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: MILFORD, OH **COOP ID: 335268**

Climate Division: OH 8 **NWS Call Sign:** **Elevation: 520 Feet** **Lat: 39˚11N** **Lon: 84˚17W**

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	38.1	18.9	28.5	72	1999	23	39.0	1990	-25+	1977	19	11.5	1977	1132	0	.0	.0	5.6	10.6	27.1	3.3
Feb	42.5	21.3	31.9	76+	2000	27	39.4	1998	-13	1985	3	16.8	1978	926	0	.0	.0	8.0	7.2	23.7	2.3
Mar	53.5	29.8	41.7	84+	1998	30	48.5	1973	-10+	1980	4	34.0	1984	724	0	.0	.0	17.8	1.3	20.0	.2
Apr	65.1	38.5	51.8	89+	1986	27	58.1	1985	18+	1976	13	47.4	1975	399	2	.0	.0	26.5	@	9.0	.0
May	75.3	48.9	62.1	93	1988	31	69.6	1991	27+	1976	10	57.4	1997	169	79	.0	.8	30.9	.0	1.0	.0
Jun	83.2	58.1	70.7	97+	1971	29	74.2	1994	36	1984	1	64.6	1972	19	188	@	5.1	30.0	.0	.0	.0
Jul	87.3	62.8	75.1	104	1988	15	79.3	1999	40	1976	18	70.1	1984	0	312	.4	9.9	31.0	.0	.0	.0
Aug	85.7	61.2	73.5	101+	1988	17	79.0	1995	41+	1999	31	69.7	1992	5	267	.1	7.2	31.0	.0	.0	.0
Sep	78.9	53.2	66.1	98	1998	15	70.9	1998	26	1983	24	61.2	1975	68	99	.0	1.9	30.0	.0	.2	.0
Oct	67.6	40.7	54.2	88	1971	1	61.3	1971	12+	1976	29	45.9	1988	353	15	.0	.0	29.8	.0	6.1	.0
Nov	54.4	32.1	43.3	81+	1999	2	49.4	1985	-3	1976	30	32.8	1976	652	0	.0	.0	18.0	.5	16.6	@
Dec	43.0	24.0	33.5	75+	1982	4	42.3	1984	-22+	1989	23	19.6	1989	976	0	.0	.0	8.2	5.9	24.4	1.0
Ann	64.6	40.8	52.7	104	Jul 1988	15	79.3	Jul 1999	-25+	Jan 1977	19	11.5	Jan 1977	5423	962	.5	24.9	266.8	25.5	128.1	6.8

\+ 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: 1969-2001

(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	3.18	2.98	3.10	2000	4	9.50	1982	.51	1981
Feb	2.72	2.60	2.38	2000	14	6.19	2000	.46	1978
Mar	3.73	3.60	2.03	1985	30	6.86	1985	1.24	1979
Apr	4.10	3.66	2.50	1998	16	9.89	1996	1.19	1971
May	4.96	4.57	3.55	1996	16	12.66	1996	.78	1988
Jun	4.54	4.22	2.86	1998	12	8.76	1998	.69	1988
Jul	4.04	4.04	4.45	2001	18	9.07	1973	.42	1997
Aug	4.18	3.98	3.10	1990	20	7.82	1980	.73	1998
Sep	3.14	2.50	4.82	1979	14	8.11	1979	.30	1978
Oct	3.09	2.81	3.33	1973	2	8.99	1983	.81	1982
Nov	3.65	3.30	2.45	1985	26	9.99	1985	.82	1976
Dec	3.35	3.38	2.41	1998	22	8.89	1990	.65	1976
Ann	44.68	43.53	4.82	Sep 1979	14	12.66	May 1996	.30	Sep 1978

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.4	7.0	2.2	.5
Feb	8.9	6.0	1.6	.5
Mar	10.8	7.9	2.7	.8
Apr	11.5	9.1	2.7	.7
May	10.7	8.8	3.6	1.3
Jun	10.7	8.6	3.3	1.2
Jul	9.0	7.0	2.8	1.1
Aug	8.1	6.5	2.8	1.2
Sep	7.9	5.7	2.1	.9
Oct	7.9	6.4	1.8	.8
Nov	10.1	7.5	2.6	.7
Dec	10.7	6.7	2.3	.6
Ann	116.7	87.2	30.5	10.3

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	.83	1.13	1.59	2.00	2.40	2.82	3.28	3.84	4.56	5.70	6.76
Feb	.65	.90	1.30	1.66	2.01	2.38	2.80	3.29	3.95	4.98	5.95
Mar	1.35	1.70	2.20	2.63	3.03	3.45	3.90	4.43	5.10	6.13	7.08
Apr	1.32	1.71	2.29	2.78	3.25	3.74	4.27	4.90	5.71	6.96	8.12
May	1.37	1.84	2.55	3.18	3.79	4.43	5.14	5.98	7.07	8.78	10.38
Jun	1.74	2.17	2.77	3.27	3.75	4.23	4.75	5.36	6.14	7.32	8.41
Jul	.87	1.25	1.84	2.37	2.91	3.49	4.13	4.91	5.92	7.55	9.09
Aug	1.67	2.06	2.60	3.05	3.48	3.91	4.38	4.92	5.60	6.65	7.60
Sep	.55	.83	1.29	1.72	2.16	2.63	3.17	3.83	4.71	6.12	7.48
Oct	.86	1.16	1.60	1.99	2.37	2.77	3.21	3.73	4.40	5.46	6.44
Nov	1.03	1.38	1.91	2.36	2.81	3.27	3.78	4.39	5.18	6.41	7.56
Dec	1.24	1.55	2.01	2.38	2.74	3.11	3.50	3.97	4.56	5.46	6.29
Ann	32.39	34.79	37.85	40.17	42.23	44.21	46.26	48.51	51.24	55.20	58.61

