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: GURABO SUBSTATION, PR **COOP ID: 664276**

Climate Division: PR 5 **NWS Call Sign:** **Elevation: 160 Feet** **Lat: 18˚16N** **Lon: 66˚00W**

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 >= 90	Max >= 70	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	84.5	60.7	72.6	89+	2001	29	75.2	1981	51+	1991	22	70.0	1997	0	237	.0	31.0	31.0	.0	.0	.0
Feb	84.9	60.6	72.8	91	1998	26	74.6+	1983	50	1968	5	70.0	1993	0	217	.2	28.3	28.3	.0	.0	.0
Mar	85.8	61.4	73.6	93	1981	25	77.0	1983	50	1970	6	71.0	1995	0	268	.6	31.0	31.0	.0	.0	.0
Apr	87.4	64.0	75.7	93+	1992	30	77.9	1987	51	1993	19	73.2	1996	0	322	3.9	30.0	30.0	.0	.0	.0
May	88.6	67.4	78.0	95+	1999	29	80.3	1999	57	1974	1	75.8	1989	0	401	7.9	31.0	31.0	.0	.0	.0
Jun	89.8	69.0	79.4	96+	1997	23	81.7	1997	61+	2000	25	76.8	1989	0	432	12.5	30.0	30.0	.0	.0	.0
Jul	90.3	68.8	79.6	96	1959	16	81.2	1985	59	1967	31	77.6	1993	0	452	17.1	31.0	31.0	.0	.0	.0
Aug	90.6	68.9	79.8	95+	1998	30	81.0+	1998	60+	1995	19	77.6	1992	0	456	18.4	31.0	31.0	.0	.0	.0
Sep	90.0	68.5	79.3	98	1958	30	80.8	1999	59+	1990	16	77.3	1992	0	428	15.7	30.0	30.0	.0	.0	.0
Oct	89.3	67.6	78.5	95+	2001	1	80.1	1980	57	1989	13	75.6	1989	0	416	12.0	31.0	31.0	.0	.0	.0
Nov	87.4	65.8	76.6	94	1960	4	78.5	1981	54	1989	29	74.5	1996	0	348	2.7	30.0	30.0	.0	.0	.0
Dec	85.2	62.8	74.0	92+	1987	14	76.8	1998	50	1991	27	70.5	1996	0	280	.4	31.0	31.0	.0	.0	.0
Ann	87.8	65.5	76.7	98	Sep 1958	30	81.7	Jun 1997	50+	Dec 1991	27	70.0+	Jan 1997	0	4257	91.4	365.3	365.3	.0	.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

Issue Date: May 2005

(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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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	3.39	3.34	7.11	1992	6	8.60	1996	.88	1985
Feb	2.89	2.78	2.74	1998	5	6.35	1989	.71	1977
Mar	2.95	2.47	4.83	1961	21	7.63	1972	.90	1984
Apr	3.43	3.23	3.05	1993	16	9.10	1983	.75	1997
May	5.70	5.14	7.00	1985	18	14.14	1981	.84	1974
Jun	4.43	3.30	12.07	1970	17	13.89	1987	.41	1977
Jul	5.03	4.55	3.23	1999	21	9.52	1983	1.25	1992
Aug	7.61	8.08	7.47	2000	23	12.05	1996	2.86	1984
Sep	7.86	6.76	11.20	1960	6	23.64	1996	2.62	1983
Oct	6.88	6.07	11.30	1970	9	18.74	1985	1.53	1989
Nov	7.27	5.97	8.33	1987	27	21.84	1977	1.98	1976
Dec	4.64	3.79	6.64	1987	8	12.40	1987	.20	1989
Ann	62.08	61.15	12.07	Jun 1970	17	23.64	Sep 1996	.20	Dec 1989

