

Climatography of the United States

No. 20

1971-2000

Station: ADVANCE 1 S, MO

COOP ID: 230022

Climate Division: MO 6

NWS Call Sign:

Elevation: 360 Feet

Lat: 37°06N

Lon: 89°54W

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	40.5	22.2	31.4	75	1950	25	41.2	1990	-20	1985	20	17.6	1977	1043	0	.0	.0	7.4	7.7	25.8	1.5
Feb	47.1	26.4	36.8	80	1962	13	43.5	1998	-21	1951	2	23.8	1978	791	0	.0	.0	12.9	4.4	20.1	.5
Mar	57.3	35.6	46.5	84+	1967	13	52.7	1973	-3	1960	5	39.8	1996	576	1	.0	.0	23.0	.6	13.1	.0
Apr	68.0	44.6	56.3	90+	1989	28	62.7	1981	23	1954	1	50.1	1983	276	15	.0	.1	29.0	.0	3.3	.0
May	77.2	54.2	65.7	96	1962	17	72.1	1987	32	1976	4	60.2	1976	98	120	.0	1.5	31.0	.0	@	.0
Jun	86.0	63.2	74.6	106	1952	30	78.5	1971	41	1988	11	70.4	1974	3	290	.2	10.5	30.0	.0	.0	.0
Jul	89.9	67.3	78.6	106+	1966	14	83.0	1980	47	1962	27	74.3	1984	0	422	.9	18.3	31.0	.0	.0	.0
Aug	88.5	64.3	76.4	105	1964	4	81.9	1980	40	1986	29	72.0	1992	2	356	.5	14.5	31.0	.0	.0	.0
Sep	81.7	56.0	68.9	103+	1954	6	73.8	1998	31	1949	30	63.4	1974	48	162	.1	5.7	30.0	.0	@	.0
Oct	71.1	43.7	57.4	93	1963	11	66.7	1971	17	1952	29	49.2	1988	271	35	.0	.2	30.7	.0	5.0	.0
Nov	56.9	35.3	46.1	85	1987	5	51.1	1999	-2	1950	25	36.5	1976	569	1	.0	.0	21.4	.2	13.1	.0
Dec	44.8	26.4	35.6	75+	1982	3	45.0	1971	-11+	1989	23	23.9	1983	910	0	.0	.0	10.4	4.1	22.3	.6
Ann	67.4	44.9	56.2	106+	Jul 1966	14	83.0	Jul 1980	-21	Feb 1951	2	17.6	Jan 1977	4587	1402	1.7	50.8	287.8	17.0	102.7	2.6

+ 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

001-A

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: ADVANCE 1 S, MO

COOP ID: 230022

Climate Division: MO 6

NWS Call Sign:

Elevation: 360 Feet

Lat: 37°06N

Lon: 89°54W

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	3.29	3.18	5.40	1982	31	12.16	1982	.27	1986	5.9	4.9	2.1	.9	.52	.81	1.28	1.74	2.21	2.72	3.30	4.02	4.98	6.53	8.02
Feb	3.27	3.05	3.04	1979	23	8.50	1989	.94	1996	6.4	5.1	2.3	1.1	1.02	1.33	1.79	2.19	2.57	2.96	3.40	3.91	4.57	5.59	6.54
Mar	4.34	3.44	8.66	1977	28	9.22	1985	1.27	1971	8.9	6.9	3.0	1.3	1.59	2.00	2.58	3.08	3.54	4.02	4.54	5.15	5.92	7.11	8.20
Apr	4.87	4.13	5.60	1983	30	13.11	1983	1.31	1971	9.0	7.2	3.0	1.5	1.40	1.86	2.56	3.17	3.76	4.38	5.06	5.86	6.90	8.53	10.05
May	4.90	4.52	6.75	1973	27	13.88	1973	1.31	1992	9.7	7.5	3.3	1.4	1.39	1.85	2.56	3.17	3.76	4.39	5.08	5.89	6.95	8.60	10.14
Jun	3.84	3.40	4.10	1989	12	9.28	1989	1.17	1983	7.8	6.2	2.7	1.1	1.23	1.60	2.14	2.59	3.04	3.49	4.00	4.58	5.34	6.52	7.60
Jul	4.12	3.87	4.90	1972	16	11.19	1972	.42	1983	7.6	6.2	2.7	1.1	.64	.99	1.59	2.16	2.75	3.39	4.13	5.03	6.23	8.19	10.07
Aug	3.06	2.70	4.68	1978	30	7.97	1982	.14	1996	6.8	5.0	2.0	1.0	.55	.82	1.27	1.69	2.11	2.57	3.09	3.72	4.57	5.92	7.21
Sep	3.15	2.26	5.04	1965	11	9.07+	1988	.34	1998	6.1	4.6	2.0	1.0	.36	.60	1.04	1.48	1.95	2.48	3.09	3.85	4.88	6.59	8.25
Oct	3.27	3.11	4.50	1992	16	8.29	1984	.53	1975	6.8	5.3	2.3	.8	.73	1.04	1.52	1.95	2.38	2.84	3.35	3.97	4.78	6.07	7.29
Nov	4.68	4.85	5.05	1994	5	9.70	1973	.16	1999	8.3	6.5	3.0	1.6	.84	1.25	1.94	2.57	3.22	3.93	4.73	5.70	6.99	9.08	11.07
Dec	3.91	3.24	3.56	2001	17	10.71	1982	.72	1980	7.2	6.1	3.0	1.2	1.05	1.42	1.99	2.48	2.97	3.48	4.05	4.72	5.59	6.96	8.25
Ann	46.70	45.77	8.66	Mar 1977	28	13.88	May 1973	.14	Aug 1996	90.5	71.5	31.4	14.0	33.36	35.94	39.25	41.76	43.99	46.15	48.37	50.83	53.81	58.13	61.86

