

Climatology of the United States

No. 20

1971-2000

Station: NORWICH, KS

COOP ID: 145870

Climate Division: KS 8

NWS Call Sign:

Elevation: 1,490 Feet Lat: 37° 28N

Lon: 97° 51W

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	41.0	19.7	30.4	77	1967	22	39.9	1990	-10	1959	4	16.1	1979	1075	0	.0	.0	10.7	7.2	26.2	1.1
Feb	47.9	24.2	36.1	88	1996	22	45.9	1976	-11	1982	6	22.1	1978	813	0	.0	.0	14.0	4.1	18.9	.7
Mar	57.4	32.3	44.9	90	1956	25	50.4	1986	-3	1960	3	38.3	1984	626	0	.0	.0	24.4	.8	11.4	.0
Apr	66.9	42.6	54.8	98	1972	12	62.6	1981	18	1975	3	46.5	1983	320	14	.0	.3	28.8	.0	2.2	.0
May	76.5	54.5	65.5	103+	2000	24	71.1	1996	33	1967	2	61.0	1995	89	104	.1	1.8	31.0	.0	.0	.0
Jun	87.4	63.9	75.7	107+	1994	25	81.2	1990	43	1969	2	70.0	1982	7	326	2.3	14.4	30.0	.0	.0	.0
Jul	94.0	68.9	81.5	111	1980	12	87.9	1980	53+	1975	13	78.5	1972	0	509	8.2	23.8	31.0	.0	.0	.0
Aug	92.4	67.3	79.9	111	1964	6	86.1	2000	47	1950	20	73.4	1992	2	461	7.5	21.8	31.0	.0	.0	.0
Sep	83.6	58.9	71.3	108	1990	1	80.8	1998	33+	1985	30	63.3	1974	37	224	1.8	10.9	29.9	.0	.0	.0
Oct	71.6	46.5	59.1	99	1979	8	63.9	1979	20+	1993	31	52.7	1976	216	32	.0	1.3	30.4	.0	1.0	.0
Nov	55.2	33.0	44.1	85+	1990	1	52.7	1998	5	1976	28	38.3	1985	626	0	.0	.0	21.5	.7	11.5	.0
Dec	43.3	23.4	33.4	83	1955	24	38.6	1991	-15	1989	22	16.6	1983	981	0	.0	.0	11.6	4.0	23.7	.7
Ann	68.1	44.6	56.4	111+	Jul 1980	12	87.9	Jul 1980	-15	Dec 1989	22	16.1	Jan 1979	4792	1670	19.9	74.3	294.3	16.8	94.9	2.5

+ 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

079-A

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: NORWICH, KS

COOP ID: 145870

Climate Division: KS 8

NWS Call Sign:

Elevation: 1,490 Feet Lat: 37°28N

Lon: 97°51W

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	.81	.69	1.49	1980	19	2.68	1973	.00+	1996	2.6	1.8	.6	.1	.00	.09	.24	.37	.50	.64	.81	1.01	1.29	1.73	2.17
Feb	1.06	.72	1.32+	1975	16	3.47	2000	.00+	1996	3.4	2.5	.6	.2	.00	.02	.11	.24	.40	.61	.88	1.24	1.76	2.69	3.63
Mar	2.70	2.01	2.90	2000	22	10.44	1973	.06	1971	5.2	4.6	1.9	.9	.23	.42	.78	1.15	1.56	2.03	2.59	3.29	4.25	5.86	7.44
Apr	2.79	2.25	6.22	1999	14	10.58	1999	.50	1987	6.1	4.8	2.0	.6	.53	.78	1.19	1.57	1.95	2.36	2.83	3.40	4.14	5.35	6.49
May	4.23	3.63	3.76	1977	21	10.78	1993	.98	1994	7.8	6.4	2.5	1.2	.91	1.30	1.92	2.48	3.04	3.64	4.32	5.13	6.21	7.91	9.53
Jun	4.20	3.67	4.59	1975	17	11.39	1975	.20	1998	7.2	6.2	2.9	1.2	.63	.99	1.60	2.18	2.78	3.44	4.20	5.13	6.37	8.40	10.35
Jul	2.91	2.82	3.60	1997	20	6.63	1998	.35+	1984	5.6	4.6	1.9	.8	.45	.69	1.11	1.52	1.93	2.39	2.92	3.56	4.42	5.82	7.16
Aug	2.94	1.86	3.41	1948	12	8.64	1977	.00	2000	5.6	4.3	2.1	.9	.11	.34	.76	1.19	1.66	2.19	2.82	3.61	4.70	6.52	8.31
Sep	2.87	1.99	5.57	1973	22	13.72	1973	.00	2000	5.3	4.0	1.9	.9	.12	.36	.79	1.20	1.66	2.17	2.77	3.53	4.56	6.28	7.96
Oct	2.47	1.80	4.35	1998	31	7.51	1998	.00+	1978	4.6	3.8	1.7	.7	.00	.16	.53	.91	1.32	1.79	2.35	3.04	4.01	5.63	7.23
Nov	2.06	1.52	6.90	1998	1	8.65	1998	.00+	1995	4.0	3.3	1.1	.6	.00	.16	.50	.82	1.16	1.55	2.00	2.56	3.33	4.61	5.86
Dec	1.02	.82	1.62	1965	24	2.80	1991	.00+	1996	3.5	2.3	.7	.2	.00	.12	.31	.48	.64	.82	1.03	1.27	1.60	2.15	2.67
Ann	30.06	31.22	6.90	Nov 1998	1	13.72	Sep 1973	.00+	Sep 2000	60.9	48.6	19.9	8.3	20.23	22.09	24.50	26.34	27.98	29.58	31.24	33.08	35.32	38.60	41.45

