

# Climatography of the United States

No. 20

1971-2000

Station: LAMONI, IA

COOP ID: 134585

Climate Division: IA 8

NWS Call Sign: 3OI

Elevation: 1,128 Feet Lat: 40° 37N Lon: 93° 57W

## 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	30.9	11.9	21.4	70	1989	31	33.0	1989	-22	1982	10	7.6	1979	1352	0	.0	.0	2.4	15.5	29.6	6.3
Feb	36.7	16.9	26.8	74+	1972	28	37.5	1998	-22	1996	2	13.8	1979	1069	0	.0	.0	5.8	10.3	24.4	2.9
Mar	49.0	27.6	38.3	86	1986	29	44.2	2000	-10	1998	12	30.6	1984	828	0	.0	.0	15.2	3.0	18.6	.3
Apr	61.2	38.4	49.8	91+	1989	25	56.3	1981	11	1975	3	43.1	1983	459	3	.0	.1	25.3	.1	5.4	.0
May	71.9	50.8	61.4	94	1967	25	67.1	1977	29	1976	3	56.8	1983	176	63	.0	.3	30.9	.0	@	.0
Jun	81.8	60.2	71.0	104	1988	25	75.7	1988	41	1969	3	65.6	1982	18	198	.2	4.5	30.0	.0	.0	.0
Jul	86.8	64.9	75.9	106	1980	30	80.2	1980	46	1971	30	71.6	1992	1	337	.9	11.1	31.0	.0	.0	.0
Aug	84.8	62.6	73.7	105+	1983	16	82.6	1983	44	1964	13	68.0	1992	17	286	.8	8.4	31.0	.0	.0	.0
Sep	76.6	52.9	64.8	100	2000	3	71.5	1998	30	1995	22	58.7	1993	100	91	@	2.3	29.8	.0	.1	.0
Oct	64.3	41.2	52.8	94	1963	5	58.6	1973	16	1949	31	47.1	1976	384	5	.0	.1	28.5	@	4.4	.0
Nov	47.8	28.2	38.0	80	1999	14	47.9	1999	-11	1964	30	30.3	1991	810	0	.0	.0	13.9	3.0	17.7	.1
Dec	34.8	17.1	26.0	68	1984	28	31.8	1994	-22	1989	23	9.8	1983	1211	0	.0	.0	3.6	11.9	28.5	3.2
Ann	60.6	39.4	50.0	106	Jul 1980	30	82.6	Aug 1983	-22+	Feb 1996	2	7.6	Jan 1979	6425	983	1.9	26.8	247.4	43.8	128.7	12.8

+ 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: 1948-2001

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

067-A

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## No. 20

### 1971-2000

National Climatic Data Center  
Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
www.ncdc.noaa.gov

Station: LAMONI, IA

COOP ID: 134585

Climate Division: IA 8

NWS Call Sign: 3OI

Elevation: 1,128 Feet Lat: 40°37N

Lon: 93°57W

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	1.01	.94	.98	1982	2	2.61	1973	.00	1986	6.7	3.1	.5	.0	.13	.26	.43	.58	.72	.87	1.04	1.24	1.51	1.93	2.33
Feb	1.42	1.39	2.31	1997	21	4.03	1997	.19	1977	6.8	3.6	.8	.2	.33	.47	.67	.86	1.04	1.24	1.46	1.72	2.06	2.60	3.11
Mar	2.67	2.46	2.29	1982	19	7.13	1973	.21	1994	9.2	5.2	1.7	.5	.48	.72	1.11	1.48	1.85	2.25	2.71	3.26	4.00	5.19	6.32
Apr	3.85	3.50	3.99	1976	17	8.41	1991	.93	2000	11.0	6.9	2.9	1.0	1.02	1.38	1.94	2.43	2.91	3.42	3.98	4.64	5.51	6.87	8.15
May	4.92	4.58	3.02	1986	16	12.94	1996	1.12	1988	12.5	8.4	3.5	1.3	1.33	1.79	2.50	3.13	3.74	4.38	5.09	5.94	7.04	8.76	10.37
Jun	4.26	3.90	4.62	1993	30	10.71	1993	.60	1988	10.6	7.0	2.7	1.1	1.21	1.62	2.23	2.76	3.28	3.82	4.42	5.12	6.04	7.48	8.82
Jul	4.93	4.18	3.40	1995	4	19.25	1993	.34	1983	9.8	6.3	3.2	1.6	.66	1.06	1.77	2.45	3.17	3.97	4.89	6.02	7.56	10.06	12.48
Aug	4.52	3.89	4.76	1980	31	12.79	1980	.89	1983	9.4	6.0	2.9	1.3	1.09	1.51	2.17	2.76	3.35	3.96	4.65	5.48	6.55	8.26	9.86
Sep	4.34	3.38	6.38	1949	12	10.50	1992	1.86	1979	8.6	5.8	2.7	1.3	1.37	1.79	2.40	2.92	3.42	3.95	4.52	5.19	6.06	7.41	8.66
Oct	3.29	3.30	3.47	1998	5	7.68	1998	.03	1975	8.4	5.0	2.0	1.0	.39	.64	1.11	1.56	2.05	2.60	3.23	4.02	5.09	6.85	8.57
Nov	2.64	2.73	2.99	1975	29	5.99	1975	.01	1989	8.1	4.9	1.7	.6	.27	.46	.82	1.19	1.59	2.04	2.56	3.22	4.12	5.62	7.08
Dec	1.52	1.37	2.46	1980	7	4.10	1982	.11	1996	7.5	3.4	.7	.2	.27	.40	.63	.83	1.04	1.27	1.53	1.85	2.27	2.95	3.60
Ann	39.37	38.19	6.38	Sep 1949	12	19.25	Jul 1993	.00	Jan 1986	108.6	65.6	25.3	10.1	24.95	27.62	31.11	33.80	36.22	38.59	41.05	43.81	47.18	52.14	56.48

