U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: FAIRFIELD, IA **COOP ID: 132789**

Climate Division: IA 9 **NWS Call Sign:** **Elevation: 740 Feet** **Lat: 41˚01N** **Lon: 91˚57W**

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	32.1	12.8	22.5	70+	1909	23	34.3	1990	-29	1930	22	9.2	1979	1320	0	.0	.0	1.9	15.9	29.3	6.8
Feb	38.2	18.8	28.5	77	1930	24	38.6	1998	-31	1996	3	15.3	1979	1022	0	.0	.0	5.0	10.8	24.6	3.5
Mar	51.1	29.0	40.1	87+	1986	29	46.3	1973	-15	1962	1	32.1	1975	774	0	.0	.0	14.9	2.8	18.9	.3
Apr	64.2	39.8	52.0	93	1896	11	58.8	1977	9	1982	6	45.5	1983	398	9	.0	.1	26.1	.1	6.0	.0
May	74.7	50.5	62.6	102	1934	31	69.1	1977	26	1931	7	57.3	1997	156	81	.0	.7	30.8	.0	.2	.0
Jun	83.8	60.0	71.9	104+	1934	29	77.0	1971	37	1945	4	66.5	1982	13	220	.1	5.1	30.0	.0	.0	.0
Jul	87.5	64.8	76.2	114	1936	15	80.8	1999	43	1911	18	71.8	1971	1	347	1.0	11.8	31.0	.0	.0	.0
Aug	85.3	62.6	74.0	113	1934	9	80.0	1983	35	1915	31	67.7	1985	12	289	.8	7.8	31.0	.0	.0	.0
Sep	77.7	54.1	65.9	103+	1925	4	71.0	1998	23	1942	28	60.4	1993	78	106	.1	2.5	30.0	.0	.3	.0
Oct	65.5	42.9	54.2	96	1953	2	60.8	1971	1	1925	30	48.2	1976	343	8	.0	@	28.6	.0	4.4	.0
Nov	49.1	30.5	39.8	81+	1938	1	47.2	1999	-6	1929	30	32.2	1976	755	0	.0	.0	13.8	2.6	17.4	.2
Dec	35.8	18.3	27.1	71	1998	4	33.8	1982	-27	1914	26	13.5	1983	1176	0	.0	.0	3.5	11.4	28.0	3.2
Ann	62.1	40.3	51.2	114	Jul 1936	15	80.8	Jul 1999	-31	Feb 1996	3	9.2	Jan 1979	6048	1060	2.0	28.0	246.6	43.6	129.1	14.0

\+ 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

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1896-2001

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

Issue Date: February 2004

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	1.27	1.11	1.94	1948	1	3.16	1996	.10	1986
Feb	1.24	1.14	2.24	2001	9	3.96	1997	.24	1977
Mar	2.43	1.95	2.90	1976	4	5.57	1998	.29+	1994
Apr	3.47	3.36	2.76	1929	19	6.87	1973	.68	1985
May	4.63	3.61	3.61	1914	27	12.41	1996	1.38	1992
Jun	3.85	3.62	3.25	1932	26	8.33	2000	.89	1988
Jul	4.46	4.03	4.20	1902	14	14.55	1993	.17	1975
Aug	4.10	3.78	4.65	1970	5	7.84	1989	1.22	2000
Sep	3.93	3.65	4.61	1933	26	10.94	1986	.11	1979
Oct	2.94	2.26	3.60	1936	9	8.52	1984	.32	1993
Nov	2.47	2.35	2.74	1944	3	6.37	1983	.02	1989
Dec	1.74	1.61	2.32	1982	2	5.18	1971	.09	1976
Ann	36.53	35.21	4.65	Aug 1970	5	14.55	Jul 1993	.02	Nov 1989

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.0	3.5	.6	.2
Feb	6.6	3.5	.4	.1
Mar	8.1	5.2	1.5	.4
Apr	10.4	6.5	2.4	.8
May	12.1	8.3	3.2	1.2
Jun	10.0	7.0	2.7	.9
Jul	9.1	6.7	3.3	1.2
Aug	8.9	6.3	2.8	1.4
Sep	7.9	5.7	2.8	1.3
Oct	8.4	5.5	2.1	.6
Nov	8.0	5.5	1.7	.6
Dec	7.9	4.3	1.0	.3
Ann	104.4	68.0	24.5	9.0

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.20	.31	.50	.67	.85	1.05	1.28	1.55	1.92	2.52	3.09
Feb	.34	.46	.64	.80	.95	1.11	1.29	1.50	1.77	2.20	2.60
Mar	.41	.62	.98	1.31	1.65	2.02	2.45	2.97	3.66	4.77	5.84
Apr	1.15	1.48	1.96	2.37	2.77	3.17	3.62	4.13	4.80	5.83	6.79
May	1.36	1.80	2.46	3.03	3.59	4.17	4.81	5.57	6.54	8.07	9.49
Jun	.97	1.33	1.89	2.39	2.88	3.40	3.97	4.66	5.55	6.97	8.29
Jul	.55	.90	1.53	2.16	2.81	3.55	4.40	5.45	6.88	9.22	11.50
Aug	1.30	1.69	2.27	2.76	3.24	3.73	4.27	4.91	5.72	7.00	8.17
Sep	.79	1.15	1.73	2.26	2.79	3.36	4.00	4.78	5.81	7.45	9.01
Oct	.46	.71	1.14	1.55	1.97	2.42	2.95	3.59	4.45	5.85	7.19
Nov	.28	.47	.81	1.16	1.53	1.94	2.42	3.02	3.84	5.18	6.49
Dec	.27	.42	.68	.92	1.17	1.44	1.75	2.13	2.64	3.46	4.25
Ann	24.37	26.67	29.65	31.93	33.97	35.95	38.02	40.31	43.10	47.19	50.74

