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: BEACONSFIELD, IA **COOP ID: 130536**

Climate Division: IA 8 **NWS Call Sign:** **Elevation: 1,200 Feet** **Lat: 40˚49N** **Lon: 94˚03W**

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	29.8	11.2	20.5	64	1981	24	33.0	1989	-24	1982	10	7.4	1979	1380	0	.0	.0	2.0	16.2	30.0	6.8
Feb	36.1	15.9	26.0	74	1972	29	36.6	1998	-25	1996	3	12.6	1979	1092	0	.0	.0	5.5	11.1	25.3	3.9
Mar	48.5	26.5	37.5	87+	1968	30	42.8+	2000	-18	1962	1	29.7	1975	853	0	.0	.0	14.7	3.4	20.5	.5
Apr	60.7	37.1	48.9	89+	1956	27	54.9	1981	8	1982	6	42.4	1983	486	2	.0	@	25.1	.2	7.7	.0
May	71.0	49.5	60.3	93+	1956	12	65.9	1977	25	1992	6	54.2	1997	197	50	.0	.1	30.9	.0	.4	.0
Jun	80.7	59.0	69.9	105	1988	25	75.2	1971	36+	1969	2	65.2	1982	26	171	.2	2.9	30.0	.0	.0	.0
Jul	85.1	64.6	74.9	105+	1974	21	79.9	1980	43	1971	30	71.2	1994	2	307	.5	8.0	31.0	.0	.0	.0
Aug	83.4	62.7	73.1	104	1988	15	81.9	1983	41+	1986	28	66.7	1992	19	269	.4	6.4	31.0	.0	.0	.0
Sep	75.8	53.3	64.6	97+	1983	8	69.5	1998	25	1989	24	58.8	1993	100	88	.0	1.8	29.9	.0	.8	.0
Oct	64.1	41.9	53.0	91	1963	5	59.6	1971	14	1972	19	47.5	1976	377	4	.0	.1	28.4	.0	5.6	.0
Nov	47.1	28.5	37.8	79	1999	14	46.4	1999	-15	1964	30	30.1	1991	815	0	.0	.0	13.8	3.5	19.9	.4
Dec	34.1	16.6	25.4	67+	1984	28	31.7	1979	-30	1989	23	9.4	1983	1229	0	.0	.0	3.9	12.4	28.8	3.7
Ann	59.7	38.9	49.3	105+	Jun 1988	25	81.9	Aug 1983	-30	Dec 1989	23	7.4	Jan 1979	6576	891	1.1	19.3	246.2	46.8	139.0	15.3

\+ 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: 1956-2001

(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	.80	.71	1.18	1960	12	2.61	1996	.00	1986
Feb	1.02	.98	1.70	1973	1	2.69	1997	.08	1972
Mar	2.33	1.75	2.55	1982	19	7.18	1973	.25	1994
Apr	3.34	2.79	2.12	1976	24	7.25	1991	1.12	1988
May	4.47	4.52	2.82	1996	9	12.20	1996	1.45	1980
Jun	4.33	4.24	4.29	1980	2	8.81	1980	.67	1988
Jul	4.61	3.96	5.75	1987	7	19.75	1993	.15	1983
Aug	3.75	3.22	5.85	1959	6	9.87	1987	.58	1983
Sep	4.28	3.11	7.00	1992	15	14.52	1992	1.25	1979
Oct	2.93	3.07	3.71	1973	11	6.94	1977	.04	1975
Nov	2.28	1.97	2.18	1958	17	5.99	1992	.00	1989
Dec	1.13	.96	1.92	1959	27	3.11	1982	.08+	1979
Ann	35.27	33.30	7.00	Sep 1992	15	19.75	Jul 1993	.00+	Nov 1989

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.9	2.4	.4	@
Feb	5.4	2.8	.6	.2
Mar	7.4	4.7	1.4	.6
Apr	9.6	7.0	2.6	.7
May	11.3	8.2	3.2	1.1
Jun	9.6	6.6	2.9	1.3
Jul	8.8	6.4	3.0	1.7
Aug	8.1	5.9	2.3	1.2
Sep	7.2	5.7	2.7	1.4
Oct	6.7	5.1	2.0	.8
Nov	7.0	4.6	1.6	.5
Dec	5.9	3.2	.5	.2
Ann	91.9	62.6	23.2	9.7

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	.07	.16	.29	.41	.53	.66	.81	.99	1.23	1.63	2.01
Feb	.15	.23	.38	.52	.67	.83	1.01	1.24	1.55	2.04	2.52
Mar	.31	.50	.83	1.16	1.50	1.87	2.31	2.85	3.57	4.75	5.90
Apr	.96	1.28	1.76	2.17	2.58	3.00	3.47	4.02	4.73	5.84	6.88
May	1.24	1.67	2.31	2.87	3.42	3.99	4.63	5.38	6.35	7.88	9.30
Jun	1.21	1.62	2.24	2.78	3.31	3.87	4.48	5.21	6.15	7.63	9.01
Jul	.48	.83	1.46	2.10	2.80	3.57	4.49	5.63	7.18	9.75	12.27
Aug	.88	1.23	1.78	2.27	2.76	3.28	3.86	4.54	5.45	6.88	8.23
Sep	.80	1.18	1.81	2.39	2.98	3.62	4.34	5.21	6.37	8.23	10.01
Oct	.34	.56	.97	1.38	1.82	2.30	2.87	3.58	4.54	6.12	7.67
Nov	.26	.54	.92	1.25	1.58	1.94	2.34	2.82	3.45	4.47	5.44
Dec	.13	.22	.38	.53	.70	.89	1.11	1.38	1.74	2.34	2.93
Ann	22.00	24.43	27.63	30.10	32.33	34.51	36.78	39.33	42.45	47.03	51.06

