

# Climatography of the United States No. 20

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

Station: SEDALIA WATER PLANT, MO

1971-2000

COOP ID: 237632

Climate Division: MO 3

NWS Call Sign:

Elevation: 780 Feet

Lat: 38°40N

Lon: 93°13W

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	37.1	17.5	27.3	77	1950	24	39.0	1990	-23+	1974	13	12.9	1977	1169	0	.0	.0	5.8	10.5	28.7	3.9
Feb	43.0	22.2	32.6	77	1996	27	42.6	1976	-27	1979	9	17.7	1978	907	0	.0	.0	9.7	6.9	23.6	2.4
Mar	54.4	32.1	43.3	87	1938	25	47.8+	1977	-17	1978	4	35.5	1978	674	0	.0	.0	19.4	1.2	17.8	.2
Apr	65.2	41.6	53.4	92	1940	14	61.3	1981	17+	1975	4	46.8	1983	356	9	.0	.1	26.8	@	5.9	.0
May	74.3	51.9	63.1	96+	1939	31	69.2	1987	28+	1989	7	57.9	1997	143	84	.0	.2	30.9	.0	.4	.0
Jun	83.3	61.7	72.5	105	1980	28	77.1	1971	40	1942	14	66.9	1982	12	237	.1	5.3	30.0	.0	.0	.0
Jul	88.6	66.2	77.4	116	1954	14	84.2	1980	44	1972	6	74.0	1996	0	384	1.2	15.1	31.0	.0	.0	.0
Aug	87.4	63.5	75.5	107	1980	1	82.0	1983	39	1986	29	67.9	1992	8	331	1.1	12.4	31.0	.0	.0	.0
Sep	79.4	55.2	67.3	107	1939	3	72.7	1978	28	1984	30	60.8	1974	72	141	.1	4.7	30.0	.0	.5	.0
Oct	68.2	43.7	56.0	96	1963	7	63.3	1971	20+	1982	22	50.3	1987	295	15	.0	.2	29.6	.0	5.7	.0
Nov	53.4	33.4	43.4	85	1937	1	51.1	1999	-6	1991	9	35.9	1976	648	0	.0	.0	18.2	1.2	17.1	.1
Dec	41.4	23.1	32.3	75	1948	13	39.4	1984	-28+	1989	24	16.0	1983	1015	0	.0	.0	8.3	6.7	26.5	1.7
Ann	64.6	42.7	53.7	116	Jul 1954	14	84.2	Jul 1980	-28+	Dec 1989	24	12.9	Jan 1977	5299	1201	2.5	38.0	270.7	26.5	126.2	8.3

+ 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: 1937-2001

(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	1.58	1.45	1.95	1938	23	4.10	1974	.04	1986	7.2	3.9	.7	.3	.19	.32	.54	.76	.99	1.25	1.55	1.92	2.43	3.26	4.07
Feb	1.81	1.60	6.00	1997	21	7.85	1997	.08	1991	6.6	3.7	1.0	.4	.23	.38	.63	.89	1.15	1.45	1.79	2.22	2.79	3.73	4.64
Mar	3.03	2.50	3.00	1976	4	10.25	1973	.40	1971	9.0	6.1	2.1	.4	.78	1.06	1.50	1.89	2.27	2.68	3.13	3.66	4.35	5.45	6.48
Apr	3.92	3.57	5.80	1960	16	10.59	1994	.74	2000	10.6	6.9	2.4	1.1	.98	1.35	1.92	2.43	2.93	3.46	4.05	4.74	5.66	7.10	8.46
May	5.32	5.29	3.41	1995	18	13.63	1995	1.08	1988	11.8	7.9	3.5	1.6	1.13	1.62	2.40	3.11	3.82	4.58	5.44	6.46	7.81	9.97	12.01
Jun	5.04	3.91	5.14	1948	18	14.68	1981	.65	1972	9.6	6.8	3.1	1.6	.88	1.32	2.06	2.75	3.45	4.22	5.09	6.15	7.56	9.84	12.01
Jul	4.44	3.10	6.50	1996	21	15.45	1998	.43	1975	8.3	5.7	2.7	1.2	.39	.69	1.29	1.90	2.58	3.34	4.26	5.40	6.98	9.62	12.21
Aug	3.58	3.04	4.65	1955	30	8.78	1982	.12	1973	7.8	5.0	2.4	1.1	.50	.79	1.30	1.80	2.32	2.89	3.56	4.37	5.47	7.26	8.99
Sep	3.94	3.52	4.70	1986	18	16.50	1986	.52	1990	7.8	5.6	2.5	1.2	.65	.99	1.56	2.11	2.66	3.27	3.96	4.80	5.93	7.75	9.50
Oct	3.65	2.88	5.54	1973	4	9.72	1986	1.25	1988	8.5	5.5	2.4	1.1	1.11	1.46	1.98	2.42	2.85	3.30	3.80	4.38	5.13	6.31	7.39
Nov	3.48	2.97	2.51	1983	2	11.01	1983	.06	1989	8.7	5.9	2.3	1.1	.49	.77	1.27	1.76	2.26	2.82	3.46	4.26	5.32	7.07	8.75
Dec	2.27	2.08	3.55	1982	2	8.27	1982	.24	1976	7.2	4.5	1.6	.4	.49	.70	1.03	1.33	1.63	1.95	2.32	2.75	3.33	4.24	5.11
Ann	42.06	40.89	6.50	Jul 1996	21	16.50	Sep 1986	.04	Jan 1986	103.1	67.5	26.7	11.5	27.25	30.01	33.61	36.38	38.86	41.28	43.80	46.61	50.04	55.07	59.47

