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: CRETE, NE **COOP ID: 252020**

Climate Division: NE 9 **NWS Call Sign:** **Elevation: 1,435 Feet** **Lat: 40˚37N** **Lon: 96˚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	34.8	14.3	24.6	73	1990	10	35.3	1990	-25	1974	12	11.6	1979	1254	0	.0	.0	4.4	12.7	29.8	5.2
Feb	41.4	19.7	30.6	84	1972	29	40.1	1999	-21	1996	3	16.2	1979	965	0	.0	.0	9.5	9.0	24.5	2.7
Mar	52.5	29.6	41.1	88	1986	29	47.5	1986	-15	1978	4	33.1	1975	744	0	.0	.0	18.2	2.3	18.9	.4
Apr	64.3	40.3	52.3	95+	1989	27	59.8	1981	6	1975	3	43.7	1983	389	7	.0	.4	26.7	.1	6.4	.0
May	73.7	51.2	62.5	98+	2000	31	68.3	1977	26+	1976	3	57.2	1995	143	65	.0	1.0	30.9	.0	.4	.0
Jun	84.1	60.8	72.5	105+	1988	22	78.3	1988	39+	1982	1	67.5	1982	14	237	.6	7.9	30.0	.0	.0	.0
Jul	88.0	65.4	76.7	110	1966	18	82.0	1974	41	1971	30	71.8	1992	0	361	1.5	13.7	31.0	.0	.0	.0
Aug	86.0	63.6	74.8	107	1964	2	81.6	1983	41	1964	12	68.8	1992	11	316	.8	11.0	31.0	.0	.0	.0
Sep	78.9	54.4	66.7	105+	2000	3	71.4	1998	25+	1995	22	61.5	1993	65	114	.1	4.4	29.9	.0	.3	.0
Oct	67.6	42.6	55.1	97	2000	2	59.8	2000	8	1997	27	50.2	1976	313	6	.0	.2	29.2	.1	5.0	.0
Nov	49.5	29.2	39.4	82	1980	6	49.1	1999	-5+	1976	29	30.5	1985	769	0	.0	.0	16.0	2.9	18.9	.2
Dec	37.7	18.5	28.1	71	1995	1	34.7	1979	-25+	1989	23	9.6	1983	1144	0	.0	.0	5.7	10.0	28.9	3.0
Ann	63.2	40.8	52.0	110	Jul 1966	18	82.0	Jul 1974	-25+	Dec 1989	23	9.6	Dec 1983	5811	1106	3.0	38.6	262.5	37.1	133.1	11.5

\+ 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	.62	.53	1.66	1971	3	1.86	1975	.00+	1987
Feb	.60	.44	1.67	1965	11	2.37	1971	.00+	1996
Mar	2.17	1.51	2.96	1987	23	7.12	1987	.03	1994
Apr	2.69	2.35	3.23	1969	4	7.48	1984	.00	1989
May	4.55	4.15	2.96	1996	8	12.19	1996	1.81	1992
Jun	3.71	3.47	5.06	1963	24	9.45	1984	.47	1988
Jul	3.81	3.46	3.38	1980	2	12.35	1993	.07	1983
Aug	3.03	3.05	3.95	1954	1	5.69	1981	.22	1976
Sep	3.33	3.00	4.65	1981	25	10.21	1973	.22	1974
Oct	2.20	2.10	4.35	1973	10	6.52	1973	.00	1988
Nov	1.55	1.27	3.58	1953	19	4.04	1981	.00	1989
Dec	.81	.69	1.80	1984	15	3.35	1984	.03	1976
Ann	29.07	27.98	5.06	Jun 1963	24	12.35	Jul 1993	.00+	Feb 1996

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.2	1.7	.3	@
Feb	4.2	1.7	.2	.1
Mar	6.3	4.0	1.6	.6
Apr	8.2	5.7	1.6	.5
May	11.8	7.7	3.2	1.3
Jun	8.9	5.6	2.6	1.1
Jul	9.0	5.7	2.5	1.1
Aug	8.3	5.1	2.1	.8
Sep	7.9	4.8	2.1	1.0
Oct	6.4	3.7	1.4	.5
Nov	5.2	2.7	1.0	.3
Dec	5.0	2.0	.5	.1
Ann	85.4	50.4	19.1	7.4

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	.00	.19	.30	.40	.51	.64	.79	.98	1.29	1.59
Feb	.00	.05	.14	.24	.34	.45	.58	.75	.97	1.35	1.72
Mar	.10	.22	.47	.76	1.09	1.49	1.98	2.61	3.50	5.03	6.56
Apr	.50	.88	1.33	1.70	2.05	2.42	2.82	3.29	3.91	4.87	5.77
May	1.61	2.04	2.66	3.18	3.68	4.20	4.76	5.41	6.24	7.53	8.72
Jun	.93	1.28	1.82	2.30	2.77	3.27	3.82	4.48	5.34	6.71	7.99
Jul	.54	.86	1.40	1.93	2.49	3.09	3.80	4.66	5.82	7.71	9.53
Aug	.71	.99	1.44	1.83	2.23	2.65	3.12	3.68	4.41	5.58	6.68
Sep	.41	.67	1.14	1.60	2.09	2.64	3.28	4.06	5.13	6.89	8.59
Oct	.05	.19	.47	.78	1.13	1.54	2.03	2.67	3.56	5.07	6.57
Nov	.05	.17	.39	.61	.86	1.14	1.48	1.90	2.48	3.46	4.42
Dec	.09	.15	.26	.37	.49	.63	.79	.99	1.26	1.72	2.16
Ann	17.89	19.93	22.62	24.70	26.58	28.42	30.34	32.49	35.13	39.03	42.45

