

Climatography of the United States

No. 20

1971-2000

Station: WAUKON, IA

COOP ID: 138755

Climate Division: IA 3

NWS Call Sign:

Elevation: 1,280 Feet Lat: 43°16N

Lon: 91°29W

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	23.3	5.4	14.4	54	1981	25	26.0	1990	-31	1951	30	2.1	1977	1570	0	.0	.0	.2	23.5	30.7	11.0
Feb	29.5	11.0	20.3	60+	1981	17	32.7	1998	-34+	1996	2	9.8	1979	1253	0	.0	.0	1.0	15.5	27.1	6.0
Mar	42.1	22.6	32.4	82	1986	29	41.5	2000	-21	1962	1	24.1	1975	1012	0	.0	.0	7.3	6.0	24.8	1.3
Apr	56.8	35.1	46.0	91	1980	22	53.7	1977	7+	1979	6	40.0	1975	573	2	.0	@	22.0	.4	11.1	.0
May	68.8	47.3	58.1	90	2001	16	66.1	1977	24	1967	3	50.4	1997	252	37	.0	.0	30.6	.0	.8	.0
Jun	77.8	57.5	67.7	96+	1988	21	71.8	1971	37	1994	9	63.2	1982	38	117	.0	.8	30.0	.0	.0	.0
Jul	81.6	61.6	71.6	102	1995	14	75.8	1983	41	1997	7	67.0	1992	11	217	@	2.6	31.0	.0	.0	.0
Aug	79.2	59.4	69.3	99	1988	17	75.4	1983	38	1950	20	63.9	1992	36	169	.0	1.2	31.0	.0	.0	.0
Sep	71.7	49.9	60.8	96	1955	9	65.8	1978	26	1961	28	54.9	1993	158	32	.0	.2	29.9	.0	.4	.0
Oct	60.2	39.0	49.6	91	1997	4	56.2	1971	15+	1988	29	43.7	1988	479	1	.0	@	26.8	@	7.5	.0
Nov	42.1	24.8	33.5	75	1949	9	39.9	1975	-13	1976	29	26.5	1996	947	0	.0	.0	8.4	5.9	22.9	.6
Dec	28.0	12.0	20.0	63	1970	3	27.2	1982	-28	2000	25	5.3	2000	1395	0	.0	.0	.7	19.5	30.1	5.9
Ann	55.1	35.5	45.3	102	Jul 1995	14	75.8	Jul 1983	-34+	Feb 1996	2	2.1	Jan 1977	7724	575	@	4.8	218.9	70.8	155.4	24.8

+ 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

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

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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: WAUKON, IA

COOP ID: 138755

Climate Division: IA 3

NWS Call Sign:

Elevation: 1,280 Feet Lat: 43°16N

Lon: 91°29W

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	.66	.55	1.70	1996	19	1.91	1979	.04	1976	5.3	2.6	.3	.1	.06	.11	.20	.29	.39	.50	.63	.80	1.03	1.41	1.78
Feb	.49	.51	1.22	1953	11	1.83	1971	.00+	1995	3.8	1.6	.1	.0	.00	.00	.09	.21	.31	.40	.51	.64	.81	1.06	1.33
Mar	1.55	1.48	2.66	1950	26	4.22	1990	.16	1994	6.4	4.5	.9	.3	.30	.44	.67	.88	1.09	1.32	1.58	1.89	2.30	2.96	3.59
Apr	3.49	2.63	4.17	1981	4	8.55	1981	1.13	1996	8.8	7.2	2.4	.7	1.17	1.50	1.99	2.40	2.79	3.20	3.64	4.16	4.83	5.86	6.82
May	3.85	3.94	4.10	2000	31	9.85	2000	1.32	1994	9.0	7.4	2.5	.9	1.23	1.60	2.14	2.60	3.05	3.51	4.01	4.61	5.37	6.56	7.66
Jun	4.65	4.05	3.58	1974	21	9.91	1990	.99	1988	9.8	7.4	3.1	1.2	1.29	1.73	2.40	2.98	3.55	4.15	4.81	5.59	6.61	8.21	9.70
Jul	4.33	3.90	4.46	1950	16	10.98	1999	.90	1996	8.2	6.9	3.0	1.4	1.09	1.50	2.13	2.69	3.24	3.82	4.46	5.23	6.24	7.82	9.31
Aug	4.61	4.74	4.72	1951	6	10.51	1980	.84	1971	7.8	6.5	3.1	1.5	1.60	2.04	2.67	3.20	3.72	4.24	4.82	5.49	6.34	7.67	8.89
Sep	3.25	2.49	3.76	1985	5	9.45	1985	.20	1979	7.3	5.5	2.0	.8	.49	.77	1.24	1.69	2.15	2.66	3.25	3.97	4.93	6.50	8.00
Oct	2.24	2.10	2.08	1948	7	4.95	1984	.33	1987	6.3	5.0	1.8	.4	.62	.83	1.15	1.44	1.71	2.00	2.32	2.70	3.19	3.96	4.68
Nov	1.94	1.59	3.45	1991	1	6.73	1991	.00	1976	6.1	4.2	1.3	.5	.20	.42	.75	1.03	1.31	1.62	1.97	2.39	2.95	3.86	4.72
Dec	.82	.72	.94	1949	11	2.13	2000	.00	1994	6.1	3.4	.1	.0	.09	.19	.33	.45	.57	.69	.84	1.01	1.24	1.61	1.96
Ann	31.88	31.37	4.72	Aug 1951	6	10.98	Jul 1999	.00+	Feb 1995	84.9	62.2	20.6	7.8	22.54	24.34	26.66	28.41	29.98	31.49	33.05	34.77	36.87	39.91	42.54