+ 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: LAMONI, IA**

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**Climate Division: IA 8**

**NWS Call Sign: 3OI**

**Elevation: 1,128 Feet**

**Lat: 40°37N**

**Lon: 93°57W**

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	6.3	5.6	2	1	7.0	1971	3	15.8	1996	18	1979	31	12	1979	4.5	2.2	.5	.1	.0	9.0	3.3	.5	.3
Feb	5.4	4.5	2	1	6.3	1994	22	14.8	1997	18	1979	10	14	1979	3.6	1.8	.6	.2	.0	8.1	4.7	2.2	.3
Mar	3.7	1.9	1	#	10.4	1998	9	16.7	1998	16	1998	13	5	1998	2.0	1.1	.4	@	@	2.6	1.4	.4	.3
Apr	1.8	.0	#	0	11.7	1997	10	18.8	1997	19	1997	11	2	1997	.6	.3	.3	.2	@	.3	.2	.1	.1
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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.4	.0	#	0	4.0	1980	27	4.0+	1997	3	1997	27	1	1980	.2	.2	.1	.0	.0	.1	@	.0	.0
Nov	2.3	.8	#	#	7.5	1975	26	9.1	1991	5	1991	7	2	1991	1.4	.7	.2	@	.0	1.2	.2	.0	.0
Dec	6.1	4.6	2	#	6.4	1995	6	29.0	2000	22	2000	22	14	2000	3.7	2.0	.7	.2	.0	5.4	1.5	.7	.0
Ann	26.0	17.4	N/A	N/A	11.7	Apr 1997	10	29.0	Dec 2000	22	Dec 2000	22	14+	Dec 2000	16.0	8.3	2.8	.7	@	26.7	11.3	3.9	1.0

+ 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	5/09	5/05	5/02	4/29	4/27	4/24	4/22	4/19	4/14
32	4/27	4/24	4/21	4/19	4/16	4/14	4/12	4/09	4/05
28	4/17	4/14	4/11	4/09	4/07	4/05	4/02	3/31	3/27
24	4/12	4/08	4/04	4/01	3/30	3/27	3/24	3/21	3/16
20	4/01	3/27	3/23	3/20	3/17	3/14	3/10	3/06	3/01
16	3/28	3/21	3/15	3/11	3/07	3/02	2/26	2/20	2/13
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	9/22	9/27	9/30	10/02	10/05	10/07	10/10	10/13	10/18
32	9/28	10/03	10/07	10/10	10/13	10/16	10/20	10/24	10/29
28	10/12	10/17	10/22	10/25	10/28	11/01	11/04	11/08	11/14
24	10/18	10/24	10/29	11/02	11/06	11/10	11/14	11/18	11/25
20	10/25	11/01	11/06	11/10	11/14	11/18	11/22	11/27	12/03
16	11/07	11/13	11/17	11/21	11/24	11/27	12/01	12/05	12/11
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	179	173	168	164	161	157	153	149	142
32	198	191	187	183	179	175	172	167	161
28	223	217	212	208	204	200	196	191	184
24	245	237	231	225	220	216	210	204	196
20	267	258	252	247	241	236	231	224	216
16	293	282	275	268	262	256	249	241	230

\* 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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**Elevation: 1,128 Feet    Lat: 40° 37N    Lon: 93° 57W**

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	1352	1069	828	459	176	18	1	17	100	384	810	1211	6425
60	1197	929	673	320	93	3	0	4	39	249	660	1056	5223
57	1104	845	581	245	57	1	0	1	19	180	573	963	4569
55	1042	795	526	200	39	0	0	0	10	140	517	901	4170
50	892	664	385	108	13	0	0	0	1	67	382	754	3266
32	408	269	67	1	0	0	0	0	0	0	69	294	1108

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	79	124	262	535	909	1171	1359	1292	982	644	249	106	7712
55	0	6	8	45	236	481	646	579	302	71	6	0	2380
57	0	0	1	29	192	421	584	517	250	48	3	0	2045
60	0	0	0	14	134	334	491	427	181	25	0	0	1606
65	0	0	0	3	63	198	337	286	91	5	0	0	983
70	0	0	0	0	22	93	196	168	36	0	0	0	515

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	7	31	139	369	695	963	1138	1069	775	437	119	14	7	38	177	546	1241	2204	3342	4411	5186	5623	5742	5756
45	0	12	77	240	540	813	983	914	625	295	59	6	0	12	89	329	869	1682	2665	3579	4204	4499	4558	4564
50	0	1	37	143	387	663	828	759	481	181	22	0	0	1	38	181	568	1231	2059	2818	3299	3480	3502	3502
55	0	0	10	77	254	514	673	604	340	96	3	0	0	0	10	87	341	855	1528	2132	2472	2568	2571	2571
60	0	0	2	33	143	366	518	450	220	38	0	0	0	0	2	35	178	544	1062	1512	1732	1770	1770	1770
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	3	24	92	215	417	642	778	725	495	257	64	8	3	27	119	334	751	1393	2171	2896	3391	3648	3712	3720

(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.  
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)