U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: DUBUQUE LOCK & DAM 11, IA **COOP ID: 132364**

Climate Division: IA 3 **NWS Call Sign:** **Elevation: 620 Feet** **Lat: 42˚32N** **Lon: 90˚39W**

Temperature (˚F)

Month	Mean (1)			Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
	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	26.9	8.7	17.8	61	1981	25	29.1	1989	-31	1951	30	6.0	1977	1463	0	.0	.0	.6	19.6	30.2	8.3
Feb	32.6	13.9	23.3	65	2000	26	36.2	1998	-32	1996	4	11.5	1979	1168	0	.0	.0	1.9	12.7	25.6	4.9
Mar	45.1	25.7	35.4	87	1986	29	43.5	1973	-32	1962	1	26.7	1975	918	0	.0	.0	10.0	3.8	20.6	.6
Apr	59.5	38.2	48.9	93	1980	22	56.2	1977	11	1982	6	43.3	1982	488	4	.0	@	24.0	.2	5.7	.0
May	71.9	50.0	61.0	95+	1991	28	68.1	1977	30+	1950	1	54.7	1997	190	64	.0	.5	30.9	.0	.1	.0
Jun	81.7	60.6	71.2	101	1988	21	75.9	1991	42	1969	3	65.7	1982	20	203	@	3.6	30.0	.0	.0	.0
Jul	85.4	64.8	75.1	108	1995	14	78.7	1988	46	1981	29	69.7	1992	2	315	.2	6.7	31.0	.0	.0	.0
Aug	82.7	62.6	72.7	104	1988	17	79.6	1995	43	1994	6	67.8	1992	17	254	.3	4.2	31.0	.0	.0	.0
Sep	74.0	53.5	63.8	97+	1955	9	68.6	1998	29	1989	24	58.0	1993	101	64	.0	1.3	30.0	.0	.1	.0
Oct	62.1	42.1	52.1	92	1997	4	59.6	1971	19	1981	24	47.2	1988	405	4	.0	@	28.0	.0	2.3	.0
Nov	44.6	28.9	36.8	75+	1999	10	44.9	1999	-8	1977	26	30.1	1995	847	0	.0	.0	10.6	3.0	17.5	.1
Dec	31.7	16.2	24.0	66	2001	6	31.5	1982	-30	1950	27	11.2	2000	1272	0	.0	.0	1.3	13.5	28.4	4.0
Ann	58.2	38.8	48.5	108	Jul 1995	14	79.6	Aug 1995	-32+	Feb 1996	4	6.0	Jan 1977	6891	908	.5	16.3	229.3	52.8	130.5	17.9

\+ 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

(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

Issue Date: February 2004

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	1.16	1.05	1.63	1960	13	2.70	1996	.09	1981
Feb	1.09	.84	1.78	2001	9	2.87	1971	.00	1987
Mar	2.13	1.79	2.22	1998	31	5.57	1991	.27	1981
Apr	3.26	2.80	2.04	1956	27	7.06	1981	1.36	1971
May	3.82	3.88	4.50	1978	13	7.23	1983	.74	1992
Jun	4.27	3.65	3.33	1969	26	8.69	1993	.61	1988
Jul	4.28	3.95	3.86	1987	30	9.57	1993	1.78	1985
Aug	4.19	3.46	5.27	1972	2	9.37	1972	1.55	1995
Sep	3.61	3.46	4.48	1972	13	10.70	1986	.51	1990
Oct	2.39	2.18	2.23	2001	23	6.34	1984	.35	1994
Nov	2.33	2.07	2.31	1992	21	6.20	1992	.02	1976
Dec	1.43	1.36	2.11	1966	8	3.72	1971	.21	1975
Ann	33.96	33.99	5.27	Aug 1972	2	10.70	Sep 1986	.00	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.9	3.6	.5	.1
Feb	6.2	3.3	.6	.1
Mar	8.8	5.0	1.3	.4
Apr	11.1	6.9	2.2	.8
May	11.5	7.6	2.6	.9
Jun	10.2	6.9	2.9	1.1
Jul	9.1	6.3	3.1	1.2
Aug	9.5	6.6	3.2	1.1
Sep	8.5	5.8	2.5	1.1
Oct	8.4	4.9	1.6	.5
Nov	9.1	5.4	1.5	.2
Dec	8.2	3.9	.7	.1
Ann	108.5	66.2	22.7	7.6

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.30	.40	.57	.72	.87	1.03	1.20	1.40	1.67	2.09	2.49
Feb	.08	.20	.37	.53	.70	.88	1.09	1.34	1.69	2.24	2.78
Mar	.43	.63	.94	1.23	1.52	1.82	2.17	2.59	3.15	4.04	4.88
Apr	1.03	1.34	1.79	2.19	2.57	2.96	3.39	3.90	4.55	5.57	6.51
May	1.06	1.42	1.97	2.45	2.92	3.42	3.96	4.60	5.44	6.75	7.98
Jun	.89	1.28	1.91	2.48	3.05	3.67	4.36	5.19	6.28	8.03	9.69
Jul	1.44	1.85	2.44	2.94	3.42	3.92	4.46	5.09	5.91	7.17	8.33
Aug	1.32	1.72	2.31	2.82	3.30	3.81	4.36	5.01	5.85	7.15	8.36
Sep	.58	.89	1.42	1.92	2.43	2.99	3.63	4.41	5.45	7.14	8.76
Oct	.48	.70	1.05	1.37	1.70	2.04	2.44	2.91	3.53	4.53	5.48
Nov	.34	.54	.88	1.20	1.53	1.90	2.33	2.85	3.55	4.68	5.78
Dec	.27	.40	.61	.80	1.00	1.21	1.45	1.74	2.12	2.74	3.32
Ann	23.54	25.54	28.10	30.06	31.80	33.49	35.24	37.18	39.53	42.96	45.93

