

# Climatology of the United States

No. 20

1971-2000

Station: IOWA CITY, IA

COOP ID: 134101

Climate Division: IA 6

NWS Call Sign:

Elevation: 640 Feet

Lat: 41° 39N

Lon: 91° 32W

## 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	30.0	13.4	21.7	68	1989	31	33.2	1989	-24	1963	28	9.2	1979	1342	0	.0	.0	1.5	16.7	29.4	6.3
Feb	36.5	19.3	27.9	68+	1976	27	39.2	1998	-26	1996	3	15.4	1979	1040	0	.0	.0	4.6	10.5	24.4	3.2
Mar	49.2	29.9	39.6	88	1986	29	46.6	1973	-17	1962	1	30.9	1975	790	0	.0	.0	14.3	2.9	18.0	.1
Apr	63.3	40.8	52.1	93	1980	22	57.9	1977	10	1982	6	46.3	1983	395	8	.0	.1	26.1	.1	4.9	.0
May	74.7	52.1	63.4	95	1985	26	69.8	1977	27+	1966	10	58.6	1997	140	90	.0	.8	30.9	.0	.1	.0
Jun	83.8	61.8	72.8	102	1988	25	77.4	1971	38	1951	3	67.7	1982	9	241	.1	5.8	30.0	.0	.0	.0
Jul	87.5	66.3	76.9	104	1988	31	81.5	1999	45	1951	1	72.5	1992	0	369	.8	11.3	31.0	.0	.0	.0
Aug	85.1	64.1	74.6	103+	1988	15	81.8	1983	39	1950	20	69.6	1992	10	308	.6	7.0	31.0	.0	.0	.0
Sep	77.8	55.5	66.7	99+	1955	9	71.7	1998	29	1984	29	61.8	1974	59	108	.0	2.4	30.0	.0	.1	.0
Oct	65.9	43.8	54.9	94	1950	18	61.8	1971	12	1952	29	49.4	1988	324	10	.0	.1	29.2	.0	3.6	.0
Nov	48.3	31.3	39.8	79	2000	1	47.1	1999	-6	1977	26	32.7	1976	757	0	.0	.0	13.7	2.4	16.7	.1
Dec	34.4	19.1	26.8	71	1998	4	34.5	1982	-20+	1962	26	14.0	1983	1186	0	.0	.0	2.7	11.0	27.9	3.2
Ann	61.4	41.5	51.4	104	Jul 1988	31	81.8	Aug 1983	-26	Feb 1996	3	9.2	Jan 1979	6052	1134	1.5	27.5	245.0	43.6	125.1	12.9

+ 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

060-A

# Climatology 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: IOWA CITY, IA**

**COOP ID: 134101**

**Climate Division: IA 6**

**NWS Call Sign:**

**Elevation: 640 Feet Lat: 41°39N**

**Lon: 91°32W**

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	1.10	.97	2.10	1960	12	2.34	1974	.02	1981	7.5	3.2	.5	.1	.19	.29	.45	.60	.76	.92	1.11	1.35	1.65	2.15	2.62
Feb	1.15	1.09	1.83	1997	21	3.03	1997	.09	1995	6.4	3.3	.6	.1	.19	.29	.46	.62	.78	.95	1.16	1.40	1.73	2.26	2.77
Mar	2.36	1.99	2.26	1976	4	6.13	1991	.18	1981	8.9	5.2	1.5	.3	.40	.60	.95	1.27	1.60	1.96	2.37	2.87	3.54	4.62	5.66
Apr	3.75	3.67	4.12	1965	24	7.30	1995	1.19	1985	11.4	7.2	2.4	1.1	1.36	1.72	2.22	2.65	3.05	3.47	3.92	4.44	5.11	6.14	7.09
May	4.52	3.75	5.26	1996	10	13.30	1996	.49	1992	12.1	7.6	3.1	1.0	.92	1.33	2.00	2.60	3.21	3.87	4.61	5.50	6.67	8.55	10.33
Jun	4.82	4.76	5.06	1967	7	10.75	1993	1.14	1992	11.0	7.1	3.2	1.5	1.36	1.82	2.51	3.11	3.70	4.32	5.00	5.80	6.84	8.48	10.00
Jul	4.54	3.86	6.91	1962	14	13.40	1993	.17	1991	9.4	6.6	3.2	1.4	.57	.93	1.57	2.20	2.87	3.62	4.48	5.55	7.00	9.38	11.69
Aug	4.89	4.36	3.67	1990	20	12.33	1993	.88	1984	9.4	6.5	3.3	1.6	1.09	1.54	2.26	2.91	3.55	4.24	5.01	5.93	7.14	9.08	10.90
Sep	3.43	3.10	4.39	1970	17	8.44	1992	.44	1979	8.6	5.5	2.3	.8	.88	1.21	1.70	2.14	2.58	3.03	3.54	4.14	4.93	6.17	7.33
Oct	2.78	2.22	3.18	1998	17	8.24	1984	.26	1993	8.6	5.2	2.0	.6	.39	.62	1.02	1.40	1.81	2.25	2.76	3.39	4.24	5.62	6.96
Nov	2.41	1.91	4.68	1952	17	8.08	1992	.13	1976	8.5	4.9	1.7	.4	.24	.42	.75	1.09	1.45	1.86	2.34	2.94	3.76	5.12	6.46
Dec	1.52	1.32	2.86	1971	15	4.50	1971	.24	1976	7.9	3.7	.8	.2	.30	.44	.66	.87	1.08	1.30	1.55	1.86	2.26	2.90	3.52
Ann	37.27	35.08	6.91	Jul 1962	14	13.40	Jul 1993	.02	Jan 1981	109.7	66.0	24.6	9.1	23.79	26.29	29.56	32.07	34.33	36.54	38.84	41.41	44.55	49.16	53.19