\+ 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: 1969-2001
(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	7.8	4.3	1	#
Feb	4.5	2.3	1	#
Mar	2.3	.8	#	#
Apr	.3	.0	#	0
May	#	.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
Nov	.4	.0	#	0
Dec	2.5	.8	#	#
Ann	17.8	8.2	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	1977	10	27.0	1978	17	1978	20	11	1977
Feb	7.5	1971	9	15.5	1985	16	1998	6	7	1978
Mar	6.0	1987	30	8.0	1980	10	1980	4	2	1978
Apr	6.0	1987	4	6.0	1987	2	1987	4	#+	1987
May	#	1983	17	#	1983	0	0	0	0	0
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	#	1992	21	#	1992	2	1989	18	#+	1993
Nov	3.0	1977	28	3.0+	1977	3	1977	28	#+	1993
Dec	5.0	1984	6	11.1	1989	8	1981	22	2	1989
Ann	7.5	Feb 1971	9	27.0	Jan 1978	17	Jan 1978	20	11	Jan 1977

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.7	2.3	.6	.2	.0
Feb	2.0	1.6	.5	.2	.0
Mar	.9	.6	.2	.1	.0
Apr	.1	.1	@	@	.0
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	.0	.0	.0	.0	.0
Nov	.3	.2	@	.0	.0
Dec	1.4	.9	.3	@	.0
Ann	7.4	5.7	1.6	.5	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	7.3	4.5	3.0	1.8
Feb	7.4	4.9	3.5	.6
Mar	1.1	.8	.5	.1
Apr	@	.0	.0	.0
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	.2	@	.0	.0
Dec	2.4	1.0	.4	.0
Ann	18.4	11.2	7.4	2.5

+ 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	5/20	5/14	5/11	5/07	5/04	5/01	4/28	4/24	4/19
32	5/09	5/04	5/01	4/28	4/25	4/22	4/19	4/15	4/11
28	4/27	4/21	4/17	4/14	4/11	4/08	4/05	4/01	3/27
24	4/15	4/11	4/08	4/05	4/02	3/31	3/28	3/25	3/21
20	4/03	3/28	3/24	3/20	3/17	3/13	3/10	3/06	2/28
16	3/20	3/14	3/10	3/06	3/02	2/27	2/23	2/19	2/13

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	9/23	9/27	9/30	10/03	10/05	10/07	10/10	10/13	10/17
32	9/28	10/03	10/07	10/10	10/13	10/16	10/20	10/23	10/29
28	10/08	10/15	10/19	10/23	10/27	10/30	11/03	11/08	11/14
24	10/21	10/26	10/30	11/02	11/06	11/09	11/12	11/16	11/21
20	10/29	11/06	11/11	11/16	11/20	11/25	11/29	12/05	12/12
16	11/13	11/21	11/26	12/01	12/05	12/09	12/14	12/20	12/27

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	173	166	161	157	153	149	145	140	133
32	194	186	180	175	171	166	161	156	148
28	226	216	209	203	198	192	186	180	170
24	239	231	225	221	216	212	207	202	194
20	278	268	260	254	248	242	235	228	217
16	304	295	288	282	277	271	266	259	250

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1132	926	724	399	169	19	0	5	68	353	652	976	5423
60	977	786	569	259	89	4	0	0	22	228	504	821	4259
57	884	703	484	186	55	1	0	0	9	167	420	735	3644
55	826	653	426	143	37	0	0	0	5	132	365	677	3264
50	683	522	294	61	12	0	0	0	1	65	240	534	2412
32	255	163	35	0	0	0	0	0	0	0	16	157	626

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	147	161	335	594	933	1159	1335	1284	1021	686	354	204	8213
55	5	6	13	46	257	470	622	571	336	105	13	11	2455
57	0	1	8	29	213	411	560	509	281	78	8	7	2105
60	0	0	0	13	154	323	467	416	204	46	2	0	1625
65	0	0	0	2	79	188	312	267	99	15	0	0	962
70	0	0	0	0	32	83	168	138	34	3	0	0	458

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	30	49	159	363	682	922	1083	1035	780	439	178	53	30	79	238	601	1283	2205	3288	4323	5103	5542	5720	5773
45	8	17	90	241	530	772	928	880	630	300	99	28	8	25	115	356	886	1658	2586	3466	4096	4396	4495	4523
50	3	4	49	141	378	622	773	725	480	181	52	7	3	7	56	197	575	1197	1970	2695	3175	3356	3408	3415
55	0	0	20	76	246	474	618	570	336	95	20	3	0	0	20	96	342	816	1434	2004	2340	2435	2455	2458
60	0	0	5	28	138	327	463	415	207	38	3	0	0	0	5	33	171	498	961	1376	1583	1621	1624	1624
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	22	40	116	244	429	608	734	695	507	290	115	37	22	62	178	422	851	1459	2193	2888	3395	3685	3800	3837

(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