

Climatology of the United States

No. 20

1971-2000

Station: PETOSKEY, MI

COOP ID: 206507

Climate Division: MI 3

NWS Call Sign:

Elevation: 610 Feet Lat: 45° 22N Lon: 84° 59W

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	26.2	14.0	20.1	56	1996	19	27.9	1990	-21	1981	4	10.4	1994	1391	0	.0	.0	.2	21.3	30.5	3.3
Feb	27.5	12.1	19.8	63	2000	27	31.5	1998	-25	1979	17	10.0	1979	1265	0	.0	.0	.8	17.6	27.0	4.5
Mar	36.6	21.0	28.8	79	1990	15	37.1	1973	-19	1972	3	22.3	1972	1122	0	.0	.0	4.4	9.1	26.5	1.6
Apr	47.8	32.5	40.2	89	1970	29	46.2	1986	2	1974	8	34.3	1975	745	0	.0	.0	12.9	1.2	16.3	.0
May	59.6	43.2	51.4	93	1998	16	59.5	1998	21	1954	4	45.0	1997	429	8	.0	.1	26.8	.0	2.5	.0
Jun	69.4	53.1	61.3	96+	1953	20	66.9	1995	34+	1956	2	55.7	1982	158	46	.0	.4	30.0	.0	.0	.0
Jul	74.9	59.3	67.1	96+	1955	26	70.9	1983	38	1958	20	60.3	1992	42	106	.0	.9	31.0	.0	.0	.0
Aug	73.6	58.0	65.8	99	1955	21	71.0	1995	36	1976	30	61.3	1982	69	93	.0	.5	31.0	.0	.0	.0
Sep	66.6	50.6	58.6	95+	1953	1	62.5	1971	28+	1965	27	55.2	1975	202	10	.0	.1	29.8	.0	.2	.0
Oct	55.6	40.4	48.0	86	1953	3	56.1	1971	20	1969	23	42.4	1981	529	1	.0	.0	23.5	.0	3.4	.0
Nov	42.3	30.5	36.4	73+	1953	18	42.1	1999	6+	1955	29	30.9	1976	858	0	.0	.0	7.6	2.9	16.5	.0
Dec	31.6	21.2	26.4	65	2001	6	33.4	1994	-18	1976	29	15.4	1989	1197	0	.0	.0	.9	13.6	27.6	.6
Ann	51.0	36.3	43.7	99	Aug 1955	21	71.0	Aug 1995	-25	Feb 1979	17	10.0	Feb 1979	8007	264	.0	2.0	198.9	65.7	150.5	10.0

+ 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: 1952-2001

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

084-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: PETOSKEY, MI

COOP ID: 206507

Climate Division: MI 3

NWS Call Sign:

Elevation: 610 Feet Lat: 45°22N

Lon: 84°59W

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	2.05	1.85	1.64	1997	5	4.00	1997	.60	1981	18.0	7.1	.4	.1	.80	.99	1.26	1.48	1.70	1.91	2.15	2.42	2.76	3.29	3.77
Feb	1.23	1.03	.96	1977	23	3.09	1985	.40	1993	12.5	3.8	.3	.0	.37	.49	.66	.81	.96	1.11	1.28	1.47	1.73	2.12	2.49
Mar	1.99	1.88	1.31	1998	31	4.47	1998	.24	1993	11.3	5.2	1.1	.2	.38	.56	.85	1.12	1.39	1.69	2.02	2.42	2.95	3.80	4.61
Apr	2.47	2.21	2.15	1981	4	5.92	1981	.42	1997	10.7	6.0	1.4	.3	.89	1.12	1.46	1.74	2.01	2.28	2.58	2.93	3.38	4.07	4.71
May	2.66	2.62	6.53	1983	31	6.53	1983	.53	1977	10.6	6.6	1.5	.5	.91	1.16	1.52	1.84	2.13	2.44	2.77	3.17	3.67	4.44	5.16
Jun	2.59	2.45	2.61	1986	11	6.49	1990	.61	1991	11.1	5.9	1.4	.4	.59	.83	1.21	1.55	1.89	2.25	2.66	3.14	3.78	4.78	5.73
Jul	3.13	2.68	3.57	1974	4	7.37	1975	.25	1989	9.5	5.6	2.0	.7	.79	1.08	1.54	1.94	2.34	2.76	3.23	3.79	4.51	5.66	6.74
Aug	3.46	3.27	3.17	1968	20	7.31	1994	.72	1996	11.8	6.9	2.3	.8	1.13	1.46	1.94	2.35	2.75	3.16	3.60	4.13	4.80	5.85	6.82
Sep	3.67	3.57	3.10	1961	13	7.68	1978	.45	1979	13.2	7.9	2.7	.6	1.09	1.44	1.96	2.41	2.85	3.31	3.82	4.41	5.18	6.38	7.50
Oct	3.18	2.62	2.84	1991	25	7.41	1991	1.25	2000	13.7	7.8	1.8	.3	1.12	1.42	1.85	2.22	2.57	2.93	3.32	3.77	4.35	5.25	6.08
Nov	2.55	2.68	1.90	1966	27	4.48+	1992	.27	1981	15.1	7.2	1.1	.1	.83	1.07	1.43	1.73	2.02	2.33	2.66	3.04	3.54	4.31	5.03
Dec	2.17	1.86	1.60	1984	28	4.44	1971	.14	1994	17.5	7.0	.5	.2	.62	.83	1.14	1.41	1.68	1.95	2.25	2.61	3.07	3.80	4.48
Ann	31.15	31.10	6.53	May 1983	31	7.68	Sep 1978	.14	Dec 1994	155.0	77.0	16.5	4.2	23.30	24.85	26.82	28.30	29.61	30.87	32.16	33.59	35.31	37.79	39.92

