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: WELLINGTON, KS **COOP ID: 148670**

Climate Division: KS 8 **NWS Call Sign:** **Elevation: 1,220 Feet** **Lat: 37˚16N** **Lon: 97˚25W**

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	41.5	19.7	30.6	79	1967	22	39.5	1990	-14	1988	9	16.7	1979	1065	0	.0	.0	9.1	8.2	28.9	1.7
Feb	48.1	24.2	36.2	88	1996	23	46.7	1976	-10+	1982	6	23.9	1978	809	0	.0	.0	12.6	5.3	22.0	1.3
Mar	58.4	34.4	46.4	91	1966	31	51.7	1986	-3	1960	3	39.9	1996	577	0	.0	@	22.6	.9	13.8	.0
Apr	68.1	43.8	56.0	99	1972	13	63.9	1981	16	1975	3	48.7	1983	291	19	.0	.3	28.4	.0	3.4	.0
May	77.0	55.1	66.1	102	1953	31	71.6	1977	29	1954	3	60.2	1995	86	118	@	1.3	30.9	.0	.0	.0
Jun	87.7	64.8	76.3	111	1953	15	81.2	1990	42	1954	4	70.6	1982	7	345	1.1	12.3	30.0	.0	.0	.0
Jul	94.0	69.8	81.9	112	1954	14	89.1	1980	49	1990	14	78.1	1994	0	523	6.1	22.3	31.0	.0	.0	.0
Aug	93.1	68.2	80.7	111+	1984	30	86.9	1983	47	1988	29	73.1	1992	2	487	6.1	20.9	31.0	.0	.0	.0
Sep	83.8	59.1	71.5	109	2000	3	79.4	1998	28	1984	30	64.0	1974	35	228	1.4	9.7	30.0	.0	.1	.0
Oct	71.9	46.4	59.2	98	1954	4	62.9	1971	14	1993	31	53.4	1976	207	24	.0	1.0	30.2	.0	2.6	.0
Nov	56.2	33.8	45.0	86	1980	9	54.3	1999	3	1975	27	39.6	1976	600	0	.0	.0	20.7	.8	14.8	.0
Dec	44.9	23.8	34.4	85	1955	24	39.0	1991	-15+	1989	23	19.4	1983	949	0	.0	.0	11.2	4.6	26.7	.8
Ann	68.7	45.3	57.0	112	Jul 1954	14	89.1	Jul 1980	-15+	Dec 1989	23	16.7	Jan 1979	4628	1744	14.7	67.8	287.7	19.8	112.3	3.8

\+ 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: 1948-2001

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

Issue Date: February 2004

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: WELLINGTON, KS **COOP ID: 148670**

Climate Division: KS 8 **NWS Call Sign:** **Elevation: 1,220 Feet** **Lat: 37˚16N** **Lon: 97˚25W**

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	.94	.74	1.60	1990	17	3.01	1990	.00	1986
Feb	1.15	.84	2.14	1955	4	3.14	1987	.00	1991
Mar	2.94	2.70	2.13	1977	28	8.60	1973	.32	1972
Apr	2.95	2.58	3.44	1994	28	7.10	1994	.32	1989
May	4.61	3.37	3.84	1955	26	12.26	1993	1.10	1994
Jun	4.70	4.59	4.99	1969	24	11.49	1995	.39	1990
Jul	3.23	3.31	4.82	1958	4	6.44	1997	.00	1983
Aug	3.13	2.20	5.00	1968	17	10.17	1977	.00	2000
Sep	2.88	2.60	4.12	1961	13	13.26	1973	.51	2000
Oct	2.52	2.19	4.50	1973	11	8.43	1998	.03	1975
Nov	2.24	2.10	4.42	1964	16	5.59	1992	.00	1976
Dec	1.25	.99	1.82	1965	24	3.60	1984	.08	1977
Ann	32.54	32.89	5.00	Aug 1968	17	13.26	Sep 1973	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.8	2.0	.6	.2
Feb	5.2	2.7	.7	.1
Mar	8.2	5.2	1.9	1.0
Apr	8.8	5.2	1.9	.6
May	10.5	6.8	3.0	1.4
Jun	9.0	6.3	3.3	1.5
Jul	7.4	5.0	2.2	.9
Aug	7.7	4.4	2.1	1.0
Sep	7.6	4.5	1.6	.9
Oct	6.6	3.8	1.6	.6
Nov	6.5	3.7	1.3	.6
Dec	5.3	2.7	.7	.2
Ann	87.6	52.3	20.9	9.0