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	20.5	8.3	1.3	.4
Feb	16.9	6.3	1.3	.5
Mar	14.5	7.0	1.6	.6
Apr	13.5	6.2	1.8	.7
May	16.7	9.0	3.1	1.7
Jun	15.0	7.4	2.6	1.1
Jul	17.8	9.4	3.0	1.2
Aug	18.8	10.8	3.9	1.7
Sep	18.9	10.8	4.1	1.7
Oct	19.5	10.7	4.4	1.9
Nov	20.7	11.6	4.2	1.5
Dec	21.0	10.1	2.1	.9
Ann	213.8	107.6	33.4	13.9

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	1.02	1.35	1.83	2.24	2.65	3.07	3.53	4.07	4.77	5.87	6.88
Feb	.94	1.22	1.62	1.97	2.30	2.64	3.02	3.45	4.02	4.90	5.70
Mar	.77	1.05	1.48	1.86	2.23	2.62	3.05	3.57	4.24	5.29	6.28
Apr	.85	1.17	1.67	2.12	2.56	3.02	3.54	4.15	4.96	6.23	7.42
May	1.02	1.53	2.36	3.14	3.93	4.79	5.77	6.95	8.53	11.07	13.49
Jun	.91	1.31	1.96	2.56	3.15	3.79	4.52	5.39	6.53	8.37	10.11
Jul	1.44	1.92	2.64	3.26	3.87	4.51	5.21	6.04	7.12	8.81	10.38
Aug	3.44	4.12	5.05	5.81	6.52	7.23	7.99	8.86	9.95	11.61	13.11
Sep	2.46	3.21	4.32	5.27	6.18	7.13	8.18	9.40	10.98	13.44	15.72
Oct	1.97	2.62	3.61	4.46	5.30	6.17	7.13	8.27	9.74	12.05	14.20
Nov	1.39	2.05	3.11	4.10	5.09	6.17	7.39	8.86	10.80	13.94	16.91
Dec	.80	1.21	1.89	2.52	3.18	3.88	4.69	5.66	6.96	9.07	11.08
Ann	42.57	46.29	51.10	54.76	58.03	61.20	64.49	68.13	72.56	79.02	84.62

\+ 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 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	0/00	0/00	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	0/00	0/00	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	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
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	1260	1141	1291	1312	1424	1422	1475	1479	1418	1439	1338	1303	16302
55	547	497	578	622	711	732	762	766	728	726	648	590	7907
57	485	441	516	562	649	672	700	704	668	664	588	528	7177
60	392	357	423	472	556	582	607	611	578	571	498	435	6082
65	237	217	268	322	401	432	452	456	428	416	348	280	4257
70	96	87	123	173	246	282	297	301	278	261	199	135	2478

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	1024	958	1048	1069	1175	1177	1225	1230	1175	1191	1102	1055	1024	1982	3030	4099	5274	6451	7676	8906	10081	11272	12374	13429
45	869	813	893	919	1020	1027	1070	1075	1025	1036	952	900	869	1682	2575	3494	4514	5541	6611	7686	8711	9747	10699	11599
50	714	668	738	769	865	877	915	920	875	881	802	745	714	1382	2120	2889	3754	4631	5546	6466	7341	8222	9024	9769
55	559	523	583	619	710	727	760	765	725	726	652	590	559	1082	1665	2284	2994	3721	4481	5246	5971	6697	7349	7939
60	404	378	428	469	555	577	605	610	575	571	502	435	404	782	1210	1679	2234	2811	3416	4026	4601	5172	5674	6109
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	713	667	729	749	831	837	860	866	832	836	782	742	713	1380	2109	2858	3689	4526	5386	6252	7084	7920	8702	9444

(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 were calculated from a serially complete daily data set. A serial dataset was not available for precipitation,
To ensure that a station's data was adequate to estimate these statistics, the following criteria were used:
1. A station must have 80% of its data for the 1971-2000 time period.
2. Only months with at least 21 days are used.
3. There must be a least 21 months (meeting criteria 2.) in the sample.

g. Snowfall and snow depth statistics were derived daily values quality controlled to be consistent with 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 differences 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. Other inconsistencies may appear from comparing statistically modeled values such as degree days to observed temperatures.

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. 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