U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: JAMESTOWN ST HOSPITAL, ND **COOP ID: 324418**

Climate Division: ND 5 **NWS Call Sign:** **Elevation: 1,467 Feet** **Lat: 46˚53N** **Lon: 98˚41W**

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	16.2	-3.8	6.2	56	1908	19	21.5	1990	-41	1918	11	-9.0	1982	1826	0	.0	.0	.1	25.1	30.9	16.2
Feb	23.5	3.3	13.4	63+	1992	29	24.8	1998	-42	1936	15	-3.9	1979	1445	0	.0	.0	.9	18.0	27.7	9.3
Mar	35.6	15.3	25.5	80+	1946	27	33.8	2000	-29	1948	10	16.9	1996	1226	0	.0	.0	4.8	10.0	28.0	3.1
Apr	53.8	27.8	40.8	99	1980	21	49.4	1987	-7	1975	2	31.0	1975	728	1	.0	.2	20.4	1.3	16.4	.1
May	69.2	41.3	55.3	107	1934	29	62.7	1977	8	1909	1	47.5	1979	324	22	.0	.9	30.0	.0	2.9	.0
Jun	77.7	51.7	64.7	107+	1936	24	74.8	1988	27	1910	2	58.6	1985	104	95	@	3.3	30.0	.0	@	.0
Jul	83.2	57.1	70.2	118	1936	6	75.0	1988	35	1945	2	62.8	1992	36	195	.7	7.4	31.0	.0	.0	.0
Aug	82.0	53.8	67.9	107+	1958	9	75.3	1983	29	1907	20	61.1	1977	70	160	.7	6.9	31.0	.0	.0	.0
Sep	70.7	42.9	56.8	107	1931	6	63.1	1998	15	1929	18	50.6	1985	271	24	.3	1.7	29.2	.0	1.9	.0
Oct	56.3	31.5	43.9	95	1963	4	48.0	1973	-8	1919	28	39.0	1976	654	0	.0	@	22.7	.6	13.1	@
Nov	34.8	16.4	25.6	78	1978	2	37.2	1999	-27	1905	30	13.9	1985	1182	0	.0	.0	4.8	12.5	27.8	2.0
Dec	21.1	2.7	11.9	67	1939	6	23.8	1997	-40	1916	21	-2.0	1983	1646	0	.0	.0	.4	22.8	30.7	11.3
Ann	52.0	28.3	40.2	118	Jul 1936	6	75.3	Aug 1983	-42	Feb 1936	15	-9.0	Jan 1982	9512	497	1.7	20.4	205.3	90.3	179.4	42.0

\+ 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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1881-2001

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

Issue Date: February 2004

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	.50	.38	1.66	1965	31	1.53	1989	.00	1973
Feb	.35	.30	1.57	1958	27	1.71	2000	.00	1973
Mar	.73	.63	1.40+	1973	14	2.02	1983	.00	1986
Apr	1.27	.89	2.10	1932	23	5.82	1986	.00+	1987
May	2.27	2.15	2.25	1912	27	5.39	1999	.34	1990
Jun	3.24	2.85	4.88	1956	6	7.59	1993	1.17	1972
Jul	3.28	2.67	3.44	1993	16	10.16	1993	.78	1988
Aug	2.43	2.09	6.45	1918	20	6.35	1980	.35	1976
Sep	2.01	1.59	3.91	1997	1	5.47	1973	.00	1974
Oct	1.49	1.04	2.62	1982	9	5.95	1998	.09	1989
Nov	.63	.52	1.34	1928	14	2.26	1993	.00+	1999
Dec	.33	.24	1.00	1988	27	1.42	1988	.00	1986
Ann	18.53	17.85	6.45	Aug 1918	20	10.16	Jul 1993	.00+	Nov 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.3	1.7	.1	.0
Feb	3.9	1.4	@	.0
Mar	4.3	2.3	.4	.1
Apr	6.2	3.3	.7	.3
May	8.2	5.4	1.4	.4
Jun	10.2	6.5	2.0	.8
Jul	9.1	5.6	2.0	.8
Aug	7.9	5.3	1.4	.6
Sep	6.8	4.1	1.0	.5
Oct	5.9	3.1	1.0	.4
Nov	4.5	2.1	.3	.0
Dec	3.6	1.3	@	@
Ann	75.9	42.1	10.3	3.9

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.02	.07	.14	.21	.29	.38	.49	.62	.79	1.09	1.38
Feb	.01	.04	.09	.14	.19	.26	.33	.43	.56	.78	.99
Mar	.05	.12	.23	.34	.45	.57	.72	.89	1.13	1.53	1.91
Apr	.00	.07	.25	.44	.65	.89	1.19	1.55	2.07	2.94	3.80
May	.40	.60	.93	1.24	1.56	1.91	2.30	2.77	3.41	4.43	5.40
Jun	1.13	1.44	1.88	2.26	2.62	2.98	3.38	3.85	4.45	5.37	6.22
Jul	.70	1.00	1.48	1.92	2.36	2.83	3.36	3.99	4.82	6.16	7.42
Aug	.52	.74	1.10	1.42	1.75	2.09	2.48	2.95	3.56	4.55	5.48
Sep	.16	.38	.71	1.00	1.31	1.64	2.02	2.49	3.11	4.13	5.10
Oct	.07	.14	.31	.51	.74	1.01	1.35	1.79	2.41	3.49	4.56
Nov	.00	.00	.00	.23	.37	.51	.65	.83	1.06	1.44	1.79
Dec	.03	.06	.11	.16	.21	.27	.33	.41	.51	.68	.84
Ann	12.07	13.28	14.85	16.06	17.14	18.20	19.30	20.52	22.01	24.20	26.11

