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: FALLS CITY 2 NE, NE **COOP ID: 252850**

Climate Division: NE 9 **NWS Call Sign: FNB** **Elevation: 980 Feet** **Lat: 40˚05N** **Lon: 95˚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	34.5	13.7	24.1	71	1981	24	34.6	1989	-20	1974	12	10.5	1979	1268	0	.0	.0	4.5	12.9	29.7	4.9
Feb	41.7	18.7	30.2	80	1972	29	40.9	1976	-18+	1996	3	16.1	1979	974	0	.0	.0	8.8	8.2	24.5	2.6
Mar	53.6	28.6	41.1	90	1986	30	46.7	1977	-17	1998	12	34.2	1998	740	0	.0	@	18.3	2.1	19.2	.4
Apr	65.7	39.6	52.7	96+	1989	27	60.8	1981	8	1975	3	46.7	1983	381	10	.0	.4	26.6	@	6.5	.0
May	76.7	51.3	64.0	101	2000	12	69.6	1977	29	1976	3	57.2	1995	129	98	@	1.5	30.9	.0	.1	.0
Jun	86.9	60.9	73.9	107	1980	27	79.1	1971	39	1990	4	68.1	1982	10	277	.4	10.0	30.0	.0	.0	.0
Jul	91.6	65.1	78.4	109+	1980	15	85.6	1980	41	1971	30	73.3	1992	0	413	2.8	16.8	31.0	.0	.0	.0
Aug	89.3	62.2	75.8	109	1983	18	83.5	1983	41	1988	28	69.5	1992	8	340	1.7	13.7	31.0	.0	.0	.0
Sep	81.0	53.1	67.1	104	1975	1	72.4	1998	25+	1995	22	60.0	1993	73	135	.3	5.4	29.9	.0	.4	.0
Oct	68.5	41.5	55.0	96	1997	4	60.1	1971	12	1993	31	49.3	1987	319	9	.0	.4	29.1	.0	5.1	.0
Nov	51.1	28.8	40.0	83	1999	14	48.8	1999	-4	1991	8	32.0	1991	752	0	.0	.0	16.7	2.1	19.0	.2
Dec	38.3	18.1	28.2	75	1964	23	34.1	1979	-29	1989	23	10.2	1983	1141	0	.0	.0	6.3	9.1	28.6	2.9
Ann	64.9	40.1	52.5	109+	Aug 1983	18	85.6	Jul 1980	-29	Dec 1989	23	10.2	Dec 1983	5795	1282	5.2	48.2	263.1	34.4	133.1	11.0

\+ 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: 1948-2000

(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	.87	.81	1.46+	1989	29	2.25	1989	.00	1986
Feb	.95	.78	1.69	1973	1	3.17	1973	.02	1991
Mar	2.45	2.25	2.45	1992	18	7.04	1992	.37	1988
Apr	3.18	2.66	2.88	1974	20	7.94	1984	.66	1989
May	4.33	4.21	4.01	1970	23	9.95	1995	.59	1992
Jun	3.83	3.77	6.00	1949	2	8.22	1984	.26	1988
Jul	5.23	3.40	7.05	1992	13	25.29	1993	.01	1983
Aug	4.30	3.40	6.41	1986	13	10.29	1986	.48	1971
Sep	3.98	2.87	4.16	1959	26	9.63	1973	.39	1990
Oct	2.59	2.56	3.89	1979	22	6.16	1973	.00	1975
Nov	2.34	2.09	2.82	1987	1	4.95	1987	.00	1989
Dec	1.03	.90	1.68	1980	7	2.75	1973	.04+	1996
Ann	35.08	32.34	7.05	Jul 1992	13	25.29	Jul 1993	.00+	Nov 1989

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.4	2.7	.3	.1
Feb	6.1	2.7	.4	.1
Mar	8.4	4.5	1.8	.5
Apr	9.8	5.8	2.1	.8
May	11.0	7.5	3.2	1.3
Jun	9.1	6.0	2.6	1.2
Jul	9.2	6.3	3.6	1.7
Aug	8.6	5.7	2.4	1.2
Sep	8.3	5.5	2.6	1.4
Oct	7.1	4.3	1.5	.7
Nov	7.1	4.3	1.5	.5
Dec	6.4	2.5	.5	.1
Ann	96.5	57.8	22.5	9.6