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	.08	.20	.33	.48	.66	.87	1.14	1.52	2.16	2.80
Feb	.04	.13	.29	.46	.64	.85	1.10	1.41	1.83	2.55	3.25
Mar	.42	.66	1.08	1.49	1.91	2.38	2.92	3.59	4.48	5.95	7.35
Apr	.56	.83	1.26	1.66	2.06	2.50	2.99	3.59	4.38	5.65	6.86
May	1.02	1.44	2.12	2.73	3.34	3.99	4.72	5.59	6.74	8.57	10.30
Jun	.93	1.36	2.05	2.68	3.32	4.00	4.78	5.72	6.95	8.94	10.82
Jul	.27	.63	1.16	1.63	2.12	2.65	3.25	3.99	4.97	6.57	8.10
Aug	.22	.54	1.04	1.50	1.98	2.51	3.12	3.87	4.88	6.53	8.13
Sep	.45	.70	1.11	1.51	1.92	2.37	2.89	3.52	4.36	5.73	7.04
Oct	.13	.26	.56	.89	1.28	1.74	2.31	3.03	4.06	5.81	7.57
Nov	.11	.30	.64	.97	1.32	1.71	2.18	2.75	3.54	4.85	6.12
Dec	.11	.20	.36	.53	.72	.94	1.20	1.52	1.96	2.70	3.43
Ann	21.72	23.76	26.40	28.42	30.23	31.99	33.82	35.84	38.32	41.93	45.08

+ 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

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

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: WELLINGTON, KS **COOP ID: 148670**

Climate Division: KS 8 **NWS Call Sign:** **Elevation: 1,220 Feet** **Lat: 37°16N** **Lon: 97°25W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	2.7	1.0	1	#
Feb	3.7	2.0	1	#
Mar	1.8	.0	#	0
Apr	.1	.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
Oct	#	.0	0	0
Nov	.9	.0	#	0
Dec	2.5	1.4	#	#
Ann	11.7	4.4	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	6.0	1978	16	11.6	1973	14	1987	19	5	1979
Feb	14.0	1980	8	16.0+	1982	14	1980	10	4	1980
Mar	9.0	1998	20	10.5	1998	9	1998	20	1	1998
Apr	2.5	1979	4	2.5	1979	3	1979	4	#+	2000
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	.0	0	0	.0	0	#	1998	22	#	1998
Oct	#	1993	30	#+	1993	0	0	0	0	0
Nov	4.0	1975	26	8.0	1972	4	1988	20	#+	1995
Dec	5.0	2000	26	10.2	1973	6+	1987	15	2	1983
Ann	14.0	Feb 1980	8	16.0+	Feb 1982	14+	Jan 1987	19	5	Jan 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.1	1.2	.4	.1	.0
Feb	2.0	1.3	.5	.1	.1
Mar	1.0	.7	.2	.1	.0
Apr	@	@	.0	.0	.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	.0	.0	.0	.0	.0
Oct	.0	.0	.0	.0	.0
Nov	.4	.3	.2	.0	.0
Dec	1.7	1.0	.3	@	.0
Ann	7.2	4.5	1.6	.3	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	5.4	2.6	1.3	.1
Feb	4.0	2.1	1.1	.3
Mar	.7	.3	.1	.0
Apr	@	@	.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	.0	.0	.0	.0
Nov	.3	.2	.0	.0
Dec	2.8	1.3	.5	.0
Ann	13.2	6.5	3.0	.4

