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: BRADENTON 5 ESE, FL **COOP ID: 080945**

Climate Division: FL 4 **NWS Call Sign:** **Elevation: 20 Feet** **Lat: 27˚27N** **Lon: 82˚29W**

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	72.3	50.9	61.6	89	1974	2	70.4	1974	23	1981	13	51.1	1981	184	62	.0	.0	30.7	.0	1.4	.0
Feb	73.5	52.5	63.0	88	1997	28	69.1	1990	24	1996	5	55.1	1978	126	70	.0	.0	28.1	.0	.6	.0
Mar	77.5	56.9	67.2	90	1994	27	73.2	1997	30	1980	3	63.1	1971	55	123	.0	@	31.0	.0	.1	.0
Apr	81.8	59.5	70.7	94+	1999	25	74.5	1994	38	1971	8	65.2	1987	12	181	.0	.6	30.0	.0	.0	.0
May	87.3	65.5	76.4	95+	2000	28	80.8	1995	46	1971	5	73.6	1992	0	352	.0	9.6	31.0	.0	.0	.0
Jun	90.3	70.8	80.6	100+	1998	30	84.0	1998	52	1984	1	78.5	1976	0	466	.1	20.3	30.0	.0	.0	.0
Jul	91.3	72.5	81.9	100+	1998	25	84.3	1998	62	1984	15	79.6	1974	0	524	.1	25.1	31.0	.0	.0	.0
Aug	91.2	72.9	82.1	99	1995	16	83.9	1995	60	1973	22	80.5	1971	0	529	.0	25.3	31.0	.0	.0	.0
Sep	89.8	71.8	80.8	97+	1970	19	82.0	1995	59+	1991	27	79.1	1984	0	473	.0	19.0	30.0	.0	.0	.0
Oct	85.1	64.8	75.0	95	1989	6	79.1	1985	44	1977	18	71.2+	1987	3	313	.0	4.6	31.0	.0	.0	.0
Nov	79.6	58.7	69.2	90+	1996	7	76.7	1986	29	1970	25	65.1	1981	33	158	.0	.1	30.0	.0	.0	.0
Dec	74.1	52.8	63.5	89	1973	31	68.8	1971	20	1983	26	57.8	1989	125	76	.0	.0	30.8	.0	.9	.0
Ann	82.8	62.5	72.7	100+	Jul 1998	25	84.3	Jul 1998	20	Dec 1983	26	51.1	Jan 1981	538	3327	.2	104.6	364.6	.0	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: 1965-2001

(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	2.94	2.86	6.10	1998	24	10.26	1998	.00	1974
Feb	2.66	2.25	3.19	1992	26	10.16	1983	.13	1989
Mar	3.36	2.84	8.45	2001	30	11.10	1987	.22	1976
Apr	1.83	1.36	3.05	1997	27	8.78	1997	.03	1981
May	2.85	1.93	3.80	1969	17	9.52	1996	.15	1992
Jun	7.41	7.06	7.67	1992	26	22.34	1992	.64	1998
Jul	8.71	8.36	6.00	2001	22	16.28	1984	3.51	1981
Aug	9.43	8.98	4.14	1977	23	24.42	1981	3.20	1996
Sep	7.25	6.90	7.08	1997	27	15.57	1988	1.96	1972
Oct	2.88	2.44	5.80	1990	11	9.65	1975	.06	1974
Nov	2.35	2.54	4.80	1997	14	9.40	1997	.06	1991
Dec	2.45	1.87	3.88	1977	9	11.94	1997	.24	1984
Ann	54.12	51.90	8.45	Mar 2001	30	24.42	Aug 1981	.00	Jan 1974

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.8	4.2	1.8	.9
Feb	6.1	3.9	1.5	.8
Mar	5.8	4.2	2.0	1.2
Apr	4.7	2.9	1.4	.4
May	5.9	4.2	1.7	.7
Jun	12.2	9.2	4.7	2.5
Jul	15.1	11.9	6.0	2.9
Aug	16.2	12.7	6.4	2.8
Sep	13.2	9.7	4.6	2.3
Oct	6.7	4.3	1.6	.9
Nov	5.9	3.5	1.2	.7
Dec	6.1	3.6	1.5	.7
Ann	104.7	74.3	34.4	16.8

