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: CARLYLE RESERVOIR, IL **COOP ID: 111290**

Climate Division: IL 8 **NWS Call Sign:** **Elevation: 501 Feet** **Lat: 38˚38N** **Lon: 89˚22W**

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	36.3	18.8	27.6	71+	1970	29	39.1	1990	-22	1994	19	12.3	1977	1161	0	.0	.0	4.5	12.2	27.5	2.6
Feb	42.6	22.9	32.8	77	2000	25	41.8	1998	-20	1982	10	19.4	1978	903	0	.0	.0	8.4	6.7	21.8	1.3
Mar	53.7	33.1	43.4	85+	1986	31	49.6	1973	-5	1978	5	35.1	1978	671	0	.0	.0	18.5	1.5	15.0	.1
Apr	64.6	42.8	53.7	89	1987	30	60.7	1981	22+	1997	9	48.1	1983	346	8	.0	.0	27.1	.0	3.6	.0
May	74.6	53.0	63.8	97	1967	28	70.2	1991	31+	1976	3	59.3	1981	135	98	.0	.4	30.9	.0	.1	.0
Jun	83.6	62.1	72.9	101+	1988	27	76.5	1971	41	1963	21	68.1	1974	9	244	.1	5.8	30.0	.0	.0	.0
Jul	87.7	66.6	77.2	104+	1980	16	81.4	1980	50	1985	2	73.7	1971	0	376	.3	12.3	31.0	.0	.0	.0
Aug	86.0	64.6	75.3	104+	1980	10	81.0	1983	43	1965	29	70.9	1992	6	326	.3	8.7	31.0	.0	.0	.0
Sep	79.4	56.7	68.1	98+	1984	2	72.8	1998	35	1983	23	62.9	1974	45	137	.0	3.1	30.0	.0	.0	.0
Oct	68.0	44.8	56.4	93	1963	12	64.0	1971	21	1981	25	50.3	1987	289	22	.0	@	29.9	.0	2.7	.0
Nov	54.0	34.9	44.5	83	1968	1	50.7	1999	0	1964	30	36.1	1976	618	0	.0	.0	17.9	.7	12.8	.0
Dec	41.7	23.8	32.8	74+	1982	3	41.5	1971	-14	1985	26	19.9	2000	1000	0	.0	.0	7.7	6.9	24.1	1.4
Ann	64.4	43.7	54.0	104+	Aug 1980	10	81.4	Jul 1980	-22	Jan 1994	19	12.3	Jan 1977	5183	1211	.7	30.3	266.9	28.0	107.6	5.4

\+ 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

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1962-2001

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

Issue Date: February 2004

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: CARLYLE RESERVOIR, IL **COOP ID: 111290**

Climate Division: IL 8 **NWS Call Sign:** **Elevation: 501 Feet** **Lat: 38˚38N** **Lon: 89˚22W**

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	2.17	1.78	2.01	1999	31	6.84	1999	.11	1986
Feb	2.41	2.27	3.38	1986	3	4.79	1986	.52	1996
Mar	3.82	3.61	3.66	1977	28	8.26	1979	.88	1981
Apr	3.91	3.13	3.96	1996	29	9.95	1994	1.20	1976
May	4.23	3.46	2.97	1995	18	14.31	1995	.90	1988
Jun	4.44	4.11	5.55	1964	18	12.58	2000	.78	1972
Jul	3.69	3.00	4.50	1993	16	10.41	1993	.97	1996
Aug	2.84	2.61	2.42	1968	1	6.53	1977	.48	1971
Sep	3.05	2.77	3.35	1989	14	9.25	1993	.09	1979
Oct	3.01	2.47	2.68	1983	20	8.16	1983	1.09	1992
Nov	3.84	3.56	5.17	1972	2	11.24	1985	.24	1976
Dec	3.23	2.56	3.55	1982	24	9.38	1982	.47	1980
Ann	40.64	40.79	5.55	Jun 1964	18	14.31	May 1995	.09	Sep 1979

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.4	4.9	1.7	.4
Feb	7.3	4.5	1.6	.5
Mar	9.8	6.6	2.5	.8
Apr	11.3	8.1	2.5	.9
May	10.5	7.2	2.9	1.0
Jun	9.3	6.5	2.9	1.5
Jul	8.1	5.8	2.4	.9
Aug	8.0	5.2	2.2	.7
Sep	7.4	4.8	2.1	.9
Oct	8.5	5.7	2.3	.8
Nov	9.2	6.4	2.7	1.0
Dec	8.7	5.6	2.0	.7
Ann	106.5	71.3	27.8	10.1

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	.31	.49	.80	1.10	1.42	1.76	2.16	2.65	3.32	4.40	5.44
Feb	.71	.94	1.28	1.58	1.87	2.17	2.51	2.90	3.41	4.20	4.94
Mar	1.05	1.41	1.96	2.44	2.91	3.40	3.95	4.60	5.44	6.76	7.99
Apr	1.06	1.43	1.99	2.49	2.97	3.48	4.04	4.71	5.58	6.95	8.22
May	1.23	1.63	2.24	2.76	3.27	3.80	4.39	5.08	5.98	7.38	8.69
Jun	1.09	1.51	2.16	2.73	3.30	3.90	4.58	5.38	6.42	8.08	9.64
Jul	.76	1.10	1.64	2.13	2.63	3.16	3.77	4.49	5.45	6.98	8.43
Aug	.77	1.04	1.45	1.81	2.16	2.53	2.94	3.42	4.05	5.04	5.96
Sep	.44	.70	1.14	1.56	2.00	2.49	3.04	3.73	4.65	6.15	7.59
Oct	.99	1.27	1.69	2.05	2.40	2.75	3.14	3.60	4.19	5.10	5.94
Nov	.63	.97	1.52	2.05	2.59	3.18	3.86	4.68	5.78	7.56	9.27
Dec	.71	1.01	1.48	1.91	2.34	2.80	3.31	3.93	4.74	6.03	7.25
Ann	28.04	30.46	33.56	35.93	38.04	40.09	42.21	44.56	47.41	51.57	55.18

