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: MOORHEAD, MS **COOP ID: 226009**

Climate Division: MS 4 **NWS Call Sign:** **Elevation: 117 Feet** **Lat: 33˚27N** **Lon: 90˚31W**

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	51.6	34.7	43.2	83	1950	25	50.9	1999	-5+	1962	11	32.3	1977	679	1	.0	.0	18.2	1.9	13.8	.0
Feb	57.4	38.7	48.1	82+	1954	27	55.6	1976	-10	1951	2	36.5	1978	480	5	.0	.0	21.2	.8	8.6	.0
Mar	65.8	46.1	56.0	90	1963	30	62.0	1974	15	1965	21	50.3	1971	296	16	.0	.0	29.0	@	2.4	.0
Apr	74.2	53.6	63.9	94	1987	27	70.0	1981	28	1987	4	57.8	1983	107	74	.0	.3	30.0	.0	.2	.0
May	81.9	62.6	72.3	101	1951	31	77.4	1998	38	1961	27	66.6	1976	19	243	.0	4.3	31.0	.0	.0	.0
Jun	88.7	69.7	79.2	105	1988	29	83.3	1998	42	1966	1	74.8	1974	0	426	.4	16.3	30.0	.0	.0	.0
Jul	91.6	72.8	82.2	107+	1980	15	86.0	1986	51	1961	4	78.5	1972	0	534	1.7	23.1	31.0	.0	.0	.0
Aug	91.2	71.3	81.3	108	1951	31	87.5	2000	51	1956	22	76.9	1992	0	504	1.6	22.0	31.0	.0	.0	.0
Sep	86.2	65.2	75.7	105	1951	1	82.7	1998	35	1965	25	69.8	1974	6	327	.3	12.3	30.0	.0	.0	.0
Oct	76.7	54.2	65.5	99	1954	3	70.5	1998	24	1965	25	59.2	1976	92	104	.0	1.2	30.9	.0	.1	.0
Nov	64.2	44.7	54.5	88	1965	26	60.7	1985	14+	1950	25	46.0	1976	332	15	.0	.0	27.1	@	3.4	.0
Dec	54.9	37.6	46.3	83+	1951	6	57.2	1984	0	1989	23	36.9	2000	589	7	.0	.0	21.1	.9	10.7	@
Ann	73.7	54.3	64.0	108	Aug 1951	31	87.5	Aug 2000	-10	Feb 1951	2	32.3	Jan 1977	2600	2256	4.0	79.5	330.5	3.6	39.2	@

\+ 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: 1940-2001

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

Issue Date: February 2004

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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	5.41	4.48	4.96	1979	20	12.03	1979	.14	1986
Feb	4.60	4.33	4.45	1991	19	10.28	1991	.94	1972
Mar	5.98	5.36	7.02	1973	16	15.22	1973	1.37	1982
Apr	5.61	5.13	7.91	2000	2	17.37	1991	.80	1981
May	5.27	5.01	6.28	1998	29	10.61	1978	.06	1992
Jun	4.35	4.08	4.21	1996	2	8.79	1989	.83	1988
Jul	4.75	3.74	6.86	1980	21	11.79	1980	1.18	1986
Aug	2.50	1.90	3.94	1984	6	8.13	1984	.06	2000
Sep	3.36	3.03	7.51	1958	21	11.55	1982	.51	1995
Oct	3.36	3.06	4.02	1984	7	11.39	1984	.19	1987
Nov	5.25	4.75	8.70	1948	19	11.36	1986	1.60	1981
Dec	5.91	4.41	7.14	1983	3	23.20	1982	.53	1980
Ann	56.35	55.36	8.70	Nov 1948	19	23.20	Dec 1982	.06+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.5	7.2	3.5	1.7
Feb	8.8	6.3	3.3	1.8
Mar	10.0	6.9	4.0	2.0
Apr	8.7	5.8	3.5	2.0
May	9.2	6.7	3.8	1.5
Jun	9.0	5.8	2.8	1.5
Jul	8.6	6.0	3.0	1.5
Aug	6.2	4.3	1.7	.7
Sep	6.8	4.4	2.2	.9
Oct	6.7	4.1	2.3	1.4
Nov	9.0	6.5	3.5	1.8
Dec	9.6	6.7	3.8	1.7
Ann	103.1	70.7	37.4	18.5

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	1.06	1.55	2.35	3.08	3.81	4.61	5.51	6.59	8.03	10.33	12.51
Feb	1.42	1.86	2.51	3.07	3.61	4.17	4.79	5.52	6.45	7.91	9.26
Mar	1.94	2.51	3.34	4.06	4.75	5.46	6.23	7.15	8.32	10.14	11.82
Apr	1.13	1.63	2.46	3.21	3.98	4.79	5.72	6.83	8.30	10.66	12.90
May	.99	1.46	2.24	2.95	3.68	4.46	5.34	6.42	7.84	10.12	12.30
Jun	1.41	1.82	2.43	2.95	3.45	3.96	4.53	5.19	6.05	7.37	8.60
Jul	1.06	1.50	2.19	2.82	3.45	4.12	4.87	5.76	6.94	8.82	10.59
Aug	.18	.34	.65	1.00	1.38	1.83	2.36	3.04	3.98	5.57	7.14
Sep	.73	1.04	1.53	1.98	2.42	2.90	3.44	4.08	4.93	6.28	7.55
Oct	.40	.66	1.14	1.61	2.10	2.66	3.31	4.11	5.19	6.98	8.72
Nov	1.77	2.27	3.00	3.61	4.21	4.82	5.48	6.26	7.26	8.80	10.23
Dec	.92	1.43	2.29	3.10	3.95	4.87	5.93	7.22	8.96	11.77	14.47
Ann	39.19	42.49	46.73	49.95	52.83	55.61	58.49	61.68	65.56	71.20	76.09

\+ 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: 1940-2001
(3) Derived from 1971-2000 serially complete daily data

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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	1.2	.0	#	0	4.0	2000	28	5.0	1992	4+	2000	28	#+	2000	.6	.5	.2	.0	.0	.6	.2	.0	.0
Feb	.1	.0	#	0	3.0	1985	2	3.0	1985	5	1985	2	1	1985	.3	.1	@	.0	.0	.3	.1	@	.0
Mar	#	.0	#	0	#	1996	1	#+	1996	#+	1996	1	#+	1996	.0	.0	.0	.0	.0	.0	.0	.0	.0
Apr	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.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	#	.0	#	0	#	1991	8	#+	1991	#+	1991	8	#+	1991	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.0	.0	#	0	.5	1990	24	.5	1990	1	1990	24	#+	1990	@	.0	.0	.0	.0	@	.0	.0	.0
Ann	1.3	.0	N/A	N/A	4.0	Jan 2000	28	5.0	Jan 1992	5	Feb 1985	2	1	Feb 1985	.9	.6	.2	.0	.0	.9	.3	@	.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

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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	4/15	4/10	4/06	4/03	3/31	3/29	3/26	3/22	3/17
32	4/04	3/28	3/23	3/19	3/15	3/11	3/07	3/02	2/23
28	3/21	3/13	3/08	3/03	2/26	2/22	2/17	2/11	2/03
24	3/09	2/28	2/21	2/16	2/11	2/05	1/31	1/24	1/15
20	2/25	2/15	2/07	1/31	1/24	1/17	1/07	12/21	0/00
16	2/11	2/02	1/25	1/17	1/06	0/00	0/00	0/00	0/00

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	10/20	10/25	10/29	11/01	11/04	11/07	11/10	11/14	11/19
32	10/28	11/04	11/09	11/13	11/17	11/21	11/25	11/30	12/07
28	11/07	11/13	11/18	11/22	11/26	11/30	12/04	12/09	12/16
24	11/20	12/02	12/10	12/17	12/24	12/31	1/07	1/15	1/27
20	12/07	12/15	12/20	12/25	12/30	1/04	1/10	1/22	0/00
16	12/24	1/03	1/12	1/21	2/05	0/00	0/00	0/00	0/00

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	239	231	226	221	217	212	208	202	195
32	275	265	258	252	246	240	234	227	217
28	300	290	284	278	272	267	261	254	244
24	>365	337	325	317	310	303	296	287	276
20	>365	>365	>365	>365	342	329	319	309	297
16	>365	>365	>365	>365	>365	>365	>365	352	332

***** 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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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	679	480	296	107	19	0	0	0	6	92	332	589	2600
60	537	351	177	42	4	0	0	0	0	36	212	445	1804
57	453	280	122	20	1	0	0	0	0	17	155	365	1413
55	400	237	92	11	0	0	0	0	0	10	122	315	1187
50	282	149	37	1	0	0	0	0	0	2	59	211	741
32	36	7	0	0	0	0	0	0	0	0	0	18	61

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	382	456	743	957	1247	1416	1557	1527	1311	1036	674	459	11765
55	32	42	122	278	534	726	844	814	621	332	106	43	4494
57	23	29	90	227	473	666	782	752	561	278	79	31	3991
60	14	16	52	159	383	576	689	659	472	204	46	18	3288
65	1	5	16	74	243	426	534	504	327	104	15	7	2256
70	0	0	3	24	130	279	379	352	199	41	3	0	1410

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	199	295	517	739	1021	1198	1331	1303	1083	799	452	257	199	494	1011	1750	2771	3969	5300	6603	7686	8485	8937	9194
45	119	193	376	589	866	1048	1176	1148	933	645	321	160	119	312	688	1277	2143	3191	4367	5515	6448	7093	7414	7574
50	61	109	247	443	711	898	1021	993	783	493	206	87	61	170	417	860	1571	2469	3490	4483	5266	5759	5965	6052
55	30	57	146	302	556	748	866	838	633	344	118	44	30	87	233	535	1091	1839	2705	3543	4176	4520	4638	4682
60	8	23	71	180	402	598	711	683	484	217	57	19	8	31	102	282	684	1282	1993	2676	3160	3377	3434	3453
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	109	166	308	467	695	833	920	893	740	519	263	140	109	275	583	1050	1745	2578	3498	4391	5131	5650	5913	6053

(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:
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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