

Climatology of the United States

No. 20

1971-2000

Station: SWEET SPRINGS, MO

COOP ID: 238223

Climate Division: MO 2

NWS Call Sign:

Elevation: 680 Feet

Lat: 38° 58N

Lon: 93° 25W

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	35.4	16.8	26.1	77	1950	24	37.4	1990	-24+	1977	17	12.9	1979	1206	0	.0	.0	5.9	10.1	27.0	3.0
Feb	42.4	22.4	32.4	83	1972	29	42.2	1976	-22	1979	1	19.2	1978	913	0	.0	.0	10.8	6.0	21.4	1.6
Mar	54.4	33.2	43.8	88	1986	29	49.2	1986	-20	1960	5	35.9	1984	657	0	.0	.0	21.4	.8	14.3	.1
Apr	64.7	42.6	53.7	93	1987	29	61.1	1981	17	1975	3	46.3	1983	348	8	.0	.4	27.9	.0	3.9	.0
May	74.6	53.3	64.0	96	1956	21	70.2	1998	29+	1963	1	59.3	1997	123	91	.0	.5	31.0	.0	.2	.0
Jun	83.1	62.8	73.0	106	1988	24	76.5	1971	42+	1972	1	67.9	1982	7	244	.3	8.0	30.0	.0	.0	.0
Jul	88.0	67.3	77.7	115	1954	14	85.3	1980	45	1959	2	74.5	1971	0	392	2.3	17.9	31.0	.0	.0	.0
Aug	86.2	64.8	75.5	109	1980	1	81.8	1983	42	1986	28	69.7	1992	6	332	1.8	14.5	31.0	.0	.0	.0
Sep	77.9	55.9	66.9	104	1953	28	72.5	1998	30+	1989	24	60.0	1974	72	130	.2	5.2	30.0	.0	.2	.0
Oct	67.0	45.0	56.0	96+	1976	2	62.4	1971	14	1952	29	50.1	1988	292	13	.0	.2	30.0	.0	4.0	.0
Nov	51.7	33.2	42.5	84	1978	4	50.8	1999	-8	1991	8	35.7	1976	676	0	.0	.0	18.6	1.0	14.1	@
Dec	40.0	23.1	31.6	75	1948	13	37.3	1982	-23	1989	23	15.9	1983	1038	0	.0	.0	8.2	6.3	24.6	1.5
Ann	63.8	43.4	53.6	115	Jul 1954	14	85.3	Jul 1980	-24+	Jan 1977	17	12.9	Jan 1979	5338	1210	4.6	46.7	275.8	24.2	109.7	6.2

+ 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

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

099-A

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: SWEET SPRINGS, MO

COOP ID: 238223

Climate Division: MO 2

NWS Call Sign:

Elevation: 680 Feet Lat: 38°58N

Lon: 93°25W

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	1.50	1.42	2.36	1971	3	3.36	1999	.03	1986	6.4	3.5	.7	.3	.21	.33	.54	.75	.97	1.21	1.49	1.84	2.30	3.06	3.79
Feb	1.85	1.69	3.19	1997	21	5.06	1997	.21	1991	6.4	3.9	1.0	.4	.43	.61	.88	1.12	1.36	1.62	1.90	2.24	2.69	3.40	4.07
Mar	3.13	2.86	2.50	1985	4	10.22	1973	.84	1986	9.5	6.1	1.9	.7	.95	1.25	1.69	2.08	2.45	2.83	3.25	3.75	4.39	5.39	6.32
Apr	4.11	3.38	4.30	1973	21	12.42	1973	.47	2000	10.4	7.0	2.7	.9	.85	1.23	1.83	2.38	2.94	3.53	4.20	5.00	6.06	7.76	9.36
May	4.95	4.15	3.58	1985	13	13.99	1995	1.23	1980	11.9	7.8	3.2	1.2	1.21	1.67	2.40	3.04	3.67	4.35	5.10	5.99	7.16	9.01	10.75
Jun	4.08	3.04	3.78	1995	26	12.78	1981	.94	1972	9.9	6.9	2.5	1.2	.98	1.37	1.96	2.49	3.02	3.57	4.20	4.94	5.91	7.44	8.89
Jul	3.94	3.05	7.03	1996	21	12.81	1996	.31	1997	8.3	5.6	2.5	1.1	.57	.90	1.47	2.02	2.59	3.21	3.93	4.81	6.00	7.93	9.80
Aug	3.90	3.97	3.61	1955	7	9.99	1982	.00	1984	8.1	5.7	2.6	1.2	.34	.77	1.41	1.98	2.56	3.20	3.93	4.81	6.00	7.92	9.76
Sep	4.45	3.61	5.93	1961	13	16.70	1986	.72	1976	8.2	5.7	2.8	1.2	.72	1.10	1.74	2.36	2.99	3.68	4.47	5.43	6.71	8.80	10.80
Oct	3.43	3.29	4.39	1973	4	6.82	1976	.86	1975	8.5	5.8	2.3	.8	.89	1.22	1.71	2.15	2.58	3.04	3.54	4.14	4.92	6.15	7.30
Nov	3.21	2.69	3.67	1979	20	9.00	1983	.13	1989	8.4	5.4	2.3	.8	.59	.88	1.35	1.79	2.23	2.71	3.25	3.91	4.79	6.19	7.53
Dec	2.25	2.05	4.85	1982	2	8.38	1982	.14	1976	7.2	4.0	1.3	.5	.28	.46	.78	1.09	1.42	1.79	2.22	2.75	3.46	4.64	5.78
Ann	40.80	42.09	7.03	Jul 1996	21	16.70	Sep 1986	.00	Aug 1984	103.2	67.4	25.8	10.3	27.62	30.12	33.35	35.82	38.03	40.17	42.39	44.85	47.86	52.24	56.04

