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: STEELVILLE 2 N, MO **COOP ID: 238043**

Climate Division: MO 5 **NWS Call Sign:** **Elevation: 700 Feet** **Lat: 38˚00N** **Lon: 91˚22W**

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	40.6	16.2	28.4	77	1965	7	37.4	1990	-31	1977	17	14.2	1977	1136	0	.0	.0	8.5	8.8	28.1	3.9
Feb	47.2	20.4	33.8	87	1962	13	42.0	2000	-22	1982	10	22.1	1978	873	0	.0	.0	11.6	4.8	23.8	2.3
Mar	57.7	28.9	43.3	89	1985	29	50.5	1974	-15	1974	24	36.4	1996	672	0	.0	.0	22.0	1.0	19.5	.3
Apr	68.8	38.1	53.5	98	1965	23	60.9	1981	13+	1989	11	47.7	1997	356	10	.0	.5	28.0	.0	10.3	.0
May	77.1	47.4	62.3	94	1996	25	68.9	1991	22+	1976	4	56.9	1997	159	73	.0	1.4	30.9	.0	2.2	.0
Jun	84.5	57.2	70.9	102	1988	26	76.0	1971	32	1984	1	67.1	1974	17	192	.1	6.9	30.0	.0	@	.0
Jul	89.5	62.1	75.8	111+	1980	31	81.7	1980	41	1962	27	71.8	1996	0	335	1.3	16.7	31.0	.0	.0	.0
Aug	88.2	60.0	74.1	110	1980	1	79.3	1983	37	1986	29	68.6	1992	9	292	1.2	12.9	31.0	.0	.0	.0
Sep	80.2	51.4	65.8	100	1984	2	71.0	1998	24	1995	23	60.6	1974	88	111	@	4.5	30.0	.0	1.1	.0
Oct	70.0	39.1	54.6	93+	1963	11	62.0	1971	13	1981	24	48.6	1976	337	14	.0	.2	30.1	.0	9.9	.0
Nov	56.3	29.5	42.9	85	1989	12	48.8	1999	-3	1976	30	34.9	1976	663	0	.0	.0	20.0	.6	19.0	.1
Dec	44.4	20.5	32.5	76+	2001	4	41.6	1971	-29	1989	23	18.7	1983	1009	0	.0	.0	11.1	5.6	26.2	1.7
Ann	67.0	39.2	53.2	111+	Jul 1980	31	81.7	Jul 1980	-31	Jan 1977	17	14.2	Jan 1977	5319	1027	2.6	43.1	284.2	20.8	140.1	8.3

\+ 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	2.09	1.57	2.47	1982	31	5.82	1995	.00	1986
Feb	2.29	1.82	2.20	1986	3	5.26	1985	.36	1983
Mar	3.51	3.28	2.65	1998	20	7.53	1998	1.09	1986
Apr	4.19	3.99	3.92	1994	11	14.13	1994	.51	1977
May	4.42	4.02	2.96	1950	10	10.06	1995	1.48	1972
Jun	3.90	3.39	3.83	1993	25	10.65	1985	.00	1980
Jul	3.85	3.37	3.30	1979	28	10.38	1981	.28	1974
Aug	3.62	3.34	6.47	1999	7	8.27	1982	.15	1998
Sep	3.57	3.31	3.49	2001	8	16.24	1993	.26	1979
Oct	3.33	3.05	3.63	1983	20	7.42	1983	1.02	1971
Nov	3.95	3.28	3.55	1993	14	11.24	1985	.61	1999
Dec	2.85	2.43	4.42	1982	3	9.99	1982	.00	2000
Ann	41.57	40.47	6.47	Aug 1999	7	16.24	Sep 1993	.00+	Dec 2000

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.2	4.5	1.2	.5
Feb	5.1	4.4	1.8	.5
Mar	7.8	7.0	2.6	.8
Apr	8.4	7.0	3.0	1.1
May	8.5	7.6	3.1	1.4
Jun	6.9	6.1	2.7	1.0
Jul	6.2	5.8	2.7	1.3
Aug	5.7	5.0	2.2	1.3
Sep	6.0	5.1	2.4	1.1
Oct	6.4	5.9	2.4	1.1
Nov	7.2	6.7	2.9	1.1
Dec	5.5	4.9	1.9	.9
Ann	78.9	70.0	28.9	12.1

