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: POCAHONTAS, IA **COOP ID: 136719**

Climate Division: IA 1 **NWS Call Sign:** **Elevation: 1,212 Feet** **Lat: 42˚44N** **Lon: 94˚40W**

Temperature (˚F)

Month	Mean (1) Daily Max	Mean (1) Daily Min	Mean (1) Mean	Extremes Highest Daily(2)	Year	Day	Highest Month(1) Mean	Year	Lowest Daily(2)	Year	Day	Lowest Month(1) Mean	Year	Degree Days (1) Base Temp 65 Heating	Cooling	Mean Number of Days (3) Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	24.6	5.0	14.8	65	1981	25	26.9	1990	-26	1970	21	1.1	1979	1557	0	.0	.0	.5	22.3	30.8	11.4
Feb	30.9	11.6	21.3	67	1981	19	32.8	1976	-27+	1996	2	5.6	1979	1225	0	.0	.0	2.4	15.2	27.7	6.8
Mar	43.1	23.3	33.2	87	1986	30	40.8	2000	-20	1962	1	23.4	1975	985	0	.0	.0	9.2	6.6	25.3	1.6
Apr	58.8	35.2	47.0	98	1980	23	54.7	1977	2	1975	3	40.9	1983	544	4	.0	.1	22.1	.7	11.7	.0
May	72.3	47.3	59.8	100	1967	25	68.0	1977	25	1967	2	52.5	1997	224	63	.0	1.4	30.4	.0	1.2	.0
Jun	81.8	57.6	69.7	105	1985	9	75.1	1971	37	1969	3	65.0	1982	28	169	.3	5.4	30.0	.0	.0	.0
Jul	84.8	61.3	73.1	108	1955	31	77.1	1974	42	1984	7	67.4	1992	6	255	.2	7.2	31.0	.0	.0	.0
Aug	82.1	58.6	70.4	105	1955	26	76.8	1983	37	1950	20	65.2	1992	23	189	.1	3.8	31.0	.0	.0	.0
Sep	74.9	48.9	61.9	98+	1948	19	67.3	1998	25+	1983	22	56.7	1993	141	47	.0	1.7	29.7	.0	1.2	.0
Oct	62.1	36.5	49.3	94	1997	4	55.0	1973	14+	1960	20	44.4	1976	488	1	.0	.2	26.6	.1	10.9	.0
Nov	43.0	23.6	33.3	80	1999	9	42.3	1999	-13	1986	11	24.5	1991	951	0	.0	.0	9.6	6.5	24.7	1.0
Dec	28.5	10.5	19.5	68	1998	2	26.8	1998	-30	1985	23	2.2	1983	1411	0	.0	.0	1.2	18.6	30.5	7.3
Ann	57.2	35.0	46.1	108	Jul 1955	31	77.1	Jul 1974	-30	Dec 1985	23	1.1	Jan 1979	7583	728	.6	19.8	223.7	70.0	164.0	28.1

\+ 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: 1948-2001

(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	.91	.87	1.29	1971	4	2.40	1994	.02	1981
Feb	.70	.55	1.42	1971	19	2.74	1971	.02	1987
Mar	2.20	1.99	2.15	1991	23	5.50	1977	.06	1994
Apr	3.09	2.52	2.25	1964	13	8.11	1999	.88	1971
May	3.94	3.65	2.78	1998	10	7.70	1982	1.88	1992
Jun	4.37	4.32	5.08	1954	10	11.59	1990	.50	1987
Jul	4.37	3.62	3.90	1952	7	9.66	1987	.85	1976
Aug	4.60	4.91	6.30	1962	31	8.81	1996	.55	1976
Sep	3.16	2.54	5.33	1978	13	7.92	1973	.70	1984
Oct	2.17	2.24	1.95+	1970	8	6.68	1971	.18	1975
Nov	1.86	1.47	2.26	1991	30	5.34	1983	.00	1976
Dec	1.03	.88	1.10	1968	19	2.90	1984	.07	1976
Ann	32.40	33.80	6.30	Aug 1962	31	11.59	Jun 1990	.00	Nov 1976

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.7	2.1	.5	.1
Feb	5.1	2.2	.3	.1
Mar	8.6	5.0	1.6	.4
Apr	10.4	6.6	2.1	.6
May	11.5	7.8	2.6	.9
Jun	11.0	7.4	3.2	1.2
Jul	10.4	6.8	3.1	1.3
Aug	9.4	6.3	2.6	1.4
Sep	8.3	5.3	1.9	.7
Oct	7.0	4.3	1.6	.5
Nov	7.0	3.9	1.3	.3
Dec	6.2	2.7	.6	@
Ann	100.6	60.4	21.4	7.5

