

# Hawaii

The Hawaiian Island Archipelago consists of both the Main Hawaiian Islands and the Northwest Hawaiian Islands. Due to the minimal population of the Northwest Hawaiian Islands, they are not included as part of this summary. The Main Hawaiian Islands are comprised of eight islands that are divided into five counties (see Figure 18). The county of Kauai (Niihau and Kauai Islands) is the northwesternmost county of the mainland Hawaiian Islands with an estimated population of 65,483 in 2008 (49). The largest city in Kauai County is Kapaa, located on the western side of Kauai Island. Honolulu County (Oahu Island) is home to the city of Honolulu, the state capital and economic center. Maui County (Molokai, Lanai, Kahoolawe, and Maui Islands) contains the second-largest island in the Main Hawaiian Island chain, Maui (1,883 square kilometers). Its largest city, Kahului, is located on the north side of the island. Kalawao County, located on the Island of Molokai, had a resident population of approximately 147 in 2008. Due to its minimal population, it is combined with Maui County for the purposes of this report. Hawaii County is the largest county by land area (10,432 square kilometers) and has the second-largest county population behind Honolulu. Its largest city, Hilo, is located on the northeast side of the island.

The reefs that surround the Main Hawaiian Islands occur relatively close to the shore and consist of non-structural reef communities. Barrier reefs occur in Kaneohe Bay on Oahu and on the south shore of Molokai. Due to their isolation and geological young age, although considered unique, the coral reefs adjacent to Hawaii are considered less diverse and generally less productive than other reefs (17). The extent of coral reef habitat surrounding the Main Hawaiian Islands is presented in Table 18 and in Figure 18.

## Key Facts

1,324,581	Population (2008)
80	Population Density (2008) (persons per sq km)
201	Number of residents per square kilometer of potential coral reef habitat within the 180 meter depth curve. (2008)
403,240	Households (2000)
460,542	Housing Units (2000)

Habitat Type	Hawaii	Maui	Honolulu	Kauai	Total
<i>Depth Curves (sq km)</i>					
18 Meter Line	193.2	395.8	371.4	260.8	1,221.2
180 Meter Line	1,053.2	3,764.4	943.9	834.1	6,595.6
<i>Mapped Coral Habitat<sup>1</sup> (sq km)</i>					
Coral Reef Hardbottom	105.7	274.0	291.1	269.0	939.8
Submerged Vegetation	0	0	0	0	0
Unconsolidated Sediment	25.3	188.7	116.3	73.3	403.6
Other Delineations	0.3	2.5	4.8	0.4	8.0

Table 18. Approximate area (in square kilometers) of coral reef habitat surrounding Hawaii. Source: Rohmann et al., 2005.

## Population

In 2000, the population of the state of Hawaii reached 1,211,537 people; in 2008, it is estimated to be 1,324,581 (35, 49). The majority of the population (70%) lives in Honolulu County. Since 1970, the state population has increased by over 548,000 people. Although Honolulu County accounted for most of this growth, Maui County showed the fastest growth rate, increasing by 213% (49).

By 2015, the state's population is expected to grow by 127,000 people, with over half of this growth occurring in Honolulu County (estimated at 69,000 people) (49). Figure 19 presents this projected change by county. In 2008, the population density of the entire state was estimated to be 80 persons per square kilometer. The most densely populated county was Honolulu



Development and sediment plume in Maunaloa Bay, Oahu. Credit: Malama Maunaloa (local NGO)

