U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: QUINTER, KS **COOP ID: 146637**

Climate Division: KS 4 **NWS Call Sign:** **Elevation: 2,678 Feet** **Lat: 39˚04N** **Lon: 100˚14W**

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	38.9	15.6	27.3	79	1989	31	37.3	1986	-20	1959	4	14.3	1979	1169	0	.0	.0	8.9	10.0	30.3	3.6
Feb	44.5	20.1	32.3	84	1972	29	41.1	1991	-19	1962	28	19.3	1978	915	0	.0	.0	11.8	6.6	25.8	2.3
Mar	53.6	27.2	40.4	91	1989	11	47.5	1986	-25	1948	11	32.9	1998	762	0	.0	.1	19.4	2.4	22.3	.4
Apr	64.1	37.1	50.6	99	1989	22	57.7	1981	11+	1997	13	44.1	1983	436	4	.0	.6	25.5	.2	9.0	.0
May	73.2	47.9	60.6	105	1939	24	65.0	1977	23	1967	2	53.2	1995	186	49	.0	1.2	30.6	.0	.5	.0
Jun	85.0	58.0	71.5	110	1946	16	77.9	1988	36+	1969	2	64.7	1982	33	229	1.7	10.3	30.0	.0	.0	.0
Jul	90.6	63.7	77.2	113	1940	26	83.7	1980	41	1952	8	72.9	1992	0	377	4.2	18.9	31.0	.0	.0	.0
Aug	88.2	62.2	75.2	108+	1964	11	83.6	1983	44	1956	21	68.9	1992	10	326	2.3	16.6	31.0	.0	.0	.0
Sep	79.5	52.6	66.1	110	1947	4	72.2	1998	26	1985	30	60.6	1993	83	114	.5	7.0	29.6	.0	.6	.0
Oct	67.8	40.1	54.0	97	1947	6	57.4	1979	12	1997	27	47.6	1976	346	3	.0	.8	28.7	.1	5.7	.0
Nov	51.1	27.2	39.2	88	1950	1	48.5	1999	-6+	1952	28	30.6	1985	777	0	.0	.0	17.5	2.8	21.8	.1
Dec	41.5	18.8	30.2	83	1964	24	35.9	1999	-23+	1989	23	12.5	1983	1081	0	.0	.0	9.5	7.4	30.0	1.8
Ann	64.8	39.2	52.1	113	Jul 1940	26	83.7	Jul 1980	-25	Mar 1948	11	12.5	Dec 1983	5798	1102	8.7	55.5	273.5	29.5	146.0	8.2

\+ 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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1939-2001

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

Issue Date: February 2004

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	.56	.45	1.40	1944	27	1.34+	1985	.00	1986
Feb	.72	.43	1.68	1993	11	2.72+	1993	.03+	1996
Mar	1.84	1.04	2.14	1984	19	5.69	1973	.01	1997
Apr	2.20	1.99	3.11	1984	21	7.28	1984	.32	1992
May	3.92	3.42	3.43	1975	30	9.78	1995	.40	1974
Jun	2.76	2.71	5.11	1943	15	6.52	1974	.06	1981
Jul	4.13	3.80	6.92	1999	25	15.36	1999	.43	1983
Aug	3.27	3.15	5.25	1959	15	9.71	1996	.36	2000
Sep	1.75	1.25	5.62	1976	16	8.89	1976	.00	1979
Oct	1.32	.99	2.92	1946	5	3.92+	1997	.00	1975
Nov	1.22	.85	2.00	1972	13	3.68	1975	.00	1989
Dec	.56	.46	1.13	1953	3	1.72	1984	.00	1976
Ann	24.25	24.15	6.92	Jul 1999	25	15.36	Jul 1999	.00+	Nov 1989

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.2	1.8	.4	.0
Feb	3.9	1.7	.4	.1
Mar	6.8	4.3	1.1	.4
Apr	6.9	4.6	1.4	.3
May	10.5	6.6	2.7	1.2
Jun	8.1	5.8	1.7	.5
Jul	8.8	6.0	2.8	1.4
Aug	7.8	4.8	1.9	1.0
Sep	5.7	3.3	1.1	.2
Oct	4.6	2.6	.8	.3
Nov	4.6	2.5	.8	.2
Dec	3.6	1.6	.2	.1
Ann	74.5	45.6	15.3	5.7

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.02	.06	.14	.22	.31	.41	.53	.69	.91	1.27	1.62
Feb	.02	.05	.13	.22	.33	.46	.63	.86	1.18	1.74	2.30
Mar	.08	.17	.38	.62	.90	1.24	1.66	2.20	2.97	4.29	5.62
Apr	.55	.75	1.07	1.36	1.64	1.93	2.26	2.66	3.17	3.98	4.75
May	.96	1.33	1.90	2.41	2.91	3.45	4.04	4.75	5.68	7.15	8.52
Jun	.41	.64	1.03	1.42	1.82	2.25	2.76	3.38	4.21	5.56	6.86
Jul	.81	1.19	1.79	2.35	2.91	3.52	4.20	5.03	6.12	7.87	9.53
Aug	.58	.87	1.34	1.79	2.25	2.74	3.30	3.99	4.90	6.36	7.76
Sep	.07	.20	.46	.71	.99	1.30	1.68	2.15	2.80	3.89	4.95
Oct	.03	.12	.29	.48	.69	.94	1.23	1.61	2.14	3.03	3.91
Nov	.06	.17	.35	.53	.72	.93	1.18	1.50	1.93	2.63	3.32
Dec	.02	.06	.13	.21	.30	.40	.52	.68	.89	1.25	1.61
Ann	17.33	18.67	20.39	21.69	22.85	23.97	25.13	26.40	27.95	30.19	32.13

