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: PRATT 4 W, KS **COOP ID: 146549**

Climate Division: KS 8 **NWS Call Sign:** **Elevation: 1,940 Feet** **Lat: 37˚41N** **Lon: 98˚48W**

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	43.6	19.7	31.7	80+	1989	31	40.8	1986	-15	1959	4	17.8	1979	1035	0	.0	.0	11.3	7.5	29.0	1.6
Feb	50.8	24.2	37.5	89	1962	12	46.7	1976	-19	1982	6	22.8	1978	771	0	.0	.0	15.4	4.1	22.4	1.0
Mar	60.5	32.7	46.6	92	1946	31	53.2	1972	-12	1948	11	40.0	1984	570	1	.0	@	24.0	.8	15.9	.1
Apr	70.1	41.9	56.0	106	1989	23	64.2	1981	16+	1997	12	47.9	1983	294	24	@	.7	28.5	@	4.7	.0
May	78.2	52.2	65.2	107	1996	23	70.9	1974	27	1961	2	59.3	1995	101	107	.2	2.6	31.0	.0	.1	.0
Jun	88.5	61.7	75.1	112	1994	25	81.1	1994	41+	1998	6	69.4	1982	9	312	2.0	13.5	30.0	.0	.0	.0
Jul	93.9	66.3	80.1	112	1996	4	85.9	1980	45	1990	14	76.9	1989	0	468	6.0	22.6	31.0	.0	.0	.0
Aug	92.6	65.1	78.9	110+	2000	29	85.1	2000	46+	1956	21	72.6	1992	2	431	4.6	20.9	31.0	.0	.0	.0
Sep	84.7	56.6	70.7	111	2000	2	78.8	1998	26	1984	30	62.9	1974	35	203	1.4	9.7	29.9	.0	.2	.0
Oct	73.4	44.9	59.2	98	1991	2	62.5	1979	14	1993	31	53.7	1976	203	21	.0	1.3	30.4	.1	2.9	.0
Nov	56.8	31.7	44.3	87	1980	9	52.1	1999	-2	1952	28	38.4	1985	624	0	.0	.0	20.8	.9	16.4	.0
Dec	46.0	22.6	34.3	85	1955	24	39.2	1988	-20	1989	23	17.8	1983	951	0	.0	.0	12.5	4.0	27.6	1.0
Ann	69.9	43.3	56.6	112+	Jul 1996	4	85.9	Jul 1980	-20	Dec 1989	23	17.8+	Dec 1983	4595	1567	14.2	71.3	295.8	17.4	119.2	3.7

\+ 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

Issue Date: February 2004

(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

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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	.66	.60	1.18	1949	11	1.97	1999	.00+	1997
Feb	.96	.68	2.30	1948	27	2.82	2000	.00+	1999
Mar	2.40	2.04	2.80	1999	13	8.67	1973	.10	1997
Apr	2.73	1.83	6.40	1974	20	9.45	1991	.17	1989
May	3.78	3.10	3.20	1989	18	8.64	1989	.54	1973
Jun	3.90	3.43	3.52	1965	5	8.62	1975	.47	1973
Jul	3.32	3.59	3.66	1987	4	7.02	1972	.07	1983
Aug	2.96	2.32	4.14	1961	19	8.33	1996	.00	2000
Sep	2.54	2.32	3.63	1951	5	9.46	1973	.00	1979
Oct	2.25	1.48	5.15	1973	11	6.72	1979	.00+	1995
Nov	1.37	.98	2.60	1996	17	3.69	1975	.00+	1999
Dec	.98	.79	2.20	1984	15	3.70	1984	.00+	1988
Ann	27.85	27.84	6.40	Apr 1974	20	9.46	Sep 1973	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	2.9	2.1	.2	.0
Feb	3.1	2.1	.7	.2
Mar	5.6	4.3	1.7	.7
Apr	5.5	4.2	1.6	.6
May	8.1	6.1	2.8	1.1
Jun	7.0	5.5	2.9	1.2
Jul	5.9	4.9	2.0	1.0
Aug	5.4	4.5	2.0	.9
Sep	5.2	4.1	1.6	.8
Oct	4.3	3.3	1.5	.7
Nov	3.7	2.8	1.0	.2
Dec	3.3	2.2	.6	.2
Ann	60.0	46.1	18.6	7.6

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	.00	.21	.33	.44	.56	.69	.84	1.04	1.37	1.68
Feb	.00	.00	.00	.17	.36	.58	.85	1.19	1.67	2.49	3.30
Mar	.17	.32	.62	.95	1.32	1.74	2.26	2.91	3.81	5.33	6.84
Apr	.30	.50	.88	1.26	1.67	2.13	2.66	3.33	4.24	5.74	7.20
May	.69	1.02	1.58	2.09	2.61	3.18	3.82	4.60	5.64	7.31	8.90
Jun	.84	1.20	1.77	2.29	2.81	3.36	3.98	4.73	5.72	7.29	8.77
Jul	.50	.78	1.26	1.72	2.19	2.72	3.32	4.06	5.05	6.66	8.20
Aug	.22	.53	1.00	1.43	1.89	2.38	2.96	3.66	4.60	6.14	7.62
Sep	.15	.39	.78	1.16	1.55	1.99	2.50	3.14	3.99	5.40	6.77
Oct	.00	.14	.49	.83	1.21	1.63	2.14	2.77	3.65	5.13	6.58
Nov	.00	.00	.29	.52	.76	1.03	1.34	1.72	2.24	3.10	3.95
Dec	.00	.09	.26	.41	.57	.75	.96	1.21	1.56	2.14	2.70
Ann	19.67	21.25	23.27	24.81	26.17	27.49	28.86	30.37	32.20	34.86	37.16

