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: PORTAGEVILLE, MO **COOP ID: 236804**

Climate Division: MO 6 **NWS Call Sign:** **Elevation: 280 Feet** **Lat: 36˚25N** **Lon: 89˚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	41.6	25.4	33.5	73+	1972	25	42.7	1989	-15	1982	17	19.5	1977	977	0	.0	.0	8.2	6.8	22.5	.7
Feb	47.6	29.5	38.6	76+	1996	28	46.0	1990	-3+	1996	3	23.6	1978	740	0	.0	.0	13.0	4.2	16.7	.1
Mar	57.7	39.5	48.6	84	1986	31	54.3	1976	11+	1980	2	42.2	1975	511	1	.0	.0	23.3	.6	8.2	.0
Apr	68.4	48.4	58.4	92	1987	28	64.5	1981	28	1973	11	51.9	1983	225	26	.0	.1	28.8	.0	1.0	.0
May	77.9	58.0	68.0	96	1996	25	73.9	1987	37+	1976	4	63.4	1976	63	154	.0	1.9	31.0	.0	.0	.0
Jun	86.6	66.5	76.6	105	1980	7	79.3	1971	47+	1978	11	71.9	1974	1	348	.2	11.6	30.0	.0	.0	.0
Jul	90.2	70.2	80.2	106+	1980	17	85.5	1980	52+	1972	6	77.7	1984	0	472	1.0	18.7	31.0	.0	.0	.0
Aug	88.0	67.8	77.9	102	1987	4	82.9	1983	47	1986	29	72.8	1992	1	400	.3	13.0	31.0	.0	.0	.0
Sep	81.5	60.2	70.9	100	1990	6	76.9	1998	37	1967	29	64.6	1974	29	204	@	5.0	30.0	.0	.0	.0
Oct	71.8	48.3	60.1	91+	1998	1	66.3	1971	25	1981	24	54.3	1976	196	42	.0	.2	30.7	.0	1.0	.0
Nov	57.6	39.2	48.4	83+	1987	5	54.7	1999	13+	1976	29	39.3	1976	500	2	.0	.0	22.3	.1	7.3	.0
Dec	46.4	29.9	38.2	77	1982	3	46.5	1984	-9+	1989	23	27.5	2000	831	0	.0	.0	12.3	3.5	18.6	.3
Ann	67.9	48.6	58.3	106+	Jul 1980	17	85.5	Jul 1980	-15	Jan 1982	17	19.5	Jan 1977	4074	1649	1.5	50.5	291.6	15.2	75.3	1.1

\+ 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: 1965-2001

(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	3.12	2.73	7.20	1966	2	6.16	1982	.57	1986
Feb	3.56	2.94	5.01	1976	18	10.08	1989	1.04	1978
Mar	4.36	3.91	3.16	1975	28	10.72	1975	1.21	1982
Apr	5.07	4.74	4.04	1973	20	13.02	1973	1.35	1976
May	4.93	4.61	4.50	1967	13	10.40	1983	1.18	1994
Jun	4.39	4.66	2.69	1999	8	8.37	1995	.72	1988
Jul	3.58	3.17	4.18	1972	17	9.17	1998	.25	1999
Aug	2.96	2.61	4.73	1971	22	7.70	1975	.05	1983
Sep	3.13	2.64	4.02	1979	21	10.42	1977	.13	1998
Oct	3.61	2.80	7.65	1998	6	11.00	1984	.74	2000
Nov	4.74	3.71	4.37	1983	23	13.37	1973	1.03	1989
Dec	4.25	4.00	4.10	2001	17	11.47	1990	.83	1976
Ann	47.70	46.15	7.65	Oct 1998	6	13.37	Nov 1973	.05	Aug 1983

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.0	6.0	2.3	.8
Feb	9.1	5.6	2.2	1.1
Mar	11.3	7.6	3.0	1.3
Apr	10.8	7.9	3.5	1.4
May	11.8	7.4	3.4	1.5
Jun	9.2	6.8	3.1	1.4
Jul	8.3	5.6	2.6	1.0
Aug	7.0	4.5	1.9	.8
Sep	7.3	5.0	2.0	.9
Oct	8.2	5.2	2.1	.9
Nov	10.2	6.8	3.4	1.2
Dec	10.4	6.8	3.2	1.3
Ann	113.6	75.2	32.7	13.6

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	1.08	1.38	1.80	2.17	2.51	2.87	3.26	3.71	4.30	5.19	6.02
Feb	.99	1.33	1.84	2.29	2.72	3.18	3.69	4.28	5.06	6.28	7.41
Mar	1.63	2.04	2.62	3.11	3.57	4.05	4.56	5.15	5.91	7.08	8.15
Apr	1.67	2.15	2.86	3.46	4.03	4.63	5.28	6.05	7.03	8.55	9.96
May	1.64	2.11	2.79	3.37	3.93	4.51	5.14	5.87	6.82	8.28	9.63
Jun	1.42	1.83	2.45	2.97	3.48	4.00	4.58	5.25	6.11	7.46	8.70
Jul	.73	1.06	1.58	2.06	2.55	3.07	3.65	4.36	5.29	6.78	8.19
Aug	.55	.81	1.25	1.65	2.06	2.50	3.00	3.61	4.41	5.71	6.94
Sep	.43	.68	1.13	1.57	2.02	2.53	3.11	3.83	4.80	6.38	7.91
Oct	.75	1.08	1.60	2.09	2.57	3.09	3.68	4.39	5.32	6.81	8.22
Nov	1.18	1.63	2.32	2.93	3.54	4.17	4.89	5.73	6.84	8.59	10.23
Dec	1.01	1.41	2.03	2.59	3.14	3.72	4.38	5.15	6.17	7.79	9.31
Ann	34.57	37.13	40.40	42.88	45.07	47.19	49.37	51.78	54.69	58.91	62.56

