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: GENEVA, NE **COOP ID: 253175**

Climate Division: NE 9 **NWS Call Sign:** **Elevation: 1,630 Feet** **Lat: 40˚32N** **Lon: 97˚36W**

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	34.0	14.3	24.2	76	1990	10	34.9	1986	-21	1974	12	11.0	1979	1267	0	.0	.0	4.7	12.9	30.0	5.2
Feb	40.3	19.7	30.0	81	1972	29	40.0	1999	-18+	1996	2	15.7	1978	979	0	.0	.0	9.1	8.6	24.5	2.7
Mar	50.9	29.0	40.0	89	1986	28	47.5	1986	-17	1960	4	32.3	1975	777	0	.0	.0	17.6	2.5	19.7	.4
Apr	62.6	40.0	51.3	96	1989	24	58.0	1981	11	1975	3	44.0	1983	416	5	.0	.4	26.8	.1	6.3	.0
May	71.6	51.6	61.6	99+	2000	29	68.0	1998	26	1967	2	55.8	1995	173	67	.0	1.0	31.0	.0	.3	.0
Jun	81.4	61.1	71.3	105	1974	20	76.2	1988	36	1951	4	65.9	1982	20	207	.4	7.2	30.0	.0	.0	.0
Jul	85.6	65.7	75.7	112	1954	11	80.7	1974	39	1950	22	70.3	1992	1	331	1.8	13.2	31.0	.0	.0	.0
Aug	83.7	63.8	73.8	107	1954	4	80.6	1983	39	1950	20	68.9	1992	14	285	.5	10.0	31.0	.0	.0	.0
Sep	76.8	54.2	65.5	103+	2000	2	71.7	1998	25	1984	29	60.5	1993	86	101	.1	4.4	29.8	.0	.3	.0
Oct	65.2	42.4	53.8	94	1963	5	56.9	2000	11	1997	27	48.6	1976	350	3	.0	.2	28.6	.1	4.1	.0
Nov	48.0	28.7	38.4	82	1999	13	49.0	1999	-6	1976	28	29.4	1985	800	0	.0	.0	15.0	3.1	20.3	.2
Dec	36.6	18.6	27.6	74	1964	23	34.0	1979	-26	1989	22	9.2	1983	1160	0	.0	.0	5.4	9.7	29.3	2.7
Ann	61.4	40.8	51.1	112	Jul 1954	11	80.7	Jul 1974	-26	Dec 1989	22	9.2	Dec 1983	6043	999	2.8	36.4	260.0	37.0	134.8	11.2

\+ 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	.62	.50	1.27	1971	3	1.63	1975	.00+	1986
Feb	.59	.49	1.77	1966	8	1.97	1971	.00+	1996
Mar	2.25	1.80	4.22	1987	23	8.84	1987	.00	1994
Apr	2.87	2.57	4.03	1986	27	7.55	1986	.04	1989
May	4.68	4.32	4.55	1965	22	11.90	1996	.86	2000
Jun	4.17	3.80	3.89	1987	28	9.54	1984	.95	1978
Jul	3.71	3.37	4.44	1976	17	11.50	1993	.08	1983
Aug	3.33	3.05	5.90	1954	6	7.81	1977	.57	1976
Sep	3.12	2.60	5.75	1983	29	10.41	1973	.32	1974
Oct	2.13	1.76	4.03	1980	16	6.00	1986	.00+	1999
Nov	1.64	1.13	2.90	1997	30	5.01	1972	.00+	1989
Dec	.65	.61	1.15	1991	12	2.08	1984	.00+	1996
Ann	29.76	28.09	5.90	Aug 1954	6	11.90	May 1996	.00+	Oct 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.8	1.7	.2	.1
Feb	3.3	1.7	.1	.1
Mar	6.3	4.2	1.5	.4
Apr	7.7	5.5	1.9	.6
May	10.1	7.4	3.4	1.4
Jun	7.5	6.0	2.8	1.3
Jul	7.4	5.7	2.5	1.2
Aug	7.1	5.4	2.5	1.1
Sep	6.2	4.8	2.0	.8
Oct	4.9	3.6	1.3	.5
Nov	4.6	2.7	.9	.3
Dec	3.7	1.7	.3	@
Ann	72.6	50.4	19.4	7.8

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	.11	.21	.32	.44	.59	.77	1.02	1.45	1.87
Feb	.00	.03	.10	.19	.29	.40	.55	.72	.97	1.40	1.83
Mar	.08	.26	.58	.90	1.26	1.67	2.15	2.76	3.60	5.01	6.39
Apr	.44	.69	1.10	1.50	1.91	2.36	2.88	3.51	4.36	5.73	7.06
May	1.24	1.68	2.36	2.95	3.54	4.15	4.84	5.65	6.70	8.36	9.92
Jun	.92	1.30	1.91	2.46	3.02	3.60	4.27	5.06	6.10	7.77	9.34
Jul	.59	.91	1.45	1.96	2.49	3.06	3.72	4.52	5.60	7.34	9.01
Aug	1.05	1.36	1.83	2.23	2.62	3.02	3.46	3.98	4.64	5.68	6.64
Sep	.33	.56	.99	1.42	1.89	2.42	3.03	3.81	4.86	6.61	8.31
Oct	.00	.22	.59	.93	1.28	1.67	2.12	2.65	3.40	4.62	5.80
Nov	.00	.09	.32	.57	.84	1.15	1.53	2.01	2.68	3.81	4.93
Dec	.00	.05	.15	.25	.36	.48	.63	.81	1.06	1.47	1.88
Ann	18.87	20.88	23.52	25.55	27.38	29.16	31.03	33.11	35.65	39.39	42.67

