

Commonwealth of the Northern Mariana Islands

The U.S. Commonwealth of the Northern Mariana Islands (CNMI) comprises 14 islands and is part of the Mariana Islands Archipelago. The populated islands of Rota, Saipan, and Tinian are located in the southern portion of the archipelago and represent three of the four municipalities (U.S. Census Bureau county equivalents) found within CNMI. The fourth municipality, the Northern Islands Municipality, has a minimal population (less than 10 persons in 2008) (49). Thus it is not included as part of this summary. Rota, the southernmost island of CNMI and least populated of the three municipalities being examined, is approximately 76 kilometers north of Guam. Rota has an emerging tourism industry and increasing development. Saipan, the largest (122 square kilometers) and most populated (approximately 85,267 people in 2008) island is driven economically by tourism and manufacturing. Tinian, located approximately 8 kilometers across the Saipan channel from Saipan, has approximately two thirds of its land area leased to the U.S. military. San Jose is the primary community found on Tinian and is an agricultural community (49).

Key Facts	
94,360	Population (2008)
305	Population Density (2008) (persons per sq km)
283	Number of residents per square kilometer of potential coral reef habitat within the 180 meter depth curve. (2008)
14,055	Households (2000)
17,566	Housing Units (2000)

The coral reefs offshore of Saipan and Tinian are most abundant on the islands' western shores. Off Saipan, the combination of fringing and barrier reefs offers the most diverse coral habitats in the Commonwealth. Rota is surrounded by fringing reefs, and newer reefs are located off the northwest and southwest coasts (30). The extent of coral reef habitat surrounding Rota, Saipan, and Tinian is presented in Table 12 and illustrated in Figure 10.

Population

In 2000, the population of CNMI reached 69,221; and in 2008, it is estimated to be 94,360 (35, 49). More than 90% of CNMI's population is concentrated on Saipan. From 1970 to 2008, the population of CNMI increased by just over 84,541 people; 77,000 of them on Saipan (49).

Habitat Type	Rota	Tinian	Saipan	Total
<i>Depth Curves (sq km)</i>				
18 Meter Line	12.1	17.3	56.8	86
180 Meter Line	57.0	103.0	173.0	333
<i>Mapped Coral Habitat¹ (sq km)</i>				
Coral Reef Hardbottom	16.6	21	65.7	103.1
Submerged Vegetation	0	0	0	0
Unconsolidated Sediment	8.7	5	31.8	45.9
Other Delineations	0	<1	0	<1

Table 12. Approximate area (square kilometers) of coral habitat surrounding CNMI. Source: Woods and Poole Economics, Inc., 2007; Rohmann et al., 2005.

By 2015, the population is expected to increase by over 29,000 people, with the majority of this growth (26,800 people) occurring, again, on Saipan. Figure 11 demonstrates this expected change by municipality. The highest percentages of growth are expected to occur on Saipan and Tinian at 31% each (49).

In 2008, the estimated population densities averaged 305 persons per square kilometer. The most densely populated municipality was Saipan, with 699 persons per square kilometer. This is more than 14 times the density of Rota and Tinian. Figure 10 illustrates population concentrations and adjacent coral habitats (35).

Table 13 presents the ratio of the area of potential coral reef habitat and



Visitors flock to Saipan Lagoon at Managaba Island off of Saipan. Credit: Bill Millhouser, NOAA Office of Ocean and Coastal Resource Management

