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: GLADSTONE DAM 18, IL **COOP ID: 113455**

Climate Division: IL 3 **NWS Call Sign:** **Elevation: 538 Feet** **Lat: 40˚53N** **Lon: 91˚01W**

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	.0	.0	.0	64	1997	5	.0	0	-23	1977	28	.0	0	0	0	.0	.0	2.3	15.8	29.5	5.4
Feb	.0	.0	.0	70	2000	26	.0	0	-26	1996	4	.0	0	0	0	.0	.0	5.1	10.4	24.6	2.7
Mar	.0	.0	.0	82	1991	27	.0	0	-2	1996	9	.0	0	0	0	.0	.0	14.2	2.6	18.4	.1
Apr	.0	.0	.0	84	1992	16	.0	0	20	1995	5	.0	0	0	0	.0	.0	25.6	.1	4.2	.0
May	.0	.0	.0	90+	1996	18	.0	0	34	1994	1	.0	0	0	0	.0	.5	30.9	.0	.2	.0
Jun	.0	.0	.0	95+	1994	20	.0	0	45	1993	6	.0	0	0	0	.2	4.9	30.0	.0	.0	.0
Jul	.0	.0	.0	100	1995	14	.0	0	51	1997	6	.0	0	0	0	.3	8.5	31.0	.0	.0	.0
Aug	.0	.0	.0	100	1991	3	.0	0	52+	1994	7	.0	0	0	0	.4	5.9	31.0	.0	.0	.0
Sep	.0	.0	.0	98	2000	3	.0	0	30	1991	21	.0	0	0	0	.0	1.8	30.0	.0	.1	.0
Oct	.0	.0	.0	92	1997	4	.0	0	26+	1997	29	.0	0	0	0	.0	@	29.0	.0	2.9	.0
Nov	.0	.0	.0	80	2000	2	.0	0	1+	1991	9	.0	0	0	0	.0	.0	14.7	1.7	16.1	.0
Dec	.0	.0	.0	73	1998	5	.0	0	-15	2000	26	.0	0	0	0	.0	.0	3.1	10.9	27.3	2.5
Ann	.0	.0	.0	100+	Jul 1995	14	-99.9	0	-26	Feb 1996	4	99.9	0	0	0	.9	21.6	246.9	41.5	123.3	10.7

+ 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

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: GLADSTONE DAM 18, IL

COOP ID: 113455

Climate Division: IL 3 **NWS Call Sign:** **Elevation: 538 Feet** **Lat: 40°53N** **Lon: 91°01W**

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	1.36	1.13	1.65	1965	2	3.35	1974	.01	1981
Feb	1.29	.97	2.00	1997	21	3.92	1997	.32	1987
Mar	2.49	2.02	2.84	1954	25	5.85	1990	.22	1981
Apr	3.42	3.36	3.49	1950	25	8.65	1973	.70	1985
May	4.04	4.07	2.60	1980	31	9.83	1996	.42	1992
Jun	4.20	3.48	3.57	1993	25	10.36	1990	.67	1991
Jul	4.07	3.32	5.52	1948	5	11.53	1982	.85	1983
Aug	3.82	2.61	3.80	1965	26	11.35	1980	.54	1971
Sep	3.63	3.66	4.15	1961	14	9.09	1986	.06	1979
Oct	2.72	2.31	2.83	1969	13	6.53	1998	.61	1993
Nov	2.72	2.77	3.22	1984	1	6.31	1992	.34	1999
Dec	2.01	1.89	2.67	1982	3	6.22	1982	.10	1976
Ann	35.77	33.80	5.52	Jul 1948	5	11.53	Jul 1982	.01	Jan 1981

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.1	3.5	.9	.2
Feb	6.6	3.4	.7	.1
Mar	8.8	5.4	1.6	.5
Apr	9.9	6.3	2.3	.7
May	10.9	7.8	2.9	1.0
Jun	9.8	6.8	2.8	1.3
Jul	8.9	6.4	2.7	1.4
Aug	8.5	6.2	2.5	1.2
Sep	7.9	5.8	2.4	1.0
Oct	7.7	5.1	1.8	.7
Nov	8.9	5.5	1.9	.5
Dec	8.0	4.5	1.1	.5
Ann	103.0	66.7	23.6	9.1

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	.14	.24	.43	.62	.82	1.05	1.32	1.66	2.12	2.88	3.63
Feb	.30	.42	.61	.78	.95	1.13	1.33	1.57	1.89	2.39	2.86
Mar	.37	.58	.94	1.28	1.64	2.03	2.49	3.04	3.78	4.99	6.16
Apr	.90	1.23	1.72	2.16	2.59	3.04	3.54	4.13	4.90	6.12	7.26
May	1.20	1.58	2.16	2.65	3.14	3.64	4.19	4.84	5.69	7.01	8.23
Jun	.87	1.25	1.87	2.43	3.00	3.60	4.29	5.11	6.20	7.94	9.59
Jul	1.11	1.49	2.08	2.60	3.10	3.63	4.22	4.91	5.81	7.23	8.56
Aug	.76	1.10	1.66	2.18	2.70	3.25	3.89	4.65	5.65	7.26	8.80
Sep	.70	1.02	1.55	2.05	2.54	3.08	3.69	4.42	5.39	6.96	8.44
Oct	.65	.90	1.30	1.65	2.01	2.38	2.80	3.29	3.95	4.98	5.96
Nov	.57	.82	1.22	1.58	1.95	2.34	2.78	3.31	4.01	5.12	6.17
Dec	.36	.54	.83	1.10	1.38	1.69	2.03	2.45	3.00	3.90	4.75
Ann	23.96	26.19	29.08	31.30	33.28	35.20	37.20	39.42	42.13	46.08	49.52

