

Climatology of the United States No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: VERSAILLES, MO

1971-2000

COOP ID: 238603

Climate Division: MO 3

NWS Call Sign:

Elevation: 1,030 Feet Lat: 38°26N

Lon: 92°51W

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	40.4	19.2	29.8	77	1965	7	41.6	1990	-18+	1985	20	16.2	1977	1091	0	.0	.0	7.8	8.7	26.3	2.6
Feb	46.8	24.1	35.5	83	1972	29	44.5	1976	-18	1979	9	21.8	1978	827	0	.0	.0	12.2	5.0	21.2	1.4
Mar	57.8	33.3	45.6	85+	1967	30	50.5	1986	-15	1960	5	38.7	1984	603	0	.0	.0	22.8	.6	14.8	.1
Apr	68.1	43.0	55.6	92	1987	20	62.8	1981	17	2001	1	49.1	1983	297	13	.0	.2	28.3	.0	3.6	.0
May	75.7	52.4	64.1	93+	1953	26	69.9	1998	28	1976	3	59.2	1976	117	88	.0	.1	31.0	.0	.2	.0
Jun	83.0	61.3	72.2	104	1952	16	76.2	1986	42+	1993	5	66.8	1982	10	224	.0	3.1	30.0	.0	.0	.0
Jul	88.7	66.2	77.5	115	1954	14	85.7	1980	45	1970	21	74.4	1971	0	386	1.1	12.5	31.0	.0	.0	.0
Aug	87.2	64.4	75.8	106	1980	1	83.3	1983	43+	1986	28	69.4	1992	9	342	.8	11.3	31.0	.0	.0	.0
Sep	79.3	56.1	67.7	102	2000	1	74.3	1998	30	1984	30	59.8	1974	61	141	.1	3.5	30.0	.0	.1	.0
Oct	69.6	45.0	57.3	94+	1976	2	62.3	1971	20+	1993	31	51.4	1976	257	18	.0	.1	30.2	.0	3.2	.0
Nov	55.5	34.0	44.8	83	1999	13	53.4	1999	0	1991	8	36.3	1976	607	0	.0	.0	20.3	.8	13.8	@
Dec	44.2	23.5	33.9	75+	1998	5	39.8	1984	-23	1989	22	19.3	1983	965	0	.0	.0	10.6	4.8	24.3	1.4
Ann	66.4	43.5	55.0	115	Jul 1954	14	85.7	Jul 1980	-23	Dec 1989	22	16.2	Jan 1977	4844	1212	2.0	30.8	285.2	19.9	107.5	5.5

+ 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/normal/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1950-2001

(3) Derived from 1971-2000 serially complete daily data

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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	1.78	1.34	2.05	1971	3	4.76	1999	.10	1986	5.6	4.1	1.1	.4	.21	.35	.60	.85	1.12	1.41	1.75	2.18	2.76	3.71	4.63	
Feb	2.16	1.86	2.60	1997	21	5.23	1985	.09	1991	5.6	4.2	1.2	.6	.33	.51	.83	1.12	1.43	1.77	2.16	2.64	3.28	4.32	5.31	
Mar	3.35	2.76	3.15	1963	4	10.54	1973	.59	1995	8.2	6.5	2.6	.8	.88	1.19	1.68	2.11	2.53	2.97	3.47	4.05	4.81	6.01	7.14	
Apr	4.24	3.81	7.52	1994	11	17.09	1994	.22	2000	8.9	7.0	2.7	1.0	.96	1.36	1.98	2.54	3.10	3.69	4.35	5.15	6.19	7.85	9.41	
May	5.07	4.70	6.41	1995	17	15.97	1990	1.39	1992	9.7	7.4	3.4	1.5	1.45	1.93	2.66	3.29	3.90	4.54	5.25	6.09	7.18	8.88	10.46	
Jun	4.13	3.42	5.56	1998	4	14.54	1998	.62	1980	8.4	6.8	2.6	1.2	.83	1.21	1.81	2.37	2.93	3.53	4.20	5.02	6.10	7.83	9.46	
Jul	4.04	2.80	7.53	1998	26	14.13	1993	.71	1999	6.8	5.7	2.6	1.2	.43	.74	1.30	1.86	2.46	3.14	3.94	4.93	6.28	8.51	10.69	
Aug	3.77	3.38	3.33	1980	5	7.81	1985	.77	1976	6.3	5.2	2.5	1.2	.72	1.06	1.61	2.12	2.64	3.20	3.83	4.59	5.60	7.22	8.76	
Sep	3.89	3.21	5.61	1975	11	13.14	1993	.54	1990	6.7	5.3	2.7	1.2	.61	.94	1.51	2.04	2.60	3.20	3.90	4.75	5.88	7.73	9.50	
Oct	3.95	3.69	5.46	1986	3	9.08	1981	1.21	1992	7.2	5.7	3.0	1.3	1.12	1.50	2.06	2.55	3.04	3.54	4.09	4.75	5.60	6.94	8.18	
Nov	3.80	3.27	3.82	1994	20	10.95	1992	.34	1989	7.6	6.1	2.6	1.1	.80	1.15	1.71	2.21	2.72	3.27	3.88	4.62	5.59	7.15	8.62	
Dec	2.54	2.38	2.70	1982	2	7.06	1982	.00	2000	6.0	4.4	1.8	.7	.22	.50	.92	1.29	1.67	2.09	2.56	3.13	3.90	5.15	6.35	
Ann	42.72	41.60	7.53	Jul 1998	26	17.09	Apr 1994	.00	Dec 2000	87.0	68.4	28.8	12.2	28.96	31.58	34.95	37.53	39.83	42.07	44.39	46.96	50.09	54.66	58.63	

