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: BELLEVUE L AND D 12, IA **COOP ID: 130608**

Climate Division: IA 6 **NWS Call Sign:** **Elevation: 603 Feet** **Lat: 42˚16N** **Lon: 90˚25W**

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	26.7	8.7	17.7	61	1981	25	29.6	1990	-30	1951	30	5.6	1977	1467	0	.0	.0	.7	19.8	30.5	8.7
Feb	32.6	13.7	23.2	68	2000	26	35.8	1998	-34	1996	4	10.8	1979	1173	0	.0	.0	2.3	12.6	26.0	5.1
Mar	44.5	24.9	34.7	87	1986	30	41.9	2000	-21	1962	1	26.1	1975	940	0	.0	.0	9.8	4.2	22.9	.5
Apr	58.5	35.8	47.2	94	1980	22	54.1	1977	5	1982	7	42.5	1975	538	2	.0	.1	23.4	.2	9.6	.0
May	70.8	46.7	58.8	94+	1985	26	65.8	1977	26	1966	10	52.6	1997	236	41	.0	.5	30.7	.0	1.3	.0
Jun	80.6	57.2	68.9	100+	1988	21	73.9	1971	35	1972	11	63.9	1982	29	146	.1	3.2	30.0	.0	.0	.0
Jul	84.3	61.6	73.0	102	1995	14	76.9	1983	41	1972	5	67.1	1992	8	254	.2	6.5	31.0	.0	.0	.0
Aug	82.1	59.7	70.9	103	1988	18	77.8	1995	36	1950	20	63.9	1992	30	211	.3	4.0	31.0	.0	.0	.0
Sep	74.2	50.5	62.4	99	1985	7	67.3	1978	26	1949	29	56.1	1993	133	54	.0	1.6	29.9	.0	.8	.0
Oct	62.1	39.0	50.6	95	1997	4	58.2	1971	14+	1952	29	44.8	1987	452	4	.0	@	27.8	.0	7.5	.0
Nov	45.0	27.2	36.1	77	1999	9	42.7	1999	-9	1977	26	28.9	1976	868	0	.0	.0	11.1	3.5	20.7	.2
Dec	31.8	15.6	23.7	67	2001	6	31.3	1982	-26	1950	27	10.9	1985	1281	0	.0	.0	1.8	13.5	28.8	4.4
Ann	57.8	36.7	47.3	103	Aug 1988	18	77.8	Aug 1995	-34	Feb 1996	4	5.6	Jan 1977	7155	712	.6	15.9	229.5	53.8	148.1	18.9

\+ 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/normals/usnormals.html

(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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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	1.14	1.06	1.80	1960	12	2.40	1974	.08	1981
Feb	1.26	1.10	1.86	1998	27	3.19	1998	.00	1987
Mar	2.28	1.85	2.32	1998	31	5.29	1991	.34	1981
Apr	3.31	3.12	2.22	1984	29	6.59	1999	.85	1985
May	3.73	3.51	2.69	1960	7	8.25	1974	.70	1992
Jun	4.58	3.76	2.87	1993	8	9.73	2000	.62	1988
Jul	3.34	2.89	2.99	1963	19	7.31	1972	.46	1991
Aug	4.38	3.44	3.68	1956	31	9.82	1981	.96	1978
Sep	3.62	3.25	4.06	1961	13	10.69	1986	.12	1979
Oct	2.51	1.97	3.30	1984	19	8.96	1984	.54	1975
Nov	2.58	2.48	2.58	1952	17	5.77	1992	.11	1976
Dec	1.62	1.49	2.12	1971	15	4.34	1982	.10	1995
Ann	34.35	34.67	4.06	Sep 1961	13	10.69	Sep 1986	.00	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.1	3.4	.5	.1
Feb	6.4	3.4	.7	.2
Mar	8.8	5.3	1.3	.3
Apr	11.0	7.5	2.3	.7
May	11.4	7.5	2.6	.8
Jun	10.4	7.2	3.0	1.3
Jul	8.9	6.1	2.3	.9
Aug	9.7	6.8	3.1	1.5
Sep	8.4	5.5	2.3	1.1
Oct	8.3	4.9	1.7	.4
Nov	9.3	5.4	1.7	.4
Dec	8.2	4.1	.8	.2
Ann	108.9	67.1	22.3	7.9

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	.24	.34	.51	.66	.81	.98	1.16	1.38	1.67	2.14	2.58
Feb	.08	.21	.41	.60	.79	1.00	1.25	1.55	1.96	2.63	3.28
Mar	.41	.61	.95	1.26	1.57	1.92	2.31	2.78	3.40	4.42	5.38
Apr	1.10	1.41	1.87	2.26	2.64	3.03	3.45	3.95	4.58	5.57	6.49
May	.96	1.31	1.85	2.33	2.80	3.29	3.85	4.50	5.36	6.71	7.98
Jun	1.02	1.45	2.12	2.72	3.33	3.97	4.69	5.55	6.69	8.50	10.21
Jul	1.02	1.34	1.81	2.22	2.61	3.02	3.47	4.00	4.68	5.74	6.72
Aug	.99	1.40	2.04	2.62	3.19	3.80	4.49	5.31	6.39	8.10	9.71
Sep	.45	.73	1.24	1.75	2.28	2.88	3.57	4.42	5.58	7.49	9.33
Oct	.47	.69	1.06	1.40	1.75	2.12	2.55	3.06	3.74	4.83	5.88
Nov	.46	.68	1.06	1.41	1.77	2.16	2.61	3.14	3.86	5.02	6.12
Dec	.30	.45	.69	.91	1.13	1.37	1.64	1.97	2.41	3.12	3.79
Ann	24.36	26.29	28.76	30.63	32.30	33.91	35.58	37.42	39.65	42.89	45.69

