

Climatology of the United States

No. 20

1971-2000

Station: SIOUX CITY AP, IA

COOP ID: 137708

Climate Division: IA 4

NWS Call Sign: SUX

Elevation: 1,093 Feet Lat: 42° 23N

Lon: 96° 23W

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	28.7	8.5	18.6	70	1981	24	30.7	1992	-26+	1970	19	4.0	1979	1439	0	.0	.0	1.7	18.0	30.6	8.5
Feb	35.0	15.3	25.1	71+	1981	17	34.8	1998	-26	1962	28	9.3	1979	1131	0	.0	.0	4.6	12.5	26.6	4.4
Mar	47.3	25.7	36.5	91	1968	30	42.4	2000	-22	1960	5	29.0	1996	885	0	.0	.0	13.3	4.4	22.4	.7
Apr	61.7	37.3	49.5	97	1980	22	56.7	1981	-2	1975	3	42.8	1997	473	11	.0	.5	24.6	.4	8.9	@
May	73.2	49.2	61.2	102	1967	25	67.5	1977	25+	1976	3	55.5	1997	172	53	.0	1.0	30.7	.0	.6	.0
Jun	82.5	58.5	70.5	108	1988	21	76.0	1988	39	1983	6	65.5	1982	25	198	.3	5.6	30.0	.0	.0	.0
Jul	86.2	62.9	74.6	108	1995	12	80.2	1974	42	1971	30	68.6	1992	3	311	.7	9.2	31.0	.0	.0	.0
Aug	83.7	60.6	72.1	104+	1955	26	80.5	1983	37	1950	20	66.8	1992	10	246	.3	6.5	31.0	.0	.0	.0
Sep	76.0	50.1	63.1	103	2000	2	70.1	1998	25+	1984	26	58.4	1993	128	87	.1	2.4	29.9	.0	.7	.0
Oct	63.7	38.0	50.8	94	1997	2	55.8	1973	12	1993	31	44.6	1976	434	8	.0	.2	27.2	.1	7.6	.0
Nov	44.8	24.8	34.8	81+	1978	3	44.2	1999	-9+	1959	14	25.3	1985	891	0	.0	.0	11.0	5.1	23.2	.7
Dec	31.7	12.8	22.3	70	1998	1	30.0	1979	-24+	1989	22	5.9	1983	1309	0	.0	.0	2.2	15.2	30.2	5.3
Ann	59.5	37.0	48.3	108+	Jul 1995	12	80.5	Aug 1983	-26+	Jan 1970	19	4.0	Jan 1979	6900	914	1.4	25.4	237.2	55.7	150.8	19.6

+ 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

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: SIOUX CITY AP, IA

COOP ID: 137708

Climate Division: IA 4

NWS Call Sign: SUX

Elevation: 1,093 Feet Lat: 42°23N

Lon: 96°23W

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	.59	.40	1.09+	1949	3	1.66	1975	.11	1986	6.6	1.7	.2	@	.10	.16	.24	.32	.40	.49	.59	.72	.88	1.14	1.39
Feb	.62	.42	2.15	1971	18	2.66	1971	.07	1996	6.3	1.7	.1	.1	.09	.14	.23	.32	.41	.51	.62	.76	.94	1.24	1.53
Mar	2.00	1.66	1.66	1987	23	5.90	1987	.04	1994	8.5	4.4	1.1	.5	.22	.38	.65	.93	1.23	1.56	1.95	2.44	3.10	4.19	5.25
Apr	2.75	2.36	2.09	1998	25	6.73	1984	.47	1981	10.1	5.3	2.0	.6	.55	.80	1.20	1.57	1.95	2.35	2.81	3.35	4.08	5.24	6.34
May	3.75	3.64	2.19	1972	1	7.48	1990	.88	1994	11.4	7.5	2.8	.8	1.54	1.88	2.36	2.76	3.14	3.52	3.93	4.40	5.00	5.91	6.74
Jun	3.61	3.49	3.86	1957	13	7.90	1999	.53	1988	10.1	6.4	2.5	1.1	.97	1.31	1.83	2.29	2.74	3.21	3.73	4.35	5.16	6.42	7.61
Jul	3.30	3.11	5.50	1972	17	10.33	1972	.41	1985	9.3	5.6	2.0	.7	.57	.85	1.34	1.79	2.25	2.76	3.33	4.03	4.96	6.47	7.90
Aug	2.90	2.35	4.28	1961	21	6.43	1993	.12	1971	9.2	5.3	1.7	.7	.43	.67	1.09	1.49	1.91	2.37	2.90	3.55	4.42	5.84	7.20
Sep	2.42	2.10	2.94	1965	29	5.17	1988	.42	1998	8.1	4.7	1.4	.6	.45	.67	1.02	1.35	1.68	2.04	2.45	2.95	3.60	4.66	5.66
Oct	1.99	1.93	4.42	1979	30	5.30	1979	.07	1975	6.8	3.9	1.4	.3	.17	.30	.57	.84	1.15	1.49	1.90	2.42	3.13	4.33	5.50
Nov	1.40	1.34	3.23	1948	19	3.24	1975	.03	1980	7.1	3.1	.9	.3	.14	.24	.43	.62	.84	1.07	1.35	1.70	2.18	2.98	3.76
Dec	.66	.53	1.08	1953	3	2.23	1982	.15	1998	6.5	2.0	.2	.0	.14	.20	.29	.38	.47	.57	.67	.80	.97	1.25	1.50
Ann	25.99	26.21	5.50	Jul 1972	17	10.33	Jul 1972	.03	Nov 1980	100.0	51.6	16.3	5.7	16.82	18.53	20.76	22.47	24.01	25.51	27.07	28.81	30.93	34.05	36.77

