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: OLNEY 2 S, IL **COOP ID: 116446**

Climate Division: IL 7 **NWS Call Sign:** **Elevation: 480 Feet** **Lat: 38˚42N** **Lon: 88˚05W**

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	36.4	18.7	27.6	75	1943	24	38.7	1990	-24	1994	19	11.4	1977	1161	0	.0	.0	5.1	10.8	25.6	2.3
Feb	42.2	22.5	32.4	78	1972	29	41.0	1998	-25	1951	2	17.8	1978	915	0	.0	.0	9.0	5.9	19.7	1.6
Mar	53.5	31.8	42.7	89+	1929	24	50.4	1973	-15	1978	5	35.0	1978	693	0	.0	.0	20.2	1.1	14.2	.1
Apr	64.9	41.9	53.4	91	1930	11	59.5	1981	21+	1994	7	47.8	1983	353	5	.0	.0	28.3	.0	4.1	.0
May	74.9	51.8	63.4	98+	1911	29	69.8	1991	29+	1976	4	58.8	1971	141	90	.0	.9	31.0	.0	.2	.0
Jun	84.2	62.0	73.1	106+	1954	26	76.5	1991	36	1917	16	68.3	1982	7	250	.1	7.4	30.0	.0	.0	.0
Jul	87.5	65.5	76.5	112+	1936	15	80.3	1993	45	1937	1	72.7	1971	0	356	.2	12.5	31.0	.0	.0	.0
Aug	85.9	63.2	74.6	109+	1943	26	79.3	1983	41+	1964	13	70.7	1992	4	300	.3	8.9	31.0	.0	.0	.0
Sep	79.8	55.0	67.4	106+	1953	2	72.9	1998	27	1928	26	62.3	1974	53	125	.0	3.8	30.0	.0	@	.0
Oct	68.6	43.6	56.1	97	1953	2	63.0	1971	17	1952	29	49.0	1987	303	26	.0	.1	30.3	.0	4.0	.0
Nov	53.7	33.8	43.8	89	1923	23	51.1	1999	-2	1929	30	35.2	1976	638	0	.0	.0	19.2	.5	12.6	.0
Dec	41.4	24.3	32.9	74	1982	2	41.2	1982	-19+	1989	23	19.5	1989	996	0	.0	.0	7.9	6.0	22.1	1.1
Ann	64.4	42.8	53.7	112+	Jul 1936	15	80.3	Jul 1993	-25	Feb 1951	2	11.4	Jan 1977	5264	1152	.6	33.6	273.0	24.3	102.5	5.1

\+ 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: 1901-2001

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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	2.84	2.51	3.17	1948	1	8.51	1999	.10	1986
Feb	2.73	2.77	2.54	1965	9	5.89	1990	.49	1978
Mar	4.35	4.00	6.30	1904	25	9.15	1989	1.52	1981
Apr	4.38	3.68	3.75	1959	19	9.62	1996	1.57	1971
May	4.76	3.99	5.37	1961	7	11.16	1995	.85	1977
Jun	4.07	4.28	4.43	1911	18	8.40	1973	.46	1978
Jul	4.13	4.16	4.55	1933	10	9.55	1979	.62	1972
Aug	3.55	2.79	4.12	1924	3	11.17	2000	.47	1971
Sep	3.09	2.79	6.43	1926	3	6.71	1993	.35	1999
Oct	3.34	3.05	4.60	1905	18	7.86	1983	1.26	1992
Nov	4.39	4.33	5.34	1993	14	12.21	1985	.22	1999
Dec	3.65	3.27	3.95	1982	3	9.98	1982	.68	1980
Ann	45.28	45.13	6.43	Sep 1926	3	12.21	Nov 1985	.10	Jan 1986

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.5	5.6	1.8	.6
Feb	8.0	5.1	1.8	.7
Mar	11.4	7.7	3.3	1.1
Apr	11.9	8.4	3.0	1.0
May	11.1	7.6	3.2	1.4
Jun	9.7	6.7	2.9	1.1
Jul	8.6	6.0	2.7	1.2
Aug	8.4	5.5	2.6	1.1
Sep	7.5	5.1	2.0	.9
Oct	8.1	5.1	2.2	.9
Nov	9.8	6.7	3.1	1.3
Dec	10.1	6.4	2.6	.9
Ann	114.1	75.9	31.2	12.2

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	.41	.65	1.06	1.45	1.86	2.31	2.83	3.47	4.33	5.73	7.08
Feb	.71	.96	1.36	1.71	2.05	2.41	2.81	3.29	3.91	4.89	5.81
Mar	1.64	2.05	2.63	3.11	3.57	4.04	4.55	5.14	5.89	7.05	8.10
Apr	1.65	2.06	2.64	3.13	3.59	4.07	4.58	5.17	5.93	7.10	8.16
May	1.24	1.69	2.38	2.99	3.59	4.22	4.92	5.75	6.84	8.55	10.15
Jun	.73	1.09	1.69	2.24	2.81	3.42	4.12	4.96	6.09	7.90	9.63
Jul	.94	1.33	1.93	2.47	3.02	3.59	4.24	5.01	6.02	7.63	9.15
Aug	.78	1.11	1.63	2.10	2.57	3.07	3.64	4.31	5.21	6.63	7.97
Sep	.63	.91	1.36	1.78	2.20	2.65	3.15	3.76	4.57	5.87	7.09
Oct	1.45	1.75	2.17	2.51	2.83	3.16	3.50	3.90	4.41	5.17	5.86
Nov	.92	1.32	1.97	2.55	3.14	3.77	4.49	5.34	6.47	8.27	9.98
Dec	1.04	1.38	1.91	2.36	2.81	3.27	3.79	4.39	5.18	6.41	7.56
Ann	31.89	34.48	37.79	40.31	42.55	44.72	46.96	49.44	52.45	56.82	60.60

