

Climatology of the United States

No. 20

1971-2000

Station: MARSHFIELD, MO

COOP ID: 235307

Climate Division: MO 4

NWS Call Sign:

Elevation: 1,490 Feet Lat: 37° 20N

Lon: 92° 55W

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	42.3	21.6	32.0	75	1950	24	42.4	1990	-20	1985	20	19.1	1977	1025	0	.0	.0	8.8	8.0	25.7	2.0
Feb	48.0	26.4	37.2	82	1972	29	46.1	1976	-12+	1979	9	24.7	1978	778	0	.0	.0	12.4	4.5	20.0	1.0
Mar	57.8	35.2	46.5	88	1972	12	51.0	1974	-3	1960	5	40.0	1996	574	0	.0	.0	22.1	1.0	13.0	@
Apr	67.7	44.5	56.1	91	1987	20	63.1	1981	19+	1975	3	50.5	1983	280	12	.0	.1	28.1	.0	3.2	.0
May	76.2	54.1	65.2	95	1972	19	71.5	1987	29+	1976	3	59.9	1976	106	109	.0	.3	31.0	.0	.1	.0
Jun	84.1	62.5	73.3	102	1952	29	77.0	1971	43+	1989	16	67.9	1974	9	258	@	4.0	30.0	.0	.0	.0
Jul	89.4	67.3	78.4	110	1954	14	85.8	1980	47	1970	21	75.2	1996	0	413	.7	13.7	31.0	.0	.0	.0
Aug	89.0	66.0	77.5	104	1964	3	84.3	1980	45	1950	21	70.6	1992	5	391	.6	13.1	31.0	.0	.0	.0
Sep	80.5	57.9	69.2	102+	2000	2	74.8	1998	31	1995	22	61.7	1974	46	173	.1	3.4	30.0	.0	.1	.0
Oct	70.3	47.0	58.7	93	1953	1	64.4	1971	18	1952	29	52.6	1976	222	24	.0	.1	30.2	@	1.9	.0
Nov	56.4	35.5	46.0	81	1955	13	54.0	1999	3	1959	17	38.0	1976	572	1	.0	.0	20.0	.8	12.4	.0
Dec	46.0	25.7	35.9	75+	1991	8	44.6	1984	-18	1989	22	22.3	1983	903	0	.0	.0	10.6	5.1	22.9	.8
Ann	67.3	45.3	56.3	110	Jul 1954	14	85.8	Jul 1980	-20	Jan 1985	20	19.1	Jan 1977	4520	1381	1.4	34.7	285.2	19.4	99.3	3.8

+ 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

061-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: MARSHFIELD, MO

COOP ID: 235307

Climate Division: MO 4

NWS Call Sign:

Elevation: 1,490 Feet Lat: 37°20N

Lon: 92°55W

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	2.24	1.90	3.20	1982	31	6.58	1982	.00	1986	7.8	4.7	1.5	.5	.25	.53	.90	1.23	1.55	1.90	2.30	2.77	3.39	4.40	5.35
Feb	2.15	1.83	2.25	1955	19	5.21	1990	.32	1983	7.0	4.6	1.4	.5	.52	.72	1.04	1.32	1.59	1.88	2.21	2.60	3.11	3.91	4.67
Mar	3.75	3.33	3.50	1985	30	8.42	1973	1.14	1972	9.4	6.5	2.6	.9	1.20	1.55	2.08	2.53	2.96	3.41	3.90	4.48	5.22	6.37	7.44
Apr	4.22	3.39	2.73	1999	26	10.33	1994	.53	2000	9.8	6.9	2.8	1.2	1.07	1.46	2.08	2.62	3.16	3.72	4.35	5.10	6.07	7.61	9.06
May	4.63	4.37	4.12	1957	21	11.45	1990	1.34	1975	11.2	7.9	3.1	1.2	1.74	2.17	2.79	3.31	3.80	4.30	4.85	5.48	6.29	7.52	8.66
Jun	4.56	3.82	3.80	1975	17	10.67	1977	1.28	1991	9.5	6.5	2.9	1.5	1.25	1.68	2.34	2.91	3.47	4.06	4.72	5.49	6.50	8.08	9.56
Jul	3.79	3.86	4.28	1998	24	9.97	1998	1.03	1975	7.6	5.6	2.4	1.2	1.15	1.51	2.05	2.51	2.96	3.43	3.94	4.55	5.33	6.55	7.69
Aug	2.97	2.62	2.90	1975	30	6.30	1975	.35	2000	6.8	5.0	2.2	.9	.53	.80	1.23	1.64	2.05	2.50	3.01	3.62	4.44	5.76	7.02
Sep	4.15	3.71	4.55	1993	25	15.81	1993	.18	1982	8.2	5.5	2.7	1.4	.49	.82	1.40	1.98	2.59	3.28	4.08	5.06	6.41	8.61	10.76
Oct	3.69	3.27	4.63	1986	1	8.14	1983	.84	1989	8.3	5.6	2.5	1.0	1.12	1.47	1.99	2.45	2.88	3.34	3.84	4.43	5.19	6.38	7.48
Nov	4.21	3.87	5.30	1987	25	9.06	1985	.33	1976	8.7	6.0	2.9	1.3	.69	1.05	1.66	2.24	2.84	3.49	4.24	5.14	6.35	8.32	10.20
Dec	3.08	2.30	4.68	1957	17	9.28	1982	.76	1989	7.8	5.2	1.9	.8	.62	.90	1.35	1.77	2.18	2.63	3.13	3.74	4.55	5.83	7.06
Ann	43.44	43.74	5.30	Nov 1987	25	15.81	Sep 1993	.00	Jan 1986	102.1	70.0	28.9	12.4	29.51	32.16	35.58	38.19	40.52	42.79	45.13	47.74	50.91	55.54	59.56