\+ 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: 1956-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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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	6.1	6.3	2	1
Feb	4.3	3.1	1	1
Mar	3.3	2.6	#	#
Apr	1.2	.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	.5	.0	#	0
Nov	2.2	.9	#	#
Dec	5.6	4.4	1	1
Ann	23.2	17.3	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	10.0	1996	27	16.8	1979	15	1996	31	5	1996
Feb	6.5	1978	13	12.8	1978	15	1996	1	7	1979
Mar	8.0	1978	2	10.7	1978	12	1978	2	4	1978
Apr	7.0	1973	9	13.0	1997	10	1997	12	1	1997
May	1.0	1994	1	1.0	1994	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	7.0	1997	27	10.0	1997	10	1997	27	1	1997
Nov	7.0	1992	26	10.5	1991	6	1972	13	1	1995
Dec	7.0	1995	7	27.1	2000	13	2000	22	8	2000
Ann	10.0	Jan 1996	27	27.1	Dec 2000	15+	Feb 1996	1	8	Dec 2000

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.2	2.2	.7	.1	@
Feb	2.8	1.8	.6	.2	.0
Mar	1.9	1.3	.4	.1	.0
Apr	.5	.4	.2	.1	.0
May	@	@	.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	.1	@	.0
Nov	1.3	.9	.2	.1	.0
Dec	3.3	2.0	.8	.2	.0
Ann	13.1	8.7	3.0	.8	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	14.6	3.1	.8	.0
Feb	11.3	5.2	3.1	.3
Mar	4.1	1.7	.9	.1
Apr	.5	.2	.2	@
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	.2	.2	.1	@
Nov	2.5	.9	.2	.0
Dec	11.2	4.4	1.8	.6
Ann	44.4	15.7	7.1	1.0

+ 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	5/22	5/16	5/12	5/08	5/04	5/01	4/27	4/23	4/17
32	5/09	5/04	4/30	4/27	4/24	4/21	4/17	4/13	4/08
28	4/27	4/22	4/18	4/15	4/12	4/09	4/06	4/02	3/28
24	4/13	4/09	4/06	4/03	4/01	3/30	3/27	3/24	3/20
20	4/13	4/07	4/02	3/29	3/26	3/22	3/19	3/14	3/08
16	4/05	3/29	3/24	3/20	3/16	3/11	3/07	3/02	2/23

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	9/15	9/21	9/25	9/28	10/01	10/05	10/08	10/12	10/18
32	9/21	9/27	10/01	10/05	10/08	10/12	10/15	10/19	10/25
28	9/30	10/07	10/12	10/16	10/20	10/24	10/28	11/03	11/10
24	10/13	10/19	10/24	10/28	11/01	11/05	11/09	11/14	11/21
20	10/23	10/29	11/03	11/07	11/10	11/14	11/17	11/22	11/28
16	10/31	11/06	11/11	11/15	11/19	11/23	11/27	12/01	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	176	167	160	155	149	144	138	132	122
32	188	181	175	171	167	163	158	153	145
28	218	208	202	196	191	185	179	173	163
24	238	230	224	218	213	209	203	197	189
20	257	247	240	234	228	223	217	210	200
16	279	268	260	254	248	242	235	227	217

***** 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	1380	1092	853	486	197	26	2	19	100	377	815	1229	6576
60	1225	952	698	346	106	5	0	4	39	240	665	1074	5354
57	1132	868	606	269	67	2	0	1	18	171	577	981	4692
55	1070	817	551	223	47	1	0	0	10	131	521	919	4290
50	917	686	408	127	16	0	0	0	1	60	385	773	3373
32	427	285	77	2	0	0	0	0	0	0	71	310	1172

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	70	117	247	509	876	1136	1328	1273	978	651	245	104	7534
55	0	5	8	39	210	446	615	560	297	69	5	0	2254
57	0	0	1	26	168	387	553	499	245	47	2	0	1928
60	0	0	0	12	114	301	460	409	176	23	0	0	1495
65	0	0	0	2	50	171	307	269	88	4	0	0	891
70	0	0	0	0	16	75	169	155	34	0	0	0	449

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	129	342	655	916	1087	1026	743	415	105	12	5	32	161	503	1158	2074	3161	4187	4930	5345	5450	5462
45	0	8	67	224	500	766	932	871	594	282	53	4	0	8	75	299	799	1565	2497	3368	3962	4244	4297	4301
50	0	1	35	130	349	616	777	716	449	169	22	0	0	1	36	166	515	1131	1908	2624	3073	3242	3264	3264
55	0	0	7	65	221	466	622	561	312	84	3	0	0	0	7	72	293	759	1381	1942	2254	2338	2341	2341
60	0	0	2	31	117	318	467	406	196	37	0	0	0	0	2	33	150	468	935	1341	1537	1574	1574	1574
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	23	86	212	394	606	744	691	476	256	68	9	0	23	109	321	715	1321	2065	2756	3232	3488	3556	3565

(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.
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