

Climatology of the United States

No. 20

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

Station: YATES CENTER, KS

1971-2000

COOP ID: 149080

Climate Division: KS 9

NWS Call Sign:

Elevation: 1,050 Feet Lat: 37° 52N

Lon: 95° 44W

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	.0	.0	.0	72	1967	23	.0	0	-15	1985	12	.0	0	0	0	.0	.0	8.8	8.3	27.0	1.4
Feb	.0	.0	.0	87	1962	12	.0	0	-12	1979	1	.0	0	0	0	.0	.0	12.8	4.4	20.3	1.0
Mar	.0	.0	.0	89	1966	31	.0	0	0	1980	2	.0	0	0	0	.0	.0	23.4	.6	12.5	@
Apr	.0	.0	.0	95	1972	12	.0	0	16	1975	3	.0	0	0	0	.0	.1	28.7	.0	2.7	.0
May	.0	.0	.0	96+	1964	26	.0	0	30	1980	8	.0	0	0	0	.0	.5	31.0	.0	@	.0
Jun	.0	.0	.0	108	1980	27	.0	0	45	1969	2	.0	0	0	0	.3	6.8	30.0	.0	.0	.0
Jul	.0	.0	.0	111+	1980	17	.0	0	49	2000	22	.0	0	0	0	2.7	17.8	31.0	.0	.0	.0
Aug	.0	.0	.0	110+	1980	1	.0	0	47	1988	29	.0	0	0	0	2.2	17.2	31.0	.0	.0	.0
Sep	.0	.0	.0	108	2000	3	.0	0	32	1995	22	.0	0	0	0	.6	6.5	30.0	.0	@	.0
Oct	.0	.0	.0	98+	1963	7	.0	0	16	1993	31	.0	0	0	0	.0	.6	30.2	.0	1.4	.0
Nov	.0	.0	.0	85	1980	6	.0	0	2	1975	27	.0	0	0	0	.0	.0	21.0	.6	12.7	.0
Dec	.0	.0	.0	77+	1966	7	.0	0	-20	1989	22	.0	0	0	0	.0	.0	11.0	4.6	24.4	.9
Ann	.0	.0	.0	111+	Jul 1980	17	-99.9	0	-20	Dec 1989	22	99.9	0	0	0	5.8	49.5	288.9	18.5	101.0	3.3

+ 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: 1948-2001

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

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NWS Call Sign:

Elevation: 1,050 Feet Lat: 37°52N

Lon: 95°44W

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	1.21	.93	2.50	1971	3	3.74	1973	.00+	2000	5.0	3.1	.6	.2	.00	.08	.27	.46	.66	.89	1.16	1.49	1.96	2.75	3.52
Feb	1.58	1.48	3.31	1997	21	4.46	1997	.03	1991	5.2	3.6	1.1	.3	.14	.24	.45	.67	.91	1.19	1.51	1.92	2.49	3.43	4.36
Mar	3.12	3.00	2.45	1962	20	9.52	1973	.59	1971	7.6	5.9	2.3	.9	.77	1.06	1.51	1.92	2.32	2.74	3.21	3.77	4.50	5.66	6.75
Apr	3.82	3.44	4.14	1970	19	11.78	1994	.12	1989	8.0	6.2	2.6	1.1	.66	.99	1.55	2.07	2.61	3.19	3.85	4.66	5.73	7.47	9.13
May	5.01	4.68	4.60	1990	27	12.24	1990	.54	1994	9.3	7.6	3.8	1.5	1.22	1.69	2.42	3.07	3.71	4.40	5.16	6.06	7.25	9.13	10.89
Jun	5.66	5.98	4.15	1965	1	9.91	1979	.38	1980	8.5	6.9	3.4	2.0	1.35	1.88	2.70	3.44	4.18	4.95	5.82	6.85	8.21	10.36	12.38
Jul	4.38	3.78	6.70	1968	25	16.63	1972	.05	1974	6.9	5.9	2.8	1.4	.28	.54	1.08	1.67	2.35	3.13	4.09	5.30	7.00	9.87	12.73
Aug	4.03	3.35	4.80	1985	22	9.62	1974	.44	2000	6.9	5.2	2.4	1.6	.49	.81	1.38	1.94	2.53	3.20	3.97	4.93	6.22	8.36	10.43
Sep	4.55	3.91	6.97	1961	13	12.36	1973	.10	1979	7.3	5.7	3.0	1.7	.57	.93	1.57	2.20	2.87	3.62	4.48	5.55	7.00	9.38	11.69
Oct	3.90	3.57	5.60	1986	3	12.33	1986	.00	1995	6.9	5.5	2.3	1.2	.52	1.01	1.67	2.23	2.78	3.36	4.02	4.80	5.84	7.48	9.03
Nov	3.03	2.94	3.35	1974	3	6.38	1992	.00	1989	6.7	4.8	2.0	.8	.31	.67	1.17	1.61	2.06	2.54	3.08	3.74	4.62	6.03	7.37
Dec	1.83	1.48	2.00	1971	15	4.83	1984	.17	1976	5.1	3.5	1.4	.5	.21	.35	.61	.87	1.14	1.44	1.80	2.24	2.84	3.83	4.79
Ann	42.12	41.85	6.97	Sep 1961	13	16.63	Jul 1972	.00+	Jan 2000	83.4	63.9	27.7	13.2	27.30	30.07	33.66	36.43	38.92	41.34	43.86	46.67	50.11	55.14	59.54

