

Climatology of the United States

No. 20

1971-2000

Station: HARLAN, IA

COOP ID: 133632

Climate Division: IA 4

NWS Call Sign:

Elevation: 1,210 Feet Lat: 41° 39N Lon: 95° 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	28.2	8.1	18.2	66	1981	24	29.2	1990	-29	1974	12	5.0	1979	1452	0	.0	.0	1.6	16.8	30.5	8.2
Feb	34.2	13.7	24.0	71	1999	11	33.6	1987	-25+	1958	17	9.3	1979	1150	0	.0	.0	4.5	11.9	26.3	4.0
Mar	46.9	24.8	35.9	89	1986	29	42.3	2000	-23	1960	5	26.5	1975	904	0	.0	.0	14.4	3.8	21.8	.8
Apr	60.5	35.4	48.0	93	1989	26	54.6	1981	2	1975	3	41.5	1983	513	2	.0	.3	25.3	.2	8.1	.0
May	71.7	48.2	60.0	100	1967	25	66.4	1977	25	1961	2	55.1	1983	204	47	.0	.7	30.9	.0	.7	.0
Jun	81.2	58.3	69.8	102	1988	21	74.6	1988	31	1969	3	65.0	1982	23	166	.2	5.1	30.0	.0	.0	.0
Jul	84.4	63.2	73.8	106	1955	31	77.9	1974	40	1972	5	68.4	1992	3	276	.2	7.8	31.0	.0	.0	.0
Aug	82.0	60.8	71.4	105	1955	27	78.4	1983	35	1967	31	65.5	1992	24	222	.1	4.8	31.0	.0	.0	.0
Sep	74.7	50.6	62.7	106	2000	3	69.7	1998	27+	1951	28	57.3	1974	133	63	@	1.7	29.9	.0	.4	.0
Oct	62.5	38.3	50.4	94	1953	2	55.3	2000	12	1993	31	44.5	1976	453	2	.0	.1	27.9	.1	6.5	.0
Nov	45.2	25.0	35.1	79	1999	9	44.1	1999	-9	1991	7	26.2	1991	898	0	.0	.0	12.0	3.8	21.6	.4
Dec	31.6	13.3	22.5	67	1975	5	29.2	1979	-26	1989	23	6.2	1983	1320	0	.0	.0	2.3	13.6	29.9	4.6
Ann	58.6	36.6	47.7	106+	Sep 2000	3	78.4	Aug 1983	-29	Jan 1974	12	5.0	Jan 1979	7077	778	.5	20.5	240.8	50.2	145.8	18.0

+ 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

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

056-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: HARLAN, IA

COOP ID: 133632

Climate Division: IA 4

NWS Call Sign:

Elevation: 1,210 Feet Lat: 41°39N

Lon: 95°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	.78	.74	.82	1982	22	2.27	1975	.00	1986	5.3	2.4	.2	.0	.06	.15	.27	.39	.51	.63	.78	.96	1.20	1.59	1.97
Feb	.78	.66	1.59	1954	19	2.21	1971	.09	1996	5.8	2.4	.3	.0	.15	.22	.34	.44	.55	.67	.80	.95	1.16	1.50	1.82
Mar	2.17	2.00	1.80	1952	22	4.76	1973	.05	1994	8.3	5.1	1.4	.5	.23	.39	.69	1.00	1.32	1.68	2.11	2.65	3.37	4.58	5.75
Apr	3.28	2.95	2.84	1978	8	7.78	1986	.59	1990	10.2	6.3	2.2	.8	.69	1.00	1.48	1.91	2.35	2.82	3.35	3.99	4.83	6.16	7.43
May	4.18	3.94	5.37	1962	21	9.47	1996	1.00	1988	11.7	8.3	2.6	.8	1.31	1.71	2.29	2.80	3.29	3.79	4.35	5.00	5.84	7.14	8.35
Jun	4.35	4.33	3.48	1985	23	8.71	1998	.62	1992	9.6	6.8	2.9	1.4	1.17	1.58	2.21	2.76	3.30	3.87	4.50	5.25	6.23	7.75	9.18
Jul	4.10	4.11	6.72	1958	2	8.32	1992	.32	1975	8.8	6.0	3.0	1.3	.83	1.21	1.81	2.36	2.91	3.51	4.18	4.98	6.05	7.76	9.38
Aug	3.79	3.20	5.15	1952	29	9.58	1980	.44	1976	8.8	5.8	2.5	1.2	.82	1.17	1.72	2.22	2.73	3.27	3.88	4.60	5.56	7.09	8.54
Sep	4.46	3.67	7.83	1972	11	16.33	1972	.20	1980	8.1	5.7	2.5	1.1	.54	.88	1.51	2.13	2.79	3.53	4.39	5.45	6.89	9.26	11.56
Oct	2.68	2.37	3.70	1986	11	6.46	1986	.07	1975	7.3	4.6	1.8	.7	.33	.55	.92	1.30	1.69	2.13	2.64	3.27	4.13	5.53	6.89
Nov	1.80	1.72	2.16	1975	9	4.91	1975	.00	1976	7.2	3.8	1.1	.3	.16	.37	.66	.93	1.20	1.49	1.82	2.23	2.77	3.64	4.48
Dec	1.01	.80	1.11	1982	28	3.09	1984	.08	1979	6.8	2.9	.4	.1	.18	.27	.42	.55	.70	.85	1.02	1.23	1.51	1.96	2.39
Ann	33.38	32.98	7.83	Sep 1972	11	16.33	Sep 1972	.00+	Jan 1986	97.9	60.1	20.9	8.2	22.11	24.23	26.98	29.09	30.98	32.81	34.72	36.85	39.44	43.22	46.52