\+ 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

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

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: GLADSTONE DAM 18, IL **COOP ID: 113455**

Climate Division: IL 3 **NWS Call Sign:** **Elevation: 538 Feet** **Lat: 40°53N** **Lon: 91°01W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	4.6	3.0	3	2
Feb	3.4	3.0	3	1
Mar	.9	.0	1	#
Apr	.4	.0	#	0
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
Nov	1.3	.0	#	#
Dec	1.5	.1	1	#
Ann	12.1	6.1	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	8.0	1979	1	16.5	1999	29	1979	31	20	1979
Feb	8.0	1978	14	13.5	1994	21	1979	11	16	1979
Mar	6.0	1972	29	6.0	1972	13	1978	5	4	1978
Apr	6.0	1982	6	9.0	1982	6	1982	9	#+	1995
May	.0	0	0	.0	0	0	0	0	0	0
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	#	1993	30	#+	1993	0	0	0	0	0
Nov	9.0	1974	30	14.0	1974	9	1974	30	1	1974
Dec	6.0	1972	12	6.0	1972	14	1977	12	4	1983
Ann	9.0	Nov 1974	30	16.5	Jan 1999	29	Jan 1979	31	20	Jan 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.5	2.0	.8	.3	.0
Feb	1.7	1.3	.3	.1	.0
Mar	.3	.3	.2	.1	.0
Apr	.1	.1	.1	@	.0
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	.0	.0	.0	.0	.0
Nov	.4	.3	.1	.1	.0
Dec	1.7	1.3	.6	.2	.0
Ann	6.7	5.3	2.1	.8	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	9.1	6.1	3.9	.1
Feb	6.5	4.3	3.0	.5
Mar	.8	.7	.3	.0
Apr	.0	.0	.0	.0
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	.6	.2	.2	.0
Dec	2.0	1.4	.5	.0
Ann	19.0	12.7	7.9	.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/normals/usnormals.html

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: GLADSTONE DAM 18, IL **COOP ID: 113455**

Climate Division: IL 3 **NWS Call Sign:** **Elevation: 538 Feet** **Lat: 40˚53N** **Lon: 91˚01W**

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	5/15	5/08	5/04	4/30	4/26	4/22	4/18	4/13	4/07
32	4/28	4/23	4/20	4/17	4/14	4/11	4/08	4/04	3/30
28	4/15	4/12	4/09	4/07	4/05	4/03	3/31	3/29	3/25
24	4/09	4/03	3/31	3/27	3/24	3/21	3/17	3/14	3/08
20	3/30	3/25	3/21	3/18	3/15	3/12	3/08	3/05	2/27
16	3/25	3/19	3/14	3/10	3/06	3/02	2/26	2/21	2/14

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	9/24	9/29	10/02	10/05	10/08	10/11	10/14	10/18	10/23
32	10/03	10/09	10/13	10/17	10/21	10/24	10/28	11/01	11/08
28	10/20	10/24	10/28	10/31	11/02	11/05	11/08	11/11	11/15
24	10/29	11/02	11/06	11/09	11/11	11/14	11/17	11/20	11/24
20	11/03	11/09	11/13	11/16	11/20	11/23	11/26	12/01	12/06
16	11/14	11/20	11/25	11/28	12/02	12/05	12/09	12/13	12/19

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	189	181	175	170	165	160	155	149	141
32	213	205	199	194	189	185	180	174	166
28	227	221	217	214	211	207	204	200	194
24	255	247	241	236	231	227	222	216	208
20	273	265	259	254	249	245	240	234	226
16	297	288	282	276	271	265	260	253	244

***** 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: GLADSTONE DAM 18, IL **COOP ID: 113455**

Climate Division: IL 3 **NWS Call Sign:** **Elevation: 538 Feet** **Lat: 40˚53N** **Lon: 91˚01W**

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	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	6	34	133	381	684	982	1125	1060	792	472	135	20	6	40	173	554	1238	2220	3345	4405	5197	5669	5804	5824
45	1	10	70	251	529	832	970	905	642	326	66	5	1	11	81	332	861	1693	2663	3568	4210	4536	4602	4607
50	0	2	36	150	377	682	815	750	494	203	29	1	0	2	38	188	565	1247	2062	2812	3306	3509	3538	3539
55	0	0	12	78	239	532	660	595	352	109	10	0	0	0	12	90	329	861	1521	2116	2468	2577	2587	2587
60	0	0	3	36	130	384	505	440	222	49	2	0	0	0	3	39	169	553	1058	1498	1720	1769	1771	1771
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	4	23	80	215	419	663	779	727	507	275	76	7	4	27	107	322	741	1404	2183	2910	3417	3692	3768	3775

(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