

# Climatography of the United States

No. 20

1971-2000

Station: SIOUX CENTER 2 SE, IA

COOP ID: 137700

Climate Division: IA 1

NWS Call Sign:

Elevation: 1,360 Feet Lat: 43°03N

Lon: 96°09W

## 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	27.3	6.8	17.1	65	1981	24	29.2	1990	-30+	1970	19	3.6	1979	1487	0	.0	.0	.7	20.0	30.9	10.7
Feb	34.4	14.0	24.2	68	1981	17	35.5	1987	-27+	1962	28	9.4	1979	1142	0	.0	.0	3.4	13.5	26.9	5.6
Mar	47.2	25.1	36.2	87	1968	30	42.7	2000	-19	1960	5	27.6	1984	893	0	.0	.0	12.1	5.1	23.7	1.3
Apr	62.9	36.3	49.6	93+	1960	22	57.3	1981	-1	1975	3	43.2	1983	471	9	.0	.3	24.5	.4	11.1	@
May	75.4	48.3	61.9	104	1967	25	69.0	1988	17	1967	3	55.7	1997	176	79	.0	1.6	30.8	.0	1.3	.0
Jun	84.3	57.6	71.0	105+	1988	21	77.1	1988	33+	1983	5	66.4	1982	21	199	.2	5.9	30.0	.0	.0	.0
Jul	86.7	61.3	74.0	103	1988	31	77.6	1983	38	1972	5	67.0	1992	7	286	.3	8.2	31.0	.0	.0	.0
Aug	84.5	59.0	71.8	101+	1955	26	78.7	1983	37	1986	28	66.0	1992	19	229	.1	5.0	31.0	.0	.0	.0
Sep	77.8	49.4	63.6	102	1976	6	68.9	1998	21	1984	26	58.4	1993	112	70	.1	2.1	29.8	.0	1.3	.0
Oct	65.2	37.5	51.4	92+	1953	2	56.3	1973	9	1972	19	45.8	1976	424	1	.0	.1	27.4	.1	9.0	.0
Nov	44.2	23.7	34.0	79	1999	8	44.0	1999	-20	1959	14	24.7	1985	931	0	.0	.0	9.7	6.5	23.7	.8
Dec	30.7	11.4	21.1	66	1998	1	29.7	1979	-29	1989	22	4.2	1983	1362	0	.0	.0	1.4	17.3	30.5	6.5
Ann	60.1	35.9	48.0	105+	Jun 1988	21	78.7	Aug 1983	-30+	Jan 1970	19	3.6	Jan 1979	7045	873	.7	23.2	231.8	62.9	158.4	24.9

+ 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/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/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 CENTER 2 SE, IA**

