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: HONOLULU INTL AP 703, HI **COOP ID: 511919**

Climate Division: HI 2 **NWS Call Sign: HNL** **Elevation: 7 Feet** **Lat: 21˚19N** **Lon: 157˚56W**

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	80.4	65.7	73.0	88	1996	21	76.2	1996	52	1969	20	69.9	1979	0	249	.0	30.9	31.0	.0	.0	.0
Feb	80.7	65.4	73.0	88	1984	11	75.3	1977	53+	1983	12	70.4	1972	0	225	.0	28.3	28.3	.0	.0	.0
Mar	81.7	66.9	74.3	89	1960	17	76.7	1986	55+	1976	13	72.2	1972	0	288	.0	31.0	31.0	.0	.0	.0
Apr	83.1	68.2	75.6	91	1996	28	79.9	1996	56	1958	22	73.8+	1985	0	319	.1	30.0	30.0	.0	.0	.0
May	84.9	69.6	77.2	93	1988	31	79.3	1994	60+	1989	3	74.9+	1983	0	379	.4	31.0	31.0	.0	.0	.0
Jun	86.9	72.1	79.5	92+	1996	11	81.4	1992	65+	1982	2	76.8	1971	0	436	2.0	30.0	30.0	.0	.0	.0
Jul	87.8	73.8	80.8	94	1995	15	83.3	1995	66+	1990	7	78.8	1971	0	490	5.7	31.0	31.0	.0	.0	.0
Aug	88.9	74.7	81.8	93+	1997	30	84.3	1994	67+	1984	9	79.7	1971	0	521	11.7	31.0	31.0	.0	.0	.0
Sep	88.9	74.2	81.5	95	1994	19	84.0	1994	66+	1985	12	79.3	1971	0	497	10.5	30.0	30.0	.0	.0	.0
Oct	87.2	73.2	80.2	94	1984	6	82.7	1995	61	1993	27	78.0	1978	0	472	4.7	31.0	31.0	.0	.0	.0
Nov	84.3	71.1	77.7	93	1986	6	80.8	1994	57	1990	25	74.9	1978	0	382	.4	30.0	30.0	.0	.0	.0
Dec	81.7	67.8	74.8	89+	1995	15	79.1	1995	54	1962	20	71.8	1972	0	303	.0	31.0	31.0	.0	.0	.0
Ann	84.7	70.2	77.5	95	Sep 1994	19	84.3	Aug 1994	52	Jan 1969	20	69.9	Jan 1979	0	4561	35.5	365.2	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

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1949-2001

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

Issue Date: May 2005

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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	2.73	1.28	6.40	1963	7	12.82	1982	.18	1986
Feb	2.35	1.33	5.52	1955	23	7.21	1979	.06	1983
Mar	1.89	1.30	15.32	1958	5	6.24	1991	.02	1993
Apr	1.11	.70	3.90	1972	14	5.15	1972	.11	1992
May	.78	.44	3.44	1965	2	4.76	1977	.03	2000
Jun	.43	.21	2.00+	1971	15	2.46	1971	.03+	2000
Jul	.50	.39	2.18	1989	20	2.33	1989	.04	1971
Aug	.46	.24	2.10	1959	6	2.17	1996	.00	1974
Sep	.74	.60	1.35	1963	17	2.08+	1992	.05+	1998
Oct	2.18	1.60	7.47	1978	30	11.15	1978	.07	1996
Nov	2.27	.98	5.39	1954	28	18.79	1996	.13	1983
Dec	2.85	1.48	7.89	1987	12	17.29	1987	.06	1976
Ann	18.29	17.23	15.32	Mar 1958	5	18.79	Nov 1996	.00	Aug 1974

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.8	4.1	1.5	.7
Feb	7.9	3.5	1.4	.7
Mar	9.0	3.4	1.0	.6
Apr	8.6	2.7	.3	.1
May	7.3	1.5	.4	.1
Jun	5.8	.8	.1	.1
Jul	7.2	.9	.1	.1
Aug	5.4	1.1	.2	.1
Sep	6.9	2.0	.3	.1
Oct	7.3	2.6	1.1	.5
Nov	9.1	3.2	1.0	.6
Dec	9.7	3.9	1.3	.7
Ann	93.0	29.7	8.7	4.4

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	.09	.20	.48	.83	1.24	1.75	2.39	3.24	4.45	6.56	8.70
Feb	.09	.21	.46	.77	1.13	1.57	2.10	2.81	3.81	5.53	7.27
Mar	.07	.16	.37	.61	.90	1.25	1.68	2.25	3.06	4.46	5.87
Apr	.11	.18	.33	.49	.66	.85	1.07	1.35	1.74	2.38	3.01
May	.03	.07	.15	.25	.37	.51	.69	.93	1.26	1.84	2.43
Jun	.01	.03	.07	.12	.19	.27	.37	.51	.70	1.05	1.41
Jul	.05	.08	.15	.22	.30	.38	.48	.61	.78	1.07	1.35
Aug	.00	.02	.07	.13	.20	.29	.40	.55	.76	1.13	1.50
Sep	.07	.12	.22	.32	.43	.56	.71	.90	1.16	1.59	2.01
Oct	.04	.10	.28	.53	.85	1.26	1.79	2.51	3.58	5.49	7.45
Nov	.05	.14	.35	.62	.96	1.39	1.93	2.66	3.71	5.56	7.45
Dec	.09	.20	.49	.85	1.28	1.82	2.49	3.37	4.65	6.87	9.13
Ann	6.43	8.15	10.65	12.76	14.77	16.84	19.09	21.71	25.07	30.26	35.02

\+ 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: 1949-2001
(3) Derived from 1971-2000 daily data

Complete documentation available from:
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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)

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	1272	1149	1311	1309	1402	1426	1513	1544	1487	1495	1372	1326	16606
55	559	505	598	619	689	736	800	831	797	782	682	613	8211
57	497	449	536	559	627	676	738	769	737	720	622	551	7481
60	404	365	443	469	534	586	645	676	647	627	532	458	6386
65	249	225	288	319	379	436	490	521	497	472	382	303	4561
70	105	91	137	171	224	286	335	366	347	317	233	155	2767

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	1027	966	1080	1089	1173	1198	1275	1301	1247	1248	1132	1079	1027	1993	3073	4162	5335	6533	7808	9109	10356	11604	12736	13815
45	872	821	925	939	1018	1048	1120	1146	1097	1093	982	924	872	1693	2618	3557	4575	5623	6743	7889	8986	10079	11061	11985
50	717	676	770	789	863	898	965	991	947	938	832	769	717	1393	2163	2952	3815	4713	5678	6669	7616	8554	9386	10155
55	562	531	615	639	708	748	810	836	797	783	682	614	562	1093	1708	2347	3055	3803	4613	5449	6246	7029	7711	8325
60	407	386	460	489	553	598	655	681	647	628	532	459	407	793	1253	1742	2295	2893	3548	4229	4876	5504	6036	6495
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	716	676	768	786	856	878	933	944	902	914	826	766	716	1392	2160	2946	3802	4680	5613	6557	7459	8373	9199	9965

(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.
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