

**Climatology
of the United States
No. 20**

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

Station: SPRINGFIELD REG AP, MO

1971-2000

COOP ID: 237976

Climate Division: MO 4

NWS Call Sign: SGF

Elevation: 1,259 Feet Lat: 37° 14N

Lon: 93° 23W

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	41.6	21.8	31.7	76	1950	24	41.5	1990	-13+	1985	20	17.1	1979	1034	0	.0	.0	9.3	7.5	25.2	2.1
Feb	47.7	26.4	37.1	81+	1972	29	45.9	1976	-17	1979	9	22.5	1978	790	0	.0	.0	12.7	4.5	19.5	.9
Mar	57.8	34.9	46.3	87	1974	31	51.9	1973	-1	1960	4	39.6	1996	581	3	.0	.0	22.2	.8	12.5	@
Apr	67.7	43.6	55.6	93	1963	21	62.2	1981	18	1957	13	50.3	1983	300	20	.0	.1	28.3	.0	2.9	.0
May	75.9	53.4	64.7	93	1972	16	71.0	1987	30+	1970	2	59.8	1997	100	83	.0	.2	30.9	.0	.1	.0
Jun	84.6	62.2	73.4	101+	1954	27	78.7	1971	42	1966	1	69.4	1974	8	258	.0	6.1	30.0	.0	.0	.0
Jul	89.9	67.1	78.5	113	1954	14	83.5	1980	44+	1972	6	74.8	1979	1	415	1.0	16.5	31.0	.0	.0	.0
Aug	89.5	65.6	77.6	106	1984	29	83.1	1983	44	1967	12	70.8	1992	1	379	1.2	14.8	31.0	.0	.0	.0
Sep	81.2	57.4	69.3	102+	2000	3	74.9	1998	31	1984	30	63.0	1974	62	179	.1	4.6	30.0	.0	.1	.0
Oct	70.6	46.1	58.4	93+	1981	5	63.9	1971	18	1993	31	53.2	1976	248	28	.0	.2	30.1	.0	2.0	.0
Nov	56.4	35.3	45.9	81	1999	13	53.4	1999	4	1959	17	38.8	1976	578	1	.0	.0	20.3	.6	12.0	.0
Dec	45.5	25.9	35.7	77+	1991	8	43.5	1971	-16	1989	23	21.2	1983	899	0	.0	.0	11.1	4.6	22.6	.9
Ann	67.4	45.0	56.2	113	Jul 1954	14	83.5	Jul 1980	-17	Feb 1979	9	17.1	Jan 1979	4602	1366	2.3	42.5	286.9	18.0	96.9	3.9

+ 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/normals/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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Elevation: 1,259 Feet Lat: 37°14N

Lon: 93°23W

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	2.11	1.55	3.85	1950	3	5.26	1990	.09	1986	8.8	4.4	1.2	.4	.34	.52	.82	1.11	1.42	1.74	2.12	2.58	3.19	4.18	5.14
Feb	2.28	1.93	3.12	1966	9	5.68	1990	.40	1982	7.9	4.6	1.5	.5	.52	.73	1.06	1.36	1.66	1.98	2.34	2.76	3.33	4.22	5.06
Mar	3.82	3.02	2.87	1961	5	9.01	1973	.95	1972	10.8	6.7	2.5	1.1	.99	1.35	1.90	2.39	2.87	3.38	3.95	4.62	5.49	6.87	8.16
Apr	4.31	3.60	3.42	1970	30	10.58	1994	.15	1989	11.1	7.1	3.0	1.1	.95	1.35	1.98	2.55	3.12	3.73	4.42	5.24	6.32	8.04	9.66
May	4.57	4.22	4.21	1989	22	13.41	1990	1.96+	1975	11.3	7.7	3.1	.9	1.73	2.16	2.77	3.28	3.76	4.25	4.78	5.40	6.19	7.40	8.51
Jun	5.02	4.37	4.82	1975	9	11.31	1975	.23	1991	10.4	7.5	3.5	1.4	1.26	1.73	2.46	3.11	3.75	4.42	5.17	6.07	7.24	9.09	10.82
Jul	3.56	2.99	4.52	1983	4	7.96	1973	.69	1980	7.4	5.1	2.5	1.1	.88	1.21	1.73	2.19	2.65	3.13	3.66	4.30	5.14	6.46	7.69
Aug	3.37	3.30	3.39	1976	15	8.60	1982	.34	2000	8.0	5.3	2.4	.9	.85	1.17	1.66	2.10	2.52	2.98	3.48	4.08	4.86	6.09	7.25
Sep	4.83	3.89	5.03	1993	24	17.46	1993	.83	1981	8.3	6.0	3.0	1.6	.85	1.27	1.98	2.64	3.31	4.04	4.88	5.89	7.24	9.42	11.50
Oct	3.47	3.53	5.48	1949	21	7.89	1981	.60	1995	9.1	5.7	2.4	1.1	.88	1.20	1.71	2.15	2.60	3.06	3.58	4.19	5.00	6.27	7.45
Nov	4.46	3.99	6.27	1987	24	12.24	1985	.19	1989	9.3	6.1	2.8	1.3	.60	.97	1.60	2.22	2.87	3.59	4.42	5.45	6.83	9.08	11.26
Dec	3.17	2.52	3.67	1982	2	8.84	1982	.71	1996	8.8	4.9	1.9	1.0	.59	.87	1.34	1.77	2.21	2.68	3.21	3.86	4.72	6.10	7.42
Ann	44.97	44.96	6.27	Nov 1987	24	17.46	Sep 1993	.09	Jan 1986	111.2	71.1	29.8	12.4	31.31	33.93	37.30	39.87	42.15	44.37	46.66	49.20	52.28	56.76	60.64

