

# Climatology of the United States

No. 20

1971-2000

Station: CHAMBERS, NE

COOP ID: 251590

Climate Division: NE 2

NWS Call Sign:

Elevation: 2,130 Feet Lat: 42° 12N

Lon: 98° 46W

## 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	31.1	8.6	19.9	71	1990	11	31.6	1989	-29	1968	7	6.3	1979	1399	0	.0	.0	3.5	15.2	30.5	8.7
Feb	36.7	14.1	25.4	77	2000	22	34.8	1992	-27+	1996	3	12.5	1979	1109	0	.0	.0	6.5	11.2	26.9	4.8
Mar	46.5	24.0	35.3	85+	1989	27	41.6	2000	-20	1980	1	27.7	1998	923	0	.0	.0	13.6	4.6	25.1	.9
Apr	58.8	35.3	47.1	94+	1989	23	56.1	1981	8+	1982	6	41.6	1983	540	1	.0	.3	23.0	.6	12.1	.0
May	69.3	46.3	57.8	102	1967	25	65.1	1977	18	1954	3	52.2	1995	247	24	.0	.3	30.1	.0	1.1	.0
Jun	79.1	56.1	67.6	107	1988	22	74.0	1988	35	1954	4	62.6	1993	56	135	.3	4.3	30.0	.0	.0	.0
Jul	84.1	61.1	72.6	108+	1990	3	77.7	1974	42	1967	14	65.0	1992	13	249	.8	9.7	31.0	.0	.0	.0
Aug	82.1	59.7	70.9	105+	1968	5	77.9	1983	37	1950	20	64.1	1992	31	214	.4	8.1	31.0	.0	.0	.0
Sep	74.1	49.4	61.8	101	1978	6	68.3	1998	23	1995	22	54.9	1993	155	57	@	2.8	29.6	.0	1.2	.0
Oct	62.2	36.6	49.4	95	1963	1	53.2	1973	9	1997	27	43.6	1987	483	0	.0	.3	26.6	.3	9.4	.0
Nov	44.6	23.4	34.0	83	1999	9	45.3	1999	-20	1959	14	21.6	1985	931	0	.0	.0	12.1	5.9	25.2	.9
Dec	34.1	12.7	23.4	71	1964	23	31.0	1999	-29	1989	23	5.0	1983	1290	0	.0	.0	4.9	12.8	30.6	5.0
Ann	58.6	35.6	47.1	108+	Jul 1990	3	77.9	Aug 1983	-29+	Dec 1989	23	5.0	Dec 1983	7177	680	1.5	25.8	241.9	50.6	162.1	20.3

+ 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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/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