**COOP ID: 137700**

**Climate Division: IA 1**

**NWS Call Sign:**

**Elevation: 1,360 Feet Lat: 43°03N**

**Lon: 96°09W**

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	.75	.52	1.15	1990	20	2.25	1975	.04	1981	5.5	2.4	.3	@	.11	.17	.28	.38	.49	.61	.75	.91	1.14	1.51	1.86
Feb	.70	.75	1.15	1962	18	1.65+	1984	.04	1974	5.4	2.3	.3	.0	.06	.11	.20	.30	.40	.52	.67	.85	1.10	1.51	1.92
Mar	2.04	1.80	2.61	1987	23	4.67	1979	.00	1994	7.2	4.3	1.3	.3	.28	.54	.89	1.17	1.46	1.76	2.10	2.51	3.04	3.89	4.68
Apr	2.83	2.75	3.92	1985	22	9.14	1985	.72	1987	9.6	6.0	1.8	.4	.58	.84	1.26	1.64	2.02	2.42	2.89	3.44	4.17	5.34	6.45
May	3.49	3.51	3.00	2000	18	6.56	1982	.84	1989	10.9	7.2	2.3	.7	1.22	1.55	2.03	2.43	2.81	3.21	3.64	4.15	4.79	5.79	6.71
Jun	4.59	3.38	4.28	1974	22	11.84	1971	.68	1987	9.4	6.7	2.8	1.3	1.04	1.47	2.14	2.74	3.35	3.99	4.70	5.56	6.69	8.49	10.18
Jul	3.79	3.29	3.73	1981	3	8.72	1992	.82	1975	8.7	5.9	2.7	1.1	1.08	1.44	1.98	2.46	2.92	3.40	3.93	4.56	5.37	6.65	7.84
Aug	3.42	3.46	6.67	1988	22	9.25	1988	.59	1976	8.6	5.4	2.1	1.0	.77	1.09	1.59	2.04	2.49	2.97	3.51	4.15	5.00	6.34	7.61
Sep	2.59	2.71	3.10	1950	20	6.77	1988	.59	1998	7.3	4.9	1.8	.5	.59	.83	1.21	1.55	1.89	2.25	2.66	3.14	3.78	4.80	5.76
Oct	2.16	1.75	2.32	1979	30	5.94	1998	.00	1989	7.1	4.5	1.3	.4	.14	.36	.70	1.02	1.35	1.72	2.15	2.67	3.38	4.53	5.65
Nov	1.62	1.51	2.39	1998	10	5.22	1983	.10+	1980	6.5	3.7	1.0	.4	.16	.27	.50	.72	.96	1.24	1.57	1.97	2.53	3.46	4.37
Dec	.81	.78	1.25	1982	25	3.10	1982	.13	1997	5.6	2.6	.3	@	.12	.18	.30	.41	.53	.66	.81	.99	1.24	1.65	2.04
Ann	28.79	28.34	6.67	Aug 1988	22	11.84	Jun 1971	.00+	Mar 1994	91.8	55.9	18.0	6.1	20.25	21.89	24.01	25.61	27.04	28.42	29.85	31.43	33.34	36.13	38.54

+ 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

Complete documentation available from:  
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

# 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](http://www.ncdc.noaa.gov)

**Station: SIOUX CENTER 2 SE, IA**

**COOP ID: 137700**

**Climate Division: IA 1**

**NWS Call Sign:**

**Elevation: 1,360 Feet**

**Lat: 43°03N**

**Lon: 96°09W**

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	7.5	5.7	5	4	9.0	1982	22	21.6	1975	22	1979	31	13	1975	4.9	3.0	.6	.3	.0	24.1	18.6	13.1	3.2
Feb	5.2	5.3	5	2	8.0	1984	18	11.5	1972	22	1979	4	19	1979	4.2	2.1	.6	.2	.0	16.9	10.4	7.6	4.4
Mar	7.4	6.0	2	1	12.0	1977	2	23.4	1983	20	1979	10	12	1979	3.9	2.4	.9	.4	@	8.7	5.4	3.1	.7
Apr	2.9	1.0	#	#	5.6	1980	3	13.7	1983	5	1982	8	1	1982	1.6	1.2	.4	@	.0	1.1	.3	.1	.0
May	.0	.0	0	0	.2	1976	2	.2	1976	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	#	1985	29	#+	1985	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	1.0	.0	#	0	6.0	1982	19	8.0	1982	6	1982	20	1	1982	.4	.4	.1	.1	.0	.3	.1	@	.0
Nov	6.1	5.9	1	1	10.0	1983	27	16.6	1983	11	1983	30	4+	2000	3.5	2.5	.7	.2	@	6.7	3.5	1.7	.2
Dec	6.6	6.2	3	3	7.3	1982	25	17.2	1982	14+	1996	31	12	1983	4.6	3.0	.5	.2	.0	18.8	9.9	4.6	1.5
Ann	36.7	30.1	N/A	N/A	12.0	Mar 1977	2	23.4	Mar 1983	22+	Feb 1979	4	19	Feb 1979	23.1	14.6	3.8	1.4	@	76.6	48.2	30.2	10.0

+ 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:

