

Climatography of the United States

No. 20

1971-2000

Station: HILO INTL AP, HI

COOP ID: 511492

Climate Division: HI 6

NWS Call Sign: ITO

Elevation: 30 Feet

Lat: 19° 43N

Lon: 155° 03W

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	79.2	63.6	71.4	92	1997	28	73.6	1974	54+	1995	10	69.1	2000	0	198	.2	30.9	31.0	.0	.0	.0
Feb	79.4	63.5	71.5	92	1968	20	73.6	1986	53	1962	21	69.0	1999	0	180	.1	28.1	28.3	.0	.0	.0
Mar	79.2	64.7	72.0	93	1972	23	74.8	1995	54+	1983	3	69.4	1985	0	215	@	30.9	31.0	.0	.0	.0
Apr	79.3	65.6	72.5	89+	1978	20	74.5	1980	59+	1985	7	69.8	1985	0	223	.0	30.0	30.0	.0	.0	.0
May	80.6	66.7	73.7	94	1966	20	77.3	1980	59+	1992	8	71.4	1985	0	268	.0	31.0	31.0	.0	.0	.0
Jun	82.2	68.0	75.1	90	1969	24	77.6	1980	61	1956	26	72.8	1976	0	303	.0	30.0	30.0	.0	.0	.0
Jul	82.5	69.2	75.9	89+	1995	15	78.1	1994	62	1970	11	73.7	1976	0	336	.0	31.0	31.0	.0	.0	.0
Aug	83.2	69.4	76.3	93	1950	15	78.6	1994	63+	1955	1	74.3	1999	0	350	.1	31.0	31.0	.0	.0	.0
Sep	83.4	69.0	76.2	92	1951	21	78.2	1995	61	1970	30	74.0	1999	0	336	.3	30.0	30.0	.0	.0	.0
Oct	82.7	68.5	75.6	91+	1979	8	77.9	1988	62+	1999	19	73.6	1975	0	328	.3	31.0	31.0	.0	.0	.0
Nov	80.7	67.2	74.0	92	1996	7	76.3	1988	58+	1985	28	72.2	1972	0	268	.1	30.0	30.0	.0	.0	.0
Dec	79.5	64.9	72.2	93	1980	14	74.9	1988	55	1977	23	69.9+	1998	0	223	.1	31.0	31.0	.0	.0	.0
Ann	81.0	66.7	73.9	94	May 1966	20	78.6	Aug 1994	53	Feb 1962	21	69.0	Feb 1999	0	3228	1.2	364.9	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: 1949-2001

