

Climatology of the United States

No. 20

1971-2000

Station: PIPESTONE, MN

COOP ID: 216565

Climate Division: MN 7

NWS Call Sign:

Elevation: 1,705 Feet Lat: 44°01N

Lon: 96°20W

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	20.6	1.7	11.2	64	1981	24	25.2	1990	-36	1972	15	-.9	1979	1670	0	.0	.0	.4	23.8	30.9	14.7
Feb	27.1	8.8	18.0	67+	2000	23	30.2	1998	-36	1988	11	6.3	1989	1318	0	.0	.0	1.8	16.6	27.9	9.0
Mar	39.4	21.0	30.2	82	1968	31	39.1	2000	-26	1962	1	19.3	1975	1079	0	.0	.0	8.3	8.1	26.9	2.7
Apr	55.8	33.3	44.6	93+	1985	19	52.6	1981	-2	1975	3	36.3	1975	616	2	.0	.1	21.4	1.0	16.2	.1
May	69.2	46.2	57.7	99	1967	26	66.6	1977	15	1967	3	51.2	1997	271	44	.0	.6	29.9	.0	3.3	.0
Jun	78.5	55.7	67.1	106	1988	22	75.3	1988	31	1969	3	61.0	1982	66	129	.2	3.4	30.0	.0	@	.0
Jul	83.1	60.1	71.6	105	1989	10	76.4	1974	32	1971	30	62.8	1992	22	226	.4	7.8	31.0	.0	@	.0
Aug	80.9	57.6	69.3	106	1988	1	75.6	1983	25	1987	31	63.7	1992	43	174	.2	4.6	31.0	.0	.1	.0
Sep	71.8	46.7	59.3	102	1976	7	65.6	1978	15	1984	26	53.3	1984	209	36	@	1.6	29.5	.0	3.4	.0
Oct	58.9	34.2	46.6	92	1997	3	53.4	1973	6	1967	28	39.0	1976	571	0	.0	@	25.2	.3	15.5	.0
Nov	39.0	21.0	30.0	82	1950	1	40.4	1999	-21	1985	29	20.9	1996	1051	0	.0	.0	7.4	9.2	26.9	1.6
Dec	25.5	7.4	16.5	61+	1998	3	26.2	1979	-33+	1973	31	-1.9	1983	1506	0	.0	.0	.8	20.7	30.8	10.5
Ann	54.2	32.8	43.5	106+	Aug 1988	1	76.4	Jul 1974	-36+	Feb 1988	11	-1.9	Dec 1983	8422	611	.8	18.1	216.7	79.7	181.9	38.6

+ 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: 1877-2001

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

075-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: PIPESTONE, MN

COOP ID: 216565

Climate Division: MN 7

NWS Call Sign:

Elevation: 1,705 Feet Lat: 44°01N

Lon: 96°20W

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	.55	.45	1.05	2001	31	1.60	1975	.00	1974	5.3	1.6	.1	.0	.01	.04	.11	.19	.28	.38	.50	.66	.89	1.27	1.66
Feb	.51	.46	1.40	2001	26	1.48	1992	.05	1982	4.9	1.7	.2	.0	.08	.13	.20	.27	.35	.43	.52	.63	.77	1.02	1.25
Mar	1.72	1.20	2.01	1985	4	4.12	1977	.29	1994	6.8	4.3	1.0	.3	.34	.49	.75	.98	1.21	1.46	1.75	2.09	2.55	3.28	3.97
Apr	2.41	2.07	3.20	2001	23	5.62	1995	.34	1996	8.1	5.6	1.6	.4	.49	.71	1.07	1.39	1.72	2.07	2.46	2.94	3.56	4.57	5.52
May	3.32	3.20	4.23	1953	25	8.61	1993	.25	1976	10.6	7.1	2.0	.7	.60	.90	1.38	1.84	2.30	2.80	3.37	4.05	4.97	6.44	7.84
Jun	3.93	3.22	6.18	1957	17	9.86	1993	1.31	1978	10.9	6.9	2.7	1.1	1.12	1.49	2.06	2.55	3.03	3.53	4.08	4.73	5.58	6.90	8.14
Jul	3.31	3.31	4.65	1989	11	7.75	1989	.99	1988	9.0	5.9	2.3	1.0	.86	1.17	1.65	2.07	2.49	2.93	3.42	4.00	4.75	5.94	7.06
Aug	3.10	2.78	3.70	1955	5	8.26	1980	.70	1976	8.4	5.6	1.9	.9	.80	1.09	1.54	1.94	2.33	2.75	3.20	3.75	4.46	5.58	6.63
Sep	2.76	2.24	2.89	1986	17	10.25	1986	.41	1990	8.4	5.2	1.6	.8	.45	.68	1.08	1.46	1.85	2.28	2.77	3.36	4.16	5.45	6.68
Oct	2.22	2.01	3.06	1973	10	6.30	1984	.03	1988	6.6	3.7	1.5	.6	.16	.30	.59	.89	1.23	1.62	2.10	2.69	3.52	4.92	6.30
Nov	1.52	1.46	1.50+	2001	24	4.39	1983	.04+	1999	6.2	3.2	.9	.2	.09	.17	.36	.56	.80	1.07	1.41	1.84	2.44	3.47	4.50
Dec	.60	.45	.94	1968	22	1.66	1982	.01	1986	4.7	1.6	.4	@	.03	.06	.13	.21	.30	.41	.55	.72	.96	1.38	1.80
Ann	25.95	25.45	6.18	Jun 1957	17	10.25	Sep 1986	.00	Jan 1974	89.9	52.4	16.2	6.0	15.92	17.76	20.16	22.03	23.72	25.37	27.10	29.03	31.41	34.91	37.99

