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: MERRIMAN, NE **COOP ID: 255470**

Climate Division: NE 2 **NWS Call Sign:** **Elevation: 3,250 Feet** **Lat: 42˚55N** **Lon: 101˚42W**

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	33.3	11.4	22.4	69	1987	13	31.8	1990	-31	1950	26	5.0	1979	1323	0	.0	.0	4.1	12.6	30.1	7.6
Feb	39.6	16.3	28.0	75+	1982	22	38.6	1999	-32	1996	2	13.4	1978	1038	0	.0	.0	8.0	8.2	26.3	4.4
Mar	48.1	24.2	36.2	84	1986	29	43.4	1986	-21+	1998	11	28.5	1996	893	0	.0	.0	15.2	4.5	25.3	1.3
Apr	58.7	33.9	46.3	95	1980	22	54.1	1981	3	1959	12	40.3	1997	561	1	.0	.2	22.4	.7	13.8	.0
May	70.1	44.8	57.5	101	1969	27	63.3	1977	14	1954	3	51.5	1995	261	27	.0	1.0	29.6	.0	2.5	.0
Jun	80.4	53.7	67.1	109	1988	25	74.7	1988	32+	1989	15	61.6	1982	70	131	.5	5.8	29.8	.0	.1	.0
Jul	87.5	59.3	73.4	110	1964	22	78.4	1974	37	1952	8	66.1	1992	12	272	2.7	13.3	31.0	.0	.0	.0
Aug	86.4	57.4	71.9	109	1965	13	77.1	1983	33	1988	28	67.0	1992	24	237	1.6	12.5	31.0	.0	.0	.0
Sep	77.3	46.9	62.1	105	1998	5	69.9	1998	18	1984	29	56.7	1985	163	77	.5	5.9	29.3	.0	2.1	.0
Oct	63.9	35.0	49.5	98	1967	3	51.7	1974	-1	1991	31	45.7	1976	482	0	.0	.5	26.3	.4	11.8	@
Nov	45.6	22.4	34.0	84	1999	9	46.4	1999	-23	1959	14	19.0	1985	930	0	.0	.0	12.2	5.5	24.9	1.2
Dec	36.4	14.3	25.4	70	1998	2	34.1	1999	-36	1989	22	8.2	1983	1229	0	.0	.0	5.8	10.6	29.7	5.0
Ann	60.6	35.0	47.8	110	Jul 1964	22	78.4	Jul 1974	-36	Dec 1989	22	5.0	Jan 1979	6986	745	5.3	39.2	244.7	42.5	166.6	19.5

\+ 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	.35	.27	.88	1992	8	.88	1992	.01	1987
Feb	.46	.38	.78	1951	27	1.79	1987	.02	1983
Mar	1.01	.90	1.62	2000	8	3.61	1977	.17	1997
Apr	1.93	1.52	2.45	1971	19	5.56	1971	.10	1992
May	2.98	2.60	2.66	1991	16	6.31	1982	.95	1974
Jun	3.27	3.26	2.98	1998	14	6.57	1998	.47	1989
Jul	2.86	2.73	3.80	1983	30	8.31	1983	.25	1974
Aug	1.89	1.62	4.20	1998	12	4.79	1998	.25	2000
Sep	1.59	1.42	2.97	1996	18	5.37	1996	.12	1975
Oct	1.22	1.21	1.45+	2000	29	4.29	1998	.00	1999
Nov	.68	.49	1.33	1993	13	1.93	1998	.01	1981
Dec	.31	.22	.80	1955	3	1.30	1987	.00+	1991
Ann	18.55	18.17	4.20	Aug 1998	12	8.31	Jul 1983	.00+	Oct 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.5	1.1	@	.0
Feb	3.9	1.5	.1	.0
Mar	6.1	3.0	.5	.1
Apr	8.1	4.7	1.1	.2
May	9.7	6.4	1.8	.7
Jun	9.2	6.1	2.4	.8
Jul	8.8	5.4	1.9	.6
Aug	6.8	4.0	1.0	.3
Sep	5.6	3.3	1.0	.2
Oct	4.9	3.0	.9	.2
Nov	4.1	2.1	.3	@
Dec	3.6	1.1	@	.0
Ann	74.3	41.7	11.0	3.1

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	.03	.05	.10	.15	.20	.26	.33	.43	.55	.76	.97
Feb	.03	.06	.12	.19	.26	.34	.44	.56	.73	1.02	1.31
Mar	.18	.27	.42	.56	.70	.85	1.03	1.23	1.51	1.96	2.39
Apr	.31	.48	.76	1.03	1.30	1.60	1.94	2.36	2.91	3.82	4.69
May	.89	1.18	1.60	1.97	2.32	2.69	3.10	3.58	4.20	5.17	6.06
Jun	.87	1.18	1.65	2.07	2.48	2.90	3.38	3.94	4.68	5.83	6.90
Jul	.67	.93	1.35	1.72	2.10	2.49	2.94	3.47	4.16	5.26	6.30
Aug	.39	.56	.84	1.09	1.35	1.62	1.93	2.29	2.78	3.56	4.29
Sep	.18	.30	.52	.74	.98	1.24	1.55	1.94	2.46	3.33	4.18
Oct	.07	.18	.37	.55	.74	.95	1.20	1.51	1.92	2.61	3.27
Nov	.05	.10	.18	.28	.38	.50	.64	.82	1.07	1.49	1.91
Dec	.00	.05	.11	.16	.21	.26	.32	.39	.48	.62	.76
Ann	11.42	12.72	14.43	15.76	16.96	18.13	19.36	20.73	22.42	24.90	27.08

