

Climatography of the United States

No. 20

1971-2000

Station: LOUP CITY, NE

COOP ID: 254985

Climate Division: NE 5

NWS Call Sign:

Elevation: 2,058 Feet Lat: 41° 17N

Lon: 98° 58W

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	33.4	9.4	21.4	75+	1990	11	32.3	1986	-32	1963	27	6.5	1979	1351	0	.0	.0	5.0	13.5	31.0	8.0
Feb	39.3	15.4	27.4	80	1995	26	37.4	1976	-25	1994	9	13.1	1979	1055	0	.0	.0	8.4	9.7	27.2	4.2
Mar	49.2	23.9	36.6	90	1986	30	42.6	1986	-18	1960	4	29.7	1996	882	0	.0	@	16.0	3.7	24.8	.7
Apr	61.5	33.7	47.6	94	1950	22	56.3	1981	9+	1994	6	40.3	1983	524	2	.0	.5	24.1	.4	11.8	.0
May	71.6	46.3	59.0	101	1967	25	65.6	1977	21	1954	3	52.3	1995	225	37	.0	.6	30.5	.0	1.4	.0
Jun	82.0	56.3	69.2	105+	1963	29	75.0	1988	33	1950	4	63.5	1982	42	166	.4	5.7	30.0	.0	.0	.0
Jul	86.9	61.5	74.2	112	1954	11	79.2	1974	42+	1992	3	68.3	1992	6	291	1.0	11.9	31.0	.0	.0	.0
Aug	84.7	58.9	71.8	107	1964	1	78.3	1983	38	1950	20	66.0	1992	22	234	.4	9.9	31.0	.0	.0	.0
Sep	75.9	47.5	61.7	103+	1972	19	68.1	1998	14	1984	29	55.8	1993	153	54	.1	3.6	29.5	.0	1.5	.0
Oct	64.4	35.3	49.9	94+	1990	6	53.8+	1975	6	1997	27	42.9	1976	471	1	.0	.3	27.7	.3	9.9	.0
Nov	46.6	22.4	34.5	80+	1999	14	43.3	1999	-16	1976	28	24.5	1985	914	0	.0	.0	14.2	4.2	25.5	.7
Dec	36.1	13.3	24.7	75	1962	17	32.5	1979	-26	1989	22	5.4	1983	1250	0	.0	.0	6.3	10.6	30.8	4.6
Ann	61.0	35.3	48.2	112	Jul 1954	11	79.2	Jul 1974	-32	Jan 1963	27	5.4	Dec 1983	6895	785	1.9	32.5	253.7	42.4	163.9	18.2

+ 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/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

068-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: LOUP CITY, NE

COOP ID: 254985

Climate Division: NE 5

NWS Call Sign:

Elevation: 2,058 Feet Lat: 41°17N

Lon: 98°58W

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	.58	.42	.95	1988	19	1.83	1996	.00+	1986	3.7	1.6	.3	.0	.00	.04	.13	.22	.32	.42	.55	.71	.93	1.30	1.67
Feb	.70	.53	1.60	1984	18	2.44	1984	.00	1996	3.9	2.0	.4	.1	.01	.06	.15	.24	.35	.48	.64	.84	1.13	1.61	2.10
Mar	2.28	1.71	3.53	1987	17	11.04	1987	.00	1994	7.1	4.3	1.3	.5	.08	.26	.58	.91	1.27	1.69	2.18	2.80	3.65	5.08	6.49
Apr	2.94	2.57	2.53	1977	14	9.22	1984	.14	1989	8.3	5.6	1.8	.7	.49	.75	1.17	1.58	1.99	2.44	2.96	3.58	4.42	5.77	7.07
May	3.93	4.04	3.50	1960	5	8.83	1995	1.20	1980	10.2	7.6	2.7	.9	1.60	1.96	2.47	2.89	3.28	3.68	4.12	4.62	5.25	6.22	7.10
Jun	3.83	3.30	5.05	1954	17	8.95	1999	1.08	1986	8.7	6.6	2.2	.9	1.06	1.42	1.97	2.45	2.93	3.42	3.97	4.62	5.46	6.78	8.01
Jul	3.64	3.14	3.19	1993	27	11.13	1993	1.08	1999	7.9	6.0	2.4	1.2	.90	1.24	1.77	2.24	2.71	3.20	3.75	4.41	5.26	6.62	7.89
Aug	2.70	2.37	4.75	1949	15	6.56	1996	.48	1991	7.0	5.2	2.0	.7	.66	.92	1.31	1.66	2.00	2.37	2.78	3.26	3.90	4.90	5.85
Sep	2.28	1.76	3.34	1957	14	7.20	1973	.08	1984	5.8	4.2	1.6	.5	.24	.41	.73	1.05	1.39	1.77	2.22	2.79	3.55	4.82	6.06
Oct	1.52	1.28	2.05	1997	13	5.09	1984	.00+	1999	4.6	3.3	.8	.2	.00	.00	.54	.81	1.05	1.31	1.60	1.94	2.37	3.07	3.74
Nov	1.55	1.65	1.70	1981	2	4.51	1983	.00	1989	4.6	3.2	1.1	.3	.05	.16	.38	.60	.85	1.13	1.47	1.90	2.49	3.49	4.48
Dec	.74	.52	1.73	1981	1	2.39	1982	.03	1998	3.6	1.9	.4	.1	.05	.10	.19	.29	.41	.54	.69	.89	1.17	1.64	2.11
Ann	26.69	25.98	5.05	Jun 1954	17	11.13	Jul 1993	.00+	Oct 1999	75.4	51.5	17.0	6.1	18.60	20.16	22.15	23.67	25.02	26.33	27.69	29.19	31.01	33.66	35.96

