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: CELINA 3 NE, OH **COOP ID: 331390**

Climate Division: OH 4 **NWS Call Sign:** **Elevation: 860 Feet** **Lat: 40˚34N** **Lon: 84˚32W**

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	32.7	17.9	25.3	64	1967	23	35.3	1990	-23+	1994	19	10.5	1977	1230	0	.0	.0	2.6	14.7	28.0	3.6
Feb	37.5	21.1	29.3	72	2000	25	38.3	1998	-16	1979	17	13.3	1978	1000	0	.0	.0	4.5	10.3	23.5	2.4
Mar	49.2	30.2	39.7	82	1986	31	47.3	1973	-9	1984	9	29.7	1984	785	0	.0	.0	14.1	2.7	19.2	.1
Apr	61.9	39.7	50.8	86+	1986	27	56.9	1985	9	1982	7	45.3	1975	429	3	.0	.0	26.1	.1	6.7	.0
May	72.9	50.6	61.8	94	1988	31	68.5+	1991	26+	1966	10	55.8	1997	179	78	.0	.5	31.0	.0	.5	.0
Jun	81.2	59.9	70.6	103	1988	25	74.3	1984	37	1966	1	66.0+	1992	19	187	.1	3.2	30.0	.0	.0	.0
Jul	84.5	63.5	74.0	101	1980	15	77.5	1988	43	1988	1	71.0	2000	1	279	.2	5.8	31.0	.0	.0	.0
Aug	82.3	61.2	71.8	101	1983	20	77.0	1983	37	1965	29	67.2	1992	14	221	@	2.5	31.0	.0	.0	.0
Sep	76.7	54.4	65.6	96	1983	10	70.3	1998	30+	1995	23	61.2+	1975	72	88	.0	1.1	30.0	.0	.1	.0
Oct	64.6	43.7	54.2	89	1963	6	61.2	1971	20+	1976	18	47.7	1988	349	12	.0	.0	28.5	.0	3.5	.0
Nov	50.0	34.2	42.1	77	1961	2	47.9	1975	-3	1958	30	34.5	1976	688	0	.0	.0	15.3	1.3	14.4	.0
Dec	37.6	23.7	30.7	70	1982	2	39.6	1982	-20	1989	22	18.0	1989	1065	0	.0	.0	4.7	8.9	25.0	1.3
Ann	60.9	41.7	51.3	103	Jun 1988	25	77.5	Jul 1988	-23+	Jan 1994	19	10.5	Jan 1977	5831	868	.3	13.1	248.8	38.0	120.9	7.4

\+ 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: 1956-2001

(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	2.17	2.27	2.39	1959	21	4.36	1982	.43	1981
Feb	2.08	2.03	2.01	1959	10	4.89	1990	.33	1987
Mar	2.78	2.68	1.90	1964	9	5.86	1973	.68	1994
Apr	3.50	3.59	2.99	1959	27	8.33	1972	1.18	1985
May	3.64	3.61	2.32	1987	19	6.14	1981	1.11	1988
Jun	3.86	3.96	3.20	1957	28	8.19	1981	.97	1988
Jul	4.43	4.13	5.00	1992	13	13.82	1992	.25	1974
Aug	3.68	3.92	2.45	1973	12	6.00	1977	.38	1983
Sep	2.76	2.71	4.43	1969	17	6.40	1972	.50	1987
Oct	2.32	2.09	2.88	1995	5	6.16	1983	.58	1994
Nov	2.95	2.48	2.49	1993	14	6.30	1985	.43	1976
Dec	2.65	2.49	2.19	1990	30	7.22	1990	.53	1976
Ann	36.82	36.55	5.00	Jul 1992	13	13.82	Jul 1992	.25	Jul 1974

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.9	6.1	1.2	.1
Feb	10.2	5.3	1.2	.2
Mar	12.7	7.2	1.8	.2
Apr	13.1	7.7	2.2	.6
May	12.2	8.1	2.5	.6
Jun	10.5	7.4	2.5	1.0
Jul	10.6	6.8	2.9	1.2
Aug	9.6	6.5	2.6	1.0
Sep	8.9	5.7	1.9	.6
Oct	9.3	5.5	1.3	.4
Nov	11.1	6.3	2.0	.4
Dec	12.5	6.6	1.5	.4
Ann	132.6	79.2	23.6	6.7

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	.69	.89	1.20	1.46	1.71	1.97	2.26	2.59	3.03	3.70	4.33
Feb	.55	.74	1.04	1.31	1.57	1.84	2.14	2.51	2.97	3.72	4.41
Mar	.97	1.23	1.61	1.93	2.24	2.56	2.90	3.30	3.81	4.60	5.33
Apr	1.36	1.68	2.15	2.53	2.89	3.26	3.67	4.13	4.72	5.63	6.45
May	1.63	1.95	2.40	2.77	3.11	3.45	3.82	4.24	4.77	5.58	6.31
Jun	1.49	1.85	2.36	2.79	3.19	3.60	4.04	4.56	5.21	6.22	7.14
Jul	1.12	1.54	2.18	2.75	3.32	3.91	4.57	5.36	6.38	8.01	9.53
Aug	1.14	1.49	2.01	2.46	2.89	3.34	3.83	4.41	5.15	6.31	7.39
Sep	.73	.99	1.39	1.74	2.09	2.45	2.85	3.33	3.95	4.94	5.85
Oct	.83	1.05	1.37	1.63	1.88	2.14	2.43	2.76	3.18	3.83	4.43
Nov	.83	1.11	1.54	1.91	2.27	2.64	3.06	3.56	4.20	5.20	6.13
Dec	.86	1.11	1.49	1.80	2.11	2.42	2.77	3.17	3.69	4.50	5.24
Ann	28.63	30.27	32.35	33.90	35.27	36.58	37.92	39.40	41.17	43.71	45.89

