

Climatology of the United States

No. 20

1971-2000

Station: COTTONWOOD FALLS, KS

COOP ID: 141858

Climate Division: KS 6

NWS Call Sign:

Elevation: 1,240 Feet Lat: 38° 22N Lon: 96° 33W

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	39.1	16.1	27.6	77	1981	24	37.5	1990	-19	1949	30	13.2	1979	1160	0	.0	.0	8.4	8.8	28.5	2.3
Feb	45.9	21.3	33.6	83	1972	29	44.2	1976	-18	1979	1	20.0	1978	879	0	.0	.0	11.9	4.9	21.9	1.5
Mar	55.8	30.4	43.1	89	1967	29	49.0	1986	-5	1967	8	36.4	1996	679	0	.0	.0	22.7	.8	15.1	.1
Apr	65.7	41.5	53.6	95	1956	27	62.1	1981	11	1975	3	45.9	1983	353	10	.0	.5	28.4	.0	3.8	.0
May	75.0	53.2	64.1	100	1964	26	69.0	1998	28	1976	3	59.0	1995	109	83	.0	.9	31.0	.0	.1	.0
Jun	84.2	62.6	73.4	111	1980	30	78.1	1980	40	1951	4	68.5	1992	10	261	.3	7.8	30.0	.0	.0	.0
Jul	90.3	67.6	79.0	116+	1954	14	89.1	1980	47	1972	5	75.3	1971	0	433	3.3	19.1	31.0	.0	.0	.0
Aug	89.4	65.1	77.3	111	1984	28	85.3	2000	46+	1974	4	71.1	1992	8	389	3.4	17.2	31.0	.0	.0	.0
Sep	81.1	56.1	68.6	107+	1978	3	75.8	1998	29	1995	22	61.1	1974	61	168	1.0	7.6	29.9	.0	.1	.0
Oct	70.0	43.5	56.8	97+	1976	1	61.2	2000	13	1993	31	50.8	1976	268	13	.0	.8	30.1	.0	3.1	.0
Nov	54.5	30.7	42.6	86+	2000	1	52.8	1999	-4	1952	28	36.3	1976	673	0	.0	.0	20.5	.8	14.8	.1
Dec	42.6	20.7	31.7	77	1955	24	37.5	1999	-22	1989	22	15.1	1983	1033	0	.0	.0	10.6	5.2	26.4	1.0
Ann	66.1	42.4	54.3	116+	Jul 1954	14	89.1	Jul 1980	-22	Dec 1989	22	13.2	Jan 1979	5233	1357	8.0	53.9	285.5	20.5	113.8	5.0

+ 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: 1948-2001

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

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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: COTTONWOOD FALLS, KS

COOP ID: 141858

Climate Division: KS 6

NWS Call Sign:

Elevation: 1,240 Feet Lat: 38°22N

Lon: 96°33W

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	.97	.87	1.47	1949	4	2.54	1973	.00	1986	4.4	2.5	.6	.2	.05	.13	.28	.42	.57	.75	.95	1.20	1.54	2.11	2.67
Feb	1.06	.82	2.05	2001	24	3.10	1997	.00+	1991	4.1	2.6	.7	.1	.00	.13	.33	.50	.68	.86	1.08	1.33	1.68	2.24	2.78
Mar	2.82	2.45	3.12	1992	18	8.48	1973	.43	1971	6.8	5.1	2.0	.7	.54	.79	1.21	1.59	1.98	2.39	2.87	3.44	4.19	5.41	6.57
Apr	3.01	2.80	3.30	1969	27	11.10	1999	.54	1989	7.5	5.5	2.3	.7	.62	.90	1.34	1.74	2.15	2.58	3.07	3.66	4.44	5.68	6.86
May	4.90	4.28	3.38	1951	1	11.29	1995	.49	1994	8.8	7.1	3.4	1.7	1.27	1.74	2.45	3.07	3.69	4.34	5.06	5.92	7.03	8.80	10.44
Jun	4.82	4.20	5.06	1965	5	14.16	1971	.70	1972	7.8	6.3	3.3	1.8	1.06	1.50	2.21	2.85	3.49	4.17	4.93	5.85	7.05	8.97	10.79
Jul	4.40	3.78	6.05	1951	11	15.02	1993	.00	1975	6.6	5.3	2.8	1.6	.13	.45	1.06	1.69	2.39	3.20	4.16	5.38	7.07	9.92	12.73
Aug	3.96	3.62	4.45	1985	22	12.47	1996	.20	1971	6.6	5.3	2.3	1.3	.21	.43	.91	1.44	2.05	2.77	3.65	4.78	6.37	9.08	11.79
Sep	3.42	2.35	5.55	1986	27	11.64	1998	.35	1980	6.3	5.1	2.2	.9	.39	.65	1.13	1.61	2.12	2.68	3.35	4.17	5.29	7.14	8.94
Oct	2.63	2.62	4.75	1985	10	6.46	1985	.30	1978	5.6	4.2	1.7	.6	.42	.64	1.02	1.38	1.76	2.17	2.64	3.21	3.97	5.22	6.41
Nov	2.60	2.32	4.25	1998	1	8.67	1998	.00	1989	5.3	4.0	1.6	.7	.13	.36	.75	1.13	1.53	1.99	2.53	3.20	4.11	5.62	7.09
Dec	1.32	1.27	1.38	1960	11	3.28	1984	.12	1976	4.4	3.0	1.0	.3	.18	.28	.47	.66	.85	1.06	1.31	1.62	2.03	2.71	3.36
Ann	35.91	34.92	6.05	Jul 1951	11	15.02	Jul 1993	.00+	Feb 1991	74.2	56.0	23.9	10.6	20.50	23.23	26.87	29.73	32.32	34.88	37.58	40.61	44.35	49.91	54.83