\+ 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: 1901-2001
(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	4.1	2.3	1	#
Feb	3.1	1.2	#	#
Mar	2.1	1.0	#	0
Apr	.2	.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	.8	.0	#	0
Dec	2.6	1.5	#	0
Ann	12.9	6.0	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	7.0	1997	9	19.5	1977	17	1977	29	10	1977
Feb	8.0	1993	25	13.0	1993	15	1977	1	4	1977
Mar	7.0	1990	24	10.0	1975	7	2000	12	1	1996
Apr	4.0	1971	6	4.0	1971	1	1971	6	#	1971
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	1.0	1993	30	1.0	1993	0	0	0	0	0
Nov	5.0	1980	27	6.0	1980	4+	1997	14	1	1997
Dec	7.1	2000	14	12.0	1973	8	1973	22	3	2000
Ann	8.0	Feb 1993	25	19.5	Jan 1977	17	Jan 1977	29	10	Jan 1977

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.5	1.8	.4	.2	.0
Feb	1.6	.9	.4	.2	.0
Mar	1.0	.7	.2	.2	.0
Apr	.1	.1	@	.0	.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
Nov	.4	.3	.1	@	.0
Dec	1.7	1.1	.3	.2	.0
Ann	7.3	4.9	1.4	.8	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	6.4	4.1	2.9	1.3
Feb	2.4	1.7	1.6	.4
Mar	.8	.5	.2	.0
Apr	.1	.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	.5	.2	.0	.0
Dec	3.2	1.9	1.1	.0
Ann	13.4	8.4	5.8	1.7

+ 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	5/16	5/10	5/07	5/03	4/30	4/27	4/24	4/20	4/15
32	5/04	4/28	4/24	4/20	4/17	4/14	4/11	4/07	4/01
28	4/18	4/14	4/11	4/09	4/07	4/05	4/02	3/31	3/27
24	4/11	4/05	4/01	3/28	3/25	3/22	3/18	3/14	3/08
20	3/24	3/20	3/17	3/14	3/12	3/10	3/07	3/04	2/28
16	3/18	3/11	3/05	2/28	2/24	2/19	2/15	2/09	2/01

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	9/27	9/30	10/03	10/05	10/07	10/09	10/12	10/16
32	9/30	10/04	10/07	10/10	10/12	10/15	10/17	10/20	10/24
28	10/11	10/17	10/21	10/24	10/27	10/30	11/03	11/07	11/12
24	10/18	10/25	10/30	11/03	11/07	11/11	11/15	11/20	11/27
20	11/01	11/07	11/12	11/16	11/20	11/24	11/28	12/03	12/09
16	11/12	11/19	11/24	11/29	12/03	12/07	12/11	12/17	12/24

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	176	169	165	161	157	153	149	144	138
32	200	192	186	182	177	173	168	163	155
28	221	214	210	206	203	199	195	191	185
24	253	244	237	232	227	221	216	209	200
20	274	267	261	257	252	248	243	238	230
16	311	300	293	287	281	275	269	262	252

***** 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	1161	915	693	353	141	7	0	4	53	303	638	996	5264
60	1006	775	540	222	70	1	0	0	15	190	491	841	4151
57	913	696	455	155	40	0	0	0	6	136	408	753	3562
55	853	644	398	117	26	0	0	0	3	105	353	696	3195
50	711	514	271	49	8	0	0	0	0	49	233	552	2387
32	273	164	30	0	0	0	0	0	0	0	17	168	652

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	135	173	360	642	972	1233	1379	1319	1062	746	369	195	8585
55	2	9	15	69	285	543	666	606	375	138	16	10	2734
57	0	5	10	47	237	483	604	544	318	107	10	5	2370
60	0	0	2	24	174	394	511	451	238	68	3	0	1865
65	0	0	0	5	90	250	356	300	125	26	0	0	1152
70	0	0	0	1	37	125	206	165	49	7	0	0	590

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	37	77	226	466	778	1023	1168	1103	866	547	225	63	37	114	340	806	1584	2607	3775	4878	5744	6291	6516	6579
45	11	37	139	330	623	873	1013	948	716	400	139	29	11	48	187	517	1140	2013	3026	3974	4690	5090	5229	5258
50	3	13	75	210	470	723	858	793	566	265	75	11	3	16	91	301	771	1494	2352	3145	3711	3976	4051	4062
55	0	3	39	122	324	573	703	638	421	160	36	3	0	3	42	164	488	1061	1764	2402	2823	2983	3019	3022
60	0	0	10	62	190	423	548	483	284	80	13	0	0	0	10	72	262	685	1233	1716	2000	2080	2093	2093
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	20	46	132	289	497	695	805	756	570	343	126	35	20	66	198	487	984	1679	2484	3240	3810	4153	4279	4314

(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