\+ 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

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	4.3	3.1	3	2
Feb	4.7	3.5	2	2
Mar	7.6	5.1	1	1
Apr	4.5	3.8	#	#
May	.2	.0	#	0
Jun	.0	.0	#	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.3	.0	#	0
Oct	2.3	1.5	#	#
Nov	6.3	4.0	1	1
Dec	4.4	3.2	2	2
Ann	34.6	24.2	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	9.0	1992	8	13.6	1982	13	1986	9	10	1986
Feb	7.0	1980	15	15.4	1987	11+	1987	28	9	1993
Mar	14.0	1977	12	43.5	1977	18	1977	12	4	1998
Apr	9.0	1984	3	22.5	1995	12	1975	1	3	1995
May	2.0	1979	9	4.0	1979	2	1979	10	#+	1991
Jun	.0	0	0	.0	0	#	1998	14	#	1998
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	5.5	1985	3	1985	29	#+	1995
Oct	9.0	1982	19	10.5	1982	7	1979	30	1	1997
Nov	10.0	1993	13	24.8	1985	14+	1998	7	7	1998
Dec	8.0	1987	27	15.0	1987	14+	1987	29	13	1985
Ann	14.0	Mar 1977	12	43.5	Mar 1977	18	Mar 1977	12	13	Dec 1985

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.3	1.7	.4	.1	.0
Feb	3.4	2.1	.5	.1	.0
Mar	4.0	2.3	.9	.3	.1
Apr	2.2	1.5	.6	.2	.0
May	.2	.1	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.2	.1	@	.0	.0
Oct	1.0	.7	.4	.1	.0
Nov	3.3	2.2	.9	.4	@
Dec	3.1	1.9	.4	.1	.0
Ann	20.7	12.6	4.1	1.3	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	14.6	8.1	5.1	1.6
Feb	11.1	5.7	2.8	.5
Mar	6.3	3.1	1.7	.4
Apr	2.4	1.4	.8	.2
May	.1	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.1	@	.0	.0
Oct	1.1	.7	.1	.0
Nov	7.7	5.0	2.8	.4
Dec	13.4	6.5	3.8	1.8
Ann	56.8	30.5	17.1	4.9

+ 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	6/11	6/04	5/30	5/26	5/22	5/18	5/14	5/09	5/02
32	5/25	5/20	5/16	5/13	5/10	5/07	5/04	4/30	4/25
28	5/15	5/11	5/07	5/05	5/02	4/29	4/27	4/23	4/19
24	5/01	4/27	4/24	4/22	4/20	4/17	4/15	4/12	4/08
20	4/29	4/22	4/17	4/13	4/09	4/05	4/01	3/27	3/21
16	4/13	4/08	4/04	3/31	3/28	3/25	3/21	3/17	3/12

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	9/06	9/10	9/13	9/15	9/17	9/20	9/22	9/25	9/29
32	9/09	9/14	9/18	9/21	9/24	9/27	9/30	10/03	10/08
28	9/18	9/23	9/27	10/01	10/04	10/07	10/10	10/14	10/20
24	9/27	10/02	10/07	10/10	10/13	10/17	10/20	10/24	10/30
20	10/07	10/13	10/17	10/20	10/23	10/27	10/30	11/03	11/08
16	10/20	10/25	10/28	10/31	11/02	11/05	11/08	11/11	11/16

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	141	133	127	122	118	113	108	102	94
32	159	151	145	140	136	131	126	121	113
28	177	169	163	159	154	150	145	139	132
24	198	191	185	180	176	172	167	161	154
20	223	214	208	202	196	191	185	179	169
16	239	232	227	223	219	215	211	206	199

***** 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	1323	1038	893	561	261	70	12	24	163	482	930	1229	6986
60	1168	898	738	416	153	25	1	6	83	329	780	1074	5671
57	1075	821	645	334	102	11	0	2	49	241	698	981	4959
55	1014	769	584	282	75	6	0	1	32	187	642	920	4512
50	867	638	438	171	29	0	0	0	9	82	504	774	3512
32	391	259	74	4	0	0	0	0	0	1	151	315	1195

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	91	145	204	433	789	1051	1283	1236	903	542	210	109	6996
55	1	11	1	22	151	366	570	524	245	15	11	2	1919
57	0	7	0	13	116	312	508	463	202	7	7	0	1635
60	0	0	0	6	73	235	416	374	146	2	0	0	1252
65	0	0	0	1	27	131	272	237	77	0	0	0	745
70	0	0	0	0	7	59	151	128	33	0	0	0	378

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	8	35	98	250	550	813	1040	997	673	337	76	19	8	43	141	391	941	1754	2794	3791	4464	4801	4877	4896
45	0	8	48	153	403	663	885	842	529	216	35	1	0	8	56	209	612	1275	2160	3002	3531	3747	3782	3783
50	0	0	18	87	265	513	730	687	391	120	13	0	0	0	18	105	370	883	1613	2300	2691	2811	2824	2824
55	0	0	4	40	160	374	576	533	266	59	2	0	0	0	4	44	204	578	1154	1687	1953	2012	2014	2014
60	0	0	0	13	78	242	423	384	163	21	0	0	0	0	0	13	91	333	756	1140	1303	1324	1324	1324
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	6	35	91	180	340	514	667	640	434	247	68	21	6	41	132	312	652	1166	1833	2473	2907	3154	3222	3243

(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