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: MILLPORT 2 NW, OH **COOP ID: 335315**

Climate Division: OH 7 **NWS Call Sign:** **Elevation: 1,150 Feet** **Lat: 40˚43N** **Lon: 80˚54W**

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	35.6	16.8	26.2	73	1950	25	36.8	1990	-34	1994	19	11.9	1977	1203	0	.0	.0	3.5	12.6	28.1	4.4
Feb	40.0	19.1	29.6	77	2000	26	37.6	1990	-23+	1963	26	16.4	1978	993	0	.0	.0	5.9	8.5	24.4	3.2
Mar	50.7	27.2	39.0	82+	1986	30	47.7	1973	-17	1986	8	30.7	1984	807	0	.0	.0	14.9	2.4	22.0	.5
Apr	62.2	35.6	48.9	90	1990	27	54.3	1985	5	1964	1	43.6	1975	483	0	.0	@	25.5	.1	12.5	.0
May	72.1	45.3	58.7	94	1942	1	65.5	1991	19	1947	10	52.7	1994	233	37	.0	.2	30.7	.0	3.1	.0
Jun	80.5	54.0	67.3	100	1952	26	70.5	1973	28	1972	11	63.3	1972	39	107	.0	1.7	30.0	.0	.1	.0
Jul	84.1	58.2	71.2	103	1988	16	74.9	1983	36	1945	12	66.7	2000	10	201	.1	4.6	31.0	.0	.0	.0
Aug	82.8	56.5	69.7	99+	1988	17	73.6	1993	27	1982	29	65.4	1992	26	169	.0	2.7	31.0	.0	@	.0
Sep	75.8	49.7	62.8	101	1953	2	66.4	1971	25+	1963	25	58.5	1974	114	47	.0	.9	30.0	.0	1.2	.0
Oct	64.3	38.7	51.5	90	1949	10	57.6	1984	14	1988	31	46.1	1988	423	3	.0	.0	28.7	.0	9.5	.0
Nov	51.4	31.0	41.2	81+	1961	3	46.8	1985	-5	1976	30	32.8	1976	714	0	.0	.0	15.8	1.1	18.1	@
Dec	40.1	22.3	31.2	74	1982	3	39.0	1982	-20	1989	24	18.5	1989	1047	0	.0	.0	6.1	8.1	25.5	1.5
Ann	61.6	37.9	49.8	103	Jul 1988	16	74.9	Jul 1983	-34	Jan 1994	19	11.9	Jan 1977	6092	564	.1	10.1	253.1	32.8	144.5	9.6

\+ 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: 1936-2001

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

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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	2.51	2.04	1.94	1959	21	5.34	1999	.85	1981
Feb	2.33	2.28	1.61	1951	1	4.86	1981	.41	1987
Mar	3.09	2.97	2.39	1964	10	5.58	1974	1.07	1990
Apr	3.25	3.00	1.85	1993	26	6.62	1981	.57	1971
May	4.12	4.28	3.71	1985	28	7.58	1983	1.58+	1988
Jun	3.84	3.99	3.70	1989	28	9.15	1989	.67	1988
Jul	4.17	3.75	3.26	1941	12	9.88	1990	1.84	1989
Aug	3.20	3.08	2.34	1980	18	7.55	1980	.53	1993
Sep	3.25	3.18	2.48	1944	4	6.95	1975	.49	1998
Oct	2.43	2.11	3.30	1998	8	4.89	1998	.65	1982
Nov	3.15	2.95	2.86	1985	5	11.17	1985	1.00	1998
Dec	3.10	2.75	2.02	1974	2	7.15	1990	1.12	1980
Ann	38.44	38.10	3.71	May 1985	28	11.17	Nov 1985	.41	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.3	7.4	1.2	.3
Feb	8.9	6.6	1.1	.3
Mar	11.4	8.1	1.8	.3
Apr	12.6	8.3	1.9	.5
May	12.1	8.6	2.7	.7
Jun	10.8	7.5	2.7	.7
Jul	10.6	7.9	2.8	1.1
Aug	8.9	6.3	2.1	.8
Sep	9.7	6.6	2.2	.6
Oct	10.2	6.1	1.1	.2
Nov	11.9	7.8	1.7	.4
Dec	11.8	8.2	1.7	.5
Ann	130.2	89.4	23.0	6.4

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	.94	1.18	1.51	1.79	2.06	2.33	2.62	2.96	3.40	4.07	4.68
Feb	.75	.97	1.30	1.57	1.84	2.12	2.42	2.78	3.24	3.95	4.61
Mar	1.37	1.65	2.03	2.34	2.63	2.92	3.24	3.60	4.05	4.74	5.36
Apr	1.14	1.45	1.90	2.27	2.63	3.00	3.40	3.86	4.46	5.38	6.23
May	1.52	1.90	2.46	2.92	3.36	3.81	4.30	4.87	5.60	6.72	7.74
Jun	1.10	1.47	2.02	2.49	2.96	3.44	3.98	4.61	5.43	6.72	7.91
Jul	1.72	2.10	2.64	3.08	3.50	3.92	4.37	4.89	5.55	6.56	7.48
Aug	.95	1.25	1.71	2.10	2.49	2.88	3.32	3.84	4.51	5.56	6.53
Sep	.94	1.25	1.71	2.12	2.51	2.92	3.37	3.91	4.60	5.68	6.69
Oct	.83	1.06	1.39	1.68	1.95	2.23	2.54	2.89	3.35	4.06	4.72
Nov	.92	1.22	1.67	2.06	2.44	2.84	3.27	3.79	4.45	5.49	6.46
Dec	1.40	1.68	2.06	2.37	2.65	2.94	3.25	3.61	4.05	4.73	5.34
Ann	29.40	31.20	33.47	35.18	36.69	38.13	39.61	41.24	43.21	46.03	48.45

