

Climatography of the United States

No. 20

1971-2000

Station: RED CLOUD, NE

COOP ID: 257070

Climate Division: NE 8

NWS Call Sign:

Elevation: 1,720 Feet Lat: 40°06N Lon: 98°31W

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	35.4	10.3	22.9	77	1990	11	32.8	1986	-28	1974	4	10.8	1979	1308	0	.0	.0	5.7	12.1	30.8	6.5
Feb	41.8	15.4	28.6	83	1972	29	40.2	1976	-20+	1985	3	14.8	1978	1019	0	.0	.0	9.7	7.8	26.9	4.0
Mar	52.0	24.8	38.4	92	1972	11	44.6	1986	-16	1960	3	30.5	1996	825	0	.0	.1	17.7	2.6	24.0	.8
Apr	64.0	35.8	49.9	100	1989	23	56.6	1981	9+	1994	6	44.0	1983	457	2	@	.5	26.0	.1	11.0	.0
May	73.6	47.3	60.5	101+	2000	30	67.0	1977	23	1967	2	54.0	1995	193	52	@	1.1	30.8	.0	1.5	.0
Jun	84.9	57.6	71.3	109	1988	22	77.5	1988	34	1998	6	65.4	1982	28	216	1.2	9.2	30.0	.0	.0	.0
Jul	90.5	63.2	76.9	112	1954	12	81.5	1980	38	1972	5	71.4	1972	1	367	4.2	17.0	31.0	.0	.0	.0
Aug	88.3	60.6	74.5	111	1983	18	82.7	1983	39+	1988	29	69.6	1992	15	307	2.3	13.9	31.0	.0	.0	.0
Sep	80.0	49.7	64.9	107	1948	2	71.0	1998	20	1984	30	59.7	1993	94	90	.5	6.4	29.8	.0	1.5	.0
Oct	67.8	36.5	52.2	96	1997	3	56.4	1975	2+	1997	28	46.9	1972	401	3	.0	.7	28.7	.1	9.9	.0
Nov	50.0	23.7	36.9	83	1980	7	44.6	1999	-9	1976	28	29.1	1985	845	0	.0	.0	16.2	2.8	24.5	.5
Dec	38.8	14.6	26.7	80	1964	23	33.3	1979	-36	1989	23	8.3	1983	1187	0	.0	.0	7.0	8.7	30.4	3.2
Ann	63.9	36.6	50.3	112	Jul 1954	12	82.7	Aug 1983	-36	Dec 1989	23	8.3	Dec 1983	6373	1037	8.2	48.9	263.6	34.2	160.5	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/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

097-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: RED CLOUD, NE

COOP ID: 257070

Climate Division: NE 8

NWS Call Sign:

Elevation: 1,720 Feet Lat: 40°06N

Lon: 98°31W

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	.49	1.60	1965	23	1.63	1992	.00+	1987	3.8	1.8	.1	.0	.00	.06	.16	.24	.33	.42	.53	.65	.83	1.11	1.39
Feb	.55	.42	1.46	1971	19	3.15	1971	.00+	1996	3.3	1.7	.2	@	.00	.00	.08	.16	.26	.37	.50	.68	.91	1.32	1.73
Mar	2.00	1.42	2.43	1981	29	7.75	1987	.00	1994	5.9	3.7	1.4	.5	.03	.14	.38	.65	.97	1.35	1.81	2.42	3.27	4.73	6.20
Apr	2.26	1.91	1.85	1976	7	6.00	1984	.02	1989	7.2	4.7	1.4	.5	.34	.53	.86	1.17	1.50	1.85	2.26	2.76	3.44	4.53	5.58
May	4.24	3.32	3.70	2001	5	9.87	1995	.73	1994	10.3	7.4	3.0	1.1	.98	1.37	1.99	2.55	3.11	3.70	4.36	5.15	6.18	7.83	9.38
Jun	3.33	3.24	6.31	1957	16	8.70	1975	1.13	1998	8.4	5.6	2.3	1.0	1.15	1.46	1.92	2.31	2.68	3.06	3.48	3.96	4.58	5.55	6.43
Jul	3.94	3.26	5.50	1950	9	11.32	1993	.15	1983	7.8	5.7	2.4	1.2	.60	.94	1.51	2.05	2.62	3.23	3.94	4.81	5.98	7.87	9.69
Aug	3.29	2.92	3.39	1995	15	7.99	1977	.32	1984	7.3	5.3	2.0	.9	.71	1.02	1.50	1.93	2.37	2.84	3.36	3.99	4.82	6.15	7.40
Sep	2.44	1.46	6.45	1983	29	11.70	1973	.29	1998	5.8	4.1	1.3	.6	.17	.32	.62	.96	1.33	1.77	2.29	2.95	3.88	5.45	7.00
Oct	1.69	1.29	3.25	1997	26	6.12	1997	.05	1999	4.8	3.3	1.0	.4	.11	.21	.42	.65	.91	1.21	1.58	2.04	2.69	3.79	4.88
Nov	1.44	1.20	2.10	1996	16	3.81	1996	.00+	1989	4.9	3.2	.8	.4	.00	.13	.37	.60	.84	1.10	1.41	1.79	2.30	3.16	3.99
Dec	.63	.49	1.22	1968	19	2.05	1984	.00+	1996	3.3	1.8	.4	@	.00	.00	.19	.30	.41	.52	.65	.81	1.00	1.33	1.64
Ann	26.33	26.38	6.45	Sep 1983	29	11.70	Sep 1973	.00+	Dec 1996	72.8	48.3	16.3	6.6	17.42	19.09	21.27	22.94	24.44	25.89	27.40	29.08	31.14	34.14	36.75

