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: MIAMI BEACH, FL **COOP ID: 085658**

Climate Division: FL 6 **NWS Call Sign:** **Elevation: 5 Feet** **Lat: 25˚47N** **Lon: 80˚08W**

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	73.2	62.6	67.9	86	1964	28	73.4	1990	32	1977	20	60.0	1981	59	134	.0	.0	31.0	.0	@	.0
Feb	73.4	63.0	68.2	88+	1982	13	73.4	1997	37	1996	5	62.7	1978	39	128	.0	.0	28.3	.0	.0	.0
Mar	75.3	66.4	70.9	92	1977	22	75.5	1997	32	1980	3	66.5	1998	18	199	.0	.1	31.0	.0	@	.0
Apr	78.5	69.8	74.2	94	1971	25	77.1	1982	46	1987	5	69.4	1987	1	274	.0	.4	30.0	.0	.0	.0
May	82.1	73.8	78.0	95+	1974	27	81.9	1995	58	1992	8	75.6	1992	0	401	.0	1.1	31.0	.0	.0	.0
Jun	85.5	76.7	81.1	97+	1985	4	82.5	2000	65	1967	5	78.4	1976	0	482	.0	2.6	30.0	.0	.0	.0
Jul	87.0	78.3	82.7	98+	1980	13	84.7	1993	66	1975	4	80.5	1985	0	547	.0	5.1	31.0	.0	.0	.0
Aug	87.2	78.3	82.8	98+	1999	29	84.9	1999	67	1982	6	80.9	1973	0	550	.0	5.1	31.0	.0	.0	.0
Sep	85.9	77.6	81.8	96+	1973	10	83.7	1996	67	1985	18	79.9	1985	0	503	.0	2.4	30.0	.0	.0	.0
Oct	82.5	74.5	78.5	95	1977	3	81.7	1995	54	1989	21	76.0	1974	0	419	.0	.7	31.0	.0	.0	.0
Nov	78.4	70.1	74.3	90	1969	1	78.3	1986	39	1970	25	71.7	1975	1	278	.0	.0	30.0	.0	.0	.0
Dec	74.8	65.0	69.9	86	1948	20	74.6	1971	32	1989	24	65.7	1989	23	175	.0	.0	31.0	.0	@	.0
Ann	80.3	71.3	75.9	98+	Aug 1999	29	84.9	Aug 1999	32+	Dec 1989	24	60.0	Jan 1981	141	4090	.0	17.5	365.3	.0	@	.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: 1948-2000

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

Issue Date: February 2004

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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	2.44	2.14	3.07	1953	30	9.67	1993	.11	1984
Feb	2.14	1.55	4.41	1987	5	8.78	1983	.02	1974
Mar	2.20	1.87	2.37	1986	26	7.91	1986	.24	1977
Apr	2.81	2.23	6.91	1960	24	7.19	1979	.02	1981
May	4.90	4.04	7.08	1987	13	17.45	1984	.15	1992
Jun	6.90	6.32	6.28	1959	18	14.36	1983	1.66	1993
Jul	3.63	2.87	4.90	1959	22	13.16	2000	.92	1976
Aug	5.44	4.75	5.77	1973	31	14.04	1973	1.49	1992
Sep	6.31	5.56	8.35	1960	23	17.09	1981	.56	1988
Oct	4.53	4.99	5.32	1952	27	11.12	1999	1.00	1988
Nov	3.32	2.47	6.70	1959	19	8.59	1992	.16	1996
Dec	1.98	1.23	3.25	1972	3	8.81	1997	.31	1981
Ann	46.60	46.90	8.35	Sep 1960	23	17.45	May 1984	.02+	Apr 1981

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.1	3.6	1.4	.8
Feb	6.1	3.5	1.3	.5
Mar	6.1	3.8	1.4	.5
Apr	6.1	4.1	1.5	.8
May	9.9	6.3	2.9	1.7
Jun	14.3	9.1	4.3	2.2
Jul	11.6	7.3	2.0	.8
Aug	14.7	9.3	2.9	1.2
Sep	14.6	9.6	3.8	2.1
Oct	12.4	7.4	2.8	1.3
Nov	9.0	5.0	1.7	.8
Dec	7.0	3.5	1.2	.6
Ann	118.9	72.5	27.2	13.3

