

# Climatology of the United States

No. 20

1971-2000

Station: WEST PLAINS, MO

COOP ID: 238880

Climate Division: MO 5

NWS Call Sign:

Elevation: 1,010 Feet Lat: 36°45N

Lon: 91°50W

## 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	42.8	20.0	31.4	77+	1952	26	42.4	1990	-18	1985	20	18.3	1977	1042	0	.0	.0	9.8	6.3	26.6	1.4
Feb	49.3	24.4	36.9	87	1962	13	44.7	1999	-21	1951	2	24.7	1978	789	0	.0	.0	14.3	3.3	20.9	.4
Mar	58.6	32.4	45.5	89+	1967	13	50.5	1973	-3	1960	5	39.0	1975	605	0	.0	.0	23.8	.5	14.0	.0
Apr	68.6	41.4	55.0	91+	1987	20	61.6	1981	19+	1992	3	49.3	1983	309	8	.0	.1	28.7	.0	4.3	.0
May	76.1	51.3	63.7	95+	2000	23	69.7	1987	28+	1963	1	58.6	1976	122	82	.0	.3	31.0	.0	.1	.0
Jun	83.9	59.8	71.9	105	1952	29	76.4	1998	39	1972	1	67.4	1974	12	218	.1	5.5	30.0	.0	.0	.0
Jul	89.5	64.7	77.1	107+	1980	12	81.7	1980	46	1972	6	73.6	1972	0	375	.9	16.7	31.0	.0	.0	.0
Aug	88.7	63.0	75.9	106	1954	16	81.9	1983	40	1986	29	69.9	1992	7	342	1.3	14.4	31.0	.0	.0	.0
Sep	80.6	55.3	68.0	103+	1954	4	73.8	1998	31	1949	30	61.4	1974	56	144	.3	4.2	30.0	.0	@	.0
Oct	70.8	43.2	57.0	94+	1953	2	62.5	1971	19	1952	29	51.3	1976	261	14	.0	.3	30.6	.0	3.7	.0
Nov	57.0	33.3	45.2	84	1989	12	52.2	1999	5+	1976	30	36.9	1976	597	0	.0	.0	21.5	.3	13.6	.0
Dec	46.2	24.3	35.3	78	1951	31	42.5	1971	-13+	1989	24	23.1	1983	923	0	.0	.0	12.2	3.9	23.5	.5
Ann	67.7	42.8	55.2	107+	Jul 1980	12	81.9	Aug 1983	-21	Feb 1951	2	18.3	Jan 1977	4723	1183	2.6	41.5	293.9	14.3	106.7	2.3

+ 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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