\+ 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: 1896-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	6.6	7.5	3	2
Feb	5.3	4.8	3	2
Mar	3.4	1.6	#	#
Apr	1.6	.0	#	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.1	.0	#	0
Nov	1.8	.3	#	#
Dec	5.7	1.8	2	#
Ann	24.5	16.0	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	14.0	1971	3	22.8	1979	22	1979	23	17	1979
Feb	10.0	1978	13	14.0	1980	26	1979	8	18	1979
Mar	6.0	1978	2	16.0	1984	12	1979	2	5	1979
Apr	8.0	1997	11	15.5	1997	13	1997	11	2	1997
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	2.0	1980	26	2.0	1980	2	1980	26	#+	1997
Nov	6.0	1975	26	9.5	1991	10	1974	30	1	1991
Dec	10.5	1978	31	20.0	1973	23	2000	31	14	2000
Ann	14.0	Jan 1971	3	22.8	Jan 1979	26	Feb 1979	8	18	Feb 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.9	2.7	.9	.2	.1
Feb	3.0	2.0	.7	.2	@
Mar	1.7	1.1	.4	.2	.0
Apr	.6	.5	.2	.1	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.1	.1	.0	.0	.0
Nov	1.1	.8	.2	.1	.0
Dec	3.3	2.2	.7	.2	.0
Ann	14.7	9.4	3.1	1.0	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	13.8	9.8	5.3	2.3
Feb	10.2	6.3	4.8	1.9
Mar	3.2	1.4	.8	.3
Apr	.6	.3	.2	.1
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.1	.0	.0	.0
Nov	1.3	.5	.1	.0
Dec	5.6	2.9	1.5	.2
Ann	34.8	21.2	12.7	4.8

+ 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

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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	5/17	5/12	5/08	5/06	5/03	4/30	4/27	4/24	4/19
32	5/03	4/28	4/24	4/21	4/18	4/16	4/13	4/09	4/04
28	4/20	4/16	4/14	4/11	4/09	4/07	4/05	4/02	3/29
24	4/13	4/09	4/06	4/03	4/01	3/30	3/27	3/24	3/20
20	4/06	4/01	3/28	3/25	3/22	3/19	3/16	3/12	3/07
16	3/28	3/22	3/17	3/13	3/10	3/06	3/02	2/26	2/19

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	9/21	9/25	9/28	9/30	10/02	10/05	10/07	10/10	10/14
32	9/24	9/30	10/04	10/07	10/10	10/13	10/17	10/21	10/26
28	10/10	10/14	10/18	10/21	10/24	10/27	10/30	11/02	11/07
24	10/20	10/25	10/28	10/31	11/03	11/06	11/09	11/13	11/18
20	10/29	11/02	11/06	11/09	11/11	11/14	11/17	11/20	11/25
16	11/08	11/13	11/17	11/20	11/23	11/26	11/29	12/03	12/08

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	167	162	158	155	152	149	146	142	137
32	192	186	181	178	174	170	167	162	156
28	214	208	204	200	197	194	190	186	180
24	234	228	223	219	216	212	208	203	197
20	255	248	242	238	234	229	225	219	212
16	282	273	267	262	257	253	247	241	233

***** 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

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Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1320	1022	774	398	156	13	1	12	78	343	755	1176	6048
60	1165	882	619	268	80	2	0	2	27	214	606	1021	4886
57	1072	802	534	201	49	0	0	0	11	150	519	928	4266
55	1010	750	476	162	33	0	0	0	6	114	463	866	3880
50	862	620	341	84	11	0	0	0	0	50	331	723	3022
32	383	240	54	0	0	0	0	0	0	0	48	276	1001

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	86	142	303	601	948	1197	1369	1300	1018	688	283	123	8058
55	0	8	12	73	268	507	656	587	333	88	8	0	2540
57	0	4	8	52	221	448	594	525	279	62	3	0	2196
60	0	0	1	29	160	359	501	433	205	34	0	0	1722
65	0	0	0	9	81	220	347	289	106	8	0	0	1060
70	0	0	0	2	31	107	206	166	42	1	0	0	555

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	31	140	379	714	969	1133	1060	782	452	126	18	5	36	176	555	1269	2238	3371	4431	5213	5665	5791	5809
45	0	10	79	253	559	819	978	905	633	311	66	5	0	10	89	342	901	1720	2698	3603	4236	4547	4613	4618
50	0	1	40	155	408	669	823	750	485	195	30	2	0	1	41	196	604	1273	2096	2846	3331	3526	3556	3558
55	0	0	19	82	270	519	668	595	344	106	9	0	0	0	19	101	371	890	1558	2153	2497	2603	2612	2612
60	0	0	6	38	155	371	514	440	223	50	1	0	0	0	6	44	199	570	1084	1524	1747	1797	1798	1798
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	3	22	90	232	445	648	772	715	500	267	66	7	3	25	115	347	792	1440	2212	2927	3427	3694	3760	3767

(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.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/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 are 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/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/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