

Climatology of the United States

No. 20

1971-2000

Station: PRIMGHAR, IA

COOP ID: 136800

Climate Division: IA 1

NWS Call Sign:

Elevation: 1,520 Feet Lat: 43°05N Lon: 95°38W

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	22.9	6.7	14.8	64	1981	24	28.1	1990	-30	1972	15	.6	1979	1557	0	.0	.0	.6	21.4	30.8	10.9
Feb	29.9	13.7	21.8	65+	1981	17	33.4	1987	-29+	1994	9	7.4	1979	1209	0	.0	.0	2.5	14.1	26.9	5.8
Mar	42.5	24.5	33.5	85	1968	30	41.1	2000	-20	1960	5	24.5	1975	977	0	.0	.0	11.4	5.9	24.0	1.6
Apr	58.4	36.2	47.3	93	1980	21	54.4	1977	3	1975	3	40.6	1975	535	5	.0	.1	23.8	.6	10.8	.0
May	71.1	48.6	59.9	100+	1967	25	67.2	1977	22	1967	3	53.1	1997	219	58	.0	1.0	30.6	.0	1.1	.0
Jun	80.2	58.2	69.2	103+	1988	20	75.4	1988	38+	1956	1	64.8	1993	34	160	.2	4.5	30.0	.0	.0	.0
Jul	83.0	62.3	72.7	102	1966	10	77.4	1974	40	1971	30	66.0	1992	11	248	.2	7.5	31.0	.0	.0	.0
Aug	80.7	60.4	70.6	100+	1955	26	77.8	1983	38	1950	20	65.5	1992	28	199	@	4.9	31.0	.0	.0	.0
Sep	73.7	50.9	62.3	100	1976	6	67.9	1998	25	1995	22	56.5	1993	138	57	@	1.4	29.8	.0	.9	.0
Oct	61.1	39.1	50.1	93	1963	5	55.7	1973	12	1967	28	44.7	1976	463	1	.0	.0	26.8	.1	8.1	.0
Nov	40.4	24.8	32.6	76+	1949	10	43.3	1999	-13	1959	14	24.1	1985	971	0	.0	.0	9.0	7.1	23.1	.9
Dec	26.5	11.6	19.1	64	1998	1	27.7	1979	-28	1989	22	2.7	1983	1425	0	.0	.0	1.2	19.1	30.4	6.9
Ann	55.9	36.4	46.2	103+	Jun 1988	20	77.8	Aug 1983	-30	Jan 1972	15	.6	Jan 1979	7567	728	.4	19.4	227.7	68.3	156.1	26.1

+ 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

093-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: PRIMGHAR, IA

COOP ID: 136800

Climate Division: IA 1

NWS Call Sign:

Elevation: 1,520 Feet Lat: 43°05N

Lon: 95°38W

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	.69	.61	.86	1994	27	1.91	1975	.10+	1981	3.9	2.3	.3	.0	.07	.11	.21	.30	.41	.52	.66	.83	1.07	1.47	1.85
Feb	.58	.51	1.28	1966	9	1.87	1971	.02	1986	3.6	2.1	.2	@	.05	.10	.18	.26	.34	.44	.56	.71	.91	1.25	1.58
Mar	1.88	1.39	2.93	1987	23	4.64	1987	.00	1994	6.1	4.3	1.3	.2	.19	.42	.73	1.00	1.28	1.58	1.91	2.32	2.86	3.73	4.56
Apr	3.01	2.53	3.52	1977	19	7.40	1985	.56	1996	8.2	5.8	2.1	.7	.63	.90	1.35	1.75	2.15	2.59	3.08	3.66	4.44	5.68	6.86
May	3.52	3.24	2.67	1970	28	7.46	1982	1.53	1994	10.5	7.4	2.3	.8	1.51	1.82	2.27	2.63	2.98	3.32	3.69	4.12	4.66	5.48	6.22
Jun	4.94	3.69	4.15	1974	22	12.18	1983	2.00	1972	9.9	7.5	3.1	1.4	1.50	1.97	2.67	3.27	3.86	4.47	5.14	5.93	6.94	8.53	10.00
Jul	4.45	4.27	4.33	1988	17	8.85	1978	.19	1975	8.0	6.1	2.8	1.4	1.10	1.52	2.16	2.74	3.31	3.91	4.58	5.38	6.42	8.08	9.63
Aug	4.33	3.67	7.70	1973	23	12.26	1975	.54	1999	7.3	5.7	2.8	1.4	.85	1.24	1.87	2.46	3.05	3.69	4.41	5.28	6.43	8.28	10.03
Sep	2.60	2.41	2.75	1994	22	7.07	1985	.49	1984	7.4	5.4	1.6	.6	.69	.94	1.31	1.64	1.97	2.31	2.69	3.13	3.72	4.64	5.49
Oct	2.07	1.60	2.70	1968	17	5.56	1982	.06	1989	6.3	4.3	1.4	.4	.22	.37	.65	.94	1.25	1.60	2.01	2.53	3.23	4.39	5.52
Nov	1.56	1.40	2.12	1977	9	4.16	1983	.02	1980	5.5	3.5	1.0	.4	.15	.26	.47	.68	.92	1.19	1.51	1.91	2.45	3.36	4.26
Dec	.74	.66	1.10	1982	25	2.49	1982	.00	1979	3.9	2.2	.3	@	.04	.11	.22	.32	.44	.57	.72	.91	1.16	1.58	1.99
Ann	30.37	30.48	7.70	Aug 1973	23	12.26	Aug 1975	.00+	Mar 1994	80.6	56.6	19.2	7.3	21.48	23.19	25.40	27.07	28.56	30.00	31.49	33.13	35.13	38.02	40.53

