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: VAN WERT 1 S, OH **COOP ID: 338609**

Climate Division: OH 1 **NWS Call Sign:** **Elevation: 790 Feet** **Lat: 40˚51N** **Lon: 84˚35W**

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	31.3	15.9	23.6	71	1950	25	34.3	1990	-22+	1985	21	7.8	1977	1283	0	.0	.0	2.2	15.1	28.5	4.2
Feb	35.7	18.8	27.3	74	2000	26	37.5	1998	-14+	1982	10	12.8	1978	1058	0	.0	.0	3.9	10.6	24.5	2.7
Mar	47.0	28.1	37.6	85	1938	22	44.9	1973	-15	1948	12	28.5	1984	851	0	.0	.0	12.6	3.3	21.0	.2
Apr	59.6	38.2	48.9	89	1942	30	55.3	1985	9	1982	6	43.4	1975	485	1	.0	.0	24.4	.1	7.6	.0
May	71.6	49.6	60.6	94+	1991	29	68.2	1991	22	1943	1	54.9	1997	207	71	.0	1.2	30.6	.0	.5	.0
Jun	80.7	59.3	70.0	104	1988	26	74.0	1984	36	1966	1	65.2	1972	29	179	.1	4.3	30.0	.0	.0	.0
Jul	84.7	63.0	73.9	110	1936	14	78.6	1999	41	1943	1	70.6	1971	1	276	.2	7.0	31.0	.0	.0	.0
Aug	82.4	60.6	71.5	103	1936	22	77.4	1995	37	1965	29	67.3	1992	15	217	.0	3.9	31.0	.0	.0	.0
Sep	76.2	53.0	64.6	105+	1939	15	69.7	1998	28+	1951	29	60.2	1976	86	75	.0	1.6	30.0	.0	.1	.0
Oct	63.6	41.4	52.5	93	1939	8	59.2	1971	19+	1969	23	45.1	1976	398	10	.0	.0	28.1	.0	4.4	.0
Nov	49.1	32.5	40.8	79	1950	1	46.5	1975	-2	1958	30	32.4	1976	726	0	.0	.0	14.4	1.1	16.3	.0
Dec	36.4	22.1	29.3	71	1998	7	38.0	1982	-18	1989	22	17.0	1989	1109	0	.0	.0	4.1	9.4	25.8	1.7
Ann	59.9	40.2	50.1	110	Jul 1936	14	78.6	Jul 1999	-22+	Jan 1985	21	7.8	Jan 1977	6248	829	.3	18.0	242.3	39.6	128.7	8.8

\+ 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: 1936-2001

(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	2.07	1.87	1.87	1959	21	3.82	1999	.78+	1986
Feb	1.85	1.53	3.63	1959	10	6.10	1990	.05	1987
Mar	2.63	2.44	2.78	1948	21	5.89	1973	.62	1994
Apr	3.47	3.62	2.25	1969	18	6.76	1972	.78	1997
May	3.81	4.00	3.10	1943	17	6.19	1996	.74	1988
Jun	4.33	4.34	3.45	1981	14	9.23	2000	.12	1991
Jul	3.90	3.24	3.92	1996	18	8.95	1990	.32	1974
Aug	3.42	2.87	2.80	1998	5	7.62	1975	1.25	1993
Sep	2.93	2.39	4.22	1997	10	7.86	1972	.43	1995
Oct	2.59	2.47	5.30	1950	9	6.19	1983	.80	1994
Nov	3.08	2.74	2.95	1958	17	6.42	1983	.24	1976
Dec	2.78	2.68	2.25	1990	30	7.10	1990	.90	1976
Ann	36.86	37.56	5.30	Oct 1950	9	9.23	Jun 2000	.05	Feb 1987

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.7	5.4	1.1	.2
Feb	8.4	4.7	.9	.3
Mar	10.0	6.6	1.6	.3
Apr	11.3	8.1	2.5	.5
May	10.5	7.4	2.5	.9
Jun	9.4	7.0	2.8	1.3
Jul	8.8	6.7	2.6	1.0
Aug	7.6	5.9	2.6	.8
Sep	8.3	5.7	1.9	.6
Oct	8.6	5.7	1.6	.5
Nov	10.6	6.8	2.2	.5
Dec	11.1	6.4	1.8	.3
Ann	114.3	76.4	24.1	7.2

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	.75	.94	1.22	1.46	1.68	1.91	2.16	2.45	2.82	3.39	3.91
Feb	.27	.43	.70	.95	1.22	1.51	1.84	2.25	2.81	3.70	4.57
Mar	.99	1.24	1.59	1.88	2.16	2.44	2.75	3.10	3.55	4.25	4.88
Apr	1.23	1.55	2.03	2.43	2.81	3.20	3.62	4.12	4.75	5.73	6.63
May	1.58	1.93	2.42	2.82	3.20	3.58	4.00	4.47	5.07	5.99	6.83
Jun	.87	1.27	1.90	2.48	3.07	3.70	4.41	5.27	6.40	8.22	9.94
Jul	1.07	1.44	2.00	2.50	2.98	3.48	4.04	4.70	5.55	6.90	8.16
Aug	1.21	1.53	2.00	2.39	2.77	3.15	3.57	4.06	4.69	5.66	6.54
Sep	.51	.77	1.20	1.60	2.01	2.45	2.96	3.57	4.39	5.71	6.97
Oct	1.07	1.30	1.64	1.91	2.17	2.43	2.72	3.04	3.46	4.09	4.66
Nov	.82	1.11	1.56	1.95	2.34	2.74	3.19	3.72	4.41	5.50	6.52
Dec	.90	1.16	1.55	1.88	2.20	2.53	2.90	3.32	3.87	4.72	5.51
Ann	27.77	29.57	31.85	33.57	35.08	36.54	38.04	39.69	41.68	44.54	47.00

