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: COSHOCTON WPC PLANT, OH **COOP ID: 331890**

Climate Division: OH 6 **NWS Call Sign:** **Elevation: 760 Feet** **Lat: 40˚14N** **Lon: 81˚52W**

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	36.3	19.1	27.7	75	1950	25	37.1	1990	-24	1994	19	12.4	1977	1157	0	.0	.0	4.3	11.6	27.6	3.0
Feb	40.6	21.7	31.2	75	2000	25	39.3	1998	-20	1951	3	18.8	1978	948	0	.0	.0	6.6	7.6	23.4	2.0
Mar	51.4	30.1	40.8	86	1950	27	48.7	1973	-6	1984	9	32.8	1984	753	0	.0	.0	15.8	1.7	20.5	.1
Apr	62.5	38.7	50.6	90+	1954	21	55.9	1985	11	1964	1	45.2	1975	433	1	.0	.0	25.9	@	9.4	.0
May	72.5	48.9	60.7	95	1936	10	68.4	1991	20	1986	3	55.4	1997	187	54	.0	.2	30.9	.0	1.1	.0
Jun	80.3	57.7	69.0	103	1952	26	73.2	1971	31+	1972	11	64.5	1972	30	151	.1	2.1	30.0	.0	@	.0
Jul	83.9	61.8	72.9	105	1936	14	76.4	1999	41+	1988	1	69.3	2000	2	245	.1	5.1	31.0	.0	.0	.0
Aug	82.4	60.3	71.4	102+	1953	31	76.6	1995	39+	1986	29	67.7	1992	12	207	.0	2.7	31.0	.0	.0	.0
Sep	75.8	52.9	64.4	106	1953	3	68.7	1971	27+	1957	28	60.5	1975	85	66	.0	.9	30.0	.0	.2	.0
Oct	64.7	40.9	52.8	92	1951	4	60.4	1971	17	1969	24	45.9	1988	388	10	.0	.0	29.2	.0	6.3	.0
Nov	52.2	32.6	42.4	83+	1950	1	48.5	1985	-5	1958	30	33.2	1976	677	0	.0	.0	16.9	.6	17.1	.0
Dec	40.8	24.2	32.5	77	1982	3	40.4	1982	-19	1989	22	18.9	1989	1008	0	.0	.0	6.9	6.8	24.7	.8
Ann	62.0	40.7	51.4	106	Sep 1953	3	76.6	Aug 1995	-24	Jan 1994	19	12.4	Jan 1977	5680	734	.2	11.0	258.5	28.3	130.3	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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1936-2001

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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	2.60	2.61	2.99	1952	26	5.21	1978	.44	1981
Feb	2.40	2.41	2.70	1975	23	4.64	1981	.29	1978
Mar	3.21	3.18	3.50	1964	9	5.68	1980	1.21	1990
Apr	3.75	3.72	2.25	1999	9	7.11	1981	.64	1971
May	4.15	4.34	5.00	1943	30	7.79	1990	.83	1977
Jun	3.98	4.04	3.11	1990	14	7.73	1981	.58	1984
Jul	4.45	4.04	3.59	1941	7	13.42	1992	1.60	1998
Aug	4.16	3.36	4.01	1939	2	12.38	1980	1.31	1989
Sep	3.16	2.81	3.08	1945	23	7.03	1979	.64	1985
Oct	2.63	2.53	2.62	1998	7	5.04	1983	.67	1994
Nov	3.44	3.24	2.60	1955	16	11.59	1985	.69	1976
Dec	3.02	2.98	2.40	1998	21	8.18	1990	1.15	1992
Ann	40.95	40.17	5.00	May 1943	30	13.42	Jul 1992	.29	Feb 1978

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	13.4	6.8	1.3	.3
Feb	10.9	5.8	1.4	.4
Mar	13.2	7.6	2.0	.3
Apr	13.4	7.9	2.3	.7
May	13.0	8.3	3.1	.9
Jun	11.5	7.7	2.5	1.0
Jul	11.0	7.7	3.2	1.1
Aug	10.4	7.0	3.1	1.0
Sep	9.5	6.1	2.2	.8
Oct	9.9	6.1	1.6	.4
Nov	12.4	7.4	2.3	.6
Dec	12.8	7.0	1.8	.4
Ann	141.4	85.4	26.8	7.9

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	.87	1.11	1.48	1.78	2.08	2.38	2.72	3.11	3.61	4.38	5.10
Feb	.75	.98	1.32	1.61	1.89	2.18	2.50	2.88	3.36	4.11	4.81
Mar	1.54	1.82	2.19	2.50	2.78	3.06	3.37	3.71	4.14	4.79	5.37
Apr	1.33	1.68	2.20	2.63	3.04	3.46	3.92	4.46	5.14	6.20	7.18
May	1.36	1.75	2.33	2.82	3.30	3.79	4.33	4.96	5.77	7.02	8.18
Jun	1.14	1.52	2.09	2.59	3.07	3.58	4.13	4.79	5.64	6.98	8.22
Jul	1.61	2.03	2.63	3.14	3.62	4.12	4.66	5.28	6.08	7.32	8.45
Aug	1.25	1.65	2.24	2.75	3.24	3.76	4.32	4.99	5.85	7.20	8.45
Sep	.95	1.25	1.70	2.09	2.46	2.85	3.28	3.78	4.44	5.45	6.40
Oct	.89	1.14	1.51	1.81	2.11	2.41	2.75	3.13	3.63	4.40	5.11
Nov	1.03	1.36	1.85	2.27	2.68	3.11	3.58	4.13	4.84	5.96	6.99
Dec	1.25	1.53	1.92	2.24	2.54	2.84	3.17	3.55	4.03	4.76	5.42
Ann	30.92	32.91	35.44	37.34	39.01	40.63	42.28	44.10	46.30	49.47	52.18

