

Climatography of the United States

No. 20

1971-2000

Station: WEBSTER CITY, IA

COOP ID: 138806

Climate Division: IA 5

NWS Call Sign:

Elevation: 1,170 Feet Lat: 42° 28N

Lon: 93° 48W

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	26.2	5.6	15.9	63	1944	25	28.9	1990	-33	1930	22	3.2	1979	1522	0	.0	.0	.8	20.2	30.8	10.0
Feb	32.7	11.7	22.2	72	1930	24	32.5	1987	-32	1996	2	8.7	1979	1198	0	.0	.0	2.9	13.4	26.7	5.5
Mar	45.7	24.2	35.0	89	1986	29	42.1	2000	-29	1962	1	26.1	1975	932	0	.0	.0	11.3	4.9	23.3	.9
Apr	60.3	34.8	47.6	97+	1910	29	55.0	1977	4	1982	6	42.1	1975	525	2	.0	.2	24.1	.2	10.1	.0
May	72.5	47.9	60.2	107+	1934	30	67.8	1977	17	1907	4	54.8	1997	205	55	.0	.3	30.9	.0	1.3	.0
Jun	81.0	57.8	69.4	107	1934	27	74.3	1971	33	1946	3	64.6	1982	28	160	.2	3.4	30.0	.0	.0	.0
Jul	84.5	62.1	73.3	109	1936	14	77.5	1977	39	1911	16	68.0	1992	7	265	.4	6.6	31.0	.0	.0	.0
Aug	82.1	59.7	70.9	109	1936	18	77.8	1983	34+	1915	30	65.5	1992	25	207	.2	4.2	31.0	.0	.0	.0
Sep	75.3	49.5	62.4	103+	1913	5	67.2	1998	20	1942	28	56.7	1993	131	53	.0	1.6	29.9	.0	1.0	.0
Oct	63.4	38.2	50.8	96	1963	5	56.9	1971	-8	1925	29	45.8	1988	441	2	.0	.2	27.6	.1	8.9	.0
Nov	44.9	24.6	34.8	81+	1931	8	43.1	1999	-16	1977	26	27.0	1991	908	0	.0	.0	10.4	5.2	22.4	.5
Dec	30.5	11.5	21.0	68	1946	8	28.3	1998	-28	1914	26	6.5	2000	1364	0	.0	.0	1.7	16.6	30.0	5.7
Ann	58.3	35.6	47.0	109+	Aug 1936	18	77.8	Aug 1983	-33	Jan 1930	22	3.2	Jan 1979	7286	744	.8	16.5	231.6	60.6	154.5	22.6

+ 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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1893-2001

(3) Derived from 1971-2000 serially complete daily data

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No. 20

1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: WEBSTER CITY, IA

COOP ID: 138806

Climate Division: IA 5

NWS Call Sign:

Elevation: 1,170 Feet Lat: 42°28N

Lon: 93°48W

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	.80	1.20	1906	4	2.23	1999	.00	1981	6.2	2.6	.3	.0	.07	.16	.30	.42	.55	.68	.83	1.02	1.27	1.67	2.06
Feb	.87	.82	1.53	1922	22	2.24	1971	.00	1987	5.4	2.8	.3	@	.08	.18	.32	.44	.58	.72	.88	1.07	1.33	1.76	2.16
Mar	1.91	2.00	1.82	1976	30	4.31	1976	.19	1994	7.8	4.7	1.2	.3	.34	.51	.79	1.05	1.31	1.60	1.93	2.32	2.85	3.70	4.51
Apr	3.09	2.57	2.32	1963	29	8.50	1999	.75	1971	9.6	6.6	1.9	.5	.90	1.19	1.63	2.01	2.39	2.78	3.20	3.71	4.37	5.39	6.34
May	4.13	3.86	3.12	1944	19	8.58	1991	1.37	1988	11.6	8.4	2.5	.9	1.58	1.96	2.51	2.97	3.40	3.84	4.32	4.87	5.57	6.65	7.64
Jun	5.23	4.67	4.97	1932	17	13.08	1998	1.26	1988	11.5	8.5	3.4	1.4	1.72	2.21	2.94	3.56	4.16	4.78	5.45	6.24	7.26	8.84	10.30
Jul	4.28	3.99	6.27	1955	7	12.49	1993	.57	1976	9.0	6.6	2.6	1.1	.99	1.39	2.02	2.58	3.14	3.73	4.39	5.19	6.23	7.88	9.44
Aug	4.62	3.88	5.20	1998	21	14.93	1993	.20	1984	9.2	6.3	3.1	1.6	.71	1.10	1.77	2.41	3.07	3.79	4.62	5.64	7.00	9.21	11.33
Sep	3.10	2.51	4.57	1925	30	7.85	1973	.82	1998	8.1	5.9	2.2	.7	.75	1.04	1.49	1.89	2.29	2.71	3.19	3.75	4.49	5.65	6.75
Oct	2.51	2.37	2.36	1982	19	4.84	1989	.28	1975	7.5	4.9	1.7	.6	.61	.85	1.21	1.54	1.86	2.20	2.58	3.04	3.63	4.57	5.45
Nov	1.86	1.51	3.00	1931	23	4.66	1992	.00	1976	7.2	4.2	1.3	.3	.19	.41	.72	.99	1.26	1.55	1.89	2.29	2.82	3.69	4.51
Dec	1.16	.98	1.70	1982	28	4.27	1982	.05	1998	6.4	3.3	.7	.1	.14	.23	.40	.56	.73	.92	1.14	1.42	1.79	2.40	3.00
Ann	33.59	33.55	6.27	Jul 1955	7	14.93	Aug 1993	.00+	Feb 1987	99.5	64.8	21.2	7.5	21.25	23.52	26.50	28.80	30.86	32.88	34.99	37.34	40.22	44.45	48.16