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	.08	.17	.32	.44	.57	.71	.87	1.07	1.33	1.75	2.16
Feb	.08	.15	.28	.41	.55	.71	.91	1.15	1.49	2.05	2.59
Mar	.36	.57	.92	1.26	1.61	2.00	2.44	2.99	3.72	4.91	6.05
Apr	.92	1.22	1.67	2.07	2.45	2.86	3.30	3.82	4.50	5.57	6.55
May	1.29	1.71	2.32	2.85	3.37	3.90	4.49	5.19	6.09	7.49	8.80
Jun	.90	1.26	1.82	2.32	2.82	3.35	3.94	4.64	5.57	7.04	8.42
Jul	.30	.60	1.24	1.94	2.75	3.70	4.84	6.32	8.38	11.90	15.40
Aug	.56	.91	1.52	2.12	2.75	3.45	4.26	5.25	6.60	8.82	10.95
Sep	.91	1.28	1.87	2.39	2.91	3.46	4.08	4.83	5.80	7.35	8.81
Oct	.15	.40	.80	1.18	1.59	2.03	2.55	3.19	4.06	5.50	6.88
Nov	.19	.44	.82	1.17	1.52	1.91	2.35	2.89	3.61	4.79	5.92
Dec	.09	.17	.30	.45	.60	.78	.99	1.26	1.62	2.23	2.82
Ann	20.23	22.87	26.38	29.13	31.63	34.09	36.68	39.58	43.18	48.50	53.20

\+ 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: 1948-2000
(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	6.0	6.0	2	1
Feb	5.3	4.0	2	1
Mar	3.5	2.5	#	0
Apr	.9	.0	#	0
May	.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	.0	#	0
Nov	1.4	.1	#	0
Dec	3.9	2.8	1	0
Ann	21.2	15.4	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	1979	13	16.9	1979	16	1984	1	9	1979
Feb	12.0	1978	13	17.0	1978	16+	1978	21	10	1979
Mar	8.0	1984	12	15.4	1984	15+	1978	4	5	1978
Apr	8.0	1992	21	9.0	1997	9	1997	12	1	1997
May	.0	0	0	.0	0	0	0	0	#	1996
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	5.0	1996	23	5.0	1996	3	1996	23	#	1996
Nov	5.0	1975	26	7.0	1983	6	1975	26	1+	1991
Dec	6.0	1983	21	16.5	1983	16+	1983	31	6	1983
Ann	12.0	Feb 1978	13	17.0	Feb 1978	16+	Jan 1984	1	10	Feb 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.0	2.0	.8	.3	@
Feb	2.4	1.9	.6	.2	@
Mar	1.3	1.2	.4	.2	.0
Apr	.3	.3	.2	@	.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	.0
Oct	.0	.0	@	@	.0
Nov	.9	.5	.2	@	.0
Dec	2.5	1.7	.5	@	.0
Ann	10.4	7.6	2.7	.7	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	13.3	8.9	4.7	.9
Feb	10.4	7.0	3.4	1.5
Mar	3.5	1.9	1.2	.4
Apr	.4	.3	.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	@	@	.0	.0
Nov	1.6	.8	.2	.0
Dec	6.4	2.8	1.0	.4
Ann	35.6	21.7	10.7	3.2

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

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

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	169	164	159	155	151	146	141	134
32	196	188	183	178	173	168	163	158	150
28	223	213	206	200	195	189	183	176	167
24	242	233	227	222	217	212	207	200	192
20	265	255	248	242	236	231	225	217	207
16	291	280	273	267	261	255	249	242	232

***** 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	1268	974	740	381	129	10	0	8	73	319	752	1141	5795
60	1113	839	586	254	62	1	0	1	26	192	602	986	4662
57	1020	760	500	189	35	0	0	0	12	129	517	893	4055
55	960	708	442	151	23	0	0	0	6	96	462	832	3680
50	811	580	308	76	7	0	0	0	0	39	331	688	2840
32	342	224	41	0	0	0	0	0	0	0	52	251	910

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	97	174	324	619	992	1256	1436	1355	1052	713	290	133	8441
55	1	14	12	80	302	566	723	642	368	95	11	2	2816
57	0	10	8	58	252	506	661	580	314	67	6	0	2462
60	0	5	1	33	186	418	568	488	238	37	1	0	1975
65	0	0	0	10	98	277	413	340	135	9	0	0	1282
70	0	0	0	2	41	156	270	208	64	1	0	0	742

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	11	54	176	412	744	1010	1173	1104	813	490	139	25	11	65	241	653	1397	2407	3580	4684	5497	5987	6126	6151
45	0	22	98	283	590	860	1018	949	665	349	73	6	0	22	120	403	993	1853	2871	3820	4485	4834	4907	4913
50	0	8	51	177	438	710	863	794	521	229	33	2	0	8	59	236	674	1384	2247	3041	3562	3791	3824	3826
55	0	1	22	100	296	561	708	639	381	129	11	0	0	1	23	123	419	980	1688	2327	2708	2837	2848	2848
60	0	0	4	50	174	414	554	484	254	59	2	0	0	0	4	54	228	642	1196	1680	1934	1993	1995	1995
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	13	49	129	263	467	669	785	731	530	310	96	25	13	62	191	454	921	1590	2375	3106	3636	3946	4042	4067

(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