

# Climatography of the United States

No. 20

1971-2000

Station: FAIRFIELD, ND

COOP ID: 322809

Climate Division: ND 7

NWS Call Sign:

Elevation: 2,750 Feet Lat: 47° 11N

Lon: 103° 13W

## 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	20.4	.1	10.3	57	1981	23	23.9	1992	-36	1982	10	-6.1	1982	1698	0	.0	.0	.4	21.5	30.6	13.6
Feb	27.8	6.9	17.4	64	1958	25	28.9	1991	-36	1994	9	.9	1989	1334	0	.0	.0	1.9	15.0	27.6	8.6
Mar	38.3	16.8	27.6	75+	1993	25	37.7	1986	-26	1962	1	16.8	1996	1160	0	.0	.0	7.6	9.2	28.8	2.9
Apr	53.2	29.1	41.2	90+	2001	29	49.0	1987	-7	1975	1	31.6	1975	716	0	.0	@	19.4	1.6	19.0	.3
May	65.5	41.1	53.3	98	1980	22	60.2	1977	12	1967	3	47.2	1996	375	12	.0	.3	28.5	@	4.1	.0
Jun	74.4	50.2	62.3	104	1988	20	73.5	1988	30	1998	2	57.7	1998	143	63	.3	1.9	29.9	.0	.1	.0
Jul	81.2	55.2	68.2	109	1981	6	72.5	1988	38	1967	3	60.3	1993	63	162	.8	6.1	31.0	.0	.0	.0
Aug	80.9	53.4	67.2	103	1988	6	73.4	1983	33	1994	31	61.0	1977	89	156	.2	6.5	31.0	.0	.0	.0
Sep	68.9	43.2	56.1	101+	1994	9	64.0	1998	19+	1995	21	50.1	1984	300	31	.1	1.6	28.4	.0	2.8	.0
Oct	55.6	31.1	43.4	92	1963	4	47.7	1974	-5	1991	30	39.1	1991	672	0	.0	@	21.1	1.0	14.9	.1
Nov	36.3	16.4	26.4	78	1999	8	39.7	1999	-21	1985	29	12.1	1985	1160	0	.0	.0	5.9	11.1	27.4	3.1
Dec	24.8	4.7	14.8	62	1979	4	26.3	1997	-38	1989	21	-4.5	1983	1557	0	.0	.0	1.0	19.3	30.7	10.2
Ann	52.3	29.0	40.7	109	Jul 1981	6	73.5	Jun 1988	-38	Dec 1989	21	-6.1	Jan 1982	9267	424	1.4	16.4	206.1	78.7	186.0	38.8

+ 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

028-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: FAIRFIELD, ND**

**COOP ID: 322809**

**Climate Division: ND 7**

**NWS Call Sign:**

**Elevation: 2,750 Feet Lat: 47° 11N**

**Lon: 103° 13W**

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	.31	.24	.56	1949	8	.88	1982	.03+	1998	5.0	1.0	.0	.0	.03	.06	.10	.14	.19	.24	.30	.37	.48	.65	.81
Feb	.33	.26	.90	1998	24	2.03	1998	.00	1994	4.2	1.1	.1	.0	.01	.02	.06	.11	.16	.22	.30	.39	.53	.76	.99
Mar	.56	.42	1.06	1963	25	1.37	1975	.02	1981	5.7	2.2	.1	.0	.07	.11	.19	.26	.35	.44	.55	.68	.86	1.16	1.45
Apr	1.41	1.22	2.73	1984	27	4.32	1984	.00	1988	7.2	3.7	.6	.1	.03	.11	.29	.49	.71	.98	1.30	1.71	2.29	3.28	4.27
May	2.04	1.81	2.70	1970	8	5.25	1978	.07	1980	10.3	5.3	1.0	.3	.29	.46	.76	1.04	1.34	1.66	2.04	2.50	3.12	4.13	5.10
Jun	2.95	3.07	4.28	1980	15	6.31	1980	.90	1974	10.7	6.0	1.8	.6	.94	1.22	1.64	1.99	2.33	2.68	3.07	3.52	4.11	5.01	5.85
Jul	2.10	1.75	2.19	1997	2	7.06	1997	.45	1976	8.2	4.8	1.2	.3	.31	.48	.79	1.08	1.38	1.71	2.09	2.56	3.20	4.22	5.21
Aug	1.62	1.26	3.60	1968	23	4.09	1999	.15	1988	7.1	3.6	1.0	.3	.22	.36	.59	.81	1.05	1.31	1.61	1.98	2.48	3.29	4.07
Sep	1.50	.82	3.55	1971	5	5.63	1986	.20	1989	6.9	3.4	.8	.3	.12	.21	.41	.62	.85	1.11	1.42	1.82	2.37	3.30	4.21
Oct	1.16	.63	1.70	2000	31	4.44	1998	.13	1988	5.5	2.6	.6	.2	.08	.15	.29	.45	.63	.84	1.09	1.41	1.85	2.61	3.36
Nov	.50	.40	1.05	2000	1	2.27	2000	.02	1990	4.8	2.0	@	@	.06	.10	.17	.24	.31	.40	.49	.61	.77	1.03	1.28
Dec	.31	.24	.56	1972	29	.94	1985	.00	1991	4.6	1.0	@	.0	.01	.03	.08	.12	.17	.23	.29	.38	.49	.68	.88
Ann	14.79	15.13	4.28	Jun 1980	15	7.06	Jul 1997	.00+	Feb 1994	80.2	36.7	7.2	2.1	9.13	10.16	11.52	12.57	13.52	14.45	15.42	16.51	17.84	19.81	21.54

