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: OMAHA EPPLEY AP, NE **COOP ID: 256255**

Climate Division: NE 6 **NWS Call Sign: OMA** **Elevation: 982 Feet** **Lat: 41˚19N** **Lon: 95˚54W**

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	31.7	11.6	21.7	67+	1987	13	33.5	1990	-23	1982	10	9.4	1982	1349	0	.0	.0	2.8	15.2	30.1	6.9
Feb	37.9	18.0	28.0	78	1972	29	37.5	1976	-21	1981	11	15.7	1978	1052	0	.0	.0	6.2	10.6	25.4	3.5
Mar	50.4	28.1	39.3	89+	1986	29	46.1	1977	-14	1960	5	30.3	1984	805	1	.0	.0	16.0	3.1	20.7	.6
Apr	63.2	39.6	51.4	97	1989	22	59.0	1977	5	1975	3	43.5	1983	424	14	.0	.5	25.8	.1	7.0	.0
May	73.7	50.7	62.2	98	1989	29	70.2	1977	27+	1980	8	56.5	1983	151	60	.0	1.0	30.8	.0	.5	.0
Jun	83.7	60.6	72.2	105	1953	18	77.8	1971	38	1983	6	65.5	1982	17	233	.6	7.1	30.0	.0	.0	.0
Jul	87.4	65.9	76.7	110	1974	21	82.2	1974	44	1972	5	71.1	1992	1	365	1.7	11.9	31.0	.0	.0	.0
Aug	85.2	63.8	74.5	107+	1983	16	81.5	1983	43+	1967	27	68.4	1992	6	296	.9	9.0	31.0	.0	.0	.0
Sep	77.3	53.5	65.4	103	1975	1	71.6	1998	25	1984	29	59.7+	1993	105	114	.1	3.6	29.8	.0	.4	.0
Oct	65.2	41.1	53.2	95+	1975	12	58.8	1971	13	1972	19	48.3	1987	384	12	.0	.2	28.2	.1	5.8	.0
Nov	47.8	28.1	38.0	83	1999	13	47.2	1999	-9	1964	30	28.5	1985	806	0	.0	.0	13.8	3.1	20.9	.2
Dec	34.8	16.4	25.6	69+	1998	1	31.8	1991	-23	1989	22	7.3	1983	1211	0	.0	.0	3.7	11.8	29.7	3.8
Ann	61.5	39.8	50.7	110	Jul 1974	21	82.2	Jul 1974	-23+	Dec 1989	22	7.3	Dec 1983	6311	1095	3.3	33.3	249.1	44.0	140.5	15.0

\+ 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

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	.77	.72	1.55	1982	22	2.01	1975	.00	1986
Feb	.80	.69	1.75	1954	19	2.43	1971	.09+	1996
Mar	2.13	1.84	1.73	1979	18	5.96	1973	.14	1988
Apr	2.94	2.92	2.73	1999	14	8.48	1999	.36	1990
May	4.44	4.59	4.16	1987	26	9.92	1982	.83	1989
Jun	3.95	3.30	4.07	1994	22	8.99	1980	1.03	1972
Jul	3.86	3.21	3.22	1948	29	10.34	1993	.39	1983
Aug	3.21	2.13	6.46	1999	7	12.26	1999	.61	1984
Sep	3.17	2.55	6.24	1965	7	8.11	1986	.57	1971
Oct	2.21	1.93	3.09	1968	16	5.25	1997	.01	1975
Nov	1.82	1.54	2.01	1952	17	4.70	1983	.03	1976
Dec	.92	.78	1.52	1984	16	5.42	1984	.04	1980
Ann	30.22	29.19	6.46	Aug 1999	7	12.26	Aug 1999	.00	Jan 1986

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.9	2.5	.3	.1
Feb	6.1	2.3	.2	.1
Mar	8.3	4.6	1.4	.5
Apr	10.4	5.9	2.0	.6
May	12.0	7.7	3.2	1.1
Jun	10.0	6.9	2.5	1.0
Jul	10.1	6.4	2.5	1.0
Aug	8.5	5.4	1.8	.9
Sep	8.3	5.2	2.0	1.0
Oct	6.6	4.0	1.5	.6
Nov	7.0	3.8	1.2	.5
Dec	6.7	2.5	.4	.1
Ann	99.9	57.2	19.0	7.5

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	.06	.15	.27	.39	.50	.63	.77	.95	1.18	1.57	1.93
Feb	.11	.17	.29	.40	.51	.64	.79	.98	1.22	1.63	2.02
Mar	.26	.43	.73	1.02	1.34	1.69	2.09	2.60	3.28	4.40	5.49
Apr	.76	1.04	1.46	1.84	2.21	2.60	3.04	3.56	4.23	5.30	6.29
May	1.45	1.87	2.49	3.02	3.53	4.05	4.62	5.29	6.16	7.49	8.73
Jun	.96	1.33	1.91	2.42	2.93	3.47	4.07	4.78	5.72	7.20	8.60
Jul	.73	1.07	1.64	2.16	2.69	3.27	3.92	4.71	5.75	7.43	9.03
Aug	.49	.76	1.23	1.67	2.13	2.63	3.21	3.92	4.87	6.42	7.90
Sep	.55	.83	1.30	1.73	2.17	2.65	3.20	3.87	4.75	6.18	7.55
Oct	.17	.31	.60	.90	1.24	1.63	2.10	2.69	3.51	4.89	6.25
Nov	.19	.33	.58	.83	1.10	1.41	1.77	2.22	2.83	3.85	4.84
Dec	.09	.16	.28	.41	.55	.70	.89	1.12	1.43	1.96	2.48
Ann	19.34	21.36	24.00	26.03	27.85	29.63	31.49	33.56	36.10	39.81	43.07