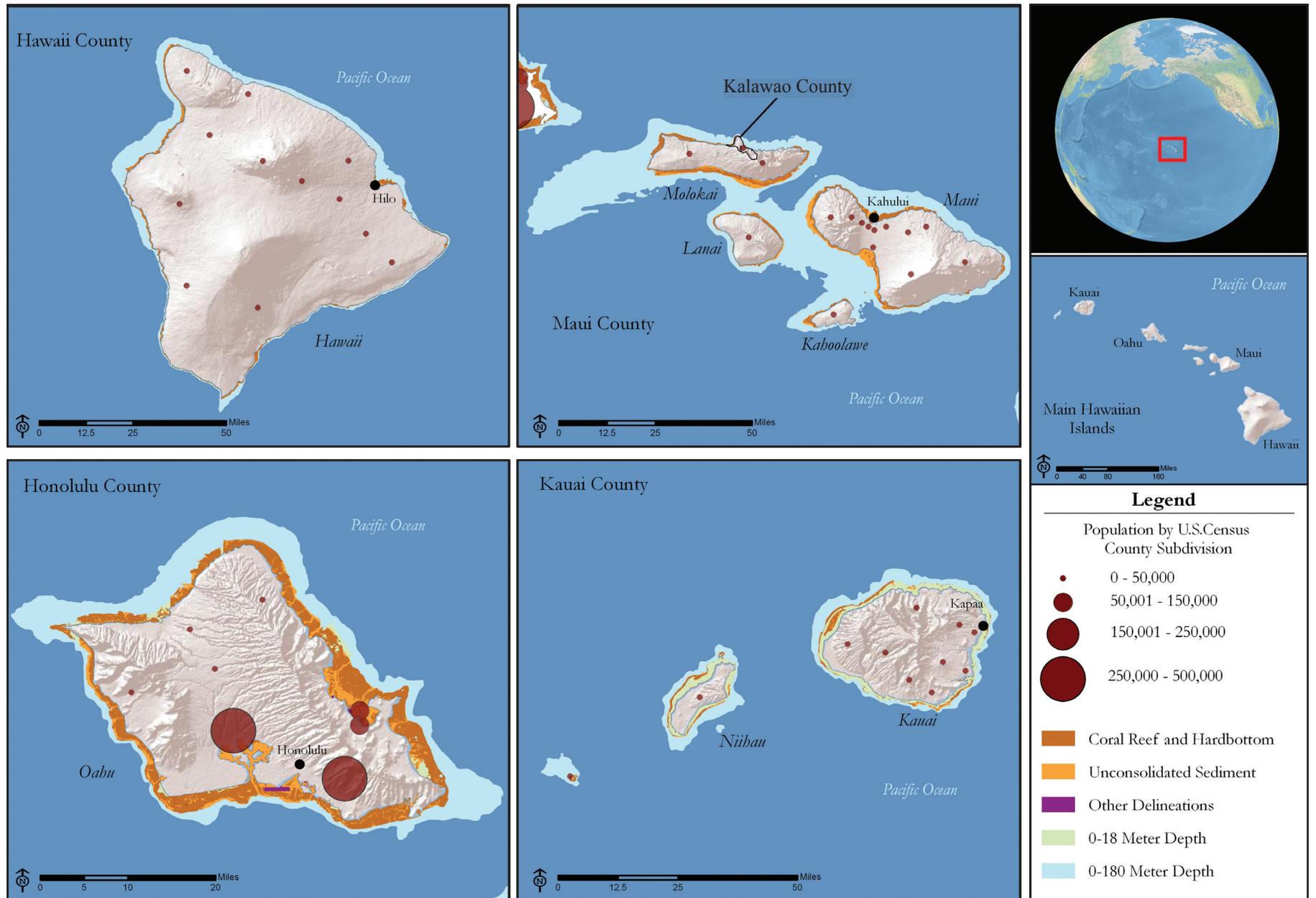


Figure 18. Population of Hawaii by US Census county subdivision adjacent to coral reef habitat. The population markers are shown at the center of each subdivision and should not be interpreted as exactly where population resides.

Source: U.S. Census Bureau, 2000; Rohmann et al., 2005.

