

# Climatology of the United States

## No. 20

### 1971-2000

**Station: CORTLAND, NY**

**COOP ID: 301799**

**Climate Division: NY 2**

**NWS Call Sign:**

**Elevation: 1,129 Feet Lat: 42° 36N**

**Lon: 76° 11W**

### 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	30.6	15.2	22.9	68	1967	26	33.0	1990	-25	1957	15	13.4	1994	1306	0	.0	.0	1.7	18.0	28.5	4.3
Feb	32.8	15.7	24.3	65	1997	28	33.2	1984	-26+	1961	3	13.3	1979	1141	0	.0	.0	2.6	14.3	25.2	3.5
Mar	41.9	24.1	33.0	85	1986	31	39.4	2000	-13+	1993	20	25.4	1984	992	0	.0	.0	7.7	7.4	23.9	.6
Apr	54.1	34.4	44.3	90	1990	29	50.6	1987	11+	1982	8	37.5	1975	622	0	.0	@	18.1	.7	13.3	.0
May	67.6	45.3	56.5	93+	1987	31	63.8	1998	23	1958	10	51.0	1973	290	25	.0	.5	29.1	.0	1.4	.0
Jun	76.3	54.3	65.3	96+	1994	17	68.8	1999	32+	1965	1	61.1	1985	73	81	.0	1.2	30.0	.0	.0	.0
Jul	81.0	58.8	69.9	100	1988	17	74.3	1988	39	1963	9	66.3	1976	16	167	@	3.2	31.0	.0	.0	.0
Aug	79.4	56.9	68.2	98+	1988	3	71.6	1988	35	1965	30	64.6	1972	24	122	.0	1.5	31.0	.0	.0	.0
Sep	70.7	49.3	60.0	100	1953	4	63.4	1971	27+	2000	30	57.2	1975	164	13	.0	.3	29.9	.0	.4	.0
Oct	59.0	39.3	49.2	90	1953	1	56.5	1971	18+	1972	21	42.9	1972	493	1	.0	.0	24.7	.1	6.4	.0
Nov	46.2	31.7	39.0	81	1950	2	44.5	1975	2	1951	28	33.5	1976	782	0	.0	.0	10.4	2.7	16.9	.0
Dec	35.1	21.5	28.3	68	1998	7	35.3	1984	-17+	1980	26	14.8	1989	1137	0	.0	.0	2.8	11.9	26.4	1.3
Ann	56.2	37.2	46.7	100+	1988	Jul 17	74.3	1988	Jul -26+	1961	Feb 3	13.3	1979	7040	409	@	6.7	219.0	55.1	142.4	9.7

+ 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/normal/usnormals.html](http://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: 1948-2000

