

Climatography of the United States

No. 20

1971-2000

Station: CROSBY, ND

COOP ID: 321871

Climate Division: ND 3

NWS Call Sign:

Elevation: 1,952 Feet Lat: 48° 54N

Lon: 103° 18W

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	17.8	-1.7	8.1	51	1942	21	21.8	1986	-45	1912	11	-9.5	1982	1767	0	.0	.0	@	24.3	31.0	16.9
Feb	25.7	6.6	16.2	66	1932	27	29.1	1984	-47	1936	16	-.1	1979	1368	0	.0	.0	.6	16.8	27.8	10.0
Mar	38.2	18.0	28.1	81	1910	22	39.3	1986	-34	1948	10	18.1	1996	1145	0	.0	.0	6.6	9.3	29.2	3.9
Apr	56.1	30.5	43.3	92+	1980	21	52.6	1987	-13	1975	2	33.7	1975	654	2	.0	.1	20.7	1.4	18.7	.3
May	69.7	42.4	56.1	103	1980	22	63.9	1977	11	1909	1	49.7	1974	302	24	.1	1.1	29.9	.0	4.3	.0
Jun	77.9	51.3	64.6	105+	1988	20	76.6	1988	24	1915	16	58.8	1993	112	100	.3	2.9	30.0	.0	.1	.0
Jul	83.0	55.3	69.2	111	1937	5	74.5	1989	33+	1967	3	62.1	1993	50	180	.8	6.8	31.0	.0	.0	.0
Aug	82.3	53.2	67.8	107+	1988	6	75.1	1983	25	1934	23	61.9	1974	76	160	.5	6.3	31.0	.0	.0	.0
Sep	69.9	43.1	56.5	103+	1978	3	61.2+	1998	9	1926	25	50.8	1984	279	24	.1	1.1	28.9	.0	2.6	.0
Oct	56.2	32.1	44.2	91	1957	2	47.7	1974	-7	1957	26	40.3	1991	647	0	.0	.0	22.2	1.1	15.1	.1
Nov	34.9	16.7	25.8	71	1969	5	36.8	1999	-25	1985	27	12.9	1985	1175	0	.0	.0	4.4	12.5	28.1	3.4
Dec	22.2	3.5	12.9	61	1939	6	26.0	1997	-40	1983	23	-3.4	1983	1615	0	.0	.0	.1	21.7	30.9	12.3
Ann	52.8	29.3	41.1	111	Jul 1937	5	76.6	Jun 1988	-47	Feb 1936	16	-9.5	Jan 1982	9190	490	1.8	18.3	205.4	87.1	187.8	46.9

+ 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: 1909-2001

(3) Derived from 1971-2000 serially complete daily data

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National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: CROSBY, ND

COOP ID: 321871

Climate Division: ND 3

NWS Call Sign:

Elevation: 1,952 Feet Lat: 48°54N

Lon: 103°18W

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	.48	.35	.81	1916	29	1.72	1999	.02	1973	5.1	1.9	@	.0	.07	.11	.18	.25	.32	.39	.48	.58	.73	.96	1.18
Feb	.33	.26	.85	1958	27	1.03	1972	.00	1971	3.9	1.4	.0	.0	.02	.05	.10	.15	.20	.26	.33	.41	.53	.72	.90
Mar	.59	.56	1.30	1993	28	1.98	1993	.05	1994	5.0	2.1	.1	@	.07	.12	.20	.28	.37	.46	.58	.71	.90	1.21	1.52
Apr	1.02	.81	2.00	1929	7	3.59	1975	.12	1987	5.9	3.2	.4	@	.15	.24	.39	.53	.68	.84	1.02	1.25	1.56	2.05	2.53
May	2.01	1.82	2.30	1965	25	5.51	1978	.00	1980	8.6	5.4	1.3	.2	.35	.62	.96	1.24	1.51	1.79	2.10	2.47	2.95	3.70	4.41
Jun	2.69	2.43	3.07	1944	27	6.02	1998	.60	1974	10.2	6.4	1.5	.4	.95	1.20	1.57	1.88	2.18	2.48	2.81	3.20	3.69	4.46	5.16
Jul	2.75	2.48	4.15	1974	11	5.95	1993	.18	1984	8.7	5.1	1.7	.7	.36	.58	.97	1.35	1.75	2.20	2.72	3.36	4.23	5.65	7.03
Aug	1.54	1.36	3.23	1963	23	4.70	1985	.20	1996	6.7	4.2	.9	.1	.29	.43	.65	.86	1.07	1.30	1.56	1.88	2.30	2.97	3.61
Sep	1.62	1.40	1.55	1920	23	4.45	1973	.08	1974	6.6	3.8	1.1	.3	.27	.41	.64	.86	1.09	1.34	1.63	1.97	2.43	3.18	3.90
Oct	.93	.78	1.90	1940	4	3.69	1971	.01	1993	4.9	2.7	.4	.1	.05	.09	.20	.33	.47	.64	.85	1.12	1.50	2.15	2.80
Nov	.53	.44	4.02	1915	7	3.05	2000	.00	1999	4.5	1.6	.2	@	.02	.07	.15	.22	.31	.40	.51	.65	.84	1.16	1.47
Dec	.45	.41	.80	1936	28	1.06	1977	.00	1997	5.1	1.8	.0	.0	.05	.11	.18	.25	.31	.38	.46	.55	.68	.88	1.06
Ann	14.94	14.56	4.15	Jul 1974	11	6.02	Jun 1998	.00+	Nov 1999	75.2	39.6	7.6	1.8	9.84	10.80	12.04	13.00	13.86	14.69	15.56	16.52	17.70	19.42	20.92