+ 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: 1937-2001

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

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COOP ID: 237632

Climate Division: MO 3

NWS Call Sign:

Elevation: 780 Feet

Lat: 38°40N

Lon: 93°13W

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	4.6	1.9	1	0	8.3	1993	10	15.7	1977	15	1977	5	5	1974	2.4	1.7	.4	.2	.0	6.8	4.0	2.0	.4
Feb	3.5	2.0	1	0	10.0	1978	13	14.5	1978	11	1975	25	4	1978	1.8	1.3	.4	.2	@	4.7	2.4	1.3	.1
Mar	1.3	.0	#	0	9.5	1990	24	9.5	1990	8+	1978	5	3	1978	.5	.3	.1	.1	.0	1.1	.7	.4	.0
Apr	.3	.0	#	0	6.0	1980	14	6.0	1980	3+	1980	14	#	1980	.1	.1	@	@	.0	.1	.1	.0	.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	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	7.0	1975	26	9.0+	1975	9+	1975	28	1+	1975	.6	.5	.1	@	.0	.6	.3	.2	.0
Dec	2.5	.5	#	0	10.0	1973	31	13.5	1973	14+	1987	16	2+	1987	1.3	.9	.1	.1	@	2.4	1.0	.6	.1
Ann	13.5	4.4	N/A	N/A	10.0+	Feb 1978	13	15.7	Jan 1977	15	Jan 1977	5	5	Jan 1974	6.7	4.8	1.1	.6	@	15.7	8.5	4.5	.6

+ 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:**

**Elevation: 780 Feet**

**Lat: 38° 40N**

**Lon: 93° 13W**

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	5/17	5/12	5/08	5/04	5/01	4/28	4/24	4/20	4/14
32	5/05	4/29	4/25	4/22	4/19	4/15	4/12	4/08	4/02
28	4/24	4/19	4/15	4/12	4/09	4/06	4/03	3/30	3/25
24	4/12	4/06	4/02	3/30	3/27	3/23	3/20	3/16	3/10
20	4/03	3/26	3/21	3/16	3/11	3/07	3/02	2/24	2/17
16	3/26	3/17	3/11	3/06	3/02	2/25	2/20	2/14	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	9/17	9/22	9/26	9/29	10/02	10/05	10/08	10/11	10/16
32	9/25	9/30	10/04	10/07	10/10	10/13	10/17	10/20	10/26
28	10/08	10/13	10/18	10/21	10/24	10/28	10/31	11/04	11/10
24	10/17	10/23	10/28	11/01	11/05	11/09	11/13	11/18	11/25
20	11/03	11/09	11/13	11/16	11/19	11/23	11/26	11/30	12/06
16	11/12	11/18	11/23	11/26	11/30	12/03	12/07	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	176	168	163	158	153	149	144	138	130
32	200	191	184	179	174	169	163	157	148
28	218	211	206	202	198	194	189	184	177
24	252	242	235	229	223	217	211	204	193
20	283	272	265	258	252	246	240	232	222
16	303	292	285	279	273	267	260	253	242

\* 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:**

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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	1169	907	674	356	143	12	0	8	72	295	648	1015	5299
60	1014	772	523	229	70	2	0	1	26	175	502	860	4174
57	922	693	437	166	41	0	0	0	12	118	420	772	3581
55	861	641	381	129	27	0	0	0	7	87	366	715	3214
50	718	514	255	60	8	0	0	0	0	34	246	572	2407
32	276	175	26	0	0	0	0	0	0	0	25	183	685

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	131	192	375	643	965	1214	1407	1346	1059	743	367	191	8633
55	2	14	17	83	278	524	694	633	376	117	18	10	2766
57	1	11	11	59	230	465	632	571	321	85	12	5	2403
60	0	5	3	32	167	377	539	480	245	50	4	0	1902
65	0	0	0	9	84	237	384	331	141	15	0	0	1201
70	0	0	0	2	33	122	236	200	68	3	0	0	664

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	19	69	200	416	714	970	1155	1093	807	483	175	47	19	88	288	704	1418	2388	3543	4636	5443	5926	6101	6148
45	6	30	116	284	559	820	1000	938	657	342	103	23	6	36	152	436	995	1815	2815	3753	4410	4752	4855	4878
50	2	11	66	178	408	670	845	783	515	221	51	8	2	13	79	257	665	1335	2180	2963	3478	3699	3750	3758
55	0	4	33	100	269	520	690	629	374	128	23	2	0	4	37	137	406	926	1616	2245	2619	2747	2770	2772
60	0	0	9	49	154	374	536	474	251	62	5	0	0	0	9	58	212	586	1122	1596	1847	1909	1914	1914
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	23	57	137	260	450	652	779	729	525	316	117	36	23	80	217	477	927	1579	2358	3087	3612	3928	4045	4081

(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> |
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## 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)