+ 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: 1893-2001

(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Station: WEBSTER CITY, IA

COOP ID: 138806

Climate Division: IA 5

NWS Call Sign:

Elevation: 1,170 Feet

Lat: 42° 28N

Lon: 93° 48W

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	7.7	7.3	5	4	10.0	1996	27	23.5	1982	22	1979	31	14	1999	4.8	3.4	.7	.4	@	18.0	13.0	9.7	2.3
Feb	6.1	6.6	4	3	7.5	1997	4	16.0	1972	22	1979	8	18	1979	3.5	2.5	.8	.2	.0	16.5	11.4	6.8	3.2
Mar	4.7	3.8	1	1	9.0	1995	7	16.0	1984	14	1993	1	6	1975	2.3	1.7	.7	.2	.0	5.5	3.5	2.0	.3
Apr	2.0	.5	#	#	6.0	1973	10	11.0	1973	10	1973	11	1	1982	1.2	.8	.2	@	.0	.9	.4	.2	.1
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	.1	.0	#	0	1.0	1997	26	1.0	1997	1	1997	26	#+	1997	.2	@	.0	.0	.0	@	.0	.0	.0
Nov	3.5	3.0	1	#	6.0	1991	23	13.0	1983	10	1991	27	3	1991	2.2	1.6	.5	.1	.0	4.5	2.3	.9	@
Dec	6.3	7.0	3	2	7.0	1994	7	12.0	1973	22	2000	29	11	2000	4.0	3.0	1.0	.2	.0	15.6	9.3	5.9	.8
Ann	30.4	28.2	N/A	N/A	10.0	Jan 1996	27	23.5	Jan 1982	22+	Dec 2000	29	18	Feb 1979	18.2	13.0	3.9	1.1	@	61.0	39.9	25.5	6.7

+ 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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NWS Call Sign:

Elevation: 1,170 Feet

Lat: 42°28N

Lon: 93°48W

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	5/29	5/23	5/19	5/16	5/13	5/10	5/06	5/02	4/27
32	5/15	5/11	5/08	5/05	5/03	5/01	4/28	4/25	4/21
28	5/05	4/30	4/27	4/24	4/22	4/19	4/16	4/13	4/08
24	4/19	4/15	4/12	4/09	4/07	4/05	4/02	3/31	3/27
20	4/15	4/10	4/07	4/05	4/02	3/31	3/28	3/25	3/21
16	4/08	4/02	3/29	3/26	3/22	3/19	3/15	3/11	3/06
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	9/08	9/13	9/16	9/18	9/21	9/23	9/25	9/28	10/03
32	9/20	9/24	9/26	9/28	9/30	10/03	10/05	10/07	10/11
28	9/25	9/30	10/04	10/07	10/11	10/14	10/17	10/21	10/26
24	10/05	10/11	10/16	10/19	10/23	10/26	10/30	11/03	11/09
20	10/16	10/21	10/26	10/29	11/01	11/05	11/08	11/12	11/18
16	10/24	10/30	11/03	11/07	11/10	11/13	11/17	11/21	11/27
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	151	144	139	134	130	126	121	116	109
32	164	159	156	153	150	147	144	140	135
28	191	185	180	175	171	167	163	158	151
24	217	211	206	202	198	194	190	185	178
20	234	227	221	217	212	208	204	198	191
16	255	247	241	237	232	227	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:
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Lon: 93°48W

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	1522	1198	932	525	205	28	7	25	131	441	908	1364	7286
60	1367	1058	777	384	114	6	0	5	54	296	758	1209	6028
57	1274	974	684	305	75	2	0	1	27	220	668	1116	5346
55	1212	918	624	257	54	1	0	0	15	175	610	1054	4920
50	1057	785	481	154	20	0	0	0	2	88	470	899	3956
32	543	352	110	4	0	0	0	0	0	1	108	404	1522

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	45	79	201	471	874	1123	1281	1206	911	585	190	63	7029
55	0	0	2	34	215	434	568	493	236	46	2	0	2030
57	0	0	0	22	174	375	506	432	188	29	0	0	1726
60	0	0	0	11	120	288	413	343	126	12	0	0	1313
65	0	0	0	2	55	160	265	207	53	2	0	0	744
70	0	0	0	0	19	68	137	105	15	0	0	0	344

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	10	80	293	639	899	1041	967	696	363	72	5	0	10	90	383	1022	1921	2962	3929	4625	4988	5060	5065
45	0	1	36	179	485	749	886	812	546	233	32	1	0	1	37	216	701	1450	2336	3148	3694	3927	3959	3960
50	0	0	16	100	338	599	731	657	401	134	14	0	0	0	16	116	454	1053	1784	2441	2842	2976	2990	2990
55	0	0	5	49	211	450	576	502	269	66	3	0	0	0	5	54	265	715	1291	1793	2062	2128	2131	2131
60	0	0	0	21	117	304	421	348	162	24	0	0	0	0	0	21	138	442	863	1211	1373	1397	1397	1397
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	7	58	191	399	595	704	642	448	227	47	2	0	7	65	256	655	1250	1954	2596	3044	3271	3318	3320

(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