U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: NEW FRANKLIN 1 W, MO **COOP ID: 236012**

Climate Division: MO 1 **NWS Call Sign:** **Elevation: 641 Feet** **Lat: 39˚01N** **Lon: 92˚45W**

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	36.8	17.3	27.1	75	1957	21	39.1	1990	-24	1974	12	13.0	1977	1177	0	.0	.0	5.7	10.7	27.9	3.2
Feb	42.8	22.2	32.5	81	1972	29	41.7	1976	-21	1979	9	18.8	1978	910	0	.0	.0	10.0	6.1	22.7	2.1
Mar	54.1	33.3	43.7	85+	1988	23	48.6	1973	-17	1960	5	36.2	1978	660	0	.0	.0	20.7	1.1	15.3	.1
Apr	64.4	43.1	53.8	92	1987	21	61.4	1981	18	1975	3	46.8	1983	346	9	.0	.2	27.3	.0	3.4	.0
May	74.4	53.7	64.1	94+	1956	13	70.2	1991	29	1976	3	59.0	1997	130	101	.0	.5	31.0	.0	@	.0
Jun	83.2	62.9	73.1	104	1988	26	79.2	1988	42	1966	1	68.5	1982	10	251	.2	6.8	30.0	.0	.0	.0
Jul	88.3	66.9	77.6	109	1980	30	85.3	1980	48+	1975	13	73.2	1971	0	391	1.5	16.1	31.0	.0	.0	.0
Aug	86.8	64.6	75.7	106	1980	1	82.4	1983	43	1986	28	70.4	1992	5	337	.9	13.2	31.0	.0	.0	.0
Sep	79.1	55.8	67.5	101	1956	22	72.5	1998	31+	1989	24	60.4	1974	63	135	@	5.1	30.0	.0	.1	.0
Oct	68.6	44.3	56.5	94	1976	2	62.4	1971	22+	1993	31	50.2	1976	277	13	.0	.3	30.1	.0	3.3	.0
Nov	53.5	33.5	43.5	83	1980	8	52.3	1990	-5	1991	8	35.6	1976	646	0	.0	.0	18.8	1.2	13.5	.1
Dec	41.2	22.7	32.0	73	1998	6	37.7	1971	-22	1989	23	16.8	1983	1024	0	.0	.0	8.1	6.2	25.8	1.7
Ann	64.4	43.4	53.9	109	Jul 1980	30	85.3	Jul 1980	-24	Jan 1974	12	13.0	Jan 1977	5248	1237	2.6	42.2	273.7	25.3	112.0	7.2

\+ 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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1956-2001

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

Issue Date: February 2004

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: NEW FRANKLIN 1 W, MO **COOP ID: 236012**

Climate Division: MO 1 **NWS Call Sign:** **Elevation: 641 Feet** **Lat: 39˚01N** **Lon: 92˚45W**

Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	1.61	1.45	2.33	1971	3	4.14	1999	.01	1986
Feb	1.78	1.51	3.73	1997	21	5.70	1997	.52+	1983
Mar	3.07	2.91	2.76	1998	31	8.69	1973	.69	1986
Apr	3.73	3.04	3.13	1994	11	11.08	1994	.43	2000
May	4.82	4.29	3.63	1990	16	13.97	1995	1.34	1998
Jun	4.18	3.06	4.08	1993	7	10.58	1981	.13	1988
Jul	3.53	3.12	5.00	1958	3	7.30	1993	.76	1997
Aug	4.01	3.30	4.17	1982	27	10.10	1982	.66	1971
Sep	3.86	2.87	5.26	1961	13	12.86	1993	.64	1976
Oct	3.13	2.86	3.69	1986	3	7.26	1986	.50	1988
Nov	2.93	2.46	3.48	1977	1	8.34	1992	.11	1989
Dec	2.12	1.97	2.20	1968	28	6.02	1982	.34	1976
Ann	38.77	37.91	5.26	Sep 1961	13	13.97	May 1995	.01	Jan 1986

