

Climatography of the United States

No. 20

1971-2000

Station: MARENGO, IL

COOP ID: 115326

Climate Division: IL 2

NWS Call Sign:

Elevation: 810 Feet

Lat: 42°15N

Lon: 88°36W

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	27.9	10.6	19.3	62+	1967	24	30.4	1990	-29	1979	11	5.9	1977	1419	0	.0	.0	.6	18.9	30.2	8.4
Feb	33.3	15.5	24.4	73	1932	25	35.3	1998	-27	1905	13	12.4	1978	1137	0	.0	.0	2.3	12.7	26.6	5.1
Mar	44.9	26.4	35.7	84	1986	30	43.3	1977	-16	1943	8	29.1	1984	909	0	.0	.0	9.8	3.9	24.0	.5
Apr	58.6	36.7	47.7	94	1926	30	54.3	1977	6	1982	7	42.9	1975	521	2	.0	@	22.8	.2	11.1	.0
May	71.2	47.2	59.2	107	1934	31	66.5	1977	22	1966	10	53.6	1997	231	51	.0	1.1	30.5	.0	1.4	.0
Jun	81.2	57.1	69.2	107	1934	1	73.4	1971	29	1972	11	64.0	1982	31	156	.2	4.7	30.0	.0	@	.0
Jul	84.5	62.0	73.3	109	1936	14	77.4	1999	39	1972	5	69.2	1992	4	260	.2	7.1	31.0	.0	.0	.0
Aug	82.1	59.9	71.0	107	1918	5	77.6	1995	37	1915	30	65.9	1992	25	211	.1	4.1	31.0	.0	.0	.0
Sep	75.0	50.7	62.9	103	1922	8	70.4	1998	25+	1974	23	58.5	1993	125	60	.0	1.4	30.0	.0	.8	.0
Oct	62.9	39.1	51.0	90+	1997	6	59.1	1971	8+	1925	29	45.1	1988	439	5	.0	.1	27.9	.0	8.4	.0
Nov	46.6	28.6	37.6	80	1933	1	45.2	1999	-17	1947	30	28.9	1976	823	0	.0	.0	12.2	2.5	20.4	.2
Dec	33.0	16.9	25.0	65+	1962	2	33.4	1982	-26	1950	27	12.8	2000	1242	0	.0	.0	2.0	13.3	29.2	4.3
Ann	58.4	37.6	48.0	109	Jul 1936	14	77.6	Aug 1995	-29	Jan 1979	11	5.9	Jan 1977	6906	745	.5	18.5	230.1	51.5	152.1	18.5

+ 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: 1901-2001

(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: MARENGO, IL

COOP ID: 115326

Climate Division: IL 2

NWS Call Sign:

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Lat: 42°15N

Lon: 88°36W

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	1.48	1.21	2.96	1938	24	4.05	1979	.10	1981	8.0	3.8	.6	.2	.27	.40	.62	.82	1.02	1.25	1.50	1.80	2.21	2.87	3.49
Feb	1.29	1.23	1.30	1997	21	2.93	1997	.11	1995	6.9	3.9	.6	.1	.23	.35	.53	.71	.89	1.08	1.30	1.57	1.92	2.50	3.04
Mar	2.42	2.15	2.10	1948	19	6.36	1976	.48	1980	9.7	5.7	1.4	.4	.58	.81	1.16	1.47	1.79	2.12	2.49	2.93	3.51	4.42	5.28
Apr	3.71	3.51	2.97	1909	29	7.88	1993	1.21	1989	11.6	7.4	2.8	.8	1.30	1.65	2.16	2.59	3.00	3.42	3.87	4.41	5.09	6.14	7.11
May	4.10	4.01	3.33	1905	11	9.89	1996	.98	1992	10.6	7.4	3.0	.9	1.26	1.65	2.23	2.73	3.21	3.71	4.26	4.91	5.75	7.05	8.26
Jun	4.56	3.90	5.15	1999	13	10.40	1993	1.31	1991	9.7	6.9	3.0	1.4	1.33	1.76	2.41	2.98	3.53	4.10	4.73	5.47	6.44	7.95	9.35
Jul	3.86	3.56	4.07	1978	2	8.34	1978	1.08	1997	9.2	6.2	2.7	1.2	1.45	1.81	2.32	2.75	3.16	3.58	4.04	4.56	5.23	6.27	7.21
Aug	4.47	3.79	3.03	1996	6	11.70	1987	1.84	1984	9.2	7.2	2.9	1.2	1.44	1.87	2.50	3.03	3.55	4.08	4.66	5.34	6.22	7.59	8.85
Sep	3.32	2.15	3.34	1986	25	10.92	1972	.00	1979	8.5	6.0	2.2	.9	.31	.68	1.23	1.72	2.21	2.75	3.36	4.10	5.09	6.70	8.23
Oct	2.61	2.15	3.20	1954	10	6.79	1985	.44	1975	8.1	5.3	1.7	.5	.50	.74	1.12	1.47	1.83	2.21	2.65	3.17	3.87	4.99	6.05
Nov	2.69	2.20	2.87	1935	3	6.25	1985	.11	1999	9.1	5.9	1.6	.5	.48	.71	1.11	1.47	1.85	2.25	2.72	3.28	4.02	5.23	6.38
Dec	1.97	1.79	2.32	1909	5	5.17	1971	.34	1976	9.4	5.0	1.0	.2	.47	.66	.95	1.20	1.46	1.72	2.02	2.38	2.85	3.59	4.29
Ann	36.48	36.78	5.15	Jun 1999	13	11.70	Aug 1987	.00	Sep 1979	110.0	70.7	23.5	8.3	27.22	29.04	31.36	33.11	34.65	36.14	37.66	39.34	41.37	44.30	46.82