\+ 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

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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	4.8	3.0	1	#
Feb	4.3	1.0	1	#
Mar	4.1	3.0	#	0
Apr	.4	.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	1.1	.0	#	0
Dec	3.0	2.5	#	#
Ann	17.7	9.5	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	7.7	1987	9	14.2	1973	11	1988	8	5	1979
Feb	11.0	1980	8	16.0	1980	12+	1983	3	6	1978
Mar	15.0	1999	13	21.0	1998	15	1999	13	2+	1999
Apr	6.0	1983	4	6.0	1983	3	1979	3	#+	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	#	1985	30	#	1985	0	0	0	0	0
Oct	.3	1980	28	.3	1980	#	1997	26	#	1997
Nov	6.0	1987	27	8.0	1972	5	1987	28	1	1972
Dec	6.0	2000	31	8.7	1973	7	1978	31	1	1997
Ann	15.0	Mar 1999	13	21.0	Mar 1998	15	Mar 1999	13	6	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.4	1.8	.5	.1	.0
Feb	1.6	1.2	.5	.2	@
Mar	1.3	1.1	.6	.2	.1
Apr	.2	.1	.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	.0	.0	.0	.0	.0
Oct	@	.0	.0	.0	.0
Nov	.5	.4	.1	@	.0
Dec	1.3	1.0	.4	.1	.0
Ann	7.3	5.6	2.2	.6	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	6.2	2.5	1.2	.0
Feb	3.5	2.1	.9	.2
Mar	1.7	.9	.7	.2
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	.0
Oct	.0	.0	.0	.0
Nov	.5	.2	.0	.0
Dec	1.7	.8	.1	.0
Ann	13.7	6.5	2.9	.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

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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	5/07	5/03	4/30	4/27	4/24	4/21	4/17	4/12
32	5/03	4/27	4/24	4/20	4/17	4/14	4/11	4/08	4/02
28	4/23	4/18	4/15	4/12	4/09	4/07	4/04	3/31	3/27
24	4/09	4/04	4/01	3/29	3/26	3/23	3/20	3/17	3/12
20	4/04	3/28	3/24	3/20	3/16	3/12	3/08	3/04	2/25
16	3/28	3/20	3/14	3/09	3/04	2/27	2/22	2/16	2/08

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	9/28	10/01	10/05	10/08	10/12	10/16	10/22
32	9/29	10/04	10/08	10/11	10/14	10/17	10/20	10/24	10/29
28	10/11	10/16	10/20	10/24	10/27	10/30	11/03	11/07	11/12
24	10/22	10/28	11/02	11/05	11/09	11/12	11/16	11/21	11/27
20	10/27	11/03	11/09	11/13	11/17	11/22	11/26	12/01	12/08
16	11/07	11/14	11/20	11/25	11/29	12/03	12/08	12/14	12/21

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	185	176	170	165	160	155	150	144	135
32	202	194	188	183	179	174	169	163	155
28	224	216	210	205	200	195	190	185	177
24	249	242	236	232	227	223	219	213	206
20	274	264	257	251	246	240	234	227	218
16	303	292	283	276	269	262	255	247	235

***** 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	1035	771	570	294	101	9	0	2	35	203	624	951	4595
60	880	642	425	184	42	2	0	0	9	97	476	796	3553
57	789	564	341	131	22	0	0	0	3	54	393	704	3001
55	728	514	289	101	13	0	0	0	0	35	340	644	2664
50	584	396	181	44	3	0	0	0	0	9	221	500	1938
32	173	107	10	0	0	0	0	0	0	0	17	116	423

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	161	260	464	720	1029	1293	1491	1452	1158	841	383	187	9439
55	4	23	29	130	329	603	778	739	469	164	16	3	3287
57	2	18	19	100	276	543	716	677	411	121	10	0	2893
60	0	11	10	63	203	454	623	584	328	70	3	0	2349
65	0	0	1	24	107	312	468	431	203	21	0	0	1567
70	0	0	0	7	44	188	314	286	110	4	0	0	953

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	39	110	260	489	786	1055	1244	1202	918	597	195	50	39	149	409	898	1684	2739	3983	5185	6103	6700	6895	6945
45	11	52	162	348	631	905	1089	1047	768	448	108	19	11	63	225	573	1204	2109	3198	4245	5013	5461	5569	5588
50	0	20	86	226	479	755	934	892	621	307	50	4	0	20	106	332	811	1566	2500	3392	4013	4320	4370	4374
55	0	5	43	127	333	605	779	737	475	187	18	0	0	5	48	175	508	1113	1892	2629	3104	3291	3309	3309
60	0	0	13	60	196	455	624	582	340	96	5	0	0	0	13	73	269	724	1348	1930	2270	2366	2371	2371
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	47	101	191	317	495	692	809	782	590	380	142	53	47	148	339	656	1151	1843	2652	3434	4024	4404	4546	4599

(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