+ 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:  
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**Station: IOWA CITY, IA**

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**Climate Division: IA 6**

**NWS Call Sign:**

**Elevation: 640 Feet**

**Lat: 41°39N**

**Lon: 91°32W**

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	7.4	6.2	4	3	10.0	1979	13	20.5	1979	18	1979	31	13	1979	5.1	2.9	1.0	.3	@	18.2	13.2	8.3	1.9
Feb	5.7	5.8	3	2	8.5	1975	24	17.0	1975	19	1979	10	15	1979	3.4	2.0	.7	.3	.0	13.7	8.9	5.3	1.8
Mar	3.4	2.0	#	#	6.0	1984	8	14.5	1984	8	1979	1	3	1975	1.8	1.2	.3	.1	.0	4.5	2.1	.7	.0
Apr	1.8	.0	#	0	10.0	1973	9	14.3	1973	7	1997	12	1	1997	.7	.6	.2	.1	@	.6	.3	.1	.0
May	#	.0	0	0	#	1989	6	#	1989	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	.3	.0	#	0	2.0	1980	28	4.0	1997	#+	1980	28	#+	1980	.2	.2	.0	.0	.0	.0	.0	.0	.0
Nov	1.8	.9	#	#	7.0	1974	30	12.0	1974	6	1991	24	1	1991	1.2	.7	.1	@	.0	1.9	.4	@	.0
Dec	6.1	5.3	2	1	9.5	1978	1	17.3	1978	23	2000	31	13	2000	4.1	2.5	.7	.1	.0	12.0	6.4	2.8	.2
Ann	26.5	20.2	N/A	N/A	10.0+	Jan 1979	13	20.5	Jan 1979	23	Dec 2000	31	15	Feb 1979	16.5	10.1	3.0	.9	@	50.9	31.3	17.2	3.9

+ 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	5/12	5/08	5/04	5/01	4/29	4/26	4/23	4/20	4/15
32	4/27	4/23	4/20	4/17	4/14	4/12	4/09	4/06	4/01
28	4/17	4/14	4/12	4/10	4/08	4/06	4/04	4/02	3/30
24	4/11	4/06	4/03	3/31	3/29	3/26	3/23	3/20	3/15
20	4/06	3/31	3/27	3/24	3/20	3/17	3/13	3/09	3/03
16	3/28	3/21	3/17	3/12	3/09	3/05	3/01	2/24	2/18
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	9/22	9/27	9/30	10/03	10/06	10/09	10/11	10/15	10/19
32	9/29	10/04	10/08	10/11	10/14	10/17	10/20	10/24	10/29
28	10/18	10/23	10/26	10/29	11/01	11/03	11/06	11/10	11/14
24	10/23	10/29	11/02	11/05	11/08	11/11	11/14	11/18	11/24
20	11/02	11/08	11/11	11/15	11/18	11/21	11/24	11/28	12/03
16	11/08	11/13	11/17	11/21	11/24	11/27	11/30	12/04	12/10
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	178	172	167	163	160	156	152	147	141
32	204	196	191	186	182	178	173	168	160
28	223	217	213	209	206	203	199	195	189
24	247	239	233	228	224	219	214	208	200
20	268	259	252	247	242	237	231	225	216
16	285	276	270	264	259	254	249	242	234

\* 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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Climate Division: IA 6      NWS Call Sign:      Elevation: 640 Feet    Lat: 41°39N    Lon: 91°32W

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	1342	1040	790	395	140	9	0	10	59	324	757	1186	6052
60	1187	900	636	266	69	1	0	1	16	199	607	1031	4913
57	1094	816	550	199	41	0	0	0	5	137	520	938	4300
55	1032	764	492	159	27	0	0	0	2	104	464	876	3920
50	879	633	355	82	8	0	0	0	0	45	332	732	3066
32	391	241	59	0	0	0	0	0	0	0	48	282	1021

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	72	125	291	603	973	1223	1392	1321	1039	708	282	119	8148
55	0	4	11	72	287	533	679	608	352	99	7	0	2652
57	0	0	8	51	239	473	617	546	295	71	3	0	2303
60	0	0	1	28	174	384	524	453	216	39	1	0	1820
65	0	0	0	8	90	241	369	308	108	10	0	0	1134
70	0	0	0	1	36	122	224	180	41	1	0	0	605

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	2	24	132	384	731	995	1151	1082	807	475	124	11	2	26	158	542	1273	2268	3419	4501	5308	5783	5907	5918
45	0	7	72	259	576	845	996	927	657	331	61	4	0	7	79	338	914	1759	2755	3682	4339	4670	4731	4735
50	0	1	36	152	426	695	841	772	508	209	27	3	0	1	37	189	615	1310	2151	2923	3431	3640	3667	3670
55	0	0	12	79	283	545	686	617	366	114	7	0	0	0	12	91	374	919	1605	2222	2588	2702	2709	2709
60	0	0	4	34	169	395	531	462	236	54	2	0	0	0	4	38	207	602	1133	1595	1831	1885	1887	1887
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	18	82	231	458	670	793	739	517	281	70	6	0	18	100	331	789	1459	2252	2991	3508	3789	3859	3865

(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:  
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## 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)