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 CANTON AP, OH **COOP ID: 330058**

Climate Division: OH 3 **NWS Call Sign: CAK** **Elevation: 1,208 Feet** **Lat: 40˚55N** **Lon: 81˚26W**

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	32.9	17.4	25.2	70	1950	25	34.9	1990	-25	1994	19	10.3	1977	1220	0	.0	.0	3.0	14.4	28.0	2.8
Feb	36.8	19.8	28.3	72	2000	26	37.0	1998	-13	1979	17	14.7	1978	1026	0	.0	.0	4.6	10.7	23.2	1.8
Mar	47.5	27.9	37.7	81	1986	30	46.3	1973	-3	1980	2	28.9	1984	836	1	.0	.0	13.1	3.7	20.3	.1
Apr	59.0	37.1	48.1	88	1986	28	54.0	1991	10	1964	1	42.6	1975	498	7	.0	.0	23.2	.2	9.1	.0
May	69.8	47.8	58.8	93	1991	29	68.7	1991	24	1966	10	52.8	1997	219	41	.0	.3	30.5	.0	.5	.0
Jun	78.2	56.8	67.5	100+	1988	25	72.8	1991	32	1972	11	62.3	1972	50	136	@	1.3	30.0	.0	@	.0
Jul	82.3	61.3	71.8	101	1988	16	76.2	1988	43+	1988	1	67.8	1976	6	231	.1	3.7	31.0	.0	.0	.0
Aug	80.3	60.2	70.3	98	1953	30	75.7	1995	41	1982	29	65.7	1976	16	189	.0	1.7	31.0	.0	.0	.0
Sep	72.8	53.1	63.0	99+	1953	3	67.5	1978	32	1956	21	58.2	1975	120	69	.0	.3	30.0	.0	.0	.0
Oct	61.1	42.1	51.6	86+	1952	1	58.0	1971	20	1952	20	45.7	1988	412	4	.0	.0	27.7	.0	3.4	.0
Nov	48.7	33.4	41.1	80	1961	3	46.7	1975	-1	1958	30	32.3	1976	704	0	.0	.0	14.6	1.7	14.8	.0
Dec	37.7	23.6	30.7	76	1982	3	39.0	1982	-16	1989	22	18.2	1989	1047	0	.0	.0	5.1	9.4	25.0	.9
Ann	58.9	40.0	49.5	101	Jul 1988	16	76.2	Jul 1988	-25	Jan 1994	19	10.3	Jan 1977	6154	678	.1	7.3	243.8	40.1	124.3	5.6

\+ 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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1948-2001

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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	2.49	2.21	2.83	1959	21	4.87	1995	.80	1981
Feb	2.28	2.11	2.05	1956	25	5.01	1990	.31	1987
Mar	3.15	3.06	3.21	1964	9	5.68	1974	1.27	1990
Apr	3.39	3.16	1.99	1987	4	6.46	1981	.91	1971
May	3.96	3.77	2.65	1956	27	7.28	1990	1.15	1976
Jun	3.55	3.49	2.85	1970	15	8.42	1989	.37	1988
Jul	4.02	3.05	3.27	1990	22	10.94	1992	.67	1991
Aug	3.65	3.62	3.67	1994	14	8.19	1974	1.13	1989
Sep	3.43	3.13	3.70	1988	3	9.02	1990	.61	1998
Oct	2.53	2.32	2.57	1954	15	7.10	1990	.85	1982
Nov	3.04	2.61	2.31	1999	2	9.39	1985	.62	1976
Dec	2.98	2.81	1.71	2000	16	6.72	1990	1.42	1976
Ann	38.47	38.28	3.70	Sep 1988	3	10.94	Jul 1992	.31	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	16.7	6.8	1.2	.2
Feb	14.2	6.2	1.0	.2
Mar	15.0	8.1	1.8	.2
Apr	13.9	8.0	1.8	.6
May	13.6	8.2	2.5	.7
Jun	11.7	7.5	2.5	.7
Jul	11.0	6.9	2.9	1.0
Aug	10.1	6.7	2.4	.8
Sep	10.6	6.2	2.1	.8
Oct	10.7	6.1	1.6	.4
Nov	14.3	7.1	1.8	.4
Dec	15.8	7.2	1.6	.6
Ann	157.6	85.0	23.2	6.6

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	.88	1.12	1.46	1.74	2.02	2.30	2.60	2.96	3.41	4.12	4.76
Feb	.72	.94	1.26	1.53	1.80	2.07	2.37	2.72	3.17	3.88	4.53
Mar	1.55	1.82	2.19	2.48	2.75	3.02	3.30	3.63	4.04	4.65	5.20
Apr	1.20	1.52	1.98	2.37	2.74	3.12	3.54	4.02	4.64	5.59	6.47
May	1.35	1.73	2.27	2.74	3.18	3.64	4.14	4.72	5.47	6.63	7.69
Jun	1.00	1.34	1.85	2.29	2.73	3.18	3.68	4.27	5.03	6.24	7.35
Jul	1.00	1.37	1.96	2.48	2.99	3.54	4.14	4.86	5.81	7.30	8.70
Aug	1.11	1.46	1.98	2.42	2.85	3.30	3.79	4.38	5.12	6.29	7.38
Sep	.92	1.24	1.74	2.17	2.60	3.05	3.55	4.14	4.91	6.11	7.24
Oct	.83	1.07	1.42	1.72	2.01	2.31	2.64	3.02	3.52	4.29	4.99
Nov	.94	1.23	1.66	2.02	2.38	2.75	3.16	3.64	4.25	5.22	6.11
Dec	1.51	1.76	2.10	2.36	2.61	2.86	3.12	3.42	3.79	4.34	4.84
Ann	27.74	29.83	32.49	34.51	36.31	38.04	39.82	41.79	44.18	47.63	50.62