+ 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

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Station: CROSBY, ND

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Climate Division: ND 3

NWS Call Sign:

Elevation: 1,952 Feet

Lat: 48° 54N

Lon: 103° 18W

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	7.1	6.0	5	4	9.0	1989	6	20.5	1994	19	1999	24	15	1999	4.7	3.2	.6	.3	.0	23.4	17.2	13.3	3.3
Feb	5.0	3.4	4	3	8.0	1998	25	16.7	1972	14+	1999	5	13	1997	3.5	2.3	.3	.1	.0	17.1	13.0	9.4	2.7
Mar	5.5	4.9	4	2	7.3	1991	26	15.1	1975	19	1997	15	12	1997	3.3	2.0	.6	.2	.0	10.0	6.8	3.3	.5
Apr	3.7	2.3	1	#	11.0	1980	7	16.0	1980	16	1980	8	5	1975	1.4	1.1	.5	.2	@	3.0	2.2	1.6	.5
May	.5	.0	#	0	5.0	1983	12	6.5	1983	4	1983	12	#+	2000	.2	.2	.1	@	.0	.1	.1	.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	#	1995	20	#+	1995	#+	1995	20	#+	1995	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	2.1	.5	#	#	7.0	1975	14	8.5	1996	7+	1996	21	1	1996	.9	.8	.2	.1	.0	1.2	.4	.1	.0
Nov	5.4	4.9	1	1	9.0	2000	2	12.5	1993	14	1996	20	9	2000	3.2	2.2	.8	.3	.0	9.5	4.8	2.6	.6
Dec	8.5	8.2	3	2	8.5	1975	31	18.0	1998	16	1996	31	12	1996	4.5	3.0	.9	.1	.0	19.7	13.1	7.0	1.5
Ann	37.8	30.2	N/A	N/A	11.0	Apr 1980	7	20.5	Jan 1994	19+	Jan 1999	24	15	Jan 1999	21.7	14.8	4.0	1.3	@	84.0	57.6	37.3	9.1

+ 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	6/09	6/04	5/31	5/28	5/25	5/22	5/19	5/15	5/10
32	5/27	5/23	5/20	5/17	5/15	5/13	5/10	5/07	5/03
28	5/19	5/14	5/10	5/08	5/05	5/02	4/29	4/26	4/21
24	5/06	5/02	4/29	4/26	4/23	4/20	4/17	4/14	4/10
20	4/24	4/20	4/17	4/15	4/12	4/10	4/07	4/04	3/31
16	4/20	4/15	4/11	4/08	4/06	4/03	3/31	3/27	3/23
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	8/24	8/29	9/02	9/05	9/08	9/11	9/14	9/18	9/23
32	9/09	9/14	9/17	9/19	9/22	9/24	9/27	9/30	10/04
28	9/15	9/20	9/23	9/26	9/29	10/02	10/05	10/09	10/13
24	9/23	9/28	10/02	10/05	10/08	10/11	10/14	10/18	10/24
20	10/04	10/09	10/13	10/16	10/19	10/22	10/25	10/29	11/03
16	10/08	10/14	10/18	10/22	10/25	10/29	11/01	11/06	11/12
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	129	121	115	110	105	101	96	90	82
32	148	142	137	133	129	125	121	116	109
28	167	160	155	151	147	143	138	133	126
24	185	179	175	171	167	164	160	156	150
20	207	201	196	192	189	185	181	177	171
16	224	216	211	206	202	198	193	188	180

* 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	1767	1368	1145	654	302	112	50	76	279	647	1175	1615	9190
60	1612	1228	990	513	188	48	16	29	166	492	1025	1460	7767
57	1519	1144	898	433	134	25	8	15	112	400	935	1367	6990
55	1457	1088	838	382	103	16	2	9	82	340	875	1305	6497
50	1302	956	696	268	47	3	0	1	30	203	727	1150	5383
32	781	510	266	37	0	0	0	0	0	8	278	636	2516

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	38	66	144	375	745	978	1153	1107	735	384	93	43	5861
55	0	0	3	30	135	303	442	403	127	3	0	0	1446
57	0	0	1	21	104	253	385	347	97	1	0	0	1209
60	0	0	0	11	65	186	300	269	61	0	0	0	892
65	0	0	0	2	24	100	180	160	24	0	0	0	490
70	0	0	0	0	6	40	94	82	7	0	0	0	229

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	0	2	16	180	505	743	911	864	503	199	15	0	0	2	18	198	703	1446	2357	3221	3724	3923	3938	3938
45	0	0	4	98	358	593	756	709	361	109	4	0	0	0	4	102	460	1053	1809	2518	2879	2988	2992	2992
50	0	0	0	49	227	444	601	554	237	49	0	0	0	0	0	49	276	720	1321	1875	2112	2161	2161	2161
55	0	0	0	15	129	300	447	403	133	14	0	0	0	0	0	15	144	444	891	1294	1427	1441	1441	1441
60	0	0	0	5	59	173	294	258	64	3	0	0	0	0	0	5	64	237	531	789	853	856	856	856
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	1	21	144	326	460	582	551	314	143	15	0	0	1	22	166	492	952	1534	2085	2399	2542	2557	2557

(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