+ 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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Station: MARENGO, IL

COOP ID: 115326

Climate Division: IL 2

NWS Call Sign:

Elevation: 810 Feet

Lat: 42°15N

Lon: 88°36W

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	9.9	9.6	5	4	12.0	1979	1	19.5	1978	38	1979	17	29	1979	5.2	3.8	.9	.4	.1	21.0	14.1	11.1	3.7
Feb	6.9	7.0	4	4	8.0	1990	15	21.0	1974	19	1985	14	15	1978	3.5	2.8	.8	.3	.0	15.2	12.7	8.2	2.4
Mar	4.6	4.0	1	1	9.0	1972	29	14.0	1971	18	1979	1	5	1975	2.1	1.6	.5	.2	.0	4.8	2.6	1.1	.1
Apr	1.1	.0	#	0	6.0	1982	6	7.0	1982	6	1982	6	1	1982	.6	.5	.2	@	.0	.8	.3	.1	.0
May	.1	.0	#	0	2.0	1990	10	2.0	1990	2	1990	10	#+	1994	.1	.1	.0	.0	.0	.1	.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	.1	.0	#	0	2.0	1989	20	2.0	1989	1	1989	20	#	1989	.1	@	.0	.0	.0	@	.0	.0	.0
Nov	2.1	1.3	#	#	6.0	1981	24	7.0+	1996	6	1975	27	1	1996	1.4	1.0	.2	.1	.0	1.3	.4	.1	.0
Dec	7.6	7.4	2	1	11.0	1987	15	17.3	1983	13	1973	19	6	1983	4.2	3.2	.8	.4	@	10.8	6.3	4.0	.9
Ann	32.4	29.3	N/A	N/A	12.0	Jan 1979	1	21.0	Feb 1974	38	Jan 1979	17	29	Jan 1979	17.2	13.0	3.4	1.4	.1	54.0	36.4	24.6	7.1

+ 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:

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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	6/01	5/27	5/23	5/20	5/17	5/14	5/11	5/07	5/02
32	5/21	5/15	5/11	5/08	5/04	5/01	4/27	4/23	4/17
28	5/06	5/01	4/27	4/24	4/21	4/18	4/15	4/11	4/06
24	4/21	4/17	4/14	4/12	4/10	4/07	4/05	4/02	3/29
20	4/14	4/09	4/05	4/02	3/30	3/27	3/24	3/20	3/15
16	4/05	3/30	3/26	3/22	3/19	3/16	3/12	3/08	3/02
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	9/14	9/18	9/22	9/24	9/27	9/29	10/02	10/05	10/10
32	9/23	9/27	9/29	10/02	10/04	10/06	10/08	10/11	10/14
28	9/26	10/03	10/07	10/11	10/14	10/18	10/22	10/26	11/01
24	10/13	10/18	10/22	10/25	10/29	11/01	11/04	11/08	11/13
20	10/21	10/28	11/02	11/06	11/09	11/13	11/17	11/22	11/28
16	11/04	11/10	11/14	11/17	11/20	11/23	11/27	12/01	12/06
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	153	146	141	136	132	128	124	118	111
32	173	165	160	156	152	148	143	138	131
28	201	192	186	181	176	171	165	159	150
24	222	215	210	205	201	197	193	188	180
20	250	241	235	229	224	218	213	206	197
16	270	262	256	250	246	241	236	230	221

* 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:

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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	1419	1137	909	521	231	31	4	25	125	439	823	1242	6906
60	1264	997	754	378	136	7	0	6	53	300	673	1087	5655
57	1171	913	661	299	93	3	0	1	27	228	584	994	4974
55	1109	857	600	250	69	1	0	0	16	185	526	932	4545
50	954	719	455	146	28	0	0	0	3	99	388	782	3574
32	448	287	89	3	0	0	0	0	0	1	62	312	1202

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	52	74	203	473	843	1115	1279	1209	926	590	229	93	7086
55	0	0	1	30	199	426	566	496	251	61	3	0	2033
57	0	0	0	19	161	367	504	435	203	42	1	0	1732
60	0	0	0	9	111	282	411	346	138	22	0	0	1319
65	0	0	0	2	51	156	260	211	60	5	0	0	745
70	0	0	0	0	18	64	128	109	19	0	0	0	338

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	8	72	258	600	872	1029	959	689	356	92	10	0	8	80	338	938	1810	2839	3798	4487	4843	4935	4945
45	0	2	35	156	448	722	874	804	540	232	45	3	0	2	37	193	641	1363	2237	3041	3581	3813	3858	3861
50	0	0	15	87	306	572	719	649	395	131	20	1	0	0	15	102	408	980	1699	2348	2743	2874	2894	2895
55	0	0	5	44	189	425	564	494	259	64	4	0	0	0	5	49	238	663	1227	1721	1980	2044	2048	2048
60	0	0	1	17	102	283	410	342	150	26	0	0	0	0	1	18	120	403	813	1155	1305	1331	1331	1331
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	4	52	171	376	568	692	636	439	227	53	5	0	4	56	227	603	1171	1863	2499	2938	3165	3218	3223

(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