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 9 NW, NE **COOP ID: 256260**

Climate Division: NE 6 **NWS Call Sign:** **Elevation: 1,280 Feet** **Lat: 41˚21N** **Lon: 96˚01W**

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	12.6	22.4	66	1981	24	34.5	1990	-22+	1982	10	9.0	1979	1323	0	.0	.0	2.5	16.0	29.8	6.7
Feb	38.0	19.0	28.5	76	1972	28	39.3	2000	-25	1996	2	14.7	1978	1022	0	.0	.0	5.7	11.3	24.4	3.4
Mar	50.8	28.8	39.8	88	1986	29	46.7	2000	-16	1960	4	31.2	1975	783	0	.0	.0	14.8	3.6	19.4	.4
Apr	63.6	40.3	52.0	96	1989	22	59.2	1981	7	1975	3	44.8	1983	400	8	.0	.5	25.1	.3	6.2	.0
May	73.3	51.3	62.3	100+	1967	25	68.4	1977	25	1967	2	57.5	1997	154	71	.0	.4	30.7	.0	.2	.0
Jun	82.4	60.5	71.5	104	1988	21	76.6	1988	40	1998	3	66.2	1982	16	209	.2	4.2	30.0	.0	.0	.0
Jul	85.6	65.5	75.6	107	1974	22	81.9	1974	44	1971	30	69.2	1992	4	330	.7	9.1	31.0	.0	.0	.0
Aug	83.9	64.1	74.0	106	1983	16	81.7	1983	44	1986	28	68.6	1992	15	295	.4	6.4	31.0	.0	.0	.0
Sep	76.3	55.0	65.7	103	1955	8	71.7	1998	28	1984	29	59.7	1993	83	101	.0	2.4	29.8	.0	.1	.0
Oct	64.6	43.1	53.9	93+	1975	12	58.4	1975	13	1997	27	48.9	1976	349	5	.0	.1	27.9	.1	4.1	.0
Nov	47.5	29.2	38.4	81+	1999	13	49.3	1999	-11	1964	30	28.9	1985	800	0	.0	.0	12.6	3.9	18.6	.2
Dec	35.1	17.2	26.2	68	1998	1	33.0	1979	-24	1983	22	8.9	1983	1204	0	.0	.0	3.2	13.4	29.0	3.7
Ann	61.1	40.6	50.9	107	Jul 1974	22	81.9	Jul 1974	-25	Feb 1996	2	8.9	Dec 1983	6153	1019	1.3	23.1	244.3	48.6	131.8	14.4

\+ 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: 1954-2001

(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	.76	.64	.97	1975	10	1.85	1975	.00	1986
Feb	.77	.74	1.39	1965	11	2.42	1971	.14	1996
Mar	2.25	1.96	2.04	1982	19	5.27	1983	.07	1988
Apr	3.07	2.44	3.31	1998	7	7.82	1999	.34	1990
May	4.57	4.12	3.10	1987	26	9.18	1995	.55	1989
Jun	3.84	3.42	4.32	1960	20	8.83	1993	.95	1972
Jul	3.75	3.06	3.96	1998	5	9.66	1992	.10	1974
Aug	2.93	2.09	3.47	1959	2	7.92	1981	.63	1971
Sep	3.03	2.69	5.31	1965	7	6.97	1973	.47	2000
Oct	2.49	2.33	3.12	1961	10	5.34	1986	.08+	1999
Nov	1.67	1.56	2.16	1983	27	5.11	1983	.03	1989
Dec	.95	.72	2.66	1984	15	4.45	1984	.21	1976
Ann	30.08	28.55	5.31	Sep 1965	7	9.66	Jul 1992	.00	Jan 1986

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.9	2.1	.3	.0
Feb	6.4	2.5	.2	.0
Mar	8.9	4.8	1.6	.5
Apr	10.0	6.1	2.0	.5
May	11.8	7.7	2.9	1.2
Jun	10.0	6.5	2.7	1.2
Jul	9.6	5.9	2.4	.9
Aug	8.7	5.2	1.8	.8
Sep	8.1	5.5	2.0	.8
Oct	7.1	4.3	1.8	.6
Nov	6.7	3.4	1.1	.4
Dec	7.3	2.6	.5	.1
Ann	100.5	56.6	19.3	7.0