\+ 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
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(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	12.8	10.8	2	1
Feb	9.4	9.3	2	1
Mar	8.4	8.5	1	1
Apr	2.6	1.5	#	0
May	.1	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.6	.0	#	0
Nov	3.6	2.6	#	0
Dec	9.4	8.1	1	1
Ann	46.9	40.8	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	8.0	1978	17	37.5	1978	16	1978	21	8+	1978
Feb	9.5	1984	28	21.1	1984	17	1984	29	7+	1985
Mar	6.6	1975	14	18.6	1999	17	1984	1	4	1984
Apr	19.7	1987	4	20.9	1987	13	1987	5	1	1987
May	1.5	1989	7	1.5	1989	#	1989	7	#	2000
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	4.4	1993	31	6.6	1993	2	1989	19	#	1989
Nov	4.4	1977	12	10.8	1971	4+	1980	18	1+	1977
Dec	16.4	1974	1	29.4	1974	20+	1974	3	5	1974
Ann	19.7	Apr 1987	4	37.5	Jan 1978	20+	Dec 1974	3	8+	Jan 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	12.9	4.7	1.0	.3	.0
Feb	9.3	2.9	.7	.2	.0
Mar	7.1	2.6	1.0	.3	.0
Apr	2.5	.6	.1	@	@
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	.5	.1	.1	.0	.0
Nov	4.5	1.1	.2	.0	.0
Dec	9.3	2.9	.5	.2	@
Ann	46.1	14.9	3.6	1.0	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	16.3	8.9	6.3	1.7
Feb	12.8	6.9	4.3	.9
Mar	6.1	2.7	1.3	.1
Apr	.9	.2	.1	@
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	.1	.0	.0	.0
Nov	1.9	.4	.0	.0
Dec	9.6	4.4	2.0	.6
Ann	47.7	23.5	14.0	3.3

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

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	9/26	9/30	10/03	10/05	10/08	10/10	10/13	10/16	10/20
32	10/04	10/09	10/13	10/16	10/19	10/22	10/25	10/29	11/03
28	10/20	10/24	10/28	10/30	11/02	11/05	11/07	11/11	11/15
24	11/01	11/06	11/09	11/12	11/14	11/17	11/20	11/23	11/28
20	11/07	11/14	11/19	11/23	11/26	11/30	12/04	12/09	12/15
16	11/19	11/25	11/29	12/03	12/06	12/10	12/13	12/17	12/23

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	165	160	156	153	150	147	143	139	134
32	194	187	182	177	173	169	165	160	153
28	216	210	205	202	198	194	191	186	180
24	244	238	233	228	224	220	216	211	204
20	268	260	254	249	244	239	234	228	219
16	285	278	273	269	265	261	256	251	244

***** 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	1220	1026	836	498	219	50	6	16	120	412	704	1047	6154
60	1080	888	692	364	146	14	0	3	41	281	568	910	4987
57	987	804	602	284	101	6	0	0	19	209	481	817	4310
55	925	748	545	233	75	3	0	0	10	167	424	755	3885
50	772	614	403	128	31	0	0	0	1	85	292	611	2937
32	301	209	73	1	0	0	0	0	0	0	27	188	799

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	64	93	254	502	846	1076	1243	1194	937	618	304	117	7248
55	0	1	14	50	185	390	530	481	262	65	13	2	1993
57	0	0	10	36	146	333	468	419	213	45	8	1	1679
60	0	0	5	21	98	252	376	328	148	23	3	0	1254
65	0	0	1	7	41	136	231	189	69	4	0	0	678
70	0	0	0	1	11	53	106	76	23	0	0	0	270

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	17	33	121	296	607	846	1007	957	704	386	146	38	17	50	171	467	1074	1920	2927	3884	4588	4974	5120	5158
45	3	11	71	183	456	696	852	802	554	249	81	18	3	14	85	268	724	1420	2272	3074	3628	3877	3958	3976
50	0	2	38	106	309	546	697	647	406	142	36	3	0	2	40	146	455	1001	1698	2345	2751	2893	2929	2932
55	0	0	14	54	190	397	542	492	268	66	15	0	0	0	14	68	258	655	1197	1689	1957	2023	2038	2038
60	0	0	4	23	103	261	387	338	154	25	2	0	0	0	4	27	130	391	778	1116	1270	1295	1297	1297
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	3	17	77	173	362	549	681	638	433	210	76	21	3	20	97	270	632	1181	1862	2500	2933	3143	3219	3240

(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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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