

Climatology of the United States

No. 20

1971-2000

Station: MUSCATINE, IA

COOP ID: 135837

Climate Division: IA 6

NWS Call Sign:

Elevation: 549 Feet

Lat: 41° 24N

Lon: 91° 04W

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	30.5	12.9	21.7	69	1989	31	33.5	1990	-28	1982	10	8.9	1979	1342	0	.0	.0	1.7	16.3	29.4	6.6
Feb	36.8	18.9	27.9	69+	1976	27	38.9	1998	-34	1996	3	15.8	1979	1040	0	.0	.0	4.3	10.4	24.5	3.4
Mar	49.3	29.4	39.4	89	1986	29	46.2	2000	-17	1962	1	31.0	1984	795	0	.0	.0	14.0	2.5	19.1	.3
Apr	62.9	40.2	51.6	93	1952	29	57.7	1977	10	1982	6	45.6	1983	409	6	.0	.1	26.0	.1	6.3	.0
May	74.0	51.6	62.8	95	1953	30	69.3	1977	28	1984	8	57.7	1997	154	85	.0	1.0	30.9	.0	.4	.0
Jun	82.9	61.0	72.0	104	1988	25	76.9	1987	39	1985	13	67.0	1982	14	223	.1	4.6	30.0	.0	.0	.0
Jul	86.4	65.5	76.0	105	1988	31	80.4	1987	45	1972	5	72.0	1992	1	339	.5	9.4	31.0	.0	.0	.0
Aug	84.1	63.2	73.7	105	1988	17	79.9	1983	39+	1986	28	68.3	1992	10	277	.6	5.6	31.0	.0	.0	.0
Sep	77.1	54.5	65.8	100	1953	1	71.1	1998	26	1984	29	61.2	1993	74	97	.0	2.1	30.0	.0	.3	.0
Oct	65.3	42.8	54.1	96	1997	3	61.8	1971	17+	1952	29	46.4	1988	352	12	.0	.1	28.9	.0	4.9	.0
Nov	48.4	30.8	39.6	81	1950	1	46.7	1999	-5	1977	26	32.6	1976	762	0	.0	.0	13.8	2.2	17.2	.1
Dec	34.9	18.7	26.8	72	1998	4	34.0	1982	-23	1989	23	12.8	1983	1185	0	.0	.0	2.9	11.2	27.9	3.5
Ann	61.1	40.8	51.0	105+	Aug 1988	17	80.4	Jul 1987	-34	Feb 1996	3	8.9	Jan 1979	6138	1039	1.2	22.9	244.5	42.7	130.0	13.9

+ 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/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

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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: MUSCATINE, IA

COOP ID: 135837

Climate Division: IA 6

NWS Call Sign:

Elevation: 549 Feet Lat: 41°24N

Lon: 91°04W

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	1.34	1.39	2.36	1960	12	3.44	1974	.02	1981	8.0	3.6	.6	.1	.24	.35	.55	.73	.92	1.12	1.35	1.63	2.01	2.61	3.18
Feb	1.34	1.15	1.93	2001	9	3.81	1997	.03	1987	6.3	3.5	.7	.1	.22	.34	.53	.72	.91	1.11	1.35	1.64	2.03	2.65	3.25
Mar	2.68	2.56	3.32	1976	4	6.92	1990	.23	1981	9.2	5.7	1.6	.5	.45	.69	1.08	1.45	1.83	2.24	2.70	3.27	4.04	5.27	6.44
Apr	3.36	3.09	4.63	1965	24	7.48	1973	.90	1988	10.7	6.5	2.1	.7	1.01	1.33	1.81	2.22	2.62	3.04	3.50	4.03	4.73	5.82	6.82
May	4.25	3.60	3.45	1996	10	11.09	1996	.19	1992	11.8	7.2	3.0	1.2	.97	1.36	1.98	2.54	3.10	3.69	4.36	5.15	6.20	7.86	9.42
Jun	4.51	3.84	9.51	1967	7	13.73	1990	.81	1992	9.9	7.0	2.8	1.5	1.08	1.50	2.16	2.75	3.33	3.95	4.64	5.46	6.53	8.23	9.83
Jul	4.30	3.61	5.75	1971	10	13.12	1992	.50	1991	9.1	7.0	2.5	1.0	.66	1.03	1.65	2.24	2.86	3.53	4.30	5.25	6.51	8.57	10.54
Aug	4.48	4.07	3.46	1987	26	12.57	1993	.39	1971	9.9	6.4	3.0	1.1	.86	1.26	1.92	2.52	3.14	3.80	4.55	5.45	6.65	8.58	10.41
Sep	3.42	2.97	5.36	1961	13	8.24	1973	.15	1979	8.3	5.7	2.1	.9	.63	.94	1.44	1.90	2.38	2.89	3.47	4.17	5.10	6.60	8.04
Oct	2.68	2.17	5.05	1954	10	7.49	1984	.36	1993	8.6	5.2	1.7	.6	.46	.70	1.09	1.46	1.83	2.24	2.70	3.26	4.01	5.23	6.38
Nov	2.58	2.62	2.36	1951	13	5.90	1985	.17	1989	9.3	5.5	1.9	.4	.32	.53	.89	1.25	1.63	2.06	2.55	3.16	3.98	5.34	6.65
Dec	1.99	1.92	2.47	1971	15	5.40	1982	.26	1976	7.7	4.6	1.2	.4	.41	.59	.88	1.15	1.42	1.71	2.03	2.42	2.93	3.76	4.54
Ann	36.93	35.78	9.51	Jun 1967	7	13.73	Jun 1990	.02	Jan 1981	108.8	67.9	23.2	8.5	24.32	26.69	29.76	32.12	34.24	36.29	38.43	40.81	43.71	47.96	51.67

