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: AUBURN, NY **COOP ID: 300321**

Climate Division: NY10 **NWS Call Sign:** **Elevation: 744 Feet** **Lat: 42˚55N** **Lon: 76˚33W**

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	30.0	12.0	21.0	65	1967	25	31.8	1990	-23	1945	18	10.5	1994	1365	0	.0	.0	1.5	17.0	29.4	3.7
Feb	32.1	12.1	22.1	66	1957	25	29.9	1998	-32	1934	9	10.3	1979	1202	0	.0	.0	2.3	15.0	26.3	3.5
Mar	41.9	21.9	31.9	85	1986	30	38.9	2000	-14+	1993	19	23.0	1984	1026	0	.0	.0	7.2	7.5	25.1	.7
Apr	54.1	33.1	43.6	91	1990	28	49.3	1991	12	1954	3	36.0	1975	642	0	.0	@	17.4	.7	13.7	.0
May	67.2	44.8	56.0	94	1985	11	61.6	1991	26	1926	4	50.9	1997	297	19	.0	.3	29.4	.0	2.6	.0
Jun	76.1	54.6	65.4	101	1933	28	68.7	1999	33	1977	3	61.0	1977	65	74	.0	.3	30.0	.0	.0	.0
Jul	80.8	60.1	70.5	100+	1936	9	73.4	1999	39	1932	8	65.9	1992	7	176	.0	1.2	31.0	.0	.0	.0
Aug	78.4	58.7	68.6	97	1933	1	71.8	1973	39	1977	25	64.7	1982	25	134	.0	1.1	31.0	.0	.0	.0
Sep	70.7	50.2	60.5	99	1931	13	65.0	1985	28	1991	30	56.9	1975	155	19	.0	.2	30.0	.0	.6	.0
Oct	58.9	39.1	49.0	92	1927	2	55.9	1971	16	1928	30	44.4	1972	497	1	.0	.0	26.0	.0	6.2	.0
Nov	46.7	29.9	38.3	78	1950	1	44.6	1975	1	1933	16	32.6	1976	801	0	.0	.0	11.0	1.9	17.0	.0
Dec	35.6	19.5	27.6	64	1991	1	34.5	1982	-21	1933	29	14.1	1989	1161	0	.0	.0	3.0	10.0	27.4	1.3
Ann	56.0	36.3	46.2	101	Jun 1933	28	73.4	Jul 1999	-32	Feb 1934	9	10.3	Feb 1979	7243	423	.0	3.1	219.8	52.1	148.3	9.2

\+ 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: 1926-2000

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

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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	.00	.00	1.20	1978	20	.00	0	.00	0
Feb	.00	.00	2.75	1940	19	.00	0	.00	0
Mar	.00	.00	1.50	1953	24	.00	0	.00	0
Apr	.00	.00	3.16	1976	16	.00	0	.00	0
May	.00	.00	3.97	1969	20	.00	0	.00	0
Jun	.00	.00	2.77	1950	24	.00	0	.00	0
Jul	.00	.00	3.14+	1968	9	.00	0	.00	0
Aug	.00	.00	2.27	1991	9	.00	0	.00	0
Sep	.00	.00	3.14	1987	13	.00	0	.00	0
Oct	.00	.00	2.10+	1977	17	.00	0	.00	0
Nov	.00	.00	2.03	1966	28	.00	0	.00	0
Dec	.00	.00	1.88	1942	30	.00	0	.00	0
Ann	.00	.00	3.97	May 1969	20	#	0	9.99	0

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	18.5	8.0	1.2	.2
Feb	15.9	4.9	.6	.1
Mar	13.6	6.2	1.0	.3
Apr	12.1	7.6	1.1	.2
May	13.6	8.0	1.4	.3
Jun	13.9	8.2	1.9	.2
Jul	11.2	7.0	2.5	.7
Aug	11.0	7.3	2.2	.7
Sep	13.2	7.9	3.0	1.2
Oct	13.6	7.3	1.9	.6
Nov	13.5	7.3	1.3	.1
Dec	18.2	9.0	1.4	.3
Ann	168.3	88.7	19.5	4.9

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	**	**	**	**	**	**	**	**	**	**	**
Feb	**	**	**	**	**	**	**	**	**	**	**
Mar	**	**	**	**	**	**	**	**	**	**	**
Apr	**	**	**	**	**	**	**	**	**	**	**
May	**	**	**	**	**	**	**	**	**	**	**
Jun	**	**	**	**	**	**	**	**	**	**	**
Jul	**	**	**	**	**	**	**	**	**	**	**
Aug	**	**	**	**	**	**	**	**	**	**	**
Sep	**	**	**	**	**	**	**	**	**	**	**
Oct	**	**	**	**	**	**	**	**	**	**	**
Nov	**	**	**	**	**	**	**	**	**	**	**
Dec	**	**	**	**	**	**	**	**	**	**	**
Ann	**	**	**	**	**	**	**	**	**	**	**