+ 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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Station: SIOUX CITY AP, IA

COOP ID: 137708

Climate Division: IA 4

NWS Call Sign: SUX

Elevation: 1,093 Feet

Lat: 42°23N

Lon: 96°23W

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	5.4	4.7	2	2	17.4	1982	22	18.2	1975	19	1982	23	8+	1982	6.1	1.7	.5	.1	@	19.3	11.7	5.4	1.0
Feb	5.5	3.8	2	1	14.3	1993	20	24.5	1993	18	1993	21	13	1979	5.2	1.8	.3	.1	@	12.5	7.9	5.2	1.8
Mar	5.8	5.1	1	1	12.4	1983	26	19.1	1983	17+	1979	5	6	1979	4.0	1.7	.5	.3	@	6.6	3.3	1.8	.5
Apr	1.9	.8	#	0	5.0	1984	29	10.7	1992	5+	1992	22	#	1997	1.6	.6	.2	.1	.0	.9	.2	.1	.0
May	#	.0	#	0	#	1990	9	#+	1990	0	0	0	#	2000	.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	#	1985	29	#	1985	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.8	.0	#	0	8.8	1991	31	9.8	1991	2	1991	31	#	1995	.4	.2	.1	.1	.0	.2	.0	.0	.0
Nov	4.9	4.1	#	0	12.2	1983	27	16.5	1983	13	1983	28	3+	2000	3.7	1.6	.4	.2	@	5.2	2.1	1.2	.1
Dec	6.3	6.7	2	1	9.2	1994	6	18.0	2000	14+	2000	31	10	1983	5.7	2.0	.6	.2	.0	14.8	7.3	3.8	1.3
Ann	30.6	25.2	N/A	N/A	17.4	Jan 1982	22	24.5	Feb 1993	19	Jan 1982	23	13	Feb 1979	26.7	9.6	2.6	1.1	@	59.5	32.5	17.5	4.7

+ 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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NWS Call Sign: SUX

Elevation: 1,093 Feet

Lat: 42° 23N

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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	5/17	5/13	5/10	5/07	5/04	5/02	4/29	4/26	4/21
32	5/10	5/05	5/02	4/29	4/26	4/23	4/20	4/16	4/12
28	4/30	4/26	4/22	4/20	4/17	4/14	4/11	4/08	4/03
24	4/16	4/12	4/09	4/07	4/05	4/02	3/31	3/28	3/24
20	4/10	4/05	4/01	3/28	3/25	3/22	3/19	3/15	3/09
16	4/01	3/27	3/23	3/19	3/16	3/13	3/10	3/06	2/28
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	9/14	9/18	9/20	9/22	9/24	9/26	9/28	10/01	10/04
32	9/19	9/24	9/27	9/30	10/03	10/05	10/08	10/12	10/16
28	9/30	10/05	10/08	10/11	10/14	10/17	10/20	10/23	10/28
24	10/13	10/18	10/21	10/24	10/27	10/30	11/02	11/06	11/11
20	10/16	10/23	10/27	10/31	11/04	11/07	11/11	11/16	11/22
16	10/28	11/03	11/08	11/12	11/16	11/20	11/24	11/28	12/05
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	160	154	150	146	142	139	135	130	124
32	178	172	167	163	159	155	151	146	140
28	198	191	187	183	179	176	172	168	161
24	223	217	212	209	205	201	198	193	187
20	248	239	233	228	223	218	213	206	198
16	267	259	253	248	244	239	234	229	221

* 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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Climate Division: IA 4 NWS Call Sign: SUX Elevation: 1,093 Feet Lat: 42°23N Lon: 96°23W

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	1439	1131	885	473	172	25	3	10	128	434	891	1309	6900
60	1283	977	728	332	96	4	0	5	51	297	756	1170	5699
57	1190	893	635	259	60	1	0	1	26	222	667	1077	5031
55	1128	844	576	215	42	0	0	0	14	177	609	1015	4620
50	977	713	434	123	14	0	0	0	2	90	471	862	3686
32	482	310	86	2	0	0	0	0	0	1	113	377	1371

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	21	67	227	534	907	1160	1330	1260	950	601	181	31	7269
55	0	0	6	58	227	471	617	547	283	65	2	0	2276
57	0	0	4	43	181	413	555	485	235	46	1	0	1963
60	0	0	2	27	123	327	462	393	171	26	0	0	1531
65	0	0	0	11	53	198	311	246	87	8	0	0	914
70	0	0	0	3	18	96	172	124	37	2	0	0	452

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	1	16	98	319	667	927	1091	1019	717	376	71	2	1	17	115	434	1101	2028	3119	4138	4855	5231	5302	5304
45	0	2	51	208	513	777	936	864	570	247	28	0	0	2	53	261	774	1551	2487	3351	3921	4168	4196	4196
50	0	0	18	117	366	627	781	709	427	144	10	0	0	0	18	135	501	1128	1909	2618	3045	3189	3199	3199
55	0	0	5	61	231	478	626	554	290	70	2	0	0	0	5	66	297	775	1401	1955	2245	2315	2317	2317
60	0	0	1	31	130	334	471	399	176	27	0	0	0	0	1	32	162	496	967	1366	1542	1569	1569	1569
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	1	21	73	204	407	609	739	686	455	233	52	2	1	22	95	299	706	1315	2054	2740	3195	3428	3480	3482

(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