+ 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

Complete documentation available from:
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Station: MARSHFIELD, MO

COOP ID: 235307

Climate Division: MO 4

NWS Call Sign:

Elevation: 1,490 Feet

Lat: 37°20N

Lon: 92°55W

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	5.1	.5	#	0	11.0	1995	19	22.5	1979	8	1985	23	4	1985	1.5	1.3	.9	.4	.1	1.2	.9	.4	.0
Feb	4.9	2.5	#	0	13.0	1984	27	15.0	1993	13	1975	25	1+	1993	.9	.9	.5	.3	.1	.4	.4	.2	.1
Mar	1.3	.0	#	0	9.0	1999	14	9.0	1999	8	1975	10	1	1975	.4	.4	.1	.1	.0	.4	.3	.1	.0
Apr	.2	.0	#	0	2.5	1980	14	2.6	1980	4	1971	5	#	1971	.1	.1	.0	.0	.0	.0	.0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.9	.0	#	0	5.0	1972	19	8.0	1980	6	1975	27	1	1975	.2	.2	.2	.1	.0	.2	.1	.1	.0
Dec	1.5	.0	0	0	8.0	1987	15	9.5	1987	6	1985	13	5	1985	.4	.4	.2	.1	.0	.3	.2	.1	.0
Ann	13.9	3.0	N/A	N/A	13.0	Feb 1984	27	22.5	Jan 1979	13	Feb 1975	25	5	Dec 1985	3.5	3.3	1.9	1.0	.2	2.5	1.9	.9	.1

+ 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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NWS Call Sign:

Elevation: 1,490 Feet

Lat: 37°20N

Lon: 92°55W

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	5/08	5/03	4/30	4/27	4/24	4/22	4/19	4/15	4/11
32	4/27	4/22	4/19	4/16	4/14	4/11	4/08	4/05	3/31
28	4/14	4/10	4/07	4/04	4/02	3/30	3/28	3/25	3/21
24	4/09	4/03	3/30	3/27	3/24	3/20	3/17	3/13	3/07
20	4/01	3/24	3/19	3/14	3/10	3/05	3/01	2/23	2/16
16	3/18	3/10	3/04	2/27	2/22	2/17	2/12	2/06	1/28
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	9/26	10/01	10/04	10/07	10/10	10/13	10/16	10/19	10/24
32	10/02	10/08	10/12	10/16	10/19	10/22	10/26	10/30	11/05
28	10/15	10/22	10/27	10/31	11/03	11/07	11/11	11/15	11/22
24	11/02	11/07	11/10	11/13	11/16	11/19	11/22	11/26	12/01
20	11/05	11/11	11/15	11/19	11/23	11/27	11/30	12/05	12/11
16	11/06	11/16	11/24	11/30	12/06	12/11	12/18	12/25	1/04
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	187	180	176	172	168	164	160	156	149
32	212	203	197	192	188	183	178	172	164
28	237	229	224	219	215	210	205	200	192
24	259	252	246	241	237	232	228	222	214
20	288	278	270	264	258	252	245	238	227
16	319	306	297	290	283	277	270	262	251

* 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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Elevation: 1,490 Feet Lat: 37° 20N Lon: 92° 55W

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	1025	778	574	280	106	9	0	5	46	222	572	903	4520
60	870	643	426	161	45	1	0	0	14	115	432	750	3457
57	780	564	341	106	23	0	0	0	5	70	351	665	2905
55	725	512	288	76	14	0	0	0	2	48	302	606	2573
50	580	389	177	25	3	0	0	0	0	15	196	467	1852
32	186	91	9	0	0	0	0	0	0	0	15	118	419

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	185	237	458	723	1026	1239	1436	1409	1117	826	434	237	9327
55	10	14	24	108	327	549	723	696	429	161	31	13	3085
57	3	10	15	78	274	489	661	634	372	121	20	9	2686
60	0	5	7	44	203	401	568	541	290	73	11	2	2145
65	0	0	0	12	109	258	413	391	173	24	1	0	1381
70	0	0	0	2	46	137	264	252	88	5	0	0	794

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	52	109	261	491	772	993	1184	1156	872	571	226	75	52	161	422	913	1685	2678	3862	5018	5890	6461	6687	6762
45	25	56	165	354	618	843	1029	1001	723	423	139	35	25	81	246	600	1218	2061	3090	4091	4814	5237	5376	5411
50	3	26	91	231	464	693	874	846	574	285	72	16	3	29	120	351	815	1508	2382	3228	3802	4087	4159	4175
55	0	7	46	133	317	543	719	691	428	170	35	1	0	7	53	186	503	1046	1765	2456	2884	3054	3089	3090
60	0	2	18	66	187	396	564	536	295	86	9	0	0	2	20	86	273	669	1233	1769	2064	2150	2159	2159
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	32	71	164	300	488	677	817	789	572	346	132	48	32	103	267	567	1055	1732	2549	3338	3910	4256	4388	4436

(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