+ 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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www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: WAUKON, IA

COOP ID: 138755

Climate Division: IA 3

NWS Call Sign:

Elevation: 1,280 Feet

Lat: 43°16N

Lon: 91°29W

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	6.1	5.5	5	3	12.0	1971	4	15.0	1971	18	1971	31	16	1971	3.1	2.6	.8	.1	@	-9.9	-9.9	-9.9	-9.9
Feb	5.9	6.3	6	4	5.0	1976	21	12.5	1989	22	1971	15	18+	1978	2.2	1.8	.6	@	.0	-9.9	-9.9	-9.9	-9.9
Mar	4.9	4.5	2	0	10.0	1971	19	12.0	1971	21	1978	11	14	1978	1.9	1.6	.6	.1	@	9.9	6.5	4.7	2.5
Apr	1.8	.8	#	0	5.0	1979	2	7.0	1973	7	1973	10	1	1975	.9	.6	.2	@	.0	1.3	.4	.1	.0
May	#	.0	#	0	#	1997	14	#+	1997	#	1997	14	#	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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.0	.0	#	0	.5	1972	18	.5+	1982	1	1972	18	#+	1997	.1	.0	.0	.0	.0	.1	.0	.0	.0
Nov	3.7	2.0	#	0	7.0	1988	29	15.5	1985	10	1977	29	2+	2000	1.6	1.3	.4	.2	.0	2.2	1.2	.8	.0
Dec	5.0	5.4	2	1	8.0	1987	15	12.5	1981	23	2000	31	13	2000	2.4	2.0	.6	.2	.0	-9.9	-9.9	-9.9	-9.9
Ann	27.4	24.5	N/A	N/A	12.0	Jan 1971	4	15.5	Nov 1985	23	Dec 2000	31	18+	Feb 1978	12.2	9.9	3.2	.6	@	-9.9	-9.9	-9.9	-9.9

+ 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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Lon: 91° 29W

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	5/20	5/16	5/13	5/11	5/08	5/06	5/04	5/01	4/27
32	5/12	5/07	5/04	4/30	4/27	4/24	4/21	4/18	4/12
28	5/02	4/27	4/23	4/19	4/16	4/13	4/10	4/06	3/31
24	4/17	4/14	4/12	4/09	4/07	4/05	4/03	4/01	3/28
20	4/14	4/09	4/06	4/03	3/31	3/29	3/26	3/22	3/18
16	4/08	4/02	3/29	3/26	3/23	3/20	3/16	3/12	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	9/19	9/22	9/25	9/27	9/29	10/01	10/03	10/05	10/09
32	9/25	9/29	10/02	10/04	10/06	10/09	10/11	10/14	10/18
28	10/03	10/08	10/11	10/15	10/18	10/21	10/24	10/27	11/01
24	10/19	10/23	10/26	10/29	10/31	11/02	11/05	11/08	11/12
20	10/26	10/30	11/02	11/05	11/07	11/10	11/12	11/15	11/20
16	10/31	11/06	11/09	11/13	11/16	11/18	11/22	11/25	12/01
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	153	149	145	142	139	136	132	127
32	181	174	169	165	161	157	153	148	141
28	204	197	192	188	184	180	175	170	164
24	222	216	212	209	206	203	199	195	190
20	240	233	228	224	220	216	212	207	201
16	262	253	247	242	237	232	227	221	212

* 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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Lon: 91°29W

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	1570	1253	1012	573	252	38	11	36	158	479	947	1395	7724
60	1415	1113	857	430	151	8	0	9	68	332	797	1240	6420
57	1322	1029	764	350	104	3	0	2	35	253	707	1147	5716
55	1260	973	703	300	78	1	0	0	20	206	647	1085	5273
50	1105	833	558	191	33	0	0	0	3	110	503	930	4266
32	574	383	152	10	0	0	0	0	0	2	118	426	1665

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	28	54	162	429	808	1069	1228	1156	863	547	162	54	6560
55	0	0	1	29	173	380	515	443	194	38	1	0	1774
57	0	0	0	19	137	322	453	383	148	23	0	0	1485
60	0	0	0	9	91	237	361	297	92	9	0	0	1096
65	0	0	0	2	37	117	217	169	32	1	0	0	575
70	0	0	0	0	11	39	104	80	6	0	0	0	240

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	1	58	245	578	831	986	912	642	328	55	4	0	1	59	304	882	1713	2699	3611	4253	4581	4636	4640
45	0	0	24	144	425	681	831	757	493	203	21	0	0	0	24	168	593	1274	2105	2862	3355	3558	3579	3579
50	0	0	10	80	283	531	676	602	350	113	4	0	0	0	10	90	373	904	1580	2182	2532	2645	2649	2649
55	0	0	4	33	168	383	521	447	223	51	1	0	0	0	4	37	205	588	1109	1556	1779	1830	1831	1831
60	0	0	0	13	84	239	367	294	125	16	0	0	0	0	0	13	97	336	703	997	1122	1138	1138	1138
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	34	151	343	534	665	598	391	186	25	0	0	0	34	185	528	1062	1727	2325	2716	2902	2927	2927

(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