

Climatography of the United States

No. 20

1971-2000

Station: BUNKER 4 N, MO

COOP ID: 231101

Climate Division: MO 5

NWS Call Sign:

Elevation: 1,200 Feet Lat: 37° 31N

Lon: 91° 12W

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	40.4	18.3	29.4	74+	1986	22	38.3	1990	-25	1985	20	15.8	1977	1106	0	.0	.0	8.6	7.3	26.6	2.0
Feb	47.1	23.4	35.3	80	1972	29	47.5	1976	-14	1988	12	23.1	1978	834	0	.0	.0	13.4	4.0	20.5	1.0
Mar	57.1	32.7	44.9	86	1967	13	52.2	1976	-3	1978	4	37.7	1996	623	0	.0	.0	23.5	.6	13.6	@
Apr	66.6	42.6	54.6	92	1987	21	61.0	1981	16	1971	2	46.6	1983	323	12	.0	.1	28.5	.0	4.0	.0
May	74.5	52.9	63.7	90	1967	25	68.9	1977	28	1966	10	59.1	1981	117	76	.0	.0	31.0	.0	.2	.0
Jun	81.9	60.9	71.4	99	1988	25	75.2	1971	37	2000	7	67.0	1982	13	206	.0	2.9	30.0	.0	.0	.0
Jul	86.9	65.1	76.0	108	1980	16	83.9	1980	46+	2000	25	71.9	1989	0	343	.7	12.2	31.0	.0	.0	.0
Aug	86.0	63.0	74.5	106	1980	1	81.0	1983	41	1986	29	69.1	1992	9	302	.3	9.8	31.0	.0	.0	.0
Sep	78.6	54.8	66.7	100	2000	1	72.6	1998	29+	2001	27	61.3	1989	75	126	@	3.1	30.0	.0	.3	.0
Oct	69.0	43.9	56.5	91	1963	10	63.4	1971	18	2000	9	49.4	1988	281	16	.0	.1	30.5	.0	3.0	.0
Nov	55.3	32.3	43.8	84	1987	1	52.2	1999	0+	1986	14	37.6	1996	636	0	.0	.0	20.8	.7	14.1	.1
Dec	44.2	22.8	33.5	74	1970	3	41.3	1971	-22+	1989	23	18.2	1983	976	0	.0	.0	10.9	4.6	24.1	1.2
Ann	65.6	42.7	54.2	108	Jul 1980	16	83.9	Jul 1980	-25	Jan 1985	20	15.8	Jan 1977	4993	1081	1.0	28.2	289.2	17.2	106.4	4.3

+ 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

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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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: BUNKER 4 N, MO

COOP ID: 231101

Climate Division: MO 5

NWS Call Sign:

Elevation: 1,200 Feet Lat: 37°31N

Lon: 91°12W

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	2.02	1.45	2.67	1982	31	5.98	1982	.11	1986	6.2	4.4	1.3	.5	.19	.34	.61	.89	1.19	1.54	1.95	2.46	3.16	4.32	5.47
Feb	2.20	2.15	3.85	1985	23	6.04	1985	.07	1996	4.6	3.8	1.6	.7	.35	.54	.86	1.16	1.48	1.82	2.21	2.69	3.33	4.37	5.36
Mar	3.90	3.44	3.63	1977	28	8.42	1977	.86	1971	7.7	6.3	2.8	1.2	1.10	1.47	2.03	2.51	2.99	3.49	4.04	4.69	5.53	6.86	8.09
Apr	4.24	3.33	4.34	1957	3	10.47	1994	1.54	2000	7.2	6.3	2.8	1.3	1.07	1.47	2.09	2.64	3.17	3.74	4.38	5.13	6.11	7.66	9.11
May	4.39	3.19	3.30	1956	15	13.76	1983	1.54	1975	7.3	6.2	2.9	1.2	1.29	1.71	2.33	2.88	3.40	3.95	4.56	5.28	6.20	7.65	9.00
Jun	3.69	3.38	4.25	1950	10	11.27	1985	.41+	1991	7.0	5.9	2.6	.9	.66	.99	1.53	2.03	2.55	3.10	3.73	4.50	5.51	7.15	8.72
Jul	4.26	3.82	4.59	1973	24	10.34	1973	.00	1974	6.4	5.5	2.7	1.2	.57	1.11	1.83	2.43	3.04	3.68	4.39	5.24	6.36	8.15	9.84
Aug	3.03	2.56	3.43	1974	29	10.06	1982	.60	1995	5.1	4.4	2.3	1.0	.57	.84	1.29	1.70	2.12	2.56	3.07	3.69	4.51	5.82	7.07
Sep	3.42	2.92	4.77	1965	5	10.34	1984	.43	1979	5.3	4.7	2.3	1.1	.44	.71	1.20	1.68	2.18	2.73	3.38	4.17	5.25	7.02	8.73
Oct	2.96	2.63	2.97	1986	1	8.21	1973	.06	1990	5.4	4.4	2.4	.9	.49	.75	1.18	1.59	2.00	2.46	2.98	3.61	4.46	5.83	7.14
Nov	4.35	3.97	4.16	1985	19	11.44	1985	.00	1989	6.3	5.6	3.1	1.6	.45	.97	1.70	2.33	2.97	3.66	4.44	5.38	6.62	8.63	10.55
Dec	2.71	2.24	4.07	1971	10	9.91	1982	.00	2000	5.3	4.3	2.1	.8	.24	.55	.99	1.39	1.80	2.24	2.74	3.35	4.16	5.48	6.74
Ann	41.17	41.14	4.77	Sep 1965	5	13.76	May 1983	.00+	Dec 2000	73.8	61.8	28.9	12.4	23.88	26.97	31.07	34.27	37.18	40.04	43.05	46.43	50.61	56.79	62.26

