

Climatography of the United States

No. 20

1971-2000

Station: EMMETSBURG, IA

COOP ID: 132689

Climate Division: IA 1

NWS Call Sign:

Elevation: 1,273 Feet Lat: 43°07N

Lon: 94°41W

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	23.4	4.2	13.8	57	1990	15	27.3	1990	-29	1982	10	-.2	1979	1587	0	.0	.0	.5	21.4	30.8	11.2
Feb	29.9	10.8	20.4	65	2000	29	32.2	1987	-29	1996	3	7.2	1979	1251	0	.0	.0	1.9	14.5	27.2	5.9
Mar	41.9	22.4	32.2	85	1968	30	41.2	2000	-26	1962	1	22.6	1975	1018	0	.0	.0	9.5	5.5	24.8	1.3
Apr	57.4	34.8	46.1	93	1980	21	53.5	1977	5	1975	2	39.0	1975	571	3	.0	.2	23.2	.5	9.7	.0
May	71.1	48.1	59.6	99	1967	25	66.9	1977	22	1967	3	52.3	1997	220	53	.0	1.0	30.8	.0	.6	.0
Jun	80.4	57.9	69.2	102	1985	8	74.6	1988	38+	1964	1	63.7	1982	34	159	.1	4.6	30.0	.0	.0	.0
Jul	83.4	62.2	72.8	105	1955	31	76.4	1974	42	1972	5	66.3	1992	8	250	.2	6.2	31.0	.0	.0	.0
Aug	81.0	59.6	70.3	102	1988	17	76.2	1983	38	1950	20	65.7	1992	24	188	.1	3.8	31.0	.0	.0	.0
Sep	73.4	49.0	61.2	98+	1970	6	65.9	1998	24+	1984	26	56.3	1993	154	40	.0	1.2	29.9	.0	.5	.0
Oct	60.9	36.1	48.5	94+	1963	5	53.9	1973	11	1972	19	41.8	1976	512	1	.0	.1	27.1	.1	7.8	.0
Nov	41.8	22.7	32.3	80	1978	3	43.3	1999	-11+	1952	28	22.6	1985	982	0	.0	.0	9.2	6.8	23.6	.7
Dec	27.5	9.8	18.7	68+	1998	2	27.5	1979	-24+	1983	24	3.2	1983	1438	0	.0	.0	1.2	18.0	30.6	6.7
Ann	56.0	34.8	45.4	105	Jul 1955	31	76.4	Jul 1974	-29+	Feb 1996	3	-.2	Jan 1979	7799	694	.4	17.1	225.3	66.8	155.6	25.8

+ 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: EMMETSBURG, IA

COOP ID: 132689

Climate Division: IA 1

NWS Call Sign:

Elevation: 1,273 Feet Lat: 43°07N

Lon: 94°41W

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	.83	.70	1.90	1971	2	3.15	1971	.00	1999	5.0	2.2	.3	.1	.04	.11	.23	.35	.48	.63	.80	1.02	1.32	1.81	2.29
Feb	.69	.64	1.55	1951	28	3.30	1971	.01	1974	4.5	2.3	.2	@	.06	.10	.19	.29	.39	.52	.66	.84	1.09	1.51	1.93
Mar	2.01	1.76	2.79	1991	23	4.96	1991	.07	1994	7.7	4.5	1.1	.3	.28	.44	.73	1.01	1.30	1.62	2.00	2.45	3.07	4.08	5.06
Apr	3.14	2.93	2.33	1985	21	6.54	1975	.87	1996	9.2	6.1	2.4	.6	.85	1.15	1.60	2.00	2.38	2.79	3.24	3.78	4.48	5.57	6.59
May	3.61	3.48	3.20	1959	21	7.47	1993	1.38	1977	11.0	7.7	2.7	.8	1.62	1.95	2.39	2.75	3.09	3.43	3.79	4.21	4.73	5.52	6.24
Jun	4.64	4.27	4.28	1994	23	11.60	1994	1.04	1978	9.9	7.2	3.5	1.4	1.30	1.75	2.41	2.99	3.56	4.15	4.81	5.59	6.59	8.17	9.64
Jul	4.12	3.82	4.74	1950	9	9.70	1997	.92	1976	9.4	6.5	2.9	1.3	1.18	1.57	2.16	2.67	3.17	3.69	4.27	4.95	5.83	7.21	8.49
Aug	4.24	3.50	4.83	1979	21	9.75	1995	.73	1999	8.6	6.0	2.4	1.3	1.07	1.47	2.09	2.63	3.17	3.74	4.38	5.13	6.12	7.67	9.13
Sep	2.73	2.29	6.40	1950	21	7.73	1983	.12	1999	8.4	5.0	1.8	.6	.40	.62	1.02	1.39	1.79	2.22	2.72	3.34	4.16	5.51	6.80
Oct	2.26	1.77	2.01	1997	14	6.02	1971	.36+	1999	7.4	4.5	1.6	.6	.38	.58	.91	1.22	1.54	1.88	2.28	2.76	3.40	4.44	5.43
Nov	1.86	1.63	2.17	1973	20	4.96	1991	.00	1976	7.3	4.0	1.1	.3	.19	.41	.72	.99	1.26	1.56	1.89	2.29	2.83	3.69	4.51
Dec	.84	.64	1.90	1966	28	3.15	1982	.03	1996	5.5	2.0	.5	@	.08	.14	.25	.37	.50	.64	.81	1.03	1.32	1.81	2.30
Ann	30.97	31.56	6.40	Sep 1950	21	11.60	Jun 1994	.00+	Jan 1999	93.9	58.0	20.5	7.3	19.18	21.34	24.18	26.37	28.36	30.30	32.32	34.59	37.37	41.47	45.07