Issue Date: February 2004

(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

# Climatology 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: WEST PLAINS, MO**

**COOP ID: 238880**

**Climate Division: MO 5**

**NWS Call Sign:**

**Elevation: 1,010 Feet Lat: 36°45N**

**Lon: 91°50W**

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	2.60	2.22	3.80	1982	30	7.94	1982	.05	1986	8.8	5.4	1.4	.5	.44	.66	1.04	1.40	1.76	2.16	2.62	3.17	3.91	5.10	6.25
Feb	3.00	2.73	5.14	1966	9	8.92	1990	.45	1996	7.7	5.0	2.3	.7	.78	1.07	1.50	1.89	2.26	2.66	3.10	3.63	4.31	5.38	6.39
Mar	4.80	4.52	4.21	1977	27	9.51	1998	1.26	1971	10.4	7.4	3.5	1.4	1.52	1.98	2.65	3.23	3.79	4.36	5.00	5.74	6.70	8.19	9.57
Apr	4.35	3.60	5.35	1957	3	12.70	1991	.57	2000	10.2	6.8	3.0	1.2	1.05	1.46	2.09	2.66	3.22	3.81	4.48	5.27	6.30	7.94	9.48
May	4.62	4.20	4.12	1989	22	9.05	1990	1.17	1977	11.8	7.6	2.9	1.2	1.75	2.18	2.80	3.31	3.80	4.29	4.83	5.45	6.25	7.47	8.59
Jun	4.33	4.14	4.65	1976	23	9.71	1982	1.39	1990	9.2	6.8	3.1	1.4	1.44	1.85	2.45	2.96	3.46	3.96	4.52	5.17	6.00	7.29	8.49
Jul	3.13	2.63	3.85	1949	7	7.67	1987	.45	1982	7.9	5.2	2.1	.8	.56	.84	1.29	1.72	2.16	2.63	3.17	3.82	4.69	6.08	7.42
Aug	3.16	3.51	5.20	1971	22	6.48	1971	.34	2000	7.2	5.0	1.9	.7	.51	.79	1.25	1.68	2.13	2.61	3.17	3.85	4.76	6.23	7.64
Sep	4.02	3.37	5.11	1975	10	10.59	1993	.17	1976	8.2	5.4	2.5	1.2	.52	.84	1.41	1.97	2.56	3.22	3.98	4.92	6.19	8.27	10.29
Oct	3.40	2.96	3.58	1983	4	12.02	1984	.50	1971	7.5	4.7	2.4	1.2	.73	1.05	1.55	2.00	2.45	2.94	3.48	4.14	5.00	6.37	7.67
Nov	4.91	4.43	5.20	1994	5	11.03	1994	.31	1976	9.3	6.4	3.1	1.7	1.00	1.45	2.17	2.83	3.49	4.20	5.01	5.98	7.26	9.30	11.24
Dec	3.97	3.44	2.99	1975	5	9.81	1971	.74	1981	9.6	6.2	2.7	1.2	.87	1.23	1.82	2.34	2.87	3.43	4.06	4.82	5.82	7.40	8.90
Ann	46.29	48.08	5.35	Apr 1957	3	12.70	Apr 1991	.05	Jan 1986	107.8	71.9	30.9	13.2	32.54	35.19	38.59	41.18	43.48	45.71	48.01	50.56	53.65	58.15	62.04

+ 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:  
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

# 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](http://www.ncdc.noaa.gov)

**Station: WEST PLAINS, MO**

**COOP ID: 238880**

**Climate Division: MO 5**

**NWS Call Sign:**

**Elevation: 1,010 Feet**

**Lat: 36°45N**

**Lon: 91°50W**

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	3.8	2.0	1	#	8.2	1977	9	18.2	1977	8	1977	19	5	1977	2.1	1.4	.4	@	.0	4.8	2.7	1.4	.0
Feb	2.9	.9	#	#	14.0	1993	16	23.8	1980	16	1980	9	4	1980	1.5	.9	.4	.1	@	1.6	.7	.1	.0
Mar	1.7	.0	#	0	15.0	1994	9	15.0	1994	15	1994	9	1	1994	.6	.5	.2	.1	.1	.7	.4	.2	.1
Apr	.2	.0	#	0	3.0	1971	6	5.0	1971	2	1971	5	#+	1980	.1	.1	@	.0	.0	.1	.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	2.5	1993	30	2.5	1993	3	1993	30	#+	1993	@	@	.0	.0	.0	@	@	.0	.0
Nov	.7	.0	#	0	6.0	1975	26	6.4	1980	6	1975	26	1	1975	.3	.1	.1	@	.0	.3	.2	.1	.0
Dec	1.8	.0	#	#	7.7	1984	5	7.7	1984	8	1984	5	1	1984	.9	.6	.2	.1	.0	1.2	.4	.2	.0
Ann	11.2	2.9	N/A	N/A	15.0	Mar 1994	9	23.8	Feb 1980	16	Feb 1980	9	5	Jan 1977	5.5	3.6	1.3	.3	.1	8.7	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

Complete documentation available from:

[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

# Climatography of the United States

## No. 20 1971-2000

**Station: WEST PLAINS, MO**

**COOP ID: 238880**

**Climate Division: MO 5**

**NWS Call Sign:**

**Elevation: 1,010 Feet**

**Lat: 36° 45N**

**Lon: 91° 50W**

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	5/10	5/05	5/02	4/29	4/26	4/23	4/20	4/17	4/12
32	4/28	4/23	4/19	4/16	4/14	4/11	4/08	4/04	3/30
28	4/18	4/13	4/10	4/07	4/04	4/02	3/30	3/26	3/22
24	4/07	4/01	3/28	3/25	3/22	3/19	3/15	3/11	3/05
20	3/30	3/23	3/17	3/12	3/08	3/03	2/26	2/21	2/13
16	3/17	3/10	3/05	3/01	2/25	2/21	2/17	2/12	2/05
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	9/26	9/30	10/02	10/05	10/07	10/09	10/12	10/14	10/18
32	10/04	10/08	10/12	10/14	10/17	10/19	10/22	10/25	10/30
28	10/14	10/19	10/22	10/25	10/28	10/31	11/03	11/07	11/12
24	10/26	11/01	11/05	11/08	11/12	11/15	11/18	11/22	11/28
20	11/06	11/12	11/17	11/21	11/24	11/28	12/02	12/06	12/12
16	11/13	11/20	11/25	11/29	12/03	12/07	12/11	12/16	12/23
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	182	175	171	167	163	159	155	151	144
32	204	198	193	189	186	182	178	173	167
28	227	220	215	210	206	202	198	193	186
24	256	249	243	239	234	230	225	220	212
20	284	276	270	265	261	256	251	245	237
16	307	298	291	285	280	275	269	262	253

\* 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

Complete documentation available from:  
[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

**Climatography  
of the United States  
No. 20  
1971-2000**

**Station: WEST PLAINS, MO**

**COOP ID: 238880**

**Climate Division: MO 5**

**NWS Call Sign:**

**Elevation: 1,010 Feet Lat: 36°45N**

**Lon: 91°50W**

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	1042	789	605	309	122	12	0	7	56	261	597	923	4723
60	887	649	455	185	53	2	0	1	17	144	453	768	3614
57	795	572	370	125	27	0	0	0	6	91	371	676	3033
55	738	519	315	92	17	0	0	0	3	64	319	619	2686
50	594	393	198	34	4	0	0	0	0	21	207	476	1927
32	190	85	10	0	0	0	0	0	0	0	14	110	409

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	171	220	428	689	983	1196	1398	1358	1078	775	407	211	8914
55	6	10	20	91	287	506	685	645	391	126	22	7	2796
57	1	6	12	64	236	446	623	583	335	91	14	2	2413
60	0	0	5	34	168	358	530	491	255	51	6	0	1898
65	0	0	0	8	82	218	375	342	144	14	0	0	1183
70	0	0	0	1	29	105	225	208	68	2	0	0	638

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	53	107	264	488	771	983	1174	1137	866	555	229	72	53	160	424	912	1683	2666	3840	4977	5843	6398	6627	6699
45	25	58	158	351	616	833	1019	982	716	405	137	38	25	83	241	592	1208	2041	3060	4042	4758	5163	5300	5338
50	1	26	87	229	461	683	864	827	567	265	73	12	1	27	114	343	804	1487	2351	3178	3745	4010	4083	4095
55	0	7	39	127	312	533	709	672	419	151	29	2	0	7	46	173	485	1018	1727	2399	2818	2969	2998	3000
60	0	0	10	60	175	383	554	517	288	70	6	0	0	0	10	70	245	628	1182	1699	1987	2057	2063	2063
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	42	89	176	313	491	665	793	766	565	360	148	53	42	131	307	620	1111	1776	2569	3335	3900	4260	4408	4461

(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:

[www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

## 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.  
Complete documentation for the 1971-2000 Normals is available on the internet from:  
[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/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 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.

- |   |   |
|---|---|
| <ol style="list-style-type: none"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
|---|---|

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)