+ 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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Station: NORWICH, KS

COOP ID: 145870

Climate Division: KS 8

NWS Call Sign:

Elevation: 1,490 Feet

Lat: 37°28N

Lon: 97°51W

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	3.5	.3	1	0	6.0	1975	2	17.0	1987	13	1988	13	4	1988	1.2	.8	.4	.2	.0	1.5	.9	.5	.1
Feb	3.9	.8	#	0	12.0	1975	16	17.7	1971	15	1971	23	3	1985	1.3	1.0	.6	.2	.1	1.2	.8	.3	.2
Mar	1.2	.0	#	0	7.0	1975	10	9.0	1975	11	1999	13	1	1999	.8	.5	.1	.1	.0	.4	.1	.0	.0
Apr	.3	.0	0	0	4.0	1979	3	4.0	1979	0	0	0	0	0	.1	.1	.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	0	.5	1993	29	.5	1993	0	0	0	0	0	@	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.5	.0	#	0	4.0	1983	23	4.0	1983	6	1991	2	1	1992	.2	.2	@	.0	.0	.1	.0	.0	.0
Dec	2.3	.3	#	#	8.1	1999	4	8.5	1983	8+	1999	5	2	1984	.8	.7	.2	.1	.0	.7	.4	.2	.0
Ann	11.7	1.4	N/A	N/A	12.0	Feb 1975	16	17.7	Feb 1971	15	Feb 1971	23	4	Jan 1988	4.4	3.3	1.4	.6	.1	3.9	2.2	1.0	.3

+ 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°28N

Lon: 97°51W

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	5/03	4/28	4/24	4/22	4/19	4/16	4/13	4/10	4/05
32	4/18	4/14	4/11	4/08	4/06	4/04	4/01	3/29	3/25
28	4/11	4/06	4/03	3/31	3/28	3/26	3/23	3/20	3/15
24	4/01	3/26	3/22	3/18	3/14	3/11	3/07	3/03	2/25
20	3/26	3/18	3/13	3/08	3/04	2/28	2/23	2/18	2/10
16	3/21	3/11	3/04	2/26	2/20	2/15	2/09	2/02	1/23
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	10/01	10/07	10/11	10/15	10/18	10/22	10/25	10/30	11/04
32	10/16	10/22	10/26	10/29	11/01	11/04	11/07	11/11	11/17
28	10/22	10/28	11/02	11/05	11/09	11/12	11/16	11/20	11/26
24	10/30	11/06	11/10	11/14	11/18	11/21	11/25	11/30	12/06
20	11/05	11/13	11/18	11/22	11/27	12/01	12/05	12/11	12/18
16	11/20	11/27	12/01	12/06	12/10	12/14	12/18	12/23	12/30
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	203	196	190	186	182	177	173	168	160
32	231	223	217	213	208	204	199	193	185
28	246	239	234	229	225	221	216	211	203
24	273	264	258	252	247	242	237	231	222
20	296	286	279	273	267	261	255	247	237
16	331	317	307	299	291	284	275	266	252

* 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)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1075	813	626	320	89	7	0	2	37	216	626	981	4792
60	920	683	475	201	34	1	0	0	11	113	481	826	3745
57	829	605	389	142	16	0	0	0	4	69	398	734	3186
55	768	554	334	110	9	0	0	0	2	48	345	674	2844
50	624	435	213	48	2	0	0	0	0	15	228	530	2095
32	203	134	15	0	0	0	0	0	0	0	19	138	509

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	152	247	413	684	1038	1309	1532	1482	1178	839	383	180	9437
55	4	24	18	103	334	619	819	769	489	174	19	3	3375
57	2	18	12	76	279	559	757	707	432	133	12	0	2987
60	0	12	4	44	204	470	664	614	349	84	4	0	2449
65	0	0	0	14	104	326	509	461	224	32	0	0	1670
70	0	0	0	3	41	199	355	316	128	8	0	0	1050

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	47	128	287	521	829	1100	1312	1277	982	654	236	63	47	175	462	983	1812	2912	4224	5501	6483	7137	7373	7436
45	12	63	178	380	674	950	1157	1122	832	502	139	24	12	75	253	633	1307	2257	3414	4536	5368	5870	6009	6033
50	0	27	100	251	519	800	1002	967	683	357	70	5	0	27	127	378	897	1697	2699	3666	4349	4706	4776	4781
55	0	6	47	145	369	650	847	812	537	227	27	0	0	6	53	198	567	1217	2064	2876	3413	3640	3667	3667
60	0	1	12	70	229	502	692	657	397	126	6	0	0	1	13	83	312	814	1506	2163	2560	2686	2692	2692
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	38	90	186	320	526	732	861	839	637	399	140	43	38	128	314	634	1160	1892	2753	3592	4229	4628	4768	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.
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