+ 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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Station: RED CLOUD, NE

COOP ID: 257070

Climate Division: NE 8

NWS Call Sign:

Elevation: 1,720 Feet

Lat: 40°06N

Lon: 98°31W

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	4.9	6.1	2	1	6.0	1971	3	10.5	1985	13+	1993	21	7	1993	3.2	2.1	.5	.1	.0	11.9	6.3	2.2	.1
Feb	2.6	1.5	1	#	8.0	1980	8	10.0	1978	9	1994	25	5	1993	2.1	1.5	.4	.1	.0	8.6	5.4	3.1	.0
Mar	3.4	2.5	1	#	10.0	1987	29	13.0	1987	13	1987	30	2	1998	1.6	1.1	.5	.2	@	2.9	1.7	1.1	.1
Apr	.9	.0	#	0	5.5	1997	11	11.2	1997	11	1997	12	1+	1997	.3	.3	.1	.1	.0	.4	.2	.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	.2	.0	#	0	3.5	1985	30	4.5	1985	5	1985	30	#	1985	.1	.1	@	.0	.0	.1	@	@	.0
Oct	.8	.0	#	0	14.0	1997	26	14.0	1997	14	1997	27	2	1997	.2	.1	.1	@	@	.3	.2	.2	.2
Nov	2.3	1.1	#	#	6.0	1983	28	8.5	1983	8	1983	30	1+	2000	1.4	.9	.4	.1	.0	2.7	1.2	.4	.0
Dec	4.1	4.8	1	#	6.0	1984	14	11.0	1997	16	1983	31	11	1983	1.8	1.6	.5	.1	.0	6.6	3.5	1.6	.7
Ann	19.2	16.0	N/A	N/A	14.0	Oct 1997	26	14.0	Oct 1997	16	Dec 1983	31	11	Dec 1983	10.7	7.7	2.5	.7	@	33.5	18.5	8.7	1.1

+ 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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Lat: 40°06N

Lon: 98°31W

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	5/27	5/21	5/17	5/14	5/11	5/08	5/05	5/01	4/26
32	5/16	5/11	5/07	5/04	5/02	4/29	4/26	4/22	4/17
28	5/01	4/27	4/23	4/20	4/18	4/15	4/12	4/09	4/04
24	4/21	4/18	4/15	4/13	4/10	4/08	4/06	4/03	3/30
20	4/14	4/09	4/06	4/04	4/01	3/30	3/27	3/24	3/20
16	4/06	3/30	3/25	3/21	3/17	3/14	3/10	3/05	2/26
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	9/11	9/15	9/18	9/20	9/22	9/24	9/27	9/29	10/03
32	9/14	9/19	9/23	9/26	9/29	10/02	10/05	10/08	10/13
28	9/25	9/30	10/03	10/06	10/09	10/12	10/14	10/18	10/22
24	10/01	10/06	10/11	10/14	10/18	10/21	10/25	10/29	11/04
20	10/13	10/19	10/24	10/28	11/01	11/04	11/08	11/13	11/19
16	10/23	10/29	11/03	11/07	11/11	11/15	11/19	11/24	12/01
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	152	145	141	137	133	130	126	121	115
32	168	162	157	153	149	146	142	137	131
28	189	184	180	177	173	170	167	163	157
24	207	201	197	193	190	186	183	178	172
20	236	228	222	217	213	208	203	197	189
16	268	258	250	244	238	232	226	218	208

* 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	1308	1019	825	457	193	28	1	15	94	401	845	1187	6373
60	1153	879	670	316	102	7	0	3	35	259	695	1032	5151
57	1060	803	578	240	63	3	0	0	15	186	605	939	4492
55	998	750	518	194	43	1	0	0	8	144	546	877	4079
50	846	621	375	101	13	0	0	0	1	65	406	727	3155
32	358	248	56	0	0	0	0	0	0	0	68	265	995

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	73	153	254	536	882	1177	1390	1315	986	625	213	100	7704
55	0	11	3	40	212	488	677	602	303	55	1	0	2392
57	0	8	1	26	170	430	615	541	251	36	0	0	2078
60	0	0	0	12	116	345	522	450	180	16	0	0	1641
65	0	0	0	2	52	216	367	307	90	3	0	0	1037
70	0	0	0	0	17	115	225	185	35	0	0	0	577

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	2	40	126	339	650	951	1149	1073	756	403	88	10	2	42	168	507	1157	2108	3257	4330	5086	5489	5577	5587
45	0	11	67	221	495	801	994	918	609	273	39	1	0	11	78	299	794	1595	2589	3507	4116	4389	4428	4429
50	0	1	31	133	350	651	839	763	465	166	13	0	0	1	32	165	515	1166	2005	2768	3233	3399	3412	3412
55	0	0	8	67	222	504	684	608	329	86	3	0	0	0	8	75	297	801	1485	2093	2422	2508	2511	2511
60	0	0	1	30	116	355	529	453	212	35	0	0	0	0	1	31	147	502	1031	1484	1696	1731	1731	1731
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	18	56	124	240	408	615	748	700	493	297	85	24	18	74	198	438	846	1461	2209	2909	3402	3699	3784	3808

(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