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: AKRON, OH **COOP ID: 330061**

Climate Division: OH 3 **NWS Call Sign:** **Elevation: 1,080 Feet** **Lat: 41˚05N** **Lon: 81˚31W**

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	34.3	20.1	27.2	65+	1997	4	36.6	1990	-22	1982	17	12.5	1977	1172	0	.0	.0	2.8	14.4	26.8	1.8
Feb	37.8	22.6	30.2	70	1997	21	40.1	1998	-6	1982	10	14.9	1979	975	0	.0	.0	4.5	10.8	22.4	.9
Mar	47.9	30.5	39.2	81+	1998	31	47.1	1973	1	1980	2	32.6	1978	800	0	.0	.0	12.2	4.0	19.1	@
Apr	60.1	40.1	50.1	88	1990	27	56.0	1985	17+	1987	1	42.1	1975	449	2	.0	.0	23.3	.3	5.8	.0
May	71.5	51.0	61.3	94+	1991	29	69.4	1991	30	1978	1	54.5	1997	185	70	.0	.5	30.4	.0	.2	.0
Jun	79.8	59.8	69.8	101	1988	25	74.2	1971	39	1977	2	65.3	1985	28	171	@	2.2	30.0	.0	.0	.0
Jul	83.9	64.2	74.1	103	1988	7	78.9	1999	44	1984	29	69.9	2000	4	284	.1	4.2	31.0	.0	.0	.0
Aug	81.6	62.7	72.2	100	1988	17	77.7	1983	43	1984	21	68.3	1992	11	233	@	2.3	31.0	.0	.0	.0
Sep	74.2	56.0	65.1	95	1973	2	69.7	1998	30	1984	28	58.9	1975	82	85	.0	.5	29.9	.0	@	.0
Oct	62.0	44.9	53.5	84	1971	3	61.6	1971	25	1988	31	47.4	1988	370	11	.0	.0	27.2	.0	2.1	.0
Nov	49.8	35.7	42.8	76+	1987	3	47.9	1987	2	1976	30	34.9	1976	667	0	.0	.0	13.8	1.5	11.1	.0
Dec	38.8	26.0	32.4	72	1971	10	40.9	1982	-12	1989	22	20.2	1989	1009	0	.0	.0	4.7	9.3	23.2	.6
Ann	60.1	42.8	51.5	103	Jul 1988	7	78.9	Jul 1999	-22	Jan 1982	17	12.5	Jan 1977	5752	856	.1	9.7	240.8	40.3	110.7	3.3

\+ 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: 1970-2000

(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	2.02	1.95	1.98	1989	31	4.21	1982	.60	1981
Feb	2.00	1.63	3.23	1988	29	4.95	1981	.13	1978
Mar	2.85	2.91	3.38	1989	31	5.64	1980	.38	1995
Apr	3.15	3.07	1.59	1996	23	6.03	1994	.97	1971
May	3.61	3.93	2.25	1984	3	6.74	1985	.80	1977
Jun	3.13	3.08	6.78	1989	30	6.78	1989	.34	1991
Jul	3.87	3.94	5.38	1988	31	8.62	1992	1.17	1997
Aug	3.36	3.51	4.13	1988	31	6.56	1974	.41	1993
Sep	3.57	3.62	4.45	1988	30	8.03	1979	.90	1995
Oct	2.46	2.05	2.18	1986	3	5.61	1986	.81	1994
Nov	3.22	2.81	2.36	1993	14	10.82	1985	.52	1976
Dec	2.83	2.81	2.15	1988	31	6.64	1990	.73	1995
Ann	36.07	36.79	6.78	Jun 1989	30	10.82	Nov 1985	.13	Feb 1978

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.8	5.8	.9	.3
Feb	11.2	5.3	.9	.3
Mar	12.9	7.4	1.7	.4
Apr	12.2	7.6	1.9	.6
May	11.9	7.8	2.1	.7
Jun	11.0	7.4	2.4	.7
Jul	9.6	6.1	2.8	1.0
Aug	9.2	6.3	2.2	.8
Sep	9.7	6.1	2.3	.9
Oct	9.8	6.2	1.4	.6
Nov	12.6	7.4	2.0	.6
Dec	12.7	7.2	1.7	.7
Ann	135.6	80.6	22.3	7.6

