

Climatology of the United States

No. 20

1971-2000

Station: GUAM, PI

COOP ID: 914229

Climate Division: PI 3

NWS Call Sign: PGAC

Elevation: 361 Feet Lat: 13° 34N Lon: 144° 50E

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	84.0	71.2	77.6	90+	1998	28	80.1	1996	56+	1978	15	75.1	1983	0	390	@	31.0	31.0	.0	.0	.0
Feb	84.0	71.1	77.6	89+	1998	27	79.6	1996	59+	1981	26	76.2	1984	0	350	.0	28.3	28.3	.0	.0	.0
Mar	85.0	71.7	78.4	91	1998	11	80.7	1996	54	1965	14	75.6	1983	0	414	.2	31.0	31.0	.0	.0	.0
Apr	86.2	72.7	79.5	90+	1994	29	81.4	1996	59	1965	6	77.7	1983	0	435	.2	30.0	30.0	.0	.0	.0
May	87.3	73.2	80.3	92+	1997	30	82.9	1996	62	1960	2	78.6	1985	0	473	3.1	31.0	31.0	.0	.0	.0
Jun	87.4	73.5	80.5	93	1993	6	83.2	1996	63+	1983	5	78.8	1985	0	463	3.8	30.0	30.0	.0	.0	.0
Jul	86.8	72.8	79.8	94	1983	3	82.0	1996	64	1986	22	78.4	1975	0	458	2.0	31.0	31.0	.0	.0	.0
Aug	86.1	72.8	79.5	91+	1995	2	81.7+	1996	63	1983	28	78.0	1975	0	449	1.0	31.0	31.0	.0	.0	.0
Sep	86.5	72.8	79.7	91+	1996	1	82.0	1997	61	1958	13	78.4	1984	0	439	.8	30.0	30.0	.0	.0	.0
Oct	86.3	72.7	79.5	91+	1995	5	81.1	1995	64+	1987	18	77.5	1982	0	449	.4	31.0	31.0	.0	.0	.0
Nov	85.6	73.6	79.6	90+	1996	3	82.0	1995	62+	1957	24	78.3	1975	0	439	.1	30.0	30.0	.0	.0	.0
Dec	84.7	73.1	78.9	89+	1995	22	81.6	1995	61+	1980	9	77.3	1982	0	431	.0	31.0	31.0	.0	.0	.0
Ann	85.8	72.6	79.2	94	Jul 1983	3	83.2	Jun 1996	54	Mar 1965	14	75.1	Jan 1983	0	5190	11.6	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/normal/usnormals.html

Issue Date: May 2005

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1957-1998

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

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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: GUAM, PI