+ 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: BUNKER 4 N, MO

COOP ID: 231101

Climate Division: MO 5

NWS Call Sign:

Elevation: 1,200 Feet

Lat: 37°31N

Lon: 91°12W

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	.8	#	#	0	5.0	1997	9	5.0	1997	7	1996	8	2	1997	-9.9	-9.9	-9.9	-9.9	-9.9	.7	.6	.1	.0
Feb	1.0	-99.9	#	0	4.0	1971	7	4.0	1971	2+	1999	21	#+	1999	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0
Mar	1.7	-99.9	#	0	8.5	1999	14	8.5	1999	6	1999	15	5	1994	.3	.1	.1	.1	.0	.0	.0	.0	.0
Apr	#	.0	#	0	#	1996	16	#	1996	#+	1996	16	#+	1996	.0	.0	.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	.1	.0	#	0	.5	1995	16	.5	1995	#+	1997	16	#+	1997	.2	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.0	.0	#	0	.0	0	0	.0	0	2	1997	9	#+	1997	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	3.6	-9.9	N/A	N/A	8.5	Mar 1999	14	8.5	Mar 1999	7	Jan 1996	8	5	Mar 1994	-9.9	-9.9	-9.9	-9.9	-9.9	.7	.6	.1	.0

+ 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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Station: BUNKER 4 N, MO

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Climate Division: MO 5

NWS Call Sign:

Elevation: 1,200 Feet

Lat: 37°31N

Lon: 91°12W

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	5/15	5/09	5/05	5/02	4/28	4/25	4/22	4/18	4/12
32	5/02	4/27	4/22	4/19	4/15	4/12	4/08	4/04	3/29
28	4/14	4/10	4/07	4/04	4/01	3/30	3/27	3/24	3/19
24	4/13	4/06	4/02	3/29	3/25	3/21	3/17	3/13	3/06
20	4/04	3/27	3/22	3/18	3/13	3/09	3/05	2/27	2/20
16	3/25	3/17	3/11	3/07	3/02	2/26	2/21	2/15	2/07
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	9/21	9/26	9/29	10/02	10/05	10/07	10/10	10/13	10/18
32	9/26	10/02	10/06	10/10	10/13	10/16	10/20	10/24	10/30
28	10/13	10/19	10/23	10/27	10/30	11/03	11/06	11/10	11/16
24	10/21	10/27	10/31	11/04	11/07	11/11	11/15	11/19	11/25
20	10/25	11/02	11/08	11/13	11/17	11/22	11/27	12/03	12/11
16	11/07	11/13	11/18	11/22	11/26	11/30	12/04	12/08	12/15
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	183	174	168	163	158	154	148	142	134
32	208	198	191	185	180	174	169	162	152
28	231	224	219	215	211	207	203	198	191
24	250	242	236	231	227	222	217	211	203
20	278	268	261	254	248	242	236	228	218
16	293	285	278	273	268	263	258	252	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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NWS Call Sign:

Elevation: 1,200 Feet Lat: 37°31N Lon: 91°12W

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	1106	834	623	323	117	13	0	9	75	281	636	976	4993
60	951	695	471	201	49	2	0	1	27	163	489	821	3870
57	858	618	386	142	25	0	0	0	12	108	406	731	3286
55	798	566	331	108	15	0	0	0	7	78	352	674	2929
50	654	439	211	46	3	0	0	0	0	29	233	530	2145
32	224	118	13	0	0	0	0	0	0	0	19	150	524

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	141	208	414	678	981	1182	1365	1317	1041	758	374	197	8656
55	1	12	19	96	283	492	652	604	358	123	17	8	2665
57	0	8	12	70	231	432	590	542	303	91	11	3	2293
60	0	1	4	39	163	344	497	450	228	53	3	0	1782
65	0	0	0	12	76	206	343	302	126	16	0	0	1081
70	0	0	0	2	24	97	202	174	56	3	0	0	558

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	44	109	266	500	763	966	1141	1090	832	550	229	72	44	153	419	919	1682	2648	3789	4879	5711	6261	6490	6562
45	20	58	167	362	608	816	986	935	683	402	142	36	20	78	245	607	1215	2031	3017	3952	4635	5037	5179	5215
50	2	29	91	242	453	666	831	780	534	268	74	10	2	31	122	364	817	1483	2314	3094	3628	3896	3970	3980
55	0	7	41	139	307	516	676	625	391	159	33	1	0	7	48	187	494	1010	1686	2311	2702	2861	2894	2895
60	0	1	13	68	176	369	521	470	262	74	11	0	0	1	14	82	258	627	1148	1618	1880	1954	1965	1965
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	34	80	172	314	480	653	778	739	540	347	144	46	34	114	286	600	1080	1733	2511	3250	3790	4137	4281	4327

(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