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: NORWICH PUB UTIL PLANT, CT **COOP ID: 065910**

Climate Division: CT 2 **NWS Call Sign:** **Elevation: 20 Feet** **Lat: 41˚32N** **Lon: 72˚04W**

Temperature (˚F)

Month	Mean (1) Daily Max	Mean (1) Daily Min	Mean (1) Mean	Extremes Highest Daily(2)	Extremes Year	Extremes Day	Extremes Highest Month(1) Mean	Extremes Year	Extremes Lowest Daily(2)	Extremes Year	Extremes Day	Extremes Lowest Month(1) Mean	Extremes Year	Degree Days (1) Base Temp 65 Heating	Degree Days (1) Base Temp 65 Cooling	Mean Number of Days (3) Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	37.8	17.3	27.6	67+	1967	24	35.4	1998	-13+	1957	18	18.3	1977	1162	0	.0	.0	4.9	8.8	28.4	1.8
Feb	40.0	19.0	29.5	72	1981	18	36.2	1998	-17	1996	5	19.9	1979	994	0	.0	.0	5.3	5.7	24.8	.8
Mar	48.6	27.4	38.0	85	1998	31	42.9	1973	-1	1962	3	33.2	1984	837	0	.0	.0	14.6	.9	21.6	.0
Apr	58.9	37.3	48.1	91	1990	28	51.7	1986	17+	1964	1	44.3	1972	508	0	.0	.1	25.9	@	8.6	.0
May	70.5	47.6	59.1	98	1996	20	62.7	1998	26	1964	16	55.3	1990	201	15	.0	.7	30.7	.0	.4	.0
Jun	78.5	56.3	67.4	98+	1963	28	71.0	1999	33	1983	10	64.0	1974	30	101	.0	1.9	30.0	.0	.0	.0
Jul	83.8	62.5	73.2	101+	1991	21	77.8	1999	43	1988	1	70.0	1992	2	256	.2	4.9	31.0	.0	.0	.0
Aug	82.0	60.8	71.4	102	2001	10	74.8	1988	40+	1957	24	68.6	1982	3	203	@	2.6	31.0	.0	.0	.0
Sep	74.6	52.7	63.7	97	1983	11	68.0	1971	29	1957	29	60.7	1984	91	51	.0	.6	30.0	.0	.1	.0
Oct	63.9	40.0	52.0	88+	1956	16	56.8	1971	18	1980	30	47.7	1988	406	1	.0	.0	30.2	.0	5.9	.0
Nov	52.9	31.6	42.3	79+	1982	1	47.2	1975	6	1989	24	37.8	1976	683	0	.0	.0	19.4	.1	16.4	.0
Dec	42.2	23.3	32.8	77	1998	7	37.8	1996	-13	1980	26	19.5	1989	999	0	.0	.0	7.0	4.5	26.1	.4
Ann	61.1	39.7	50.4	102	Aug 2001	10	77.8	Jul 1999	-17	Feb 1996	5	18.3	Jan 1977	5916	627	.2	10.8	260.0	20.0	132.3	3.0

+ 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: 1956-2001

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

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Climate Division: CT 2 **NWS Call Sign:** **Elevation: 20 Feet** **Lat: 41˚32N** **Lon: 72˚04W**

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	4.74	4.62	3.24	1979	21	14.04	1979	.60	1981
Feb	3.82	3.81	2.65	1999	2	7.08	1981	.47	1987
Mar	4.93	4.43	3.44	1998	9	9.82	1980	1.01	1981
Apr	4.58	4.35	3.78	1983	10	12.93	1983	1.13	1999
May	4.13	3.95	3.64	1967	25	8.85	1984	1.10	1986
Jun	3.68	2.65	6.11	1982	5	14.67	1998	.07	1999
Jul	3.67	3.34	3.64	1980	29	7.59	1986	1.16	1979
Aug	4.85	4.29	5.21	1991	19	12.34	1991	.77	1984
Sep	4.29	3.84	4.12	1961	21	9.54	1977	1.08	1980
Oct	4.53	4.51	4.35	1971	10	9.37	1989	.57	1994
Nov	4.86	4.25	2.98	1983	16	10.75	1983	.43	1976
Dec	4.70	4.00	3.47	1993	5	9.06	1972	1.14	1980
Ann	52.78	52.41	6.11	Jun 1982	5	14.67	Jun 1998	.07	Jun 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.7	7.4	3.9	1.2
Feb	8.6	6.0	2.5	1.3
Mar	10.3	7.6	3.3	1.2
Apr	10.7	7.0	3.0	1.3
May	11.9	7.7	2.9	.9
Jun	10.2	5.9	2.3	1.0
Jul	9.1	5.5	2.3	1.2
Aug	9.3	6.2	3.2	1.4
Sep	9.1	6.0	2.9	1.4
Oct	8.8	6.2	3.1	1.3
Nov	9.9	6.6	3.4	1.7
Dec	10.8	7.7	3.1	1.5
Ann	118.4	79.8	35.9	15.4

