

# Climatology of the United States

No. 20

1971-2000

Station: NEW HAMPTON, IA

COOP ID: 135952

Climate Division: IA 3

NWS Call Sign:

Elevation: 1,160 Feet Lat: 43°03N

Lon: 92°19W

## 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	24.1	6.8	15.5	58	1981	25	28.0	1990	-34+	1912	12	3.0	1977	1536	0	.0	.0	.2	22.6	30.7	10.6
Feb	30.4	13.8	22.1	65+	1981	17	32.6	1998	-33	1899	9	10.7	1979	1202	0	.0	.0	1.3	15.3	26.6	5.6
Mar	42.7	25.0	33.9	84	1986	29	41.5	1973	-25+	1948	11	23.4	1975	966	0	.0	.0	8.7	6.1	24.2	1.2
Apr	58.1	36.7	47.4	94	1980	22	54.9	1977	5	1911	7	40.3	1975	531	3	.0	.1	22.9	.3	9.2	.0
May	70.7	48.5	59.6	105	1934	31	67.0	1977	20	1897	31	53.9	1997	219	52	.0	.4	30.7	.0	.7	.0
Jun	79.7	57.9	68.8	105	1934	27	74.2	1988	34	1946	3	64.0	1982	36	148	.1	2.6	30.0	.0	.0	.0
Jul	82.8	62.2	72.5	110+	1936	13	76.4	1987	41+	1921	31	66.7	1992	11	244	.1	4.4	31.0	.0	.0	.0
Aug	80.7	60.0	70.4	104	1988	17	76.6	1983	35	1915	30	65.0	1992	29	194	.2	2.6	31.0	.0	.0	.0
Sep	73.2	51.3	62.3	101	1939	7	67.4	1978	19	1949	29	56.5	1993	132	49	.0	1.0	29.8	.0	.4	.0
Oct	60.9	39.8	50.4	95	1997	4	56.5	1971	0	1925	29	45.0	1988	455	1	.0	.1	27.0	.1	7.3	.0
Nov	42.4	26.2	34.3	78+	1933	1	42.0	1999	-14	1977	26	26.5	1996	921	0	.0	.0	8.9	6.0	22.3	.7
Dec	28.4	12.7	20.6	64	2001	6	28.5+	1982	-29	1933	27	7.5	2000	1378	0	.0	.0	.8	18.9	30.1	6.1
Ann	56.2	36.7	46.5	110+	Jul 1936	13	76.6	Aug 1983	-34+	Jan 1912	12	3.0	Jan 1977	7416	691	.4	11.2	222.3	69.3	151.5	24.2

+ 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: 1897-2001

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

081-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: NEW HAMPTON, IA**

**COOP ID: 135952**

**Climate Division: IA 3**

**NWS Call Sign:**

**Elevation: 1,160 Feet Lat: 43°03N**

**Lon: 92°19W**

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	1.10	.89	1.71	1946	5	3.14	1996	.14	1981	7.2	3.3	.4	.0	.23	.33	.49	.64	.79	.94	1.12	1.33	1.62	2.07	2.49
Feb	1.00	.82	1.50	1915	13	2.63	1998	.00	1987	5.7	3.1	.6	@	.07	.18	.34	.49	.64	.81	1.00	1.23	1.55	2.07	2.57
Mar	2.24	2.23	2.40+	1909	9	4.56	1990	.18	1994	8.1	5.1	1.6	.4	.49	.70	1.03	1.32	1.62	1.94	2.29	2.72	3.28	4.18	5.02
Apr	3.79	3.48	4.60	1909	18	8.94	1991	1.15	1971	10.5	7.1	2.5	.7	1.40	1.75	2.26	2.69	3.09	3.51	3.96	4.48	5.15	6.18	7.12
May	4.37	4.03	2.97	1967	11	10.76	1983	1.07	1988	11.3	7.8	3.1	1.2	1.60	2.01	2.60	3.09	3.56	4.04	4.57	5.18	5.95	7.15	8.24
Jun	4.88	4.55	4.96	1914	13	10.57	1998	1.32	1988	10.0	7.6	3.1	1.4	1.65	2.11	2.79	3.36	3.91	4.47	5.09	5.81	6.73	8.17	9.49
Jul	4.55	3.65	7.10	1999	21	17.75	1999	1.17	1996	9.5	6.6	2.8	1.3	.97	1.39	2.06	2.66	3.27	3.92	4.65	5.52	6.68	8.52	10.26
Aug	4.88	3.77	5.20	1993	10	14.97	1993	.88	1971	9.6	7.1	3.2	1.4	1.00	1.44	2.16	2.81	3.47	4.18	4.98	5.94	7.21	9.25	11.18
Sep	3.25	2.78	3.87	1983	20	9.81	1972	.64	1976	8.6	5.5	2.2	.8	.67	.97	1.44	1.88	2.32	2.78	3.31	3.95	4.79	6.14	7.41
Oct	2.61	2.33	4.20	1970	9	8.20	1998	.33	1975	7.7	5.0	1.7	.6	.60	.84	1.22	1.57	1.91	2.27	2.68	3.17	3.81	4.82	5.78
Nov	2.48	2.44	2.85	1991	1	6.79	1991	.10	1976	8.8	4.7	1.5	.6	.28	.47	.82	1.16	1.53	1.95	2.43	3.03	3.84	5.19	6.50
Dec	1.40	1.12	2.98	1911	10	4.43	2000	.30	1998	7.4	4.0	.8	.1	.30	.43	.64	.82	1.01	1.21	1.43	1.70	2.05	2.61	3.15
Ann	36.55	35.77	7.10	Jul 1999	21	17.75	Jul 1999	.00	Feb 1987	104.4	66.9	23.5	8.5	24.55	26.82	29.75	32.00	34.01	35.96	37.99	40.24	42.98	46.99	50.47

