

# Climatography of the United States

No. 20

1971-2000

Station: STEPHENSON 8 WNW, MI

COOP ID: 207867

Climate Division: MI 1

NWS Call Sign:

Elevation: 710 Feet Lat: 45° 27N Lon: 87° 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	24.5	1.1	12.8	52	1973	25	21.4	1990	-39	1982	17	4.3	1977	1618	0	.0	.0	.1	24.3	30.9	13.8
Feb	29.1	4.9	17.0	58	1991	9	29.8	1998	-45	1996	3	7.5	1979	1344	0	.0	.0	.6	17.4	27.7	10.0
Mar	39.5	16.9	28.2	78	2000	8	37.2	2000	-32	1962	1	20.8	1996	1140	0	.0	.0	5.0	7.4	28.0	3.7
Apr	53.6	29.4	41.5	91	1980	22	47.4	1986	2	1982	7	36.0	1975	706	0	.0	@	18.8	.7	19.3	.0
May	67.5	40.0	53.8	93+	1969	28	60.2	1977	17	1967	3	46.2	1997	368	18	.0	.3	29.6	.0	7.3	.0
Jun	76.2	49.3	62.8	98	1970	29	67.7	1995	26	1949	8	56.5	1982	125	58	.0	1.5	30.0	.0	.9	.0
Jul	80.4	54.2	67.3	101	1955	26	72.0	1983	32	1972	4	61.8	1992	45	117	.0	2.6	31.0	.0	@	.0
Aug	78.1	52.7	65.4	99+	1955	21	69.9	1983	29	1950	22	61.4	1997	74	86	.0	1.0	31.0	.0	.1	.0
Sep	69.3	44.4	56.9	94+	1948	12	60.0	1978	21+	1976	24	52.1	1993	250	5	.0	.1	29.9	.0	3.2	.0
Oct	57.3	34.0	45.7	88	1963	6	53.5	1971	13+	1969	23	40.9	1987	600	0	.0	.0	24.0	.0	14.0	.0
Nov	41.5	23.0	32.3	76	1990	3	39.1	1999	-13	1976	29	24.7	1995	983	0	.0	.0	6.3	5.6	24.9	.6
Dec	28.6	9.4	19.0	62	2001	6	26.8	1997	-31	1976	30	7.3	1985	1426	0	.0	.0	.5	19.1	30.3	7.6
Ann	53.8	29.9	41.9	101	Jul 1955	26	72.0	Jul 1983	-45	Feb 1996	3	4.3	Jan 1977	8679	284	.0	5.5	206.8	74.5	186.6	35.7

+ 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](http://www.ncdc.noaa.gov/oa/climate/normals/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

095-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: STEPHENSON 8 WNW, MI

COOP ID: 207867

Climate Division: MI 1

NWS Call Sign:

Elevation: 710 Feet Lat: 45°27N

Lon: 87°45W

#### Precipitation (inches)

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days <sup>(3)</sup>				Precipitation Probabilities <sup>(1)</sup> Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians <sup>(1)</sup>		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily <sup>(2)</sup>	Year	Day	Highest Monthly <sup>(1)</sup>	Year	Lowest Monthly <sup>(1)</sup>	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	1.41	1.06	1.69	1996	19	3.40	1996	.21	1981	9.0	4.5	.5	.1	.27	.40	.60	.80	.99	1.20	1.43	1.72	2.10	2.70	3.28
Feb	.95	.84	1.29	1955	20	2.89	1971	.07	1982	6.1	3.1	.3	.1	.08	.15	.27	.40	.55	.71	.91	1.15	1.49	2.06	2.61
Mar	1.91	1.62	1.70	1990	14	6.15	1977	.26	1993	7.9	4.6	1.2	.3	.31	.48	.75	1.02	1.29	1.58	1.92	2.33	2.88	3.77	4.62
Apr	2.32	2.34	1.82	1980	8	4.85	1981	.32	1989	8.9	5.9	1.2	.2	.71	.93	1.26	1.54	1.81	2.10	2.41	2.77	3.25	3.99	4.67
May	3.19	2.73	2.18	1994	30	7.73	1973	.92	1986	10.0	6.6	2.2	.7	1.06	1.36	1.80	2.18	2.54	2.92	3.33	3.81	4.42	5.38	6.26
Jun	3.45	3.47	4.32	1968	7	7.68	1993	.79	1988	11.3	7.4	2.0	.6	1.14	1.47	1.94	2.35	2.74	3.15	3.59	4.11	4.78	5.81	6.76
Jul	3.62	3.26	3.35	1982	11	6.95	1990	.99	1981	11.4	7.1	2.5	.7	1.34	1.68	2.17	2.57	2.96	3.36	3.79	4.29	4.92	5.91	6.80
Aug	3.73	3.14	2.83	1985	6	8.69	1985	.69	1991	11.2	7.3	2.5	1.0	1.37	1.72	2.22	2.64	3.04	3.45	3.90	4.41	5.07	6.08	7.01
Sep	3.55	3.44	3.45	1959	7	7.32	1986	.89	1989	10.5	6.8	2.8	.7	1.31	1.64	2.12	2.52	2.90	3.29	3.71	4.20	4.83	5.80	6.68
Oct	2.65	2.70	2.13	1982	6	5.76	1995	.67	1975	9.7	5.7	1.7	.6	.78	1.03	1.41	1.74	2.06	2.39	2.75	3.18	3.74	4.61	5.42
Nov	2.55	2.42	2.35	1985	2	6.27	1985	.25	1976	9.1	5.6	1.5	.7	.48	.71	1.08	1.43	1.78	2.16	2.59	3.11	3.80	4.91	5.97
Dec	1.79	1.68	1.08	1959	28	4.85	1982	.07	1994	8.9	5.2	1.1	.1	.27	.42	.68	.93	1.19	1.47	1.79	2.19	2.72	3.59	4.42
Ann	31.12	30.80	4.32	Jun 1968	7	8.69	Aug 1985	.07+	Dec 1994	114.0	69.8	19.5	5.8	22.92	24.53	26.58	28.12	29.49	30.81	32.17	33.66	35.47	38.08	40.33

+ 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:

[www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

# 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](http://www.ncdc.noaa.gov)

Station: STEPHENSON 8 WNW, MI

COOP ID: 207867

Climate Division: MI 1

NWS Call Sign:

Elevation: 710 Feet

Lat: 45° 27N

Lon: 87° 45W

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	16.4	11.5	11	10	15.0	1971	4	43.8	1971	36	1997	31	25	1997	7.4	5.0	2.0	.6	.1	28.3	27.4	24.5	14.3
Feb	9.9	9.7	12	12	6.8	1976	18	22.1	1972	37	1997	1	28	1971	5.4	3.2	1.1	.1	.0	27.2	25.9	21.9	16.1
Mar	10.6	9.4	7	5	10.2	1972	4	32.5	1972	32	1972	6	24	1972	4.7	3.1	1.2	.5	.1	17.0	14.7	12.9	9.2
Apr	4.0	3.0	1	#	10.0	1991	10	11.9	1977	14	1972	1	7	1972	1.8	1.3	.4	.2	.1	3.8	2.7	2.2	1.1
May	.6	.0	#	0	8.0	1990	11	9.0	1990	7	1990	11	#+	1997	.2	.1	.1	.1	.0	.1	.1	@	.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	#	1984	29	#	1984	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.5	.0	#	0	3.0	1987	23	3.0+	1989	2	1989	20	#+	1995	.3	.3	@	.0	.0	.1	.0	.0	.0
Nov	5.7	4.9	1	#	6.5	1992	26	19.0	1985	10	1985	30	2	1995	3.2	2.1	.7	.1	.0	5.0	2.1	.8	@
Dec	15.0	13.4	5	4	14.0	1985	2	33.6	1972	28	1985	6	22	1985	6.3	4.8	1.9	.7	.1	20.9	15.7	10.6	5.4
Ann	62.7	51.9	N/A	N/A	15.0	Jan 1971	4	43.8	Jan 1971	37	Feb 1997	1	28	Feb 1971	29.3	19.9	7.4	2.3	.4	102.4	88.6	72.9	46.1

+ 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:

[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

# Climatography of the United States

## No. 20 1971-2000

**Station: STEPHENSON 8 WNW, MI**

**COOP ID: 207867**

**Climate Division: MI 1**

**NWS Call Sign:**

**Elevation: 710 Feet**

**Lat: 45°27N**

**Lon: 87°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	7/03	6/26	6/21	6/17	6/13	6/09	6/05	5/31	5/24
32	6/17	6/11	6/08	6/04	6/01	5/29	5/26	5/22	5/17
28	5/29	5/24	5/20	5/17	5/15	5/12	5/09	5/05	4/30
24	5/13	5/08	5/04	5/01	4/28	4/25	4/22	4/18	4/13
20	5/02	4/27	4/23	4/20	4/17	4/15	4/12	4/08	4/03
16	4/16	4/12	4/08	4/05	4/02	3/31	3/28	3/24	3/19
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	8/19	8/25	8/30	9/02	9/06	9/09	9/13	9/17	9/23
32	9/06	9/10	9/13	9/15	9/17	9/20	9/22	9/25	9/29
28	9/18	9/22	9/25	9/27	9/30	10/02	10/05	10/08	10/12
24	9/27	10/02	10/05	10/09	10/11	10/14	10/17	10/21	10/26
20	10/13	10/19	10/23	10/26	10/30	11/02	11/06	11/10	11/15
16	10/24	10/30	11/04	11/07	11/11	11/14	11/18	11/22	11/28
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	116	105	97	90	84	78	71	63	52
32	126	119	115	111	107	104	100	95	89
28	155	149	145	141	138	134	130	126	120
24	186	179	174	170	166	161	157	152	145
20	217	209	204	199	195	190	185	180	172
16	243	236	230	226	222	218	213	208	201

\* 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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

**Climatography  
of the United States**  
**No. 20**  
**1971-2000**

**Station: STEPHENSON 8 WNW, MI**

**COOP ID: 207867**

**Climate Division: MI 1      NWS Call Sign:      Elevation: 710 Feet    Lat: 45° 27N    Lon: 87° 45W**

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	1618	1344	1140	706	368	125	45	74	250	600	983	1426	8679
60	1463	1204	985	557	244	53	9	20	128	449	833	1271	7216
57	1370	1120	892	470	183	27	2	7	74	362	743	1178	6428
55	1308	1064	830	413	147	16	0	2	48	307	683	1116	5934
50	1153	924	675	282	77	4	0	0	12	188	535	961	4811
32	605	444	207	21	0	0	0	0	0	7	119	446	1849

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	10	24	89	306	674	923	1095	1036	745	430	125	43	5500
55	0	0	0	8	108	249	382	325	103	17	0	0	1192
57	0	0	0	4	82	200	322	268	69	9	0	0	954
60	0	0	0	2	50	136	236	187	33	3	0	0	647
65	0	0	0	0	18	58	117	86	5	0	0	0	284
70	0	0	0	0	5	16	41	27	0	0	0	0	89

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	0	0	22	142	445	698	858	803	513	220	33	1	0	0	22	164	609	1307	2165	2968	3481	3701	3734	3735
45	0	0	7	72	304	548	703	648	370	120	15	0	0	0	7	79	383	931	1634	2282	2652	2772	2787	2787
50	0	0	0	36	182	400	549	494	236	53	2	0	0	0	0	36	218	618	1167	1661	1897	1950	1952	1952
55	0	0	0	15	101	263	395	341	134	21	0	0	0	0	0	15	116	379	774	1115	1249	1270	1270	1270
60	0	0	0	4	46	145	249	202	57	3	0	0	0	0	0	4	50	195	444	646	703	706	706	706
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	18	111	294	444	560	514	323	142	20	0	0	0	18	129	423	867	1427	1941	2264	2406	2426	2426

(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](http://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](http://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"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
|---|---|

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)