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: HOULTON INTL AP, ME **COOP ID: 173892**

Climate Division: ME 1 **NWS Call Sign: HUL** **Elevation: 476 Feet** **Lat: 46˚07N** **Lon: 67˚48W**

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	22.5	.2	11.4	55+	1980	12	18.9	1990	-41	1981	4	.7	1994	1664	0	.0	.0	.4	24.1	30.2	16.6
Feb	26.1	2.4	14.3	62	1994	20	27.3	1981	-36+	1993	21	3.6	1993	1420	0	.0	.0	.4	20.0	27.4	13.5
Mar	36.4	15.1	25.8	72	1962	30	33.7	1979	-31	2001	2	19.3	1972	1217	0	.0	.0	2.9	10.0	28.4	4.9
Apr	49.1	27.8	38.5	86	1990	27	43.4	1987	-6	1977	10	33.4	1975	796	0	.0	.0	13.7	1.0	22.5	.1
May	64.3	38.8	51.6	96	1978	29	56.7	1999	18+	1977	1	46.2	1974	420	2	.0	.4	28.6	.0	8.0	.0
Jun	73.5	48.1	60.8	97	1969	13	65.2	1973	28	1971	6	56.6	1977	148	21	.0	1.0	30.0	.0	.6	.0
Jul	78.4	53.8	66.1	97+	1991	20	71.5	1973	32	1969	7	60.2	1992	59	93	.0	1.5	31.0	.0	.0	.0
Aug	76.2	51.5	63.9	99	1975	2	67.9	1973	30+	1978	28	59.2	1982	87	50	.0	1.0	31.0	.0	.1	.0
Sep	66.0	42.1	54.1	91+	1999	3	62.4	1999	20	1980	29	49.1	1978	332	3	.0	@	29.6	.0	4.6	.0
Oct	53.5	32.4	43.0	82	1970	9	47.6	1995	10+	1978	30	38.3+	1974	683	0	.0	.0	20.6	@	16.8	.0
Nov	39.9	23.0	31.5	71	1956	1	35.9	1999	-14	1989	24	27.5	1986	1007	0	.0	.0	5.1	6.7	24.5	.6
Dec	27.4	7.9	17.7	59+	1969	11	27.8	1996	-34	1989	30	1.9	1989	1467	0	.0	.0	.9	20.7	30.1	10.0
Ann	51.1	28.6	39.9	99	Aug 1975	2	71.5	Jul 1973	-41	Jan 1981	4	.7	Jan 1994	9300	169	.0	3.9	194.2	82.5	193.2	45.7

\+ 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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1948-2001

(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	3.28	2.98	2.33	1990	30	5.99	1979	.77	1985
Feb	2.12	2.25	1.64	1968	3	3.60	1984	.42	1987
Mar	2.71	2.50	1.36	1953	30	4.87	1991	1.59	1992
Apr	2.84	2.64	2.13	1973	28	6.12	1993	1.00	1985
May	3.23	3.13	3.50	1961	27	6.30	1990	.42	1982
Jun	3.66	3.32	2.62	1952	7	9.23	1977	1.16	1983
Jul	3.46	3.51	2.33	1956	2	7.91	1996	1.59	1991
Aug	3.69	3.22	3.38	1990	11	9.32	1990	.49	1975
Sep	3.44	3.24	5.20	1954	11	8.06	1999	1.57	1988
Oct	3.31	2.99	2.53	1959	25	7.17	1981	1.12	1997
Nov	3.62	3.48	2.75	1974	26	8.50	1983	1.82	1996
Dec	3.27	2.89	2.89	1993	11	5.84	1973	1.16	1988
Ann	38.63	37.16	5.20	Sep 1954	11	9.32	Aug 1990	.42+	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	13.3	7.3	2.1	.5
Feb	10.1	5.4	1.1	.1
Mar	11.8	6.7	1.5	.2
Apr	11.1	6.8	1.7	.3
May	12.4	7.8	2.0	.5
Jun	12.5	7.9	2.3	.8
Jul	11.8	6.9	2.4	.7
Aug	11.4	6.8	2.4	.7
Sep	9.9	5.8	2.3	.7
Oct	12.2	6.9	2.0	.7
Nov	11.7	7.2	2.3	.5
Dec	13.6	7.6	1.9	.4
Ann	141.8	83.1	24.0	6.1

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	1.15	1.46	1.91	2.29	2.65	3.03	3.43	3.90	4.51	5.44	6.30
Feb	.76	.96	1.25	1.49	1.72	1.96	2.22	2.52	2.90	3.49	4.03
Mar	1.43	1.65	1.95	2.18	2.40	2.61	2.84	3.09	3.41	3.89	4.31
Apr	1.04	1.31	1.69	2.01	2.32	2.63	2.97	3.36	3.86	4.63	5.34
May	.89	1.20	1.67	2.07	2.47	2.89	3.35	3.89	4.60	5.72	6.76
Jun	1.32	1.66	2.16	2.58	2.98	3.38	3.83	4.34	5.00	6.02	6.95
Jul	1.53	1.84	2.27	2.62	2.95	3.28	3.63	4.04	4.55	5.32	6.02
Aug	1.17	1.52	2.04	2.48	2.91	3.36	3.85	4.42	5.16	6.31	7.37
Sep	1.60	1.90	2.31	2.65	2.96	3.27	3.61	3.99	4.47	5.19	5.85
Oct	.98	1.30	1.77	2.18	2.57	2.99	3.44	3.98	4.67	5.75	6.76
Nov	1.66	1.98	2.42	2.78	3.11	3.44	3.80	4.20	4.72	5.49	6.19
Dec	1.32	1.62	2.04	2.39	2.72	3.06	3.42	3.84	4.37	5.18	5.92
Ann	28.97	30.88	33.31	35.14	36.75	38.30	39.90	41.66	43.78	46.83	49.46