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	.81	.99	1.26	1.47	1.68	1.89	2.12	2.38	2.71	3.21	3.68
Feb	.44	.62	.91	1.18	1.45	1.73	2.05	2.43	2.93	3.74	4.50
Mar	.87	1.14	1.55	1.89	2.23	2.58	2.96	3.41	3.99	4.90	5.74
Apr	1.20	1.50	1.92	2.26	2.60	2.93	3.30	3.72	4.26	5.09	5.84
May	1.14	1.48	1.99	2.43	2.85	3.28	3.76	4.32	5.04	6.17	7.21
Jun	.78	1.07	1.53	1.93	2.33	2.76	3.23	3.79	4.52	5.68	6.76
Jul	1.43	1.79	2.32	2.75	3.17	3.59	4.05	4.58	5.26	6.31	7.27
Aug	.98	1.30	1.78	2.19	2.60	3.02	3.49	4.04	4.75	5.87	6.91
Sep	1.02	1.36	1.87	2.32	2.75	3.20	3.71	4.30	5.07	6.27	7.39
Oct	.82	1.06	1.40	1.69	1.97	2.25	2.57	2.93	3.40	4.13	4.81
Nov	.94	1.25	1.71	2.10	2.49	2.90	3.34	3.87	4.55	5.62	6.61
Dec	1.04	1.30	1.69	2.00	2.31	2.62	2.96	3.35	3.85	4.63	5.34
Ann	26.96	28.76	31.05	32.77	34.30	35.76	37.27	38.93	40.93	43.81	46.30

\+ 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: 1970-2000
(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	29.4	-99.9	0	0	29.4	1974	99	29.4	1974	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Feb	-99.9	-99.9	#	0	#	1991	27	#	1991	#	1991	27	#	1991	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Mar	-99.9	-99.9	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Apr	-99.9	-99.9	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0
May	-99.9	-99.9	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0
Jun	-99.9	-99.9	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0
Jul	-99.9	-99.9	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0
Aug	-99.9	-99.9	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0
Sep	-99.9	-99.9	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0
Oct	-99.9	-99.9	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0
Nov	-99.9	-99.9	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0
Dec	-99.9	-99.9	0	0	#	1992	5	#	1992	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Ann	-9.9	-9.9	N/A	N/A	29.4	Jan 1974	99	29.4	Jan 1974	#	Feb 1991	27	#	Feb 1991	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

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

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	10/02	10/08	10/12	10/16	10/19	10/23	10/26	10/31	11/05
32	10/09	10/16	10/20	10/24	10/28	10/31	11/04	11/09	11/15
28	10/20	10/26	10/31	11/03	11/07	11/10	11/14	11/19	11/25
24	11/07	11/13	11/18	11/21	11/25	11/28	12/02	12/07	12/13
20	11/20	11/26	11/30	12/04	12/07	12/10	12/14	12/18	12/24
16	11/28	12/04	12/07	12/11	12/14	12/17	12/20	12/24	12/30

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	194	187	183	179	175	171	167	163	156
32	217	209	202	197	192	187	182	176	167
28	236	228	222	218	213	208	204	198	190
24	263	255	250	245	240	236	231	225	218
20	285	277	271	265	261	256	251	245	236
16	307	297	291	285	280	274	269	262	253

***** 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	1172	975	800	449	185	28	4	11	82	370	667	1009	5752
60	1017	835	645	309	101	6	0	1	29	241	518	854	4556
57	924	751	556	234	64	2	0	0	13	176	432	761	3913
55	862	696	499	188	45	1	0	0	7	139	377	701	3515
50	715	566	360	97	16	0	0	0	1	68	248	557	2628
32	257	185	55	1	0	0	0	0	0	0	16	156	670

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	108	135	278	544	908	1133	1303	1244	993	664	339	169	7818
55	0	1	9	41	239	444	590	531	309	89	10	2	2265
57	0	0	4	27	197	386	528	469	255	65	4	0	1935
60	0	0	0	12	141	300	435	377	182	37	1	0	1485
65	0	0	0	2	70	171	284	233	85	11	0	0	856
70	0	0	0	0	27	77	148	116	28	2	0	0	398

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	25	36	120	316	645	886	1039	984	741	403	155	39	25	61	181	497	1142	2028	3067	4051	4792	5195	5350	5389
45	6	13	70	205	492	736	884	829	592	263	83	18	6	19	89	294	786	1522	2406	3235	3827	4090	4173	4191
50	1	2	39	121	349	586	729	674	444	149	39	4	1	3	42	163	512	1098	1827	2501	2945	3094	3133	3137
55	0	0	17	62	219	436	574	519	300	72	16	1	0	0	17	79	298	734	1308	1827	2127	2199	2215	2216
60	0	0	4	26	123	294	419	367	176	30	2	0	0	0	4	30	153	447	866	1233	1409	1439	1441	1441
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	6	17	68	178	380	580	711	668	454	209	70	20	6	23	91	269	649	1229	1940	2608	3062	3271	3341	3361

(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