

Climatology of the United States

No. 20

1971-2000

Station: FESTUS, MO

COOP ID: 232850

Climate Division: MO 5

NWS Call Sign:

Elevation: 600 Feet Lat: 38°16N Lon: 90°24W

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	39.1	17.9	28.5	78	1970	28	40.9	1990	-27	1977	17	13.4	1977	1131	0	.0	.0	7.6	8.9	27.2	2.3
Feb	45.9	22.1	34.0	89	1962	13	42.7	1999	-20	1982	10	21.6	1978	869	0	.0	.0	10.8	4.5	22.3	1.2
Mar	56.7	30.9	43.8	91	1985	28	50.1	1973	-13	1978	5	36.3	1978	658	0	.0	.1	22.0	.7	15.0	.1
Apr	67.2	40.5	53.9	93	1965	23	60.3	1981	18	1973	11	47.9	1983	343	8	.0	.3	28.5	.0	5.1	.0
May	75.7	50.0	62.9	95+	1978	29	69.4	1991	27	1963	1	57.9	1981	146	79	.0	2.0	31.0	.0	.2	.0
Jun	83.7	59.0	71.4	103	1980	28	74.8	1991	37+	1972	1	65.5	1974	17	208	.3	8.3	30.0	.0	.0	.0
Jul	88.2	64.4	76.3	110+	1980	16	80.2	1999	43	1972	6	72.4	1971	0	351	1.4	16.0	31.0	.0	.0	.0
Aug	86.9	62.3	74.6	106	1962	21	80.7	1995	40	1967	28	70.4	1976	7	304	1.4	12.9	31.0	.0	.0	.0
Sep	79.6	53.6	66.6	105	1971	14	73.7	1998	30+	1983	24	59.7	1974	72	120	.2	5.2	30.0	.0	.2	.0
Oct	69.6	41.6	55.6	97	1980	8	61.4	1971	18+	1981	24	48.2	1976	313	21	.0	.5	30.3	.0	5.0	.0
Nov	55.1	32.6	43.9	87	1980	7	52.5	1999	2	1976	30	34.5	1976	635	0	.0	.0	20.5	.6	14.4	.0
Dec	43.2	23.0	33.1	78	1970	3	41.0	1982	-19+	1989	24	19.6	1983	989	0	.0	.0	9.9	4.4	25.0	.6
Ann	65.9	41.5	53.7	110+	Jul 1980	16	80.7	Aug 1995	-27	Jan 1977	17	13.4	Jan 1977	5180	1091	3.3	45.3	282.6	19.1	114.4	4.2

+ 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: 1960-2001

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

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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: FESTUS, MO

COOP ID: 232850

Climate Division: MO 5

NWS Call Sign:

Elevation: 600 Feet Lat: 38°16N

Lon: 90°24W

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	2.15	1.92	3.15	1969	29	5.74	1975	.15	1986	7.5	4.9	1.6	.6	.34	.52	.83	1.13	1.43	1.77	2.15	2.62	3.25	4.27	5.24
Feb	2.39	2.23	2.54	1975	22	4.37	1975	.72	1983	6.2	4.5	1.6	.5	.87	1.10	1.42	1.69	1.95	2.21	2.50	2.83	3.25	3.91	4.51
Mar	3.85	3.28	2.68	1995	7	7.68	1978	1.51	1986	9.3	6.8	2.4	.9	1.37	1.73	2.25	2.70	3.12	3.55	4.02	4.57	5.27	6.35	7.35
Apr	4.15	3.64	3.70	1979	11	13.16	1994	.50	1980	9.0	6.8	2.7	1.3	.84	1.22	1.83	2.38	2.94	3.55	4.23	5.04	6.12	7.86	9.50
May	3.99	3.57	3.40	1964	28	10.46	1995	1.38	1972	9.6	6.7	2.6	1.0	1.21	1.59	2.15	2.64	3.12	3.61	4.15	4.79	5.61	6.90	8.09
Jun	3.88	3.03	4.30	2000	16	9.56	1997	.97	1988	8.4	5.7	2.3	1.0	.85	1.21	1.78	2.29	2.81	3.36	3.97	4.71	5.69	7.24	8.71
Jul	2.99	2.72	3.27	1979	28	8.95	1998	.07	1974	6.9	5.2	2.5	1.1	.48	.73	1.17	1.58	2.01	2.47	3.01	3.65	4.52	5.93	7.29
Aug	3.57	3.31	3.65	1970	9	7.13	1975	.49	1983	6.9	5.3	2.6	1.0	.94	1.27	1.79	2.25	2.70	3.17	3.69	4.31	5.12	6.40	7.59
Sep	3.03	2.86	2.80	1993	23	10.78	1993	.00	1979	6.4	4.4	2.3	1.0	.25	.59	1.08	1.53	1.98	2.48	3.05	3.74	4.66	6.17	7.61
Oct	2.75	2.50	3.86	1983	20	6.17	1983	.41	1975	6.6	4.7	2.1	.8	.76	1.02	1.41	1.76	2.10	2.45	2.85	3.31	3.92	4.87	5.75
Nov	4.01	4.18	3.55	1963	22	9.75	1972	.30	1999	9.0	6.7	2.7	1.3	.78	1.14	1.73	2.27	2.82	3.41	4.08	4.88	5.95	7.66	9.29
Dec	3.15	2.72	3.70	1971	10	7.92	1971	.35	1980	8.0	5.4	2.1	1.0	.66	.95	1.41	1.83	2.25	2.71	3.22	3.83	4.64	5.94	7.17
Ann	39.91	40.96	4.30	Jun 2000	16	13.16	Apr 1994	.00	Sep 1979	93.8	67.1	27.5	11.5	26.81	29.29	32.50	34.95	37.15	39.28	41.49	43.95	46.95	51.32	55.13