+ 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

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: PRIMGHAR, IA

COOP ID: 136800

Climate Division: IA 1

NWS Call Sign:

Elevation: 1,520 Feet

Lat: 43°05N

Lon: 95°38W

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	6.6	5.0	5	3	12.0	1990	20	21.0	1975	22	1975	31	15	1975	3.0	2.6	.8	.4	.1	-9.9	-9.9	-9.9	-9.9
Feb	2.6	2.0	2	#	10.0	1997	4	10.0+	1997	24	1975	20	23	1975	1.9	1.5	.4	.1	@	-9.9	-9.9	-9.9	-9.9
Mar	6.4	6.0	1	#	9.0	1990	15	15.2	1983	20	1975	14	11	1975	1.9	1.7	.9	.5	.0	6.9	5.1	3.6	1.9
Apr	1.1	.0	#	0	5.0	1997	10	5.0+	1997	6	1975	4	1	1975	.6	.5	.1	@	.0	.3	.1	.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	.2	.0	0	0	2.0	1991	18	4.0	1991	0	0	0	0	0	.2	.1	.0	.0	.0	.0	.0	.0	.0
Nov	2.9	2.0	#	0	10.0	1991	1	12.2	1983	7	1994	27	1	1975	1.8	1.6	.4	.2	@	1.9	.1	.1	.0
Dec	5.8	5.8	2	1	10.0	1972	12	14.0	1982	11	1972	19	10	1996	3.1	2.3	1.0	.3	.1	-9.9	-9.9	-9.9	-9.9
Ann	25.6	20.8	N/A	N/A	12.0	Jan 1990	20	21.0	Jan 1975	24	Feb 1975	20	23	Feb 1975	12.5	10.3	3.6	1.5	.2	-9.9	-9.9	-9.9	-9.9

+ 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:

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

Climatography of the United States

No. 20 1971-2000

Station: PRIMGHAR, IA

COOP ID: 136800

Climate Division: IA 1

NWS Call Sign:

Elevation: 1,520 Feet

Lat: 43° 05N

Lon: 95° 38W

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	5/20	5/16	5/13	5/11	5/09	5/06	5/04	5/01	4/27
32	5/10	5/06	5/03	5/01	4/28	4/26	4/23	4/20	4/16
28	5/06	5/01	4/27	4/24	4/21	4/18	4/15	4/11	4/06
24	4/20	4/16	4/14	4/11	4/09	4/06	4/04	4/01	3/28
20	4/12	4/08	4/05	4/02	3/30	3/28	3/25	3/22	3/18
16	4/07	4/02	3/30	3/27	3/24	3/21	3/18	3/15	3/10
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	9/17	9/20	9/22	9/24	9/26	9/28	9/30	10/04
32	9/20	9/24	9/26	9/28	9/30	10/02	10/05	10/07	10/11
28	9/26	10/01	10/04	10/07	10/10	10/13	10/16	10/19	10/24
24	10/08	10/13	10/17	10/20	10/23	10/26	10/29	11/01	11/06
20	10/17	10/22	10/26	10/29	11/01	11/04	11/07	11/11	11/16
16	10/27	11/01	11/05	11/09	11/12	11/15	11/19	11/23	11/28
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	149	145	141	137	134	130	126	119
32	169	164	161	158	155	152	149	145	140
28	191	184	179	175	171	167	163	158	151
24	215	208	204	200	197	193	189	185	178
20	234	227	223	219	215	211	207	202	196
16	255	247	242	237	232	228	223	217	209

* 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

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

Station: PRIMGHAR, IA

COOP ID: 136800

Climate Division: IA 1

NWS Call Sign:

Elevation: 1,520 Feet Lat: 43°05N Lon: 95°38W

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	1557	1209	977	535	219	34	11	28	138	463	971	1425	7567
60	1402	1069	822	397	128	8	0	6	60	314	821	1270	6297
57	1309	985	730	320	86	3	0	1	30	235	731	1177	5607
55	1247	929	670	273	64	1	0	0	18	187	673	1115	5177
50	1092	797	527	173	26	0	0	0	3	94	534	961	4207
32	581	364	142	9	0	0	0	0	0	2	153	459	1710

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	47	79	189	469	862	1117	1261	1194	909	563	173	56	6919
55	0	0	3	43	214	428	548	481	237	35	3	0	1992
57	0	0	1	30	174	369	486	421	190	21	0	0	1692
60	0	0	0	16	122	284	393	332	129	7	0	0	1283
65	0	0	0	5	58	160	248	199	57	1	0	0	728
70	0	0	0	0	21	71	129	100	18	0	0	0	339

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	0	11	77	291	645	910	1050	981	700	365	62	2	0	11	88	379	1024	1934	2984	3965	4665	5030	5092	5094
45	0	1	37	182	495	760	895	826	552	238	25	1	0	1	38	220	715	1475	2370	3196	3748	3986	4011	4012
50	0	0	12	103	350	610	740	671	408	138	9	0	0	0	12	115	465	1075	1815	2486	2894	3032	3041	3041
55	0	0	5	51	224	461	585	516	277	64	2	0	0	0	5	56	280	741	1326	1842	2119	2183	2185	2185
60	0	0	1	24	124	315	430	361	164	27	0	0	0	0	1	25	149	464	894	1255	1419	1446	1446	1446
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	5	54	189	401	594	707	653	442	228	37	0	0	5	59	248	649	1243	1950	2603	3045	3273	3310	3310

(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/normal/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