\+ 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	6.2	5.5	2	1
Feb	5.9	5.0	2	#
Mar	5.4	4.5	1	#
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	.1	.0	#	0
Oct	.1	.0	#	0
Nov	2.8	.3	#	#
Dec	5.0	4.3	1	#
Ann	26.7	19.6	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	12.0	1971	3	14.0	1971	18	1993	21	11	1993
Feb	12.0	1971	22	17.0+	1997	15	1978	13	15	1978
Mar	12.0	1976	30	18.5	1976	15	1987	29	2	1998
Apr	8.0	1971	1	8.0	1971	10	1987	1	1+	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	4.0	1985	29	4.0	1985	4	1985	29	#	1985
Oct	2.0	1991	31	2.0	1991	15	1997	26	1	1997
Nov	9.0	1972	13	14.0	1983	10	1983	28	2	1991
Dec	8.0	1974	14	11.5+	1974	16	1983	30	11	1983
Ann	12.0+	Mar 1976	30	18.5	Mar 1976	18	Jan 1993	21	15	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.1	1.7	.6	.2	@
Feb	2.1	1.7	.5	.3	.1
Mar	1.6	1.3	.7	.4	@
Apr	.4	.4	.3	.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
Oct	.1	.1	.0	.0	.0
Nov	.8	.7	.3	.1	.0
Dec	1.5	1.2	.4	.2	.0
Ann	8.6	7.1	2.8	1.3	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	9.6	5.6	3.1	.3
Feb	7.8	5.8	4.5	1.2
Mar	3.3	2.1	1.2	.2
Apr	.6	.4	.2	@
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	@	@	.0	.0
Oct	@	.0	.0	.0
Nov	1.7	1.4	.7	.1
Dec	6.2	3.7	2.4	.6
Ann	29.2	19.0	12.1	2.4

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

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	9/16	9/21	9/24	9/27	9/29	10/02	10/04	10/08	10/12
32	9/26	10/01	10/05	10/08	10/11	10/14	10/17	10/21	10/26
28	10/06	10/11	10/15	10/18	10/21	10/24	10/27	10/31	11/05
24	10/17	10/23	10/27	10/30	11/03	11/06	11/09	11/13	11/19
20	10/21	10/28	11/02	11/07	11/11	11/15	11/20	11/25	12/02
16	11/02	11/09	11/13	11/17	11/21	11/25	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	154	150	146	142	137	131
32	189	182	178	174	171	167	163	159	153
28	213	206	201	197	193	189	185	180	173
24	234	227	222	218	214	210	205	200	193
20	263	253	246	239	234	228	221	214	204
16	284	273	266	259	253	247	240	233	222

***** 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	1267	979	777	416	173	20	1	14	86	350	800	1160	6043
60	1112	846	622	281	91	4	0	2	31	213	650	1005	4857
57	1019	768	533	210	56	1	0	0	13	144	564	912	4220
55	959	715	476	168	38	0	0	0	7	107	508	850	3828
50	811	588	338	85	12	0	0	0	0	44	374	704	2956
32	344	233	50	0	0	0	0	0	0	0	69	255	951

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	100	178	297	579	917	1177	1353	1294	1005	676	259	118	7953
55	2	16	10	57	242	488	640	581	321	70	9	0	2436
57	1	12	5	39	198	428	578	519	268	45	4	0	2097
60	0	6	0	20	140	341	485	428	195	21	0	0	1636
65	0	0	0	5	67	207	331	285	101	3	0	0	999
70	0	0	0	1	25	102	191	163	42	0	0	0	524

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	12	52	157	391	708	977	1143	1083	797	469	115	19	12	64	221	612	1320	2297	3440	4523	5320	5789	5904	5923
45	1	18	86	260	553	827	988	928	647	327	56	4	1	19	105	365	918	1745	2733	3661	4308	4635	4691	4695
50	0	4	41	153	402	677	833	773	500	207	20	0	0	4	45	198	600	1277	2110	2883	3383	3590	3610	3610
55	0	0	9	79	262	527	678	618	361	107	7	0	0	0	9	88	350	877	1555	2173	2534	2641	2648	2648
60	0	0	3	35	146	379	523	463	237	46	0	0	0	0	3	38	184	563	1086	1549	1786	1832	1832	1832
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	14	45	112	246	435	649	769	730	509	288	82	18	14	59	171	417	852	1501	2270	3000	3509	3797	3879	3897

(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