\+ 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: 1962-2001
(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: CARLYLE RESERVOIR, IL **COOP ID: 111290**

Climate Division: IL 8 **NWS Call Sign:** **Elevation: 501 Feet** **Lat: 38°38N** **Lon: 89°22W**

Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	5.2	2.5	1	#	7.5	1977	9	24.3	1977	17	1977	22	10	1977	2.0	1.3	.4	.1	.0	4.5	2.4	1.9	1.6
Feb	1.9	1.3	2	#	5.0	1982	9	6.7	1982	23	1982	11	17	1982	1.0	.8	.2	.1	.0	2.7	1.8	1.3	.2
Mar	.9	.0	#	0	7.0	1975	10	7.5	1975	10	1978	5	3	1978	.4	.2	.1	.1	.0	.3	.1	.1	.0
Apr	.4	.0	#	0	7.0	1971	6	9.0	1971	7	1971	6	1	1971	.1	.1	@	@	.0	.2	.1	.1	.0
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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	1.1	.0	#	0	8.0	1975	27	9.3	1980	7	1980	27	1	1980	.2	.2	.1	.1	.0	.5	.2	.1	.0
Dec	2.6	.3	#	#	12.0	1973	20	20.0	1973	12	1973	23	2	1983	1.2	.8	.2	.1	.1	2.0	.9	.4	.2
Ann	12.1	4.1	N/A	N/A	12.0	Dec 1973	20	24.3	Jan 1977	23	Feb 1982	11	17	Feb 1982	4.9	3.4	1.0	.5	.1	10.2	5.5	3.9	2.0

+ 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

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: CARLYLE RESERVOIR, IL **COOP ID: 111290**

Climate Division: IL 8 **NWS Call Sign:** **Elevation: 501 Feet** **Lat: 38˚38N** **Lon: 89˚22W**

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	5/03	4/29	4/25	4/22	4/19	4/16	4/13	4/10	4/05
32	4/24	4/20	4/17	4/15	4/12	4/10	4/07	4/04	3/31
28	4/16	4/11	4/07	4/03	3/31	3/28	3/25	3/21	3/16
24	4/04	3/30	3/26	3/23	3/20	3/17	3/14	3/10	3/05
20	3/20	3/15	3/11	3/08	3/04	3/01	2/26	2/22	2/17
16	3/16	3/08	3/03	2/26	2/22	2/18	2/13	2/08	1/31

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	9/26	10/01	10/05	10/08	10/11	10/14	10/17	10/20	10/25
32	10/07	10/12	10/16	10/19	10/22	10/25	10/28	10/31	11/05
28	10/18	10/24	10/28	10/31	11/03	11/06	11/10	11/14	11/19
24	11/01	11/07	11/11	11/14	11/17	11/20	11/23	11/27	12/03
20	11/07	11/14	11/19	11/23	11/27	11/30	12/04	12/09	12/16
16	11/19	11/25	11/29	12/03	12/07	12/10	12/14	12/19	12/25

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	192	185	181	177	174	170	166	162	156
32	210	204	199	195	192	188	184	180	173
28	239	231	226	221	216	212	207	201	193
24	262	255	250	245	241	237	233	228	221
20	293	284	277	272	266	261	255	249	240
16	315	305	298	292	287	281	275	268	259

***** 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: CARLYLE RESERVOIR, IL **COOP ID: 111290**

Climate Division: IL 8 **NWS Call Sign:** **Elevation: 501 Feet** **Lat: 38˚38N** **Lon: 89˚22W**

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	1161	903	671	346	135	9	0	6	45	289	618	1000	5183
60	1006	763	524	218	66	1	0	0	12	175	471	845	4081
57	913	685	437	154	38	0	0	0	4	121	389	756	3497
55	852	633	383	118	25	0	0	0	2	92	336	699	3140
50	709	505	261	51	7	0	0	0	0	39	219	556	2347
32	268	159	30	0	0	0	0	0	0	0	16	170	643

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	129	180	382	652	986	1225	1399	1343	1082	757	388	193	8716
55	1	10	22	80	298	535	686	630	394	135	18	9	2818
57	0	6	15	56	249	475	624	568	336	103	12	4	2448
60	0	0	8	30	184	386	531	475	253	63	4	0	1934
65	0	0	0	8	98	244	376	326	137	22	0	0	1211
70	0	0	0	1	41	122	226	191	57	5	0	0	643

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	26	67	198	438	761	1006	1171	1112	854	519	209	51	26	93	291	729	1490	2496	3667	4779	5633	6152	6361	6412
45	6	31	120	301	606	856	1016	957	704	374	124	24	6	37	157	458	1064	1920	2936	3893	4597	4971	5095	5119
50	1	10	64	190	453	706	861	802	555	244	65	6	1	11	75	265	718	1424	2285	3087	3642	3886	3951	3957
55	0	2	30	106	306	556	706	647	412	144	30	1	0	2	32	138	444	1000	1706	2353	2765	2909	2939	2940
60	0	0	7	54	185	408	551	492	277	68	8	0	0	0	7	61	246	654	1205	1697	1974	2042	2050	2050
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	17	47	119	252	475	685	808	765	555	317	117	32	17	64	183	435	910	1595	2403	3168	3723	4040	4157	4189

(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