

Climatology of the United States

No. 20

1971-2000

Station: SHELTON, IA

COOP ID: 137594

Climate Division: IA 1

NWS Call Sign:

Elevation: 1,420 Feet Lat: 43° 11N

Lon: 95° 51W

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	22.8	3.0	12.9	66	1981	24	24.0	1990	-32	1972	15	-.4	1979	1615	0	.0	.0	.4	21.5	31.0	11.9
Feb	29.2	9.8	19.5	66+	1958	23	31.6	1998	-32	1988	11	5.5	1979	1274	0	.0	.0	2.4	14.8	27.3	6.2
Mar	41.7	21.3	31.5	85	1968	30	39.9	2000	-22	1960	5	22.7	1975	1039	0	.0	.0	9.6	6.0	25.3	1.5
Apr	56.9	32.8	44.9	93	1980	21	52.1	1977	3	1975	3	38.9+	1983	605	1	.0	.2	22.7	.5	12.8	.0
May	69.9	46.6	58.3	101	1967	25	65.2	1977	17	1967	3	53.0	1997	248	39	.0	.7	30.6	.0	1.6	.0
Jun	78.9	56.5	67.7	102	1988	21	73.0	1988	33	1989	15	63.1	1982	43	124	.2	3.4	30.0	.0	.0	.0
Jul	82.6	60.8	71.7	102	1966	10	75.8	1974	41+	1967	4	64.1	1992	18	225	.1	6.3	31.0	.0	.0	.0
Aug	80.2	58.6	69.4	99+	1955	1	76.8	1983	33	1950	20	63.1	1992	37	173	.0	3.4	31.0	.0	.0	.0
Sep	72.6	47.8	60.2	100	1976	6	66.2	1998	23+	1984	26	55.0	1993	180	34	@	1.2	29.7	.0	1.4	.0
Oct	59.8	35.2	47.5	94	1963	5	52.5	1973	10	1993	31	42.9+	1987	543	0	.0	@	25.9	.2	10.5	.0
Nov	40.5	21.5	31.0	77	1999	9	41.5	1999	-20	1959	14	22.0	1985	1019	0	.0	.0	8.9	7.5	25.0	1.2
Dec	26.7	8.5	17.6	66	1998	2	25.9	1979	-24+	1968	31	1.5	1983	1469	0	.0	.0	1.1	19.1	30.7	7.6
Ann	55.2	33.5	44.4	102+	Jun 1988	21	76.8	Aug 1983	-32+	Feb 1988	11	-.4	Jan 1979	8090	596	.3	15.2	223.3	69.6	165.6	28.4

+ 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

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: SHELDON, IA

COOP ID: 137594

Climate Division: IA 1

NWS Call Sign:

Elevation: 1,420 Feet Lat: 43°11N

Lon: 95°51W

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	.77	.63	1.46	1988	20	2.09	1988	.08	1971	6.5	2.4	.2	@	.09	.15	.26	.37	.48	.61	.76	.94	1.20	1.61	2.01
Feb	.65	.61	1.30	1962	18	1.69	1971	.03	1986	5.6	2.1	.2	.0	.07	.12	.21	.30	.40	.51	.63	.79	1.01	1.37	1.72
Mar	2.14	2.09	2.03	1987	23	4.64	1987	.15	1994	8.9	4.7	1.3	.4	.43	.62	.94	1.22	1.51	1.83	2.18	2.60	3.16	4.06	4.92
Apr	2.95	2.97	3.11	1985	22	7.57	1985	.56	1981	10.4	6.4	1.9	.5	.63	.90	1.33	1.72	2.12	2.54	3.02	3.59	4.34	5.55	6.68
May	3.55	3.16	2.38	1965	15	8.00	1982	1.70	1989	11.3	7.3	2.3	.7	1.50	1.83	2.28	2.65	2.99	3.35	3.72	4.16	4.71	5.55	6.30
Jun	4.48	3.03	7.53	1953	7	10.14	1994	1.53	1978	10.8	7.4	2.9	1.0	1.17	1.59	2.24	2.81	3.38	3.97	4.63	5.41	6.43	8.03	9.54
Jul	3.87	3.58	3.23	2001	25	7.44	1992	.27	1975	9.4	6.1	2.8	1.3	1.03	1.39	1.95	2.45	2.93	3.43	4.00	4.66	5.53	6.90	8.17
Aug	3.95	4.13	5.59	1973	23	7.47	1974	.79	1999	9.0	5.8	2.8	1.3	.98	1.35	1.93	2.44	2.94	3.48	4.07	4.78	5.71	7.17	8.54
Sep	2.51	2.26	2.35	1985	5	7.38	1985	.61	1984	8.1	5.0	1.8	.5	.71	.94	1.30	1.62	1.93	2.25	2.60	3.02	3.56	4.42	5.21
Oct	2.07	1.54	3.50	1979	30	6.50	1984	.01	1989	7.1	4.1	1.2	.5	.15	.28	.55	.83	1.15	1.52	1.96	2.52	3.29	4.60	5.89
Nov	1.68	1.72	1.65	1991	30	4.62	1996	.06	1976	7.1	3.7	1.2	.3	.18	.31	.54	.78	1.03	1.31	1.64	2.05	2.61	3.54	4.45
Dec	.84	.76	1.23	1982	25	2.96	1982	.11	1988	6.4	2.4	.3	@	.14	.21	.33	.44	.56	.69	.84	1.03	1.27	1.66	2.04
Ann	29.46	30.31	7.53	Jun 1953	7	10.14	Jun 1994	.01	Oct 1989	100.6	57.4	18.9	6.5	20.54	22.26	24.46	26.14	27.63	29.08	30.57	32.23	34.24	37.17	39.71