+ 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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Elevation: 1,259 Feet

Lat: 37°14N

Lon: 93°23W

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	6.6	4.0	1	1	9.1	1978	16	23.1	1979	14	1995	20	6	1979	4.2	2.0	.7	.3	.0	8.9	5.3	2.9	.4
Feb	4.5	2.7	1	1	11.9	1975	23	19.2	1980	16+	1980	9	5	1980	3.1	1.0	.5	.3	.1	5.5	3.3	1.9	.5
Mar	2.9	.8	#	0	8.6	1975	9	15.0	1989	14+	1999	14	2	1989	1.6	.6	.3	.2	.0	1.2	.6	.3	.2
Apr	.4	.0	#	0	6.9	1971	4	7.1	1971	3	1971	5	#	1980	.3	.1	@	@	.0	.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	1.0	1993	29	1.2	1993	4	1980	26	#	1993	.1	.0	.0	.0	.0	.1	@	.0	.0
Nov	1.7	.3	#	0	7.5	1974	29	11.5	1972	8	1972	19	1	1972	1.0	.4	.2	.1	.0	.6	.3	.2	.0
Dec	4.0	3.3	1	0	13.7	2000	13	18.1	2000	13	2000	14	5	2000	3.0	1.2	.5	.1	@	4.2	2.0	1.3	.1
Ann	20.1	11.1	N/A	N/A	13.7	Dec 2000	13	23.1	Jan 1979	16+	Feb 1980	9	6	Jan 1979	13.3	5.3	2.2	1.0	.1	20.6	11.5	6.6	1.2

+ 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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Elevation: 1,259 Feet

Lat: 37° 14N

Lon: 93° 23W

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	5/03	4/30	4/27	4/23	4/20	4/16	4/11
32	4/29	4/24	4/21	4/17	4/15	4/12	4/08	4/05	3/31
28	4/15	4/10	4/07	4/04	4/02	3/30	3/28	3/24	3/20
24	4/08	4/02	3/28	3/25	3/21	3/18	3/14	3/09	3/03
20	3/26	3/20	3/16	3/12	3/08	3/05	3/01	2/25	2/19
16	3/15	3/07	3/02	2/26	2/21	2/17	2/13	2/08	1/31
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	9/25	9/30	10/03	10/06	10/09	10/11	10/14	10/17	10/22
32	10/04	10/10	10/14	10/17	10/21	10/24	10/28	11/01	11/07
28	10/19	10/25	10/29	11/02	11/05	11/09	11/12	11/17	11/23
24	10/26	11/02	11/06	11/10	11/14	11/17	11/21	11/25	12/02
20	11/06	11/12	11/16	11/20	11/24	11/27	12/01	12/05	12/11
16	11/15	11/21	11/26	11/30	12/04	12/08	12/12	12/17	12/23
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	186	178	173	168	164	160	156	150	143
32	212	204	198	193	188	184	179	173	165
28	238	231	225	221	217	212	208	203	195
24	261	253	247	242	237	232	227	221	212
20	285	276	270	265	260	254	249	243	234
16	313	303	296	290	285	279	273	266	256

* 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

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Elevation: 1,259 Feet Lat: 37°14N Lon: 93°23W

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	1034	790	581	300	100	8	1	1	62	248	578	899	4602
60	877	647	431	169	45	2	0	0	16	122	434	754	3497
57	792	569	345	111	22	0	0	0	7	75	352	669	2942
55	733	517	291	80	13	0	0	0	4	52	302	611	2603
50	589	394	179	27	2	0	0	0	0	16	194	471	1872
32	197	96	9	0	0	0	0	0	0	0	14	121	437

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	146	227	463	709	1009	1236	1434	1404	1108	806	419	202	9163
55	1	7	40	121	306	546	721	691	426	166	32	5	3062
57	1	4	27	92	252	486	659	629	371	129	21	3	2674
60	0	1	14	57	178	397	566	536	294	81	10	1	2135
65	0	0	3	20	83	258	415	379	179	28	1	0	1366
70	0	0	0	4	26	132	263	236	92	6	0	0	759

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	51	114	264	478	769	1003	1192	1167	876	568	232	80	51	165	429	907	1676	2679	3871	5038	5914	6482	6714	6794
45	23	57	162	341	614	853	1037	1012	726	418	141	36	23	80	242	583	1197	2050	3087	4099	4825	5243	5384	5420
50	5	26	91	218	461	703	882	857	578	283	77	16	5	31	122	340	801	1504	2386	3243	3821	4104	4181	4197
55	0	7	43	127	314	553	727	702	432	172	35	1	0	7	50	177	491	1044	1771	2473	2905	3077	3112	3113
60	0	1	17	61	185	404	572	547	303	85	8	0	0	1	18	79	264	668	1240	1787	2090	2175	2183	2183
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	38	77	166	293	487	680	817	791	578	351	138	54	38	115	281	574	1061	1741	2558	3349	3927	4278	4416	4470

(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