+ 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/normals/usnormals.html

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: WELLINGTON, KS **COOP ID: 148670**

Climate Division: KS 8 **NWS Call Sign:** **Elevation: 1,220 Feet** **Lat: 37˚16N** **Lon: 97˚25W**

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	5/08	5/03	4/30	4/27	4/25	4/22	4/19	4/16	4/11
32	4/24	4/20	4/17	4/14	4/11	4/09	4/06	4/03	3/30
28	4/13	4/09	4/06	4/04	4/01	3/30	3/28	3/25	3/21
24	4/06	3/31	3/27	3/23	3/20	3/16	3/13	3/08	3/02
20	3/30	3/23	3/17	3/13	3/08	3/04	2/28	2/22	2/15
16	3/20	3/12	3/06	3/01	2/24	2/19	2/14	2/07	1/30

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	9/21	9/27	10/01	10/04	10/08	10/11	10/14	10/18	10/24
32	10/05	10/11	10/15	10/19	10/22	10/25	10/29	11/02	11/08
28	10/18	10/24	10/28	10/31	11/04	11/07	11/11	11/15	11/20
24	10/28	11/04	11/08	11/12	11/16	11/19	11/23	11/28	12/04
20	11/04	11/11	11/16	11/20	11/24	11/28	12/02	12/07	12/14
16	11/12	11/20	11/25	11/30	12/04	12/09	12/14	12/19	12/27

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	188	180	174	170	165	161	156	150	143
32	216	208	202	197	193	188	183	177	169
28	237	230	224	220	216	212	207	202	195
24	267	258	251	246	240	235	230	223	214
20	289	279	272	266	260	254	248	241	230
16	316	305	297	290	283	276	269	261	250

***** 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/normals/usnormals.html

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: WELLINGTON, KS **COOP ID: 148670**

Climate Division: KS 8 **NWS Call Sign:** **Elevation: 1,220 Feet** **Lat: 37˚16N** **Lon: 97˚25W**

Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1065	809	577	291	86	7	0	2	35	207	600	949	4628
60	910	679	429	178	33	1	0	0	10	102	454	794	3590
57	819	601	344	124	16	0	0	0	4	59	372	703	3042
55	758	549	290	93	9	0	0	0	1	38	319	643	2700
50	612	429	178	38	2	0	0	0	0	10	205	500	1974
32	190	126	10	0	0	0	0	0	0	0	14	119	459

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	147	242	456	719	1055	1327	1546	1508	1183	840	404	193	9620
55	3	21	23	122	351	637	833	795	494	166	19	4	3468
57	1	16	14	92	296	577	771	733	437	124	12	1	3074
60	0	10	7	56	220	488	678	640	353	74	4	0	2530
65	0	0	0	19	118	345	523	487	228	24	0	0	1744
70	0	0	0	5	50	216	369	340	131	5	0	0	1116

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	30	101	249	476	784	1068	1280	1245	932	585	213	49	30	131	380	856	1640	2708	3988	5233	6165	6750	6963	7012
45	5	49	153	336	629	918	1125	1090	782	438	122	16	5	54	207	543	1172	2090	3215	4305	5087	5525	5647	5663
50	1	17	83	216	478	768	970	935	635	300	66	4	1	18	101	317	795	1563	2533	3468	4103	4403	4469	4473
55	0	4	37	120	331	618	815	780	492	182	23	0	0	4	41	161	492	1110	1925	2705	3197	3379	3402	3402
60	0	0	12	56	199	469	660	625	358	92	4	0	0	0	12	68	267	736	1396	2021	2379	2471	2475	2475
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	31	85	168	293	496	712	847	821	604	368	138	42	31	116	284	577	1073	1785	2632	3453	4057	4425	4563	4605

(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.
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