

SECTION 6

GEOGRAPHY AND ENVIRONMENT

This section relates to area, climatologic, topographic, hydrologic, and other geographic and environmental measurements of Hawaii.

The State consists of eight major Islands and 124 minor Islands with a total land area of 6,425 square miles and a coastline of 750 miles. Honolulu is 214 miles from Hilo, 1,367 miles from Kure Atoll (the westernmost end of the State), and 2,397 miles from San Francisco. The highest peak in the State is Mauna Kea, 13,796 feet above sea level; the longest stream is Kaukonahua Stream, 33 miles in length; the biggest lake in Halalii, 841 acres; and the highest named waterfall is Kahiwa, a 1,750-foot cascade. Various measures of air pollution, such as suspended particulate matter and radioactivity, indicate that Honolulu is one of the cleanest cities in the nation. There is also very little water pollution: nine out of nine major Oahu beaches were rated "A" in 1970 (coliform not exceeding 50 to 100 ml.) and none was rated either "B" (51-500) or "C" (501 or more). Climatically, Hawaii is marked by remarkably balmy temperatures and wide variations in rainfall. The all-time temperature range in downtown Honolulu, for example, is from 57° to 88°F. Normal precipitation, however, ranges from 5.7 inches near Kawaihae to 486 inches atop Waialeale. The longest volcanic eruption in Island history lasted 875 days, the worst earthquake attained 7.5 on the Richter scale, and the highest tsunami wave reached 66 feet.

Important sources of data include the U.S. Geological Survey, National Ocean Survey, National Weather Service, U.S. Bureau of the Census Geography Division, the Division of Water and Land Development of the State Department of Land and Natural Resources, the State Department of Health, and the University of Hawaii Institute of Geophysics. Detailed information is given in *Geographic Statistics of Hawaii*, published by the Department of Planning and Economic Development (now out of print). National data are reported in *Statistical Abstract of the United States: 1971*, Section 6.

Table 53.—GREAT CIRCLE DISTANCES IN STATUTE MILES BETWEEN HONOLULU INTERNATIONAL AIRPORT AND SPECIFIED PLACES

Place	Miles from Honolulu	Place	Miles from Honolulu
Hawaiian Islands:		Other Pacific, con.:	
Cape Kumukahi, Hawaii ¹	236	Hong Kong	5,541
Hilo, Hawaii	214	Johnston Island	820
Ka Lae (South Cape), Hawaii	221	Kingman Reef	1,073
Kailua, Kona, Hawaii	168	Manila, Philippines	5,293
Kahului, Maui	98	Pago Pago, Amer. Samoa	2,606
Lanai Airport	72	Palmyra Islands	1,101
Molokai Airport	54	Papeete, Tahiti	2,741
Lihue, Kauai	103	Suva, Fiji	3,159
Puuwai, Niihau	152	Sydney (Port Jackson), Australia	5,070
Nihoa	283	Tokyo, Japan	3,847
Necker Island	520	Wake Island	2,294
French Frigate Shoals	556		
Gardner Pinnacles	688		
Maro Reef	851		
Laysan Island	936		
Lisianski Island	1,065	North America:	
Pearl and Hermes Atoll	1,208	Anchorage, Alaska	2,781
Midway Islands	1,309	Chicago, Illinois	4,179
Kure Atoll ¹	1,367	Christobal, Canal Zone	5,214
		Los Angeles, California	2,557
Trust Territory of the Pacific Islands:		Miami, Florida	4,856
Majuro, Marshall Islands	2,271	New York, N.Y.	4,959
Kwajalein, Marshall Islands	2,443	Portland, Oregon	2,595
Kolonia, Ponape, E.C.I.	3,087	San Diego, California	2,610
Saipan, Mariana Islands	3,704	San Francisco, California	2,397
Koror, Palau, W.C.I.	4,593	Seattle, Washington	2,679
		Vancouver, B.C.	2,709
Other Pacific locations:		Victoria, B.C.	2,668
Apra Harbor, Guam	3,806	Tijuana, Mexico	2,616
Auckland, N.Z.	4,393	Washington, D.C.	4,829

¹The great circle distance from Kure Atoll to Cape Kumukahi, Hawaii, is 1,523 statute miles. This distance represents the total length of the Hawaiian Archipelago.

Source: U.S. Geological Survey measurements cited in the Hawaii State Department of Planning and Economic Development, *Geographic Statistics of Hawaii* (Statistical Report 67, July 1, 1969), p. 5.