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	1.27	1.72	2.40	3.01	3.60	4.22	4.90	5.72	6.79	8.45	10.01
Feb	1.25	1.61	2.15	2.60	3.04	3.49	3.98	4.56	5.30	6.46	7.52
Mar	1.97	2.42	3.06	3.60	4.10	4.61	5.16	5.80	6.61	7.85	8.98
Apr	1.55	1.98	2.61	3.15	3.67	4.20	4.78	5.46	6.33	7.68	8.92
May	1.42	1.81	2.38	2.86	3.32	3.79	4.31	4.91	5.68	6.88	7.97
Jun	.38	.65	1.16	1.67	2.22	2.84	3.57	4.49	5.73	7.79	9.81
Jul	1.12	1.46	1.99	2.43	2.87	3.32	3.82	4.40	5.16	6.34	7.43
Aug	1.15	1.61	2.32	2.95	3.58	4.25	4.99	5.88	7.05	8.89	10.63
Sep	1.29	1.70	2.31	2.83	3.34	3.87	4.45	5.14	6.02	7.41	8.69
Oct	1.25	1.68	2.33	2.90	3.46	4.04	4.69	5.45	6.45	8.01	9.47
Nov	1.29	1.75	2.45	3.07	3.68	4.32	5.03	5.87	6.96	8.69	10.30
Dec	1.39	1.84	2.51	3.09	3.65	4.23	4.88	5.64	6.62	8.16	9.59
Ann	41.03	43.39	46.36	48.58	50.54	52.41	54.34	56.44	58.98	62.62	65.73

\+ 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: 1956-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	3.3	2.5	2	#	8.0	1974	9	8.0	1974	25	1996	9	9	1982	2.2	1.4	.6	.2	.0	1.4	.4	.0	.0
Feb	7.2	3.6	2	1	10.0	1994	11	21.3	1994	16	1978	16	14	1978	2.0	1.4	.6	.2	.1	-9.9	-9.9	-9.9	-9.9
Mar	3.2	.1	#	0	7.7	1978	16	12.7	1978	9	1978	3	3	1978	1.3	.8	.3	.2	.0	1.9	.7	.2	.0
Apr	1.0	.0	#	0	9.0	1996	10	14.0	1996	3	1996	10	#+	1997	.2	.2	.1	.1	.0	.2	.1	.0	.0
May	#	.0	0	0	#	1977	9	#	1977	0	0	0	0	0	.0	.0	.0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.3	.0	#	0	4.0	1980	17	4.0	1980	5	1986	19	#+	1996	.2	.2	@	.0	.0	.3	.1	.0	.0
Dec	3.7	2.3	#	#	5.5	1995	14	16.3	1995	10	1995	21	4	1995	1.5	1.0	.5	.1	.0	3.2	1.5	1.1	.2
Ann	18.7	8.5	N/A	N/A	10.0	Feb 1994	11	21.3	Feb 1994	25	Jan 1996	9	14	Feb 1978	7.4	5.0	2.1	.8	.1	-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	5/27	5/22	5/18	5/15	5/12	5/09	5/05	5/01	4/26
32	5/10	5/06	5/02	4/29	4/27	4/24	4/21	4/18	4/13
28	4/26	4/22	4/18	4/15	4/12	4/10	4/07	4/03	3/29
24	4/11	4/06	4/03	3/31	3/29	3/26	3/23	3/20	3/15
20	4/05	3/31	3/27	3/24	3/21	3/18	3/15	3/12	3/07
16	3/26	3/21	3/16	3/13	3/09	3/06	3/02	2/26	2/20

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	9/18	9/22	9/25	9/27	9/29	10/01	10/04	10/06	10/10
32	9/30	10/04	10/07	10/09	10/11	10/13	10/16	10/19	10/22
28	10/08	10/13	10/17	10/20	10/23	10/26	10/29	11/02	11/07
24	10/24	10/30	11/03	11/07	11/10	11/13	11/17	11/21	11/27
20	11/08	11/14	11/18	11/21	11/25	11/28	12/01	12/05	12/11
16	11/23	11/28	12/02	12/05	12/08	12/12	12/15	12/19	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	155	150	146	143	140	137	134	130	125
32	183	178	174	170	167	163	160	156	150
28	215	207	202	197	193	189	184	179	171
24	249	241	235	230	226	221	216	210	202
20	269	262	256	252	247	243	238	233	226
16	297	289	283	278	273	269	264	258	250

***** 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	1162	994	837	508	201	30	2	3	91	406	683	999	5916
60	1007	854	682	359	93	4	0	0	29	261	533	844	4666
57	914	770	589	272	50	1	0	0	12	185	443	751	3987
55	852	714	527	218	30	0	0	0	6	140	384	689	3560
50	697	574	374	104	6	0	0	0	0	58	244	537	2594
32	222	153	28	0	0	0	0	0	0	0	7	119	529

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	83	83	214	483	837	1062	1277	1223	950	618	314	142	7286
55	0	0	0	10	155	372	564	510	266	45	1	0	1923
57	0	0	0	5	112	312	502	448	212	28	0	0	1619
60	0	0	0	1	62	225	409	355	139	11	0	0	1202
65	0	0	0	0	15	101	256	203	51	1	0	0	627
70	0	0	0	0	2	27	122	79	9	0	0	0	239

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	16	22	88	268	586	818	1022	971	712	394	154	38	16	38	126	394	980	1798	2820	3791	4503	4897	5051	5089
45	2	2	35	145	431	668	867	816	562	250	77	11	2	4	39	184	615	1283	2150	2966	3528	3778	3855	3866
50	0	0	12	67	283	518	712	661	412	138	31	3	0	0	12	79	362	880	1592	2253	2665	2803	2834	2837
55	0	0	4	27	156	368	557	506	270	63	10	0	0	0	4	31	187	555	1112	1618	1888	1951	1961	1961
60	0	0	0	9	75	227	402	355	155	18	2	0	0	0	0	9	84	311	713	1068	1223	1241	1243	1243
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	7	14	60	156	346	523	690	656	447	240	92	25	7	21	81	237	583	1106	1796	2452	2899	3139	3231	3256

(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