+ 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

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Station: SWEET SPRINGS, MO

COOP ID: 238223

Climate Division: MO 2

NWS Call Sign:

Elevation: 680 Feet

Lat: 38°58N

Lon: 93°25W

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	7.0	4.6	1	1	10.2	1987	9	24.0	1987	11	1979	16	7	1979	3.7	2.2	.7	.3	@	9.9	6.0	3.8	.1
Feb	5.8	5.0	1	#	10.8	1978	13	16.3	1993	11	1978	13	5	1978	3.2	1.7	.6	.2	.1	6.7	3.9	2.1	.2
Mar	3.6	1.6	#	#	8.8	1978	24	14.0	1978	7	1978	24	2	1978	1.5	.9	.4	.1	.0	1.1	.5	.2	.0
Apr	.6	.0	#	0	6.5	1973	9	6.5	1973	4	1973	9	#+	1997	.3	.2	.1	@	.0	.1	.1	.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	2.2	1997	27	2.2	1997	0	0	0	0	0	@	@	.0	.0	.0	.0	.0	.0	.0
Nov	1.9	.3	#	#	8.8	1975	26	10.0	1971	7	1975	26	1	1975	1.0	.6	.2	.1	.0	.7	.3	.1	.0
Dec	4.3	3.2	#	#	8.2	1973	30	16.5	1987	11	1987	15	3	2000	2.9	1.5	.4	.1	.0	4.7	2.2	.8	@
Ann	23.3	14.7	N/A	N/A	10.8	Feb 1978	13	24.0	Jan 1987	11+	Dec 1987	15	7	Jan 1979	12.6	7.1	2.4	.8	.1	23.2	13.0	7.0	.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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NWS Call Sign:

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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	5/12	5/07	5/04	5/01	4/28	4/25	4/23	4/19	4/14
32	5/01	4/26	4/22	4/19	4/16	4/13	4/10	4/07	4/02
28	4/18	4/14	4/11	4/09	4/07	4/05	4/02	3/31	3/27
24	4/10	4/05	4/02	3/30	3/27	3/24	3/21	3/18	3/13
20	4/03	3/26	3/21	3/16	3/12	3/08	3/03	2/26	2/18
16	3/23	3/14	3/08	3/03	2/26	2/21	2/16	2/10	2/01
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	9/20	9/24	9/28	10/01	10/03	10/06	10/09	10/12	10/17
32	9/27	10/02	10/06	10/09	10/12	10/15	10/19	10/23	10/28
28	10/12	10/17	10/21	10/24	10/27	10/30	11/03	11/07	11/12
24	10/25	10/31	11/04	11/08	11/11	11/14	11/18	11/22	11/27
20	11/04	11/10	11/14	11/18	11/21	11/25	11/28	12/03	12/09
16	11/12	11/18	11/23	11/28	12/02	12/06	12/10	12/15	12/21
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	174	169	164	161	157	154	150	146	140
32	199	192	187	183	179	174	170	165	158
28	220	214	210	206	203	199	196	191	186
24	251	243	237	232	228	224	219	213	205
20	283	273	266	259	254	248	242	234	224
16	313	301	292	285	278	271	264	255	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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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	1206	913	657	348	123	7	0	6	72	292	676	1038	5338
60	1051	776	504	220	56	1	0	1	25	171	529	883	4217
57	958	698	419	157	31	0	0	0	11	113	446	792	3625
55	897	646	362	121	19	0	0	0	6	82	391	734	3258
50	752	518	238	53	5	0	0	0	0	32	267	591	2456
32	295	176	21	0	0	0	0	0	0	0	29	188	709

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	111	187	387	651	991	1228	1415	1349	1047	744	343	173	8626
55	1	13	15	81	297	538	702	636	363	113	15	6	2780
57	0	9	10	57	247	478	640	574	309	82	10	2	2418
60	0	3	2	31	179	388	547	482	233	46	2	0	1913
65	0	0	0	8	91	244	392	332	130	13	0	0	1210
70	0	0	0	1	35	122	243	199	59	2	0	0	661

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	25	85	247	484	787	1030	1210	1153	865	545	205	52	25	110	357	841	1628	2658	3868	5021	5886	6431	6636	6688
45	9	41	151	346	632	880	1055	998	715	401	118	23	9	50	201	547	1179	2059	3114	4112	4827	5228	5346	5369
50	2	21	84	228	478	730	900	843	565	268	61	7	2	23	107	335	813	1543	2443	3286	3851	4119	4180	4187
55	0	4	44	132	331	580	745	688	420	160	27	2	0	4	48	180	511	1091	1836	2524	2944	3104	3131	3133
60	0	1	16	70	203	430	590	533	289	76	8	0	0	1	17	87	290	720	1310	1843	2132	2208	2216	2216
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	21	61	157	304	504	699	817	774	566	341	124	34	21	82	239	543	1047	1746	2563	3337	3903	4244	4368	4402

(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