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	.17	.45	.91	1.34	1.80	2.31	2.90	3.63	4.62	6.25	7.83
Feb	.26	.45	.81	1.18	1.58	2.04	2.57	3.24	4.16	5.69	7.18
Mar	.39	.65	1.13	1.59	2.09	2.65	3.30	4.10	5.20	7.00	8.75
Apr	.07	.16	.35	.59	.87	1.21	1.63	2.18	2.97	4.33	5.70
May	.26	.46	.84	1.24	1.67	2.16	2.74	3.47	4.47	6.14	7.79
Jun	1.60	2.28	3.37	4.35	5.34	6.39	7.58	9.00	10.87	13.86	16.69
Jul	4.16	4.92	5.95	6.78	7.55	8.32	9.14	10.07	11.25	13.02	14.61
Aug	4.03	4.89	6.08	7.06	7.97	8.89	9.89	11.03	12.47	14.67	16.66
Sep	2.25	2.94	3.97	4.84	5.69	6.57	7.54	8.68	10.14	12.42	14.54
Oct	.22	.41	.78	1.18	1.62	2.12	2.73	3.49	4.56	6.34	8.10
Nov	.16	.31	.60	.92	1.29	1.70	2.21	2.85	3.74	5.24	6.73
Dec	.25	.44	.77	1.11	1.48	1.89	2.38	2.99	3.81	5.19	6.53
Ann	40.83	43.46	46.80	49.30	51.52	53.65	55.83	58.24	61.14	65.31	68.90

\+ 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: 1965-2001
(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	.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	3/11	3/02	2/24	2/19	2/14	2/09	2/04	1/29	1/21
32	2/22	2/12	2/04	1/29	1/23	1/16	1/09	12/30	0/00
28	2/02	1/22	1/12	12/30	0/00	0/00	0/00	0/00	0/00
24	1/05	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	11/19	12/02	12/11	12/19	12/26	1/03	1/11	1/20	2/02
32	12/12	12/20	12/26	1/01	1/06	1/12	1/18	1/27	0/00
28	12/28	1/09	1/21	2/09	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	330	320	313	306	300	294	286	276
32	>365	>365	>365	359	345	335	327	317	306
28	>365	>365	>365	>365	>365	>365	>365	>365	336
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)

Base — Heating Degree Days (1)

Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	184	126	55	12	0	0	0	0	0	3	33	125	538
60	122	59	14	1	0	0	0	0	0	0	7	54	257
57	81	32	5	0	0	0	0	0	0	0	2	28	148
55	59	20	2	0	0	0	0	0	0	0	0	17	98
50	25	6	0	0	0	0	0	0	0	0	0	4	35
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	916	868	1091	1159	1375	1456	1547	1552	1463	1333	1115	975	14850
55	262	244	380	469	662	766	834	839	773	620	425	279	6553
57	222	200	321	409	600	706	772	777	713	558	367	227	5872
60	170	143	238	319	507	616	679	684	623	465	282	160	4886
65	62	70	123	181	352	466	524	529	473	313	158	76	3327
70	43	24	47	76	203	316	369	374	323	172	71	24	2042

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	674	671	847	932	1136	1228	1309	1316	1237	1098	875	723	674	1345	2192	3124	4260	5488	6797	8113	9350	10448	11323	12046
45	521	527	692	782	981	1078	1154	1161	1087	943	725	570	521	1048	1740	2522	3503	4581	5735	6896	7983	8926	9651	10221
50	376	389	538	632	826	928	999	1006	937	788	575	425	376	765	1303	1935	2761	3689	4688	5694	6631	7419	7994	8419
55	251	265	386	482	671	778	844	851	787	633	430	290	251	516	902	1384	2055	2833	3677	4528	5315	5948	6378	6668
60	143	153	249	334	516	628	689	696	637	478	287	176	143	296	545	879	1395	2023	2712	3408	4045	4523	4810	4986
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	427	427	556	631	792	856	914	923	871	766	585	459	427	854	1410	2041	2833	3689	4603	5526	6397	7163	7748	8207

(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

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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