\+ 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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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	10.2	8.7	5	4
Feb	7.4	8.0	5	4
Mar	4.2	4.3	1	1
Apr	1.7	.0	#	#
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.0	.0	#	0
Nov	2.5	.8	#	#
Dec	7.5	7.0	3	2
Ann	33.5	28.8	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	13.0	1996	27	24.9	1996	32	1979	24	21	1979
Feb	6.0	1978	5	19.0	1994	29	1979	2	24	1979
Mar	12.0	1991	13	13.5	1975	16	1975	12	9	1979
Apr	10.0	1973	9	17.0	1973	16	1973	10	2	1973
May	#	1994	1	#	1994	#	1994	1	#	1994
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	.4	1992	20	.4	1992	#	1992	20	#	1992
Nov	5.0	1995	28	11.5	1977	11	1977	28	2	1986
Dec	12.0	1994	7	20.5	1987	31	2000	31	13	2000
Ann	13.0	Jan 1996	27	24.9	Jan 1996	32	Jan 1979	24	24	Feb 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.6	3.8	1.3	.4	.1
Feb	3.4	2.7	.7	.2	.0
Mar	2.3	1.5	.5	.2	@
Apr	.6	.5	.2	.1	@
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.1	.0	.0	.0	.0
Nov	1.4	1.1	.3	@	.0
Dec	4.4	2.9	1.1	.3	@
Ann	17.8	12.5	4.1	1.2	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	20.3	14.2	10.5	2.7
Feb	17.4	11.3	7.7	2.3
Mar	7.0	3.5	2.0	.6
Apr	.9	.4	.3	.1
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	3.2	.9	.5	.1
Dec	14.1	6.9	4.2	.6
Ann	62.9	37.2	25.2	6.4

+ 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	5/10	5/05	5/02	4/29	4/26	4/23	4/20	4/16	4/11
32	4/30	4/25	4/21	4/18	4/15	4/12	4/09	4/05	3/31
28	4/14	4/11	4/08	4/06	4/05	4/03	4/01	3/29	3/26
24	4/12	4/07	4/04	4/01	3/29	3/26	3/23	3/20	3/15
20	4/05	3/30	3/26	3/23	3/19	3/16	3/12	3/08	3/03
16	3/30	3/24	3/19	3/15	3/11	3/08	3/04	2/27	2/20

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	9/23	9/28	10/02	10/05	10/07	10/10	10/13	10/16	10/21
32	10/08	10/13	10/16	10/20	10/23	10/25	10/29	11/01	11/06
28	10/17	10/21	10/25	10/27	10/30	11/01	11/04	11/07	11/12
24	10/25	10/30	11/03	11/06	11/08	11/11	11/14	11/18	11/23
20	11/03	11/08	11/12	11/16	11/19	11/22	11/26	11/30	12/05
16	11/13	11/19	11/23	11/26	11/29	12/02	12/05	12/09	12/15

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	184	177	172	168	164	160	156	151	144
32	212	205	199	194	190	185	181	175	167
28	222	217	214	210	208	205	202	198	193
24	245	238	232	228	224	219	215	209	202
20	268	260	254	249	244	239	234	228	220
16	289	280	273	267	262	257	251	244	235

***** 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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Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1463	1168	918	488	190	20	2	17	101	405	847	1272	6891
60	1308	1028	763	350	105	4	0	3	37	268	697	1117	5680
57	1215	944	671	274	67	1	0	0	16	197	608	1024	5017
55	1153	888	611	229	48	0	0	0	8	156	550	962	4605
50	998	755	469	133	17	0	0	0	1	78	412	811	3674
32	487	325	107	3	0	0	0	0	0	1	76	334	1333

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	47	81	212	509	897	1174	1336	1260	953	623	219	85	7396
55	0	0	3	45	232	484	623	547	271	66	3	0	2274
57	0	0	1	30	189	425	561	485	219	45	1	0	1956
60	0	0	0	15	133	338	468	395	150	22	0	0	1521
65	0	0	0	4	64	203	315	254	64	4	0	0	908
70	0	0	0	0	24	98	177	140	19	0	0	0	458

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	84	320	685	940	1094	1032	751	419	92	7	0	6	90	410	1095	2035	3129	4161	4912	5331	5423	5430
45	0	1	42	202	530	790	939	877	601	281	43	4	0	1	43	245	775	1565	2504	3381	3982	4263	4306	4310
50	0	0	19	111	380	640	784	722	454	166	21	0	0	0	19	130	510	1150	1934	2656	3110	3276	3297	3297
55	0	0	6	55	244	490	629	567	311	87	3	0	0	0	6	61	305	795	1424	1991	2302	2389	2392	2392
60	0	0	0	21	136	342	474	412	194	38	0	0	0	0	0	21	157	499	973	1385	1579	1617	1617	1617
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	2	48	180	410	625	761	705	464	226	42	3	0	2	50	230	640	1265	2026	2731	3195	3421	3463	3466

(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.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/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 are 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.

a. Temperature/ Precipitation Tables
   1. 1971-2000 Monthly Normals
   2. Cooperative Summary of the Day
   3. National Weather Service station records
   4. 1971-2000 serially complete daily data

b. Degree Day Table
   1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
   2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data

c. Snow Tables
   1. Snow Climatology
   2. Cooperative Summary of the Day

d. Freeze Data Table
   1971-2000 serially complete daily data

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/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