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

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Station: COTTONWOOD FALLS, KS

COOP ID: 141858

Climate Division: KS 6

NWS Call Sign:

Elevation: 1,240 Feet

Lat: 38°22N

Lon: 96°33W

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	5.2	4.6	1	#	7.0	1973	22	18.0	1973	14	1979	31	9	1979	2.3	1.8	.6	.2	.0	7.9	5.2	3.3	.4
Feb	3.7	1.0	1	#	12.0	1971	22	16.0	1971	12	1983	4	7	1979	1.4	1.1	.4	.1	.1	4.8	3.5	2.3	.7
Mar	1.9	.3	#	#	6.0	1975	10	13.0	1998	6	1975	10	1	1988	.8	.7	.2	.1	.0	.9	.2	.1	.0
Apr	.4	.0	#	0	5.0	1983	4	5.0	1983	5	1983	4	#+	1996	.1	.1	.1	@	.0	.2	.1	@	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.2	.0	0	0	6.0	1996	23	6.0	1996	0	0	0	0	0	@	@	@	@	.0	.0	.0	.0	.0
Nov	1.4	.0	#	0	9.0	1975	26	9.0	1975	9	1975	27	1	1975	.4	.4	.2	@	.0	.4	.2	.1	.0
Dec	3.3	1.8	#	#	6.0	1978	31	13.0	1973	6+	2000	14	1+	2000	1.3	1.1	.3	.1	.0	1.7	.4	.1	.0
Ann	16.1	7.7	N/A	N/A	12.0	Feb 1971	22	18.0	Jan 1973	14	Jan 1979	31	9	Jan 1979	6.3	5.2	1.8	.5	.1	15.9	9.6	5.9	1.1

+ 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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No. 20 1971-2000

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Climate Division: KS 6

NWS Call Sign:

Elevation: 1,240 Feet

Lat: 38°22N

Lon: 96°33W

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	5/12	5/07	5/04	5/01	4/28	4/26	4/23	4/20	4/15
32	4/28	4/24	4/21	4/18	4/16	4/13	4/11	4/08	4/03
28	4/19	4/14	4/11	4/08	4/05	4/02	3/30	3/27	3/22
24	4/12	4/06	4/03	3/30	3/27	3/24	3/21	3/17	3/12
20	4/03	3/27	3/22	3/18	3/14	3/10	3/06	3/02	2/23
16	3/23	3/16	3/10	3/05	3/01	2/24	2/20	2/14	2/06
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	9/20	9/24	9/27	9/30	10/02	10/05	10/07	10/10	10/15
32	9/28	10/03	10/07	10/10	10/13	10/16	10/20	10/23	10/29
28	10/12	10/17	10/21	10/24	10/27	10/30	11/02	11/06	11/11
24	10/21	10/28	11/01	11/05	11/08	11/12	11/16	11/20	11/26
20	11/05	11/10	11/14	11/17	11/20	11/23	11/26	11/30	12/05
16	11/10	11/16	11/21	11/24	11/28	12/01	12/05	12/09	12/15
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	176	169	164	160	156	152	148	143	137
32	199	193	188	184	180	176	172	167	160
28	225	218	213	208	204	200	196	191	183
24	251	242	236	230	225	220	215	209	200
20	274	266	260	255	250	245	240	234	225
16	301	291	283	277	271	265	259	252	241

* 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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COOP ID: 141858

Climate Division: KS 6 NWS Call Sign: Elevation: 1,240 Feet Lat: 38°22N Lon: 96°33W

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	1160	879	679	353	109	10	0	8	61	268	673	1033	5233
60	1005	746	525	227	45	1	0	1	21	149	527	878	4125
57	912	667	438	164	23	0	0	0	9	94	444	786	3537
55	852	615	381	128	13	0	0	0	5	66	390	726	3176
50	706	489	250	60	3	0	0	0	0	23	269	581	2381
32	257	160	21	0	0	0	0	0	0	0	32	171	641

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	121	205	365	647	996	1242	1456	1403	1097	768	349	160	8809
55	2	16	12	86	296	552	743	690	411	121	17	2	2948
57	1	12	7	62	244	492	681	628	356	86	12	0	2581
60	0	6	1	34	173	403	588	537	277	48	4	0	2071
65	0	0	0	10	83	261	433	389	168	13	0	0	1357
70	0	0	0	2	29	143	287	254	88	2	0	0	805

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	34	96	251	486	791	1032	1239	1197	899	583	206	50	34	130	381	867	1658	2690	3929	5126	6025	6608	6814	6864
45	7	49	149	347	636	882	1084	1042	749	433	120	19	7	56	205	552	1188	2070	3154	4196	4945	5378	5498	5517
50	0	17	77	224	481	732	929	887	601	297	63	6	0	17	94	318	799	1531	2460	3347	3948	4245	4308	4314
55	0	7	36	131	333	582	774	732	462	181	24	1	0	7	43	174	507	1089	1863	2595	3057	3238	3262	3263
60	0	1	10	66	199	434	619	577	326	92	6	0	0	1	11	77	276	710	1329	1906	2232	2324	2330	2330
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	32	78	174	302	502	699	830	798	586	371	136	42	32	110	284	586	1088	1787	2617	3415	4001	4372	4508	4550

(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/normal/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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. 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