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: SEDAN, KS **COOP ID: 147305**

Climate Division: KS 9 **NWS Call Sign:** **Elevation: 880 Feet** **Lat: 37˚08N** **Lon: 96˚11W**

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	42.9	20.6	31.8	80	1950	24	40.2	1990	-27	1949	30	18.2	1979	1030	0	.0	.0	11.1	6.6	27.8	1.6
Feb	49.6	25.5	37.6	89	1962	12	46.8	1976	-19	1979	1	24.8	1979	769	0	.0	.0	14.7	3.7	21.5	1.0
Mar	59.3	34.5	46.9	90+	1995	23	51.6	1986	2+	1967	8	40.2	1975	561	0	.0	.1	24.3	.6	13.2	.0
Apr	69.0	44.5	56.8	99	1972	12	64.1	1981	12	1957	13	49.9	1983	266	18	.0	.5	29.0	.0	2.8	.0
May	76.9	54.8	65.9	96	1964	26	70.6	1977	28	1963	1	61.4	1995	82	107	.0	.9	31.0	.0	.1	.0
Jun	85.4	64.1	74.8	106	1952	29	78.9	1994	43	1954	4	70.2	1992	6	298	.2	9.8	30.0	.0	.0	.0
Jul	91.8	68.9	80.4	117	1954	14	86.8	1980	47	1971	31	77.3	1971	0	476	4.0	21.6	31.0	.0	.0	.0
Aug	91.8	66.8	79.3	114+	1964	4	86.7	2000	43	1967	28	72.6	1992	3	446	5.0	20.7	31.0	.0	.0	.0
Sep	82.8	58.7	70.8	111	2000	3	78.7	1998	32+	1995	23	63.2	1974	41	213	1.2	8.8	29.9	.0	.1	.0
Oct	72.2	46.0	59.1	99+	1963	7	63.5	1973	17	1993	31	52.9	1976	211	28	.0	.9	30.4	.0	2.8	.0
Nov	57.8	34.6	46.2	86	1978	4	55.2	1999	3	1976	29	40.4	1976	565	0	.0	.0	22.2	.5	14.3	.0
Dec	46.5	24.8	35.7	80	1966	7	41.0	1984	-15	1989	23	20.8	1983	911	0	.0	.0	13.7	4.1	24.9	.8
Ann	68.8	45.3	57.1	117	Jul 1954	14	86.8	Jul 1980	-27	Jan 1949	30	18.2	Jan 1979	4445	1586	10.4	63.3	298.3	15.5	107.5	3.4

\+ 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

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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	1.33	1.01	2.25	1975	31	4.32	1973	.00+	1986
Feb	1.70	1.55	3.62	1997	21	4.86	1997	.07	1991
Mar	3.32	3.32	2.65	1989	28	8.99	1973	.25	1971
Apr	3.59	3.32	3.81	1994	28	12.26	1994	.02	1989
May	6.09	6.25	7.22	1982	25	16.26	1982	.52	1994
Jun	4.88	4.24	4.99	1951	30	10.76	1999	1.34	1998
Jul	3.41	3.01	6.15	1959	15	8.44	1971	.08	1980
Aug	3.01	2.85	4.80	1948	12	8.01	1977	.01	2000
Sep	4.39	3.92	6.68	1986	30	16.30	1986	.67	1975
Oct	4.05	3.09	8.74	1986	3	13.10	1998	.26	1995
Nov	3.22	3.10	6.70	1979	21	9.34	1979	.00+	1989
Dec	1.93	1.53	2.19	1991	20	4.68	1999	.05	1977
Ann	40.92	39.44	8.74	Oct 1986	3	16.30	Sep 1986	.00+	Nov 1989

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.8	2.9	.7	.3
Feb	5.7	3.4	1.0	.4
Mar	8.3	5.5	2.6	.9
Apr	8.5	6.0	2.6	.9
May	10.8	7.5	3.8	1.9
Jun	9.4	6.6	3.5	1.6
Jul	7.0	4.7	2.0	.8
Aug	7.5	4.6	2.1	.9
Sep	8.0	5.4	2.7	1.4
Oct	7.1	4.8	2.2	1.2
Nov	6.7	4.1	2.2	1.0
Dec	5.9	3.3	1.5	.5
Ann	90.7	58.8	26.9	11.8

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	.00	.18	.43	.65	.86	1.09	1.35	1.66	2.08	2.76	3.41
Feb	.17	.29	.53	.76	1.02	1.31	1.65	2.08	2.66	3.63	4.58
Mar	.61	.91	1.40	1.85	2.31	2.80	3.36	4.04	4.94	6.40	7.78
Apr	.52	.82	1.33	1.83	2.35	2.92	3.58	4.38	5.47	7.24	8.94
May	1.34	1.90	2.79	3.60	4.41	5.27	6.24	7.39	8.92	11.35	13.65
Jun	1.32	1.78	2.49	3.11	3.71	4.34	5.05	5.88	6.96	8.66	10.25
Jul	.35	.61	1.07	1.55	2.06	2.64	3.32	4.16	5.32	7.23	9.10
Aug	.36	.60	1.02	1.44	1.89	2.38	2.96	3.68	4.66	6.26	7.82
Sep	.73	1.11	1.75	2.35	2.97	3.64	4.42	5.35	6.60	8.63	10.57
Oct	.47	.78	1.35	1.92	2.52	3.19	3.97	4.94	6.26	8.44	10.56
Nov	.00	.41	1.01	1.53	2.05	2.61	3.26	4.02	5.06	6.75	8.38
Dec	.15	.28	.53	.80	1.09	1.43	1.84	2.35	3.06	4.26	5.44
Ann	28.32	30.73	33.84	36.20	38.31	40.35	42.47	44.81	47.65	51.80	55.39