+ 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: MUSCATINE, IA

COOP ID: 135837

Climate Division: IA 6

NWS Call Sign:

Elevation: 549 Feet

Lat: 41°24N

Lon: 91°04W

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	8.3	8.2	3	2	13.0	1971	3	24.1	1979	24	1979	19	17	1979	4.7	2.7	1.0	.4	.1	16.3	9.8	6.0	1.3
Feb	5.1	4.3	3	1	9.0	1975	24	19.5	1975	20	1979	10	17	1979	3.0	1.8	.8	.3	.0	12.2	7.9	5.2	1.3
Mar	2.8	1.0	#	#	7.0	1999	9	13.5	1972	8	1979	2	3	1979	1.6	1.0	.3	.2	.0	3.9	1.8	1.2	.0
Apr	.9	.0	#	0	9.0	1997	12	10.2	1997	5	1975	2	#+	1997	.6	.2	.1	.1	.0	.1	.1	@	.0
May	.0	.0	0	0	.7	1994	1	.7	1994	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	3.5	1997	27	3.5	1997	1	1997	27	#+	1997	.1	.1	@	.0	.0	@	.0	.0	.0
Nov	2.2	.2	#	#	9.0	1974	30	15.5	1974	8	1974	30	1	1995	1.2	.7	.2	.1	.0	1.4	.3	.2	.0
Dec	7.0	5.7	2	1	10.0	1987	15	23.1	1978	17	2000	31	8	2000	3.5	2.4	.8	.3	@	10.9	5.4	2.6	.2
Ann	26.5	19.4	N/A	N/A	13.0	Jan 1971	3	24.1	Jan 1979	24	Jan 1979	19	17+	Feb 1979	14.7	8.9	3.2	1.4	.1	44.8	25.3	15.2	2.8

+ 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:

Elevation: 549 Feet

Lat: 41°24N

Lon: 91°04W

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	5/16	5/12	5/09	5/06	5/03	5/01	4/28	4/25	4/20
32	5/06	5/01	4/27	4/23	4/20	4/17	4/13	4/09	4/04
28	4/23	4/19	4/16	4/13	4/11	4/09	4/06	4/03	3/30
24	4/13	4/09	4/07	4/05	4/02	3/31	3/29	3/26	3/23
20	4/09	4/03	3/30	3/26	3/22	3/19	3/15	3/10	3/04
16	3/30	3/24	3/20	3/17	3/13	3/10	3/07	3/03	2/25
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	9/16	9/20	9/24	9/27	9/30	10/02	10/05	10/09	10/13
32	9/24	9/30	10/03	10/07	10/10	10/13	10/16	10/20	10/26
28	10/05	10/11	10/15	10/18	10/22	10/25	10/28	11/01	11/07
24	10/19	10/24	10/28	10/31	11/03	11/06	11/09	11/13	11/18
20	10/29	11/03	11/07	11/10	11/13	11/16	11/19	11/22	11/27
16	11/09	11/14	11/18	11/21	11/24	11/27	12/01	12/05	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	168	161	156	152	149	145	141	136	130
32	197	189	183	177	172	167	162	156	147
28	217	209	203	198	193	188	183	177	169
24	231	225	221	217	214	211	207	202	197
20	257	249	244	239	235	230	225	220	212
16	279	271	265	260	255	251	246	240	231

* 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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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	795	409	154	14	1	10	74	352	762	1185	6138
60	1187	900	641	276	79	3	0	1	25	226	613	1030	4981
57	1094	816	551	207	47	1	0	0	10	163	526	937	4352
55	1032	764	495	166	32	0	0	0	5	127	469	875	3965
50	879	633	357	85	10	0	0	0	1	61	337	732	3095
32	394	241	58	0	0	0	0	0	0	0	49	284	1026

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	74	125	285	588	954	1198	1362	1291	1013	683	277	122	7972
55	0	4	10	63	273	508	649	578	328	97	7	0	2517
57	0	0	4	44	226	449	587	516	273	71	3	0	2173
60	0	0	0	24	165	361	494	423	197	41	1	0	1706
65	0	0	0	6	85	223	339	277	97	12	0	0	1039
70	0	0	0	1	34	111	199	153	35	2	0	0	535

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	5	27	126	371	712	968	1122	1051	779	450	122	15	5	32	158	529	1241	2209	3331	4382	5161	5611	5733	5748
45	0	8	71	249	557	818	967	896	629	308	66	5	0	8	79	328	885	1703	2670	3566	4195	4503	4569	4574
50	0	1	37	147	405	668	812	741	484	192	28	4	0	1	38	185	590	1258	2070	2811	3295	3487	3515	3519
55	0	0	13	79	268	518	657	586	342	104	8	0	0	0	13	92	360	878	1535	2121	2463	2567	2575	2575
60	0	0	5	32	157	369	503	431	216	47	3	0	0	0	5	37	194	563	1066	1497	1713	1760	1763	1763
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	19	79	225	445	649	772	715	501	269	68	5	0	19	98	323	768	1417	2189	2904	3405	3674	3742	3747

(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.

- a. Temperature/ Precipitation Tables
 - 1. 1971-2000 Monthly Normals
 - 2. Cooperative Summary of the Day
 - 3. National Weather Service station records
 - 4. 1971-2000 serially complete daily data
- b. Degree Day Table
 - 1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
 - 2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data
- c. Snow Tables
 - 1. Snow Climatology
 - 2. Cooperative Summary of the Day
- d. 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