

# Climatography of the United States

No. 20

1971-2000

Station: EUREKA, KS

COOP ID: 142622

Climate Division: KS 9

NWS Call Sign:

Elevation: 1,080 Feet Lat: 37°49N

Lon: 96°17W

## 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	40.3	17.9	29.1	75+	1996	14	38.5	1990	-17	1959	5	15.1	1979	1112	0	.0	.0	10.1	8.0	27.5	2.0
Feb	47.5	22.5	35.0	86	1962	12	45.9	1976	-19	1979	1	22.3	1978	840	0	.0	.0	13.4	4.2	21.1	1.2
Mar	58.1	31.7	44.9	91	1967	11	49.2	1986	-3	1960	3	38.4	1996	624	0	.0	.0	24.5	.6	13.7	@
Apr	67.9	42.6	55.3	99	1972	12	63.3	1981	14	1975	3	48.3	1983	306	13	.0	.6	28.9	.0	3.2	.0
May	76.6	54.2	65.4	99	1964	26	69.9	1991	29+	1976	3	61.0	1995	83	95	.0	1.3	31.0	.0	.1	.0
Jun	85.4	63.4	74.4	110	1980	27	79.2	1980	38	1962	19	70.1	1982	6	287	.6	10.0	30.0	.0	.0	.0
Jul	91.6	68.7	80.2	117	1954	14	90.0	1980	47	1970	21	77.2	1971	0	470	4.3	20.7	31.0	.0	.0	.0
Aug	90.1	66.2	78.2	112	1956	6	85.1	2000	46+	1988	29	71.5	1992	4	412	3.5	18.6	31.0	.0	.0	.0
Sep	82.0	57.6	69.8	109	2000	3	76.5	1998	28	1984	30	62.3	1974	49	193	.9	7.8	30.0	.0	.1	.0
Oct	70.8	44.9	57.9	98+	1963	6	61.5	2000	15	1993	31	52.1	1976	236	14	.0	.6	30.5	.0	2.8	.0
Nov	55.6	32.3	44.0	85	1980	8	53.2	1999	0	1975	27	38.0	1985	632	0	.0	.0	21.6	.5	14.4	@
Dec	43.9	22.4	33.2	82	1955	24	37.9	1991	-18	1989	22	17.1	1983	987	0	.0	.0	11.7	4.4	25.2	.9
Ann	67.5	43.7	55.6	117	Jul 1954	14	90.0	Jul 1980	-19	Feb 1979	1	15.1	Jan 1979	4879	1484	9.3	59.6	293.7	17.7	108.1	4.1

+ 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](http://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: 1954-2001

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

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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: EUREKA, KS**

**COOP ID: 142622**

**Climate Division: KS 9**

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**Elevation: 1,080 Feet Lat: 37°49N**

**Lon: 96°17W**

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	1.16	.95	2.00	1971	3	3.19	1973	.00	1986	6.7	2.9	.6	.2	.07	.18	.35	.52	.71	.91	1.14	1.43	1.82	2.47	3.10
Feb	1.55	1.34	2.85	1997	21	4.09	1985	.00	1991	6.0	3.7	.8	.3	.14	.31	.57	.79	1.03	1.28	1.57	1.91	2.38	3.13	3.86
Mar	2.89	2.72	1.90	1988	3	9.06	1973	.52	1971	8.4	5.7	2.4	.6	.72	1.00	1.42	1.79	2.16	2.55	2.98	3.50	4.17	5.24	6.23
Apr	3.14	2.97	3.12	1994	28	9.36	1994	.07	1989	8.8	5.5	2.3	.9	.43	.68	1.13	1.57	2.03	2.53	3.12	3.84	4.82	6.41	7.95
May	4.69	4.47	4.90	1959	17	10.72	1982	.48	1994	9.9	6.9	3.6	1.5	1.22	1.66	2.34	2.94	3.53	4.15	4.84	5.66	6.73	8.41	9.98
Jun	5.25	4.82	5.30	1965	9	9.90	1981	.81	1980	9.3	6.6	3.5	1.7	1.46	1.95	2.71	3.37	4.02	4.69	5.44	6.32	7.47	9.28	10.96
Jul	3.82	3.23	3.37	2001	26	11.47	1972	.00	1975	7.1	5.5	2.8	1.3	.25	.64	1.24	1.80	2.39	3.04	3.79	4.71	5.96	8.00	9.97
Aug	3.99	3.52	3.55	1977	11	9.55	1974	.23	2000	7.9	6.0	2.7	1.3	.62	.96	1.54	2.09	2.66	3.29	4.00	4.87	6.04	7.94	9.77
Sep	3.31	2.50	6.78	1961	13	10.51	1973	.55	1979	7.5	5.2	2.2	1.0	.40	.66	1.13	1.59	2.08	2.62	3.26	4.04	5.11	6.87	8.57
Oct	3.30	3.14	5.25	1973	11	7.41	1986	.22	1995	7.0	4.9	2.2	1.0	.48	.75	1.23	1.69	2.16	2.69	3.29	4.03	5.02	6.65	8.21
Nov	2.96	2.91	4.83	1998	1	11.01	1998	.00	1989	6.6	4.5	1.8	.8	.20	.51	.98	1.41	1.87	2.37	2.95	3.66	4.62	6.19	7.70
Dec	1.72	1.31	2.00	1972	30	3.67	1984	.12+	1977	6.8	3.3	1.3	.4	.20	.33	.57	.81	1.07	1.35	1.68	2.10	2.66	3.58	4.48
Ann	37.78	37.35	6.78	Sep 1961	13	11.47	Jul 1972	.00+	Feb 1991	92.0	60.7	26.2	11.0	25.63	27.94	30.92	33.20	35.23	37.21	39.26	41.53	44.30	48.33	51.84