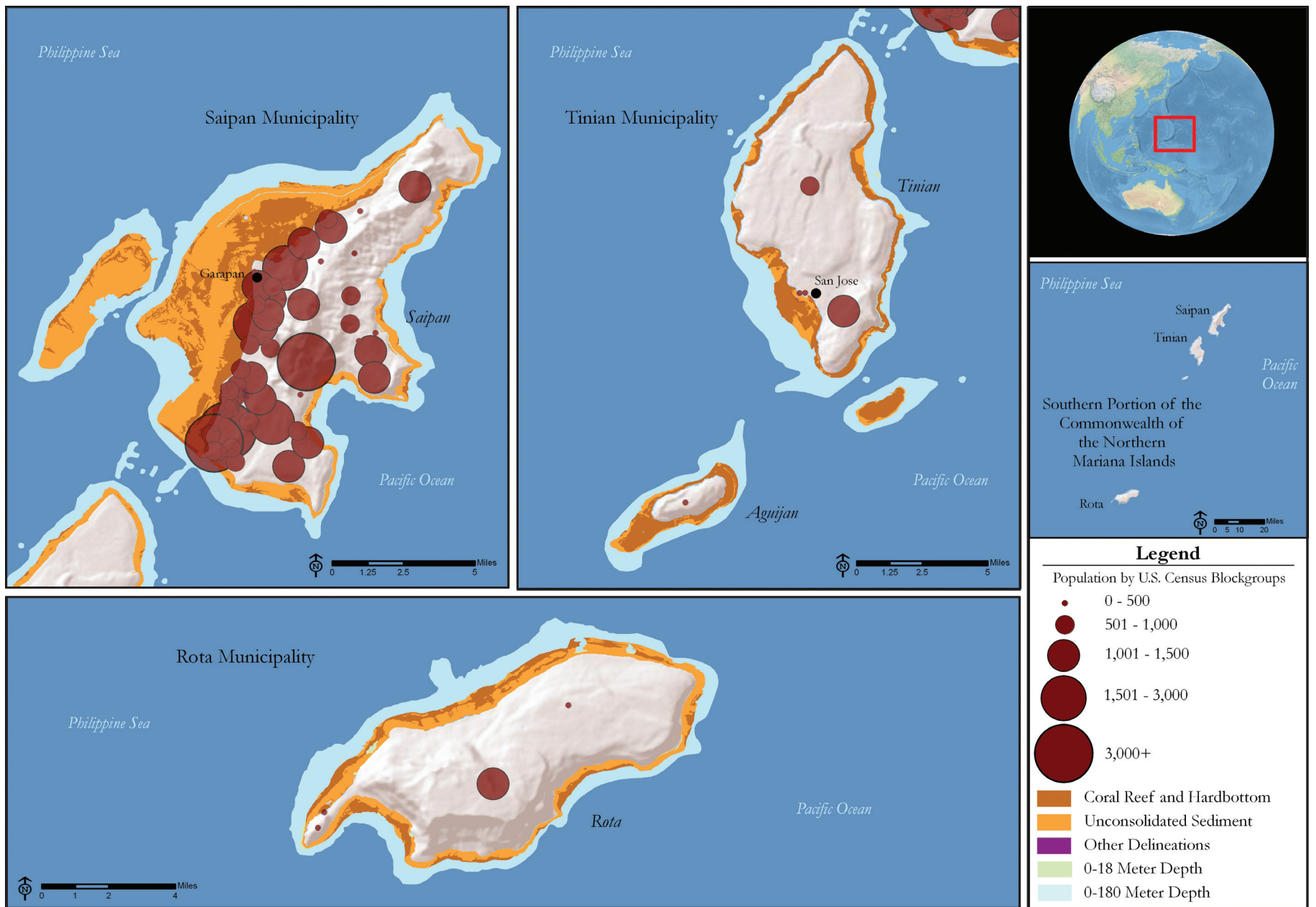


Figure 10. Population of the Commonwealth of the Northern Mariana Islands by U.S. Census blockgroup adjacent to coral reef habitat. The population markers are shown at the center of each blockgroup and should not be interpreted as exactly where population resides. Source: U.S. Census Bureau, 2000; Rohmann et al., 2005.

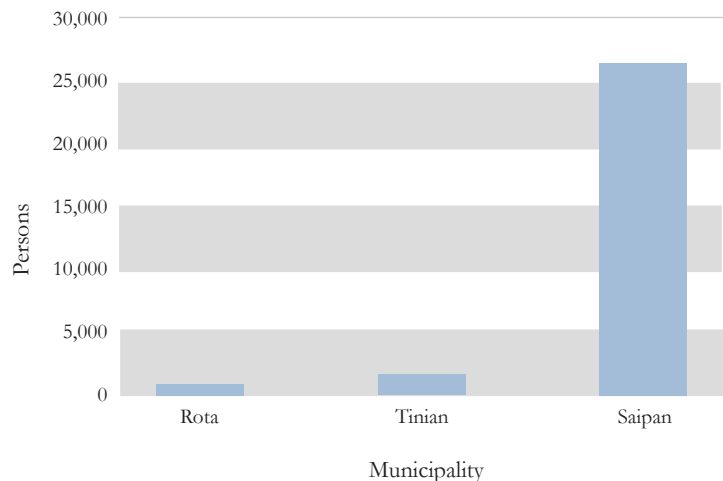


Figure 11. Expected population change in CNMI from 2008 to 2015 by municipality. Source: Woods and Poole Economics, Inc., 2007.

mapped coral reef habitat to the number of residents on CNMI. When compared to the other study areas in this report, CNMI has the third-highest number of residents per square kilometer of coral reef habitat within the 0-180 meter depth curve (behind Guam and Puerto Rico).

Gender

In 2000, CNMI's population was comprised of 54% females and 46% males. This ratio fluctuated among the municipalities. On Rota, for example, the ratio was 45% female and 55% male. Of all individuals greater than 15 years of age, 54% were married and only 2% had ever been divorced (35).

Race/Ethnicity

In 2000, over half of CNMI's population (56%) was comprised of individuals of solely Asian descent. This was followed by individuals of solely Native Hawaiian or Other Pacific Islander descent, making up 36% of the population, individuals of two or more races (5%), white (2%), and other (1%) (35).

Age

Twenty-nine percent of the total population of CNMI in 2000 ranged in age from 25-34, followed by the age groups 0-17 (26%), 35-44 (18%), 18-24 (14%), 45-59 (11%), 60-69 (2%), 70-79 (1%) (35).