+ 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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NWS Call Sign:

Elevation: 1,050 Feet

Lat: 37°52N

Lon: 95°44W

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	5.2	1.3	1	#	6.0	1985	10	23.0	1979	8	1987	10	4	1977	2.2	1.8	.6	.2	.0	-9.9	-9.9	-9.9	-9.9
Feb	5.2	4.0	#	0	12.0	1980	8	14.0+	1980	10	1985	5	2	1985	1.7	1.3	.5	.3	@	1.5	.4	.2	.0
Mar	1.8	.0	#	0	10.0	1975	10	14.0	1975	10	1975	10	1	1975	.6	.5	.2	.1	@	.6	.2	.1	.1
Apr	.1	.0	#	0	2.0	1979	4	2.0	1979	#+	1997	9	#+	1997	.1	@	.0	.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	#	.0	#	0	#	1997	27	#+	1997	#	1997	27	#	1997	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	1.1	.0	#	0	10.0	1975	26	10.0	1975	6	1971	23	#+	1997	.2	.2	.1	.1	@	.1	.1	.1	.0
Dec	4.4	2.5	#	0	8.0	1973	31	17.5	1987	13	1987	15	2+	2000	1.3	1.0	.3	.1	.0	1.8	.8	.4	.2
Ann	17.8	7.8	N/A	N/A	12.0	Feb 1980	8	23.0	Jan 1979	13	Dec 1987	15	4	Jan 1977	6.1	4.8	1.7	.8	@	-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

Complete documentation available from:

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Lat: 37° 52N

Lon: 95° 44W

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	5/04	4/29	4/26	4/23	4/20	4/18	4/15	4/12	4/07
32	4/21	4/16	4/13	4/11	4/08	4/06	4/03	3/31	3/27
28	4/12	4/08	4/04	4/02	3/30	3/27	3/25	3/22	3/17
24	4/05	3/30	3/25	3/21	3/18	3/14	3/10	3/05	2/27
20	3/30	3/23	3/18	3/13	3/09	3/05	2/28	2/23	2/15
16	3/22	3/13	3/07	3/02	2/25	2/21	2/15	2/09	2/01
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	9/28	10/03	10/07	10/10	10/13	10/16	10/19	10/23	10/28
32	10/12	10/17	10/21	10/24	10/27	10/30	11/02	11/06	11/11
28	10/20	10/25	10/30	11/02	11/05	11/09	11/12	11/16	11/22
24	10/28	11/03	11/08	11/12	11/16	11/19	11/23	11/28	12/04
20	11/07	11/13	11/18	11/22	11/25	11/29	12/02	12/07	12/13
16	11/14	11/20	11/25	11/29	12/03	12/06	12/10	12/15	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	197	189	184	179	175	170	166	160	153
32	219	213	209	205	201	198	194	189	183
28	242	234	229	224	220	215	211	205	198
24	270	261	254	248	242	237	231	224	214
20	292	281	273	267	261	254	248	240	229
16	312	301	293	286	279	273	266	258	247

* 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:
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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	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	108	275	516	803	1032	1236	1191	914	607	231	63	43	151	426	942	1745	2777	4013	5204	6118	6725	6956	7019
45	13	57	170	372	648	882	1081	1036	764	456	135	28	13	70	240	612	1260	2142	3223	4259	5023	5479	5614	5642
50	1	21	95	241	493	732	926	881	616	317	72	7	1	22	117	358	851	1583	2509	3390	4006	4323	4395	4402
55	0	6	44	142	345	582	771	726	468	193	29	1	0	6	50	192	537	1119	1890	2616	3084	3277	3306	3307
60	0	1	15	71	205	433	616	571	331	100	8	0	0	1	16	87	292	725	1341	1912	2243	2343	2351	2351
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	34	81	180	314	509	701	834	797	597	373	142	44	34	115	295	609	1118	1819	2653	3450	4047	4420	4562	4606

(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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. 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