

# Climatography of the United States

No. 20

1971-2000

Station: ST LOUIS INTL AP, MO

COOP ID: 237455

Climate Division: MO 2

NWS Call Sign: STL

Elevation: 568 Feet

Lat: 38°45N

Lon: 90°22W

## 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	37.9	21.2	29.6	77	1950	24	41.7	1990	-18	1985	20	15.6	1977	1097	0	.0	.0	6.4	11.0	25.6	1.8
Feb	44.3	26.5	35.4	85	1972	29	44.3	1976	-12	1996	3	22.0	1978	844	0	.0	.0	9.8	6.6	19.2	.6
Mar	55.4	36.2	45.8	89	1985	28	52.2	1973	-5	1960	5	37.5	1984	613	7	.0	.0	20.1	1.1	12.2	@
Apr	66.7	46.5	56.6	93	1989	26	63.8	1981	22+	1975	3	50.9	1997	294	32	.0	.3	27.8	.0	2.5	.0
May	76.5	56.6	66.5	98	1953	26	73.2	1987	31+	1976	3	61.3	1981	79	114	.0	1.3	30.9	.0	@	.0
Jun	85.3	65.9	75.6	105	1952	29	79.9	1984	43	1969	3	71.1	1974	6	316	.1	8.6	30.0	.0	.0	.0
Jul	89.8	70.6	80.2	115	1954	14	85.7	1980	51+	1972	6	75.8	1996	0	461	1.2	15.8	31.0	.0	.0	.0
Aug	87.9	68.6	78.2	107	1984	29	84.5	1983	47+	1986	29	72.6	1992	1	396	1.0	12.2	31.0	.0	.0	.0
Sep	80.1	60.3	70.2	104+	1984	1	75.0	1998	36+	1974	23	63.8	1974	46	196	.1	4.5	30.0	.0	.0	.0
Oct	68.3	48.2	58.3	94+	1963	11	64.1	1971	23	1976	28	52.0	1976	246	36	.0	.1	30.1	.0	1.3	.0
Nov	53.8	36.7	45.3	85+	1989	11	52.6	1999	1	1964	30	37.7	1976	583	3	.0	.0	18.0	.7	10.2	.0
Dec	42.0	25.8	33.9	76+	1970	3	41.4	1982	-16	1989	22	20.3	1983	949	0	.0	.0	8.6	6.3	22.1	.8
Ann	65.7	46.9	56.3	115	Jul 1954	14	85.7	Jul 1980	-18	Jan 1985	20	15.6	Jan 1977	4758	1561	2.4	42.8	273.7	25.7	93.1	3.2

+ 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: 1941-2001

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

085-A

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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: ST LOUIS INTL AP, MO**

**COOP ID: 237455**

**Climate Division: MO 2**

**NWS Call Sign: STL**

**Elevation: 568 Feet Lat: 38°45N**

**Lon: 90°22W**

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	2.14	1.83	4.16	1950	3	5.38	1975	.10	1986	9.4	4.3	1.3	.3	.30	.48	.79	1.08	1.39	1.73	2.13	2.61	3.26	4.32	5.35
Feb	2.28	2.04	2.36	1959	9	4.68	1986	.52	1996	8.2	4.6	1.4	.5	.66	.88	1.20	1.49	1.76	2.05	2.37	2.74	3.23	3.99	4.70
Mar	3.60	3.26	2.38	1977	28	6.67	1978	1.22	1986	11.1	7.2	2.4	.5	1.50	1.82	2.29	2.66	3.02	3.38	3.77	4.22	4.78	5.65	6.43
Apr	3.69	3.24	4.79	1979	11	10.32	1994	.99	1977	11.4	7.0	2.4	.6	.90	1.24	1.78	2.26	2.74	3.24	3.80	4.47	5.34	6.73	8.03
May	4.11	3.78	5.59	1995	16	12.92	1995	1.02	1972	11.3	7.2	2.6	1.0	1.11	1.50	2.10	2.62	3.13	3.66	4.26	4.96	5.88	7.31	8.66
Jun	3.76	3.24	3.95	1957	14	9.43	1985	.44	1991	9.6	6.1	2.7	1.1	.92	1.27	1.82	2.31	2.79	3.30	3.87	4.55	5.43	6.84	8.15
Jul	3.90	3.62	4.68	1948	5	10.71	1981	.76	1984	8.3	5.4	2.5	1.2	1.01	1.38	1.95	2.45	2.94	3.46	4.03	4.71	5.60	7.01	8.32
Aug	2.98	2.78	2.53	1974	28	5.56	1987	.08	1971	8.1	5.1	2.2	.9	.60	.87	1.31	1.71	2.12	2.55	3.04	3.63	4.41	5.66	6.84
Sep	2.96	2.56	2.89	1984	10	9.16	1993	.00	1979	7.5	5.0	1.9	.9	.26	.59	1.07	1.50	1.95	2.43	2.98	3.65	4.55	6.00	7.39
Oct	2.76	2.32	2.67	1986	3	7.12	1984	.21	1975	8.5	5.1	1.8	.6	.71	.97	1.37	1.72	2.07	2.44	2.85	3.34	3.97	4.97	5.91
Nov	3.71	3.31	3.15	1985	18	9.95	1985	.59	1989	10.1	6.1	2.8	1.0	.77	1.11	1.65	2.15	2.65	3.19	3.79	4.51	5.47	7.00	8.45
Dec	2.86	2.06	2.76	1992	15	7.82	1982	.66	1980	9.4	5.1	1.8	.7	.54	.80	1.22	1.60	2.00	2.42	2.90	3.48	4.25	5.48	6.66
Ann	38.75	37.54	5.59	May 1995	16	12.92	May 1995	.00	Sep 1979	112.9	68.2	25.8	9.3	26.37	28.72	31.76	34.09	36.16	38.18	40.26	42.58	45.40	49.51	53.08