COOP ID: 914229

Climate Division: PI 3

NWS Call Sign: PGAC

Elevation: 361 Feet Lat: 13°34N

Lon: 144°50E

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	5.58	4.86	6.35	1988	12	20.39	1976	.79	1998	20.5	10.6	2.7	1.0	.98	1.47	2.29	3.05	3.83	4.67	5.64	6.81	8.37	10.88	13.28
Feb	5.11	3.84	8.24	1980	26	14.79	1980	.88	1998	18.6	9.3	2.5	1.2	.81	1.25	1.99	2.69	3.42	4.21	5.12	6.23	7.72	10.14	12.45
Mar	4.24	3.37	3.15	1971	2	16.94	1971	.85	1978	20.2	10.3	2.1	.7	.64	1.00	1.61	2.20	2.80	3.47	4.24	5.17	6.43	8.48	10.45
Apr	4.16	2.97	6.36	1997	17	14.83	1974	.94	1998	20.1	8.9	1.6	.9	.73	1.09	1.70	2.27	2.85	3.49	4.21	5.08	6.24	8.12	9.92
May	6.39	4.05	17.59	1976	21	40.13	1976	.64	1987	20.4	9.9	2.9	1.2	.52	.94	1.78	2.67	3.64	4.76	6.09	7.77	10.09	13.99	17.83
Jun	6.28	6.24	3.86	1982	23	14.61	1985	.80	1983	24.1	13.9	3.8	1.1	2.01	2.61	3.49	4.24	4.97	5.72	6.54	7.50	8.75	10.67	12.46
Jul	11.66	11.74	7.80	1986	4	20.00	1972	6.15	1983	26.4	18.7	7.1	3.2	6.45	7.37	8.59	9.55	10.42	11.29	12.20	13.23	14.51	16.41	18.10
Aug	16.17	15.21	7.59	1971	4	38.49	1997	6.09	1977	26.3	18.5	9.7	4.9	6.20	7.70	9.85	11.64	13.33	15.06	16.93	19.10	21.86	26.09	29.96
Sep	13.69	12.13	7.35	1965	13	27.13	1982	5.95	1992	24.9	18.2	8.6	3.9	6.09	7.31	9.01	10.38	11.67	12.96	14.35	15.94	17.95	20.99	23.74
Oct	11.88	10.76	7.81	1969	16	26.05	1979	6.63	1976	25.4	17.7	7.1	3.4	6.43	7.38	8.65	9.65	10.57	11.48	12.44	13.53	14.88	16.89	18.67
Nov	9.34	8.27	6.07	1977	8	16.41	1990	2.08	1973	25.7	16.5	5.0	2.4	3.80	4.66	5.87	6.86	7.80	8.76	9.78	10.97	12.47	14.77	16.86
Dec	6.11	6.17	7.23	1997	17	12.43	1986	2.17	1992	24.0	13.2	3.3	.8	2.88	3.41	4.14	4.73	5.28	5.83	6.41	7.08	7.92	9.18	10.32
Ann	100.61	97.86	17.59	May 1976	21	40.13	May 1976	.64	May 1987	276.6	165.7	56.4	24.7	68.04	74.22	82.21	88.31	93.77	99.07	104.57	110.67	118.10	128.94	138.37

+ 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: 1957-1998

(3) Derived from 1971-2000 daily data

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: GUAM, PI

COOP ID: 914229

Climate Division: PI 3

NWS Call Sign: PGAC

Elevation: 361 Feet

Lat: 13°34N

Lon: 144°50E

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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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Elevation: 361 Feet

Lat: 13° 34N

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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

Complete documentation available from:

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Elevation: 361 Feet Lat: 13° 34N Lon: 144° 50E

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	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

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	1413	1274	1437	1425	1496	1453	1481	1472	1429	1472	1429	1454	17235
55	700	630	724	735	783	763	768	759	739	759	739	741	8840
57	638	574	662	675	721	703	706	697	679	697	679	679	8110
60	545	490	569	585	628	613	613	604	589	604	589	586	7015
65	390	350	414	435	473	463	458	449	439	449	439	431	5190
70	235	210	259	285	318	313	303	294	289	294	289	276	3365

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	1175	1099	1194	1198	1257	1224	1245	1233	1197	1239	1199	1217	1175	2274	3468	4666	5923	7147	8392	9625	10822	12061	13260	14477
45	1020	954	1039	1048	1102	1074	1090	1078	1047	1084	1049	1062	1020	1974	3013	4061	5163	6237	7327	8405	9452	10536	11585	12647
50	865	809	884	898	947	924	935	923	897	929	899	907	865	1674	2558	3456	4403	5327	6262	7185	8082	9011	9910	10817
55	710	664	729	748	792	774	780	768	747	774	749	752	710	1374	2103	2851	3643	4417	5197	5965	6712	7486	8235	8987
60	555	519	574	598	637	624	625	613	597	619	599	597	555	1074	1648	2246	2883	3507	4132	4745	5342	5961	6560	7157
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	865	808	883	882	926	898	917	903	874	915	895	905	865	1673	2556	3438	4364	5262	6179	7082	7956	8871	9766	10671

(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.

Complete 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 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

c. Snow Tables

1. Cooperative Summary of the Day

d. Freeze Data Table

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

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