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: DAYTON INTL AP, OH **COOP ID: 332075**

Climate Division: OH 8 **NWS Call Sign: DAY** **Elevation: 1,000 Feet** **Lat: 39˚54N** **Lon: 84˚13W**

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	33.7	19.0	26.3	69	1967	23	36.8	1990	-25+	1994	19	10.7	1977	1185	0	.0	.0	3.8	13.3	27.2	3.0
Feb	38.2	22.4	30.3	73+	2000	25	39.2	1998	-16	1951	2	16.0	1978	973	0	.0	.0	6.1	9.2	22.3	1.6
Mar	49.3	31.2	40.2	82+	1986	30	47.7	1973	-7	1980	2	30.7	1984	760	2	.0	.0	15.4	2.5	17.9	.2
Apr	60.7	40.4	50.6	89	1962	30	56.0	1985	15	1972	8	46.3	1975	427	9	.0	.0	25.3	.1	6.2	.0
May	71.2	51.1	61.2	93	1962	18	68.7	1991	26	1963	1	55.8	1997	167	62	.0	.3	30.8	.0	.3	.0
Jun	80.1	60.2	70.2	102	1988	25	73.7	1994	40+	1990	5	66.0	1972	24	194	@	3.2	30.0	.0	.0	.0
Jul	84.2	64.4	74.3	102+	1988	15	78.4	1999	44	1972	6	70.0	1984	2	305	.2	6.8	31.0	.0	.0	.0
Aug	82.3	62.2	72.3	102	1988	17	77.6	1995	40	1965	3	68.2	1976	7	246	@	4.0	31.0	.0	.0	.0
Sep	75.6	54.6	65.1	101	1954	6	70.6	1998	32	1974	23	59.8	1974	90	105	.0	1.3	30.0	.0	@	.0
Oct	63.5	43.5	53.5	89	1951	4	61.3	1971	21	1962	26	46.6	1976	358	11	.0	.0	28.6	.0	3.3	.0
Nov	50.1	34.3	42.2	79+	1975	9	48.2	1994	-2	1958	30	34.2	1976	670	1	.0	.0	15.7	.9	14.2	.0
Dec	38.5	24.4	31.4	72+	1998	6	39.7	1982	-20	1989	22	18.8	1989	1027	0	.0	.0	5.9	8.2	24.0	1.1
Ann	60.6	42.3	51.5	102+	Aug 1988	17	78.4	Jul 1999	-25+	Jan 1994	19	10.7	Jan 1977	5690	935	.2	15.6	253.6	34.2	115.4	5.9

\+ 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: 1950-2001

(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	2.60	2.47	4.16	1959	21	6.03	1982	.30	1981
Feb	2.29	2.10	2.58	1951	20	5.77	1990	.24	1978
Mar	3.29	3.19	2.87	1964	4	5.99	1989	1.18	1981
Apr	4.03	3.83	3.10	1977	2	9.20	1996	1.00	1971
May	4.17	4.15	3.17	1989	23	9.05	1995	1.62	1988
Jun	4.21	3.95	3.76	1981	5	9.54	1980	1.41	1988
Jul	3.75	3.67	3.16	1955	9	8.55	1990	.47	1974
Aug	3.49	3.02	3.38	1995	5	8.03	1974	.03	1996
Sep	2.65	2.67	2.60	1981	14	6.87	1996	.28	1987
Oct	2.72	2.42	3.54	1995	5	6.25	1986	.98	1974
Nov	3.30	2.92	2.85	1955	16	8.07	1985	.87	1976
Dec	3.08	2.84	2.85	1990	30	10.04	1990	.67	1976
Ann	39.58	38.74	4.16	Jan 1959	21	10.04	Dec 1990	.03	Aug 1996

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	13.6	6.5	1.3	.2
Feb	11.7	5.3	1.1	.4
Mar	12.5	7.7	2.1	.4
Apr	12.8	8.3	2.4	.8
May	12.5	8.1	2.9	.9
Jun	10.7	7.3	2.8	.9
Jul	10.1	6.7	2.6	1.3
Aug	9.6	5.9	2.3	1.0
Sep	8.4	4.8	1.5	.7
Oct	9.2	5.6	1.6	.4
Nov	11.8	6.7	2.3	.8
Dec	12.6	6.7	2.0	.6
Ann	135.5	79.6	24.9	8.4

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	1.06	1.42	1.74	2.04	2.36	2.71	3.11	3.64	4.46	5.21
Feb	.61	.83	1.16	1.45	1.74	2.04	2.37	2.77	3.28	4.09	4.85
Mar	1.46	1.75	2.16	2.49	2.80	3.12	3.45	3.84	4.32	5.05	5.72
Apr	1.41	1.79	2.34	2.81	3.25	3.71	4.21	4.79	5.53	6.68	7.73
May	1.50	1.89	2.46	2.93	3.39	3.85	4.36	4.94	5.70	6.86	7.92
Jun	1.64	2.03	2.58	3.05	3.48	3.93	4.41	4.97	5.68	6.76	7.76
Jul	1.17	1.53	2.06	2.51	2.95	3.40	3.90	4.48	5.24	6.41	7.49
Aug	.55	.85	1.35	1.84	2.33	2.88	3.50	4.27	5.29	6.95	8.53
Sep	.43	.65	1.04	1.40	1.78	2.19	2.66	3.23	3.99	5.23	6.42
Oct	.83	1.08	1.47	1.80	2.13	2.46	2.83	3.26	3.82	4.70	5.51
Nov	1.17	1.48	1.93	2.31	2.67	3.05	3.45	3.92	4.53	5.46	6.32
Dec	1.17	1.46	1.87	2.21	2.53	2.86	3.22	3.64	4.17	4.98	5.72
Ann	27.21	29.57	32.62	34.94	37.01	39.02	41.10	43.41	46.22	50.31	53.85

