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: CAMBRIDGE, NE **COOP ID: 251415**

Climate Division: NE 8 **NWS Call Sign:** **Elevation: 2,260 Feet** **Lat: 40˚17N** **Lon: 100˚10W**

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	38.8	12.4	25.6	76+	1990	11	35.7	1986	-23+	1984	20	12.6	1979	1222	0	.0	.0	8.4	9.5	30.7	5.0
Feb	45.1	17.0	31.1	81	1970	17	39.4	1991	-22	1951	1	17.9	1978	952	0	.0	.0	12.5	6.1	26.9	2.7
Mar	54.1	25.3	39.7	90	1986	29	45.5	1986	-21	1960	3	33.2	1996	784	0	.0	@	19.9	1.8	23.5	.6
Apr	64.7	35.3	50.0	96+	1981	27	58.0	1981	13+	1994	7	44.3	1984	452	2	.0	.7	26.5	.1	11.4	.0
May	73.6	47.5	60.6	101+	2000	30	64.9	1977	22	1967	2	53.8	1995	177	38	.1	1.1	30.8	.0	1.2	.0
Jun	84.6	57.5	71.1	111	1985	8	77.5	1988	35+	1954	4	66.7	1999	25	206	1.2	9.5	29.9	.0	.0	.0
Jul	89.7	63.1	76.4	114	1954	11	81.4	1980	42+	1990	14	71.8	1994	1	353	3.4	17.3	31.0	.0	.0	.0
Aug	87.8	60.4	74.1	110	1983	16	82.2	1983	40	1964	12	68.7	1992	10	293	2.3	14.9	31.0	.0	.0	.0
Sep	80.1	49.6	64.9	107	1985	1	70.2	1983	18	1984	29	59.1	1993	94	90	.5	7.5	29.8	.0	1.1	.0
Oct	68.6	36.1	52.4	97+	1953	2	55.9	1974	8	1997	27	48.1	1976	394	1	.0	.7	29.2	.1	10.2	.0
Nov	51.1	23.6	37.4	84+	1999	14	44.6	1999	-14	1952	28	28.5	2000	830	0	.0	.0	17.0	2.5	25.4	.6
Dec	41.2	15.3	28.3	82	1964	23	35.1	1979	-35	1989	23	10.1	1983	1140	0	.0	.0	9.0	6.9	30.5	3.0
Ann	65.0	36.9	51.0	114	Jul 1954	11	82.2	Aug 1983	-35	Dec 1989	23	10.1	Dec 1983	6081	983	7.5	51.7	275.0	27.0	160.9	11.9

\+ 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

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	.43	.24	1.07	1988	19	1.34	1988	.00+	1997
Feb	.58	.55	.94	1993	11	1.93	1978	.00+	1999
Mar	1.54	1.17	1.80	1984	19	3.82	1977	.00+	1994
Apr	2.13	1.61	2.40	1984	21	5.53	1984	.09	1989
May	3.54	3.24	4.05	1969	21	7.50	1977	.59	1992
Jun	3.53	3.39	3.45	1989	25	9.49	1975	.27	1978
Jul	3.19	2.33	3.07	1973	19	11.28	1993	.56	1997
Aug	2.70	2.28	3.60	1964	20	6.17	1999	.42	1986
Sep	1.50	1.27	3.00	1963	21	5.27	1973	.00+	1998
Oct	1.24	.84	1.85+	2000	23	4.75	1997	.00+	1999
Nov	1.17	.87	1.67	1975	20	3.28	1975	.01	1989
Dec	.50	.47	1.09	1982	27	1.93	1982	.00+	1995
Ann	22.05	21.34	4.05	May 1969	21	11.28	Jul 1993	.00+	Oct 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	2.6	1.5	.2	.1
Feb	2.8	1.8	.3	.0
Mar	5.0	3.7	1.0	.3
Apr	5.8	4.3	1.3	.7
May	9.4	7.4	2.6	.7
Jun	6.9	5.5	2.2	1.1
Jul	6.8	5.5	2.2	.8
Aug	5.7	4.8	2.1	.8
Sep	4.2	3.2	1.0	.3
Oct	3.5	2.5	.9	.2
Nov	3.6	2.7	.9	.2
Dec	2.6	1.5	.3	@
Ann	58.9	44.4	15.0	5.2

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	.00	.04	.11	.18	.25	.33	.43	.54	.69	.95	1.20
Feb	.00	.00	.07	.15	.24	.36	.51	.70	.96	1.42	1.89
Mar	.00	.15	.42	.66	.92	1.20	1.52	1.92	2.46	3.36	4.23
Apr	.30	.48	.78	1.08	1.39	1.73	2.12	2.60	3.25	4.31	5.34
May	.99	1.33	1.83	2.28	2.71	3.16	3.66	4.26	5.03	6.23	7.36
Jun	.79	1.12	1.64	2.10	2.57	3.06	3.62	4.28	5.16	6.55	7.86
Jul	.68	.97	1.44	1.86	2.29	2.75	3.26	3.88	4.69	5.99	7.22
Aug	.60	.85	1.25	1.60	1.96	2.34	2.76	3.27	3.94	5.01	6.02
Sep	.00	.13	.38	.62	.87	1.14	1.47	1.86	2.40	3.29	4.17
Oct	.00	.04	.18	.35	.55	.79	1.10	1.49	2.05	3.03	4.01
Nov	.07	.14	.28	.44	.62	.83	1.08	1.41	1.87	2.64	3.42
Dec	.00	.00	.07	.14	.23	.33	.45	.61	.83	1.22	1.60
Ann	14.64	16.03	17.84	19.22	20.46	21.67	22.92	24.31	26.01	28.50	30.66