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	.07	.15	.27	.38	.50	.62	.76	.93	1.16	1.53	1.89
Feb	.12	.19	.30	.41	.52	.64	.78	.94	1.17	1.53	1.88
Mar	.26	.43	.75	1.06	1.40	1.77	2.21	2.75	3.49	4.71	5.89
Apr	.76	1.05	1.49	1.89	2.28	2.70	3.16	3.71	4.43	5.57	6.63
May	1.41	1.84	2.49	3.04	3.58	4.14	4.76	5.48	6.41	7.86	9.21
Jun	1.21	1.57	2.11	2.58	3.03	3.49	4.00	4.60	5.37	6.57	7.68
Jul	.43	.72	1.24	1.77	2.33	2.95	3.68	4.58	5.81	7.84	9.82
Aug	.44	.68	1.11	1.51	1.93	2.40	2.93	3.58	4.45	5.88	7.24
Sep	.71	1.00	1.44	1.84	2.23	2.65	3.11	3.67	4.40	5.56	6.65
Oct	.27	.45	.80	1.15	1.52	1.94	2.43	3.04	3.88	5.26	6.61
Nov	.15	.26	.48	.71	.97	1.26	1.60	2.04	2.63	3.63	4.61
Dec	.18	.26	.40	.53	.66	.80	.96	1.15	1.41	1.83	2.22
Ann	19.76	21.70	24.21	26.15	27.88	29.56	31.32	33.27	35.65	39.14	42.18

\+ 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

(1) From the 1971-2000 Monthly Normals
(2) Derived from station's available digital record: 1954-2001
(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	7.5	4.6	3	2	11.2	1975	10	21.5	1975	14	1984	2	7	1984	4.9	2.2	.7	.2	@	3.8	1.3	.6	.0
Feb	6.0	3.8	2	1	8.4	1971	22	22.0	1978	13	1978	14	8	1975	4.2	1.7	.4	.1	.0	7.2	2.8	1.1	.0
Mar	5.3	5.0	1	#	9.4	1987	28	18.3	1984	13	1987	29	4+	1998	3.2	1.3	.7	.2	.0	2.8	.9	.3	.0
Apr	1.9	.8	#	#	8.7	1992	20	10.3	1983	9	1992	21	3	1992	1.2	.6	.1	@	.0	.3	.1	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.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	.3	1985	29	.3	1985	0	0	0	0	0	@	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.8	.0	#	0	5.7	1991	31	5.7	1991	3+	1996	22	#+	1997	.4	.2	.1	.1	.0	.2	@	.0	.0
Nov	4.0	3.9	1	#	8.5	1983	27	13.6	1983	8	1983	28	4	1972	2.6	1.1	.4	.1	.0	1.6	.4	.3	.0
Dec	4.8	4.7	1	1	6.5	1984	13	9.7	1984	14	1983	21	9	1983	4.6	1.7	.4	.1	.0	5.6	2.0	.2	.0
Ann	30.3	22.8	N/A	N/A	11.2	Jan 1975	10	22.0	Feb 1978	14+	Jan 1984	2	9	Dec 1983	21.1	8.8	2.8	.8	@	21.5	7.5	2.5	.0

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	178	172	167	163	159	155	151	146	140
32	194	187	182	178	174	170	166	161	154
28	217	211	207	203	200	197	193	189	184
24	242	233	228	222	218	213	208	202	193
20	263	254	248	243	237	232	227	220	212
16	278	269	262	256	251	246	240	234	225

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1323	1022	783	400	154	16	4	15	83	349	800	1204	6153
60	1168	882	629	270	77	2	0	3	28	216	652	1049	4976
57	1075	806	544	203	46	0	0	0	12	150	566	956	4358
55	1014	753	486	164	30	0	0	0	6	113	512	894	3972
50	867	623	351	86	9	0	0	0	0	50	379	748	3113
32	392	250	60	1	0	0	0	0	0	0	75	290	1068

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	92	151	300	599	940	1183	1349	1302	1009	679	265	110	7979
55	1	11	13	73	257	493	636	589	325	79	11	0	2488
57	0	7	9	52	210	433	574	527	271	53	6	0	2142
60	0	0	1	28	149	345	481	437	197	26	1	0	1665
65	0	0	0	8	71	209	330	295	101	5	0	0	1019
70	0	0	0	1	25	101	192	174	41	0	0	0	534

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	5	39	132	366	697	956	1125	1062	768	436	108	9	5	44	176	542	1239	2195	3320	4382	5150	5586	5694	5703
45	0	15	73	245	543	806	970	907	619	299	54	2	0	15	88	333	876	1682	2652	3559	4178	4477	4531	4533
50	0	2	37	148	391	656	815	752	470	188	18	0	0	2	39	187	578	1234	2049	2801	3271	3459	3477	3477
55	0	0	10	79	255	506	660	597	335	102	8	0	0	0	10	89	344	850	1510	2107	2442	2544	2552	2552
60	0	0	4	37	144	358	505	442	214	44	1	0	0	0	4	41	185	543	1048	1490	1704	1748	1749	1749
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	3	30	85	212	420	638	773	721	483	250	66	6	3	33	118	330	750	1388	2161	2882	3365	3615	3681	3687

(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

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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