+ 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

Station: LOUP CITY, NE

COOP ID: 254985

Climate Division: NE 5

NWS Call Sign:

Elevation: 2,058 Feet

Lat: 41° 17N

Lon: 98° 58W

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	7.4	6.5	2	#	10.0	1982	23	23.0	1993	15	1993	21	15	1993	3.6	2.5	.9	.3	@	-9.9	-9.9	-9.9	-9.9
Feb	5.4	3.5	1	#	10.0	1984	18	25.0	1978	15	1994	25	9	1979	2.9	2.2	.6	.3	@	-9.9	-9.9	-9.9	-9.9
Mar	7.2	5.3	1	#	11.0	1987	24	20.0	1987	10+	1998	11	2+	1998	3.1	2.6	.9	.4	@	2.3	1.5	1.2	.1
Apr	2.0	.3	#	0	5.0	1984	30	13.0	1984	7	1984	3	#+	1998	.9	.8	.3	@	.0	.3	.1	.1	.0
May	.0	.0	#	0	.0	0	0	.0	0	#	1999	31	#	1999	.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	#	1998	21	#	1998	.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	3.0	1985	29	3.0	1985	#	1992	8	#	1992	@	@	@	.0	.0	.0	.0	.0	.0
Oct	.8	.0	#	0	5.5	1997	26	9.0	1997	6	1997	27	1	1997	.4	.4	.1	@	.0	.4	.3	.2	.0
Nov	5.6	4.0	#	0	9.0	1973	21	17.5	1983	9+	2000	12	2	2000	2.3	1.8	.8	.4	.0	.9	.4	.2	.0
Dec	8.6	7.5	1	#	10.0	1987	27	21.6	1973	10	1982	31	8	1972	2.9	2.0	.9	.5	@	5.1	2.6	1.5	.4
Ann	37.1	27.1	N/A	N/A	11.0	Mar 1987	24	25.0	Feb 1978	15+	Feb 1994	25	15	Jan 1993	16.1	12.3	4.5	1.9	@	-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

Climatography of the United States

No. 20 1971-2000

Station: LOUP CITY, NE

COOP ID: 254985

Climate Division: NE 5

NWS Call Sign:

Elevation: 2,058 Feet

Lat: 41° 17N

Lon: 98° 58W

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	5/30	5/25	5/21	5/17	5/14	5/11	5/08	5/04	4/28
32	5/16	5/11	5/08	5/05	5/02	4/30	4/27	4/24	4/19
28	5/09	5/04	4/30	4/28	4/25	4/22	4/19	4/16	4/11
24	4/28	4/24	4/21	4/18	4/15	4/13	4/10	4/07	4/02
20	4/15	4/11	4/08	4/06	4/03	4/01	3/29	3/26	3/22
16	4/09	4/03	3/30	3/27	3/23	3/20	3/16	3/12	3/06
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	9/22	9/25	9/27	9/30	10/03	10/07
32	9/15	9/19	9/23	9/26	9/28	10/01	10/04	10/07	10/12
28	9/24	9/29	10/03	10/06	10/09	10/12	10/15	10/19	10/24
24	10/03	10/08	10/11	10/14	10/17	10/20	10/23	10/26	10/31
20	10/15	10/21	10/25	10/29	11/02	11/05	11/09	11/13	11/19
16	10/16	10/23	10/28	11/01	11/05	11/09	11/13	11/18	11/25
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	155	147	142	137	133	129	124	119	111
32	167	161	156	152	148	144	140	135	129
28	189	181	176	171	166	162	157	151	143
24	204	197	192	188	184	180	176	171	164
20	235	227	221	216	212	207	202	196	188
16	254	244	237	231	226	220	214	207	197

* 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

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

Station: LOUP CITY, NE

COOP ID: 254985

Climate Division: NE 5 NWS Call Sign: Elevation: 2,058 Feet Lat: 41°17N Lon: 98°58W

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	1351	1055	882	524	225	42	6	22	153	471	914	1250	6895
60	1196	915	727	382	125	12	0	5	71	322	764	1095	5614
57	1103	838	634	303	81	4	0	1	39	242	674	1002	4921
55	1042	786	573	254	58	2	0	0	24	194	615	940	4488
50	892	655	427	151	20	0	0	0	5	97	475	792	3514
32	411	273	68	3	0	0	0	0	0	1	107	322	1185

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	83	142	209	471	835	1114	1308	1235	892	554	183	95	7121
55	1	11	1	32	180	426	595	522	225	33	1	0	2027
57	0	7	0	21	141	369	533	461	180	19	0	0	1731
60	0	0	0	10	92	286	440	372	122	7	0	0	1329
65	0	0	0	2	37	166	291	234	54	1	0	0	785
70	0	0	0	0	10	79	159	125	17	0	0	0	390

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	4	32	106	296	608	888	1077	1020	696	366	81	12	4	36	142	438	1046	1934	3011	4031	4727	5093	5174	5186
45	0	9	56	188	456	738	922	865	550	242	32	0	0	9	65	253	709	1447	2369	3234	3784	4026	4058	4058
50	0	1	23	106	312	588	767	710	409	137	10	0	0	1	24	130	442	1030	1797	2507	2916	3053	3063	3063
55	0	0	5	57	190	441	612	555	276	64	0	0	0	0	5	62	252	693	1305	1860	2136	2200	2200	2200
60	0	0	0	25	92	299	457	402	166	21	0	0	0	0	0	25	117	416	873	1275	1441	1462	1462	1462
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	21	47	97	209	378	577	715	672	448	267	80	24	21	68	165	374	752	1329	2044	2716	3164	3431	3511	3535

(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/normal/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