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	.21	.37	.70	1.04	1.41	1.83	2.34	2.97	3.84	5.31	6.74
Feb	.14	.27	.53	.82	1.15	1.53	2.00	2.59	3.41	4.81	6.19
Mar	.24	.41	.71	1.02	1.35	1.71	2.14	2.68	3.41	4.62	5.79
Apr	.23	.42	.79	1.18	1.61	2.10	2.68	3.41	4.43	6.13	7.80
May	.71	1.12	1.83	2.51	3.21	3.99	4.89	5.98	7.46	9.86	12.18
Jun	2.12	2.78	3.75	4.59	5.41	6.25	7.18	8.26	9.67	11.86	13.89
Jul	.82	1.16	1.69	2.17	2.65	3.15	3.72	4.40	5.29	6.71	8.05
Aug	1.44	1.95	2.74	3.43	4.11	4.83	5.62	6.57	7.80	9.73	11.54
Sep	1.55	2.15	3.07	3.89	4.70	5.55	6.50	7.64	9.12	11.47	13.68
Oct	.93	1.34	2.01	2.61	3.23	3.88	4.62	5.52	6.69	8.58	10.37
Nov	.54	.82	1.31	1.76	2.23	2.75	3.33	4.05	5.01	6.57	8.05
Dec	.16	.29	.55	.83	1.13	1.47	1.89	2.41	3.12	4.32	5.51
Ann	32.28	35.02	38.55	41.24	43.63	45.95	48.35	51.01	54.24	58.95	63.03

\+ 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: 1948-2000
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Snow (inches)

Snow Totals

Means/Medians (1)

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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Feb	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Mar	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Apr	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	.0	.0	N/A	N/A	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0

+ 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	1/24	1/03	0/00	0/00	0/00	0/00	0/00	0/00	0/00
32	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
28	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
24	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
20	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00

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	1/13	2/11	0/00	0/00	0/00	0/00	0/00	0/00	0/00
32	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
28	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
24	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
20	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	>365	>365	>365	>365	>365	>365	>365	>365	>365
32	>365	>365	>365	>365	>365	>365	>365	>365	>365
28	>365	>365	>365	>365	>365	>365	>365	>365	>365
24	>365	>365	>365	>365	>365	>365	>365	>365	>365
20	>365	>365	>365	>365	>365	>365	>365	>365	>365
16	>365	>365	>365	>365	>365	>365	>365	>365	>365

***** 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	59	39	18	1	0	0	0	0	0	0	1	23	141
60	26	10	3	0	0	0	0	0	0	0	0	5	44
57	13	3	0	0	0	0	0	0	0	0	0	1	17
55	8	1	0	0	0	0	0	0	0	0	0	0	9
50	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	1112	1013	1204	1264	1424	1472	1570	1573	1493	1442	1267	1175	16009
55	407	370	491	574	711	782	857	860	803	729	577	462	7623
57	350	316	429	514	649	722	795	798	743	667	517	401	6901
60	270	239	339	424	556	632	702	705	653	574	427	311	5832
65	134	128	199	274	401	482	547	550	503	419	278	175	4090
70	82	54	94	136	247	332	392	395	353	264	139	77	2565

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	900	858	1000	1051	1199	1246	1341	1341	1271	1216	1058	958	900	1758	2758	3809	5008	6254	7595	8936	10207	11423	12481	13439
45	745	713	845	901	1044	1096	1186	1186	1121	1061	908	803	745	1458	2303	3204	4248	5344	6530	7716	8837	9898	10806	11609
50	592	568	690	751	889	946	1031	1031	971	906	758	648	592	1160	1850	2601	3490	4436	5467	6498	7469	8375	9133	9781
55	438	426	535	601	734	796	876	876	821	751	608	493	438	864	1399	2000	2734	3530	4406	5282	6103	6854	7462	7955
60	296	289	381	451	579	646	721	721	671	596	458	346	296	585	966	1417	1996	2642	3363	4084	4755	5351	5809	6155
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	597	576	690	751	884	932	1004	1004	953	903	758	651	597	1173	1863	2614	3498	4430	5434	6438	7391	8294	9052	9703

(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