

Climatography of the United States

No. 20

1971-2000

Station: HUDSON, KS

COOP ID: 143847

Climate Division: KS 8

NWS Call Sign:

Elevation: 1,867 Feet Lat: 38°06N

Lon: 98°40W

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	41.4	20.4	30.9	77	1986	20	41.0	1986	-15	1979	31	16.0	1979	1057	0	.0	.0	9.7	7.8	27.8	1.8
Feb	48.4	25.3	36.9	84+	1996	23	46.0	1976	-20	1951	1	21.5	1978	792	0	.0	.0	14.0	4.8	20.6	1.2
Mar	58.5	34.0	46.3	88+	1986	28	52.7	1986	-9	1960	3	39.7	1998	582	0	.0	.0	22.7	1.2	13.9	.1
Apr	69.1	43.6	56.4	102	1989	23	65.0	1981	16	1975	2	47.7	1983	285	26	.1	.7	28.4	.0	3.4	.0
May	78.2	53.8	66.0	103	1996	23	70.5	1991	29	1954	3	60.1	1995	87	119	.2	2.8	30.9	.0	.0	.0
Jun	89.4	63.4	76.4	111	1980	27	81.0+	1994	42	1954	4	70.9	1982	7	348	2.6	14.8	30.0	.0	.0	.0
Jul	94.5	68.5	81.5	110+	1954	13	88.4	1980	50+	1970	22	78.3	1972	0	513	7.0	23.8	31.0	.0	.0	.0
Aug	92.5	66.9	79.7	108+	1984	28	85.7	1983	47	1967	27	73.2	1992	2	457	5.0	20.7	31.0	.0	.0	.0
Sep	83.7	58.5	71.1	107	2000	2	77.6	1998	28	1984	30	64.1	1974	30	212	1.1	9.3	29.9	.0	.1	.0
Oct	72.0	46.4	59.2	97+	1979	7	63.4	1979	19+	1993	31	53.7	1976	202	22	.0	.8	30.2	@	1.7	.0
Nov	55.2	33.2	44.2	86	1980	8	52.1	1999	-1	1952	28	37.4	1985	624	0	.0	.0	20.5	1.1	14.4	.0
Dec	44.5	23.9	34.2	82	1955	24	40.7	1988	-18	1989	22	17.5	1983	955	0	.0	.0	11.6	4.8	25.7	.9
Ann	69.0	44.8	56.9	111	Jun 1980	27	88.4	Jul 1980	-20	Feb 1951	1	16.0	Jan 1979	4623	1697	16.0	72.9	289.9	19.7	107.6	4.0

+ 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

046-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: HUDSON, KS

COOP ID: 143847

Climate Division: KS 8

NWS Call Sign:

Elevation: 1,867 Feet Lat: 38°06N

Lon: 98°40W

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	.72	.64	1.80	1999	28	2.83	1999	.00+	1997	3.3	2.0	.4	.1	.00	.04	.15	.26	.38	.51	.68	.88	1.17	1.64	2.12
Feb	.85	.71	1.78	1966	9	2.92	1997	.00	1991	3.2	2.0	.5	.1	.00	.02	.08	.17	.29	.46	.67	.97	1.41	2.21	3.05
Mar	2.33	1.58	2.30	1987	23	7.81	1973	.00+	1997	5.8	4.2	1.6	.6	.00	.16	.52	.87	1.26	1.70	2.22	2.87	3.77	5.28	6.76
Apr	2.39	2.10	2.60	1985	30	8.27	1976	.30	1989	6.0	4.5	1.7	.6	.37	.57	.91	1.24	1.59	1.96	2.39	2.91	3.62	4.76	5.86
May	4.07	3.72	3.10	1990	31	11.89	1995	.57	1984	8.4	6.4	2.8	1.4	.95	1.33	1.93	2.46	2.99	3.55	4.18	4.93	5.91	7.48	8.95
Jun	3.44	2.87	5.06	1993	19	8.30	1992	.91	1980	7.1	5.7	2.6	.9	1.13	1.45	1.93	2.34	2.73	3.14	3.58	4.10	4.77	5.81	6.77
Jul	3.17	2.86	4.10+	1999	1	9.76	1993	.23	1984	6.0	4.9	2.2	.9	.34	.57	1.01	1.45	1.93	2.46	3.09	3.87	4.94	6.70	8.42
Aug	2.62	2.44	3.82	1986	21	9.01	1997	.14	2000	6.2	4.7	1.8	.7	.28	.48	.84	1.21	1.60	2.04	2.56	3.20	4.08	5.53	6.94
Sep	2.26	1.43	7.77	1973	26	15.06	1973	.00	1980	5.4	4.1	1.3	.4	.10	.30	.63	.96	1.32	1.72	2.19	2.78	3.58	4.91	6.21
Oct	2.02	1.88	3.65	1968	16	5.19	1985	.00	1975	4.7	3.3	1.3	.6	.10	.29	.59	.89	1.21	1.56	1.98	2.49	3.19	4.35	5.48
Nov	1.25	.79	2.17	1992	25	4.31	1998	.00+	1997	4.0	2.7	.7	.2	.00	.03	.17	.33	.54	.78	1.09	1.50	2.08	3.09	4.11
Dec	.91	.81	2.32	1984	16	4.00	1984	.00	1976	3.7	2.1	.4	.1	.02	.08	.19	.32	.47	.64	.84	1.11	1.47	2.10	2.73
Ann	26.03	25.97	7.77	Sep 1973	26	15.06	Sep 1973	.00+	Nov 1997	63.8	46.6	17.3	6.6	15.64	17.52	20.00	21.93	23.67	25.39	27.18	29.19	31.66	35.32	38.53