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.7	4.1	.8	.4
Feb	5.8	4.0	1.2	.3
Mar	8.2	5.9	2.0	.6
Apr	9.5	6.8	2.7	1.0
May	11.0	7.7	3.4	1.4
Jun	8.9	6.5	2.7	1.2
Jul	7.9	5.6	2.4	1.1
Aug	7.7	5.4	2.6	1.2
Sep	7.6	5.5	2.5	1.2
Oct	7.6	5.5	2.1	.7
Nov	7.9	5.4	2.3	.5
Dec	6.5	4.1	1.5	.5
Ann	95.3	66.5	26.2	10.1

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.15	.27	.48	.71	.95	1.22	1.55	1.96	2.52	3.45	4.36
Feb	.43	.60	.86	1.09	1.32	1.56	1.83	2.16	2.58	3.25	3.87
Mar	.82	1.11	1.55	1.94	2.32	2.73	3.18	3.71	4.40	5.48	6.50
Apr	.78	1.12	1.66	2.16	2.66	3.20	3.81	4.53	5.49	7.03	8.48
May	1.30	1.76	2.46	3.07	3.67	4.29	4.99	5.81	6.89	8.57	10.15
Jun	.59	.93	1.53	2.11	2.72	3.39	4.16	5.11	6.38	8.47	10.48
Jul	.73	1.05	1.57	2.04	2.52	3.03	3.60	4.30	5.21	6.67	8.06
Aug	.68	1.02	1.61	2.16	2.73	3.34	4.04	4.90	6.04	7.89	9.65
Sep	.70	1.04	1.61	2.13	2.67	3.25	3.91	4.71	5.77	7.48	9.11
Oct	.91	1.20	1.65	2.04	2.42	2.81	3.25	3.76	4.43	5.47	6.44
Nov	.53	.78	1.21	1.61	2.02	2.46	2.97	3.58	4.39	5.69	6.94
Dec	.55	.75	1.06	1.33	1.59	1.87	2.19	2.56	3.04	3.80	4.51
Ann	24.47	27.11	30.57	33.24	35.64	37.99	40.44	43.17	46.52	51.45	55.76

\+ 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: 1956-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Services

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: NEW FRANKLIN 1 W, MO **COOP ID: 236012**

Climate Division: MO 1 **NWS Call Sign:** **Elevation: 641 Feet** **Lat: 39°01N** **Lon: 92°45W**

Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	3.7	2.0	1	#	6.8	1997	9	15.3	1997	13	1974	12	7	1977	1.3	1.2	.4	.1	.0	2.2	.9	.4	.0
Feb	5.5	4.0	1	#	10.0	1978	13	17.0	1993	12	1975	24	5	1979	1.4	1.4	.6	.3	.1	3.7	2.1	1.3	.2
Mar	1.9	.0	#	0	7.0	1990	24	12.0	1978	10	1978	4	4	1978	.4	.4	.3	.1	.0	1.3	.8	.5	.1
Apr	.1	.0	#	0	3.0	1973	9	3.0	1973	3	1973	9	#+	1982	@	@	@	.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	1.1	.0	#	0	7.0	1975	26	7.0	1975	7	1975	26	1	1975	.4	.4	.2	@	.0	.9	.5	.1	.0
Dec	3.5	2.0	#	#	10.0	1973	30	14.0	1987	10	1987	15	2	1983	1.0	1.0	.3	.1	.1	3.0	.7	.3	.2
Ann	15.8	8.0	N/A	N/A	10.0+	Feb 1978	13	17.0	Feb 1993	13	Jan 1974	12	7	Jan 1977	4.5	4.4	1.8	.6	.2	11.1	5.0	2.6	.5

+ 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: NEW FRANKLIN 1 W, MO **COOP ID: 236012**