+ 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: 1941-2001

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

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**Elevation: 568 Feet**

**Lat: 38°45N**

**Lon: 90°22W**

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	7.2	4.2	1	0	10.9	1978	16	23.9	1977	13	1978	25	7	1977	5.2	2.0	.8	.3	@	9.4	5.3	3.8	.4
Feb	4.7	3.5	1	1	9.6	1993	25	20.8	1993	20+	1982	11	10+	1982	3.4	1.2	.5	.2	.0	6.1	4.1	3.0	1.3
Mar	3.2	1.6	#	0	10.0	1989	6	15.4	1978	17	1978	9	6	1978	2.3	.7	.4	.1	@	2.3	1.4	1.0	.5
Apr	.8	.0	#	0	5.0	1980	14	6.5	1971	6	1971	6	#	1997	.4	.3	.1	@	.0	.2	.1	@	.0
May	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	2000	.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	#	1993	31	#+	1993	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	1.5	.0	#	0	7.6	1975	26	8.0	1980	8	1975	27	1+	1980	.9	.4	.1	.1	.0	.9	.4	.2	.0
Dec	4.8	1.8	1	0	12.0	1973	19	26.3	1973	12+	1973	21	3	2000	3.5	1.5	.4	.2	.1	4.9	3.0	1.5	.1
Ann	22.2	11.1	N/A	N/A	12.0	Dec 1973	19	26.3	Dec 1973	20+	Feb 1982	11	10+	Feb 1982	15.7	6.1	2.3	.9	.1	23.8	14.3	9.5	2.3

+ 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	4/27	4/23	4/20	4/17	4/15	4/13	4/10	4/07	4/03
32	4/19	4/15	4/12	4/09	4/07	4/05	4/02	3/30	3/26
28	4/10	4/05	4/01	3/29	3/26	3/23	3/20	3/16	3/11
24	4/03	3/28	3/24	3/21	3/18	3/15	3/11	3/07	3/02
20	3/25	3/18	3/13	3/09	3/05	3/01	2/25	2/20	2/13
16	3/18	3/08	3/02	2/24	2/19	2/13	2/08	2/01	1/23
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	10/04	10/08	10/12	10/14	10/17	10/19	10/22	10/25	10/30
32	10/14	10/19	10/23	10/26	10/29	10/31	11/03	11/07	11/12
28	10/26	10/31	11/04	11/07	11/10	11/14	11/17	11/21	11/26
24	11/05	11/10	11/14	11/17	11/20	11/23	11/27	12/01	12/06
20	11/10	11/17	11/21	11/25	11/29	12/03	12/07	12/12	12/18
16	11/17	11/24	11/29	12/04	12/08	12/12	12/17	12/22	12/30
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	205	198	193	188	184	180	175	170	163
32	223	216	212	207	204	200	196	191	184
28	254	245	239	234	229	224	218	212	203
24	272	263	257	252	247	242	236	230	221
20	296	287	280	274	269	263	257	251	241
16	330	317	307	299	292	284	276	266	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:

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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	1097	844	613	294	79	6	0	1	46	246	583	949	4758
60	944	694	450	161	41	0	0	0	8	129	449	809	3685
57	853	616	366	108	22	0	0	0	2	82	367	724	3140
55	798	564	314	79	14	0	0	0	1	59	316	666	2811
50	652	439	203	30	3	0	0	0	0	20	205	524	2076
32	236	122	16	0	0	0	0	0	0	0	16	153	543

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	119	196	438	727	1058	1298	1481	1421	1139	817	418	178	9290
55	2	7	43	137	352	608	768	708	453	174	37	5	3294
57	1	4	31	107	296	548	706	646	396	137	26	3	2901
60	0	2	19	72	220	459	613	553	315	91	15	1	2360
65	0	0	7	32	114	316	461	396	196	36	3	0	1561
70	0	0	2	9	48	184	307	251	103	10	0	0	914

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	249	500	819	1065	1243	1185	908	581	231	72	44	142	391	891	1710	2775	4018	5203	6111	6692	6923	6995
45	16	51	156	361	664	915	1088	1030	758	430	147	34	16	67	223	584	1248	2163	3251	4281	5039	5469	5616	5650
50	5	22	89	236	511	765	933	875	608	294	79	12	5	27	116	352	863	1628	2561	3436	4044	4338	4417	4429
55	0	7	46	143	360	615	778	720	462	181	41	4	0	7	53	196	556	1171	1949	2669	3131	3312	3353	3357
60	0	1	20	78	225	466	623	565	324	96	15	0	0	1	21	99	324	790	1413	1978	2302	2398	2413	2413
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	27	60	149	295	524	735	861	817	599	347	128	41	27	87	236	531	1055	1790	2651	3468	4067	4414	4542	4583

(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)