025-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: CHAMBERS, NE**

**COOP ID: 251590**

**Climate Division: NE 2**

**NWS Call Sign:**

**Elevation: 2,130 Feet Lat: 42°12N**

**Lon: 98°46W**

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	.52	.35	.77	2001	30	1.70	1988	.00+	1987	3.2	1.6	.2	.0	.00	.00	.09	.18	.28	.39	.51	.66	.86	1.19	1.51
Feb	.62	.45	2.20	1984	19	2.20	1984	.00+	1988	3.9	1.7	.3	.1	.00	.05	.15	.25	.35	.46	.60	.76	.99	1.37	1.74
Mar	1.58	1.05	2.80	1987	17	8.03	1987	.08+	1997	5.9	3.7	.9	.2	.13	.23	.44	.66	.90	1.18	1.51	1.92	2.50	3.47	4.42
Apr	2.41	2.19	2.23	2001	23	6.19	1984	.44	1980	8.0	5.9	1.5	.4	.54	.76	1.11	1.43	1.75	2.08	2.47	2.92	3.52	4.47	5.37
May	3.82	3.54	2.72	1949	21	8.33	1982	.78	1994	10.0	7.4	2.7	1.0	1.30	1.67	2.19	2.64	3.06	3.50	3.98	4.54	5.26	6.37	7.40
Jun	3.70	3.79	2.91	1957	16	7.35	1986	.80	1980	9.0	6.4	2.4	.8	1.06	1.41	1.94	2.40	2.85	3.32	3.84	4.45	5.24	6.48	7.64
Jul	3.04	2.96	2.65	1950	8	8.65	1993	.69	1987	8.7	6.0	2.1	.8	.69	.98	1.42	1.82	2.22	2.64	3.12	3.69	4.43	5.62	6.74
Aug	2.56	2.48	3.10	1966	12	5.38	1996	.20	2000	6.9	4.6	1.7	.6	.50	.73	1.11	1.45	1.80	2.18	2.60	3.12	3.79	4.88	5.92
Sep	2.06	1.74	2.78	1999	4	6.36	1986	.29	1980	6.3	4.3	1.5	.5	.33	.51	.81	1.09	1.39	1.71	2.07	2.52	3.11	4.08	5.00
Oct	1.87	1.85	3.40	1951	3	4.56	1982	.00	1976	5.2	3.7	1.4	.4	.10	.27	.56	.84	1.13	1.45	1.84	2.31	2.95	4.01	5.05
Nov	1.26	1.17	2.06	1982	12	3.39	1982	.00	1980	4.5	2.5	.7	.2	.03	.11	.27	.45	.65	.89	1.17	1.53	2.04	2.90	3.75
Dec	.73	.61	1.80	1981	1	2.51	1982	.00	1986	3.5	2.0	.2	.1	.07	.15	.27	.38	.49	.61	.74	.90	1.12	1.48	1.81
Ann	24.17	24.21	3.40	Oct 1951	3	8.65	Jul 1993	.00+	Feb 1988	75.1	49.8	15.6	5.1	14.48	16.23	18.54	20.34	21.97	23.57	25.25	27.12	29.44	32.85	35.86

+ 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:  
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

# 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](http://www.ncdc.noaa.gov)

**Station: CHAMBERS, NE**

**COOP ID: 251590**

**Climate Division: NE 2**

**NWS Call Sign:**

**Elevation: 2,130 Feet**

**Lat: 42° 12N**

**Lon: 98° 46W**

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	5.2	4.5	2	#	12.0	1990	20	14.6	1996	16	1979	31	10	1979	2.0	1.4	.5	.3	@	-9.9	-9.9	-9.9	-9.9
Feb	5.1	3.0	2	#	17.0	1984	19	17.0	1984	17	1978	20	14	1979	1.6	1.2	.6	.4	.1	-9.9	-9.9	-9.9	-9.9
Mar	3.8	4.3	1	#	12.0	1987	24	12.0	1987	15	1978	8	6	1978	1.7	1.5	1.0	.3	@	4.4	2.5	1.2	.0
Apr	4.6	1.3	#	0	12.0	1984	3	24.0	1984	10	1994	13	1	1997	1.2	1.1	.5	.3	.1	1.6	.9	.6	.1
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	.1	.0	0	0	2.0	1985	29	2.0	1985	0	0	0	0	0	@	@	.0	.0	.0	.0	.0	.0	.0
Oct	1.3	.0	#	0	10.0	1995	23	11.0	1995	10	1995	23	1	1995	.3	.3	.2	.1	@	.7	.4	.1	.1
Nov	4.2	2.5	1	#	11.0	1983	28	18.0	1983	18	1979	22	7	1979	1.9	1.5	.5	.2	.1	4.0	1.2	.0	.0
Dec	7.5	7.5	2	1	11.0	1982	27	21.0	1982	16	1982	27	10	1978	2.3	1.9	.7	.4	@	6.7	2.9	1.7	.4
Ann	31.8	23.1	N/A	N/A	17.0	Feb 1984	19	24.0	Apr 1984	18	Nov 1979	22	14	Feb 1979	11.0	8.9	4.0	2.0	.3	-9.9	-9.9	-9.9	-9.9