\+ 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

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(2) Derived from station's available digital record: 1936-2001
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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	8.2	5.8	2	1
Feb	6.1	4.5	1	#
Mar	2.9	2.8	#	#
Apr	.8	.0	#	0
May	#	.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	.8	.0	#	#
Dec	3.7	2.0	1	#
Ann	22.5	15.1	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	8.0	1996	7	33.9	1978	14	1978	21	9	1978
Feb	6.5	1979	12	17.5	1985	17	1977	4	9	1978
Mar	5.5	1999	9	9.0	1971	8	1984	1	3	1978
Apr	15.0	1987	4	16.0	1987	15	1987	4	1	1987
May	#	1989	6	#	1989	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	1.0	1989	19	1.0	1989	0	0	0	0	0
Nov	6.0	1980	17	8.0	1980	6	1980	17	1	1980
Dec	9.0	1974	1	15.8	1974	7	1974	2	3	1989
Ann	15.0	Apr 1987	4	33.9	Jan 1978	17	Feb 1977	4	9+	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.7	3.6	.9	.3	.0
Feb	3.1	2.0	.7	.2	.0
Mar	2.2	1.2	.3	.1	.0
Apr	.2	.1	.1	.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	@	@	.0	.0	.0
Nov	.7	.4	@	@	.0
Dec	2.8	1.4	.4	.1	.0
Ann	14.7	8.7	2.4	.8	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	11.1	7.4	5.1	1.4
Feb	7.3	4.5	2.8	1.0
Mar	2.5	1.1	.6	.0
Apr	.2	@	@	@
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	.5	.2	@	.0
Dec	4.7	1.6	.4	.0
Ann	26.3	14.8	8.9	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

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

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	9/20	9/23	9/26	9/28	9/30	10/03	10/05	10/07	10/11
32	9/25	9/30	10/04	10/07	10/10	10/13	10/16	10/20	10/25
28	10/11	10/16	10/19	10/22	10/25	10/27	10/30	11/02	11/07
24	10/18	10/23	10/28	10/31	11/03	11/07	11/10	11/14	11/20
20	10/31	11/07	11/12	11/16	11/19	11/23	11/27	12/02	12/09
16	11/14	11/20	11/25	11/29	12/03	12/06	12/10	12/15	12/21

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	160	154	149	145	141	137	133	128	121
32	179	172	167	163	159	155	151	146	139
28	211	203	198	194	189	185	181	176	168
24	231	224	218	213	209	205	200	194	187
20	263	254	247	241	235	230	224	217	208
16	293	284	277	272	267	262	256	250	241

***** 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	1157	948	753	433	187	30	2	12	85	388	677	1008	5680
60	1002	808	598	289	98	7	0	1	29	257	528	853	4470
57	909	724	508	212	60	2	0	0	12	191	441	760	3819
55	847	668	451	165	40	1	0	0	7	152	386	701	3418
50	703	536	313	75	12	0	0	0	1	78	256	558	2532
32	255	153	34	0	0	0	0	0	0	0	17	160	619

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	121	129	304	558	890	1111	1266	1219	970	645	330	175	7718
55	0	0	8	33	217	422	553	506	287	84	9	3	2122
57	0	0	3	20	175	363	491	444	233	61	4	0	1794
60	0	0	0	7	120	277	398	351	160	34	1	0	1348
65	0	0	0	1	54	151	245	207	66	10	0	0	734
70	0	0	0	0	18	61	111	95	17	1	0	0	303

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	26	39	139	332	642	870	1017	969	727	402	153	45	26	65	204	536	1178	2048	3065	4034	4761	5163	5316	5361
45	7	13	80	212	487	720	862	814	578	261	83	23	7	20	100	312	799	1519	2381	3195	3773	4034	4117	4140
50	1	1	42	124	341	570	707	659	430	152	38	4	1	2	44	168	509	1079	1786	2445	2875	3027	3065	3069
55	0	0	17	63	210	422	552	504	290	72	16	0	0	0	17	80	290	712	1264	1768	2058	2130	2146	2146
60	0	0	3	27	112	279	398	350	168	25	2	0	0	0	3	30	142	421	819	1169	1337	1362	1364	1364
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	14	30	96	212	397	573	690	650	464	250	95	28	14	44	140	352	749	1322	2012	2662	3126	3376	3471	3499

(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