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: COLUMBUS INTL AP, OH **COOP ID: 331786**

Climate Division: OH 5 **NWS Call Sign: CMH** **Elevation: 810 Feet** **Lat: 39˚59N** **Lon: 82˚53W**

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	36.2	20.3	28.3	74	1950	25	38.1	1990	-22	1994	19	12.1	1977	1154	0	.0	.0	4.0	12.3	26.6	2.4
Feb	40.5	23.5	32.0	75	2000	26	40.5	1998	-13+	1977	8	17.4	1978	940	0	.0	.0	6.5	8.7	22.3	1.4
Mar	51.7	32.2	42.0	83	1998	31	51.3	1973	-6	1984	9	33.2	1984	731	2	.0	.0	16.0	2.2	17.9	.1
Apr	62.9	41.2	52.0	88+	1990	27	57.3	1985	14	1982	7	47.4	1982	415	9	.0	.0	25.6	.1	6.4	.0
May	73.3	51.8	62.6	93+	1988	31	71.6	1991	25	1966	10	56.6	1997	152	61	.0	.5	30.9	.0	.4	.0
Jun	81.6	60.7	71.2	101	1988	25	75.7	1991	35	1972	11	64.7	1972	27	198	@	3.5	30.0	.0	.0	.0
Jul	85.3	64.9	75.1	104	1954	14	80.2	1999	43	1972	6	71.5	1971	3	305	.2	6.2	31.0	.0	.0	.0
Aug	83.8	63.2	73.5	101	1983	20	79.0	1995	39	1965	29	69.3	1976	7	254	@	4.3	31.0	.0	.0	.0
Sep	77.1	55.9	66.5	100	1953	2	71.6	1998	31+	1963	30	62.7	1976	80	109	.0	1.2	30.0	.0	.0	.0
Oct	65.4	44.0	54.7	90	1951	5	60.8	1971	17	1952	21	47.9	1988	347	12	.0	.0	29.1	.0	3.1	.0
Nov	52.4	34.9	43.7	80+	1987	3	49.0	1985	-4	1958	30	34.8	1976	654	1	.0	.0	16.3	.8	13.3	.0
Dec	41.0	25.9	33.5	76	1982	3	41.2	1982	-17	1989	22	20.2	1989	982	0	.0	.0	6.4	7.5	22.7	.5
Ann	62.6	43.2	52.9	104	Jul 1954	14	80.2	Jul 1999	-22	Jan 1994	19	12.1	Jan 1977	5492	951	.2	15.7	256.8	31.6	112.7	4.4

\+ 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: 1948-2001

(3) Derived from 1971-2000 serially complete daily data

Issue Date: February 2004

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Precipitation (inches)

Precipitation Totals

Means/Medians(1)

Month	Mean	Median
Jan	2.53	2.26
Feb	2.20	2.00
Mar	2.89	2.92
Apr	3.25	3.14
May	3.88	3.53
Jun	4.08	4.00
Jul	4.62	4.09
Aug	3.72	3.13
Sep	2.92	2.41
Oct	2.31	2.11
Nov	3.19	2.93
Dec	2.93	2.83
Ann	38.52	37.82

Extremes

Month	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	4.79	1959	21	5.89	1978	.70	1981
Feb	2.15	1975	23	5.15	1990	.29	1978
Mar	3.40	1964	9	4.38	1974	1.01	1979
Apr	2.23	1998	16	6.51	1998	.67	1971
May	2.67	2000	28	7.01	1990	.95	1977
Jun	2.55	1981	13	8.77	1973	.65	1999
Jul	5.13	1992	13	12.36	1992	1.14	1974
Aug	3.17	1995	5	8.63	1979	.74	1993
Sep	2.66	1979	14	6.76	1979	1.15	1995
Oct	1.69	1986	3	5.05	1990	.92+	1994
Nov	2.38	1985	10	10.67	1985	.60	1976
Dec	2.56	1998	21	6.98	1990	.93	1976
Ann	5.13	Jul 1992	13	12.36	Jul 1992	.29	Feb 1978

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	13.8	6.4	1.4	.3
Feb	11.4	5.6	1.1	.3
Mar	13.1	7.4	1.7	.2
Apr	13.2	7.2	2.0	.5
May	12.6	8.0	2.6	.6
Jun	10.9	7.0	3.0	1.1
Jul	10.7	7.2	3.3	1.1
Aug	10.5	6.7	2.5	1.0
Sep	8.5	5.3	1.9	.7
Oct	9.4	5.2	1.4	.4
Nov	11.6	7.0	2.1	.6
Dec	13.2	6.8	1.5	.4
Ann	138.9	79.8	24.5	7.2