+ 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: 1950-2001

(3) Derived from 1971-2000 serially complete daily data

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Station: VERSAILLES, MO

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Climate Division: MO 3

NWS Call Sign:

Elevation: 1,030 Feet

Lat: 38°26N

Lon: 92°51W

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	1.8	1.5	1	1	2.0	1976	7	4.0	1976	13	1979	31	7	1979	.4	.3	.0	.0	.0	1.6	.0	.0	.0
Feb	1.6	.8	1	#	9.0	1975	23	9.0	1975	14	1979	9	8	1979	.5	.5	.2	.2	.0	1.5	.5	.4	.1
Mar	.7	.0	#	#	4.5	1974	23	6.0	1974	11	1978	4	4	1978	.3	.3	@	.0	.0	.4	@	@	.0
Apr	#	.0	#	0	#	1983	17	#+	1983	4	1973	9	#+	1997	.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	#	.0	#	0	#	1997	26	#+	1997	#	1997	26	#	1997	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	1.4	.0	#	0	9.0	1974	29	9.5	1974	9	1974	29	1	1975	.4	.3	.1	.1	.0	.5	.3	.2	.0
Dec	1.1	.0	1	#	9.0	1973	30	9.0	1973	13	1973	31	4	1989	.7	.5	.1	@	.0	2.6	.7	.3	.0
Ann	6.6	2.3	N/A	N/A	9.0+	Feb 1975	23	9.5	Nov 1974	14	Feb 1979	9	8	Feb 1979	2.3	1.9	.4	.3	.0	6.6	1.5	.9	.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:

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Elevation: 1,030 Feet

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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	5/13	5/08	5/04	5/01	4/28	4/25	4/22	4/18	4/12
32	5/01	4/26	4/21	4/18	4/15	4/11	4/08	4/04	3/29
28	4/19	4/15	4/11	4/09	4/06	4/03	4/01	3/28	3/24
24	4/08	4/03	3/31	3/27	3/24	3/21	3/18	3/15	3/09
20	3/31	3/25	3/21	3/17	3/14	3/11	3/07	3/03	2/25
16	3/23	3/14	3/09	3/03	2/27	2/22	2/17	2/11	2/03
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	9/24	9/28	10/01	10/04	10/06	10/09	10/11	10/14	10/18
32	9/30	10/05	10/09	10/13	10/16	10/19	10/22	10/26	10/31
28	10/18	10/22	10/25	10/28	10/30	11/01	11/04	11/07	11/11
24	10/26	11/01	11/06	11/09	11/13	11/16	11/20	11/25	12/01
20	11/01	11/09	11/14	11/18	11/22	11/26	12/01	12/06	12/13
16	11/12	11/18	11/23	11/27	12/01	12/05	12/09	12/13	12/20
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	181	174	169	165	160	156	152	147	139
32	206	198	192	188	183	179	174	168	161
28	226	219	214	210	206	202	198	194	187
24	257	249	243	238	233	228	223	216	208
20	284	273	265	258	252	246	239	232	221
16	310	298	290	283	276	270	263	254	243

* 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:

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NWS Call Sign:

Elevation: 1,030 Feet Lat: 38°26N Lon: 92°51W

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	1091	827	603	297	117	10	0	9	61	257	607	965	4844
60	937	695	455	178	51	1	0	1	19	143	466	810	3756
57	847	616	369	121	27	0	0	0	8	92	384	722	3186
55	792	564	315	90	16	0	0	0	4	65	333	665	2844
50	646	441	199	34	4	0	0	0	0	23	221	522	2090
32	235	129	13	0	0	0	0	0	0	0	20	149	546

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	167	226	433	706	994	1204	1409	1357	1070	784	403	208	8961
55	10	17	21	106	297	514	696	644	384	136	25	11	2861
57	4	13	13	78	245	454	634	582	328	101	17	5	2474
60	0	8	7	44	177	365	541	489	250	59	9	0	1949
65	0	0	0	13	88	224	386	342	141	18	0	0	1212
70	0	0	0	3	32	109	241	211	66	3	0	0	665

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	43	100	260	494	763	982	1179	1133	850	557	223	65	43	143	403	897	1660	2642	3821	4954	5804	6361	6584	6649
45	13	56	163	357	608	832	1024	978	700	409	137	31	13	69	232	589	1197	2029	3053	4031	4731	5140	5277	5308
50	1	26	90	233	454	682	869	823	551	274	75	13	1	27	117	350	804	1486	2355	3178	3729	4003	4078	4091
55	0	10	47	134	306	532	714	668	408	162	33	3	0	10	57	191	497	1029	1743	2411	2819	2981	3014	3017
60	0	1	15	71	176	383	559	513	280	80	11	0	0	1	16	87	263	646	1205	1718	1998	2078	2089	2089
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	29	75	174	310	485	667	810	772	560	343	137	48	29	104	278	588	1073	1740	2550	3322	3882	4225	4362	4410

(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

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
- 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">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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