+ 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: 1897-2001

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

Complete documentation available from:  
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Station: NEW HAMPTON, IA

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Climate Division: IA 3

NWS Call Sign:

Elevation: 1,160 Feet

Lat: 43°03N

Lon: 92°19W

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	10.0	8.5	6	5	10.0	1996	27	25.5	1996	25	1971	4	17	1979	5.8	3.5	1.4	.4	@	25.0	18.8	13.2	6.2
Feb	6.5	5.3	6	5	10.0	1975	24	17.2	1975	23	1979	16	21	1979	4.0	2.5	.7	.3	@	21.5	15.4	11.3	5.7
Mar	6.9	5.9	2	1	12.0	1971	19	20.5	1975	21	1975	12	12	1975	2.9	2.1	.9	.3	@	9.3	5.8	4.0	1.8
Apr	2.5	1.1	#	#	10.0	1973	9	18.0	1973	15	1973	10	2	1973	1.3	.9	.3	.1	@	1.7	.7	.2	.1
May	#	.0	#	0	#	1994	1	#+	1994	#+	1997	1	#+	1997	.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	#	1985	24	#	1985	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.2	.0	#	0	1.5	1982	20	1.5	1982	2	1982	20	#+	1997	.2	.2	.0	.0	.0	.1	.0	.0	.0
Nov	5.1	2.7	1	#	7.0	1991	23	20.8	1991	13	1991	24	4	1991	2.8	1.6	.7	.2	.0	4.1	2.6	1.3	.3
Dec	8.8	9.1	4	3	9.0	1985	1	34.0	2000	32	2000	31	19	2000	5.9	3.7	1.1	.4	.0	19.4	13.8	8.3	1.9
Ann	40.0	32.6	N/A	N/A	12.0	Mar 1971	19	34.0	Dec 2000	32	Dec 2000	31	21	Feb 1979	22.9	14.5	5.1	1.7	@	81.1	57.1	38.3	16.0

+ 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

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	5/23	5/18	5/15	5/12	5/09	5/06	5/03	4/29	4/25
32	5/11	5/06	5/02	4/29	4/26	4/23	4/19	4/16	4/10
28	4/25	4/21	4/17	4/15	4/12	4/10	4/07	4/04	3/30
24	4/17	4/14	4/11	4/09	4/06	4/04	4/02	3/30	3/26
20	4/10	4/06	4/03	4/01	3/29	3/27	3/25	3/22	3/18
16	4/08	4/02	3/29	3/26	3/23	3/20	3/17	3/13	3/07
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	9/15	9/19	9/22	9/24	9/27	9/29	10/01	10/04	10/09
32	9/23	9/27	9/30	10/02	10/04	10/06	10/09	10/11	10/15
28	9/30	10/05	10/08	10/12	10/14	10/17	10/20	10/24	10/29
24	10/13	10/18	10/22	10/25	10/28	10/30	11/03	11/06	11/11
20	10/22	10/27	10/30	11/02	11/04	11/07	11/10	11/13	11/18
16	10/31	11/05	11/08	11/11	11/14	11/17	11/20	11/23	11/28
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	158	152	148	144	140	137	133	128	122
32	179	172	168	164	161	157	153	149	142
28	205	198	193	189	185	180	176	171	164
24	220	214	210	207	203	200	197	193	187
20	238	231	227	223	219	216	212	207	201
16	260	252	246	240	235	230	225	219	210

\* 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	1536	1202	966	531	219	36	11	29	132	455	921	1378	7416
60	1381	1062	811	391	126	8	0	7	54	310	771	1223	6144
57	1288	978	719	313	84	3	0	1	26	233	681	1130	5456
55	1226	922	659	265	62	1	0	0	14	187	623	1068	5027
50	1071	785	515	163	24	0	0	0	2	97	482	913	4052
32	552	345	132	7	0	0	0	0	0	2	113	414	1565

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	39	67	189	469	856	1103	1256	1188	908	570	182	59	6886
55	0	0	3	37	205	414	543	475	232	43	2	0	1954
57	0	0	1	25	165	356	481	414	184	27	0	0	1653
60	0	0	0	12	114	271	388	327	121	11	0	0	1244
65	0	0	0	3	52	148	244	194	49	1	0	0	691
70	0	0	0	0	18	63	125	97	13	0	0	0	316

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	6	68	268	614	870	1016	946	675	343	62	4	0	6	74	342	956	1826	2842	3788	4463	4806	4868	4872
45	0	1	29	160	461	720	861	791	527	218	26	1	0	1	30	190	651	1371	2232	3023	3550	3768	3794	3795
50	0	0	9	87	319	570	706	636	383	122	8	0	0	0	9	96	415	985	1691	2327	2710	2832	2840	2840
55	0	0	2	39	195	420	551	481	254	56	2	0	0	0	2	41	236	656	1207	1688	1942	1998	2000	2000
60	0	0	0	15	105	276	396	329	144	20	0	0	0	0	0	15	120	396	792	1121	1265	1285	1285	1285
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	1	37	161	368	569	690	631	417	199	32	1	0	1	38	199	567	1136	1826	2457	2874	3073	3105	3106

(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> |
|---|---|

## 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)