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: OBERLIN, OH **COOP ID: 336196**

Climate Division: OH 2 **NWS Call Sign:** **Elevation: 816 Feet** **Lat: 41˚16N** **Lon: 82˚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	32.0	15.6	23.8	74	1950	25	35.1	1998	-23+	1994	19	9.4	1977	1277	0	.0	.0	2.6	15.0	28.8	4.0
Feb	35.7	18.1	26.9	76	2000	27	37.2	1998	-18	1985	3	14.5	1978	1066	0	.0	.0	4.2	11.2	24.7	2.5
Mar	45.8	26.7	36.3	83	1945	25	44.1	1973	-15	1984	9	26.3	1984	891	0	.0	.0	12.1	3.7	22.4	.3
Apr	58.0	36.2	47.1	89	1942	26	53.5	1985	6	1964	1	38.6	1975	538	1	.0	.0	23.6	.1	11.5	.0
May	69.7	46.9	58.3	93	1944	31	66.3	1991	19	1966	10	53.0	1997	252	44	.0	.2	30.5	.0	1.5	.0
Jun	78.6	56.1	67.4	104	1988	26	71.6	1971	30	1972	11	61.6	1972	55	125	@	3.0	30.0	.0	@	.0
Jul	82.7	60.3	71.5	102	1941	28	75.3	1999	38	1972	6	67.8	1984	6	208	.1	5.8	31.0	.0	.0	.0
Aug	80.8	58.2	69.5	100	1988	18	74.8	1995	32	1982	29	66.1	1992	21	160	@	2.8	31.0	.0	@	.0
Sep	74.2	50.9	62.6	100+	1953	3	68.0	1978	25	1984	28	55.7	1975	124	51	.0	1.1	30.0	.0	.4	.0
Oct	62.6	40.1	51.4	92	1953	3	58.1	1971	16	1988	31	46.5	1988	428	5	.0	.0	28.3	.0	5.7	.0
Nov	49.1	31.9	40.5	80	1950	1	46.0	1985	2	1958	30	32.9	1976	735	0	.0	.0	14.6	1.3	16.9	.0
Dec	37.1	21.7	29.4	77	1943	24	38.3	1982	-18	1989	24	15.7	1989	1104	0	.0	.0	4.8	9.0	26.3	1.4
Ann	58.9	38.6	48.7	104	Jun 1988	26	75.3	Jul 1999	-23+	Jan 1994	19	9.4	Jan 1977	6497	594	.1	12.9	242.7	40.3	138.2	8.2

\+ 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: 1936-2001

(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	2.25	2.17	2.35	1998	7	5.43	1995	.51	1981
Feb	2.02	2.09	2.70	1961	25	4.76	1990	.21	1987
Mar	2.65	2.91	1.70	1939	12	4.84	1977	.62	1990
Apr	3.22	3.44	2.15	1950	24	5.86	1998	.55	1975
May	3.60	3.71	3.20	1939	21	7.85	1989	.59	1998
Jun	3.85	3.95	4.12	1937	25	7.90	1987	.85	1988
Jul	3.75	3.78	4.12	1969	5	8.54	1992	1.55	1982
Aug	3.49	3.45	3.40	1940	18	7.31	1975	.79	1993
Sep	3.25	2.82	3.28	1972	18	9.20	1996	.59	1985
Oct	2.37	2.34	2.88	1983	5	5.71	1983	.73	1994
Nov	3.05	2.94	2.40	1962	10	7.38	1985	.64	1976
Dec	2.73	2.62	1.81	1992	31	8.02	1990	.93	1976
Ann	36.23+	36.19+	4.12+	Jul 1969	5	9.20	Sep 1996	.21	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.3	6.5	1.0	.2
Feb	10.1	5.7	1.0	.2
Mar	11.6	7.1	1.4	.3
Apr	12.6	8.3	2.1	.4
May	11.8	7.7	2.2	.7
Jun	11.0	7.7	2.7	.9
Jul	9.5	6.9	2.5	.9
Aug	9.6	6.2	2.4	.8
Sep	9.7	5.9	2.2	.6
Oct	10.3	6.3	1.3	.3
Nov	11.7	7.6	1.9	.5
Dec	12.8	7.0	1.6	.2
Ann	133.0	82.9	22.3	6.0

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	.66	.88	1.20	1.48	1.75	2.03	2.34	2.70	3.18	3.92	4.60
Feb	.48	.67	.96	1.22	1.49	1.76	2.07	2.44	2.93	3.70	4.43
Mar	1.14	1.38	1.72	1.99	2.24	2.50	2.78	3.10	3.50	4.11	4.66
Apr	1.15	1.45	1.89	2.26	2.61	2.97	3.36	3.82	4.40	5.30	6.13
May	.96	1.30	1.82	2.28	2.73	3.20	3.72	4.34	5.15	6.43	7.62
Jun	1.52	1.88	2.38	2.80	3.20	3.60	4.04	4.54	5.18	6.15	7.05
Jul	1.56	1.90	2.38	2.78	3.15	3.53	3.93	4.40	4.99	5.90	6.72
Aug	1.04	1.37	1.87	2.30	2.71	3.15	3.63	4.19	4.91	6.05	7.11
Sep	.89	1.20	1.66	2.07	2.48	2.90	3.36	3.92	4.63	5.76	6.82
Oct	.83	1.06	1.38	1.65	1.91	2.18	2.47	2.81	3.25	3.92	4.53
Nov	.82	1.11	1.55	1.94	2.32	2.72	3.16	3.68	4.36	5.43	6.43
Dec	1.19	1.43	1.78	2.05	2.32	2.58	2.86	3.19	3.60	4.22	4.78
Ann	27.79	29.47	31.60	33.20	34.61	35.96	37.34	38.87	40.70	43.34	45.59