+ 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: 1956-2001
(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	10.5	8.5	3	2	10.0	1978	26	35.9	1978	26	1978	29	12	1996	7.6	3.7	1.3	.4	@	12.6	7.4	4.4	.9
Feb	7.7	6.9	3	1	8.0	1993	16	19.3	1979	27	1978	13	23	1978	5.4	2.4	.7	.2	.0	8.6	6.0	4.3	2.4
Mar	4.7	4.3	1	#	7.5	1973	17	13.3	1984	20	1978	3	8	1978	3.5	1.4	.4	.2	.0	3.3	1.7	1.1	.4
Apr	1.1	.0	#	0	7.0	1982	9	13.0	1982	5	1982	6	1	1982	.7	.3	.1	.1	.0	.3	.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	.3	.0	#	0	4.2	1989	19	4.2	1989	2	1989	19	#+	1993	.2	.1	@	.0	.0	@	.0	.0	.0
Nov	1.5	.8	#	#	4.0	1997	14	6.8	1980	3	1996	21	1	1996	1.6	.5	.1	.0	.0	.8	.1	.0	.0
Dec	6.4	4.4	1	#	8.5	1973	20	21.4	1973	17	1977	11	6	1977	5.4	2.2	.6	.2	.0	5.8	2.5	1.5	.3
Ann	32.2	24.9	N/A	N/A	10.0	Jan 1978	26	35.9	Jan 1978	27	Feb 1978	13	23	Feb 1978	24.4	10.6	3.2	1.1	@	31.4	17.8	11.3	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	5/18	5/14	5/11	5/09	5/06	5/04	5/01	4/28	4/24
32	5/10	5/06	5/02	4/30	4/27	4/24	4/21	4/18	4/13
28	4/24	4/21	4/18	4/15	4/13	4/11	4/08	4/05	4/01
24	4/16	4/11	4/07	4/04	4/01	3/29	3/26	3/22	3/17
20	4/05	4/01	3/28	3/25	3/22	3/20	3/17	3/13	3/08
16	3/31	3/25	3/20	3/16	3/13	3/09	3/05	3/01	2/23

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	9/21	9/25	9/28	9/30	10/03	10/05	10/08	10/11	10/15
32	9/29	10/04	10/08	10/11	10/14	10/16	10/19	10/23	10/28
28	10/12	10/17	10/21	10/25	10/28	10/31	11/04	11/08	11/13
24	10/25	10/31	11/03	11/06	11/09	11/12	11/15	11/19	11/24
20	11/04	11/11	11/15	11/19	11/23	11/27	12/01	12/06	12/12
16	11/20	11/26	12/01	12/05	12/09	12/12	12/16	12/21	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	167	161	157	153	149	145	142	137	131
32	189	182	177	173	169	165	161	156	149
28	221	213	207	202	197	193	188	182	174
24	243	235	230	226	221	217	213	207	200
20	268	260	254	250	245	240	235	230	221
16	293	285	279	275	270	266	261	255	248

***** 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	1230	1000	785	429	179	19	1	14	72	349	688	1065	5831
60	1075	860	630	290	97	4	0	1	23	223	538	910	4651
57	982	776	545	216	61	1	0	0	9	161	451	817	4019
55	920	723	487	172	43	1	0	0	5	125	397	759	3632
50	772	593	352	85	15	0	0	0	1	59	267	615	2759
32	302	207	59	0	0	0	0	0	0	0	23	202	793

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	96	131	297	564	922	1158	1301	1231	1006	686	325	160	7877
55	0	3	13	46	252	468	588	518	320	98	9	4	2319
57	0	0	9	30	209	409	526	456	265	72	4	0	1980
60	0	0	0	14	151	321	433	364	189	41	1	0	1514
65	0	0	0	3	78	187	279	221	88	12	0	0	868
70	0	0	0	0	31	83	141	109	28	2	0	0	394

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	16	35	139	350	685	925	1061	993	776	454	158	37	16	51	190	540	1225	2150	3211	4204	4980	5434	5592	5629
45	2	12	78	229	530	775	906	838	626	314	90	16	2	14	92	321	851	1626	2532	3370	3996	4310	4400	4416
50	0	2	40	133	381	625	751	683	478	190	42	4	0	2	42	175	556	1181	1932	2615	3093	3283	3325	3329
55	0	0	16	67	249	475	596	528	335	103	17	0	0	0	16	83	332	807	1403	1931	2266	2369	2386	2386
60	0	0	4	29	140	330	441	373	208	46	2	0	0	0	4	33	173	503	944	1317	1525	1571	1573	1573
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	1	20	85	209	423	619	729	676	497	263	83	12	1	21	106	315	738	1357	2086	2762	3259	3522	3605	3617

(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