

Climatography of the United States No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: KAHULUI AP 398, HI

1971-2000

COOP ID: 512572

Climate Division: HI 5

NWS Call Sign: OGG

Elevation: 51 Feet

Lat: 20° 54N

Lon: 156° 26W

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	80.3	63.3	71.8	90	1959	10	75.1	1996	48	1969	20	69.4	1973	0	210	.0	30.9	31.0	.0	.0	.0
Feb	80.8	63.1	71.9	89+	2001	9	74.1	1981	50+	1987	2	69.2	1973	0	195	.0	28.2	28.3	.0	.0	.0
Mar	81.5	64.6	73.1	90+	1984	12	75.9	1984	52	1993	12	70.7	1985	0	250	.1	31.0	31.0	.0	.0	.0
Apr	82.5	66.0	74.2	91	1981	17	77.0+	1996	54	1985	4	70.8	1985	0	277	.1	30.0	30.0	.0	.0	.0
May	84.3	67.0	75.7	92+	1996	23	78.5	1980	57+	1985	19	72.4	1987	0	330	.9	31.0	31.0	.0	.0	.0
Jun	86.0	69.3	77.6	94	1996	12	80.6	1996	58	1985	2	74.3	1975	0	379	1.8	30.0	30.0	.0	.0	.0
Jul	86.9	70.8	78.8	95	1996	22	81.4	1996	58	1965	30	75.7	1975	0	429	3.2	31.0	31.0	.0	.0	.0
Aug	87.9	71.0	79.5	97	1994	31	81.2	1994	61+	1999	2	76.6	1975	0	448	6.1	31.0	31.0	.0	.0	.0
Sep	88.1	70.0	79.1	96+	1997	14	81.3	1997	60+	1975	27	75.6	1975	0	422	7.6	30.0	30.0	.0	.0	.0
Oct	86.9	69.4	78.1	96	1973	5	80.5	1984	58	1964	13	75.3	1975	0	407	4.8	31.0	31.0	.0	.0	.0
Nov	84.1	67.9	76.0	93+	1990	7	79.0	1984	55+	1985	27	73.0	1985	0	329	1.2	30.0	30.0	.0	.0	.0
Dec	81.7	65.1	73.4	90+	1995	6	75.9	1995	52	1983	18	71.2	1985	0	260	.1	31.0	31.0	.0	.0	.0
Ann	84.3	67.3	75.8	97	Aug 1994	31	81.4	Jul 1996	48	Jan 1969	20	69.2	Feb 1973	0	3936	25.9	365.1	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: 1954-2001

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

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Lon: 156°26W

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	3.74	2.43	4.70	1980	10	14.46	1980	.12	1977	10.2	5.2	1.9	1.0	.14	.32	.72	1.20	1.78	2.47	3.34	4.46	6.07	8.86	11.67
Feb	2.36	1.39	4.44	1965	3	8.31	1972	.06	2000	8.7	4.2	1.4	.6	.09	.20	.45	.75	1.11	1.55	2.10	2.81	3.82	5.59	7.36
Mar	2.35	2.07	4.94	1968	14	6.75	1996	.18	1998	10.7	4.5	1.3	.6	.37	.57	.91	1.23	1.57	1.93	2.35	2.87	3.56	4.67	5.75
Apr	1.75	1.03	3.95	1989	7	14.29	1989	.06	1990	10.2	3.5	.9	.3	.06	.13	.31	.53	.80	1.12	1.53	2.07	2.85	4.20	5.57
May	.66	.52	2.41	1987	5	4.36	1987	.00	1972	6.7	1.7	.2	.0	.01	.03	.10	.18	.28	.41	.57	.78	1.08	1.61	2.14
Jun	.23	.13	2.22	1967	29	.90	1990	.00	1974	5.7	.6	.0	.0	.00	.01	.04	.07	.11	.15	.21	.28	.38	.56	.74
Jul	.49	.40	1.04	1989	22	1.65	1989	.01	1999	6.9	1.4	.1	.0	.02	.05	.11	.17	.25	.34	.44	.58	.78	1.12	1.46
Aug	.53	.50	1.13	1982	1	1.54	1982	.02	1973	6.5	1.4	.2	.0	.08	.12	.20	.28	.35	.44	.53	.65	.81	1.07	1.32
Sep	.39	.22	1.16	1965	23	1.43	1987	.02	1972	5.0	1.0	.2	.0	.02	.03	.08	.13	.19	.26	.35	.47	.63	.92	1.21
Oct	1.05	.66	2.92	1985	17	5.66	1985	.00+	1996	7.1	2.1	.4	.1	.00	.04	.17	.32	.49	.70	.95	1.27	1.73	2.52	3.30
Nov	2.17	1.93	5.48	1965	12	6.53	1996	.14	1980	10.1	4.2	1.2	.6	.17	.31	.59	.89	1.22	1.61	2.06	2.64	3.44	4.79	6.12
Dec	3.08	2.36	5.82	1955	21	10.21	1996	.01	1975	10.8	4.7	1.6	.6	.09	.22	.53	.92	1.39	1.96	2.69	3.65	5.02	7.42	9.86
Ann	18.80	16.54	5.82	Dec 1955	21	14.46	Jan 1980	.00+	Oct 1996	98.6	34.5	9.4	3.8	7.20	8.95	11.45	13.52	15.49	17.50	19.68	22.19	25.40	30.32	34.82

+ 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: 1954-2001

(3) Derived from 1971-2000 daily data

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

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Station: KAHULUI AP 398, HI

COOP ID: 512572

Climate Division: HI 5

NWS Call Sign: OGG

Elevation: 51 Feet

Lat: 20° 54N

Lon: 156° 26W

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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No. 20 1971-2000

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Climate Division: HI 5

NWS Call Sign: OGG

Elevation: 51 Feet

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Lon: 156° 26W

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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COOP ID: 512572

Climate Division: HI 5 NWS Call Sign: OGG Elevation: 51 Feet Lat: 20° 54N Lon: 156° 26W

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	1233	1119	1273	1267	1353	1369	1452	1471	1412	1430	1319	1283	15981
55	520	475	560	577	640	679	739	758	722	717	629	570	7586
57	458	419	498	517	578	619	677	696	662	655	569	508	6856
60	365	335	405	427	485	529	584	603	572	562	479	415	5761
65	210	195	250	277	330	379	429	448	422	407	329	260	3936
70	73	68	103	132	180	230	274	293	272	252	180	111	2168

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	996	934	1037	1039	1117	1140	1218	1238	1182	1197	1091	1045	996	1930	2967	4006	5123	6263	7481	8719	9901	11098	12189	13234
45	841	789	882	889	962	990	1063	1083	1032	1042	941	890	841	1630	2512	3401	4363	5353	6416	7499	8531	9573	10514	11404
50	686	644	727	739	807	840	908	928	882	887	791	735	686	1330	2057	2796	3603	4443	5351	6279	7161	8048	8839	9574
55	531	499	572	589	652	690	753	773	732	732	641	580	531	1030	1602	2191	2843	3533	4286	5059	5791	6523	7164	7744
60	376	354	417	439	497	540	598	618	582	577	491	425	376	730	1147	1586	2083	2623	3221	3839	4421	4998	5489	5914
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	686	643	727	739	796	829	889	895	851	861	786	733	686	1329	2056	2795	3591	4420	5309	6204	7055	7916	8702	9435

(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