

Climatography of the United States

No. 20

1971-2000

Station: FREMONT, OH

COOP ID: 332974

Climate Division: OH 2

NWS Call Sign:

Elevation: 600 Feet

Lat: 41° 20N

Lon: 83° 07W

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	32.1	16.7	24.4	66	1967	24	34.5	1990	-20	1994	19	11.0	1977	1259	0	.0	.0	2.1	15.9	28.7	4.2
Feb	35.5	19.2	27.4	75	2000	27	36.3	1998	-13	1963	26	12.9	1978	1055	0	.0	.0	3.3	12.3	24.7	2.6
Mar	45.8	27.9	36.9	81+	1998	31	44.7	1973	-5+	1984	9	26.8	1984	872	0	.0	.0	10.6	4.5	22.1	.2
Apr	58.2	37.8	48.0	87+	1990	26	54.2	1985	8+	1982	7	42.0	1975	510	1	.0	.0	22.4	.1	8.3	.0
May	70.1	48.9	59.5	93+	1962	18	66.9	1991	27	1966	10	53.3	1997	228	57	.0	.6	30.5	.0	.3	.0
Jun	79.6	58.9	69.3	104	1988	26	71.9	1999	38	1972	11	63.7	1972	31	157	.1	2.8	30.0	.0	.0	.0
Jul	83.7	62.8	73.3	100+	1999	31	78.1	1999	45	1965	1	70.1	1979	2	258	.1	5.3	31.0	.0	.0	.0
Aug	81.6	60.8	71.2	100	1953	31	76.2	1995	40	1965	29	66.7	1992	13	205	.0	2.2	31.0	.0	.0	.0
Sep	75.0	53.1	64.1	105	1953	2	68.3	1978	31	1974	23	59.7	1975	90	61	.0	.8	30.0	.0	.1	.0
Oct	62.9	41.7	52.3	93	1953	3	59.6	1971	19	1988	31	46.4	1988	402	7	.0	.0	27.7	.0	4.6	.0
Nov	49.3	33.3	41.3	78	1968	2	47.4	1975	0	1958	30	34.8	1976	710	0	.0	.0	13.6	1.2	16.5	.0
Dec	37.2	23.0	30.1	71	1998	7	38.7	1982	-17+	1989	23	16.6	1989	1081	0	.0	.0	3.9	9.7	25.9	1.2
Ann	59.3	40.3	49.8	105	Sep 1953	2	78.1	Jul 1999	-20	Jan 1994	19	11.0	Jan 1977	6253	746	.2	11.7	236.1	43.7	131.2	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

Issue Date: February 2004

(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

037-A

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: FREMONT, OH

COOP ID: 332974

Climate Division: OH 2

NWS Call Sign:

Elevation: 600 Feet Lat: 41°20N

Lon: 83°07W

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	2.11	1.93	1.50	1959	21	4.56	1995	.75	1983	10.8	6.1	.9	.2	.68	.88	1.18	1.43	1.67	1.92	2.20	2.52	2.94	3.58	4.18
Feb	1.88	1.81	2.21	1997	27	5.13	1990	.07	1987	9.6	5.3	.9	.2	.37	.54	.82	1.07	1.33	1.60	1.92	2.29	2.79	3.59	4.35
Mar	2.68	2.42	1.71	1954	25	4.42	1985	.74	1981	11.3	7.1	1.6	.2	1.24	1.47	1.80	2.06	2.30	2.55	2.81	3.11	3.48	4.05	4.56
Apr	3.27	3.55	2.06	1950	24	5.22	1999	.83	1971	12.3	8.3	2.1	.5	1.29	1.59	2.02	2.38	2.72	3.06	3.43	3.86	4.40	5.23	5.99
May	3.81	3.74	3.04	1969	18	6.86	1997	.89	1988	11.7	8.0	2.6	.9	1.59	1.94	2.43	2.83	3.20	3.58	3.99	4.46	5.06	5.97	6.79
Jun	4.37	4.17	2.75	1990	3	8.39	1981	.53	1988	10.6	7.1	2.8	1.3	1.59	2.00	2.59	3.09	3.56	4.04	4.57	5.18	5.96	7.16	8.26
Jul	3.36	3.29	7.95	1969	5	6.10	1992	.65	1974	9.1	6.2	2.3	.9	1.17	1.49	1.95	2.34	2.71	3.09	3.51	4.00	4.62	5.58	6.47
Aug	3.46	3.46	2.11	1968	9	7.63	1975	.25	1996	9.8	6.7	2.6	.9	.75	1.07	1.58	2.04	2.50	2.99	3.54	4.21	5.08	6.47	7.79
Sep	3.06	2.49	3.15	1971	27	7.44	1981	.80	1985	9.4	6.0	1.9	.7	.91	1.20	1.64	2.01	2.38	2.76	3.18	3.68	4.32	5.32	6.25
Oct	2.52	2.23	2.28	1988	18	4.91	1991	.60	1974	9.2	6.0	1.5	.3	.88	1.11	1.46	1.75	2.03	2.31	2.63	2.99	3.46	4.18	4.84
Nov	2.87	2.80	1.88	1983	11	5.64	1992	.49	1976	11.8	7.2	1.9	.3	.91	1.18	1.58	1.93	2.26	2.61	2.99	3.43	4.00	4.89	5.72
Dec	2.74	2.86	2.05	1990	30	7.34	1990	.92	1976	12.7	7.2	1.7	.2	1.14	1.39	1.74	2.03	2.30	2.57	2.87	3.21	3.64	4.30	4.90
Ann	36.13	36.43	7.95	Jul 1969	5	8.39	Jun 1981	.07	Feb 1987	128.3	81.2	22.8	6.6	28.81	30.29	32.15	33.54	34.76	35.93	37.12	38.43	40.00	42.24	44.15