+ 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: 1952-2001

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

Complete documentation available from:
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

Station: PETOSKEY, MI

COOP ID: 206507

Climate Division: MI 3

NWS Call Sign:

Elevation: 610 Feet

Lat: 45° 22N

Lon: 84° 59W

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	41.4	39.7	19	20	14.0	1990	25	68.2	1971	60	1971	31	37	1971	14.9	11.0	5.0	1.9	.3	-9.9	-9.9	-9.9	-9.9
Feb	22.3	21.5	14	18	10.0	1985	11	45.5	1985	30+	2000	20	30	1971	10.1	7.2	2.8	.8	.1	-9.9	-9.9	-9.9	-9.9
Mar	12.0	12.4	7	#	10.0	1989	3	32.5	1972	36	1972	7	29	1972	6.2	4.0	1.5	.6	@	-9.9	-9.9	-9.9	-9.9
Apr	3.7	2.0	#	0	6.0	1971	3	15.0	1971	14	1972	5	4	1972	2.2	1.4	.4	.2	.0	-9.9	-9.9	-9.9	-9.9
May	.3	.0	#	0	2.5	1979	6	2.5	1979	#+	1996	2	#+	1996	.1	.1	.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	#	1998	24	#	1998	.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	.3	.0	#	0	2.0	1972	19	3.0	1972	#+	2000	8	#+	2000	.4	.3	.0	.0	.0	.0	.0	.0	.0
Nov	10.8	8.3	1	#	11.0	1991	4	26.0	1976	16	1976	30	7	1976	5.4	3.7	1.3	.5	@	-9.9	-9.9	-9.9	-9.9
Dec	26.3	24.9	9	4	13.0	1985	1	44.5	1996	36+	2000	27	23	1983	12.6	9.0	3.9	1.6	.2	-9.9	-9.9	-9.9	-9.9
Ann	117.1	108.8	N/A	N/A	14.0	Jan 1990	25	68.2	Jan 1971	60	Jan 1971	31	37	Jan 1971	51.9	36.7	14.9	5.6	.6	-9.9	-9.9	-9.9	-9.9

+ 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

Climatography of the United States

No. 20 1971-2000

Station: PETOSKEY, MI

COOP ID: 206507

Climate Division: MI 3

NWS Call Sign:

Elevation: 610 Feet

Lat: 45° 22N

Lon: 84° 59W

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	6/09	6/04	6/01	5/28	5/26	5/23	5/20	5/16	5/11
32	5/21	5/17	5/14	5/11	5/09	5/07	5/04	5/01	4/27
28	5/05	5/01	4/28	4/26	4/24	4/21	4/19	4/16	4/12
24	4/23	4/19	4/17	4/14	4/12	4/10	4/08	4/05	4/02
20	4/16	4/11	4/08	4/06	4/03	4/01	3/29	3/26	3/21
16	4/12	4/08	4/05	4/02	3/30	3/28	3/25	3/22	3/17
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	9/12	9/18	9/22	9/25	9/29	10/02	10/05	10/09	10/15
32	9/29	10/05	10/08	10/11	10/14	10/17	10/20	10/24	10/29
28	10/13	10/18	10/22	10/26	10/29	11/01	11/04	11/08	11/14
24	10/31	11/05	11/08	11/11	11/14	11/17	11/20	11/24	11/29
20	11/08	11/13	11/17	11/21	11/24	11/27	12/01	12/05	12/11
16	11/18	11/24	11/28	12/01	12/05	12/08	12/11	12/15	12/21
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	145	138	133	129	125	121	117	112	106
32	176	170	165	161	158	154	150	145	139
28	207	200	195	191	188	184	180	175	168
24	237	229	224	220	215	211	207	201	194
20	255	248	243	238	234	230	226	221	213
16	272	264	258	253	249	244	239	233	225

* 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

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

Station: PETOSKEY, MI

COOP ID: 206507

Climate Division: MI 3 NWS Call Sign: Elevation: 610 Feet Lat: 45° 22N Lon: 84° 59W

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	1391	1265	1122	745	429	158	42	69	202	529	858	1197	8007
60	1236	1125	967	595	293	77	8	18	92	382	708	1042	6543
57	1143	1041	874	507	222	44	1	6	49	299	618	949	5753
55	1081	985	812	450	181	28	0	2	30	249	558	887	5263
50	926	845	657	313	97	8	0	0	6	144	410	732	4138
32	390	369	184	26	1	0	0	0	0	3	42	251	1266

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	21	28	85	271	602	878	1087	1048	798	498	174	77	5567
55	0	0	0	5	69	216	374	337	138	31	0	0	1170
57	0	0	0	2	49	171	313	279	97	19	0	0	930
60	0	0	0	0	26	114	227	197	50	9	0	0	623
65	0	0	0	0	8	46	106	93	10	1	0	0	264
70	0	0	0	0	1	12	32	29	1	0	0	0	75

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	2	30	122	387	652	853	830	586	301	68	4	0	2	32	154	541	1193	2046	2876	3462	3763	3831	3835
45	0	0	9	65	250	502	698	675	439	178	27	1	0	0	9	74	324	826	1524	2199	2638	2816	2843	2844
50	0	0	3	31	145	355	543	520	296	94	8	0	0	0	3	34	179	534	1077	1597	1893	1987	1995	1995
55	0	0	1	14	71	222	388	365	174	40	3	0	0	0	1	15	86	308	696	1061	1235	1275	1278	1278
60	0	0	0	2	28	119	240	218	81	11	0	0	0	0	0	2	30	149	389	607	688	699	699	699
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	17	76	208	377	541	523	326	139	26	0	0	0	17	93	301	678	1219	1742	2068	2207	2233	2233

(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/normal/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