

Climatology of the United States

No. 20

1971-2000

Station: ALFRED, NY

COOP ID: 300085

Climate Division: NY 1

NWS Call Sign:

Elevation: 1,770 Feet Lat: 42° 16N Lon: 77° 47W

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	31.1	10.3	20.7	70	1950	25	30.2	1998	-25+	1994	20	9.0	1977	1374	0	.0	.0	1.7	16.9	29.8	5.7
Feb	34.0	10.4	22.2	66	1976	29	31.4	1998	-35	1934	9	10.8	1979	1198	0	.0	.0	3.1	13.4	26.7	5.3
Mar	44.2	19.4	31.8	83	1998	31	38.1	1973	-16+	1993	19	23.0	1984	1030	0	.0	.0	8.9	5.1	26.0	1.4
Apr	55.1	28.4	41.8	91	1990	28	47.2	1985	5+	1982	7	34.3	1975	697	0	.0	@	20.7	.5	17.4	.0
May	67.9	39.5	53.7	93	1996	18	60.7	1998	18	1978	1	48.3	1984	363	12	.0	.1	29.9	.0	5.8	.0
Jun	76.0	47.9	62.0	94+	1934	3	65.3	1999	27	1945	1	57.6	1985	129	39	.0	.5	30.0	.0	.2	.0
Jul	80.5	52.1	66.3	101	1936	9	70.4	1988	35	1929	20	63.1	1976	46	87	.0	1.4	31.0	.0	.0	.0
Aug	78.6	50.6	64.6	98	2001	10	68.5	1995	27	1982	29	60.0	1982	71	59	.0	.6	31.0	.0	@	.0
Sep	70.8	43.6	57.2	94+	1953	3	61.7	1971	20	1991	30	53.9	1975	237	3	.0	@	29.9	.0	2.0	.0
Oct	60.0	33.2	46.6	90	1927	2	53.5	1971	13	1940	20	40.5	1988	571	0	.0	.0	25.6	.0	11.3	.0
Nov	46.9	25.6	36.3	78	1950	1	41.8	1975	-10	1933	16	28.5	1976	863	0	.0	.0	11.4	2.5	21.2	.0
Dec	35.8	16.6	26.2	68+	2001	6	34.3	1998	-21	1980	25	13.3	1989	1202	0	.0	.0	3.1	12.1	28.5	2.3
Ann	56.7	31.5	44.1	101	Jul 1936	9	70.4	Jul 1988	-35	Feb 1934	9	9.0	Jan 1977	7781	200	.0	2.6	226.3	50.5	168.9	14.7

+ 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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1926-2001

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

005-A

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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: ALFRED, NY

COOP ID: 300085

Climate Division: NY 1

NWS Call Sign:

Elevation: 1,770 Feet Lat: 42°16N

Lon: 77°47W

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	2.20	1.85	1.75	1998	7	4.83	1979	.61	1980	15.1	6.6	.9	.2	.69	.90	1.21	1.47	1.73	2.00	2.29	2.63	3.07	3.76	4.39
Feb	2.00	1.86	2.10	1950	14	3.81	1971	.70	1987	12.3	6.0	.9	.1	.71	.90	1.17	1.40	1.62	1.84	2.09	2.37	2.73	3.29	3.80
Mar	2.69	2.80	1.90	1945	22	5.25	1980	1.29	1995	12.9	7.1	1.6	.3	1.19	1.43	1.77	2.04	2.29	2.54	2.82	3.13	3.52	4.12	4.66
Apr	3.11	2.95	1.70	1996	13	5.68	1993	1.30	1975	12.6	7.8	1.8	.2	1.40	1.68	2.06	2.37	2.66	2.95	3.26	3.62	4.06	4.74	5.36
May	3.49	3.29	3.53	1946	28	7.81	1984	1.37	1971	13.2	8.7	2.4	.5	1.34	1.66	2.12	2.51	2.87	3.25	3.65	4.12	4.71	5.62	6.46
Jun	4.60	4.11	5.83	1972	21	16.60	1972	.46	1991	12.5	8.5	3.1	.8	1.02	1.44	2.12	2.73	3.34	3.98	4.71	5.58	6.73	8.56	10.29
Jul	3.67	3.30	5.58	1935	8	8.23	1992	1.16	1980	11.5	7.5	2.5	.6	1.43	1.77	2.25	2.66	3.04	3.42	3.84	4.33	4.94	5.89	6.75
Aug	3.36	3.09	2.81	1933	24	7.41	1977	1.24	1971	11.3	6.9	2.0	.6	1.27	1.58	2.03	2.41	2.76	3.12	3.51	3.97	4.55	5.44	6.26
Sep	3.95	3.31	2.78	1962	28	7.40	1996	1.65	1988	13.0	7.9	2.7	.8	1.61	1.98	2.49	2.91	3.30	3.70	4.14	4.64	5.27	6.24	7.12
Oct	3.28	2.85	3.12	1955	15	6.90	1976	.99	1994	12.8	7.4	1.7	.7	1.12	1.43	1.88	2.26	2.63	3.01	3.43	3.91	4.53	5.49	6.37
Nov	3.20	3.01	2.32	1927	17	6.69	1985	1.39	1976	13.7	8.0	1.7	.5	1.34	1.63	2.04	2.38	2.69	3.01	3.36	3.75	4.25	5.02	5.71
Dec	2.67	2.36	2.23	1978	25	4.98	1978	1.30	2000	14.7	7.3	1.4	.2	1.24	1.48	1.80	2.06	2.30	2.54	2.80	3.10	3.47	4.03	4.53
Ann	38.22	37.83	5.83	Jun 1972	21	16.60	Jun 1972	.46	Jun 1991	155.6	89.7	22.7	5.5	29.44	31.19	33.41	35.07	36.53	37.93	39.37	40.95	42.85	45.57	47.91

