

# Climatography of the United States

No. 20

1971-2000

Station: KIT CARSON, CO

COOP ID: 054603

Climate Division: CO 1

NWS Call Sign:

Elevation: 4,280 Feet Lat: 38°46N

Lon: 102°47W

## 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	41.4	10.4	25.9	77+	1986	31	36.6	1986	-30+	1984	19	11.3	1988	1217	0	.0	.0	10.1	7.8	30.9	4.8
Feb	47.1	15.2	31.2	83	1962	11	36.9	1999	-24	1982	5	22.0	1989	949	0	.0	.0	13.8	4.9	27.9	2.3
Mar	55.4	23.1	39.3	87	1963	28	45.1	1986	-20	1960	3	34.5	1980	797	0	.0	.0	21.5	2.1	26.5	.3
Apr	64.6	31.3	48.0	93	1950	22	55.4	1981	5	1975	2	42.4	1983	512	0	.0	.2	26.1	.3	15.0	.0
May	73.8	43.0	58.4	99+	2000	30	62.5	1974	19	1967	1	52.3	1995	227	21	.0	1.6	30.3	.0	2.0	.0
Jun	85.2	53.4	69.3	109	1954	20	73.0	1994	31	1998	6	64.9	1989	34	162	1.1	11.1	30.0	.0	@	.0
Jul	90.9	58.6	74.8	107+	1973	7	79.4	1980	36	1978	28	72.1	1995	1	303	3.4	19.8	31.0	.0	.0	.0
Aug	88.6	56.9	72.8	106	1969	8	78.8	1983	39+	1978	30	68.5	1992	9	251	1.2	16.3	31.0	.0	.0	.0
Sep	80.1	46.9	63.5	102	1971	7	68.3	1977	17	1985	30	58.6	1993	118	72	.2	6.7	29.6	.0	1.4	.0
Oct	68.2	32.9	50.6	93+	1967	3	54.6	1979	9+	1991	30	47.0	1984	448	0	.0	.3	28.4	.3	13.6	.0
Nov	52.2	20.6	36.4	84	1949	19	44.1	1999	-20	1991	3	28.7	1972	859	0	.0	.0	17.8	2.5	27.5	.3
Dec	43.2	12.3	27.8	78	1955	24	36.1	1980	-29	1989	22	16.8	1983	1155	0	.0	.0	11.1	6.1	30.9	3.4
Ann	65.9	33.7	49.8	109	Jun 1954	20	79.4	Jul 1980	-30+	Jan 1984	19	11.3	Jan 1988	6326	809	5.9	56.0	280.7	24.0	175.7	11.1

+ 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/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1948-2001

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

059-A

# Climatography of the United States

## No. 20 1971-2000

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

**Station: KIT CARSON, CO**

**COOP ID: 054603**

**Climate Division: CO 1**

**NWS Call Sign:**

**Elevation: 4,280 Feet Lat: 38°46N**

**Lon: 102°47W**

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	.28	.21	.87	1973	27	1.01	1990	.00+	1998	2.2	1.1	.1	.0	.00	.00	.06	.11	.16	.21	.27	.35	.45	.62	.79
Feb	.32	.23	1.22	1987	15	1.22	1987	.00+	1999	2.4	1.1	.1	@	.00	.00	.02	.07	.12	.19	.27	.38	.54	.81	1.08
Mar	.83	.64	1.26	1981	4	3.70	1973	.00	1978	3.5	2.2	.5	.1	.04	.11	.23	.35	.48	.63	.80	1.02	1.32	1.82	2.30
Apr	1.07	.93	1.60	1953	24	3.40	1999	.00	1978	3.8	2.7	.6	.2	.03	.10	.25	.40	.57	.77	1.01	1.31	1.73	2.43	3.13
May	2.72	2.63	2.50	1962	16	7.52	1995	.87	1984	7.3	5.8	2.1	.6	.93	1.19	1.56	1.88	2.18	2.50	2.84	3.24	3.75	4.54	5.27
Jun	2.29	1.99	3.20	1997	10	8.03	1995	.00	1984	6.2	4.0	1.5	.6	.08	.26	.58	.91	1.27	1.69	2.18	2.80	3.66	5.10	6.51
Jul	2.51	2.50	2.52	1986	20	5.44	1985	.54	1978	6.6	5.0	1.5	.5	.87	1.11	1.46	1.75	2.02	2.31	2.62	2.98	3.45	4.17	4.83
Aug	2.20	1.55	5.45	1965	19	6.91	1991	.21	1976	6.0	4.4	1.3	.6	.32	.50	.82	1.12	1.44	1.79	2.19	2.69	3.35	4.44	5.49
Sep	.99	.88	1.87	1990	29	3.42	1990	.00+	1998	3.7	2.6	.5	.2	.00	.00	.17	.33	.50	.70	.93	1.23	1.64	2.33	3.01
Oct	.77	.60	2.10	1960	29	2.46	1986	.00+	1980	2.7	2.0	.6	.1	.00	.03	.12	.23	.35	.50	.69	.93	1.26	1.85	2.43
Nov	.53	.44	1.03	1971	17	1.81	1991	.00+	2000	2.6	1.6	.3	@	.00	.00	.08	.17	.27	.37	.50	.66	.88	1.24	1.60
Dec	.27	.17	1.00	1986	1	1.31	1973	.00+	1995	1.7	.9	.2	@	.00	.00	.00	.02	.06	.12	.20	.30	.46	.74	1.02
Ann	14.78	15.42	5.45	Aug 1965	19	8.03	Jun 1995	.00+	Nov 2000	48.7	33.4	9.3	2.9	8.23	9.38	10.91	12.12	13.22	14.30	15.45	16.74	18.34	20.71	22.82