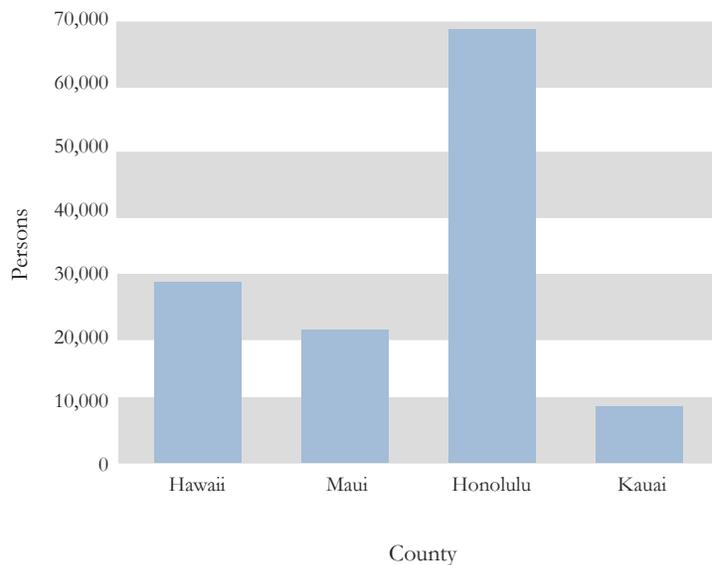


Figure 19. Expected population change in Hawaii from 2008 to 2015 by county. Source: Woods and Poole Economics, Inc., 2007.

County, with 599 persons per square kilometer. Most of the population resides in the city of Honolulu on the southwestern shore of Oahu. The second-most densely populated county was Maui, with 49 persons per square kilometer (49). Figure 18 illustrates the concentrations of population in relation to adjacent coral reef habitat.

Table 19 presents the ratio of the area of potential coral reef habitat and mapped coral reef habitat to the number of residents on Hawaii.

#### Gender

In 2000, Hawaii's population was 50% females and 50% males. This ratio was consistent across all of Hawaii's counties. Of all individuals 15 years of age and older, 55% were married, 30% had never been married, and 9% had been divorced (35).

#### Race/Ethnicity

In 2000, the population of Hawaii was 42% Asian, 24% white, 21% of two or more races, 9% Native Hawaiian and other Pacific Islander, 2% black or

Habitat Type	Area of Coral Reef Habitat in Hawaii	Persons Per Sq Km of Potential Coral Reef Habitat in 2008
<i>Depth Curves (sq km)</i>		
18 Meter Line	1,221.2	1,085
180 Meter Line	6,595.6	201
<i>Mapped Coral Habitat<sup>1</sup> (sq km)</i>		
Coral Reef Hardbottom	939.8	1,409
Submerged Vegetation	0	0
Unconsolidated Sediment	403.6	3,282
Other Delineations	8.0	165,573

Table 19. Ratio of the area of potential coral reef habitat and mapped coral reef habitat to population in Hawaii.

Source: Woods and Poole Economics, Inc., 2007; Rohmann et al., 2005.

African American, and 1% other. The percentage of Native Hawaiian and other Pacific Islander ranged from 9% to 11% across counties (35).

#### Age

Twenty-four percent of Hawaii's population in 2000 ranged in age from 0-17, followed by age groups 45-59 (19%), 35-44 (16%), 25-34 (14%), 18-24 (9%), 60-69 (7%), 70-79 (6%), and 80+ (3%). These ratios were generally consistent among all counties in Hawaii (35).



Yellow Tangs are a popular species collected from reefs for sale in the marine aquarium industry. Reef fish collection is an issue of concern in Hawaii and many other coral jurisdictions.

Credit: ©Ziggy Livnat, For the Sea Productions

## Households

In 2000, the total number of households in Hawaii was 403,240. Seventy-one percent were family households; of these, 34% were 2-person households and 24% were 3-person households. This was consistent across all counties. Most non-family households contained only one person (76%) (35).

### *Language*

The primary language spoken in the home was English (66%), followed by Asian and Pacific Island languages (29%), Spanish (3%), and Indo-European languages (2%) (35).

### *Place of Birth*

Of the total population, 57% were born in Hawaii, 23% were born in another state, 18% were foreign born, and 2% were native but born outside the United States. The counties with the highest percentage of individuals born in Hawaii were Hawaii County (63%) and Kauai County (62%) (35).

### *Income*

In 2000, the average median household income was \$39,112 per year. This is shown in Figure 20. In 2000, 11% of the population lived below the poverty level (35).

