

Climatology of the United States

No. 20

1971-2000

Station: WINDSOR, MO

COOP ID: 239032

Climate Division: MO 3

NWS Call Sign:

Elevation: 840 Feet

Lat: 38° 32N

Lon: 93° 32W

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	37.2	18.4	27.8	74+	1967	24	38.0	1990	-19+	1982	11	16.3	1977	1153	0	.0	.0	5.3	10.1	29.1	3.1
Feb	43.7	23.7	33.7	78	1981	26	42.9	1976	-19	1979	9	21.9	1978	877	0	.0	.0	9.9	6.5	23.3	2.0
Mar	55.0	33.3	44.2	85+	1986	30	49.8	1991	-10+	1974	25	36.5	1996	646	0	.0	.0	20.1	1.3	17.3	.2
Apr	65.7	43.3	54.5	91	1987	21	61.3	1981	17	1975	3	48.1	1983	328	13	.0	.2	26.8	@	4.6	.0
May	74.8	53.8	64.3	93	1956	21	70.5	1987	29	1976	3	58.4	1997	121	99	.0	.2	31.0	.0	.2	.0
Jun	83.4	63.3	73.4	102+	1980	28	79.0	1986	37	1984	3	69.0	1982	10	259	.1	4.7	30.0	.0	.0	.0
Jul	88.9	67.7	78.3	115	1954	14	86.8	1980	46	1972	6	74.0	1996	0	411	1.4	15.5	31.0	.0	.0	.0
Aug	87.6	65.2	76.4	108	1980	1	84.3	1983	42	1967	28	69.8	1992	6	358	1.6	12.7	31.0	.0	.0	.0
Sep	79.5	56.7	68.1	103	2000	1	73.6	1978	28+	1967	30	61.3	1974	66	158	.1	4.6	30.0	.0	.3	.0
Oct	68.8	44.9	56.9	96+	1963	10	63.5	1971	17	1993	31	51.0	1976	270	17	.0	.1	29.9	.0	3.9	.0
Nov	53.7	34.2	44.0	82	1980	9	53.0	1999	-2+	1991	9	36.4	1976	631	0	.0	.0	18.4	1.3	16.4	.1
Dec	41.8	23.4	32.6	73+	1998	5	39.2	1971	-18+	1983	26	15.9	1983	1004	0	.0	.0	8.4	6.4	26.4	1.7
Ann	65.0	44.0	54.5	115	Jul 1954	14	86.8	Jul 1980	-19+	Jan 1982	11	15.9	Dec 1983	5112	1315	3.2	38.0	271.8	25.6	121.5	7.1

+ 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/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

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No. 20 1971-2000

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

Station: WINDSOR, MO

COOP ID: 239032

Climate Division: MO 3

NWS Call Sign:

Elevation: 840 Feet Lat: 38°32N

Lon: 93°32W

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	1.59	1.31	2.43	1971	3	4.28	1979	.20	1986	5.8	3.6	1.0	.3	.31	.45	.69	.90	1.12	1.35	1.61	1.93	2.35	3.02	3.67
Feb	1.95	1.80	3.55	1997	21	5.85	1997	.00+	1991	4.7	3.7	1.4	.4	.00	.46	.86	1.17	1.45	1.75	2.07	2.43	2.92	3.70	4.42
Mar	3.06	2.83	3.08	1976	4	9.86	1973	.21	1971	7.3	5.7	2.2	.7	.71	.99	1.44	1.84	2.24	2.67	3.14	3.71	4.46	5.65	6.77
Apr	3.73	3.23	6.28	1973	21	12.61	1973	.36	2000	8.6	6.5	2.5	1.0	.66	.98	1.53	2.04	2.56	3.12	3.77	4.55	5.59	7.27	8.87
May	5.17	5.17	3.90	1986	16	10.95	1995	.75	1988	8.4	6.4	3.1	1.4	1.48	1.97	2.71	3.36	3.98	4.64	5.36	6.22	7.32	9.06	10.67
Jun	4.49	3.86	4.35	1981	11	17.89	1981	.23	1972	8.5	6.8	3.0	1.2	.73	1.12	1.78	2.39	3.03	3.72	4.51	5.48	6.77	8.86	10.86
Jul	3.89	3.27	4.95	1956	3	14.33	1993	.47	1980	6.4	5.0	2.2	1.3	.55	.87	1.43	1.97	2.53	3.15	3.87	4.75	5.93	7.86	9.72
Aug	3.73	3.30	9.71	1980	5	13.52	1980	.41	1976	5.9	4.8	2.3	.9	.42	.70	1.22	1.74	2.30	2.92	3.65	4.56	5.79	7.83	9.81
Sep	4.26	3.28	6.00	1998	13	14.33	1993	.37	1990	6.9	5.5	2.8	1.2	.58	.93	1.54	2.13	2.75	3.44	4.23	5.20	6.52	8.66	10.74
Oct	3.56	3.23	5.51	1969	12	8.95	1986	.83	1995	6.6	5.3	2.5	1.2	1.09	1.43	1.93	2.36	2.78	3.22	3.70	4.26	4.99	6.12	7.17
Nov	3.39	3.07	2.93	1983	3	9.71	1992	.13	1989	6.0	5.2	2.5	1.0	.51	.80	1.29	1.76	2.25	2.78	3.39	4.15	5.15	6.79	8.36
Dec	2.06	1.79	3.00	1982	3	6.29	1982	.00	1996	5.2	4.0	1.8	.7	.15	.36	.69	.99	1.31	1.66	2.06	2.55	3.21	4.29	5.33
Ann	40.88	40.17	9.71	Aug 1980	5	17.89	Jun 1981	.00+	Dec 1996	80.3	62.5	27.3	11.3	26.98	29.60	32.99	35.59	37.92	40.19	42.54	45.17	48.37	53.05	57.13