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	.06	.12	.23	.36	.50	.66	.86	1.11	1.45	2.04	2.63
Feb	.07	.12	.22	.32	.42	.54	.68	.86	1.10	1.50	1.88
Mar	.36	.55	.87	1.17	1.48	1.82	2.21	2.69	3.32	4.34	5.32
Apr	.91	1.20	1.64	2.03	2.40	2.78	3.21	3.71	4.36	5.37	6.32
May	1.73	2.08	2.57	2.97	3.35	3.73	4.13	4.59	5.18	6.07	6.87
Jun	1.22	1.64	2.27	2.82	3.35	3.91	4.53	5.27	6.22	7.71	9.10
Jul	1.25	1.66	2.29	2.83	3.36	3.92	4.53	5.25	6.18	7.65	9.01
Aug	.89	1.30	1.98	2.60	3.23	3.91	4.68	5.61	6.84	8.82	10.70
Sep	.73	1.02	1.48	1.90	2.31	2.75	3.24	3.83	4.60	5.83	6.99
Oct	.38	.57	.89	1.18	1.49	1.81	2.19	2.64	3.25	4.23	5.17
Nov	.16	.36	.67	.94	1.22	1.53	1.88	2.30	2.87	3.80	4.69
Dec	.14	.23	.37	.52	.67	.83	1.02	1.26	1.58	2.10	2.60
Ann	20.81	22.97	25.78	27.95	29.89	31.79	33.77	35.98	38.68	42.64	46.10

\+ 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:
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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	7.1	6.6	4	3
Feb	4.9	4.2	2	1
Mar	5.9	5.5	1	#
Apr	1.9	.5	#	#
May	#	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.3	.0	#	0
Nov	5.1	3.6	#	#
Dec	8.6	6.6	2	1
Ann	33.8	27.0	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	10.0	1975	11	18.1	1994	22	1999	9	13	1999
Feb	10.5	1997	4	13.6	1997	19	1993	26	8	1997
Mar	10.0	1977	3	16.0	1987	10+	1989	4	3	1993
Apr	6.0	1984	30	13.0	1984	8	1985	1	#+	2000
May	#	1994	1	#+	1994	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	4.0	1981	24	4.0	1981	2	1976	19	#+	1997
Nov	9.0	1983	27	21.0	1983	10	1983	28	2	2000
Dec	8.0	1984	14	28.0	2000	23	2000	29	11	2000
Ann	10.5	Feb 1997	4	28.0	Dec 2000	23	Dec 2000	29	13	Jan 1999

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.3	2.5	.8	.4	.1
Feb	3.2	2.0	.7	.3	.1
Mar	2.6	2.1	.7	.3	.1
Apr	.9	.6	.3	.1	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.2	.1	@	.0	.0
Nov	3.0	1.9	.6	.1	.0
Dec	4.3	2.6	1.0	.2	.0
Ann	18.5	11.8	4.1	1.4	.3

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	18.6	12.9	8.4	2.1
Feb	12.7	8.7	5.0	.5
Mar	4.6	2.0	1.2	.1
Apr	.6	.2	.1	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.1	.0	.0	.0
Nov	3.4	1.0	.3	.1
Dec	13.3	6.4	3.4	.2
Ann	53.3	31.2	18.4	3.0

+ 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	5/21	5/16	5/13	5/10	5/07	5/04	5/01	4/28	4/23
32	5/14	5/09	5/05	5/02	4/29	4/26	4/23	4/19	4/14
28	5/03	4/28	4/25	4/22	4/19	4/16	4/13	4/09	4/04
24	4/18	4/14	4/12	4/09	4/07	4/05	4/03	3/31	3/28
20	4/13	4/09	4/05	4/03	3/31	3/28	3/26	3/22	3/18
16	4/05	3/30	3/27	3/23	3/20	3/17	3/14	3/10	3/05

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	156	149	145	141	137	133	129	124	117
32	172	166	161	158	154	151	147	143	137
28	199	191	185	180	175	171	166	160	152
24	216	209	205	201	198	194	190	186	180
20	236	229	223	219	215	210	206	201	193
16	257	250	245	240	236	232	227	222	215

***** 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	1557	1225	985	544	224	28	6	23	141	488	951	1411	7583
60	1402	1085	830	403	134	7	0	4	60	338	801	1256	6320
57	1309	1001	737	326	92	2	0	1	31	258	711	1163	5631
55	1247	945	677	278	70	1	0	0	18	209	653	1101	5199
50	1092	811	532	174	30	0	0	0	3	110	513	947	4212
32	573	372	138	8	0	0	0	0	0	2	136	450	1679

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	39	71	176	457	862	1131	1273	1189	896	538	175	63	6870
55	0	0	1	37	219	442	560	476	224	32	2	0	1993
57	0	0	0	25	179	383	498	415	177	19	0	0	1696
60	0	0	0	13	128	297	405	325	116	6	0	0	1290
65	0	0	0	4	63	169	255	189	47	1	0	0	728
70	0	0	0	0	25	74	127	89	13	0	0	0	328

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	5	63	257	626	890	1027	945	663	321	59	2	0	5	68	325	951	1841	2868	3813	4476	4797	4856	4858
45	0	1	28	158	471	740	872	790	515	202	21	0	0	1	29	187	658	1398	2270	3060	3575	3777	3798	3798
50	0	0	8	83	327	590	717	635	375	115	7	0	0	0	8	91	418	1008	1725	2360	2735	2850	2857	2857
55	0	0	2	43	204	442	562	480	244	50	0	0	0	0	2	45	249	691	1253	1733	1977	2027	2027	2027
60	0	0	0	18	109	301	409	327	141	21	0	0	0	0	0	18	127	428	837	1164	1305	1326	1326	1326
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	5	45	168	376	576	690	624	422	212	44	1	0	5	50	218	594	1170	1860	2484	2906	3118	3162	3163

(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