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: EATON, OH **COOP ID: 332485**

Climate Division: OH 8 **NWS Call Sign:** **Elevation: 1,002 Feet** **Lat: 39˚44N** **Lon: 84˚38W**

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	33.4	15.6	24.5	68	1967	24	35.4	1990	-33	1994	19	6.6	1977	1255	0	.0	.0	3.3	14.0	28.5	4.9
Feb	38.3	18.5	28.4	73	2000	26	37.9	1998	-20	1985	3	12.8	1978	1025	0	.0	.0	6.0	9.8	24.8	3.3
Mar	49.3	27.9	38.6	82	1986	31	46.1	1973	-11	1978	5	27.7	1984	818	0	.0	.0	15.1	2.9	21.7	.3
Apr	61.1	37.4	49.3	87+	1986	27	54.9	1985	14	1982	7	43.1	1975	473	1	.0	.0	24.7	@	9.5	.0
May	71.9	48.0	60.0	96	1962	19	67.2	1991	25+	1974	7	55.0	1997	210	53	.0	.2	30.7	.0	1.0	.0
Jun	80.6	57.1	68.9	100	1988	26	73.5	1991	36+	1990	5	64.3	1982	37	151	@	3.1	30.0	.0	.0	.0
Jul	84.5	60.9	72.7	102	1988	16	76.5	1999	42+	1984	20	66.7	1984	7	244	.1	6.1	31.0	.0	.0	.0
Aug	83.0	59.2	71.1	101	1988	17	77.0	1995	38	1981	18	67.3	1992	17	206	.1	3.5	31.0	.0	.0	.0
Sep	76.8	51.5	64.2	98+	1964	11	69.3	1998	26	1974	23	58.3	1975	103	77	.0	1.5	30.0	.0	.4	.0
Oct	64.6	39.4	52.0	90+	1971	3	60.6	1971	12	1976	29	44.4	1976	414	11	.0	.1	28.7	.0	7.0	.0
Nov	50.7	31.1	40.9	79+	1974	1	46.5	1994	-3	1976	30	30.5	1976	723	0	.0	.0	15.7	1.2	18.1	@
Dec	38.7	21.4	30.1	72+	1998	7	38.7	1982	-30	1983	25	17.9	1989	1084	0	.0	.0	5.7	8.6	26.3	1.8
Ann	61.1	39.0	50.1	102	Jul 1988	16	77.0	Aug 1995	-33	Jan 1994	19	6.6	Jan 1977	6166	743	.2	14.5	251.9	36.5	137.3	10.3

\+ 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

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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	2.55	2.44	3.68	1952	27	4.68	1999	.26	1981
Feb	2.26	2.11	2.25	1967	16	5.17	1971	.22	1978
Mar	3.25	3.03	2.55	1964	10	6.50	1973	1.44	1981
Apr	4.03	3.75	3.36	1996	29	8.30	1996	1.29	1971
May	4.72	4.21	4.28	1991	18	9.73	1996	1.22	1988
Jun	3.86	3.62	3.31	1974	23	8.85	1998	.65	1988
Jul	3.74	3.25	3.60	1992	24	10.89	1992	.58	1974
Aug	3.30	2.61	3.06	1995	6	8.31	1978	.70	1996
Sep	2.64	2.03	3.22	1966	20	5.74	1996	.35	1998
Oct	2.74	2.74	2.97	1995	6	5.75	1983	.70	1994
Nov	3.41	2.82	2.45	1985	27	10.52	1985	.87	1976
Dec	3.04	2.79	3.15	1967	3	8.66	1990	.49	1976
Ann	39.54	39.09	4.28	May 1991	18	10.89	Jul 1992	.22	Feb 1978

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.3	5.9	1.3	.4
Feb	9.8	5.7	1.4	.3
Mar	11.9	7.2	2.2	.5
Apr	13.4	8.1	2.7	.8
May	12.3	8.2	3.1	1.3
Jun	10.8	6.8	2.7	.9
Jul	9.2	6.3	2.8	1.0
Aug	8.8	6.2	2.4	.8
Sep	8.3	4.7	1.6	.6
Oct	9.5	5.4	1.7	.6
Nov	11.3	6.9	2.3	.8
Dec	12.0	6.2	1.9	.7
Ann	128.6	77.6	26.1	8.7

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	.75	.99	1.36	1.67	1.98	2.29	2.64	3.06	3.59	4.43	5.20
Feb	.50	.71	1.04	1.34	1.64	1.96	2.32	2.75	3.31	4.21	5.06
Mar	1.46	1.75	2.15	2.47	2.78	3.08	3.40	3.78	4.24	4.95	5.59
Apr	1.51	1.89	2.43	2.88	3.31	3.74	4.22	4.77	5.47	6.54	7.53
May	1.38	1.83	2.51	3.09	3.66	4.25	4.90	5.67	6.67	8.23	9.68
Jun	1.31	1.68	2.21	2.66	3.09	3.54	4.03	4.59	5.32	6.45	7.49
Jul	1.01	1.37	1.90	2.38	2.84	3.33	3.87	4.50	5.34	6.64	7.86
Aug	.97	1.28	1.76	2.16	2.56	2.97	3.42	3.96	4.65	5.74	6.74
Sep	.44	.67	1.05	1.41	1.79	2.19	2.66	3.22	3.97	5.19	6.36
Oct	.79	1.05	1.44	1.78	2.12	2.46	2.84	3.30	3.88	4.80	5.65
Nov	.96	1.28	1.77	2.20	2.62	3.06	3.54	4.11	4.85	6.01	7.09
Dec	.98	1.27	1.69	2.06	2.41	2.77	3.17	3.64	4.24	5.17	6.03
Ann	29.71	31.65	34.12	35.98	37.62	39.19	40.81	42.60	44.75	47.85	50.51