Table 54.—AREA AND COASTLINE OF COUNTIES, ISLANDS, AND CITIES

County, Island or city	Area in square statute miles			Coastline in statute miles	
	Total	Land	Inland water	General coastline ¹	Tidal shoreline
The State	6,450	6,425	25	750	1,052
Counties:					
Hawaii	4,038.0	4,037.0	1.0	266	313
Maui	1,161.1	1,160.3	0.8	} 210	343
Kalawao	13.3	13.3	—		
Honolulu	610.9	595.7	15.2		
Kauai	627.1	619.1	8.0	137	162
Islands:					
Hawaii	4,038.0	4,037.0	1.0	266	313
Maui	728.8	728.2	0.6	120	149
Kahoolawe	45.0	45.0	—	29	36
Molokini	<0.01	<0.01	—	—	—
Lanai	139.5	139.5	—	47	52
Molokai	261.1	260.9	0.2	88	106
Oahu	607.7	592.7	15.0	112	209
Kauai	553.3	548.7	4.6	90	110
Niihau	73.0	69.6	3.4	45	50
Lehua	0.4	0.4	—	—	—
Kaula	0.4	0.4	—	2	2
Northwestern Haw'n Isl.	3.2	3.0	0.2	25	25
Cities:					
Hilo	298.9	298.9	—	—	—
Honolulu	88.7	86.6	2.1	—	—
On Oahu	85.5	83.6	1.9	—	—
On NW Haw'n Isl.	3.2	3.0	0.2	25	25

¹Figures for the four Islands of Maui County are not consistent with the published County total.

Source: Hawaii State Department of Planning and Economic Development, *Geographic Statistics of Hawaii* (Statistical Report 67, July 1, 1969).

Table 55.—ELEVATIONS OF MAJOR MOUNTAINS, BY ISLAND

Island and mountain ¹	Elevation (feet)	Island and mountain ¹	Elevation (feet)
Hawaii:		Oahu:	
Mauna Kea	13,796	Kaala	4,020
Mauna Loa	13,677	Konahuanui	3,150
Hualalai	8,271	Tantalus	2,013
Kohala	5,480	Olomana	1,643
Kilauea (Uwekahuna)	4,090	Diamond Head	760
		Punchbowl	500
Kahoolawe:		Koko Head	642
Lua Makika	1,477		
		Kauai:	
Maui:		Kawaikini	5,243
Haleakala (Red Hill)	10,023	Waialeale	5,148
Puu Kukui	5,788		
Iao Needle	2,250	Niihau:	
		Paniau	1,281
Lanai:			
Lanaihale	3,370	Kaula Island	550
		Nihoa ²	910
Molokai:			
Kamakou	4,970		
Puu Nana	1,381		

¹Highest elevation on each Island and other important peaks.

²Highest elevation in the Northwestern Hawaiian Islands.

Source: U.S. Geological Survey data cited in the Hawaii Department of Planning and Economic Development, *Elevations of Major Mountains in Hawaii* (Statistical Report 52, November 7, 1967), as corrected.

Table 56.—MAJOR STREAMS, LAKES, AND WATERFALLS

Subject	Name	Island	Magnitude
Streams:			
Longest water feature (mi.)	Kaukonahua Str.	Oahu	33.0
Second longest water feature (mi.)	Wailuku Riv.	Hawaii	32.0
Greatest ave. discharge (million gal./day)	Wailuku Riv.	Hawaii	303.5
Lakes:			
Greatest area (natural) (acres) ¹	Halulu	Niihau	182
Greatest area (man-made) (acres)	Koloa Res.	Kauai	422
Longest shoreline (miles)	Wahiawa Res.	Oahu	11
Highest (feet above sea level)	Lake Waiau	Hawaii	13,020
Named waterfalls:			
Greatest sheer drop (feet)	Akaka	Hawaii	442
Highest cascade (feet)	Kahiwa	Molokai	1,750

¹Excludes fishponds and intermittent lakes. The largest intermittent lake is Halalii Lake, Niihau (840.7 acres).

Source: Hawaii State Department of Planning and Economic Development, *Geographic Statistics of Hawaii* (Statistical Report 67, July 1, 1969), as corrected.