\+ 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: 1936-2001
(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	8.8	3	2	11.0	1978	20	26.8	1999	15	1999	14	7	1996	6.0	4.2	1.4	.4	@	16.6	9.2	5.6	1.1
Feb	9.4	7.1	2	1	15.0	1991	15	21.5	1991	16+	1985	15	8	1985	4.8	3.5	.9	.5	@	12.9	6.2	3.4	.6
Mar	7.0	6.0	1	#	9.0	1987	31	16.6	1987	16	1984	1	5	1984	3.1	2.2	1.1	.4	.0	6.4	3.8	1.9	.2
Apr	1.5	.0	#	0	5.0	1996	1	8.0	1992	6	1987	1	1	1987	.8	.8	.2	@	.0	1.0	.5	.1	.0
May	#	.0	#	0	#	1996	13	#+	1996	#+	1996	13	#+	1996	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.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	.0	.0	#	0	.3	1976	27	.3	1976	#+	1997	28	#+	1997	@	.0	.0	.0	.0	.0	.0	.0	.0
Nov	2.6	1.8	#	#	4.5	1977	26	10.8	1977	4+	1999	3	#+	2000	1.6	1.1	.1	.0	.0	1.5	.2	.0	.0
Dec	8.6	7.6	1	1	11.0	1974	1	22.0	1995	11	1995	23	5	1989	5.0	3.4	.9	.3	@	10.0	4.9	1.9	.3
Ann	39.2	31.3	N/A	N/A	15.0	Feb 1991	15	26.8	Jan 1999	16+	Feb 1985	15	8	Feb 1985	21.3	15.2	4.6	1.6	@	48.4	24.8	12.9	2.2

+ 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	6/04	5/29	5/24	5/20	5/17	5/13	5/09	5/04	4/28
32	5/22	5/16	5/12	5/08	5/05	5/01	4/28	4/23	4/17
28	5/09	5/04	4/30	4/27	4/24	4/21	4/18	4/15	4/10
24	4/22	4/17	4/14	4/11	4/08	4/05	4/02	3/29	3/24
20	4/15	4/10	4/06	4/03	3/31	3/28	3/25	3/21	3/16
16	4/03	3/28	3/23	3/19	3/16	3/12	3/08	3/03	2/25

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	9/13	9/18	9/21	9/24	9/27	9/30	10/03	10/07	10/12
32	9/20	9/27	10/02	10/06	10/10	10/14	10/19	10/24	10/31
28	10/06	10/12	10/17	10/21	10/24	10/28	11/01	11/05	11/12
24	10/23	10/28	10/31	11/03	11/06	11/09	11/12	11/15	11/20
20	11/02	11/09	11/14	11/18	11/22	11/25	11/29	12/04	12/11
16	11/11	11/18	11/23	11/27	12/01	12/05	12/10	12/14	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	158	149	143	138	133	128	123	117	108
32	186	176	169	163	158	152	146	139	130
28	210	201	194	188	182	177	171	164	155
24	234	226	221	216	211	207	202	197	189
20	262	252	246	240	235	229	224	217	208
16	288	278	271	265	260	255	249	242	233

***** 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	1277	1066	891	538	252	55	6	21	124	428	735	1104	6497
60	1122	926	736	393	151	17	0	3	51	289	585	949	5222
57	1029	842	644	311	104	7	0	0	26	217	495	856	4531
55	967	786	586	260	78	4	0	0	15	174	436	794	4100
50	814	648	444	150	32	0	0	0	3	89	299	651	3130
32	333	226	91	3	0	0	0	0	0	0	24	222	899

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	79	84	223	455	816	1060	1225	1162	917	600	279	141	7041
55	0	0	5	22	181	374	512	449	242	61	2	0	1848
57	0	0	1	13	145	317	450	387	193	42	1	0	1549
60	0	0	0	5	99	237	357	297	128	22	0	0	1145
65	0	0	0	1	44	125	208	160	51	5	0	0	594
70	0	0	0	0	16	49	88	64	13	0	0	0	230

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	14	24	106	279	596	848	1000	936	700	383	136	33	14	38	144	423	1019	1867	2867	3803	4503	4886	5022	5055
45	3	7	60	175	446	698	845	781	550	250	73	14	3	10	70	245	691	1389	2234	3015	3565	3815	3888	3902
50	0	3	29	101	306	548	690	626	403	143	33	5	0	3	32	133	439	987	1677	2303	2706	2849	2882	2887
55	0	0	10	50	190	400	535	471	265	70	10	0	0	0	10	60	250	650	1185	1656	1921	1991	2001	2001
60	0	0	3	17	103	264	380	319	155	26	1	0	0	0	3	20	123	387	767	1086	1241	1267	1268	1268
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	4	14	73	180	370	552	673	621	438	233	79	16	4	18	91	271	641	1193	1866	2487	2925	3158	3237	3253

(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