Climate Division: MO 1 **NWS Call Sign:** **Elevation: 641 Feet** **Lat: 39˚01N** **Lon: 92˚45W**

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	5/09	5/05	5/01	4/28	4/26	4/23	4/20	4/17	4/12
32	4/23	4/19	4/16	4/13	4/11	4/09	4/06	4/03	3/30
28	4/17	4/12	4/09	4/06	4/04	4/01	3/29	3/26	3/21
24	4/06	3/31	3/28	3/24	3/21	3/18	3/15	3/11	3/06
20	3/27	3/21	3/17	3/13	3/10	3/06	3/03	2/26	2/20
16	3/23	3/15	3/09	3/04	2/27	2/23	2/18	2/12	2/04

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	9/23	9/27	10/01	10/03	10/06	10/08	10/11	10/14	10/18
32	9/29	10/05	10/09	10/12	10/15	10/18	10/22	10/26	10/31
28	10/15	10/20	10/24	10/27	10/30	11/02	11/05	11/08	11/13
24	10/30	11/05	11/09	11/12	11/15	11/19	11/22	11/26	12/02
20	11/04	11/10	11/14	11/18	11/22	11/25	11/29	12/03	12/09
16	11/15	11/22	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	181	175	170	166	162	158	154	149	143
32	207	200	195	191	187	182	178	173	166
28	228	221	216	212	208	205	200	195	189
24	261	253	248	243	238	234	229	223	215
20	280	272	266	261	256	252	247	241	232
16	312	301	293	286	279	273	266	258	246

***** 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: NEW FRANKLIN 1 W, MO **COOP ID: 236012**

Climate Division: MO 1 **NWS Call Sign:** **Elevation: 641 Feet** **Lat: 39˚01N** **Lon: 92˚45W**

Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1177	910	660	346	130	10	0	5	63	277	646	1024	5248
60	1022	772	507	219	62	2	0	0	20	158	502	869	4133
57	929	695	421	155	36	0	0	0	8	102	419	780	3545
55	868	643	365	119	23	0	0	0	4	73	366	722	3183
50	724	515	239	52	7	0	0	0	0	27	249	580	2393
32	276	172	21	0	0	0	0	0	0	0	27	186	682

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	121	186	384	654	994	1231	1414	1355	1063	759	372	185	8718
55	1	12	15	83	304	541	701	642	377	119	20	8	2823
57	0	8	9	59	255	481	639	580	321	86	14	4	2456
60	0	2	2	32	189	392	546	487	243	48	6	0	1947
65	0	0	0	9	101	251	391	337	135	13	0	0	1237
70	0	0	0	2	43	132	242	202	62	2	0	0	685

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	77	224	460	770	1018	1197	1137	858	539	209	48	19	96	320	780	1550	2568	3765	4902	5760	6299	6508	6556
45	7	35	136	325	615	868	1042	982	708	391	124	20	7	42	178	503	1118	1986	3028	4010	4718	5109	5233	5253
50	1	16	72	209	463	718	887	827	559	261	64	6	1	17	89	298	761	1479	2366	3193	3752	4013	4077	4083
55	0	3	35	124	317	569	732	672	416	154	30	2	0	3	38	162	479	1048	1780	2452	2868	3022	3052	3054
60	0	0	11	60	188	420	577	518	282	77	9	0	0	0	11	71	259	679	1256	1774	2056	2133	2142	2142
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	19	57	143	280	490	695	814	770	560	338	126	35	19	76	219	499	989	1684	2498	3268	3828	4166	4292	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.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/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 are 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.

a. Temperature/ Precipitation Tables
   1. 1971-2000 Monthly Normals
   2. Cooperative Summary of the Day
   3. National Weather Service station records
   4. 1971-2000 serially complete daily data

b. Degree Day Table
   1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
   2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data

c. Snow Tables
   1. Snow Climatology
   2. Cooperative Summary of the Day

d. Freeze Data Table
   1971-2000 serially complete daily data

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/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