+ 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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Station: WINDSOR, MO

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Climate Division: MO 3

NWS Call Sign:

Elevation: 840 Feet

Lat: 38°32N

Lon: 93°32W

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	3.2	2.5	#	0	8.0	1974	10	9.5	1974	3	1997	16	#+	1997	1.2	1.1	.4	.2	.0	-9.9	-9.9	-9.9	-9.9
Feb	5.2	2.5	#	0	9.0	1978	13	16.0	1975	7	1993	16	1	1993	1.2	1.1	.4	.2	.0	-9.9	-9.9	-9.9	-9.9
Mar	2.0	.0	#	0	7.0	1978	2	12.0	1978	6	1975	10	4	1978	.6	.5	.3	.1	.0	-9.9	-9.9	-9.9	-9.9
Apr	.1	.0	#	0	3.0	1980	14	3.0	1980	#	1997	13	#	1997	@	@	@	.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	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	1.3	.0	#	0	8.0	1975	26	10.0	1975	2	1987	28	#+	1997	.3	.3	.1	.1	.0	.2	.0	.0	.0
Dec	3.2	.5	#	0	12.0	1973	27	28.0	1973	3	1997	10	#+	1998	.8	.7	.3	.1	.1	-9.9	-9.9	-9.9	-9.9
Ann	15.0	5.5	N/A	N/A	12.0	Dec 1973	27	28.0	Dec 1973	7	Feb 1993	16	4	Mar 1978	4.1	3.7	1.5	.7	.1	-9.9	-9.9	-9.9	-9.9

+ 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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NWS Call Sign:

Elevation: 840 Feet

Lat: 38°32N

Lon: 93°32W

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	5/11	5/07	5/04	5/01	4/29	4/26	4/24	4/21	4/17
32	4/30	4/25	4/21	4/18	4/15	4/13	4/10	4/06	4/01
28	4/17	4/13	4/09	4/07	4/04	4/02	3/30	3/27	3/23
24	4/11	4/05	3/31	3/27	3/24	3/20	3/16	3/12	3/06
20	4/01	3/25	3/19	3/14	3/10	3/05	2/28	2/23	2/15
16	3/20	3/13	3/07	3/03	2/27	2/22	2/18	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	9/22	9/27	10/01	10/05	10/08	10/11	10/14	10/18	10/24
32	9/28	10/04	10/09	10/13	10/16	10/20	10/24	10/29	11/04
28	10/10	10/16	10/21	10/25	10/29	11/02	11/06	11/11	11/18
24	10/22	10/28	11/01	11/05	11/08	11/11	11/15	11/19	11/25
20	11/02	11/08	11/13	11/16	11/20	11/23	11/27	12/02	12/08
16	11/09	11/16	11/20	11/24	11/28	12/02	12/06	12/11	12/17
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	170	165	161	157	153	148	141
32	208	200	193	188	183	178	173	167	158
28	232	224	217	212	207	202	197	191	182
24	256	246	240	234	229	223	217	211	201
20	286	275	268	261	255	248	242	234	223
16	303	293	286	280	274	268	262	255	245

* 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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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	1153	877	646	328	121	10	0	6	66	270	631	1004	5112
60	998	737	499	206	55	1	0	1	23	153	489	851	4013
57	905	658	412	146	30	0	0	0	11	99	406	763	3430
55	843	606	357	113	19	0	0	0	6	71	354	705	3074
50	697	478	237	50	5	0	0	0	0	26	239	563	2295
32	246	138	21	0	0	0	0	0	0	0	25	178	608

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	116	185	397	675	1002	1240	1434	1376	1082	770	384	196	8857
55	0	9	21	97	307	550	721	663	398	128	22	10	2926
57	0	5	14	71	257	490	659	601	343	95	15	6	2556
60	0	0	7	41	189	401	566	508	265	56	8	1	2042
65	0	0	0	13	99	259	411	358	158	17	0	0	1315
70	0	0	0	3	40	140	265	223	80	3	0	0	754

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	16	71	209	428	734	977	1172	1115	829	513	188	43	16	87	296	724	1458	2435	3607	4722	5551	6064	6252	6295
45	4	32	124	295	579	827	1017	960	679	368	106	20	4	36	160	455	1034	1861	2878	3838	4517	4885	4991	5011
50	1	13	65	183	425	677	862	805	531	237	54	5	1	14	79	262	687	1364	2226	3031	3562	3799	3853	3858
55	0	4	33	102	284	527	707	650	391	134	23	2	0	4	37	139	423	950	1657	2307	2698	2832	2855	2857
60	0	0	12	51	163	380	552	495	263	60	5	0	0	0	12	63	226	606	1158	1653	1916	1976	1981	1981
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	19	53	142	269	459	660	796	748	537	324	118	34	19	72	214	483	942	1602	2398	3146	3683	4007	4125	4159

(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