\+ 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: 1936-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	8.2	6.2	1	1
Feb	6.6	5.8	1	1
Mar	6.5	6.2	#	#
Apr	1.4	.5	#	0
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.1	.0	#	0
Nov	2.4	1.5	#	0
Dec	6.5	6.2	1	#
Ann	31.7	26.4	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	6.0	1976	8	22.0	1978	12	1996	13	6	1979
Feb	9.0	1984	29	17.5	1984	15	1984	29	7	1985
Mar	8.0	1993	14	15.2	1993	6	1983	11	1	1988
Apr	10.0	1987	4	11.0	1987	10	1987	4	1	1987
May	#	1996	13	#+	1996	#	1996	13	#	1996
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	.5	1972	19	.8	1974	1	1993	31	#	1993
Nov	5.0	1993	1	7.5	1976	5	1993	1	1	1971
Dec	20.0	1974	2	32.2	1974	15	1974	6	6	1974
Ann	20.0	Dec 1974	2	32.2	Dec 1974	15+	Feb 1984	29	7	Feb 1985

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.5	3.7	.8	.2	.0
Feb	3.9	3.1	.6	.1	.0
Mar	3.3	2.1	.8	.2	.0
Apr	1.1	.6	.1	@	@
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.1	.0	.0	.0	.0
Nov	1.6	1.1	.2	@	.0
Dec	3.7	2.9	.5	.1	@
Ann	19.2	13.5	3.0	.6	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	-9.9	-9.9	-9.9	-9.9
Feb	6.4	4.0	2.6	.1
Mar	1.6	.9	.4	.0
Apr	.1	.1	.1	.1
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	.7	.3	.1	.0
Dec	4.2	3.1	1.8	.5
Ann	-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

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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	6/16	6/10	6/05	6/01	5/28	5/24	5/20	5/16	5/09
32	6/01	5/27	5/23	5/20	5/17	5/14	5/10	5/07	5/01
28	5/18	5/13	5/09	5/05	5/02	4/29	4/26	4/22	4/16
24	5/05	4/30	4/26	4/23	4/20	4/17	4/14	4/10	4/05
20	4/26	4/20	4/16	4/12	4/09	4/05	4/02	3/28	3/22
16	4/10	4/05	4/02	3/30	3/27	3/24	3/21	3/18	3/13

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	9/01	9/06	9/10	9/13	9/16	9/19	9/22	9/25	9/30
32	9/13	9/17	9/20	9/22	9/25	9/27	9/29	10/02	10/06
28	9/23	9/28	10/02	10/06	10/09	10/12	10/15	10/19	10/25
24	10/10	10/15	10/19	10/22	10/25	10/28	10/31	11/04	11/09
20	10/21	10/26	10/30	11/03	11/06	11/09	11/12	11/16	11/21
16	11/02	11/08	11/13	11/17	11/21	11/24	11/28	12/03	12/09

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	133	125	120	115	110	105	101	95	87
32	145	140	136	133	130	127	124	121	115
28	180	173	167	163	159	155	150	145	138
24	209	201	196	191	187	182	178	172	165
20	233	225	220	215	210	206	201	195	187
16	264	255	249	243	238	233	227	221	212

***** 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	1203	993	807	483	233	39	10	26	114	423	714	1047	6092
60	1048	853	652	336	132	8	0	5	42	281	564	892	4813
57	955	769	564	255	87	3	0	0	19	207	475	799	4133
55	893	713	506	204	62	1	0	0	10	164	417	738	3708
50	746	579	366	101	22	0	0	0	1	80	283	596	2774
32	282	184	58	0	0	0	0	0	0	0	22	185	731

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	102	115	274	508	828	1058	1214	1167	922	603	298	161	7250
55	0	0	9	22	177	369	501	454	242	54	4	1	1833
57	0	0	5	12	140	310	439	392	192	36	1	0	1527
60	0	0	0	4	92	226	346	303	125	17	0	0	1113
65	0	0	0	0	37	107	201	169	47	3	0	0	564
70	0	0	0	0	11	32	90	76	10	0	0	0	219

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	21	29	119	289	577	811	961	912	675	356	135	42	21	50	169	458	1035	1846	2807	3719	4394	4750	4885	4927
45	5	9	68	182	425	661	806	757	525	226	71	19	5	14	82	264	689	1350	2156	2913	3438	3664	3735	3754
50	1	1	33	101	284	512	651	603	379	124	30	5	1	2	35	136	420	932	1583	2186	2565	2689	2719	2724
55	0	0	10	47	166	365	496	448	248	55	11	0	0	0	10	57	223	588	1084	1532	1780	1835	1846	1846
60	0	0	3	17	79	230	343	299	137	17	1	0	0	0	3	20	99	329	672	971	1108	1125	1126	1126
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	8	23	92	196	363	534	640	606	437	230	79	27	8	31	123	319	682	1216	1856	2462	2899	3129	3208	3235

(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