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	.86	1.10	1.45	1.74	2.02	2.32	2.64	3.01	3.49	4.23	4.91
Feb	.60	.81	1.12	1.40	1.67	1.96	2.27	2.65	3.14	3.90	4.62
Mar	1.28	1.54	1.90	2.19	2.46	2.74	3.03	3.37	3.79	4.43	5.01
Apr	1.02	1.33	1.79	2.18	2.56	2.95	3.39	3.89	4.55	5.57	6.51
May	1.47	1.83	2.35	2.78	3.19	3.61	4.06	4.58	5.25	6.28	7.21
Jun	1.20	1.59	2.17	2.67	3.16	3.67	4.23	4.89	5.75	7.08	8.32
Jul	1.48	1.92	2.57	3.12	3.65	4.20	4.81	5.52	6.43	7.85	9.16
Aug	.99	1.34	1.88	2.35	2.82	3.30	3.85	4.49	5.33	6.65	7.88
Sep	.90	1.18	1.60	1.95	2.29	2.65	3.04	3.50	4.09	5.01	5.87
Oct	.85	1.07	1.38	1.64	1.89	2.14	2.42	2.73	3.14	3.77	4.35
Nov	.93	1.23	1.69	2.08	2.47	2.86	3.31	3.83	4.50	5.55	6.53
Dec	1.29	1.56	1.92	2.22	2.49	2.77	3.07	3.41	3.85	4.50	5.09
Ann	28.93	30.82	33.23	35.04	36.63	38.17	39.75	41.49	43.58	46.60	49.20

\+ 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)

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	10.1	7.4	2	1	8.8	1996	7	34.4	1978	17+	1978	23	8	1977	8.9	3.1	1.0	.3	.0	12.1	7.2	5.0	1.0
Feb	6.2	5.0	1	1	8.9	1971	8	16.4	1979	13+	1979	20	6+	1985	6.1	2.2	.4	.1	.0	8.1	4.6	3.0	.8
Mar	4.1	3.2	#	1	7.2	1999	9	12.3	1971	9+	1984	2	2+	1984	4.8	1.2	.3	.1	.0	3.2	1.2	.6	.0
Apr	1.2	.1	#	0	12.3	1987	4	12.6	1987	10	1987	5	1	1987	1.1	.2	.1	.1	@	.2	.2	@	@
May	.0	.0	#	0	.8	1989	7	.8	1989	#	1989	7	#	2000	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	1998	.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	.2	.0	#	0	3.6	1993	30	4.6	1993	1	1980	27	#	1980	.1	.1	@	.0	.0	@	.0	.0	.0
Nov	1.6	.9	#	0	6.0	1980	17	8.0	1980	4	1972	30	#	1992	2.3	.6	.1	@	.0	.3	@	.0	.0
Dec	5.0	4.6	#	0	5.7	1984	5	13.4	2000	7	1981	22	2	1989	6.2	1.8	.3	@	.0	4.7	1.9	.3	.0
Ann	28.4	21.2	N/A	N/A	12.3	Apr 1987	4	34.4	Jan 1978	17+	Jan 1978	23	8	Jan 1977	29.5	9.2	2.2	.6	@	28.6	15.1	8.9	1.8

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

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	9/25	9/28	10/01	10/04	10/06	10/08	10/10	10/13	10/17
32	10/06	10/11	10/14	10/17	10/20	10/23	10/25	10/29	11/03
28	10/17	10/22	10/26	10/29	11/01	11/04	11/07	11/11	11/16
24	10/27	11/02	11/06	11/10	11/13	11/17	11/20	11/24	11/30
20	11/10	11/16	11/21	11/24	11/28	12/01	12/05	12/10	12/16
16	11/18	11/25	11/29	12/03	12/07	12/11	12/15	12/20	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	174	166	161	156	152	148	143	138	130
32	198	191	186	182	178	174	169	164	157
28	226	218	213	208	204	200	195	190	182
24	249	241	235	231	226	222	217	211	204
20	281	272	266	260	255	250	244	237	228
16	302	294	288	283	278	273	268	263	254

***** 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	1154	940	731	415	152	27	3	7	80	347	654	982	5492
60	984	785	563	255	86	5	0	0	17	210	492	822	4219
57	891	701	477	182	52	2	0	0	6	150	407	729	3597
55	829	648	420	141	36	1	0	0	3	116	353	675	3222
50	688	518	291	62	12	0	0	0	0	54	229	530	2384
32	252	154	36	0	0	0	0	0	0	0	14	148	604

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	86	125	323	580	922	1152	1314	1265	1014	683	346	149	7959
55	1	1	22	71	238	463	601	552	332	91	18	3	2393
57	1	1	15	51	193	405	539	490	278	66	12	2	2053
60	0	0	9	29	135	319	447	398	205	38	5	1	1586
65	0	0	2	9	61	198	305	254	109	12	1	0	951
70	0	0	0	1	21	87	154	123	41	1	0	0	428

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	31	49	162	362	682	922	1076	1029	783	450	174	55	31	80	242	604	1286	2208	3284	4313	5096	5546	5720	5775
45	10	21	94	239	527	772	921	874	633	305	101	27	10	31	125	364	891	1663	2584	3458	4091	4396	4497	4524
50	2	6	50	141	380	622	766	719	484	185	50	6	2	8	58	199	579	1201	1967	2686	3170	3355	3405	3411
55	0	0	25	75	248	473	611	564	342	95	19	2	0	0	25	100	348	821	1432	1996	2338	2433	2452	2454
60	0	0	9	29	138	328	456	410	214	42	5	0	0	0	9	38	176	504	960	1370	1584	1626	1631	1631
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	13	29	101	217	420	611	738	697	500	257	92	28	13	42	143	360	780	1391	2129	2826	3326	3583	3675	3703

(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