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

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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	2.74	2.22	1.49	1996	20	7.37	1978	1.08	1980	17.4	7.4	1.2	.3	.92	1.18	1.56	1.88	2.19	2.51	2.86	3.27	3.79	4.60	5.34
Feb	2.49	2.36	2.21	1961	4	4.95	1972	.66	1987	14.3	6.1	1.3	.2	.92	1.15	1.48	1.76	2.03	2.30	2.60	2.94	3.38	4.06	4.68
Mar	3.12	3.13	1.91	1977	23	5.86	1994	1.14	1981	14.3	7.3	1.8	.5	1.31	1.59	1.99	2.32	2.63	2.94	3.27	3.66	4.14	4.88	5.56
Apr	3.22	2.93	2.05	1983	16	7.42	1993	1.37	1971	13.4	7.4	2.1	.5	1.50	1.78	2.17	2.48	2.78	3.07	3.38	3.74	4.19	4.87	5.48
May	3.28	2.95	2.15	1954	4	6.59	1984	.69	1980	12.1	7.8	2.2	.5	1.15	1.46	1.91	2.29	2.65	3.02	3.43	3.90	4.50	5.44	6.30
Jun	4.08	3.82	2.94	1954	13	10.87	1972	1.24	1988	11.8	8.2	2.8	.8	1.35	1.73	2.30	2.79	3.25	3.73	4.26	4.87	5.66	6.88	8.01
Jul	3.37	3.08	2.32	1952	10	8.12	1992	.83	1993	10.6	7.1	2.5	.6	1.18	1.50	1.96	2.35	2.72	3.10	3.52	4.00	4.62	5.58	6.46
Aug	2.98	2.71	3.10	1954	31	7.04	1994	1.01	1982	10.2	6.2	2.0	.5	1.16	1.44	1.83	2.16	2.47	2.78	3.12	3.52	4.02	4.79	5.49
Sep	3.97	3.70	3.05	1975	26	10.27	1977	1.54	1983	11.5	7.0	3.1	.8	1.68	2.04	2.54	2.96	3.35	3.74	4.17	4.65	5.27	6.21	7.06
Oct	3.17	2.76	3.44	1981	28	7.91	1981	.52	1994	12.6	7.3	1.8	.6	.95	1.25	1.70	2.09	2.47	2.86	3.29	3.80	4.45	5.47	6.42
Nov	3.49	3.55	3.21	1996	9	6.58	1985	1.19	1978	15.2	8.2	2.2	.3	1.48	1.79	2.24	2.60	2.94	3.28	3.65	4.08	4.62	5.44	6.18
Dec	3.41	2.93	1.93	1983	14	6.11	1990	1.14	1999	16.8	8.6	1.9	.4	1.29	1.61	2.06	2.44	2.80	3.17	3.56	4.02	4.61	5.51	6.33
Ann	39.32	38.04	3.44	Oct 1981	28	10.87	Jun 1972	.52	Oct 1994	160.2	88.6	24.9	6.0	30.47	32.24	34.47	36.15	37.62	39.04	40.49	42.08	43.99	46.73	49.08

+ 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: 1948-2000

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

Complete documentation available from:  
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Lon: 76° 11W

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	19.7	17.5	8	7	16.0	1987	3	52.5	1978	28	1978	22	19	1994	9.1	9.0	2.9	.7	.2	24.2	20.6	16.9	9.0
Feb	19.2	16.0	8	7	14.0	1972	20	39.0	1993	28	1971	9	20+	1978	7.0	6.8	2.7	.7	.1	22.7	20.8	16.5	6.9
Mar	13.2	8.1	5	2	34.0	1993	14	56.1	1993	42	1971	6	25	1971	4.5	4.4	2.0	.8	.2	13.5	10.0	7.7	3.8
Apr	4.0	1.0	#	#	8.6	1975	4	17.0+	1983	14	1975	6	3	1975	1.7	1.7	.4	.2	.0	3.1	1.9	1.2	.2
May	.0	.0	#	0	1.0	1996	12	1.0	1996	1	1996	12	#+	1996	@	@	.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	.3	#	#	0	6.0	1988	23	6.0	1988	3	1988	23	#+	1996	.1	.1	@	@	.0	.1	@	.0	.0
Nov	8.2	8.0	1	1	10.0	1995	15	30.0	1995	20	1995	17	8	1995	3.2	3.1	1.1	.5	@	5.7	3.0	1.8	.4
Dec	22.3	23.1	3	3	22.0	1997	30	38.0	1989	25+	1997	31	8	1989	7.6	7.5	3.4	1.0	.1	18.2	13.6	9.0	2.7
Ann	86.9	73.7	N/A	N/A	34.0	Mar 1993	14	56.1	Mar 1993	42	Mar 1971	6	25	Mar 1971	33.2	32.6	12.5	3.9	.6	87.5	69.9	53.1	23.0

+ 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:

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<b>Freeze Data</b>									
<b>Spring Freeze Dates (Month/Day)</b>									
<b>Temp (F)</b>	<b>Probability of later date in spring (thru Jul 31) than indicated(*)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	5/31	5/26	5/22	5/19	5/16	5/13	5/10	5/06	5/01
<b>32</b>	5/16	5/11	5/07	5/04	5/01	4/28	4/25	4/22	4/17
<b>28</b>	4/29	4/25	4/22	4/19	4/17	4/14	4/12	4/08	4/04
<b>24</b>	4/22	4/18	4/15	4/12	4/10	4/08	4/05	4/02	3/29
<b>20</b>	4/10	4/06	4/03	4/01	3/29	3/27	3/25	3/22	3/18
<b>16</b>	4/04	3/31	3/27	3/25	3/22	3/20	3/17	3/14	3/10
<b>Fall Freeze Dates (Month/Day)</b>									
<b>Temp (F)</b>	<b>Probability of earlier date in fall (beginning Aug 1) than indicated(*)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	9/15	9/19	9/22	9/25	9/27	9/29	10/02	10/05	10/09
<b>32</b>	9/25	10/01	10/05	10/08	10/11	10/14	10/18	10/22	10/27
<b>28</b>	10/06	10/13	10/17	10/21	10/25	10/29	11/02	11/06	11/13
<b>24</b>	10/26	11/01	11/05	11/08	11/11	11/14	11/17	11/21	11/26
<b>20</b>	11/06	11/12	11/17	11/20	11/24	11/28	12/01	12/06	12/12
<b>16</b>	11/13	11/20	11/25	11/29	12/02	12/06	12/10	12/15	12/22
<b>Freeze Free Period</b>									
<b>Temp (F)</b>	<b>Probability of longer than indicated freeze free period (Days)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	148	143	139	136	133	130	127	123	118
<b>32</b>	183	175	170	166	162	158	153	148	141
<b>28</b>	215	206	200	195	191	186	181	175	167
<b>24</b>	229	224	220	217	214	211	208	204	199
<b>20</b>	263	255	249	244	239	234	229	223	215
<b>16</b>	281	272	265	259	254	249	243	237	228

\* 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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**Lon: 76° 11W**

### 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
65	1306	1141	992	622	290	73	16	24	164	493	782	1137	7040
60	1151	1001	837	474	178	22	1	2	65	347	632	982	5692
57	1058	917	744	388	125	9	0	0	31	267	542	889	4970
55	996	861	682	333	95	4	0	0	18	218	483	827	4517
50	841	721	530	210	41	0	0	0	3	120	342	675	3483
32	331	269	117	7	0	0	0	0	0	1	33	218	976

Base	Cooling Degree Days (1)												
	Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
32	48	52	148	375	758	998	1174	1121	839	532	241	104	6390
55	0	0	0	11	140	313	461	408	167	36	1	0	1537
57	0	0	0	6	107	257	399	346	120	22	0	0	1257
60	0	0	0	2	68	180	307	255	64	9	0	0	885
65	0	0	0	0	25	81	167	122	13	1	0	0	409
70	0	0	0	0	7	22	68	39	1	0	0	0	137

### 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	7	11	59	195	517	763	931	878	601	302	96	17	7	18	77	272	789	1552	2483	3361	3962	4264	4360	4377
45	0	0	28	110	369	613	776	723	451	185	47	4	0	0	28	138	507	1120	1896	2619	3070	3255	3302	3306
50	0	0	10	56	239	463	621	568	311	97	18	1	0	0	10	66	305	768	1389	1957	2268	2365	2383	2384
55	0	0	3	28	137	321	466	414	188	42	4	0	0	0	3	31	168	489	955	1369	1557	1599	1603	1603
60	0	0	1	10	70	197	314	266	96	8	0	0	0	0	1	11	81	278	592	858	954	962	962	962
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	5	39	115	305	478	608	570	359	168	50	6	0	5	44	159	464	942	1550	2120	2479	2647	2697	2703

(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:

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## 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](http://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 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/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)