+ 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: 1948-2001

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

Complete documentation available from:  
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**Station: KIT CARSON, CO**

**COOP ID: 054603**

**Climate Division: CO 1**

**NWS Call Sign:**

**Elevation: 4,280 Feet**

**Lat: 38°46N**

**Lon: 102°47W**

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	3.0	2.1	#	#	8.0	1990	20	10.0	1990	7	1971	3	3	1974	.9	.7	.2	.1	.0	1.4	.4	.2	.0
Feb	1.4	1.0	#	#	4.0	1985	23	7.1	1971	6	1990	20	1	1989	.6	.5	.1	.0	.0	.5	.2	.0	.0
Mar	2.2	1.0	#	#	6.0	1973	30	8.0	1973	6	1973	30	#+	1997	.9	.8	.3	@	.0	.6	.1	.1	.0
Apr	1.4	.0	#	0	8.0	1995	21	9.0	1980	6	1995	20	#+	1997	.5	.5	.3	.2	.0	.1	.1	.0	.0
May	.4	.0	#	0	10.0	1973	1	10.0	1973	3	1973	1	#	1973	@	@	@	@	@	@	@	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.3	.0	#	0	4.0	1971	18	4.0	1971	1	1995	21	#	1995	.1	.1	@	.0	.0	@	.0	.0	.0
Oct	.6	.0	#	0	5.0	1972	31	5.0	1972	5	1991	31	#+	1999	.2	.2	.1	@	.0	.1	@	@	.0
Nov	4.1	1.0	#	#	10.0	1997	29	20.5	1991	10	1997	29	2	1979	1.1	1.1	.6	.2	.1	1.1	.7	.1	.0
Dec	1.0	.1	1	0	4.0	1972	5	4.5	1991	9	1972	12	8	1979	.8	.6	.2	.0	.0	1.7	1.2	.3	.0
Ann	14.4	5.2	N/A	N/A	10.0+	Nov 1997	29	20.5	Nov 1991	10	Nov 1997	29	8	Dec 1979	5.1	4.5	1.8	.5	.1	5.5	2.7	.7	.0

+ 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:

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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	6/08	5/31	5/26	5/22	5/17	5/13	5/09	5/03	4/26
32	5/23	5/18	5/15	5/12	5/09	5/06	5/03	4/30	4/25
28	5/12	5/07	5/03	4/30	4/27	4/24	4/21	4/17	4/12
24	5/01	4/26	4/23	4/20	4/18	4/15	4/12	4/09	4/05
20	4/19	4/14	4/11	4/08	4/05	4/03	3/31	3/28	3/23
16	4/18	4/11	4/06	4/01	3/28	3/24	3/19	3/14	3/06
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	9/13	9/17	9/20	9/22	9/24	9/27	9/29	10/02	10/05
32	9/18	9/22	9/25	9/28	9/30	10/03	10/05	10/08	10/12
28	9/27	10/02	10/05	10/08	10/11	10/14	10/17	10/20	10/25
24	10/04	10/09	10/13	10/16	10/20	10/23	10/26	10/30	11/05
20	10/15	10/20	10/23	10/26	10/29	11/01	11/04	11/08	11/13
16	10/26	10/30	11/03	11/05	11/08	11/10	11/13	11/16	11/20
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	153	145	139	134	129	124	119	113	105
32	164	157	152	147	143	139	135	130	123
28	184	178	174	170	166	163	159	155	148
24	205	198	193	188	184	180	175	170	163
20	223	217	213	210	206	203	199	195	190
16	252	242	235	230	224	219	213	206	197

\* 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:

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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	1217	949	797	512	227	34	1	9	118	448	859	1155	6326
60	1062	809	642	368	118	8	0	1	48	298	709	1000	5063
57	969	725	549	287	71	2	0	0	24	215	619	907	4368
55	907	669	488	238	49	1	0	0	13	167	559	845	3936
50	752	530	340	134	14	0	0	0	2	73	419	690	2954
32	277	139	22	1	0	0	0	0	0	0	71	218	728

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	83	114	247	480	817	1119	1325	1264	944	576	202	86	7257
55	0	0	0	26	153	429	612	551	267	29	0	0	2067
57	0	0	0	16	114	371	550	489	218	16	0	0	1774
60	0	0	0	7	67	286	457	398	153	5	0	0	1373
65	0	0	0	0	21	162	303	251	72	0	0	0	809
70	0	0	0	0	4	73	160	127	26	0	0	0	390

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	7	35	132	305	602	898	1101	1040	740	379	84	15	7	42	174	479	1081	1979	3080	4120	4860	5239	5323	5338
45	0	8	62	193	452	748	946	885	591	246	35	1	0	8	70	263	715	1463	2409	3294	3885	4131	4166	4167
50	0	0	20	107	311	598	791	730	448	135	10	0	0	0	20	127	438	1036	1827	2557	3005	3140	3150	3150
55	0	0	3	45	187	451	636	575	315	62	1	0	0	0	3	48	235	686	1322	1897	2212	2274	2275	2275
60	0	0	0	11	90	307	482	421	193	15	0	0	0	0	0	11	101	408	890	1311	1504	1519	1519	1519
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	41	77	153	250	389	562	687	657	471	303	114	46	41	118	271	521	910	1472	2159	2816	3287	3590	3704	3750

(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:

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## 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](http://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](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)