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: PORTLAND INTL AP, ME **COOP ID: 176905**

Climate Division: ME 3 **NWS Call Sign: PWM** **Elevation: 45 Feet** **Lat: 43˚39N** **Lon: 70˚18W**

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	30.9	12.5	21.7	64+	1950	26	29.8	1990	-26	1971	19	12.6	1971	1346	0	.0	.0	.9	16.7	29.6	5.4
Feb	34.1	15.6	24.8	64	1957	26	32.7	1981	-25	1971	3	16.4	1979	1141	0	.0	.0	1.4	12.4	25.9	3.0
Mar	42.2	25.2	33.7	88	1998	31	38.6	1973	-21	1950	4	28.7	1984	985	0	.0	.0	5.6	4.2	24.3	.3
Apr	52.8	34.7	43.7	89	1927	20	46.9	1986	8	1954	4	40.9	1975	649	0	.0	.0	18.2	.2	12.3	.0
May	63.3	44.2	53.8	96	1937	31	57.7	1991	23	1956	9	51.1	1997	361	7	.0	.2	29.5	.0	1.3	.0
Jun	72.8	52.9	62.9	98	1991	28	66.3	1999	33	1944	4	58.2	1982	116	51	.0	1.1	30.0	.0	.0	.0
Jul	78.8	58.6	68.7	100	1926	22	72.4	1994	40+	1965	7	65.0	1992	19	144	.0	1.9	31.0	.0	.0	.0
Aug	77.3	57.2	67.2	103	1975	2	70.7	1973	33	1965	31	63.6	1982	37	120	@	1.2	31.0	.0	.0	.0
Sep	68.9	48.5	58.7	96+	1939	16	63.3	1999	23	1941	30	56.5	1995	199	24	.0	.3	30.0	.0	.3	.0
Oct	57.9	37.4	47.7	88	1963	7	52.5	1995	15	1976	28	43.2	1976	523	1	.0	.0	27.2	.0	8.6	.0
Nov	47.1	29.5	38.3	74+	1987	4	42.7	1975	3	1989	24	34.7	1972	790	0	.0	.0	11.8	1.2	19.0	.0
Dec	36.4	18.7	27.6	71+	2001	6	34.5	1996	-21	1963	31	13.4	1989	1152	0	.0	.0	2.8	10.4	28.2	1.7
Ann	55.2	36.3	45.7	103	Aug 1975	2	72.4	Jul 1994	-26	Jan 1971	19	12.6	Jan 1971	7318	347	@	4.7	219.4	45.1	149.5	10.4

\+ 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: 1920-2001

(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	4.09	4.42	3.56	1977	10	11.92	1979	.93	1981
Feb	3.14	2.86	3.21	1965	25	7.10	1981	.04	1987
Mar	4.14	4.11	3.47	1951	31	9.75	1983	1.42	1990
Apr	4.26	3.77	5.21	1973	2	9.90	1973	.28	1999
May	3.82	3.75	3.49	1922	5	9.64	1984	1.09	1975
Jun	3.28	3.12	4.35	1922	18	9.01	1998	.76	1997
Jul	3.32	3.03	4.25	1939	28	7.48	1976	1.62	1999
Aug	3.05	2.53	7.75	1991	19	15.22	1991	.47	1995
Sep	3.37	3.06	7.49	1954	11	8.79	1999	.59	1978
Oct	4.40	3.61	9.62	1996	21	16.83	1996	.63	1994
Nov	4.72	4.16	4.70	1990	10	13.50	1983	.90	1976
Dec	4.24	3.75	3.50	1990	4	9.57	1973	1.18+	1982
Ann	45.83	43.59	9.62	Oct 1996	21	16.83	Oct 1996	.04	Feb 1987

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.7	7.4	3.1	.9
Feb	9.6	5.5	2.2	.9
Mar	12.1	7.5	3.0	1.0
Apr	11.7	6.9	2.9	.9
May	12.4	7.3	2.5	.8
Jun	11.5	6.2	2.1	.7
Jul	10.6	6.6	2.3	.7
Aug	9.3	5.3	1.8	.6
Sep	9.8	5.7	2.0	.9
Oct	10.0	6.5	2.6	1.2
Nov	11.3	7.1	3.1	1.4
Dec	12.0	7.4	2.6	1.2
Ann	132.0	79.4	30.2	11.2

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	1.07	1.46	2.05	2.57	3.09	3.63	4.23	4.94	5.87	7.34	8.71
Feb	.64	.92	1.39	1.81	2.23	2.69	3.20	3.82	4.64	5.95	7.19
Mar	1.62	2.00	2.55	3.00	3.43	3.87	4.34	4.89	5.58	6.64	7.61
Apr	1.21	1.62	2.23	2.76	3.28	3.82	4.42	5.12	6.04	7.47	8.81
May	1.19	1.55	2.09	2.56	3.00	3.47	3.98	4.58	5.35	6.55	7.66
Jun	.87	1.18	1.65	2.07	2.48	2.91	3.39	3.96	4.70	5.86	6.94
Jul	1.31	1.62	2.05	2.41	2.76	3.10	3.48	3.91	4.46	5.31	6.08
Aug	.57	.84	1.29	1.70	2.12	2.58	3.10	3.72	4.55	5.89	7.16
Sep	1.04	1.36	1.84	2.25	2.64	3.05	3.51	4.04	4.72	5.78	6.77
Oct	1.04	1.45	2.10	2.67	3.24	3.85	4.52	5.33	6.39	8.07	9.64
Nov	1.46	1.91	2.57	3.15	3.70	4.28	4.91	5.66	6.62	8.12	9.50
Dec	1.09	1.49	2.10	2.64	3.18	3.74	4.37	5.12	6.09	7.63	9.07
Ann	33.09	35.57	38.74	41.15	43.28	45.34	47.46	49.81	52.65	56.76	60.31