\+ 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

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	8.7	7.8	5	5	12.0	1985	1	22.0	1979	20	1979	29	14	1979	5.3	4.0	1.1	.4	.1	20.2	15.1	11.4	2.2
Feb	6.0	5.0	5	4	7.0	1975	24	23.6	1994	24	1979	13	20	1979	3.4	2.5	.8	.2	.0	17.8	12.4	8.8	1.8
Mar	4.4	2.7	1	1	11.0	1991	13	17.0	1975	15	1979	3	9	1979	2.0	1.5	.5	.2	@	6.1	3.7	1.9	.6
Apr	1.1	.0	#	0	8.0	1982	6	8.0+	1975	9	1982	9	2	1982	.5	.5	.1	.1	.0	.9	.4	.3	.0
May	.1	.0	0	0	4.0	1994	1	4.0	1994	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	.0	.0	#	0	.5	1997	27	.5	1997	1	1997	27	#+	1997	@	.0	.0	.0	.0	@	.0	.0	.0
Nov	1.8	.2	#	#	4.0	1986	19	7.0	1986	7	1986	22	2	1986	1.1	.8	.3	.0	.0	2.5	.8	.3	.0
Dec	7.4	6.5	3	2	12.0	1994	7	29.3	2000	25	2000	31	14	2000	4.0	3.0	.9	.3	@	15.0	9.1	6.2	1.0
Ann	29.5	22.2	N/A	N/A	12.0+	Dec 1994	7	29.3	Dec 2000	25	Dec 2000	31	20	Feb 1979	16.3	12.3	3.7	1.2	.1	62.5	41.5	28.9	5.6

+ 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	5/29	5/23	5/19	5/16	5/13	5/10	5/07	5/03	4/28
32	5/15	5/10	5/07	5/04	5/01	4/29	4/26	4/22	4/17
28	4/28	4/23	4/20	4/17	4/14	4/12	4/09	4/06	4/01
24	4/18	4/14	4/12	4/10	4/08	4/06	4/04	4/01	3/28
20	4/13	4/08	4/05	4/02	3/30	3/27	3/24	3/21	3/16
16	4/06	3/30	3/25	3/21	3/17	3/13	3/09	3/04	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	9/18	9/22	9/24	9/26	9/28	10/01	10/03	10/05	10/09
32	9/24	9/28	10/01	10/03	10/06	10/08	10/10	10/13	10/17
28	9/30	10/06	10/09	10/13	10/16	10/19	10/22	10/26	11/01
24	10/14	10/19	10/23	10/26	10/29	11/01	11/04	11/08	11/13
20	10/26	10/30	11/03	11/06	11/09	11/11	11/14	11/18	11/22
16	11/05	11/10	11/14	11/17	11/20	11/23	11/26	11/30	12/05

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	157	150	145	141	138	134	130	125	118
32	175	168	164	160	156	153	149	145	138
28	204	197	192	188	184	180	175	170	163
24	223	216	211	207	204	200	196	191	184
20	241	235	230	226	223	219	215	211	205
16	275	265	258	253	247	242	236	229	219

***** 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)

Base — Heating Degree Days (1)

Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1467	1173	940	538	236	29	8	30	133	452	868	1281	7155
60	1312	1033	785	394	137	6	0	8	57	311	718	1126	5887
57	1219	949	692	314	92	2	0	2	29	236	628	1033	5196
55	1157	893	631	265	68	1	0	0	17	192	569	971	4764
50	1002	757	487	159	27	0	0	0	3	102	428	820	3785
32	490	324	109	4	0	0	0	0	0	1	76	342	1346

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	46	75	191	458	829	1107	1269	1204	911	576	199	84	6949
55	0	0	1	28	184	417	556	491	238	53	1	0	1969
57	0	0	0	18	146	359	494	431	190	35	0	0	1673
60	0	0	0	8	97	273	401	344	127	17	0	0	1267
65	0	0	0	2	41	146	254	211	54	4	0	0	712
70	0	0	0	0	13	56	130	112	16	0	0	0	327

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	7	76	277	617	882	1041	980	696	371	83	6	0	7	83	360	977	1859	2900	3880	4576	4947	5030	5036
45	0	0	38	168	464	732	886	825	547	240	37	4	0	0	38	206	670	1402	2288	3113	3660	3900	3937	3941
50	0	0	15	91	314	582	731	670	404	139	16	0	0	0	15	106	420	1002	1733	2403	2807	2946	2962	2962
55	0	0	4	46	193	434	576	515	268	69	3	0	0	0	4	50	243	677	1253	1768	2036	2105	2108	2108
60	0	0	0	17	105	290	421	361	160	30	0	0	0	0	0	17	122	412	833	1194	1354	1384	1384	1384
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	3	51	173	379	583	704	654	437	224	51	4	0	3	54	227	606	1189	1893	2547	2984	3208	3259	3263

(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