+ 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: 1960-2001

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

Complete documentation available from:
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Station: FESTUS, MO

COOP ID: 232850

Climate Division: MO 5

NWS Call Sign:

Elevation: 600 Feet

Lat: 38°16N

Lon: 90°24W

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	5.8	3.0	1	#	7.5	1994	17	25.0	1977	11	1977	23	7	1977	2.4	1.6	.4	.2	.0	6.6	3.8	2.5	.1
Feb	1.8	1.3	1	#	9.0	1993	25	9.0	1993	19	1982	9	9	1982	1.4	1.0	.3	.1	.0	4.1	2.2	.8	.0
Mar	1.8	.3	#	0	6.5	1975	10	9.5	1978	7	1978	3	1	1978	.8	.6	.3	.1	.0	1.1	.6	.3	.0
Apr	.7	.0	#	0	8.5	1971	6	11.5	1971	5	1971	6	#+	1997	.2	.1	.1	@	.0	.1	.1	.1	.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	#	.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	9.0	1980	27	10.0	1980	8	1980	27	1	1980	.5	.4	.2	.1	.0	.7	.4	.2	.0
Dec	4.5	2.3	#	0	8.0	1973	19	18.8	1973	11	1973	20	2	1989	1.6	1.0	.3	.2	.0	2.2	1.0	.7	.1
Ann	16.1	6.9	N/A	N/A	9.0+	Feb 1993	25	25.0	Jan 1977	19	Feb 1982	9	9	Feb 1982	6.9	4.7	1.6	.7	.0	14.8	8.1	4.6	.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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Climate Division: MO 5

NWS Call Sign:

Elevation: 600 Feet

Lat: 38° 16N

Lon: 90° 24W

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	5/11	5/07	5/03	4/29	4/26	4/22	4/18	4/11
32	5/02	4/27	4/23	4/20	4/17	4/14	4/11	4/07	4/02
28	4/25	4/19	4/15	4/11	4/08	4/05	4/01	3/28	3/22
24	4/11	4/05	4/02	3/29	3/27	3/24	3/20	3/17	3/11
20	4/02	3/27	3/23	3/19	3/16	3/13	3/09	3/05	2/27
16	3/24	3/15	3/09	3/04	2/27	2/22	2/16	2/10	2/02
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	9/25	9/28	10/01	10/04	10/07	10/10	10/13	10/18
32	9/28	10/03	10/06	10/08	10/11	10/13	10/16	10/19	10/24
28	10/07	10/13	10/17	10/21	10/24	10/27	10/31	11/04	11/10
24	10/15	10/23	10/29	11/02	11/07	11/12	11/16	11/22	11/30
20	10/27	11/03	11/08	11/13	11/17	11/21	11/25	12/01	12/08
16	11/08	11/17	11/22	11/28	12/02	12/07	12/12	12/18	12/26
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	181	173	167	162	157	152	147	141	132
32	197	190	185	180	176	172	167	162	155
28	227	217	210	204	198	193	187	180	170
24	251	242	236	230	225	220	214	208	199
20	274	264	257	251	245	240	234	227	217
16	313	301	292	285	278	271	263	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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Lat: 38°16N

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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	1131	869	658	343	146	17	0	7	72	313	635	989	5180
60	976	729	509	215	71	3	0	0	26	196	490	834	4049
57	883	652	421	152	41	1	0	0	11	140	408	745	3454
55	823	600	366	116	26	0	0	0	6	108	355	688	3088
50	680	471	243	50	7	0	0	0	1	50	238	545	2285
32	248	137	21	0	0	0	0	0	0	0	21	163	590

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	140	192	387	655	955	1181	1374	1321	1038	731	376	197	8547
55	2	11	18	81	269	491	661	608	354	126	20	9	2650
57	0	6	12	57	221	432	599	546	299	96	14	4	2286
60	0	0	6	30	159	344	506	453	223	59	5	0	1785
65	0	0	0	8	79	208	351	304	120	21	0	0	1091
70	0	0	0	1	29	100	202	173	50	5	0	0	560

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	39	84	245	472	768	996	1175	1116	857	536	218	53	39	123	368	840	1608	2604	3779	4895	5752	6288	6506	6559
45	14	47	154	336	613	846	1020	961	707	384	132	26	14	61	215	551	1164	2010	3030	3991	4698	5082	5214	5240
50	5	19	85	210	458	696	865	806	557	254	74	8	5	24	109	319	777	1473	2338	3144	3701	3955	4029	4037
55	1	6	38	119	312	546	710	651	412	150	32	0	1	7	45	164	476	1022	1732	2383	2795	2945	2977	2977
60	0	0	18	57	181	397	555	496	277	71	10	0	0	0	18	75	256	653	1208	1704	1981	2052	2062	2062
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	33	65	174	305	491	667	792	744	563	352	144	43	33	98	272	577	1068	1735	2527	3271	3834	4186	4330	4373

(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