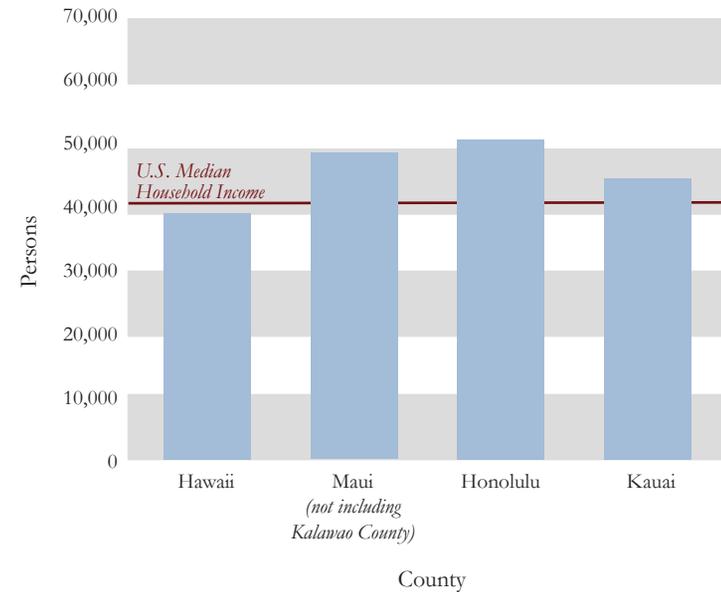


Figure 20. Median household income in Hawaii in 2000 by county.  
Source: U.S. Census Bureau, 2000.



*A beach resort along the reefs in Hanauma Bay on Oahu.  
Credit: Kathy Chaston, NOAA*

*Highlighted Issue:*  
**Trade in Coral and Live Reef Species**

Collection and trade of coral and marine aquarium fish is a major industry worldwide, and has been a growing issue of concern to marine scientists and coral reef managers for many years now (4, 33). Although Hawaii has outlawed the taking of coral from its waters, it does permit the commercial collection of ornamental reef fish. Reef fish harvest has grown from about 90,000 fish collected in 1973 to 422,823 fish in 1995. During the same time period the number of commercial permits for collecting rose from 75 to 160 permits. There can be a significantly lower abundance of popular aquarium fish in sites with high collection rates. In one study, 7 of 10 aquarium species ranged from 38% to 75% lower in abundance at fish collection sites when compared to non-collection sites (33).



Reef fish (flame angels) in plastic cases are prepared for shipping.  
 Credit: Chris Wade/Marine Photobank

**Education**

In 2000, 29% of the adult population (25 years of age and over) had a high school diploma. Approximately 30% had some college or an associate's degree, and 26% held a bachelor's degree or higher. This distribution is broken down by sex in Figure 21. Men outnumbered women in the category of holding a bachelor's degree or higher, but women outnumbered men in all other categories (35).

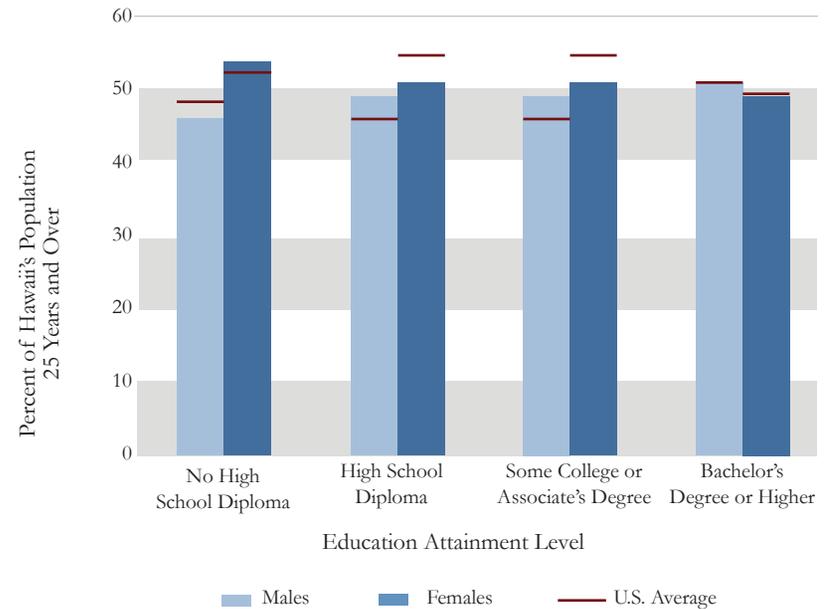


Figure 21. Education attainment by gender for the population 25 years and over in Hawaii in 2000.

Source: U.S. Census Bureau, 2000.