Table 57.—VOLCANIC ERUPTIONS: 1750 TO 1972

Crater and date of outbreak	Duration (days)	Area (square miles)	Volume (cubic yards)
Haleakala:			
c. 1790	(NA)	2.2	35,000,000
Hualalai:			
1800-1801	(NA)	17.7	410,000,000
Kilauea:			
1750 (?)	(NA)	1.57	19,500,000
1790 (?)	(NA)	3.04	37,670,000
1790: Nov. (?)	(NA)	No lava flow	No lava flow
1823: Feb-July	Short	3.86	15,000,000
1832: Jan. 14	Short	(NA)	(NA)
1840: May 30	26	6.60	281,000,000
1868: April 2	Short	0.07	(NA)
April 2 (?)	Short	0.04	250,000
1877: May 4	1(?)	(NA)	(NA)
May 21 (?)	(NA)	0.04	(NA)
1884: Jan. 22	1	(NA)	(NA)
1885: March	80(?)	(NA)	(NA)
1894: March 21	6+	(NA)	(NA)
July 7	4(?)	(NA)	(NA)
1918: Feb. 23	14	0.04	250,000
1919: Feb. 7	294	1.60	34,500,000
Dec. 21	221	5.00	62,000,000
1921: March 18	7	0.77	8,800,000
1922: May 28	2	0.04	(NA)
1923: Aug. 25(?)	1	0.20	100,000
1924: May 10	17	No lava flow	No lava flow
July 19	11	0.02	320,000
1927: July 7	13	0.04	3,160,000
1929: Feb. 20	2	0.06	1,920,000
July 25	4	0.08	3,600,000
1930: Nov. 19	19	0.09	8,480,000
1931: Dec. 23	14	0.12	9,640,000
1934: Sept. 6	33	0.16	9,500,000
1952: June 27	136	0.23	64,000,000
1954: May 31	3	0.44	8,500,000
1955: Feb. 28	88	6.10	120,000,000
1959: Nov. 14	36	0.24	51,000,000
1960: Jan. 13	36	4.1	155,000,000

NA Not available

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Table 57.—VOLCANIC ERUPTIONS: 1750 TO 1972 (continued)

Crater and date of outbreak	Duration (days)	Area (square miles)	Volume (cubic yards)
1961: Feb. 24	1	0.02	30,000
March 3	22	0.1	350,000
July 10	7	0.4	17,300,000
Sept. 22	3	0.3	3,000,000
1962: Dec. 7	2	0.02	430,000
1963: Aug. 21	2	0.06	1,100,000
Oct. 5	1	1.3	9,000,000
1965: March 5	10	3.0	23,000,000
Dec. 24	< 1	0.23	1,160,000
1967: Nov. 5	251	0.25	110,000,000
1968: Aug. 22	5	0.01	50,000
Oct. 7	15	0.8	9,000,000
1969: Feb. 22	6	2.3	22,000,000
May 24	875	19.0	240,000,000
1971: Aug. 14	< 1	0.8	12,000,000
Sept. 24	5	1.5	10,000,000
1972: Feb. 4	In progress, Mar. 3, 1972		
Mauna Loa:			
1832: June 20	21	(NA)	(NA)
1843: Jan. 9	90	20.2	250,000,000
1849: May	15	(NA)	(NA)
1851: Aug. 8	21	6.9	90,000,000
1852: Feb. 17	20	11.0	140,000,000
1855: Aug. 11	450	12.2	150,000,000
1859: Jan. 23	300	32.7	600,000,000
1865: Dec. 30	120	(NA)	(NA)
1818: Mar. 27	15	9.1	190,000,000
1870: Jan. 1 (?)	14	(NA)	(NA)
1871: Aug. 1 (?)	30	(NA)	(NA)
1872: Aug. 10	60	(NA)	(NA)
1873: Jan. 6	2(?)	(NA)	(NA)
April 20	547	(NA)	(NA)
1875: Jan. 10	30	(NA)	(NA)
Aug. 11	7	(NA)	(NA)
1876: Feb. 13	Short	(NA)	(NA)
1877: Feb. 14	10	(NA)	(NA)
1880: May 1	6	(NA)	(NA)
Nov. 1	280	24.0	300,000,000
1887: Jan. 16	10	11.3	300,000,000
1892: Nov. 30	3	(NA)	(NA)
1896: April 21	16	(NA)	(NA)
1899: July 4	19	16.2	200,000,000

NA Not available.

