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: COLUMBUS VLY CROSSING, OH **COOP ID: 331783**

Climate Division: OH 5 **NWS Call Sign:** **Elevation: 735 Feet** **Lat: 39˚54N** **Lon: 82˚56W**

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	36.4	20.2	28.3	73	1950	25	37.9	1990	-28	1994	19	12.9	1977	1138	0	.0	.0	4.2	11.2	26.7	2.6
Feb	41.3	23.3	32.3	75	2000	26	40.4	1976	-20	1951	3	18.4	1978	916	0	.0	.0	7.0	7.3	22.0	1.3
Mar	52.5	31.8	42.2	83+	1986	31	50.7	1973	-3	1960	8	34.1	1984	707	0	.0	.0	17.7	1.5	17.5	.1
Apr	64.2	40.4	52.3	90	1990	27	57.4	1985	17+	1995	5	47.4	1975	382	2	.0	@	27.2	.0	6.8	.0
May	73.9	50.7	62.3	94+	1962	18	70.4	1991	26	1966	10	57.1	1997	159	76	.0	.6	31.0	.0	.4	.0
Jun	82.2	59.9	71.1	100	1988	25	74.6	1971	37	1972	11	66.6	1972	14	195	@	3.8	30.0	.0	.0	.0
Jul	85.6	63.7	74.7	102	1954	14	79.2	1999	45+	1996	4	71.9	1984	0	299	@	6.6	31.0	.0	.0	.0
Aug	83.8	61.6	72.7	100	1983	20	77.4	1983	38	1986	29	69.0	1992	6	246	@	3.8	31.0	.0	.0	.0
Sep	77.9	54.5	66.2	98	1953	3	70.4	1978	28	1995	23	62.1	1975	65	101	.0	1.1	30.0	.0	.1	.0
Oct	66.5	43.0	54.8	88	1951	5	61.9	1971	17	1952	21	47.6	1988	334	16	.0	.0	29.7	.0	4.2	.0
Nov	52.9	34.2	43.6	80+	1968	1	49.0	1985	-7	1958	30	35.7	1976	643	0	.0	.0	17.5	.5	14.3	.0
Dec	41.1	25.4	33.3	76	1982	3	42.1	1982	-21	1989	22	18.9	1989	985	0	.0	.0	7.1	6.4	23.6	.8
Ann	63.2	42.4	52.8	102	Jul 1954	14	79.2	Jul 1999	-28	Jan 1994	19	12.9	Jan 1977	5349	935	@	15.9	263.4	26.9	115.6	4.8

\+ 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: 1948-2001

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

Issue Date: February 2004

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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	2.56	2.71	4.55	1959	21	5.80	1995	.23	1981
Feb	2.07	2.14	2.46	1975	23	3.92	1990	.19	1978
Mar	3.00	3.13	3.16	1964	9	5.14	1985	.88	1981
Apr	3.65	3.61	2.76	2001	11	7.86	1996	.64	1971
May	4.31	4.15	2.87	1968	27	7.95	1996	1.20	1999
Jun	4.01	3.76	2.48	1973	17	8.97	1973	1.01	1984
Jul	4.39	4.65	3.77	1992	13	10.44	1992	1.42	1991
Aug	4.31	4.11	2.94	1995	5	11.15	1972	.52	1986
Sep	2.93	2.47	5.09	1979	14	7.64	1979	.47	1995
Oct	2.53	2.59	2.25+	1995	5	5.59	1983	.71	1982
Nov	3.30	2.94	1.72	1993	17	12.47	1985	.56	1976
Dec	2.97	2.77	2.16	2000	16	7.52	1990	.78	1976
Ann	40.03	39.86	5.09	Sep 1979	14	12.47	Nov 1985	.19	Feb 1978

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.6	6.5	1.6	.3
Feb	8.0	5.1	1.2	.2
Mar	10.0	7.2	2.1	.3
Apr	10.0	7.4	2.8	.7
May	10.4	7.9	3.2	1.0
Jun	8.6	6.6	3.0	1.0
Jul	8.3	6.8	3.1	1.3
Aug	8.2	6.9	3.0	1.3
Sep	6.9	4.9	2.0	.8
Oct	7.0	5.5	2.0	.5
Nov	9.4	7.1	2.3	.6
Dec	9.9	6.3	2.1	.4
Ann	107.3	78.2	28.4	8.4

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	.62	.87	1.24	1.57	1.90	2.25	2.64	3.10	3.71	4.67	5.57
Feb	.52	.72	1.02	1.29	1.55	1.83	2.14	2.50	2.98	3.74	4.45
Mar	1.26	1.53	1.91	2.23	2.52	2.82	3.14	3.51	3.98	4.69	5.33
Apr	1.11	1.46	1.98	2.43	2.86	3.31	3.80	4.38	5.13	6.30	7.38
May	1.52	1.92	2.51	3.01	3.49	3.97	4.50	5.12	5.92	7.14	8.27
Jun	1.37	1.75	2.30	2.77	3.22	3.68	4.19	4.78	5.54	6.71	7.79
Jul	1.44	1.86	2.47	2.99	3.49	4.01	4.58	5.24	6.10	7.42	8.64
Aug	.85	1.24	1.87	2.45	3.04	3.67	4.38	5.24	6.38	8.21	9.94
Sep	.65	.92	1.35	1.73	2.12	2.54	3.00	3.56	4.29	5.46	6.57
Oct	.93	1.17	1.51	1.80	2.07	2.35	2.65	3.00	3.45	4.13	4.77
Nov	.91	1.23	1.70	2.12	2.52	2.95	3.42	3.98	4.70	5.84	6.90
Dec	1.18	1.45	1.84	2.16	2.47	2.78	3.11	3.50	3.99	4.74	5.42
Ann	29.04	31.18	33.93	36.00	37.84	39.62	41.45	43.47	45.91	49.45	52.51