\+ 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

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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	3.5	1.0	1	#
Feb	3.6	2.3	1	#
Mar	1.7	.1	#	#
Apr	.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	#	.0	#	0
Nov	.5	.0	#	0
Dec	2.1	.5	#	#
Ann	11.4	3.9	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	6.5	1978	16	13.5	1987	10	1988	8	3	1978
Feb	9.3	1980	8	12.5	1971	9	1980	10	4	1978
Mar	6.5	1990	1	8.5	1988	8	1999	14	1	1999
Apr	.1	1984	1	.1	1984	#+	1997	9	#+	1997
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	0	0	0	0	0
Oct	#	1997	27	#+	1997	#+	1997	27	#+	1997
Nov	4.0	1971	23	4.0	1971	4	1971	23	#+	2000
Dec	7.0	2000	13	11.5	2000	9+	2000	14	3	2000
Ann	9.3	Feb 1980	8	13.5	Jan 1987	10	Jan 1988	8	4	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.2	1.2	.4	.1	.0
Feb	1.7	1.1	.4	.1	.0
Mar	.9	.6	.2	@	.0
Apr	@	.0	.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	.2	.1	.0	.0
Dec	1.5	.8	.1	.1	.0
Ann	6.7	3.9	1.2	.3	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	5.1	2.3	.8	.1
Feb	3.5	2.0	.9	.0
Mar	.8	.3	.1	.0
Apr	.0	.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	.0	.0	.0	.0
Nov	.3	.1	.0	.0
Dec	2.8	1.2	.4	.0
Ann	12.5	5.9	2.2	.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

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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	5/10	5/04	4/29	4/25	4/22	4/18	4/15	4/10	4/04
32	4/23	4/18	4/15	4/12	4/09	4/07	4/04	4/01	3/27
28	4/16	4/10	4/06	4/03	3/31	3/28	3/24	3/20	3/15
24	4/05	3/30	3/25	3/21	3/18	3/14	3/10	3/06	2/28
20	3/30	3/21	3/15	3/09	3/05	2/28	2/22	2/16	2/08
16	3/20	3/11	3/05	2/28	2/23	2/18	2/13	2/07	1/29

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	9/26	10/02	10/05	10/09	10/12	10/15	10/18	10/22	10/27
32	10/04	10/10	10/15	10/19	10/22	10/26	10/30	11/04	11/10
28	10/16	10/23	10/28	11/01	11/05	11/09	11/13	11/18	11/24
24	10/30	11/05	11/10	11/14	11/17	11/21	11/25	11/29	12/05
20	11/07	11/14	11/19	11/23	11/27	12/01	12/05	12/10	12/16
16	11/16	11/23	11/28	12/02	12/06	12/10	12/15	12/20	12/26

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	195	187	182	177	172	168	163	157	149
32	221	212	206	200	195	190	185	178	170
28	248	237	230	224	218	212	206	199	189
24	271	262	255	249	244	239	233	226	217
20	301	289	280	273	266	260	252	244	232
16	321	309	300	293	286	279	272	263	251

***** 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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1030	769	561	266	82	6	0	3	41	211	565	911	4445
60	875	638	411	154	29	0	0	0	13	107	424	756	3407
57	783	560	325	102	13	0	0	0	5	64	344	668	2864
55	723	509	272	74	7	0	0	0	2	43	294	610	2534
50	579	388	161	26	1	0	0	0	0	12	188	469	1824
32	171	97	7	0	0	0	0	0	0	0	13	111	399

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	164	252	469	743	1048	1282	1499	1466	1163	840	439	223	9588
55	3	19	21	126	342	592	786	753	475	171	30	9	3327
57	1	14	13	94	286	532	724	691	418	129	19	5	2926
60	0	9	5	57	209	442	631	598	335	80	10	1	2377
65	0	0	0	18	107	298	476	446	213	28	0	0	1586
70	0	0	0	4	41	171	321	303	121	6	0	0	967

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	43	118	284	530	816	1058	1263	1233	933	604	243	74	43	161	445	975	1791	2849	4112	5345	6278	6882	7125	7199
45	12	62	179	387	661	908	1108	1078	783	454	147	34	12	74	253	640	1301	2209	3317	4395	5178	5632	5779	5813
50	3	28	98	257	507	758	953	923	634	314	79	9	3	31	129	386	893	1651	2604	3527	4161	4475	4554	4563
55	1	8	51	149	358	608	798	768	486	196	35	3	1	9	60	209	567	1175	1973	2741	3227	3423	3458	3461
60	0	1	20	78	222	458	643	613	349	102	11	0	0	1	21	99	321	779	1422	2035	2384	2486	2497	2497
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	47	103	199	336	528	718	845	809	610	390	164	62	47	150	349	685	1213	1931	2776	3585	4195	4585	4749	4811

(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