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

007-A

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: HILO INTL AP, HI

COOP ID: 511492

Climate Division: HI 6

NWS Call Sign: ITO

Elevation: 30 Feet

Lat: 19°43N

Lon: 155°03W

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	9.74	7.45	9.51	1990	19	32.24	1979	.13	1998	16.3	11.1	5.2	2.8	.42	.90	2.00	3.27	4.77	6.57	8.78	11.67	15.76	22.80	29.88
Feb	8.86	7.06	16.87	1979	20	45.55	1979	.52	2000	15.7	10.4	4.2	2.2	.54	1.06	2.16	3.36	4.72	6.32	8.25	10.72	14.18	20.04	25.88
Mar	14.35	12.09	15.66	1980	17	49.93	1980	.88	1972	22.6	16.6	7.0	3.8	1.54	2.62	4.60	6.60	8.75	11.16	13.99	17.52	22.32	30.27	38.03
Apr	12.54	10.27	9.66	1971	23	43.24	1986	4.02	1990	25.4	18.8	7.1	2.8	3.33	4.52	6.33	7.93	9.50	11.14	12.97	15.13	17.96	22.40	26.55
May	8.07	7.66	7.89	1989	15	19.80	1989	2.84	1999	25.4	16.9	4.1	1.5	2.58	3.35	4.48	5.45	6.38	7.35	8.40	9.65	11.25	13.73	16.03
Jun	7.36	6.33	3.39	1997	26	22.70	1997	1.80	1985	25.4	16.1	4.4	1.3	1.90	2.60	3.67	4.61	5.54	6.51	7.60	8.89	10.58	13.23	15.72
Jul	10.71	9.50	5.91	1987	21	28.59	1982	3.54	1999	27.4	19.5	6.1	2.1	3.00	4.01	5.55	6.90	8.21	9.58	11.10	12.89	15.22	18.88	22.29
Aug	9.78	8.63	9.64	1991	3	26.92	1991	2.66	1971	25.9	17.5	5.1	1.8	2.92	3.85	5.25	6.45	7.61	8.83	10.17	11.74	13.77	16.95	19.90
Sep	9.14	9.09	8.67	1994	19	21.82	1994	1.59	1974	23.3	15.4	5.1	2.1	2.54	3.40	4.72	5.87	6.99	8.17	9.47	11.01	13.00	16.14	19.07
Oct	9.64	9.20	8.63	1961	28	20.96	1990	2.52	1984	24.0	17.3	5.8	2.0	3.66	4.56	5.84	6.91	7.93	8.96	10.09	11.39	13.04	15.59	17.92
Nov	15.58	13.67	16.17	2000	2	45.90	2000	1.01	1989	23.6	17.4	8.2	4.2	2.53	3.88	6.14	8.29	10.50	12.91	15.66	19.02	23.52	30.80	37.78
Dec	10.50	8.15	9.33	1970	2	32.19	1971	.28	1980	19.8	14.0	5.2	2.4	1.52	2.39	3.90	5.36	6.88	8.55	10.47	12.83	16.00	21.18	26.16
Ann	126.27	117.94	16.87	Feb 1979	20	49.93	Mar 1980	.13	Jan 1998	274.8	191.0	67.5	29.0	79.39	88.04	99.35	108.10	115.98	123.68	131.71	140.68	151.69	167.86	182.03

+ 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: HILO INTL AP, HI

COOP ID: 511492

Climate Division: HI 6

NWS Call Sign: ITO

Elevation: 30 Feet

Lat: 19°43N

Lon: 155°03W

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

Complete documentation available from:

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Elevation: 30 Feet

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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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No. 20
1971-2000**

Station: HILO INTL AP, HI

COOP ID: 511492

Climate Division: HI 6 NWS Call Sign: ITO Elevation: 30 Feet Lat: 19° 43N Lon: 155° 03W

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	1221	1104	1238	1213	1291	1293	1359	1373	1326	1351	1258	1246	15273
55	508	460	525	523	578	603	646	660	636	638	568	533	6878
57	446	404	463	463	516	543	584	598	576	576	508	471	6148
60	353	320	370	373	423	453	491	505	486	483	418	378	5053
65	198	180	215	223	268	303	336	350	336	328	268	223	3228
70	66	54	76	85	123	154	181	195	186	173	122	83	1498

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	989	928	1003	987	1061	1071	1127	1145	1103	1122	1035	1012	989	1917	2920	3907	4968	6039	7166	8311	9414	10536	11571	12583
45	834	783	848	837	906	921	972	990	953	967	885	857	834	1617	2465	3302	4208	5129	6101	7091	8044	9011	9896	10753
50	679	638	693	687	751	771	817	835	803	812	735	702	679	1317	2010	2697	3448	4219	5036	5871	6674	7486	8221	8923
55	524	493	538	537	596	621	662	680	653	657	585	547	524	1017	1555	2092	2688	3309	3971	4651	5304	5961	6546	7093
60	369	348	383	387	441	471	507	525	503	502	435	392	369	717	1100	1487	1928	2399	2906	3431	3934	4436	4871	5263
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	679	637	691	687	750	770	813	834	801	806	734	702	679	1316	2007	2694	3444	4214	5027	5861	6662	7468	8202	8904

(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