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Table 57.—VOLCANIC ERUPTIONS: 1750 TO 1972 (continued)

Crater and date of outbreak	Duration (days)	Area (square miles)	Volume (cubic yards)
1903: Oct. 6	60	(NA)	(NA)
1907: Jan. 9	15	8.1	100,000,000
1914: Nov. 25	48	(NA)	(NA)
1916: May 19	14	6.6	80,000,000
1919: Sept. 29	Short	9.2	350,000,000
1926: April 10	Short	13.4	150,000,000
1933: Dec. 2	17	2.0	100,000,000
1935: Nov. 21	42	13.8	160,000,000
1940: April 7	133	3.9	100,000,000
1942: April 26	13	10.6	100,000,000
1943: Nov. 21	3	(NA)	(NA)
1949: Jan. 6	145	5.6	77,000,000
1950: June 1	23	35.0	600,000,000

NA Not available.

Source: Gordon A. Macdonald and Agatin T. Abbott, *Volcanoes in the Sea* (University of Hawaii Press, 1970), pp. 50, 53, 56-57, and 74-75; Hawaiian Volcano Observatory, records.

Table 58.—EARTHQUAKES OF MAGNITUDE 5 OR GREATER: 1838 TO 1971

Date	Location	Estimated Richter magnitude ¹
1838: December 12	Hawaii	6
1841: April 7	Hawaii	6
1852: March 31	Hawaii	6
1868: March 28	Hawaii	6.5
April 2	Hawaii	7.5
1871: February 18	South of Oahu	6.5
1875: November 23	Hawaii	6
1887: January 24	Hawaii	6
1913: October 25	Hawaii	6.5
1918: November 1	Hawaii	6.5
1919: September 14	Hawaii	6.5
1929: October 6	Hawaii	6.5
1938: January 23	N. of Pauwela Pt., Maui	6.75
1940: June 17	Hawaii	6
1941: September 25	Hawaii	6
1950: May 30	Hawaii	6.25
1951: April 23	Hawaii	6.5
August 21	Hawaii	6.9
1952: May 23	Hawaii	6
1953: January 15	Hawaii	5.25
1954: March 30	Hawaii	6
March 30	Hawaii	6.5
1961: September 25	Hawaii	5.75-6
1962: June 28	Hawaii	6.1
1963: October 23	Hawaii	5
1964: October 11	W. of Kona Coast	5

¹Except for the earthquake of April 2, 1868, magnitudes prior to 1929 are conjectural.

Source: Information supplied by Wm. Mansfield Adams and Augustine S. Furumoto, Hawaii Institute of Geophysics, University of Hawaii. Correct to December 31, 1971.

Table 59.—TSUNAMIS WITH RUN-UP OF 2 METERS (6.6 FEET) OR MORE: 1819 TO 1972

Date ¹	Maximum height in Hawaii (feet)	Deaths in Hawaii	Damage in Hawaii
1819: April 12	6.6	—	Unknown
1837: Nov. 7	19.7	16	174 houses
1841: May 17	15.1	—	Unknown
1868: April 2	65.6	46	Great locally
August 14	15.1	—	Severe
1869: July 25	29.9	—	Some
1877: May 10	16.1	5	Extensive
1878: Jan. 20	9.8	—	Some houses
1896: June 15	29.9	—	Unknown
1906: Jan. 31	11.8	—	Minor
August 16	11.8	—	Some
1919: April 9	14.1	—	Minor
April 30	13.8	—	Unknown
1922: November 11	6.9	—	Minor
1923: February 3	20.0	1	\$1,500,000
1924: May 30	16.4	—	Great locally
1933: March 2	9.5	—	Unknown
1946: April 1	55.8	159	\$26,000,000
1952: November 4	20.0	—	\$ 1,000,000
1957: March 9	52.5	—	\$ 5,000,000
1960: May 23	34.4	61	\$23,000,000
1964: March 27	15.7	—	\$ 67,590

¹Limited to tsunamis with a maximum run-up of 2.0 meters or more.

Source: George Pararas-Carayannis, *Catalog of Tsunamis in the Hawaiian Islands* (U.S. Coast and Geodetic Survey, May 1969); Robert C. Schmitt, "Catastrophic Mortality in Hawaii," *The Hawaiian Journal of History*, Vol. III (1969), pp. 66-86; Hawaii Institute of Geophysics, records. Correct to February 29, 1972.