**Employment**

*Industry*

In 2000, 44% of the civilian population over 16 years of age were employed. This percentage represents 538,000 people (35). The industries that employed the most individuals are listed in Table 20.

Industry	Percent Employed
Educational; health and social services	19
Arts; entertainment; recreation; accommodation and food services	16
Retail trade	12
Professional; scientific; management; administrative and waste management services	9
Public administration	8
Finance; insurance; real estate and rental and leasing	7
Transportation and warehousing; and utilities	6
Construction	6
Other services (except public administration)	4
Manufacturing	4
Wholesale trade	3
Information	2
Agriculture; forestry; fishing and hunting; and mining	2

Table 20. Percent of the population 16 years of age and over employed by industry in Hawaii in 2000.

Source: U.S. Census Bureau, 2000.

#### *Commute to Work*

For the civilian population over 16 years of age, 99% worked in their county of residence. The primary means of transportation to work were driving a private vehicle alone (64%) and carpooling in a private vehicle (19%). These were followed by walking (5%), working at home (4%), and motorcycle, bicycle, and other means of transportation (3% combined) (35).

### **Housing and Development**

#### *Housing Units*

There were a total of 460,542 housing units in Hawaii in 2000. Honolulu County had the highest number of units with 315,988. Of the total housing units, almost half were owner occupied, 38% were renter occupied, and 12% were reported as vacant. (35).

#### *Plumbing Facilities*

In 2000, only about 1% of housing units lacked complete plumbing facilities in the study area. Hawaii County had the highest percentage of units lacking complete facilities, at a little under 4% (35).

#### *Source of Water*

The U.S. Census Bureau did not collect data on water sources for Hawaii in 2000 (35).

#### *Sewage Disposal*

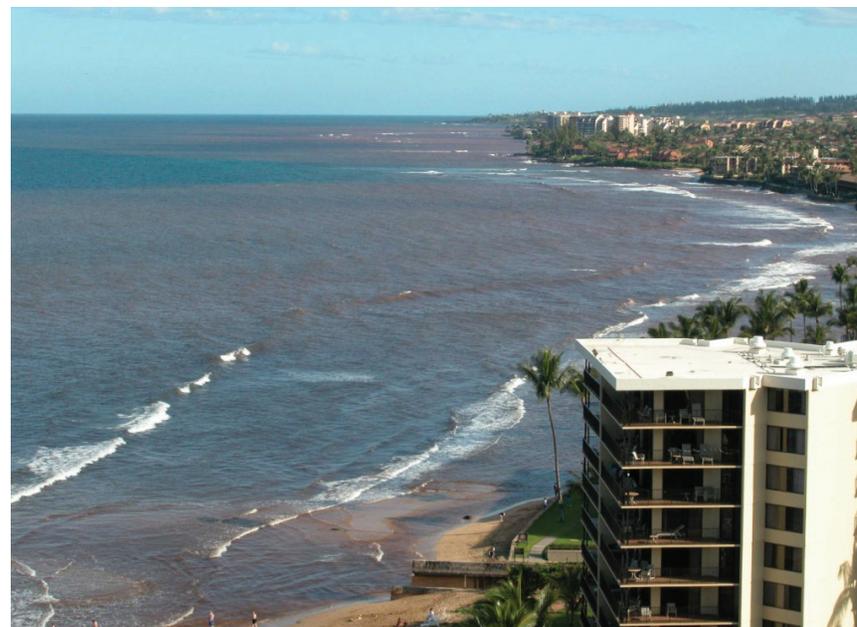
The U.S. Census Bureau did not collect data on sewage disposal for Hawaii in 2000 (35).

#### *Building Permits* <sup>2</sup>

Between 2002 and 2006, an average of 5,954 building permits were issued per year. Of those, 5,723 were for single-unit buildings and 231 were for multi-unit buildings. The total number of housing units (single and multiple unit buildings) averaged 7,916 per year (36, 37, 38, 39, 40).

### **Tourism**

From 2002 to 2006, an average of 6,987,808 tourists per year visited Hawaii. About 70% of them came from other U.S. states. The Japanese account for another 15% to 20% per year (31).



*Development along the coast in Kahana on Maui.*

*Credit: U.S. EPA*