+ 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: 1877-2001

(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: PIPESTONE, MN

COOP ID: 216565

Climate Division: MN 7

NWS Call Sign:

Elevation: 1,705 Feet

Lat: 44°01N

Lon: 96°20W

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	3.2	2.5	6	6	12.0	1982	24	12.0	1982	24	1997	13	23	1997	4.2	2.5	.6	.2	@	-9.9	-9.9	-9.9	-9.9
Feb	4.2	3.3	5	3	8.0	1997	4	11.0	1971	25	1994	11	20	1979	3.3	2.2	.5	.1	.0	-9.9	-9.9	-9.9	-9.9
Mar	6.8	4.1	3	1	11.0	1984	4	21.5	1989	20	1985	5	19	1979	2.8	2.2	.9	.3	@	5.5	2.5	1.5	1.1
Apr	3.9	1.2	#	0	10.0	1994	29	15.0	1983	12	1995	12	7	1994	1.0	.8	.5	.3	@	.4	.1	.1	.0
May	#	.0	0	0	#	1989	5	#	1989	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	.0	.0	0	0	.1	1995	22	.1	1995	0	0	0	0	0	@	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.7	.0	#	0	4.0	1982	20	4.8	1976	4	1976	24	#+	1995	.3	.3	.1	.0	.0	.1	@	.0	.0
Nov	5.9	7.3	2	1	11.0	1994	28	13.4	1985	13+	1993	27	9	1979	2.8	1.6	.9	.4	@	2.6	1.6	1.1	.3
Dec	6.6	6.1	4	2	12.0	1982	28	18.0	1982	22	1996	26	17	1996	3.2	1.8	.6	.3	.1	10.1	6.5	4.9	.5
Ann	31.3	24.5	N/A	N/A	12.0+	Dec 1982	28	21.5	Mar 1989	25	Feb 1994	11	23	Jan 1997	17.6	11.4	4.1	1.6	.1	-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:

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NWS Call Sign:

Elevation: 1,705 Feet

Lat: 44°01N

Lon: 96°20W

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	6/23	6/14	6/08	6/03	5/29	5/24	5/19	5/13	5/04
32	6/07	5/30	5/24	5/19	5/14	5/09	5/04	4/28	4/20
28	5/19	5/13	5/09	5/06	5/03	4/30	4/27	4/23	4/17
24	5/08	5/03	4/29	4/26	4/23	4/20	4/17	4/13	4/08
20	4/23	4/19	4/16	4/13	4/10	4/08	4/05	4/02	3/28
16	4/14	4/10	4/06	4/03	4/01	3/29	3/26	3/23	3/18
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	8/26	8/31	9/04	9/07	9/10	9/13	9/16	9/20	9/25
32	9/06	9/11	9/14	9/17	9/20	9/23	9/26	9/29	10/04
28	9/13	9/18	9/21	9/24	9/27	9/30	10/03	10/06	10/11
24	9/20	9/26	9/30	10/04	10/07	10/10	10/14	10/18	10/24
20	10/01	10/07	10/12	10/16	10/20	10/23	10/27	11/01	11/08
16	10/10	10/16	10/20	10/24	10/27	10/30	11/03	11/07	11/13
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	124	116	110	103	97	90	83	72
32	158	147	140	134	128	123	116	109	99
28	166	159	154	150	146	143	139	134	127
24	190	182	176	171	166	162	157	151	143
20	214	206	201	196	192	187	182	177	169
16	232	224	218	213	209	204	199	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	1670	1318	1079	616	271	66	22	43	209	571	1051	1506	8422
60	1515	1178	924	473	170	22	6	12	112	420	901	1351	7084
57	1422	1094	831	392	121	10	0	4	70	334	811	1258	6347
55	1360	1038	769	342	94	5	0	2	48	280	751	1196	5885
50	1205	901	623	229	44	1	0	0	15	165	608	1041	4832
32	680	453	192	18	0	0	0	0	0	6	191	531	2071

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	33	59	136	394	797	1054	1226	1154	817	457	130	48	6305
55	0	0	0	28	178	369	513	443	176	19	0	0	1726
57	0	0	0	18	143	313	451	383	137	10	0	0	1455
60	0	0	0	9	98	236	364	298	90	4	0	0	1099
65	0	0	0	2	44	129	226	174	36	0	0	0	611
70	0	0	0	0	16	56	121	85	10	0	0	0	288

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	3	44	214	552	811	970	903	585	255	35	0	0	3	47	261	813	1624	2594	3497	4082	4337	4372	4372
45	0	0	17	127	408	661	815	748	441	154	14	0	0	0	17	144	552	1213	2028	2776	3217	3371	3385	3385
50	0	0	4	67	276	511	660	593	307	81	5	0	0	0	4	71	347	858	1518	2111	2418	2499	2504	2504
55	0	0	0	30	164	366	505	439	193	34	1	0	0	0	0	30	194	560	1065	1504	1697	1731	1732	1732
60	0	0	0	11	83	234	351	291	104	8	0	0	0	0	0	11	94	328	679	970	1074	1082	1082	1082
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	3	37	157	346	519	638	590	384	192	31	0	0	3	40	197	543	1062	1700	2290	2674	2866	2897	2897

(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