\+ 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	5.5	4.3	2	2
Feb	4.3	3.0	2	1
Mar	3.9	4.4	1	#
Apr	.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
Oct	.5	.0	#	0
Nov	3.1	1.5	#	#
Dec	4.9	3.4	1	#
Ann	22.8	16.6	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	13.0	1971	3	15.8	1971	16	1984	2	8	1974
Feb	13.5	1971	22	19.0	1971	15	1971	22	8	1978
Mar	13.0	1998	8	13.0	1998	13	1998	8	3	1978
Apr	4.0	1992	21	5.0	1992	5+	1997	10	#+	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	.5	1985	29	.5	1985	1	1985	29	#	1985
Oct	12.0	1997	26	12.0	1997	12	1997	26	1	1997
Nov	12.0	1997	29	12.0	1997	12	1997	29	2	1991
Dec	7.2	1974	14	17.9	1973	16	1983	31	8	1983
Ann	13.5	Feb 1971	22	19.0	Feb 1971	16+	Jan 1984	2	8+	Dec 1983

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.1	1.6	.6	.2	@
Feb	2.8	1.5	.5	.1	@
Mar	1.6	1.2	.5	.3	@
Apr	.6	.3	.1	.0	.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
Oct	.1	.1	@	@	@
Nov	1.6	1.1	.4	.1	@
Dec	3.0	1.8	.6	.2	.0
Ann	12.8	7.6	2.7	.9	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	13.7	7.2	4.4	1.2
Feb	8.3	5.0	2.5	.6
Mar	3.8	1.8	1.1	.1
Apr	.4	.1	@	.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
Oct	.2	.1	.1	.1
Nov	2.9	1.5	.7	.1
Dec	9.0	5.1	2.4	.5
Ann	38.3	20.8	11.2	2.6

+ 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	5/15	5/10	5/07	5/04	5/01	4/29	4/26	4/22	4/17
32	5/08	5/03	4/29	4/26	4/23	4/20	4/16	4/13	4/08
28	4/24	4/19	4/16	4/13	4/11	4/08	4/05	4/02	3/28
24	4/14	4/10	4/07	4/04	4/02	3/31	3/28	3/25	3/21
20	4/10	4/04	3/31	3/27	3/23	3/20	3/16	3/12	3/06
16	4/04	3/27	3/22	3/17	3/13	3/09	3/04	2/27	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	9/14	9/19	9/22	9/25	9/28	10/01	10/04	10/08	10/13
32	9/23	9/28	10/01	10/04	10/07	10/10	10/13	10/17	10/21
28	10/02	10/08	10/12	10/15	10/18	10/21	10/25	10/29	11/03
24	10/15	10/21	10/26	10/29	11/02	11/06	11/09	11/14	11/20
20	10/23	10/30	11/03	11/07	11/11	11/14	11/18	11/23	11/29
16	10/30	11/06	11/12	11/16	11/20	11/24	11/29	12/04	12/11

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	169	162	157	153	149	145	141	136	129
32	185	179	174	170	167	163	159	155	148
28	208	202	197	194	190	186	183	178	172
24	237	229	223	218	213	209	204	198	190
20	261	251	244	238	232	226	220	212	202
16	284	273	265	258	252	245	238	230	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	1254	965	744	389	143	14	0	11	65	313	769	1144	5811
60	1099	832	591	259	67	2	0	1	19	184	620	989	4663
57	1006	753	505	192	37	0	0	0	7	122	535	896	4053
55	946	701	447	154	23	0	0	0	3	89	480	835	3678
50	801	574	315	78	6	0	0	0	0	36	348	691	2849
32	336	223	45	0	0	0	0	0	0	0	60	254	918

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	106	182	324	608	945	1214	1384	1328	1040	715	281	133	8260
55	2	16	13	72	255	524	671	615	352	92	11	2	2625
57	1	12	9	50	207	464	609	553	296	62	6	0	2269
60	0	7	2	27	143	376	516	461	218	31	1	0	1782
65	0	0	0	7	65	237	361	316	114	6	0	0	1106
70	0	0	0	1	21	124	218	188	48	0	0	0	600

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	16	54	169	401	718	991	1155	1092	814	489	126	20	16	70	239	640	1358	2349	3504	4596	5410	5899	6025	6045
45	1	20	93	272	563	841	1000	937	664	349	64	5	1	21	114	386	949	1790	2790	3727	4391	4740	4804	4809
50	0	5	48	169	413	691	845	782	516	225	22	0	0	5	53	222	635	1326	2171	2953	3469	3694	3716	3716
55	0	1	16	92	271	541	690	627	377	124	4	0	0	1	17	109	380	921	1611	2238	2615	2739	2743	2743
60	0	0	4	38	151	395	535	472	248	58	0	0	0	0	4	42	193	588	1123	1595	1843	1901	1901	1901
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	15	49	123	251	443	659	782	735	527	312	84	21	15	64	187	438	881	1540	2322	3057	3584	3896	3980	4001

(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