+ 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

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**Station: FAIRFIELD, ND**

**COOP ID: 322809**

**Climate Division: ND 7**

**NWS Call Sign:**

**Elevation: 2,750 Feet**

**Lat: 47° 11N**

**Lon: 103° 13W**

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	5.0	4.6	4	2	4.6	1989	7	15.1	1989	19	1971	31	12	1979	4.3	1.8	.3	.0	.0	22.1	16.9	11.6	4.6
Feb	3.9	3.0	4	2	9.0	1998	24	14.0	1972	24	1972	29	19	1972	3.9	1.8	.4	.1	.0	14.8	10.5	6.3	4.2
Mar	4.9	3.4	3	1	4.8	1982	19	15.5	1982	26	1972	5	12	1978	4.0	2.1	.5	.0	.0	9.6	6.6	4.2	1.7
Apr	3.6	1.9	1	#	12.2	1984	27	16.7	1984	17	1984	28	11	1975	1.3	.9	.4	.1	@	3.5	2.3	1.6	.8
May	.7	.0	#	0	8.0	1983	12	8.0	1983	6	1983	12	#+	2000	.3	.2	.1	@	.0	.1	.1	.1	.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	.3	.0	#	0	5.0	1972	25	5.0	1972	5	1972	25	#+	1985	.2	.1	@	@	.0	.1	.1	@	.0
Oct	1.6	.4	#	#	4.2	1985	8	9.5	1991	7	1985	9	1	1985	.8	.6	.2	.0	.0	.8	.3	.1	.0
Nov	5.1	3.7	1	#	5.0	2000	2	22.5	2000	9	1986	18	6	1978	3.5	2.2	.5	@	.0	8.4	3.4	2.9	.0
Dec	4.2	3.6	2	1	5.6	1988	26	11.0	1972	12	1985	31	9	1985	4.3	1.5	.3	.1	.0	17.0	8.9	5.5	1.4
Ann	29.3	20.6	N/A	N/A	12.2	Apr 1984	27	22.5	Nov 2000	26	Mar 1972	5	19	Feb 1972	22.6	11.2	2.7	.3	@	76.4	49.1	32.3	12.7

+ 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:

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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	6/13	6/07	6/03	5/31	5/27	5/24	5/20	5/16	5/10
32	5/28	5/23	5/20	5/17	5/15	5/12	5/10	5/06	5/02
28	5/18	5/13	5/10	5/07	5/04	5/01	4/28	4/25	4/20
24	5/10	5/04	4/30	4/27	4/24	4/20	4/17	4/13	4/07
20	4/29	4/24	4/21	4/18	4/15	4/12	4/09	4/05	3/31
16	4/17	4/12	4/09	4/06	4/03	4/01	3/29	3/25	3/21
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	9/03	9/07	9/10	9/12	9/14	9/16	9/19	9/21	9/25
32	9/11	9/15	9/18	9/21	9/23	9/26	9/28	10/01	10/06
28	9/17	9/22	9/26	9/30	10/03	10/06	10/09	10/13	10/18
24	9/21	9/27	10/02	10/06	10/10	10/14	10/18	10/22	10/29
20	10/04	10/10	10/15	10/18	10/22	10/25	10/29	11/02	11/09
16	10/13	10/19	10/24	10/27	10/31	11/03	11/07	11/11	11/17
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	131	123	118	114	109	105	101	95	88
32	152	145	139	135	131	126	122	117	109
28	173	165	160	155	151	147	142	137	129
24	195	186	179	174	169	163	158	151	142
20	211	204	198	194	189	185	180	175	167
16	234	225	219	214	210	205	200	194	186

\* 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:

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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	1698	1334	1160	716	375	143	63	89	300	672	1160	1557	9267
60	1543	1194	1005	570	245	67	21	38	190	517	1010	1402	7802
57	1450	1110	912	486	182	36	10	21	136	426	920	1309	6998
55	1388	1054	850	431	145	23	6	14	105	365	860	1247	6488
50	1235	927	700	306	73	5	0	3	46	227	718	1093	5333
32	725	486	248	41	1	0	0	0	0	10	274	591	2376

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	50	76	111	315	661	910	1122	1089	721	360	104	57	5576
55	0	0	0	16	92	243	415	390	136	3	0	0	1295
57	0	0	0	10	67	196	357	335	107	1	0	0	1073
60	0	0	0	5	38	137	275	259	71	0	0	0	785
65	0	0	0	0	12	63	162	156	31	0	0	0	424
70	0	0	0	0	2	21	81	80	11	0	0	0	195

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	22	161	443	689	894	869	507	206	28	0	0	2	24	185	628	1317	2211	3080	3587	3793	3821	3821
45	0	0	7	85	305	539	739	714	367	114	10	0	0	0	7	92	397	936	1675	2389	2756	2870	2880	2880
50	0	0	0	40	188	389	584	561	244	53	0	0	0	0	0	40	228	617	1201	1762	2006	2059	2059	2059
55	0	0	0	15	97	253	429	408	146	15	0	0	0	0	0	15	112	365	794	1202	1348	1363	1363	1363
60	0	0	0	2	39	136	280	265	76	3	0	0	0	0	0	2	41	177	457	722	798	801	801	801
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	1	26	119	272	417	564	547	313	142	22	0	0	1	27	146	418	835	1399	1946	2259	2401	2423	2423

(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](http://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](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> |
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## 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)