\+ 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

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	5.3	4.3	1	#	8.0	1994	17	14.0	1979	13	1996	12	5	1985	3.9	3.1	.9	.4	.0	5.2	2.8	.9	.4
Feb	5.0	4.2	1	#	11.0	1984	29	12.5	1979	11	1984	29	4	1985	2.4	1.6	.5	.2	@	3.3	1.2	.3	.1
Mar	1.9	1.2	#	0	7.0	1999	9	7.6	1999	10	1987	31	10	1987	1.0	.6	.2	@	.0	.6	.2	.0	.0
Apr	.7	.0	#	0	10.0	1987	5	13.0	1987	5	1987	5	#+	1987	.2	.1	.1	.1	@	.1	.1	@	.0
May	#	.0	0	0	#	1989	7	#	1989	0	0	0	0	0	.0	.0	.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	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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.0	.0	#	0	.3	1989	19	.3	1989	#	1992	21	#	1992	@	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.8	#	#	0	4.8	2000	25	6.5	1972	1	1971	24	#+	2000	.4	.3	.1	.0	.0	.1	.0	.0	.0
Dec	2.8	1.2	#	#	6.0	1984	6	9.0	1980	6	1989	27	3	1989	1.9	1.1	.3	.1	.0	2.3	1.1	.7	.0
Ann	16.5	10.9	N/A	N/A	11.0	Feb 1984	29	14.0	Jan 1979	13	Jan 1996	12	10	Mar 1987	9.8	6.8	2.1	.8	@	11.6	5.4	1.9	.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	5/13	5/10	5/07	5/05	5/03	5/01	4/29	4/27	4/23
32	5/09	5/05	5/02	4/29	4/26	4/24	4/21	4/18	4/14
28	4/23	4/19	4/17	4/14	4/12	4/10	4/07	4/04	3/31
24	4/13	4/08	4/04	4/01	3/29	3/26	3/23	3/19	3/14
20	4/04	3/29	3/25	3/21	3/17	3/14	3/10	3/06	2/28
16	3/17	3/12	3/07	3/04	3/01	2/25	2/22	2/18	2/12

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	9/26	9/29	10/02	10/04	10/06	10/08	10/11	10/15
32	9/30	10/04	10/08	10/11	10/13	10/16	10/19	10/22	10/27
28	10/09	10/15	10/20	10/24	10/27	10/31	11/04	11/08	11/14
24	10/24	10/29	11/02	11/05	11/09	11/12	11/15	11/19	11/24
20	11/05	11/11	11/16	11/20	11/23	11/27	12/01	12/05	12/12
16	11/14	11/20	11/25	11/29	12/03	12/07	12/11	12/16	12/22

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	167	162	159	156	153	150	147	143	138
32	187	181	176	173	169	165	162	157	151
28	218	211	206	202	198	194	190	185	178
24	246	239	233	228	224	219	215	209	201
20	275	266	260	255	250	245	240	234	225
16	302	293	287	282	277	272	267	260	252

***** 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	1138	916	707	382	159	14	0	6	65	334	643	985	5349
60	983	776	556	242	80	3	0	0	21	212	495	830	4198
57	890	692	470	169	47	1	0	0	9	152	409	737	3576
55	828	639	413	127	31	0	0	0	5	118	355	683	3199
50	685	509	284	51	9	0	0	0	1	55	230	539	2363
32	247	147	33	0	0	0	0	0	0	0	14	155	596

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	132	155	349	610	940	1172	1322	1262	1026	705	360	193	8226
55	0	3	15	46	258	482	609	549	340	110	12	8	2432
57	0	0	10	29	213	422	547	487	284	82	6	0	2080
60	0	0	4	12	153	334	454	394	207	49	1	0	1608
65	0	0	0	2	76	195	299	246	101	16	0	0	935
70	0	0	0	0	29	86	156	120	35	4	0	0	430

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	29	54	174	387	702	934	1078	1018	791	470	181	55	29	83	257	644	1346	2280	3358	4376	5167	5637	5818	5873
45	7	21	104	262	547	784	923	863	641	326	104	30	7	28	132	394	941	1725	2648	3511	4152	4478	4582	4612
50	1	4	53	158	394	634	768	708	491	197	53	6	1	5	58	216	610	1244	2012	2720	3211	3408	3461	3467
55	0	0	28	83	255	484	613	553	350	105	23	0	0	0	28	111	366	850	1463	2016	2366	2471	2494	2494
60	0	0	8	34	142	340	458	398	218	47	5	0	0	0	8	42	184	524	982	1380	1598	1645	1650	1650
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	12	35	113	240	438	625	738	693	514	286	104	31	12	47	160	400	838	1463	2201	2894	3408	3694	3798	3829

(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