+ 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

Complete documentation available from:
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151 Patton Avenue
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Station: FREMONT, OH

COOP ID: 332974

Climate Division: OH 2

NWS Call Sign:

Elevation: 600 Feet

Lat: 41°20N

Lon: 83°07W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	6.0	4.7	2	1	7.5	1999	3	23.3	1999	15	1999	15	6+	1999	4.6	2.7	.9	.1	.0	6.7	4.1	2.2	.4
Feb	5.1	3.3	2	1	6.0	1988	4	13.0	1988	14	1982	3	14	1982	3.9	2.3	.5	.1	.0	6.5	2.2	.6	.0
Mar	3.4	2.7	#	#	5.5	2000	12	10.5	1999	6+	2000	12	1	1999	1.9	1.3	.6	.1	.0	2.5	1.2	.4	.0
Apr	.5	.0	#	0	4.0	1994	7	4.0	1994	4	1994	7	#+	2000	.2	.1	.1	.0	.0	.2	.1	.0	.0
May	.0	.0	#	0	.5	1989	7	.5	1989	1	1989	7	#	1989	@	.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	#	2000	8	#+	2000	#	2000	8	#	2000	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.7	.0	#	#	2.5	1995	18	3.3	1995	2	1997	14	#+	2000	.8	.3	.0	.0	.0	.3	.0	.0	.0
Dec	5.6	3.7	1	#	8.0	1974	2	16.9	1974	13	1974	4	4	1974	3.7	2.0	.4	.1	.0	5.3	2.2	1.2	.3
Ann	21.3	14.4	N/A	N/A	8.0	Dec 1974	2	23.3	Jan 1999	15	Jan 1999	15	14	Feb 1982	15.1	8.7	2.5	.4	.0	21.5	9.8	4.4	.7

+ 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:

www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

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No. 20 1971-2000

Station: FREMONT, OH

COOP ID: 332974

Climate Division: OH 2

NWS Call Sign:

Elevation: 600 Feet

Lat: 41°20N

Lon: 83°07W

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	5/17	5/13	5/10	5/08	5/06	5/04	5/01	4/29	4/25
32	5/09	5/04	5/01	4/28	4/26	4/23	4/21	4/18	4/13
28	4/20	4/17	4/15	4/13	4/12	4/10	4/08	4/06	4/03
24	4/13	4/09	4/06	4/04	4/01	3/30	3/27	3/24	3/20
20	4/06	4/01	3/29	3/26	3/23	3/21	3/18	3/15	3/10
16	3/28	3/22	3/18	3/15	3/11	3/08	3/05	3/01	2/23
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	9/22	9/26	9/29	10/02	10/04	10/06	10/09	10/11	10/15
32	10/01	10/06	10/09	10/12	10/15	10/18	10/21	10/25	10/29
28	10/17	10/21	10/25	10/27	10/30	11/02	11/04	11/08	11/12
24	10/24	10/30	11/04	11/08	11/12	11/16	11/20	11/24	12/01
20	11/05	11/12	11/17	11/21	11/25	11/29	12/03	12/07	12/14
16	11/16	11/22	11/26	11/30	12/04	12/07	12/11	12/16	12/22
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	166	161	157	153	150	147	144	140	135
32	190	184	179	175	172	168	164	159	153
28	215	210	207	203	201	198	195	191	186
24	248	240	234	229	224	219	214	208	200
20	271	262	256	251	246	240	235	229	220
16	288	281	275	271	267	262	258	253	245

* 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

Complete documentation available from:

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**Climatology
of the United States**
No. 20
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Station: FREMONT, OH

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Climate Division: OH 2 NWS Call Sign: Elevation: 600 Feet Lat: 41°20N Lon: 83°07W

Degree Days to Selected Base Temperatures (°F)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1259	1055	872	510	228	31	2	13	90	402	710	1081	6253
60	1104	915	717	365	134	8	0	1	31	268	561	926	5030
57	1011	831	626	283	91	3	0	0	13	199	472	833	4362
55	949	775	569	232	67	1	0	0	7	159	415	771	3945
50	795	638	426	126	27	0	0	0	1	81	281	628	3003
32	317	225	85	1	0	0	0	0	0	0	22	205	855

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	81	94	235	482	852	1116	1279	1215	961	628	301	147	7391
55	0	0	7	23	206	428	566	502	278	74	4	0	2088
57	0	0	1	13	168	369	504	440	224	52	2	0	1773
60	0	0	0	5	118	284	411	348	152	28	0	0	1346
65	0	0	0	1	57	157	258	205	61	7	0	0	746
70	0	0	0	0	22	64	123	95	15	1	0	0	320

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	10	22	94	274	609	879	1029	961	712	383	133	29	10	32	126	400	1009	1888	2917	3878	4590	4973	5106	5135
45	0	5	50	166	458	729	874	806	564	246	69	11	0	5	55	221	679	1408	2282	3088	3652	3898	3967	3978
50	0	2	23	90	314	579	719	651	415	142	28	4	0	2	25	115	429	1008	1727	2378	2793	2935	2963	2967
55	0	0	9	46	195	430	564	496	278	72	12	0	0	0	9	55	250	680	1244	1740	2018	2090	2102	2102
60	0	0	2	19	107	289	409	341	166	27	2	0	0	0	2	21	128	417	826	1167	1333	1360	1362	1362
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	1	11	58	159	360	573	697	643	446	222	68	15	1	12	70	229	589	1162	1859	2502	2948	3170	3238	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:
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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normal/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 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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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