

Climatology of the United States

No. 20

1971-2000

Station: WILSON LAKE, KS

COOP ID: 148946

Climate Division: KS 5

NWS Call Sign:

Elevation: 1,512 Feet Lat: 38° 58N

Lon: 98° 29W

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	38.8	16.8	27.8	75	1986	21	37.6	1986	-15+	1985	12	11.8	1979	1153	0	.0	.0	8.1	9.7	29.4	2.9
Feb	45.1	20.9	33.0	83	1970	18	43.8	1976	-17	1979	1	19.6	1979	895	0	.0	.0	11.5	6.5	24.0	2.2
Mar	54.8	29.7	42.3	87	1972	12	48.8	1986	-5	1978	4	34.8	1975	706	0	.0	.0	20.0	1.7	17.5	.4
Apr	65.6	40.1	52.9	100+	1989	25	61.0	1981	12	1975	3	47.4	1997	371	6	.1	.5	26.7	.1	5.9	.0
May	74.9	51.4	63.2	100	1967	25	68.9	1977	27	1976	3	56.2	1995	134	77	.0	1.7	30.8	.0	.2	.0
Jun	86.1	61.5	73.8	111	1988	21	79.4	1988	38	1969	3	68.0	1992	12	276	1.8	12.0	30.0	.0	.0	.0
Jul	92.4	67.1	79.8	110+	1980	13	86.4	1980	46+	1990	14	75.4	1992	0	457	6.1	21.3	31.0	.0	.0	.0
Aug	90.0	65.0	77.5	111	1983	16	85.2	1983	45+	1988	28	70.8	1992	7	394	3.9	18.0	31.0	.0	.0	.0
Sep	81.6	55.5	68.6	105	2000	3	74.2	1998	28	1984	30	63.1	1974	45	151	.9	8.6	29.9	.0	.2	.0
Oct	69.9	43.2	56.6	95	1969	1	60.3	1983	17	1993	31	51.1	1976	272	10	.0	.9	29.5	.0	4.0	.0
Nov	53.7	30.5	42.1	83	1990	2	51.0	1999	-5	1975	27	33.4	1985	686	0	.0	.0	18.9	1.5	18.0	.2
Dec	42.3	21.1	31.7	76	1975	6	37.7	1999	-26	1989	23	15.8	1983	1033	0	.0	.0	10.0	6.4	27.9	1.5
Ann	66.3	41.9	54.1	111+	Jun 1988	21	86.4	Jul 1980	-26	Dec 1989	23	11.8	Jan 1979	5314	1371	12.8	63.0	277.4	25.9	127.1	7.2

+ 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: 1964-2001

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

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No. 20 1971-2000

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

Station: WILSON LAKE, KS

COOP ID: 148946

Climate Division: KS 5

NWS Call Sign:

Elevation: 1,512 Feet Lat: 38°58N

Lon: 98°29W

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	.51	.43	1.30	1999	30	1.95	1979	.00+	1998	3.1	1.6	.3	@	.00	.00	.06	.15	.24	.35	.47	.63	.85	1.21	1.58
Feb	.60	.56	1.17	1966	9	2.08	1993	.00+	1996	3.3	1.7	.5	.0	.00	.00	.06	.19	.31	.44	.58	.76	1.01	1.40	1.80
Mar	2.07	1.49	3.05	1987	23	8.84	1973	.00	1997	5.6	3.4	1.5	.5	.09	.26	.56	.86	1.19	1.56	2.00	2.54	3.29	4.53	5.75
Apr	2.27	1.90	2.32	1987	14	5.29	1976	.11	1989	7.7	5.0	1.4	.5	.58	.79	1.12	1.41	1.70	2.00	2.34	2.74	3.27	4.09	4.87
May	3.96	3.54	2.56	1991	30	9.21	1995	1.03	1984	10.1	7.1	2.6	1.0	.98	1.36	1.93	2.45	2.95	3.49	4.08	4.79	5.72	7.19	8.56
Jun	3.18	2.53	2.27	2000	24	10.59	1992	.43	1973	8.2	5.6	2.3	.9	.77	1.06	1.53	1.94	2.35	2.79	3.27	3.85	4.60	5.80	6.93
Jul	3.63	3.40	4.70	1986	6	11.56	1993	.00	1975	7.4	5.0	2.2	1.1	.20	.54	1.10	1.63	2.20	2.83	3.57	4.48	5.72	7.75	9.74
Aug	3.52	3.06	5.11	1985	22	7.63+	1985	.15	2000	7.2	5.1	2.3	1.2	.37	.63	1.11	1.60	2.13	2.73	3.43	4.30	5.49	7.46	9.39
Sep	2.11	1.80	3.26	1969	1	7.96	1973	.19	1991	6.2	4.0	1.4	.4	.34	.52	.82	1.12	1.42	1.74	2.12	2.58	3.19	4.18	5.13
Oct	1.89	1.66	3.07	1976	4	5.09	1976	.00	1975	5.1	3.1	1.1	.6	.05	.17	.42	.68	.98	1.34	1.76	2.30	3.06	4.34	5.61
Nov	1.30	.93	3.50	1996	17	4.29	1971	.00+	1989	4.6	2.9	.6	.2	.00	.00	.28	.50	.72	.98	1.27	1.64	2.12	2.94	3.73
Dec	.62	.49	1.26	1975	14	2.34	1973	.00+	1996	3.1	1.7	.3	.1	.00	.00	.15	.25	.36	.48	.62	.79	1.01	1.38	1.74
Ann	25.66	24.75	5.11	Aug 1985	22	11.56	Jul 1993	.00+	Jan 1998	71.6	46.2	16.5	6.5	15.42	17.28	19.72	21.62	23.34	25.03	26.80	28.78	31.22	34.82	37.99