+ 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: 1920-2001
(3) Derived from 1971-2000 serially complete daily data

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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	20.9	17.2	7	5
Feb	12.8	11.0	6	5
Mar	13.4	11.9	4	4
Apr	3.3	1.4	#	1
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	.1	.0	0	0
Nov	3.2	1.7	#	0
Dec	13.6	12.3	2	2
Ann	67.3	55.5	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	15.9	1979	17	62.4	1979	31+	1996	13	24	1977
Feb	14.7	1972	19	38.0	1972	30	1987	1	22	1987
Mar	16.9	1993	13	49.0	1993	34	1993	14	16	1971
Apr	14.0	1982	6	15.9	1982	16+	1982	8	3	1982
May	#	1977	10	#	1977	0	0	0	#	1999
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	1.7	1979	10	1.7	1979	#	1979	11	0	0
Nov	10.2	1997	16	20.5	1997	10	1972	15	2	1972
Dec	14.2	1976	29	37.7	1972	25	1995	21	9	1972
Ann	16.9	Mar 1993	13	62.4	Jan 1979	34	Mar 1993	14	24	Jan 1977

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	8.0	4.7	2.4	1.5	.2
Feb	5.9	2.8	1.5	.8	.2
Mar	5.4	3.2	1.5	.7	.2
Apr	1.3	.8	.2	.2	.1
May	.0	.0	.0	.0	.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	.1	.0	.0	.0	.0
Nov	2.0	1.0	.3	.1	@
Dec	6.8	3.8	1.7	.7	.1
Ann	29.5	16.3	7.6	4.0	.8

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	23.1	18.8	15.8	9.1
Feb	20.3	16.4	13.4	8.7
Mar	14.2	11.1	8.4	5.6
Apr	1.7	1.0	.6	.2
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	1.9	.8	.3	@
Dec	12.7	9.6	6.5	2.1
Ann	73.9	57.7	45.0	25.7

+ 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	5/25	5/21	5/19	5/16	5/14	5/12	5/10	5/07	5/04
32	5/15	5/10	5/07	5/05	5/02	4/30	4/27	4/24	4/19
28	5/01	4/27	4/25	4/22	4/20	4/18	4/16	4/13	4/10
24	4/19	4/14	4/11	4/08	4/05	4/03	3/31	3/28	3/23
20	4/10	4/05	4/02	3/30	3/27	3/24	3/21	3/18	3/13
16	3/31	3/27	3/25	3/22	3/20	3/18	3/15	3/13	3/09

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	9/21	9/23	9/25	9/27	9/29	10/01	10/03	10/06
32	9/26	9/29	10/02	10/04	10/06	10/08	10/10	10/12	10/15
28	10/07	10/11	10/14	10/16	10/18	10/21	10/23	10/26	10/30
24	10/19	10/24	10/28	10/31	11/03	11/05	11/09	11/12	11/17
20	11/01	11/06	11/11	11/14	11/18	11/21	11/25	11/29	12/05
16	11/10	11/16	11/20	11/23	11/26	11/29	12/03	12/07	12/12

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	147	143	140	137	135	133	130	127	124
32	171	166	162	159	156	153	150	146	141
28	196	190	187	183	180	177	174	170	165
24	228	222	218	214	210	207	203	199	193
20	258	250	244	239	235	230	226	220	212
16	272	265	259	255	250	246	242	236	229

***** 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	1346	1141	985	649	361	116	19	37	199	523	790	1152	7318
60	1187	985	816	488	203	32	0	4	84	383	650	1006	5838
57	1094	901	723	398	128	12	0	0	42	295	560	913	5066
55	1032	845	661	338	86	5	0	0	24	239	500	851	4581
50	877	705	506	196	22	0	0	0	3	122	351	696	3478
32	353	239	74	1	0	0	0	0	0	0	21	229	917

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	28	38	127	344	668	927	1147	1106	816	502	227	63	5993
55	0	0	1	6	62	244	434	393	158	22	2	0	1322
57	0	0	0	4	43	193	372	333	118	13	1	0	1077
60	0	0	0	1	23	127	281	245	71	5	0	0	753
65	0	0	0	0	7	51	144	120	24	1	0	0	347
70	0	0	0	0	1	16	50	40	6	0	0	0	113

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	1	5	32	141	429	697	908	866	584	269	84	11	1	6	38	179	608	1305	2213	3079	3663	3932	4016	4027
45	0	0	8	61	278	547	753	711	434	151	35	2	0	0	8	69	347	894	1647	2358	2792	2943	2978	2980
50	0	0	3	22	151	397	598	556	289	70	9	0	0	0	3	25	176	573	1171	1727	2016	2086	2095	2095
55	0	0	0	5	69	253	443	402	164	26	2	0	0	0	0	5	74	327	770	1172	1336	1362	1364	1364
60	0	0	0	0	25	133	290	253	76	4	0	0	0	0	0	0	25	158	448	701	777	781	781	781
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	15	76	224	410	591	555	338	149	40	5	0	0	15	91	315	725	1316	1871	2209	2358	2398	2403

(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