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	.16	.39	.72	1.03	1.35	1.70	2.10	2.58	3.24	4.31	5.34
Feb	.58	.79	1.13	1.42	1.71	2.02	2.36	2.77	3.30	4.13	4.92
Mar	1.38	1.71	2.17	2.55	2.91	3.28	3.67	4.13	4.71	5.60	6.41
Apr	.92	1.31	1.93	2.48	3.04	3.63	4.29	5.09	6.14	7.81	9.39
May	1.49	1.91	2.53	3.04	3.54	4.06	4.62	5.27	6.11	7.41	8.61
Jun	.43	.91	1.56	2.12	2.69	3.30	3.99	4.81	5.91	7.66	9.33
Jul	.84	1.19	1.76	2.27	2.78	3.33	3.94	4.68	5.65	7.19	8.66
Aug	.66	.98	1.51	2.01	2.51	3.05	3.67	4.41	5.40	7.00	8.52
Sep	.61	.92	1.44	1.93	2.43	2.98	3.60	4.36	5.37	7.00	8.56
Oct	1.12	1.44	1.90	2.29	2.66	3.05	3.47	3.96	4.59	5.57	6.47
Nov	.86	1.23	1.81	2.33	2.86	3.42	4.05	4.80	5.80	7.38	8.88
Dec	.22	.52	.98	1.40	1.83	2.31	2.85	3.52	4.42	5.89	7.30
Ann	26.29	29.12	32.81	35.66	38.23	40.74	43.35	46.27	49.85	55.11	59.71

+ 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	5.4	3.0	1	#
Feb	3.4	1.0	1	#
Mar	2.1	1.0	#	#
Apr	.1	.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	0
Oct	#	.0	#	0
Nov	.8	.0	#	0
Dec	3.2	.0	#	#
Ann	15.0	5.0	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	1982	31	20.0	1977	12	1982	31	6	1977
Feb	7.0	1975	25	13.0	1993	13	1982	9	7	1982
Mar	10.0	1989	6	11.0	1989	11	1989	7	2	1978
Apr	2.0	1982	8	2.0	1982	3	1971	6	#+	1993
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	.0	0	0	.0	0	0	0	0	0	0
Oct	#	1993	30	#	1993	#	1993	30	#	1993
Nov	6.0	1980	27	7.0	1980	12	1975	27	1	1980
Dec	12.0	1973	19	29.0	1973	12	1973	20	2	1989
Ann	12.0+	Jan 1982	31	29.0	Dec 1973	13	Feb 1982	9	7	Feb 1982

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.0	2.0	.6	.3	@
Feb	1.1	1.0	.6	.2	.0
Mar	.8	.8	.3	.1	@
Apr	.1	.1	.0	.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	.0
Oct	.0	.0	.0	.0	.0
Nov	.3	.3	.1	@	.0
Dec	.9	.9	.4	.2	.1
Ann	5.2	5.1	2.0	.8	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	6.2	3.2	1.8	.0
Feb	4.4	3.5	2.4	.6
Mar	1.3	.7	.5	.1
Apr	@	.0	.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	.0
Oct	.0	.0	.0	.0
Nov	.6	.2	.1	.0
Dec	3.3	1.9	.6	.1
Ann	15.8	9.5	5.4	.8

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

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	155	147	142	137	132	128	123	117	109
32	167	161	156	151	147	144	139	134	127
28	191	183	177	173	168	164	159	154	146
24	217	209	203	198	193	188	183	178	169
20	241	233	228	223	219	215	211	205	198
16	262	255	249	245	241	236	232	226	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.

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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	1136	873	672	356	159	17	0	9	88	337	663	1009	5319
60	981	733	519	229	81	3	0	1	35	212	514	854	4162
57	888	652	433	166	48	1	0	0	17	150	431	766	3552
55	826	600	377	130	32	0	0	0	10	115	375	708	3173
50	680	470	250	60	10	0	0	0	2	51	249	565	2337
32	235	127	21	0	0	0	0	0	0	0	21	177	581

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	122	178	372	643	937	1165	1358	1306	1013	700	348	191	8333
55	0	6	15	84	257	475	645	593	333	102	12	9	2531
57	0	3	10	60	211	416	583	531	280	75	7	5	2181
60	0	0	2	33	150	328	490	439	208	44	1	0	1695
65	0	0	0	10	73	192	335	292	111	14	0	0	1027
70	0	0	0	2	26	86	191	164	47	3	0	0	519

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	31	78	203	423	699	933	1116	1066	780	466	186	54	31	109	312	735	1434	2367	3483	4549	5329	5795	5981	6035
45	7	42	119	294	546	783	961	911	630	329	111	25	7	49	168	462	1008	1791	2752	3663	4293	4622	4733	4758
50	2	15	65	187	393	633	806	756	484	213	61	8	2	17	82	269	662	1295	2101	2857	3341	3554	3615	3623
55	0	6	34	108	261	483	651	601	348	117	26	1	0	6	40	148	409	892	1543	2144	2492	2609	2635	2636
60	0	1	11	53	146	338	496	447	225	54	5	0	0	1	12	65	211	549	1045	1492	1717	1771	1776	1776
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	38	81	169	304	465	617	736	702	517	332	147	52	38	119	288	592	1057	1674	2410	3112	3629	3961	4108	4160

(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