+ 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: 1954-2001

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**NWS Call Sign:**

**Elevation: 1,080 Feet**

**Lat: 37°49N**

**Lon: 96°17W**

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	6.6	5.8	1	#	6.3	1975	3	21.5	1979	13	1979	31	8	1979	3.8	1.9	.6	.2	.0	8.0	5.2	3.4	.2
Feb	5.6	3.2	1	#	15.2	1980	8	17.9	1975	15	1980	9	6	1979	2.4	1.7	.6	.3	.1	5.7	3.5	2.6	.5
Mar	2.3	1.0	#	#	10.4	1975	10	12.0	1988	10	1975	10	1	1990	1.3	.7	.2	.1	@	1.0	.4	.2	@
Apr	.2	.0	#	0	4.8	1979	4	4.8	1979	#+	1997	9	#+	1997	.1	@	@	.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	#	0	1.0	1976	31	1.0	1976	#	1993	30	#	1993	@	@	.0	.0	.0	.0	.0	.0	.0
Nov	1.6	.1	#	0	9.5	1975	26	13.5	1972	9	1975	27	1	1975	.9	.5	.1	.1	.0	.6	.2	.2	.0
Dec	4.6	2.6	#	#	8.3	1973	31	18.9	1973	10	1987	15	2+	2000	2.5	1.5	.4	.1	.0	3.6	1.7	.7	.1
Ann	20.9	12.7	N/A	N/A	15.2	Feb 1980	8	21.5	Jan 1979	15	Feb 1980	9	8	Jan 1979	11.0	6.3	1.9	.8	.1	18.9	11.0	7.1	.8

+ 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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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	5/06	5/02	4/29	4/26	4/24	4/21	4/17	4/12
32	4/24	4/20	4/17	4/14	4/12	4/09	4/06	4/03	3/30
28	4/15	4/11	4/08	4/05	4/03	3/31	3/29	3/26	3/21
24	4/05	3/30	3/26	3/23	3/20	3/17	3/13	3/09	3/04
20	4/01	3/25	3/19	3/15	3/10	3/06	3/01	2/24	2/17
16	3/23	3/14	3/08	3/03	2/26	2/22	2/17	2/11	2/02
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	9/24	9/29	10/02	10/05	10/08	10/11	10/14	10/17	10/22
32	9/29	10/05	10/10	10/13	10/17	10/20	10/24	10/28	11/03
28	10/13	10/19	10/24	10/27	10/31	11/03	11/07	11/11	11/17
24	10/23	10/30	11/03	11/07	11/10	11/14	11/18	11/22	11/28
20	11/04	11/10	11/14	11/18	11/22	11/26	11/30	12/04	12/10
16	11/10	11/17	11/22	11/27	12/01	12/05	12/09	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	178	172	168	164	160	155	150	143
32	209	202	196	192	187	183	179	173	166
28	231	224	219	214	210	206	202	196	189
24	257	249	244	239	235	231	226	220	213
20	288	277	269	262	256	250	243	235	224
16	311	299	291	283	277	270	262	254	242

\* 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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

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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	1112	840	624	306	83	6	0	4	49	236	632	987	4879
60	957	708	470	187	30	0	0	0	16	120	487	832	3807
57	865	629	384	129	13	0	0	0	7	70	404	741	3242
55	805	578	327	97	7	0	0	0	3	47	351	681	2896
50	660	454	203	39	1	0	0	0	0	13	234	538	2142
32	229	139	12	0	0	0	0	0	0	0	22	146	548

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	140	222	411	697	1035	1271	1493	1431	1133	801	380	181	9195
55	3	17	13	104	329	581	780	718	447	135	19	4	3150
57	1	13	8	76	273	521	718	656	390	96	12	1	2765
60	0	8	2	44	197	431	625	563	309	53	5	0	2237
65	0	0	0	13	95	287	470	412	193	14	0	0	1484
70	0	0	0	3	33	162	321	272	106	2	0	0	899

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	42	107	285	525	816	1058	1265	1211	920	597	220	63	42	149	434	959	1775	2833	4098	5309	6229	6826	7046	7109
45	14	57	176	384	661	908	1110	1056	770	449	132	29	14	71	247	631	1292	2200	3310	4366	5136	5585	5717	5746
50	1	22	99	254	506	758	955	901	621	310	68	8	1	23	122	376	882	1640	2595	3496	4117	4427	4495	4503
55	0	6	46	150	358	608	800	746	476	189	27	1	0	6	52	202	560	1168	1968	2714	3190	3379	3406	3407
60	0	1	17	78	219	458	645	591	342	100	8	0	0	1	18	96	315	773	1418	2009	2351	2451	2459	2459
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	40	89	200	335	527	713	844	805	605	379	146	50	40	129	329	664	1191	1904	2748	3553	4158	4537	4683	4733

(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](http://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](http://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"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
|---|---|

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)