+ 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: HARLAN, IA

COOP ID: 133632

Climate Division: IA 4

NWS Call Sign:

Elevation: 1,210 Feet

Lat: 41°39N

Lon: 95°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	7.8	5.9	3	2	9.0	1971	3	28.2	1975	19	1975	19	12	1975	5.3	2.4	.9	.3	.0	17.5	12.1	7.2	1.5
Feb	6.2	5.9	3	2	9.2	1999	23	18.3	1978	18	1975	17	15	1975	4.4	2.1	.7	.2	.0	13.8	8.6	5.0	.6
Mar	4.8	2.5	1	#	12.0	1998	8	13.3	1984	13	1978	7	7	1975	2.9	1.5	.6	.3	.1	5.3	3.4	2.3	1.0
Apr	1.5	.1	#	#	6.0	1996	14	7.6	1973	7	1997	12	1	1997	1.0	.7	.1	@	.0	.5	.2	@	.0
May	.0	.0	0	0	.0	0	0	.0	0	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	#	1985	29	#	1985	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.7	.0	#	0	8.0	1997	26	8.0	1997	6	1997	26	#+	1997	.3	.2	.1	.1	.0	.2	.1	.1	.0
Nov	3.3	2.7	#	#	4.8	1972	13	11.5	1991	5	1991	7	3	1991	2.7	1.1	.4	.0	.0	3.0	1.1	.3	.0
Dec	6.5	5.9	2	1	6.7	1972	12	15.2+	1994	15	2000	20	8+	2000	5.6	2.2	.8	.2	.0	12.2	6.1	2.0	.5
Ann	30.8	23.0	N/A	N/A	12.0	Mar 1998	8	28.2	Jan 1975	19	Jan 1975	19	15	Feb 1975	22.2	10.2	3.6	1.1	.1	52.5	31.6	16.9	3.6

+ 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:

www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

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NWS Call Sign:

Elevation: 1,210 Feet

Lat: 41°39N

Lon: 95°19W

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	5/19	5/14	5/11	5/08	5/05	5/03	4/30	4/27	4/22
32	5/12	5/07	5/03	4/30	4/27	4/24	4/21	4/18	4/13
28	4/30	4/25	4/22	4/19	4/16	4/13	4/11	4/07	4/03
24	4/16	4/12	4/09	4/07	4/05	4/02	3/31	3/28	3/24
20	4/14	4/09	4/05	4/01	3/29	3/26	3/22	3/18	3/13
16	4/03	3/29	3/25	3/21	3/18	3/15	3/11	3/07	3/02
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	9/14	9/18	9/21	9/24	9/26	9/28	10/01	10/04	10/08
32	9/22	9/27	10/01	10/04	10/07	10/09	10/13	10/16	10/21
28	10/04	10/08	10/11	10/14	10/17	10/19	10/22	10/25	10/30
24	10/16	10/21	10/24	10/27	10/29	11/01	11/04	11/07	11/12
20	10/20	10/26	10/30	11/03	11/06	11/09	11/13	11/17	11/23
16	10/28	11/04	11/08	11/12	11/16	11/20	11/24	11/29	12/05
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	162	155	151	147	143	139	135	131	124
32	181	174	169	165	162	158	154	149	142
28	200	194	190	186	183	180	176	172	166
24	224	219	214	211	207	204	200	196	190
20	245	237	231	226	221	217	212	206	198
16	266	258	252	247	242	238	233	227	219

* 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	1452	1150	904	513	204	23	3	24	133	453	898	1320	7077
60	1297	1010	749	371	111	4	0	5	58	308	748	1165	5826
57	1204	926	656	292	71	1	0	1	30	230	659	1072	5142
55	1142	870	596	244	51	0	0	0	18	184	600	1010	4715
50	987	739	454	142	17	0	0	0	3	93	461	856	3752
32	483	318	96	3	0	0	0	0	0	1	102	368	1371

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	54	92	215	482	866	1132	1296	1221	920	572	194	72	7116
55	0	0	2	32	204	443	583	508	248	42	2	0	2064
57	0	0	0	21	162	384	521	447	200	27	0	0	1762
60	0	0	0	9	110	297	428	358	138	11	0	0	1351
65	0	0	0	2	47	166	276	222	63	2	0	0	778
70	0	0	0	0	15	69	140	116	21	0	0	0	361

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	18	111	341	674	940	1082	1012	731	393	86	7	0	18	129	470	1144	2084	3166	4178	4909	5302	5388	5395
45	0	2	57	218	521	790	927	857	583	264	38	1	0	2	59	277	798	1588	2515	3372	3955	4219	4257	4258
50	0	0	23	126	372	640	772	702	437	151	14	0	0	0	23	149	521	1161	1933	2635	3072	3223	3237	3237
55	0	0	6	65	237	490	617	547	301	74	3	0	0	0	6	71	308	798	1415	1962	2263	2337	2340	2340
60	0	0	0	29	128	344	463	392	185	31	0	0	0	0	0	29	157	501	964	1356	1541	1572	1572	1572
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	21	81	217	412	627	738	683	465	237	54	4	0	21	102	319	731	1358	2096	2779	3244	3481	3535	3539

(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