+ 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: 1964-2001

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

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Station: WILSON LAKE, KS

COOP ID: 148946

Climate Division: KS 5

NWS Call Sign:

Elevation: 1,512 Feet

Lat: 38°58N

Lon: 98°29W

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	4.9	3.5	2	#	12.0	1985	10	21.5	1979	16	1979	31	11	1979	2.1	1.4	.5	.2	@	3.6	.9	.4	.0
Feb	4.6	1.0	2	#	12.0	1980	8	17.0	1993	16	1979	1	10	1979	1.8	1.1	.5	.3	@	5.1	3.7	2.8	1.1
Mar	2.1	.0	#	#	9.0	1975	10	10.5	1987	9	1975	10	4	1971	.9	.7	.3	.1	.0	1.1	.6	.3	.0
Apr	.4	.0	#	0	4.0	1994	6	4.0	1994	1+	1994	7	#+	1994	.1	.1	.1	.0	.0	.0	.0	.0	.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	.1	.0	0	0	1.5	1997	26	1.5	1997	0	0	0	0	0	@	@	.0	.0	.0	.0	.0	.0	.0
Nov	.8	.0	#	0	4.0	1975	26	5.3	1987	4	1987	29	#+	1991	.5	.3	.1	.0	.0	.5	.1	.0	.0
Dec	1.7	2.0	#	#	6.0	1983	28	6.0	1983	12	1983	21	4	1983	1.0	.8	.2	@	.0	1.7	1.0	.2	.1
Ann	14.6	6.5	N/A	N/A	12.0+	Jan 1985	10	21.5	Jan 1979	16+	Feb 1979	1	11	Jan 1979	6.4	4.4	1.7	.6	@	12.0	6.3	3.7	1.2

+ 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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Climate Division: KS 5

NWS Call Sign:

Elevation: 1,512 Feet

Lat: 38° 58N

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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	5/13	5/09	5/06	5/03	5/01	4/28	4/26	4/23	4/19
32	5/05	4/30	4/27	4/24	4/21	4/19	4/16	4/13	4/08
28	4/24	4/20	4/17	4/14	4/11	4/09	4/06	4/03	3/29
24	4/13	4/08	4/04	4/01	3/30	3/27	3/24	3/21	3/16
20	4/03	3/29	3/25	3/21	3/18	3/15	3/11	3/07	3/02
16	4/02	3/25	3/19	3/14	3/09	3/04	2/27	2/22	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	9/18	9/23	9/27	10/01	10/04	10/07	10/11	10/15	10/20
32	9/28	10/04	10/08	10/12	10/15	10/19	10/22	10/27	11/01
28	10/07	10/13	10/17	10/21	10/25	10/28	11/01	11/06	11/12
24	10/16	10/23	10/27	10/31	11/04	11/08	11/12	11/16	11/23
20	10/23	10/30	11/04	11/08	11/12	11/16	11/21	11/26	12/03
16	11/07	11/14	11/19	11/23	11/27	11/30	12/05	12/09	12/16
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	172	167	162	159	156	152	149	144	139
32	197	190	185	180	176	172	168	163	155
28	219	211	206	201	196	191	186	180	172
24	244	235	229	224	219	214	208	202	193
20	266	256	250	244	238	233	227	220	211
16	295	283	275	268	262	255	248	240	229

* 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

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Climate Division: KS 5 NWS Call Sign: Elevation: 1,512 Feet Lat: 38°58N Lon: 98°29W

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	1153	895	706	371	134	12	0	7	45	272	686	1033	5314
60	998	765	553	240	61	2	0	0	12	151	539	878	4199
57	908	687	466	173	33	0	0	0	3	96	454	785	3605
55	848	635	409	135	21	0	0	0	1	68	400	724	3241
50	703	511	278	62	5	0	0	0	0	24	275	579	2437
32	267	183	32	0	0	0	0	0	0	0	31	167	680

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	137	212	349	625	966	1254	1480	1410	1096	761	334	157	8781
55	5	20	13	70	274	564	767	697	407	115	14	1	2947
57	3	15	9	48	224	504	705	635	349	81	8	0	2581
60	0	10	2	25	159	416	612	542	267	43	2	0	2078
65	0	0	0	6	77	276	457	394	151	10	0	0	1371
70	0	0	0	0	28	158	307	258	71	1	0	0	823

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	24	75	196	415	734	1028	1240	1174	860	526	167	35	24	99	295	710	1444	2472	3712	4886	5746	6272	6439	6474
45	4	36	115	285	581	878	1085	1019	712	383	92	9	4	40	155	440	1021	1899	2984	4003	4715	5098	5190	5199
50	0	10	58	178	429	728	930	864	562	255	42	2	0	10	68	246	675	1403	2333	3197	3759	4014	4056	4058
55	0	1	22	99	289	579	775	709	424	153	11	0	0	1	23	122	411	990	1765	2474	2898	3051	3062	3062
60	0	0	5	46	169	432	620	555	292	73	3	0	0	0	5	51	220	652	1272	1827	2119	2192	2195	2195
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	29	70	146	265	453	672	816	768	552	341	119	38	29	99	245	510	963	1635	2451	3219	3771	4112	4231	4269

(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