+ 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/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

# Climatography of the United States

## No. 20 1971-2000

**Station: CHAMBERS, NE**

**COOP ID: 251590**

**Climate Division: NE 2**

**NWS Call Sign:**

**Elevation: 2,130 Feet**

**Lat: 42° 12N**

**Lon: 98° 46W**

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	5/20	5/16	5/13	5/10	5/08	5/06	5/03	4/30	4/26
32	5/13	5/09	5/05	5/03	4/30	4/27	4/25	4/21	4/17
28	5/05	5/01	4/27	4/25	4/22	4/19	4/17	4/13	4/09
24	4/23	4/19	4/16	4/13	4/10	4/08	4/05	4/02	3/28
20	4/16	4/11	4/07	4/04	4/01	3/29	3/26	3/23	3/17
16	4/09	4/04	3/31	3/27	3/24	3/21	3/18	3/14	3/08
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	9/12	9/16	9/19	9/21	9/24	9/26	9/28	10/01	10/05
32	9/15	9/20	9/24	9/27	9/30	10/03	10/06	10/10	10/15
28	9/27	10/02	10/06	10/09	10/12	10/15	10/18	10/22	10/27
24	10/04	10/10	10/14	10/17	10/20	10/24	10/27	10/31	11/06
20	10/17	10/22	10/27	10/30	11/02	11/05	11/09	11/13	11/19
16	10/19	10/26	10/31	11/04	11/08	11/12	11/16	11/21	11/27
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	157	150	146	142	138	134	130	126	119
32	173	166	161	156	152	148	143	138	131
28	190	184	180	176	172	168	165	160	154
24	213	206	201	197	192	188	184	179	171
20	238	230	224	219	214	210	205	199	190
16	255	245	239	233	228	222	217	210	201

\* 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:

[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

**Climatography  
of the United States  
No. 20  
1971-2000**

**Station: CHAMBERS, NE**

**COOP ID: 251590**

**Climate Division: NE 2      NWS Call Sign:      Elevation: 2,130 Feet    Lat: 42°12N      Lon: 98°46W**

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	1399	1109	923	540	247	56	13	31	155	483	931	1290	7177
60	1244	969	768	397	138	17	1	8	73	332	781	1135	5863
57	1151	885	675	316	89	7	0	3	40	249	691	1042	5148
55	1089	834	613	266	64	3	0	1	24	199	636	980	4709
50	941	704	468	160	22	0	0	0	5	99	497	830	3726
32	455	300	92	4	0	0	0	0	0	2	134	354	1341

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	79	115	192	456	801	1069	1258	1206	892	542	193	87	6890
55	0	5	0	28	151	382	545	494	226	26	6	0	1863
57	0	0	0	17	115	325	483	434	181	14	0	0	1569
60	0	0	0	8	71	246	391	346	124	4	0	0	1190
65	0	0	0	1	24	135	249	214	57	0	0	0	680
70	0	0	0	0	5	59	132	114	19	0	0	0	329

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	25	88	267	588	857	1042	982	668	347	74	8	3	28	116	383	971	1828	2870	3852	4520	4867	4941	4949
45	0	4	43	165	436	707	887	827	522	226	33	0	0	4	47	212	648	1355	2242	3069	3591	3817	3850	3850
50	0	0	14	89	298	558	732	672	380	126	8	0	0	0	14	103	401	959	1691	2363	2743	2869	2877	2877
55	0	0	3	44	174	413	577	518	254	57	3	0	0	0	3	47	221	634	1211	1729	1983	2040	2043	2043
60	0	0	0	19	85	273	422	366	155	18	0	0	0	0	0	19	104	377	799	1165	1320	1338	1338	1338
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	13	29	77	181	354	550	688	640	423	238	63	18	13	42	119	300	654	1204	1892	2532	2955	3193	3256	3274

(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](http://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](http://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"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
|---|---|

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)