\+ 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: 1948-2001
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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	22.5	25.2	17	13
Feb	17.4	15.2	18	14
Mar	18.2	20.7	14	13
Apr	8.3	7.6	2	3
May	.2	#	#	0
Jun	.0	.0	#	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	#	0
Oct	.8	.0	#	0
Nov	8.1	5.5	1	1
Dec	20.9	17.9	8	6
Ann	96.4	92.1	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	16.4	1990	30	43.7	1994	71+	1998	31	56	1998
Feb	17.0	2000	14	28.6	1973	69	1998	1	51	1977
Mar	18.3	1984	14	37.8	1981	60	1977	6	37	1977
Apr	11.5	1982	7	20.4	1974	33	1971	1	11	1971
May	2.6	1974	8	2.6	1974	2	1974	8	#	2000
Jun	.0	0	0	.0	0	0	0	0	#	1990
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	1.0	1991	29	1.1	1991	1	1991	30	#	1991
Oct	4.4	1997	27	5.3	1979	2+	1999	5	#	1999
Nov	22.3	1974	26	36.1	1974	30	1974	27	5	1974
Dec	17.4	1989	3	69.1	1972	42+	1972	23	29+	1997
Ann	22.3	Nov 1974	26	69.1	Dec 1972	71+	Jan 1998	31	56	Jan 1998

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	11.0	5.5	2.7	1.5	.1
Feb	8.7	5.2	2.1	.9	@
Mar	7.7	4.2	2.2	1.0	.4
Apr	4.0	2.3	.9	.5	@
May	.1	.1	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.1	.0	.0	.0	.0
Oct	.6	.3	.1	.0	.0
Nov	3.6	2.0	.9	.4	@
Dec	10.1	5.8	2.4	1.1	.2
Ann	45.9	25.4	11.3	5.4	.7

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	29.4	26.4	24.4	19.7
Feb	26.4	25.6	24.5	21.0
Mar	28.6	25.7	23.4	17.6
Apr	10.7	7.1	5.1	2.3
May	.1	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	@	.0	.0	.0
Oct	.3	.0	.0	.0
Nov	7.1	3.4	1.8	.5
Dec	24.3	17.4	14.1	9.3
Ann	126.9	105.6	93.3	70.4

+ 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	7/06	6/29	6/25	6/21	6/17	6/13	6/09	6/04	5/29
32	6/15	6/10	6/07	6/04	6/01	5/29	5/26	5/23	5/18
28	5/27	5/23	5/20	5/18	5/16	5/13	5/11	5/08	5/04
24	5/14	5/09	5/06	5/04	5/01	4/29	4/26	4/23	4/19
20	4/28	4/24	4/21	4/18	4/16	4/13	4/11	4/08	4/03
16	4/19	4/14	4/11	4/09	4/06	4/04	4/01	3/29	3/25

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	8/24	8/27	8/30	9/02	9/04	9/07	9/11	9/15
32	9/01	9/06	9/09	9/12	9/15	9/17	9/20	9/23	9/28
28	9/17	9/21	9/24	9/26	9/28	9/30	10/03	10/06	10/10
24	9/29	10/02	10/05	10/07	10/09	10/11	10/13	10/15	10/18
20	10/09	10/14	10/17	10/20	10/23	10/25	10/28	11/01	11/05
16	10/25	10/30	11/02	11/05	11/07	11/10	11/12	11/16	11/20

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	102	93	87	81	76	71	66	59	50
32	125	118	113	109	105	101	97	92	85
28	150	145	141	138	135	132	129	125	120
24	175	170	166	163	160	157	154	150	145
20	208	201	197	193	189	186	182	177	171
16	233	227	222	218	214	210	206	202	195

***** 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	1664	1420	1217	796	420	148	59	87	332	683	1007	1467	9300
60	1509	1280	1062	646	277	57	13	23	200	528	857	1312	7764
57	1416	1196	969	556	202	25	4	7	134	436	767	1219	6931
55	1354	1140	907	496	158	13	0	3	98	376	707	1157	6409
50	1199	1000	752	349	74	2	0	0	37	234	557	1002	5206
32	645	503	246	22	0	0	0	0	0	3	101	479	1999

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	3	7	52	217	605	863	1057	986	661	343	84	35	4913
55	0	0	0	0	50	186	344	276	69	3	0	0	928
57	0	0	0	0	32	138	286	218	45	1	0	0	720
60	0	0	0	0	14	79	202	141	20	0	0	0	456
65	0	0	0	0	2	21	93	50	3	0	0	0	169
70	0	0	0	0	0	2	27	9	0	0	0	0	38

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	0	10	69	369	631	821	749	433	152	31	1	0	0	10	79	448	1079	1900	2649	3082	3234	3265	3266
45	0	0	0	27	232	482	666	594	291	74	11	0	0	0	0	27	259	741	1407	2001	2292	2366	2377	2377
50	0	0	0	7	123	335	511	439	168	26	0	0	0	0	0	7	130	465	976	1415	1583	1609	1609	1609
55	0	0	0	2	61	206	357	290	82	4	0	0	0	0	0	2	63	269	626	916	998	1002	1002	1002
60	0	0	0	0	20	108	214	163	30	0	0	0	0	0	0	0	20	128	342	505	535	535	535	535
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	9	63	241	394	525	474	262	95	12	0	0	0	9	72	313	707	1232	1706	1968	2063	2075	2075

(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.
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