\+ 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	6.3	4.0	2	1	12.1	1975	10	22.7	1975	17	1984	1	6+	1991	4.6	1.9	.7	.2	@	14.6	8.8	5.5	.7
Feb	5.5	4.0	2	2	9.4	1971	22	17.4	1971	11+	1978	22	7	1978	4.2	1.9	.6	.2	.0	12.1	7.1	3.8	.5
Mar	4.5	4.2	1	1	9.7	1987	28	14.2	1984	13+	1978	8	4	1978	2.7	1.3	.6	.3	.0	4.9	2.7	1.5	.3
Apr	1.3	.5	#	0	8.7	1992	20	10.0	1992	6	1987	1	#	1987	1.1	.6	@	@	.0	.6	.1	.1	.0
May	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	2000	.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	#	1985	29	#	1985	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.3	.0	#	0	2.5	1991	31	2.5	1991	5	1997	26	#	1997	.2	.2	.0	.0	.0	.2	.1	@	.0
Nov	3.4	2.4	#	0	7.9	1972	13	9.7	1972	6+	1987	29	2	1991	2.5	1.3	.3	.1	.0	2.8	1.0	.4	.0
Dec	5.5	4.5	1	0	6.3	2000	11	18.1	2000	17+	1983	29	10	1983	4.8	2.0	.6	.1	.0	9.9	4.9	1.8	.6
Ann	26.8	19.6	N/A	N/A	12.1	Jan 1975	10	22.7	Jan 1975	17+	Jan 1984	1	10	Dec 1983	20.1	9.2	2.8	.9	@	45.1	24.7	13.1	2.1

+ 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	5/16	5/11	5/08	5/05	5/02	4/30	4/27	4/23	4/19
32	5/09	5/04	5/01	4/28	4/25	4/23	4/20	4/16	4/12
28	4/25	4/21	4/17	4/15	4/12	4/10	4/07	4/04	3/30
24	4/14	4/10	4/07	4/05	4/03	3/31	3/29	3/26	3/22
20	4/08	4/02	3/29	3/26	3/23	3/19	3/16	3/12	3/07
16	3/29	3/23	3/19	3/16	3/13	3/10	3/06	3/02	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	9/14	9/19	9/22	9/25	9/27	9/30	10/03	10/06	10/10
32	9/23	9/28	10/01	10/04	10/07	10/10	10/13	10/17	10/22
28	10/03	10/09	10/13	10/17	10/20	10/23	10/26	10/30	11/05
24	10/13	10/20	10/24	10/28	10/31	11/04	11/07	11/12	11/18
20	10/24	10/29	11/03	11/06	11/09	11/13	11/16	11/21	11/26
16	11/01	11/07	11/11	11/15	11/19	11/22	11/26	11/30	12/07

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	160	155	151	147	144	140	135	129
32	185	178	173	168	164	160	156	150	143
28	212	204	199	194	190	186	181	176	168
24	233	225	220	215	211	206	202	196	188
20	254	246	241	236	231	227	222	216	208
16	274	266	260	255	250	245	240	235	226

***** 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	1349	1052	805	424	151	17	1	6	105	384	806	1211	6311
60	1189	898	644	285	86	3	0	3	34	240	662	1067	5111
57	1096	814	557	217	53	1	0	0	16	173	574	974	4475
55	1034	764	499	177	36	0	0	0	8	134	518	912	4082
50	882	634	362	95	12	0	0	0	1	63	383	763	3195
32	393	246	61	1	0	0	0	0	0	0	70	300	1071

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	36	91	284	583	937	1204	1385	1319	1001	657	236	53	7786
55	0	0	12	75	247	514	672	606	329	88	6	0	2549
57	0	0	8	56	200	454	610	544	278	64	3	0	2217
60	0	0	4	35	137	367	517	451	209	37	1	0	1758
65	0	0	1	14	60	233	365	296	114	12	0	0	1095
70	0	0	0	4	21	121	218	169	53	4	0	0	590

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	3	30	135	365	698	974	1144	1077	769	428	102	7	3	33	168	533	1231	2205	3349	4426	5195	5623	5725	5732
45	0	10	74	245	543	824	989	922	621	291	46	3	0	10	84	329	872	1696	2685	3607	4228	4519	4565	4568
50	0	2	38	144	393	674	834	767	474	175	17	0	0	2	40	184	577	1251	2085	2852	3326	3501	3518	3518
55	0	0	10	77	255	524	679	612	338	91	4	0	0	0	10	87	342	866	1545	2157	2495	2586	2590	2590
60	0	0	3	36	144	377	524	457	214	41	0	0	0	0	3	39	183	560	1084	1541	1755	1796	1796	1796
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	8	33	101	229	431	645	784	730	494	266	71	10	8	41	142	371	802	1447	2231	2961	3455	3721	3792	3802

(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