\+ 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: 1950-2001
(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	9.7	7.8	2	0
Feb	6.7	5.2	1	1
Mar	4.8	3.4	#	1
Apr	.8	.1	#	0
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.4	.0	#	0
Nov	1.4	.7	#	0
Dec	5.3	3.9	#	0
Ann	29.1	21.1	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	12.2	1978	26	40.2	1978	22	1978	21	10	1977
Feb	7.1	1979	12	17.5	1979	14+	1978	1	7	1978
Mar	8.2	1975	28	19.3	1975	8+	1984	1	2	1978
Apr	4.7	1974	8	4.9	1974	6	1987	1	#	1996
May	#	1989	7	#	1989	0	0	0	#	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	4.8	1989	19	5.8	1989	4	1989	19	#	1993
Nov	6.0	1974	30	6.6	1974	5	1980	18	#	1991
Dec	13.4	1981	22	28.1	1981	9	1981	22	2+	1995
Ann	13.4	Dec 1981	22	40.2	Jan 1978	22	Jan 1978	21	10	Jan 1977

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	8.4	3.0	.7	.2	@
Feb	6.5	2.0	.6	.1	.0
Mar	3.9	1.4	.4	.2	.0
Apr	1.2	.2	@	.0	.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	.2	.1	.1	.0	.0
Nov	2.0	.4	.1	@	.0
Dec	5.4	1.6	.4	.2	@
Ann	27.6	8.7	2.3	.7	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	11.8	6.3	4.2	1.7
Feb	9.2	4.8	2.9	.7
Mar	3.4	1.5	.6	.0
Apr	.2	.1	.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	.1	@	.0	.0
Nov	.5	.1	@	.0
Dec	5.8	2.6	.8	.0
Ann	31.0	15.4	8.6	2.4

+ 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

Complete documentation available from:
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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	5/14	5/10	5/07	5/05	5/03	5/01	4/28	4/25	4/22
32	5/06	5/01	4/28	4/25	4/22	4/20	4/17	4/13	4/09
28	4/22	4/18	4/16	4/13	4/11	4/09	4/06	4/03	3/30
24	4/13	4/08	4/05	4/02	3/30	3/27	3/24	3/21	3/16
20	4/03	3/28	3/24	3/21	3/18	3/15	3/11	3/07	3/02
16	3/24	3/18	3/13	3/09	3/05	3/01	2/25	2/21	2/14

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	9/23	9/28	10/01	10/04	10/06	10/09	10/11	10/15	10/19
32	10/03	10/08	10/12	10/16	10/19	10/22	10/26	10/30	11/04
28	10/14	10/19	10/23	10/27	10/30	11/02	11/05	11/09	11/15
24	10/25	10/30	11/03	11/06	11/09	11/12	11/15	11/19	11/24
20	11/07	11/13	11/17	11/21	11/24	11/27	12/01	12/05	12/11
16	11/18	11/24	11/29	12/03	12/06	12/10	12/14	12/19	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	162	159	156	152	149	145	139
32	203	195	189	184	179	174	169	163	155
28	223	216	210	206	201	197	192	187	179
24	244	237	232	227	223	219	215	210	203
20	273	265	260	255	250	246	241	236	228
16	300	292	286	280	276	271	266	260	251

***** 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	1185	973	760	427	167	24	2	7	90	358	670	1027	5690
60	1044	831	613	292	108	4	0	1	31	246	535	885	4590
57	951	747	527	215	70	2	0	0	14	183	449	792	3950
55	889	694	469	169	50	1	0	0	8	147	394	735	3556
50	745	564	332	78	18	0	0	0	1	76	267	591	2672
32	289	185	47	0	0	0	0	0	0	0	23	186	730

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	79	120	310	574	921	1160	1323	1260	1004	680	337	134	7902
55	1	1	21	70	238	471	610	547	324	94	20	3	2400
57	0	1	15	51	193	412	548	485	271	69	13	2	2060
60	0	0	7	29	135	326	455	393	200	41	6	1	1593
65	0	0	2	9	62	194	305	246	105	11	1	0	935
70	0	0	0	1	20	90	162	119	42	2	0	0	436

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	28	46	156	357	683	927	1085	1023	774	444	172	48	28	74	230	587	1270	2197	3282	4305	5079	5523	5695	5743
45	7	19	90	237	529	777	930	868	624	304	97	26	7	26	116	353	882	1659	2589	3457	4081	4385	4482	4508
50	1	5	50	140	379	627	775	713	476	187	50	6	1	6	56	196	575	1202	1977	2690	3166	3353	3403	3409
55	0	0	26	71	245	478	620	558	333	100	20	3	0	0	26	97	342	820	1440	1998	2331	2431	2451	2454
60	0	0	4	31	141	334	465	403	208	46	6	0	0	0	4	35	176	510	975	1378	1586	1632	1638	1638
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	6	26	93	211	414	619	744	695	493	257	93	25	6	32	125	336	750	1369	2113	2808	3301	3558	3651	3676

(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