45	0	0	0	69	231	410	604	600	281	52	2	0	0	0	0	69	300	710	1314	1914	2195	2247	2249	2249
50	0	0	0	25	119	266	449	445	159	13	0	0	0	0	0	25	144	410	859	1304	1463	1476	1476	1476
55	0	0	0	5	51	143	298	294	69	2	0	0	0	0	0	5	56	199	497	791	860	862	862	862
60	0	0	0	0	14	62	163	163	22	0	0	0	0	0	0	0	14	76	239	402	424	424	424	424
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	23	115	242	345	481	484	294	117	5	0	0	0	23	138	380	725	1206	1690	1984	2101	2106	2106

(1) Derived from the 1971-2000 Monthly Normals

(2) Derived from 1971-2000 serially complete daily data

Note: For corn, temperatures below 50 are set to 50, and temperatures above 86 are set to 86

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

Notes

- a. The monthly means are simple arithmetic averages computed by summing the monthly values for the period 1971-2000 and dividing by thirty. Prior to averaging, the data are adjusted if necessary to compensate for data quality issues, station moves or changes in station reporting practices. Missing months are replaced by estimates based on neighboring stations.
- b. The median is defined as the middle value in an ordered set of values. The median is being provided for the snow and precipitation elements because the mean can be a misleading value for precipitation normals.
- c. Only observed validated values were used to select the extreme daily values.
- d. Extreme monthly temperature/precipitation means were selected from the monthly normals data.
Monthly snow extremes were calculated from daily values quality controlled to be consistent with the Snow Climatology.
- e. Degree Days were derived using the same techniques as the 1971-2000 normals.
Complete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normal/usnormals.html
- f. Mean "number of days statistics" for temperature and precipitation were calculated from a serially complete daily data set.
Documentation of the serially complete data set is available from the link below:
- g. Snowfall and snow depth statistics were derived from the Snow Climatology.
Documentation for the Snow Climatology project is available from the link under references.

Data Sources for Tables

Several different data sources were used to create the Clim20 climate summaries. In some cases the daily extremes appear inconsistent with the monthly extremes and or the mean number of days statistics. For example, a high daily extreme value may not be reflected in the highest monthly value or the mean number of days threshold that is less than and equal to the extreme value. Some of these difference are caused by different periods of record. Daily extremes are derived from the station's entire period of record while the serial data and normals data were for the 1971-2000 period. Therefore extremes observed before 1971 would not be included in the 1971-2000 normals or the 1971-2000 serial daily data set. Inconsistencies can also occur when monthly values are adjusted to reflect the current observing conditions or were replaced during the 1971-2000 Monthly Normals processing and are not reconciled with the Summary of the Day data.

- a. Temperature/ Precipitation Tables
 - 1. 1971-2000 Monthly Normals
 - 2. Cooperative Summary of the Day
 - 3. National Weather Service station records
 - 4. 1971-2000 serially complete daily data
- b. Degree Day Table
 - 1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
 - 2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data
- c. Snow Tables
 - 1. Snow Climatology
 - 2. Cooperative Summary of the Day
- d. Freeze Data Table
1971-2000 serially complete daily data

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html
Snow Climatology Project Description, www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html
Eischeid, J. K., P. Pasteris, H. F. Diaz, M. Plantico, and N. Lott, 2000: Creating a serially complete, national daily time series of temperature and precipitation for the Western United States. J. Appl. Meteorol., 39, 1580-1591,
www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf