

# Climatography of the United States

No. 20

1971-2000

Station: BOYNE FALLS, MI

COOP ID: 200925

Climate Division: MI 3

NWS Call Sign:

Elevation: 735 Feet Lat: 45° 10N Lon: 84° 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	27.6	11.5	19.6	56	1996	18	28.3	1990	-32	1981	4	9.8	1994	1409	0	.0	.0	.3	21.3	30.4	6.3
Feb	31.4	11.0	21.2	65	2000	26	33.4	1998	-35	1979	17	11.2	1979	1227	0	.0	.0	1.3	16.2	26.8	6.9
Mar	41.8	19.5	30.7	82	2000	8	40.9	2000	-23	1962	2	23.8	1972	1065	0	.0	.0	7.1	6.0	26.9	2.9
Apr	55.8	30.6	43.2	89+	1980	22	48.4	1986	-2	1982	7	36.5	1975	655	0	.0	.0	20.6	.4	17.9	.1
May	69.9	40.8	55.4	94	1998	15	63.2	1998	17	1966	2	48.3	1997	332	33	.0	.5	30.1	.0	7.5	.0
Jun	77.9	50.4	64.2	98	1971	28	69.5	1995	27+	1972	10	58.0	1982	106	81	.0	2.3	30.0	.0	.9	.0
Jul	82.1	55.0	68.6	98+	1977	19	73.1	1983	32	1965	6	63.0	1992	25	136	.0	3.9	31.0	.0	.0	.0
Aug	79.5	54.0	66.8	99	1988	2	72.3	1995	28	1976	30	62.4	1977	63	117	.0	1.6	31.0	.0	.1	.0
Sep	70.8	47.2	59.0	95	1999	5	63.7	1998	22	1965	27	54.2	1974	198	18	.0	.5	29.9	.0	1.9	.0
Oct	59.1	37.9	48.5	86+	1971	1	56.5	1971	15	1974	20	43.4	1980	514	3	.0	.0	25.3	.0	9.4	.0
Nov	44.0	29.0	36.5	76	1990	1	43.2	1999	-3	1996	15	31.0	1976	855	0	.0	.0	8.6	3.0	20.4	.1
Dec	32.2	18.5	25.4	66	2001	5	33.3	1994	-26	1976	29	14.6	1989	1229	0	.0	.0	1.3	15.2	29.0	2.1
Ann	56.0	33.8	44.9	99	Aug 1988	2	73.1	Jul 1983	-35	Feb 1979	17	9.8	Jan 1994	7678	388	.0	8.8	216.5	62.1	171.2	18.4

+ 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](http://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: 1961-2001

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

# 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: BOYNE FALLS, MI**

**COOP ID: 200925**

**Climate Division: MI 3**

**NWS Call Sign:**

**Elevation: 735 Feet Lat: 45°10N**

**Lon: 84°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	2.36	2.32	1.76	1990	17	4.59	1997	.82	1981	18.7	7.6	.6	.1	1.16	1.36	1.63	1.85	2.06	2.26	2.47	2.72	3.03	3.49	3.90
Feb	1.39	1.27	.83	2001	9	3.08	1985	.31	1998	12.3	4.7	.5	.0	.45	.58	.78	.94	1.10	1.27	1.45	1.67	1.94	2.37	2.76
Mar	2.00	1.94	2.03	1987	3	4.93	1998	.33	1993	11.1	5.6	.8	.2	.57	.76	1.05	1.30	1.54	1.79	2.08	2.41	2.84	3.52	4.15
Apr	2.26	2.24	1.69	1981	4	4.60	1981	.49	1997	10.8	6.2	1.2	.1	.81	1.03	1.33	1.59	1.84	2.09	2.36	2.68	3.09	3.72	4.30
May	2.69	2.49	4.90	1963	8	7.42	1983	.71	1982	10.6	6.8	1.5	.5	.80	1.05	1.44	1.77	2.09	2.42	2.79	3.23	3.79	4.67	5.48
Jun	2.65	2.48	2.20	1999	2	6.23	1990	.22	1991	10.1	6.4	1.4	.4	.62	.87	1.26	1.60	1.95	2.32	2.73	3.22	3.86	4.88	5.84
Jul	3.10	2.73	3.11	1972	20	8.62	1972	.63	1989	9.5	5.7	2.0	.8	.76	1.05	1.50	1.90	2.30	2.72	3.19	3.75	4.48	5.63	6.72
Aug	3.70	3.52	3.15	1995	17	7.95	1977	.52	1980	11.2	7.6	2.5	.7	1.12	1.47	2.00	2.45	2.89	3.35	3.85	4.44	5.20	6.39	7.50
Sep	3.90	3.66	3.30	1961	13	8.16	1986	.34	1979	13.1	8.6	2.3	.7	1.34	1.70	2.24	2.70	3.13	3.58	4.07	4.65	5.38	6.52	7.56
Oct	3.40	3.02	1.95	1983	3	7.98	1991	1.26	1971	13.8	8.2	2.0	.6	1.26	1.57	2.03	2.42	2.78	3.15	3.56	4.03	4.62	5.55	6.39
Nov	2.92	2.94	2.05	1966	27	5.37	1992	1.26	1981	14.9	8.7	1.3	.3	1.33	1.59	1.94	2.23	2.50	2.78	3.07	3.40	3.81	4.45	5.02
Dec	2.44	2.33	1.24	1984	28	4.03	1982	.40	1994	17.2	8.4	.7	.1	.98	1.21	1.52	1.79	2.03	2.28	2.55	2.87	3.26	3.87	4.42
Ann	32.81	33.31	4.90	May 1963	8	8.62	Jul 1972	.22	Jun 1991	153.3	84.5	16.8	4.5	26.49	27.78	29.40	30.60	31.65	32.66	33.69	34.81	36.15	38.08	39.71

+ 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: 1961-2001

(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: BOYNE FALLS, MI**

**COOP ID: 200925**

**Climate Division: MI 3**

**NWS Call Sign:**

**Elevation: 735 Feet**

**Lat: 45° 10N**

**Lon: 84° 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	30.0	29.8	12	11	17.0	1978	26	56.7	1979	33	1979	18	26	1979	16.0	12.0	4.0	1.4	.1	29.5	27.4	24.9	15.7
Feb	19.0	19.0	14	14	10.0	1988	13	42.5	1988	35	1971	2	29	1979	11.0	7.7	2.5	.6	.1	26.2	25.7	24.5	16.6
Mar	13.2	11.0	8	7	10.0	1998	9	29.1+	1976	29	1977	5	21	1972	6.6	4.4	1.6	.4	@	18.7	16.5	14.7	9.2
Apr	4.7	4.0	1	#	8.0	1973	10	14.3	1985	17	1972	5	7	1975	2.5	1.7	.6	.2	.0	2.4	1.4	1.1	.5
May	.4	.0	#	0	3.5	1990	11	3.5+	1990	#+	1984	1	#+	1984	.2	.2	.1	.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	#	1989	23	#+	1989	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.9	.0	#	0	3.5	1992	18	6.5	1992	2	1992	18	#+	1999	.9	.3	.1	.0	.0	.3	.0	.0	.0
Nov	14.1	11.0	1	1	13.0	1989	16	43.5	1976	21	1976	30	4	1989	6.8	5.0	1.8	.6	.1	8.2	4.4	2.0	.4
Dec	31.5	31.5	6	5	11.0	1993	24	58.5	1983	26+	1985	29	16	1985	13.4	10.1	3.9	1.4	.1	23.9	19.9	15.8	7.2
Ann	113.8	106.3	N/A	N/A	17.0	Jan 1978	26	58.5	Dec 1983	35	Feb 1971	2	29	Feb 1979	57.4	41.4	14.6	4.6	.4	109.2	95.3	83.0	49.6

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

# Climatography of the United States

## No. 20 1971-2000

**Station: BOYNE FALLS, MI**

**COOP ID: 200925**

**Climate Division: MI 3**

**NWS Call Sign:**

**Elevation: 735 Feet**

**Lat: 45° 10N**

**Lon: 84° 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	7/15	7/06	6/29	6/24	6/19	6/13	6/08	6/01	5/23
32	6/16	6/11	6/08	6/05	6/02	5/30	5/27	5/24	5/19
28	5/30	5/25	5/21	5/18	5/15	5/12	5/09	5/05	4/30
24	5/15	5/10	5/07	5/05	5/03	4/30	4/28	4/25	4/21
20	4/29	4/25	4/22	4/20	4/18	4/15	4/13	4/10	4/07
16	4/20	4/16	4/12	4/09	4/07	4/04	4/01	3/29	3/25
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	8/15	8/22	8/26	8/30	9/03	9/07	9/11	9/16	9/23
32	9/03	9/08	9/11	9/14	9/17	9/20	9/23	9/27	10/02
28	9/16	9/23	9/27	10/01	10/05	10/09	10/13	10/17	10/24
24	10/05	10/12	10/17	10/21	10/25	10/29	11/02	11/07	11/14
20	10/24	10/29	11/02	11/05	11/08	11/11	11/15	11/18	11/24
16	10/31	11/06	11/11	11/15	11/18	11/22	11/26	11/30	12/07
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	111	99	90	83	76	69	62	53	41
32	128	120	115	111	107	102	98	93	85
28	167	158	152	147	142	137	132	126	118
24	200	191	185	180	175	170	164	158	149
20	224	217	212	208	204	200	196	191	184
16	250	241	235	230	225	220	214	208	199

\* 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: BOYNE FALLS, MI**

**COOP ID: 200925**

**Climate Division: MI 3      NWS Call Sign:      Elevation: 735 Feet    Lat: 45°10N    Lon: 84°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	1409	1227	1065	655	332	106	25	63	198	514	855	1229	7678
60	1254	1087	910	508	220	44	4	18	95	368	705	1074	6287
57	1161	1003	817	422	165	23	0	7	54	289	615	981	5537
55	1099	947	755	367	132	14	0	3	34	241	555	919	5066
50	944	807	602	243	68	3	0	0	8	140	408	764	3987
32	409	344	166	14	0	0	0	0	0	3	45	280	1261

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	23	42	124	350	725	965	1133	1077	810	515	180	74	6018
55	0	0	0	13	144	289	420	367	154	40	0	0	1427
57	0	0	0	8	114	238	358	309	113	26	0	0	1166
60	0	0	0	3	76	169	269	227	65	13	0	0	822
65	0	0	0	0	33	81	136	117	18	3	0	0	388
70	0	0	0	0	12	26	49	45	2	0	0	0	134

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	4	41	175	489	736	895	840	578	289	67	4	0	4	45	220	709	1445	2340	3180	3758	4047	4114	4118
45	0	0	16	102	346	586	740	685	430	175	28	2	0	0	16	118	464	1050	1790	2475	2905	3080	3108	3110
50	0	0	5	54	224	439	585	530	293	93	8	0	0	0	5	59	283	722	1307	1837	2130	2223	2231	2231
55	0	0	1	28	131	297	430	378	176	41	3	0	0	0	1	29	160	457	887	1265	1441	1482	1485	1485
60	0	0	0	15	65	173	280	233	90	16	0	0	0	0	0	15	80	253	533	766	856	872	872	872
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	1	33	133	332	478	590	552	360	169	35	1	0	1	34	167	499	977	1567	2119	2479	2648	2683	2684

(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)