\+ 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: 1926-2000
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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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	34.8	37.7	8	6
Feb	19.0	18.5	7	6
Mar	15.3	7.4	5	2
Apr	3.0	1.1	#	#
May	.9	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	.8	.0	#	0
Nov	7.9	7.8	#	#
Dec	19.9	21.1	3	4
Ann	101.6	93.6	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	17.1	1994	4	54.2	1978	30	1978	21	19	1994
Feb	13.0	1978	7	31.5	1978	28	1978	7	19	1978
Mar	26.1	1993	14	50.8	1993	30	1993	15	17	1993
Apr	9.0	1975	4	18.2	1975	17	1975	5	3	1975
May	9.0	1977	9	9.0	1977	9	1977	9	#	1977
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	#	1992	30	#	1992	0	0	0	0	0
Oct	8.0	1974	3	8.1	1974	6	1974	3	#+	1993
Nov	9.1	1990	12	15.5	1990	10	1990	12	1	1990
Dec	10.1	1977	5	29.3	1973	17	1973	19	6+	1989
Ann	26.1	Mar 1993	14	54.2	Jan 1978	30+	Mar 1993	15	19+	Jan 1994

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	11.5	8.0	3.1	1.3	.4
Feb	8.2	6.6	2.2	.9	.1
Mar	5.5	3.7	2.0	1.0	.3
Apr	1.3	.9	.2	.2	.0
May	.1	.1	.1	.1	.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	.4	.2	.1	.1	.0
Nov	3.4	2.5	1.0	.5	.0
Dec	8.5	6.2	2.4	.9	.1
Ann	38.9	28.2	11.1	5.0	.9

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	21.3	18.4	15.3	9.0
Feb	-9.9	-9.9	-9.9	-9.9
Mar	12.4	9.9	9.0	6.1
Apr	1.8	1.1	1.0	.6
May	-9.9	-9.9	-9.9	-9.9
Jun	-9.9	-9.9	-9.9	-9.9
Jul	-9.9	-9.9	-9.9	-9.9
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.1	.1	.1	.0
Nov	4.3	2.0	.9	.1
Dec	15.4	11.4	7.8	.6
Ann	-9.9	-9.9	-9.9	-9.9

+ 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	6/04	5/31	5/27	5/24	5/22	5/19	5/16	5/13	5/08
32	5/25	5/20	5/16	5/13	5/10	5/07	5/04	5/01	4/26
28	5/10	5/05	5/02	4/29	4/26	4/23	4/20	4/16	4/11
24	4/26	4/21	4/18	4/15	4/12	4/10	4/07	4/04	3/30
20	4/12	4/08	4/05	4/02	3/31	3/29	3/26	3/23	3/19
16	4/08	4/04	3/31	3/29	3/26	3/24	3/21	3/18	3/13

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	9/13	9/18	9/21	9/24	9/27	9/29	10/02	10/05	10/10
32	9/21	9/27	10/01	10/04	10/07	10/11	10/14	10/18	10/24
28	10/07	10/13	10/17	10/20	10/23	10/27	10/30	11/03	11/08
24	10/19	10/26	10/30	11/03	11/07	11/10	11/14	11/19	11/25
20	10/29	11/05	11/09	11/13	11/17	11/21	11/25	11/29	12/06
16	11/15	11/20	11/24	11/27	11/30	12/04	12/07	12/11	12/16

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	148	141	136	131	127	123	119	114	107
32	175	166	160	155	150	145	139	133	124
28	202	194	189	184	180	176	171	166	158
24	232	224	218	213	208	203	198	191	183
20	253	245	240	235	230	226	221	215	208
16	271	264	258	253	249	244	239	234	226

***** 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	1365	1202	1026	642	297	65	7	25	155	497	801	1161	7243
60	1210	1062	871	494	180	18	0	3	61	350	651	1006	5906
57	1117	978	778	408	125	6	0	0	30	269	561	913	5185
55	1055	922	716	354	94	3	0	0	17	220	501	851	4733
50	900	782	567	230	41	0	0	0	3	120	356	696	3695
32	382	319	146	13	0	0	0	0	0	1	32	231	1124

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	40	42	143	361	745	999	1191	1132	854	528	221	93	6349
55	0	0	0	12	126	312	478	419	181	34	0	0	1562
57	0	0	0	7	95	256	416	357	134	21	0	0	1286
60	0	0	0	2	57	177	323	267	75	9	0	0	910
65	0	0	0	0	19	74	176	134	19	1	0	0	423
70	0	0	0	0	4	17	66	47	2	0	0	0	136

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	4	11	52	186	497	747	889	871	633	314	96	18	4	15	67	253	750	1497	2386	3257	3890	4204	4300	4318
45	1	1	25	110	351	597	734	716	484	191	47	4	1	2	27	137	488	1085	1819	2535	3019	3210	3257	3261
50	0	0	10	56	224	447	579	561	340	98	21	1	0	0	10	66	290	737	1316	1877	2217	2315	2336	2337
55	0	0	3	31	126	305	424	407	213	35	3	0	0	0	3	34	160	465	889	1296	1509	1544	1547	1547
60	0	0	1	10	61	173	269	257	113	8	0	0	0	0	1	11	72	245	514	771	884	892	892	892
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	5	33	109	285	460	577	563	383	167	50	7	0	5	38	147	432	892	1469	2032	2415	2582	2632	2639

(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.
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