\+ 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: 1939-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	4.1	3.4	#	#
Feb	6.4	2.8	1	#
Mar	5.5	5.0	#	#
Apr	1.3	.0	#	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.1	.0	#	0
Oct	.8	.0	#	0
Nov	2.1	1.0	#	#
Dec	3.5	3.5	1	#
Ann	23.8	15.7	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	8.0	1993	9	10.5	1990	12	1985	10	3	1985
Feb	9.0	1978	13	20.6	1993	14	1982	12	8	1982
Mar	12.0	1987	28	23.5	1987	11	1999	13	5	1979
Apr	7.0	1980	3	10.5	1994	3	1996	14	#+	1996
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	3.0	1985	29	3.5	1985	4	1995	21	#+	1995
Oct	9.0	1991	30	13.0	1991	12	1997	27	2	1997
Nov	7.0	1972	13	9.0	1972	14	1983	28	2	1972
Dec	9.0	1982	28	11.0	1992	13	1983	3	13	1983
Ann	12.0	Mar 1987	28	23.5	Mar 1987	14+	Nov 1983	28	13	Dec 1983

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.1	1.6	.8	.3	.0
Feb	2.0	1.4	.5	.2	.0
Mar	1.6	1.3	.5	.3	.1
Apr	.5	.4	.2	.1	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.1	@	@	.0	.0
Oct	.1	.1	.1	.1	.0
Nov	.9	.8	.4	.1	.0
Dec	1.7	1.4	.5	.1	.0
Ann	9.0	7.0	3.0	1.2	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	-9.9	-9.9	-9.9	-9.9
Feb	2.6	1.6	1.0	.1
Mar	1.9	.8	.4	.1
Apr	.1	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.1	.1	.1	.0
Nov	1.7	.7	.4	.0
Dec	3.1	.7	.1	.0
Ann	-9.9	-9.9	-9.9	-9.9

+ 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

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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	5/17	5/13	5/10	5/08	5/06	5/03	5/01	4/28	4/24
32	5/09	5/04	5/01	4/28	4/25	4/22	4/19	4/16	4/11
28	4/22	4/19	4/16	4/14	4/12	4/09	4/07	4/04	4/01
24	4/13	4/08	4/05	4/02	3/31	3/28	3/25	3/22	3/17
20	4/09	4/04	4/01	3/29	3/26	3/23	3/20	3/16	3/11
16	4/04	3/28	3/23	3/19	3/15	3/11	3/07	3/02	2/23

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	9/30	10/02	10/05	10/08	10/11	10/16
32	9/24	9/30	10/04	10/08	10/11	10/14	10/18	10/22	10/28
28	10/10	10/15	10/18	10/21	10/24	10/26	10/29	11/02	11/07
24	10/21	10/26	10/29	11/01	11/04	11/07	11/10	11/13	11/18
20	10/30	11/03	11/07	11/09	11/12	11/15	11/18	11/21	11/26
16	11/02	11/09	11/13	11/17	11/21	11/25	11/29	12/03	12/09

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	167	161	156	152	149	145	142	137	131
32	191	183	178	173	168	164	159	153	145
28	209	204	201	197	194	191	188	185	180
24	238	231	226	222	218	214	209	204	197
20	253	245	240	235	231	226	222	216	209
16	278	269	262	256	250	245	239	232	222

***** 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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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	1169	915	762	436	186	33	0	10	83	346	777	1081	5798
60	1014	777	607	300	95	10	0	2	29	208	627	926	4595
57	921	700	517	228	57	4	0	0	13	139	539	833	3951
55	860	648	461	186	38	2	0	0	7	101	483	771	3557
50	711	519	322	100	11	0	0	0	0	39	348	625	2675
32	257	175	38	1	0	0	0	0	0	0	52	194	717

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	111	184	299	559	886	1186	1400	1339	1022	680	265	137	8068
55	1	12	8	54	211	498	687	626	338	68	6	0	2509
57	0	9	3	36	168	440	625	564	285	44	2	0	2176
60	0	2	0	18	113	356	532	473	211	20	0	0	1725
65	0	0	0	4	49	229	377	326	114	3	0	0	1102
70	0	0	0	0	16	128	230	197	51	0	0	0	622

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	22	68	159	355	652	956	1168	1110	802	464	128	31	22	90	249	604	1256	2212	3380	4490	5292	5756	5884	5915
45	1	29	84	235	499	806	1013	955	656	327	64	6	1	30	114	349	848	1654	2667	3622	4278	4605	4669	4675
50	0	8	40	140	353	657	858	800	510	208	21	0	0	8	48	188	541	1198	2056	2856	3366	3574	3595	3595
55	0	0	10	70	219	510	703	646	377	111	4	0	0	0	10	80	299	809	1512	2158	2535	2646	2650	2650
60	0	0	1	28	115	364	548	491	252	48	0	0	0	0	1	29	144	508	1056	1547	1799	1847	1847	1847
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	38	72	138	244	398	611	756	720	503	310	106	40	38	110	248	492	890	1501	2257	2977	3480	3790	3896	3936

(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.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/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 are 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/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/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