

Climatology of the United States No. 20

Station: ANDERSEN AFB GUAM, PI

1971-2000

COOP ID: 914025

Climate Division: PI 3

NWS Call Sign: UAM

Elevation: 624 Feet

Lat: 13° 35N

Lon: 144° 56E

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	82.6	75.6	79.1	88+	1998	25	82.0	1989	66	1963	14	77.6	1983	0	436	.0	31.0	31.0	.0	.0	.0
Feb	82.6	75.3	79.0	90	1998	21	80.8	1989	69+	1978	4	76.8	1978	0	390	@	28.3	28.3	.0	.0	.0
Mar	83.1	75.7	79.4	89	1989	4	82.3	1984	69+	1965	13	77.9	1972	0	446	.0	31.0	31.0	.0	.0	.0
Apr	84.1	76.5	80.3	91+	1984	29	82.3	1984	69+	1963	28	77.8	1976	0	458	.1	30.0	30.0	.0	.0	.0
May	84.8	77.4	81.1	94	1984	31	84.0	1984	71+	1976	20	78.3	1972	0	499	.6	31.0	31.0	.0	.0	.0
Jun	85.3	77.7	81.5	93+	1999	20	83.9	1983	70	1962	4	78.8	1972	0	494	.4	30.0	30.0	.0	.0	.0
Jul	85.0	77.0	81.0	90+	1998	23	83.2	1984	70+	1972	24	78.4	1971	0	496	.2	31.0	31.0	.0	.0	.0
Aug	85.1	76.6	80.9	91+	1996	18	82.4	1987	70+	1977	17	79.3	1971	0	492	.4	31.0	31.0	.0	.0	.0
Sep	85.6	76.6	81.1	91+	2000	1	84.0	1987	70	1999	22	79.8	1985	0	483	.3	30.0	30.0	.0	.0	.0
Oct	85.3	77.3	81.3	93	1966	7	84.0	1987	70+	1999	16	80.0	1982	0	505	.2	31.0	31.0	.0	.0	.0
Nov	84.3	77.5	80.9	90	1987	17	82.6	1987	71+	1960	3	79.2	1978	0	477	@	30.0	30.0	.0	.0	.0
Dec	83.4	76.9	80.2	90+	1997	14	82.4	1988	68	1962	12	78.1	1986	0	469	.1	31.0	31.0	.0	.0	.0
Ann	84.3	76.7	80.5	94	May 1984	31	84.0+	Oct 1987	66	Jan 1963	14	76.8	Feb 1978	0	5645	2.3	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: 1953-2001

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

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

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COOP ID: 914025

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Elevation: 624 Feet Lat: 13°35N

Lon: 144°56E

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	5.23	3.94	9.15	1990	14	16.26	1976	1.08	1983	18.8	9.3	2.4	1.1	1.00	1.46	2.23	2.94	3.66	4.43	5.31	6.37	7.78	10.04	12.19
Feb	5.06	3.40	7.88	1953	22	17.45	1980	.71	1975	16.1	8.1	2.2	1.2	.49	.85	1.54	2.25	3.01	3.88	4.90	6.17	7.92	10.83	13.68
Mar	3.73	2.35	3.28	1972	19	14.66	1971	.89	1978	17.5	8.7	1.7	.6	.55	.86	1.40	1.92	2.46	3.05	3.73	4.56	5.68	7.50	9.25
Apr	4.33	3.42	8.96	1963	29	14.55	1974	.64	1982	17.3	7.9	1.8	.9	.65	1.01	1.64	2.24	2.86	3.54	4.33	5.29	6.58	8.68	10.70
May	5.75	3.54	22.60	1976	21	35.18	1976	.76	1987	18.7	9.4	2.5	1.1	.43	.80	1.54	2.34	3.22	4.23	5.44	6.98	9.11	12.70	16.24
Jun	6.07	5.99	4.99	1982	23	17.88	1985	.55	1983	22.4	12.5	3.5	1.0	1.37	1.93	2.82	3.62	4.42	5.27	6.23	7.36	8.86	11.25	13.49
Jul	10.89	11.42	5.82	1986	4	19.03	1996	4.26	1998	24.5	17.3	6.9	2.9	5.68	6.57	7.78	8.74	9.62	10.49	11.42	12.47	13.78	15.74	17.48
Aug	14.51	13.39	12.55	1992	28	32.89	1992	5.26	1998	25.0	17.7	8.9	4.2	5.84	7.17	9.06	10.62	12.09	13.59	15.20	17.06	19.42	23.04	26.32
Sep	12.17	10.92	6.09	1967	12	26.06	1982	3.30	1997	23.6	16.1	7.4	3.9	4.69	5.82	7.43	8.77	10.04	11.34	12.74	14.36	16.43	19.60	22.49
Oct	11.39	10.58	18.30	1953	15	28.99	1979	4.05	1972	23.9	16.1	6.7	3.3	5.10	6.11	7.52	8.66	9.72	10.80	11.95	13.26	14.92	17.44	19.71
Nov	9.42	8.47	5.17	1990	23	19.20	1981	2.44	1973	22.9	14.5	5.1	2.6	3.39	4.27	5.55	6.63	7.66	8.71	9.85	11.18	12.88	15.50	17.91
Dec	6.16	5.73	14.17	1997	17	17.05	1997	1.34	1992	21.9	12.2	3.5	1.2	2.13	2.71	3.55	4.27	4.95	5.66	6.43	7.32	8.47	10.25	11.88
Ann	94.71	95.65	22.60	May 1976	21	35.18	May 1976	.55	Jun 1983	252.6	149.8	52.6	24.0	61.01	67.29	75.46	81.76	87.42	92.94	98.69	105.09	112.93	124.42	134.46

+ 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: 1953-2001

(3) Derived from 1971-2000 daily data

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

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Lat: 13°35N

Lon: 144°56E

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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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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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	1459	1314	1469	1448	1522	1484	1519	1515	1473	1528	1467	1492	17690
55	746	670	756	758	809	794	806	802	783	815	777	779	9295
57	684	614	694	698	747	734	744	740	723	753	717	717	8565
60	591	530	601	608	654	644	651	647	633	660	627	624	7470
65	436	390	446	458	499	494	496	492	483	505	477	469	5645
70	281	250	291	308	344	344	341	337	333	350	327	314	3820

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	1216	1131	1227	1220	1282	1255	1272	1265	1232	1278	1234	1252	1216	2347	3574	4794	6076	7331	8603	9868	11100	12378	13612	14864
45	1061	986	1072	1070	1127	1105	1117	1110	1082	1123	1084	1097	1061	2047	3119	4189	5316	6421	7538	8648	9730	10853	11937	13034
50	906	841	917	920	972	955	962	955	932	968	934	942	906	1747	2664	3584	4556	5511	6473	7428	8360	9328	10262	11204
55	751	696	762	770	817	805	807	800	782	813	784	787	751	1447	2209	2979	3796	4601	5408	6208	6990	7803	8587	9374
60	596	551	607	620	662	655	652	645	632	658	634	632	596	1147	1754	2374	3036	3691	4343	4988	5620	6278	6912	7544
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	906	841	916	914	969	949	959	951	929	962	932	942	906	1747	2663	3577	4546	5495	6454	7405	8334	9296	10228	11170

(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/normal/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