\+ 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: 1965-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

Snow Fall >= Thresholds

Snow Depth >= Thresholds

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	3.6	2.2	1	#	10.0	1994	17	12.4	1978	12	1978	22	4	1978	2.1	1.4	.4	.2	@	4.5	2.7	1.3	.0
Feb	2.4	.9	#	#	10.0	1980	8	13.0	1980	10	1980	9	3	1979	1.4	1.0	.2	.2	@	2.8	1.2	.7	.1
Mar	1.3	.0	#	#	7.2	1975	14	9.4	1975	7	1975	14	1	1994	.4	.4	.2	.1	.0	.4	.2	@	.0
Apr	.0	.0	0	0	.2	1971	6	.2	1971	0	0	0	0	0	@	.0	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.1	.0	0	0	2.2	1993	30	2.2	1993	0	0	0	0	0	@	@	.0	.0	.0	.0	.0	.0	.0
Nov	.3	.0	#	0	3.0	1976	12	4.6	1976	3	1976	12	#+	1976	.2	.1	@	.0	.0	.1	@	.0	.0
Dec	1.2	.2	#	#	4.0	1992	25	6.0	1992	5	1992	26	1	1992	1.0	.7	.1	.0	.0	1.5	.3	@	.0
Ann	8.9	3.3	N/A	N/A	10.0+	Jan 1994	17	13.0	Feb 1980	12	Jan 1978	22	4	Jan 1978	5.1	3.6	.9	.5	@	9.3	4.4	2.0	.1

+ 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	4/19	4/15	4/13	4/11	4/09	4/07	4/04	4/02	3/29
32	4/13	4/09	4/05	4/02	3/31	3/28	3/25	3/22	3/17
28	3/31	3/26	3/23	3/20	3/17	3/15	3/12	3/08	3/04
24	3/20	3/13	3/08	3/04	2/28	2/24	2/20	2/15	2/08
20	3/10	3/03	2/25	2/21	2/16	2/12	2/08	2/02	1/26
16	3/08	2/26	2/18	2/11	2/05	1/30	1/23	1/15	1/02

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	10/05	10/09	10/13	10/15	10/18	10/21	10/24	10/27	10/31
32	10/11	10/17	10/22	10/26	10/29	11/02	11/06	11/10	11/16
28	10/27	11/03	11/08	11/12	11/16	11/19	11/23	11/28	12/05
24	11/07	11/14	11/19	11/23	11/27	12/01	12/05	12/10	12/16
20	11/17	11/25	11/30	12/05	12/09	12/13	12/18	12/23	12/30
16	11/21	12/02	12/09	12/16	12/22	12/28	1/04	1/12	1/25

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	208	203	199	195	192	189	185	181	175
32	231	225	220	216	212	208	204	199	192
28	269	260	253	248	242	237	232	225	216
24	298	289	282	276	271	266	260	253	244
20	325	315	307	301	295	289	282	274	264
16	>365	354	334	323	314	306	298	289	276

***** 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	977	740	511	225	63	1	0	1	29	196	500	831	4074
60	822	607	368	122	22	0	0	0	7	101	361	678	3088
57	738	529	288	77	10	0	0	0	2	62	283	593	2582
55	678	478	241	53	6	0	0	0	1	42	236	535	2270
50	536	358	144	16	0	0	0	0	0	12	140	398	1604
32	160	78	6	0	0	0	0	0	0	0	5	78	327

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	206	262	520	792	1114	1337	1495	1422	1165	869	496	270	9948
55	12	18	42	155	407	647	782	709	476	198	38	14	3498
57	9	13	27	118	349	587	720	647	417	155	25	10	3077
60	1	8	14	74	268	497	627	554	332	102	12	2	2491
65	0	0	1	26	154	348	472	400	204	42	2	0	1649
70	0	0	0	6	72	205	317	252	105	12	0	0	969

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	62	136	312	561	874	1107	1257	1185	932	635	307	108	62	198	510	1071	1945	3052	4309	5494	6426	7061	7368	7476
45	29	68	200	419	719	957	1102	1030	782	481	197	54	29	97	297	716	1435	2392	3494	4524	5306	5787	5984	6038
50	9	29	117	291	565	807	947	875	632	339	111	24	9	38	155	446	1011	1818	2765	3640	4272	4611	4722	4746
55	0	9	60	174	414	657	792	720	485	215	55	6	0	9	69	243	657	1314	2106	2826	3311	3526	3581	3587
60	0	0	24	90	274	507	637	565	343	118	23	0	0	0	24	114	388	895	1532	2097	2440	2558	2581	2581
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	37	73	169	334	570	763	862	822	624	396	169	54	37	110	279	613	1183	1946	2808	3630	4254	4650	4819	4873

(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