Table 60.—WATER QUALITY DATA FOR OAHU BEACHES: 1950 TO 1970

Beach	Coliform per 100 milliliters (logarithmic average)						
	1950	1960	1966	1967	1968	1969	1970
Ala Moana Park	177.0	11	7	1.6	14	5	3
Fort DeRussy	19.2	7	15	18.7	25	13	11
Kuhio Beach	4.0	6	8	12.7	12	15	25
Hanauma Bay	3.9	2	45	6.3	6	13	16
Kailua Beach	6.4	6	8	37.3	12	13	15
Punaluu Park	6.3	157	311	49.5	20	7	8
Haleiwa Park	12.6	81	29	11.0	21	7	7
Waianae Park	1.7	3	10	10.4	52	9	13
Ewa Beach	2.4	9	22	5.9	6	6	4

Source: *Annual Report, Department of Health, State of Hawaii, Statistical Supplement, 1950-1970.*

Table 61.—AEROMETRIC SURVEY DATA FOR SPECIFIED LOCATIONS ON OAHU: 1971

Subject	Department of Health Bldg.	Kalihi Kai ²	Pearl City ³	Barbers Point ²	Waimanalo ³	Ala Moana ²
Minimum:						
Particulate matter ⁴	18	28	23	18	16	44
Sulfur dioxide ⁴	5	5	5	5	—	5
Nitrogen dioxide ⁴	20	20	20	20	—	20
Carbon monoxide, 1 hr. values ⁵	0.6	—	—	—	—	—
Carbon monoxide, 8 hr. values ⁵	0.2	—	—	—	—	—
Photochemical oxidants ⁴	3	—	—	—	—	—
Maximum:						
Particulate matter ⁴	125	160	196	471	66	240
Sulfur dioxide ⁴	42	12	23	16	—	10
Nitrogen dioxide ⁴	159	109	118	68	—	128
Carbon monoxide, 1 hr. values ⁵	38.0	—	—	—	—	—
Carbon monoxide, 8 hr. values ⁵	11.2	—	—	—	—	—
Photochemical oxidants ⁴	48	—	—	—	—	—
Annual average:						
Particulate matter ⁴	45	72	49	125	37	89
Sulfur dioxide ⁴	11	5	5	5	—	5
Nitrogen dioxide ⁴	56	54	40	29	—	69

¹Period of sampling: 11 months for particulates, 9 months for sulfur dioxide, 9 months for nitrogen dioxide, 9 months for carbon monoxide, and 10 months for photochemical oxidants.

²Period of sampling: 11 months for particulates, 9 months for sulfur dioxide, and 9 months for nitrogen dioxide.

³Period of sampling: 6 months.

⁴Concentration in micrograms per cubic meter.

⁵Concentration in milligrams per cubic meter.

Source: Hawaii State Department of Health, Environmental Health Division, Air Sanitation Branch, records.

Table 62.—AEROMETRIC SURVEY DATA, FOR HONOLULU: 1957 TO 1971

Year	Suspended particulate matter (mean micrograms per cubic meter)	Benzene-soluble organic matter (mean micrograms per cubic meter)	Beta radioactivity (mean micromicrocuries per cubic meter)
1957	47	3.5	0.6
1958	59	7.5	3.3
1959	63	5.4	1.3
1960	47	4.1	0.0
1961	43	3.0	0.8
1962	41	3.1	4.0
1963	42	4.3	3.7
1964	44	2.3	0.9
1965	41	2.5	0.3
1966	35	2.8	0.2
1967	38	2.5	0.3
1968	45	2.8	(NA)
1969	43	2.3	(NA)
1970	37	1.5	(NA)
1971	45	(NA)	(NA)

NA Not available.

Source: Hawaii State, Department of Health, Environmental Health Division, Air Sanitation Branch, records.

Table 63.—AIR POLLUTANT EMISSIONS, BY SOURCE AND COUNTY: 1970
(In tons per year)

Source or County	Sulphur oxides	Particulates	Carbon monoxide	Hydro- carbons	Nitrogen oxides
Total	58,000	78,000	636,000	145,000	77,000
Source:					
Motor vehicles	1,000	1,420	413,500	67,900	40,700
Aircraft	570	1,390	4,570	3,810	1,250
Vessels	1,490	160	400	100	610
Other transportation	420	240	3,040	3,460	3,220
Fuel combustion in stationary sources	53,000	25,000	1,550	3,200	25,000
Residential, commercial, institutional ...	12,200	490	83	170	3,470
Industrial	12,000	910	11	160	3,000
Agricultural	2,550	22,800	1,450	2,200	3,900
Steam-electric utilities	26,200	1,150	6	700	14,800
Solid waste disposal	400	5,800	24,600	8,700	1,900
Industrial process losses	1,280	11,800	270	20,200	200
Agricultural	(N)	31,900	188,000	37,600	3,740
County:					
City and County of Honolulu	50,500	29,300	396,000	91,700	58,400
Hawaii County	3,000	22,800	97,400	21,800	8,100
Kauai County	1,200	11,900	55,600	12,200	3,900
Maui County	3,400	14,000	86,600	19,200	6,200

N Negligible

Source: Hawaii State Department of Health, Air Sanitation Branch, *Summary of Air Pollutant Emissions in the State of Hawaii, 1970* (table).