\+ 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)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	1.2	1.0	2	1
Feb	4.7	4.5	2	#
Mar	2.1	1.4	1	#
Apr	.8	.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
Nov	#	.0	#	0
Dec	3.0	1.1	1	#
Ann	11.8	8.0	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	7.0	2000	20	7.0	2000	19	1996	8	9	1977
Feb	4.0	1974	25	8.7	1972	20	1977	15	10	1978
Mar	5.5	1999	10	9.0	1971	13	1978	3	5	1978
Apr	5.0	1974	9	5.0	1974	5	1974	9	#+	1996
May	.0	0	0	.0	0	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	.0	0	0	.0	0	3+	1993	31	#+	1993
Nov	#	1997	24	#+	1997	6	1980	18	#+	1997
Dec	10.5	1974	1	11.7	1973	11	1974	1	3	1974
Ann	10.5	Dec 1974	1	11.7	Dec 1973	20	Feb 1977	15	10	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.2	1.1	.2	.1	.0
Feb	2.0	1.1	.3	.0	.0
Mar	1.0	.7	.2	.1	.0
Apr	.3	.2	.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	.0	.0	.0	.0	.0
Dec	1.5	.9	.2	.2	.1
Ann	6.0	4.0	1.0	.5	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	2.9	1.4	.8	.0
Feb	4.4	2.1	.6	.0
Mar	.8	.1	.0	.0
Apr	.2	.1	@	.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	.0	.0	.0	.0
Dec	2.1	.7	.5	.1
Ann	10.4	4.4	1.9	.1

+ 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	5/25	5/19	5/16	5/13	5/10	5/07	5/04	4/30	4/25
32	5/15	5/09	5/05	5/02	4/29	4/25	4/22	4/18	4/12
28	5/01	4/26	4/22	4/19	4/16	4/14	4/10	4/07	4/02
24	4/20	4/15	4/11	4/08	4/05	4/02	3/30	3/27	3/22
20	4/12	4/06	4/01	3/28	3/25	3/21	3/17	3/12	3/06
16	3/31	3/24	3/20	3/16	3/12	3/09	3/05	2/28	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	9/19	9/23	9/26	9/28	9/30	10/02	10/05	10/07	10/11
32	9/24	9/29	10/03	10/07	10/10	10/13	10/16	10/20	10/26
28	10/03	10/09	10/13	10/17	10/21	10/24	10/28	11/02	11/08
24	10/12	10/18	10/23	10/27	10/30	11/03	11/07	11/11	11/18
20	10/21	10/29	11/04	11/09	11/13	11/18	11/22	11/28	12/06
16	11/03	11/12	11/19	11/24	11/29	12/05	12/10	12/17	12/26

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	161	155	150	146	143	139	136	131	125
32	186	178	173	168	164	159	154	149	141
28	214	205	198	192	187	181	175	169	159
24	235	225	219	213	207	202	196	189	180
20	266	255	246	239	233	226	219	211	199
16	294	283	275	268	261	255	248	240	228

***** 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	1255	1025	818	473	210	37	7	17	103	414	723	1084	6166
60	1100	885	663	330	117	9	0	2	42	282	573	929	4932
57	1007	801	575	252	76	3	0	0	21	214	486	836	4271
55	945	745	517	204	54	2	0	0	12	175	429	774	3857
50	803	616	377	107	19	0	0	0	3	95	297	633	2950
32	339	223	65	1	0	0	0	0	0	1	29	213	871

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	107	122	270	519	867	1105	1261	1212	964	622	296	152	7497
55	0	0	9	32	208	416	548	499	286	82	6	0	2086
57	0	0	5	19	168	358	486	437	235	60	3	0	1771
60	0	0	0	8	116	274	393	346	166	35	1	0	1339
65	0	0	0	1	53	151	244	206	77	11	0	0	743
70	0	0	0	0	19	65	119	99	25	2	0	0	329

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	32	126	311	633	876	1025	974	735	394	146	36	16	48	174	485	1118	1994	3019	3993	4728	5122	5268	5304
45	5	8	70	201	479	726	870	819	586	258	82	16	5	13	83	284	763	1489	2359	3178	3764	4022	4104	4120
50	0	1	36	113	334	576	715	664	438	150	41	4	0	1	37	150	484	1060	1775	2439	2877	3027	3068	3072
55	0	0	14	57	207	426	560	509	297	76	15	1	0	0	14	71	278	704	1264	1773	2070	2146	2161	2162
60	0	0	3	21	106	283	405	355	178	30	0	0	0	0	3	24	130	413	818	1173	1351	1381	1381	1381
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	4	23	89	200	388	575	693	652	474	254	91	23	4	27	116	316	704	1279	1972	2624	3098	3352	3443	3466

(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