+ 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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No. 20 1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
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Station: EMMETSBURG, IA

COOP ID: 132689

Climate Division: IA 1

NWS Call Sign:

Elevation: 1,273 Feet

Lat: 43°07N

Lon: 94°41W

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	6.8	5.5	5	5	12.0	1975	11	20.5	1975	26	1982	26	14	1997	4.2	2.4	.9	.4	.1	21.3	15.2	12.1	.9
Feb	5.8	6.3	4	3	6.0	1971	22	12.6	1993	29	1982	8	19	1982	3.1	2.0	.6	.2	.0	14.8	6.9	4.8	1.9
Mar	6.1	5.7	1	#	14.0	1977	2	17.0	1977	13	1997	3	8	1979	3.0	1.7	.7	.1	@	6.1	3.0	1.0	.1
Apr	2.2	.4	#	0	8.0	2000	8	14.0	1984	6	1984	30	1	1982	1.2	.9	.2	.1	.0	1.3	.5	.3	.0
May	#	.0	#	0	#	1989	5	#	1989	5	1984	1	#	1984	.0	.0	.0	.0	.0	.1	@	@	.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	1.7	1990	18	1.7	1990	1+	1995	31	#+	1995	.2	.1	.0	.0	.0	.1	.0	.0	.0
Nov	5.5	4.3	1	#	12.0	1991	1	22.0	1991	12	1991	2	5	1991	3.1	1.7	.5	.2	@	6.1	3.0	1.8	.2
Dec	6.8	7.1	3	1	8.0	1982	28	13.0	1990	23	2000	31	12+	2000	3.9	2.0	.8	.3	.0	14.4	8.4	5.7	2.6
Ann	33.4	29.3	N/A	N/A	14.0	Mar 1977	2	22.0	Nov 1991	29	Feb 1982	8	19	Feb 1982	18.7	10.8	3.7	1.3	.1	64.2	37.0	25.7	5.7

+ 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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Station: EMMETSBURG, IA

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Climate Division: IA 1

NWS Call Sign:

Elevation: 1,273 Feet

Lat: 43° 07N

Lon: 94° 41W

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	5/12	5/09	5/06	5/04	5/01	4/28	4/25	4/21
32	5/11	5/06	5/03	4/30	4/27	4/25	4/22	4/18	4/14
28	4/20	4/17	4/15	4/13	4/12	4/10	4/08	4/06	4/03
24	4/16	4/12	4/09	4/07	4/04	4/02	3/30	3/27	3/23
20	4/11	4/06	4/03	3/31	3/28	3/26	3/23	3/20	3/15
16	4/05	3/31	3/27	3/23	3/20	3/17	3/14	3/10	3/04
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	9/21	9/23	9/26	9/28	10/01	10/04	10/08
32	9/22	9/26	9/30	10/02	10/05	10/08	10/10	10/14	10/18
28	9/27	10/03	10/07	10/10	10/14	10/17	10/20	10/24	10/30
24	10/08	10/14	10/18	10/21	10/25	10/28	10/31	11/05	11/10
20	10/24	10/29	11/02	11/05	11/08	11/10	11/13	11/17	11/22
16	10/26	11/02	11/06	11/10	11/13	11/17	11/21	11/25	12/01
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	162	156	152	148	145	141	138	133	127
32	177	171	167	163	160	157	153	149	143
28	202	196	191	188	184	181	177	172	166
24	223	216	211	207	203	199	195	190	183
20	246	238	233	228	223	219	214	209	201
16	263	254	248	243	237	232	227	220	211

* 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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NWS Call Sign:

Elevation: 1,273 Feet Lat: 43°07N Lon: 94°41W

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	1587	1251	1018	571	220	34	8	24	154	512	982	1438	7799
60	1432	1111	863	429	127	8	0	4	69	363	832	1283	6521
57	1339	1027	770	350	85	3	0	1	36	281	742	1190	5824
55	1277	971	708	301	63	1	0	0	22	231	683	1128	5385
50	1122	834	562	194	25	0	0	0	4	129	542	973	4385
32	602	392	149	11	0	0	0	0	0	4	151	466	1775

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	38	64	155	433	856	1115	1265	1187	875	515	159	51	6713
55	0	0	0	33	206	426	552	474	207	30	1	0	1929
57	0	0	0	22	166	367	490	413	162	18	0	0	1638
60	0	0	0	11	115	283	397	323	104	6	0	0	1239
65	0	0	0	3	53	159	250	188	40	1	0	0	694
70	0	0	0	0	19	70	126	88	10	0	0	0	313

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	5	66	278	646	902	1040	963	683	344	61	1	0	5	71	349	995	1897	2937	3900	4583	4927	4988	4989
45	0	1	27	169	491	752	885	808	534	221	25	0	0	1	28	197	688	1440	2325	3133	3667	3888	3913	3913
50	0	0	9	94	345	602	730	653	391	125	7	0	0	0	9	103	448	1050	1780	2433	2824	2949	2956	2956
55	0	0	2	45	217	454	575	498	259	55	1	0	0	0	2	47	264	718	1293	1791	2050	2105	2106	2106
60	0	0	0	20	118	311	421	346	150	20	0	0	0	0	0	20	138	449	870	1216	1366	1386	1386	1386
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	3	44	176	394	591	703	644	428	214	38	1	0	3	47	223	617	1208	1911	2555	2983	3197	3235	3236

(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