Table 64.—CLIMATIC DATA FOR SELECTED PLACES

Island and station	Ground elevation (feet)	Average temperature (°F)		Extreme temperature of record (°F)		Average annual precipitation (inches)	Average annual possible sunshine (percent)
		Coolest month	Warmest month	Lowest	Highest		
Hawaii:							
Hilo Airport	27	70.6	75.8	53	94	136.62	38
Haw'n Volcanoes Nat. Park Hdq.	3,971	57.9	63.5	37	85	100.69	—
Kona (Kailua)	30	72.1	77.3	54	93	25.22	—
Puako ¹	10	73.9	80.4	52	98	9.47	—
Waimea	2,670	62.3	66.8	34	90	40.05	—
Mauna Kea summit ²	13,796	30.0	42.6	12	62	10.05	—
Maui:							
Hana	120	71.3	76.8	50	90	70.65	—
Haleakala summit	9,960	42.6	50.0	14	73	50.69	—
Kihei ³	90	70.9	78.4	49	98	13.25	—
Kahului Airport	48	71.7	79.0	48	95	16.33	70
Lahaina	45	71.2	77.7	52	93	14.53	—
Molokai:							
Kaunakakai	12	—	—	—	—	14.08	—
Molokai Airport	450	70.2	77.6	48	90	29.21	—
Lanai:							
Lanai City	1,620	65.8	72.8	46	88	38.44	—
Oahu:							
Honolulu International Airport ..	7	72.4	79.4	52	92	21.89	69
Honolulu Federal Building ⁴	12	71.9	78.4	57	88	23.96	65
Waikiki ⁵	10	72.0	80.8	51	93	29.56	—
Upper Manoa (HSPA)	500	69.4	75.2	—	—	158.41	—
Kaneohe MCAS	10	72.9	79.1	58	90	43.88	—
Kahuku	25	70.6	77.8	49	95	41.10	—
Wheeler AFB	826	68.2	75.5	52	89	39.85	—
Waianae	20	72.1	79.7	45	96	20.31	—
Kauai:							
Kilauea	315	68.7	75.6	49	94	68.03	—
Kealia	9	70.2	78.0	44	93	43.28	—
Lihue Airport	103	70.7	78.4	50	90	43.00	55
Poipu (Makahuena Pt.)	52	72.4	79.4	50	93	36.39	—
Kokee (Kanalohuluhulu)	3,600	54.9	65.5	31	80	72.25	—
Waialeale	5,075	—	—	—	—	486.	—
Northwestern Hawaiian Islands:							
Midway	10	65.0	78.6	52	89	43.60	—

¹Temperature data are for Mahukona.

²Based on incomplete and non-continuous data for 1966-1971.

³Temperature data refer to Puunene Airport.

⁴Temperature sensors are 87 feet above the ground.

⁵Located at Honolulu Zoo. Available only from 1965. The rainfall average shown is thought to be above the long-term average.

Source: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service Pacific Region, data supplied February 25, 1972.

Table 65.—CLIMATIC EXTREMES FOR THE PERIOD OF RECORD

Subject	Date	Place	Magnitude
Long-term average:			
Lowest monthly average temperature (°F.)	February	Mauna Loa Obser.	39.8
Highest monthly average temperature (°F.)	August	Honolulu Airport	82.3
Lowest average annual rainfall (inches)	N. of Kawaihae	5.7
Highest average annual rainfall (inches)	Waialeale	486.0
Single events:			
Lowest temperature of record (°F.)	Feb. 23, 1971	Mauna Kea summit	12.0
Highest temperature of record (°F.)	April 27, 1931	Pahala	100.0
Lowest annual rainfall of record (inches)	1953	Kawaihae	0.2
Highest annual rainfall of record (inches)	1947-1948	Waialeale	624.1
Highest wind speed of record (m.p.h.)	Jan. 17-18, 1959	Mauna Loa Obser.	105+

Source: U.S. Department of Commerce, National Weather Service Pacific Region, data supplied February 25, 1972.