+ 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: 1926-2001

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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: ALFRED, NY

COOP ID: 300085

Climate Division: NY 1

NWS Call Sign:

Elevation: 1,770 Feet

Lat: 42° 16N

Lon: 77° 47W

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	18.0	17.6	5	5	12.5	1996	3	29.5	1987	28	1978	21	13	1978	12.4	7.3	1.8	.7	.1	25.4	19.7	14.6	5.8
Feb	15.2	13.4	7	5	15.5	1971	14	37.3	1972	33	1971	15	21	1978	9.0	5.6	1.9	.5	@	23.3	19.5	16.1	8.1
Mar	12.1	9.5	3	1	26.0	1993	14	34.0	1984	38	1993	15	16	1971	7.2	4.8	1.3	.6	.1	13.1	7.6	5.7	2.6
Apr	4.2	3.5	#	#	7.0	1990	5	12.0+	1983	9	1974	10	1	1987	2.7	1.7	.4	.2	.0	2.8	1.2	.4	.0
May	.4	.0	#	0	4.5	1989	7	7.5	1989	3	1977	9	#+	1977	.2	.1	.1	.0	.0	.1	@	.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	.5	.0	#	0	5.0	1976	22	5.0	1976	4	1976	22	#+	1981	.5	.2	.1	@	.0	.2	@	.0	.0
Nov	7.0	5.1	#	#	18.0	1995	15	23.0	1976	11	1971	12	2	1980	4.9	2.9	.7	.3	@	5.6	2.2	.6	.0
Dec	17.0	15.3	3	2	29.0	1978	25	47.9	1978	31	1978	25	9	1978	9.8	6.5	1.8	.7	.1	20.1	12.2	7.4	.9
Ann	74.4	64.4	N/A	N/A	29.0	Dec 1978	25	47.9	Dec 1978	38	Mar 1993	15	21	Feb 1978	46.7	29.1	8.1	3.0	.3	90.6	62.4	44.8	17.4

+ 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	6/20	6/15	6/11	6/08	6/05	6/02	5/30	5/26	5/21
32	6/07	6/02	5/29	5/26	5/23	5/20	5/17	5/13	5/08
28	5/25	5/20	5/16	5/13	5/10	5/07	5/04	5/01	4/26
24	5/08	5/03	4/30	4/27	4/24	4/22	4/19	4/16	4/11
20	4/24	4/20	4/16	4/14	4/11	4/09	4/06	4/03	3/29
16	4/16	4/11	4/08	4/05	4/02	3/31	3/28	3/25	3/20
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	8/19	8/26	8/31	9/04	9/08	9/12	9/16	9/21	9/28
32	9/07	9/12	9/15	9/18	9/21	9/24	9/27	10/01	10/05
28	9/16	9/22	9/26	9/30	10/03	10/06	10/10	10/14	10/20
24	10/02	10/07	10/11	10/14	10/17	10/20	10/24	10/27	11/01
20	10/16	10/21	10/25	10/28	10/31	11/03	11/06	11/10	11/15
16	10/25	10/31	11/04	11/07	11/11	11/14	11/18	11/22	11/28
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	120	111	105	99	94	89	84	78	69
32	142	134	129	125	121	116	112	107	99
28	168	160	155	150	145	141	136	130	122
24	195	188	183	179	175	171	167	162	156
20	221	215	210	206	202	198	194	189	183
16	245	237	231	226	222	217	212	206	199

* 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)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1374	1198	1030	697	363	129	46	71	237	571	863	1202	7781
60	1219	1058	875	548	235	52	7	14	114	422	713	1047	6304
57	1126	974	782	459	172	25	1	4	63	337	623	954	5520
55	1064	918	720	402	136	14	0	1	40	285	563	892	5035
50	909	778	568	269	66	2	0	0	10	173	416	737	3928
32	390	314	139	15	0	0	0	0	0	5	49	269	1181

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	40	40	133	308	672	899	1064	1011	756	458	176	90	5647
55	0	0	0	5	95	223	351	299	107	24	0	0	1104
57	0	0	0	3	70	174	290	240	70	15	0	0	862
60	0	0	0	1	40	111	203	158	31	6	0	0	550
65	0	0	0	0	12	39	87	59	3	0	0	0	200
70	0	0	0	0	2	8	20	11	0	0	0	0	41

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	3	11	57	181	464	693	846	791	557	265	80	14	3	14	71	252	716	1409	2255	3046	3603	3868	3948	3962
45	0	0	28	97	322	543	691	636	411	154	36	6	0	0	28	125	447	990	1681	2317	2728	2882	2918	2924
50	0	0	10	53	200	397	536	481	274	78	14	2	0	0	10	63	263	660	1196	1677	1951	2029	2043	2045
55	0	0	2	22	106	259	382	329	160	27	1	0	0	0	2	24	130	389	771	1100	1260	1287	1288	1288
60	0	0	0	6	46	142	232	191	73	2	0	0	0	0	0	6	52	194	426	617	690	692	692	692
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	7	45	134	305	440	547	506	347	172	52	7	0	7	52	186	491	931	1478	1984	2331	2503	2555	2562

(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/normal/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