[www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

# Climatography of the United States

## No. 20 1971-2000

**Station: SIOUX CENTER 2 SE, IA**

**COOP ID: 137700**

**Climate Division: IA 1**

**NWS Call Sign:**

**Elevation: 1,360 Feet**

**Lat: 43°03N**

**Lon: 96°09W**

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	6/01	5/25	5/20	5/16	5/12	5/08	5/03	4/28	4/21
32	5/14	5/09	5/06	5/03	5/01	4/28	4/25	4/22	4/18
28	5/04	4/29	4/26	4/23	4/20	4/18	4/15	4/11	4/07
24	4/23	4/19	4/15	4/12	4/10	4/07	4/04	4/01	3/28
20	4/14	4/10	4/06	4/04	4/01	3/29	3/27	3/23	3/19
16	4/10	4/04	3/31	3/27	3/24	3/21	3/17	3/13	3/08
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	9/10	9/13	9/16	9/18	9/20	9/22	9/24	9/26	9/30
32	9/16	9/20	9/23	9/26	9/28	10/01	10/03	10/06	10/11
28	9/23	9/28	10/02	10/06	10/09	10/12	10/15	10/19	10/25
24	10/01	10/07	10/11	10/14	10/17	10/20	10/24	10/28	11/02
20	10/13	10/19	10/22	10/26	10/29	11/01	11/04	11/08	11/13
16	10/21	10/27	11/01	11/04	11/08	11/11	11/15	11/19	11/25
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	156	147	141	135	130	125	120	114	105
32	169	162	157	153	150	146	142	137	131
28	189	183	178	174	171	167	163	159	153
24	210	203	198	194	190	186	181	176	169
20	233	225	219	215	210	206	201	195	188
16	252	244	238	233	228	223	218	212	204

\* 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)

**Climatography  
of the United States  
No. 20  
1971-2000**

**Station: SIOUX CENTER 2 SE, IA**

**COOP ID: 137700**

**Climate Division: IA 1**

**NWS Call Sign:**

**Elevation: 1,360 Feet Lat: 43°03N**

**Lon: 96°09W**

**Degree Days to Selected Base Temperatures (°F)**

<b>Base</b>	<b>Heating Degree Days (1)</b>												
<b>Below</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Ann</b>
<b>65</b>	1487	1142	893	471	176	21	7	19	112	424	931	1362	7045
<b>60</b>	1332	1002	739	339	97	4	0	3	43	278	781	1207	5825
<b>57</b>	1239	918	648	269	62	1	0	0	20	201	691	1114	5163
<b>55</b>	1177	867	592	227	45	0	0	0	11	156	634	1052	4761
<b>50</b>	1024	736	450	137	17	0	0	0	1	74	495	899	3833
<b>32</b>	522	327	103	5	0	0	0	0	0	1	129	408	1495

<b>Base</b>	<b>Cooling Degree Days (1)</b>												
<b>Above</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Ann</b>
<b>32</b>	58	109	233	534	926	1168	1302	1233	948	601	188	69	7369
<b>55</b>	0	5	9	65	257	478	589	520	269	43	3	0	2238
<b>57</b>	0	0	3	47	213	419	527	458	218	26	0	0	1911
<b>60</b>	0	0	0	28	154	332	434	368	151	10	0	0	1477
<b>65</b>	0	0	0	9	79	199	286	229	70	1	0	0	873
<b>70</b>	0	0	0	2	31	97	156	119	24	0	0	0	429

**Growing Degree Units (2)**

<b>Base</b>	<b>Growing Degree Units (Monthly)</b>												<b>Growing Degree Units (Accumulated Monthly)</b>											
	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
<b>40</b>	0	9	84	302	659	915	1047	976	702	364	60	2	0	9	93	395	1054	1969	3016	3992	4694	5058	5118	5120
<b>45</b>	0	2	39	187	506	765	892	821	555	239	23	1	0	2	41	228	734	1499	2391	3212	3767	4006	4029	4030
<b>50</b>	0	0	13	109	360	615	737	666	409	137	8	0	0	0	13	122	482	1097	1834	2500	2909	3046	3054	3054
<b>55</b>	0	0	4	53	232	466	582	511	276	67	1	0	0	0	4	57	289	755	1337	1848	2124	2191	2192	2192
<b>60</b>	0	0	0	28	129	322	428	360	168	27	0	0	0	0	0	28	157	479	907	1267	1435	1462	1462	1462
<b>Base</b>	<b>Growing Degree Units for Corn (Monthly)</b>												<b>Growing Degree Units for Corn (Accumulated Monthly)</b>											
<b>50/86</b>	0	11	64	206	412	599	702	651	455	241	39	0	0	11	75	281	693	1292	1994	2645	3100	3341	3380	3380

(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)