\+ 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)

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	11.9	11.1	2	1	9.0	1978	18	42.0	1978	20	1978	28	7	1978	5.1	4.1	1.4	.3	.0	15.1	7.8	4.9	.9
Feb	9.0	9.1	2	1	10.0	1982	3	17.0	1982	18+	1982	5	15	1978	3.7	3.2	1.0	.2	@	10.6	5.9	4.4	2.3
Mar	4.0	3.5	1	#	6.0	1973	17	10.0	1971	16	1978	3	8	1978	1.8	1.5	.4	.1	.0	3.2	1.6	.9	.6
Apr	1.5	.0	#	0	7.0	1973	12	13.0	1982	7	1982	8	1	1982	.5	.4	.2	.1	.0	.3	.2	.1	.0
May	.0	.0	0	0	.0	0	0	.0	0	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	.1	.0	#	0	3.5	1989	19	3.5	1989	1	1992	20	#+	1992	.1	.1	@	.0	.0	.0	.0	.0	.0
Nov	2.1	1.0	#	0	4.0	1975	27	6.0	1980	4	1980	27	#+	1996	1.3	1.0	.2	.0	.0	.6	.1	.0	.0
Dec	10.0	8.8	1	#	10.1	1996	17	31.0	1973	14	1977	10	4	1977	4.0	3.3	.8	.5	.1	6.3	2.3	1.3	.2
Ann	38.6	33.5	N/A	N/A	10.1	Dec 1996	17	42.0	Jan 1978	20	Jan 1978	28	15	Feb 1978	16.5	13.6	4.0	1.2	.1	36.1	17.9	11.6	4.0

+ 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	5/17	5/12	5/09	5/06	5/03	5/01	4/28	4/25	4/20
32	5/09	5/04	5/01	4/28	4/25	4/22	4/19	4/16	4/11
28	4/25	4/21	4/18	4/15	4/13	4/10	4/08	4/05	4/01
24	4/16	4/11	4/08	4/06	4/03	4/01	3/29	3/26	3/21
20	4/06	4/01	3/28	3/25	3/22	3/19	3/16	3/12	3/07
16	4/01	3/25	3/21	3/17	3/13	3/09	3/05	3/01	2/22

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	9/22	9/26	9/29	10/02	10/05	10/07	10/10	10/13	10/17
32	9/29	10/04	10/08	10/11	10/15	10/18	10/21	10/25	10/30
28	10/12	10/18	10/22	10/25	10/29	11/01	11/05	11/09	11/14
24	10/26	10/31	11/04	11/07	11/10	11/13	11/16	11/20	11/25
20	11/05	11/12	11/16	11/20	11/24	11/28	12/02	12/06	12/13
16	11/19	11/25	11/29	12/03	12/07	12/10	12/14	12/18	12/25

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	172	166	161	157	153	150	146	141	135
32	195	187	181	176	172	167	162	157	149
28	223	215	208	203	198	193	188	182	173
24	241	234	228	224	220	216	212	207	200
20	273	264	257	252	246	241	236	229	220
16	290	283	277	272	268	263	259	253	245

***** 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	1283	1058	851	485	207	29	1	15	86	398	726	1109	6248
60	1128	918	696	340	119	7	0	2	30	266	576	954	5036
57	1035	834	605	261	79	3	0	0	13	199	487	861	4377
55	973	778	549	212	58	1	0	0	7	159	430	799	3966
50	819	645	407	111	22	0	0	0	1	83	296	657	3041
32	338	237	77	1	0	0	0	0	0	0	27	227	907

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	78	103	249	507	887	1140	1298	1225	979	635	292	141	7534
55	0	0	8	28	232	451	585	512	296	81	4	0	2197
57	0	0	2	17	191	393	523	450	242	58	2	0	1878
60	0	0	0	7	138	307	430	359	169	33	0	0	1443
65	0	0	0	1	71	179	276	217	75	10	0	0	829
70	0	0	0	0	29	82	138	106	22	1	0	0	378

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	9	26	119	313	664	920	1063	995	755	416	141	30	9	35	154	467	1131	2051	3114	4109	4864	5280	5421	5451
45	2	8	68	200	509	770	908	840	605	282	76	14	2	10	78	278	787	1557	2465	3305	3910	4192	4268	4282
50	0	2	33	115	360	620	753	685	456	169	34	4	0	2	35	150	510	1130	1883	2568	3024	3193	3227	3231
55	0	0	12	59	230	471	598	530	316	88	15	0	0	0	12	71	301	772	1370	1900	2216	2304	2319	2319
60	0	0	2	24	130	328	443	375	192	41	4	0	0	0	2	26	156	484	927	1302	1494	1535	1539	1539
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	2	14	76	193	403	609	727	666	478	249	75	14	2	16	92	285	688	1297	2024	2690	3168	3417	3492	3506

(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