\+ 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)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	3.8	3.0	2	#
Feb	5.3	2.0	1	1
Mar	4.8	4.3	1	#
Apr	1.5	.0	#	0
May	.0	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.2	.0	#	0
Oct	.4	.0	#	0
Nov	4.7	3.6	1	#
Dec	5.6	4.0	2	1
Ann	26.3	16.9	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	11.0	1990	20	13.0	1990	18	1984	23	14	1984
Feb	12.0	1984	18	17.0	1978	17	1978	18	7	1978
Mar	21.0	1984	19	22.0	1984	19	1984	19	4	1975
Apr	6.0	1973	8	11.5	1994	6	1973	8	#+	1997
May	.0	0	0	.0	0	1	1994	25	#	1994
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	6.0	1985	29	6.0	1985	2	1985	30	#	1985
Oct	6.0	1997	26	6.0	1997	6	1997	26	#+	1997
Nov	12.0	1973	21	19.0	1975	19	1975	30	6	1975
Dec	14.0	1982	27	23.0	1982	23	1983	30	16	1983
Ann	21.0	Mar 1984	19	23.0	Dec 1982	23	Dec 1983	30	16	Dec 1983

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.0	1.8	.4	.2	@
Feb	1.7	1.6	.7	.3	.1
Mar	1.8	1.7	.7	.1	@
Apr	.7	.6	.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
Oct	.2	.2	@	@	.0
Nov	1.5	1.3	.6	.3	.1
Dec	2.0	1.8	.8	.3	.1
Ann	9.9	9.0	3.4	1.3	.3

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	7.7	4.7	3.2	2.1
Feb	6.4	3.2	1.7	.4
Mar	2.6	.9	.4	.1
Apr	.6	.2	@	.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	.1	@	.0
Nov	2.9	1.6	1.1	.6
Dec	7.6	5.0	3.3	1.8
Ann	27.9	15.7	9.7	5.0

+ 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	5/25	5/20	5/17	5/14	5/12	5/09	5/06	5/03	4/28
32	5/15	5/11	5/07	5/05	5/02	4/30	4/27	4/24	4/19
28	5/07	5/02	4/29	4/26	4/23	4/20	4/17	4/13	4/08
24	4/24	4/19	4/15	4/12	4/10	4/07	4/04	3/31	3/26
20	4/12	4/07	4/03	3/31	3/29	3/26	3/23	3/19	3/14
16	4/06	3/30	3/26	3/22	3/18	3/14	3/10	3/06	2/27

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	9/25	9/28	9/30	10/03	10/07
32	9/17	9/22	9/25	9/28	10/01	10/04	10/07	10/10	10/15
28	9/30	10/04	10/07	10/10	10/12	10/14	10/17	10/20	10/24
24	10/03	10/08	10/12	10/15	10/18	10/21	10/24	10/28	11/02
20	10/11	10/17	10/22	10/25	10/29	11/02	11/06	11/10	11/16
16	10/21	10/28	11/02	11/06	11/09	11/13	11/17	11/22	11/28

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	152	147	143	139	136	133	130	126	120
32	169	163	159	155	151	148	144	139	133
28	188	182	178	175	172	168	165	161	155
24	211	204	199	195	191	187	183	178	171
20	239	231	224	219	214	209	203	197	188
16	262	253	246	241	236	230	225	218	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

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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	1222	952	784	452	177	25	1	10	94	394	830	1140	6081
60	1067	812	629	311	84	5	0	2	34	246	680	985	4855
57	974	729	536	235	47	1	0	0	14	169	590	892	4187
55	912	678	476	189	30	0	0	0	7	125	531	830	3778
50	760	548	333	98	7	0	0	0	0	49	393	683	2871
32	287	183	33	0	0	0	0	0	0	0	68	237	808

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	88	155	272	540	884	1171	1375	1306	986	630	228	119	7754
55	0	7	2	40	202	481	662	593	304	42	1	0	2334
57	0	2	0	25	157	423	600	531	251	24	0	0	2013
60	0	0	0	11	100	337	507	439	180	9	0	0	1583
65	0	0	0	2	38	206	353	293	90	1	0	0	983
70	0	0	0	0	9	106	211	168	36	0	0	0	530

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	13	47	152	353	649	949	1141	1082	770	419	95	19	13	60	212	565	1214	2163	3304	4386	5156	5575	5670	5689
45	0	13	78	232	494	799	986	927	622	288	41	0	0	13	91	323	817	1616	2602	3529	4151	4439	4480	4480
50	0	2	32	133	349	650	831	772	477	168	10	0	0	2	34	167	516	1166	1997	2769	3246	3414	3424	3424
55	0	0	7	69	219	501	676	617	341	82	1	0	0	0	7	76	295	796	1472	2089	2430	2512	2513	2513
60	0	0	0	30	117	356	521	463	222	29	0	0	0	0	0	30	147	503	1024	1487	1709	1738	1738	1738
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	31	74	145	262	408	615	747	705	498	316	104	36	31	105	250	512	920	1535	2282	2987	3485	3801	3905	3941

(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