+ 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

Station: ADVANCE 1 S, MO

COOP ID: 230022

Climate Division: MO 6

NWS Call Sign:

Elevation: 360 Feet

Lat: 37°06N

Lon: 89°54W

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	4.4	2.5	#	0	8.0	1978	17	15.5+	1985	8	1985	4	2	1985	1.8	1.3	.5	.2	.0	2.5	.9	.3	.0
Feb	3.7	1.0	1	#	14.0	1993	16	20.0	1993	16	1979	26	8	1984	1.4	1.1	.5	.2	.1	1.2	.8	.3	.1
Mar	1.4	.0	#	0	9.0	1994	9	10.0	1975	9	1994	9	1	1994	.6	.4	.2	.1	.0	.5	.2	.2	.0
Apr	#	.0	0	0	#	1973	10	#+	1973	0	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	2.0	1993	30	2.0	1993	0	0	0	0	0	@	@	.0	.0	.0	.0	.0	.0	.0
Nov	.4	.0	#	0	4.5	1980	27	4.5	1980	5	1980	27	#	1980	.1	.1	.1	.0	.0	.1	.1	@	.0
Dec	1.9	1.0	#	0	8.0	1984	5	9.5	2000	8	1984	6	2	2000	.7	.7	.3	@	.0	1.3	.5	.2	.0
Ann	11.9	4.5	N/A	N/A	14.0	Feb 1993	16	20.0	Feb 1993	16	Feb 1979	26	8	Feb 1984	4.6	3.6	1.6	.5	.1	5.6	2.5	1.0	.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

Climatography of the United States

No. 20 1971-2000

Station: ADVANCE 1 S, MO

COOP ID: 230022

Climate Division: MO 6

NWS Call Sign:

Elevation: 360 Feet

Lat: 37°06N

Lon: 89°54W

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	5/04	4/29	4/25	4/22	4/20	4/17	4/14	4/10	4/05
32	4/23	4/18	4/15	4/12	4/09	4/06	4/03	3/31	3/26
28	4/16	4/11	4/08	4/05	4/02	3/30	3/27	3/23	3/18
24	3/25	3/21	3/17	3/14	3/11	3/08	3/06	3/02	2/25
20	3/20	3/12	3/07	3/02	2/26	2/21	2/16	2/11	2/03
16	3/13	3/05	2/27	2/22	2/17	2/12	2/07	2/01	1/24
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	9/29	10/03	10/06	10/09	10/12	10/15	10/19	10/24
32	9/30	10/05	10/09	10/12	10/15	10/18	10/22	10/25	10/31
28	10/13	10/20	10/24	10/28	11/01	11/04	11/08	11/13	11/19
24	10/24	11/01	11/06	11/11	11/15	11/19	11/24	11/29	12/07
20	11/08	11/16	11/22	11/27	12/01	12/06	12/10	12/16	12/24
16	11/11	11/22	11/30	12/06	12/13	12/19	12/25	1/02	1/13
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	192	185	180	176	172	168	164	159	152
32	207	201	196	192	189	185	181	177	170
28	235	227	222	217	212	208	203	197	189
24	272	264	258	253	248	243	238	232	224
20	307	297	290	283	278	272	266	258	248
16	331	318	309	302	295	289	282	274	263

* 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

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

Station: ADVANCE 1 S, MO

COOP ID: 230022

Climate Division: MO 6

NWS Call Sign:

Elevation: 360 Feet

Lat: 37°06N

Lon: 89°54W

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	1043	791	576	276	98	3	0	2	48	271	569	910	4587
60	888	652	431	160	41	0	0	0	15	165	425	755	3532
57	796	575	348	106	21	0	0	0	6	115	345	666	2978
55	742	522	297	77	13	0	0	0	3	87	294	610	2645
50	597	396	190	27	3	0	0	0	0	38	184	467	1902
32	195	89	12	0	0	0	0	0	0	0	9	110	415

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	175	222	460	729	1046	1277	1445	1377	1104	787	431	223	9276
55	9	11	32	116	345	587	732	664	417	162	26	9	3110
57	1	7	21	85	292	527	670	602	360	127	17	4	2713
60	0	1	11	49	219	437	577	509	279	84	7	0	2173
65	0	0	1	15	120	290	422	356	162	35	1	0	1402
70	0	0	0	3	53	155	268	214	76	11	0	0	780

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	44	98	261	504	808	1048	1205	1140	875	550	238	73	44	142	403	907	1715	2763	3968	5108	5983	6533	6771	6844
45	19	46	159	364	653	898	1050	985	725	400	143	34	19	65	224	588	1241	2139	3189	4174	4899	5299	5442	5476
50	3	16	85	239	498	748	895	830	576	268	76	13	3	19	104	343	841	1589	2484	3314	3890	4158	4234	4247
55	0	3	37	137	347	598	740	675	430	159	37	3	0	3	40	177	524	1122	1862	2537	2967	3126	3163	3166
60	0	1	11	67	215	448	585	520	295	79	11	0	0	1	12	79	294	742	1327	1847	2142	2221	2232	2232
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	29	70	161	310	519	710	821	772	575	365	147	44	29	99	260	570	1089	1799	2620	3392	3967	4332	4479	4523

(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