\+ 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: 1881-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	7.7	5.8	7	5	9.0	1982	22	19.5	1994	30	1994	31	25	1994	4.1	3.0	1.2	.5	.0	-9.9	-9.9	-9.9	-9.9
Feb	4.2	4.0	4	2	6.0	1982	24	12.0	1979	26	1994	28	26	1994	3.1	2.4	.8	@	.0	-9.9	-9.9	-9.9	-9.9
Mar	5.1	3.0	1	#	10.0	1982	2	18.0	1984	14	1982	4	8	1982	2.6	2.2	.9	.3	@	6.7	3.8	1.8	.0
Apr	1.6	.0	#	0	6.0	1995	11	11.0	1975	12	1986	14	2	1986	.6	.5	.2	.1	.0	.9	.4	.1	.0
May	.3	.0	#	0	6.0	1991	3	7.0	1991	6	1991	4	1	1991	.1	.1	@	@	.0	.3	.2	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.2	.0	#	0	3.0	1971	31	3.0	1971	1	1995	31	#+	1997	.2	.2	@	.0	.0	.3	.0	.0	.0
Nov	6.0	5.0	1	#	11.0	1996	20	24.0	1985	24	1985	30	7	1993	2.8	2.4	1.0	.4	.0	9.6	6.7	4.4	1.7
Dec	4.2	4.0	3	1	6.0	1983	13	12.5	1993	25	1985	20	21	1985	2.9	2.3	.4	@	.0	10.7	5.6	5.4	5.4
Ann	29.3	21.8	N/A	N/A	11.0	Nov 1996	20	24.0	Nov 1985	30	Jan 1994	31	26	Feb 1994	16.4	13.1	4.5	1.3	@	-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

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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	5/30	5/26	5/23	5/20	5/18	5/15	5/13	5/10	5/05
32	5/23	5/18	5/15	5/12	5/09	5/06	5/03	4/30	4/25
28	5/12	5/08	5/05	5/02	4/30	4/27	4/25	4/21	4/17
24	5/01	4/26	4/23	4/20	4/17	4/14	4/11	4/08	4/03
20	4/19	4/15	4/12	4/10	4/08	4/05	4/03	3/31	3/27
16	4/15	4/10	4/07	4/04	4/01	3/29	3/27	3/23	3/19

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	9/04	9/07	9/10	9/12	9/14	9/16	9/18	9/20	9/24
32	9/14	9/17	9/20	9/22	9/25	9/27	9/29	10/02	10/06
28	9/21	9/25	9/29	10/02	10/05	10/07	10/10	10/14	10/18
24	9/28	10/04	10/08	10/11	10/15	10/18	10/22	10/26	11/01
20	10/06	10/12	10/16	10/20	10/23	10/27	10/30	11/04	11/10
16	10/19	10/24	10/28	10/31	11/03	11/06	11/09	11/13	11/18

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	135	129	125	122	118	115	111	107	102
32	158	151	146	142	138	134	130	125	118
28	176	169	165	161	157	153	149	145	139
24	202	194	189	184	180	175	171	165	158
20	219	212	207	202	198	194	189	184	177
16	236	229	224	219	215	211	206	201	194

***** 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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1826	1445	1226	728	324	104	36	70	271	654	1182	1646	9512
60	1671	1305	1071	583	207	42	10	26	160	499	1032	1491	8097
57	1578	1221	978	499	150	21	3	13	106	407	942	1398	7316
55	1516	1165	916	445	118	13	0	7	77	347	882	1336	6822
50	1361	1025	762	320	58	2	0	1	27	209	732	1181	5678
32	830	562	287	49	0	0	0	0	0	8	277	657	2670

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	28	41	84	311	721	981	1182	1113	743	377	86	33	5700
55	0	0	0	17	125	304	469	407	130	3	0	0	1455
57	0	0	0	11	96	252	410	351	99	1	0	0	1220
60	0	0	0	5	60	183	324	271	63	0	0	0	906
65	0	0	0	1	22	95	195	160	24	0	0	0	497
70	0	0	0	0	6	36	103	80	7	0	0	0	232

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	1	17	187	550	794	973	925	568	235	22	0	0	1	18	205	755	1549	2522	3447	4015	4250	4272	4272
45	0	0	4	103	404	644	818	770	420	130	9	0	0	0	4	107	511	1155	1973	2743	3163	3293	3302	3302
50	0	0	0	55	267	494	663	615	289	59	1	0	0	0	0	55	322	816	1479	2094	2383	2442	2443	2443
55	0	0	0	20	155	344	508	460	174	25	0	0	0	0	0	20	175	519	1027	1487	1661	1686	1686	1686
60	0	0	0	7	81	213	353	309	93	7	0	0	0	0	0	7	88	301	654	963	1056	1063	1063	1063
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	1	14	133	345	497	633	594	349	155	19	0	0	1	15	148	493	990	1623	2217	2566	2721	2740	2740

(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:
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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.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/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 are 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.

a. Temperature/ Precipitation Tables
   1. 1971-2000 Monthly Normals
   2. Cooperative Summary of the Day
   3. National Weather Service station records
   4. 1971-2000 serially complete daily data

b. Degree Day Table
   1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
   2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data

c. Snow Tables
   1. Snow Climatology
   2. Cooperative Summary of the Day

d. Freeze Data Table
   1971-2000 serially complete daily data

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/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