+ 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

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Asheville, North Carolina 28801
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Station: HUDSON, KS

COOP ID: 143847

Climate Division: KS 8

NWS Call Sign:

Elevation: 1,867 Feet

Lat: 38°06N

Lon: 98°40W

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	4.8	4.2	1	#	9.0	1993	9	16.0+	2000	10	1988	10	4	1979	2.2	1.8	.6	.2	.0	3.6	1.6	.9	.2
Feb	4.3	2.3	1	#	10.0	1978	13	18.0	1971	12	1978	15	5	1978	1.8	1.4	.7	.3	@	4.1	1.1	.7	.0
Mar	3.4	2.0	#	#	9.0	1999	13	13.0	1984	8	1980	24	1	1998	1.2	1.1	.7	.2	.0	1.3	.5	.2	.0
Apr	.8	.0	#	0	10.0	1983	4	13.0	1983	10	1983	4	1	1983	.2	.2	.1	@	@	.2	.2	.1	@
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	#	1995	22	#	1995	#	1995	22	#	1995	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.3	.0	#	0	6.0	1976	27	6.0	1976	2	1991	31	#+	1997	.1	.1	@	@	.0	.1	.0	.0	.0
Nov	1.2	.0	#	0	9.0	1992	25	9.0	1992	9	1992	25	1	1992	.5	.5	.1	@	.0	.6	.3	.1	.0
Dec	3.3	2.7	#	#	4.0	1972	12	11.5	1987	8	1983	23	2	1983	1.9	1.5	.4	.0	.0	3.0	.7	.0	.0
Ann	18.1	11.2	N/A	N/A	10.0+	Apr 1983	4	18.0	Feb 1971	12	Feb 1978	15	5	Feb 1978	7.9	6.6	2.6	.7	@	12.9	4.4	2.0	.2

+ 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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Station: HUDSON, KS

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Climate Division: KS 8

NWS Call Sign:

Elevation: 1,867 Feet

Lat: 38°06N

Lon: 98°40W

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	5/06	5/01	4/28	4/25	4/22	4/19	4/16	4/13	4/08
32	4/22	4/18	4/16	4/13	4/11	4/09	4/07	4/04	3/31
28	4/15	4/10	4/07	4/04	4/01	3/30	3/27	3/24	3/19
24	4/05	3/31	3/28	3/25	3/23	3/20	3/17	3/14	3/10
20	3/31	3/24	3/19	3/15	3/11	3/07	3/03	2/26	2/19
16	3/24	3/17	3/11	3/06	3/02	2/25	2/21	2/15	2/07
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	9/27	10/02	10/05	10/09	10/12	10/14	10/18	10/21	10/26
32	10/03	10/09	10/14	10/18	10/22	10/25	10/30	11/03	11/10
28	10/16	10/22	10/26	10/30	11/02	11/06	11/09	11/13	11/19
24	10/24	10/30	11/03	11/07	11/10	11/13	11/17	11/21	11/27
20	11/04	11/10	11/15	11/18	11/22	11/25	11/29	12/03	12/09
16	11/10	11/17	11/23	11/27	12/01	12/05	12/10	12/15	12/22
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	193	186	181	176	172	167	163	158	150
32	216	208	202	197	193	188	183	177	169
28	239	230	224	219	214	209	204	198	189
24	251	244	240	235	231	227	223	218	212
20	281	272	266	260	255	250	244	238	229
16	303	293	286	279	274	268	261	254	244

* 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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Station: HUDSON, KS

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Climate Division: KS 8 NWS Call Sign: Elevation: 1,867 Feet Lat: 38°06N Lon: 98°40W

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	1057	792	582	285	87	7	0	2	30	202	624	955	4623
60	903	662	436	177	34	1	0	0	7	97	478	800	3595
57	812	584	352	125	16	0	0	0	2	56	395	708	3050
55	752	534	300	95	9	0	0	0	0	37	342	648	2717
50	609	417	190	41	2	0	0	0	0	10	225	505	1999
32	198	124	13	0	0	0	0	0	0	0	18	121	474

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	164	260	454	731	1055	1332	1536	1478	1172	843	385	189	9599
55	5	26	28	136	351	642	823	765	482	167	18	3	3446
57	3	20	18	105	296	582	761	703	424	124	11	0	3047
60	1	14	9	67	221	492	668	610	339	72	4	0	2497
65	0	0	0	26	119	348	513	457	212	22	0	0	1697
70	0	0	0	8	51	218	358	310	116	4	0	0	1065

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	111	263	503	809	1092	1293	1234	934	603	201	53	42	153	416	919	1728	2820	4113	5347	6281	6884	7085	7138
45	10	54	164	363	654	942	1138	1079	784	454	113	17	10	64	228	591	1245	2187	3325	4404	5188	5642	5755	5772
50	0	18	90	236	502	792	983	924	637	317	54	2	0	18	108	344	846	1638	2621	3545	4182	4499	4553	4555
55	0	5	42	134	353	642	828	769	492	194	18	0	0	5	47	181	534	1176	2004	2773	3265	3459	3477	3477
60	0	0	13	67	218	493	673	614	354	101	4	0	0	0	13	80	298	791	1464	2078	2432	2533	2537	2537
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	39	81	180	315	504	719	850	813	605	379	131	42	39	120	300	615	1119	1838	2688	3501	4106	4485	4616	4658

(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