+ 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

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Station: SHELDON, IA

COOP ID: 137594

Climate Division: IA 1

NWS Call Sign:

Elevation: 1,420 Feet

Lat: 43° 11N

Lon: 95° 51W

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	7.6	5.1	6	5	12.0	1982	22	23.7	1975	22	1979	31	14	1994	6.0	2.7	.7	.3	@	23.0	19.0	15.0	4.8
Feb	4.6	4.2	6	2	7.2	1984	18	11.8	1972	24	1979	9	21	1979	4.3	2.0	.4	.1	.0	17.5	13.3	10.1	5.6
Mar	7.8	8.3	2	2	11.0	1977	2	21.5	1983	25	1979	8	16	1979	4.0	2.3	1.1	.4	@	9.2	6.8	5.1	2.0
Apr	2.3	1.0	#	#	4.0	1994	29	11.0	1983	5	1975	1	1	1975	1.7	.9	.3	.0	.0	1.0	.4	@	.0
May	#	.0	0	0	#	1997	13	#+	1997	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	#	1984	30	#	1984	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.5	.0	#	0	3.8	1991	19	4.0	1982	3	1982	19	#+	1999	.5	.3	.1	.0	.0	.2	@	.0	.0
Nov	5.7	5.3	1	1	12.0	1991	1	18.6	1991	12	1991	3	5	1991	3.9	2.1	.7	.2	@	6.8	4.0	2.0	.1
Dec	7.7	6.4	3	2	7.5	1982	28	20.5	1982	18	1982	30	10	1985	5.4	2.5	.9	.3	.0	17.9	11.7	7.5	2.0
Ann	36.2	30.3	N/A	N/A	12.0+	Nov 1991	1	23.7	Jan 1975	25	Mar 1979	8	21	Feb 1979	25.8	12.8	4.2	1.3	@	75.6	55.2	39.7	14.5

+ 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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Elevation: 1,420 Feet

Lat: 43° 11N

Lon: 95° 51W

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	5/24	5/20	5/17	5/14	5/10	5/07	5/03	4/27
32	5/19	5/14	5/10	5/07	5/04	5/01	4/28	4/25	4/20
28	5/07	5/03	4/29	4/27	4/24	4/21	4/19	4/15	4/11
24	4/27	4/22	4/18	4/15	4/12	4/09	4/06	4/02	3/28
20	4/17	4/12	4/08	4/05	4/02	3/30	3/27	3/24	3/19
16	4/12	4/06	4/02	3/29	3/26	3/22	3/19	3/14	3/08
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	9/09	9/13	9/15	9/17	9/20	9/22	9/24	9/27	9/30
32	9/15	9/19	9/22	9/25	9/27	9/29	10/02	10/05	10/09
28	9/22	9/27	10/01	10/04	10/07	10/10	10/14	10/17	10/23
24	10/03	10/08	10/12	10/16	10/19	10/22	10/25	10/29	11/04
20	10/13	10/18	10/22	10/25	10/28	10/31	11/03	11/07	11/12
16	10/19	10/26	10/30	11/03	11/06	11/10	11/14	11/18	11/24
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	152	144	138	133	128	124	119	113	105
32	166	159	154	149	145	141	136	131	124
28	186	179	174	170	166	162	157	152	145
24	210	203	198	193	189	185	180	175	168
20	231	223	217	212	208	203	198	192	184
16	252	242	236	230	225	220	214	207	198

* 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	1615	1274	1039	605	248	43	18	37	180	543	1019	1469	8090
60	1460	1134	884	461	147	11	4	10	86	392	869	1314	6772
57	1367	1050	791	379	101	3	0	2	48	305	779	1221	6046
55	1305	994	729	328	76	1	0	1	30	253	719	1159	5595
50	1150	859	583	214	32	0	0	0	6	142	576	1004	4566
32	626	415	164	13	0	0	0	0	0	4	169	491	1882

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	35	65	148	399	815	1070	1230	1159	845	484	139	44	6433
55	0	0	0	24	178	382	517	447	185	20	0	0	1753
57	0	0	0	15	141	324	455	386	143	10	0	0	1474
60	0	0	0	7	94	241	367	300	91	3	0	0	1103
65	0	0	0	1	39	124	225	173	34	0	0	0	596
70	0	0	0	0	12	46	118	83	8	0	0	0	267

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	249	609	867	1014	934	650	311	49	1	0	5	68	317	926	1793	2807	3741	4391	4702	4751	4752
45	0	1	26	151	456	717	859	779	503	192	19	0	0	1	27	178	634	1351	2210	2989	3492	3684	3703	3703
50	0	0	9	80	314	567	704	624	361	102	3	0	0	0	9	89	403	970	1674	2298	2659	2761	2764	2764
55	0	0	1	37	192	419	549	470	231	49	1	0	0	0	1	38	230	649	1198	1668	1899	1948	1949	1949
60	0	0	0	15	100	279	395	317	132	18	0	0	0	0	0	15	115	394	789	1106	1238	1256	1256	1256
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	5	46	170	376	560	678	619	409	199	32	0	0	5	51	221	597	1157	1835	2454	2863	3062	3094	3094

(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