Habitat Type	Area of Coral Reef Habitat in CNMI	Persons Per Sq Km of Potential Coral Reef Habitat in 2008
<i>Depth Curves (sq km)</i>		
18 Meter Line	86	1,096
180 Meter Line	333	283
<i>Mapped Coral Habitat' (sq km)</i>		
Coral Reef Hardbottom	103.1	915
Submerged Vegetation	0	...
Unconsolidated Sediment	46	2,056
Other Delineations	<1	...

Table 13. Ratio of the area of potential coral reef habitat and mapped coral reef habitat to population on CNMI.

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

Households

In 2000, the total number of households in CNMI was 14,055. Sixty-seven percent were family households. The size of family households was somewhat evenly distributed, with two-, three-, four-, five-, and seven-person households ranging from 16-20% of the total; and six-person households making up 11% of the total. Most non-family households (58%) contained only one person (35).

Language

The primary languages spoken in the home in CNMI were Philippine languages (32%), other languages (31%), and Chamorro (30%). English was the primary language in 7% of households (35).



Traditional fishing and recreation are competing uses in Saipan Lagoon on the West coast of Saipan. Credit: Bill Millhouser, NOAA Office of Ocean and Coastal Resource Management

Place of Birth

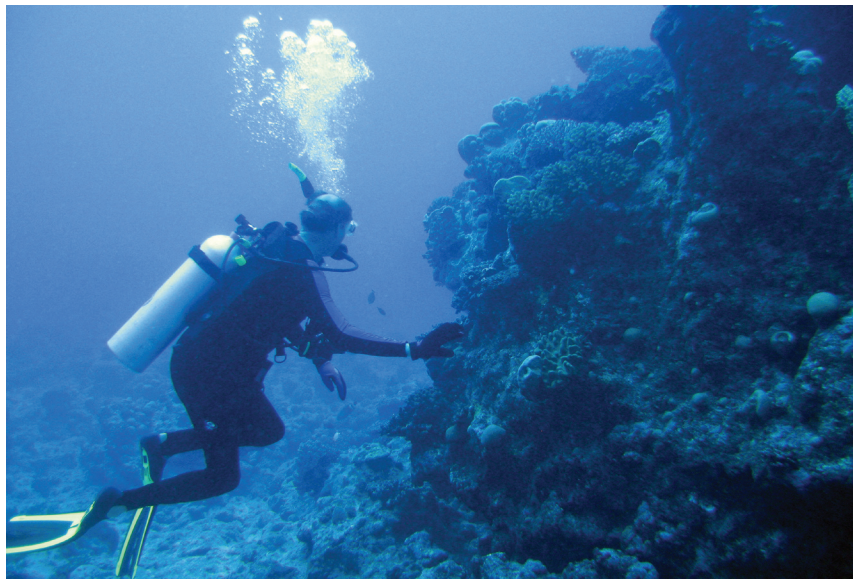
Of the total population, 36% were born in CNMI, 30% were born in other parts of Asia (excluding the Philippines), and 23% were born in the Philippines. The remaining population was born in other areas (5%), the United States (3%), and the Federated States of Micronesia (3%) (35).

Income

In 2000, the median household income in CNMI was approximately \$25,264 per year (35). Median household income by municipality is shown in Figure 12. That same year, 46% of the population lived at or below the poverty level (35).

Education

In 2000, 36% of the adult population (25 years of age and over) had a high school diploma. Approximately 18% had some college or an associate's degree, and 15% held a bachelor's degree or higher. The distribution is broken down by gender in Figure 13. In almost all education attainment categories, men outnumber women. Women outnumber men among those with no high school diploma (35).



Uninformed or careless divers can damage coral simply by touching it with fins or fingers, or by fanning sediment over live coral on the ocean floor.

Credit: Bill Millhouser, NOAA Office of Ocean and Coastal Resource Management

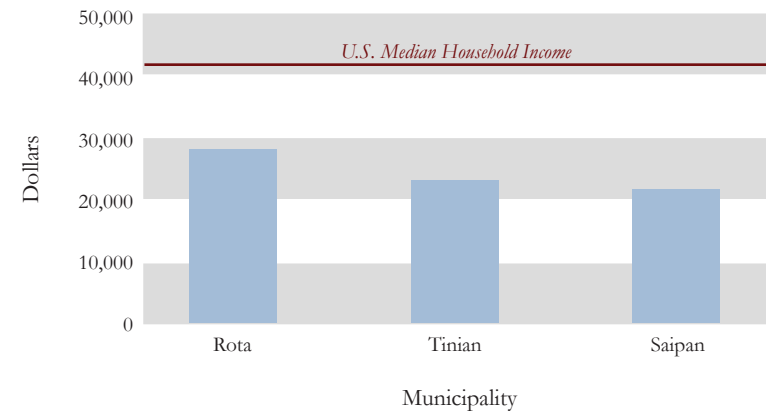


Figure 12. Median household income in CNMI in 2000 by municipality. Source: U.S. Census Bureau, 2000.

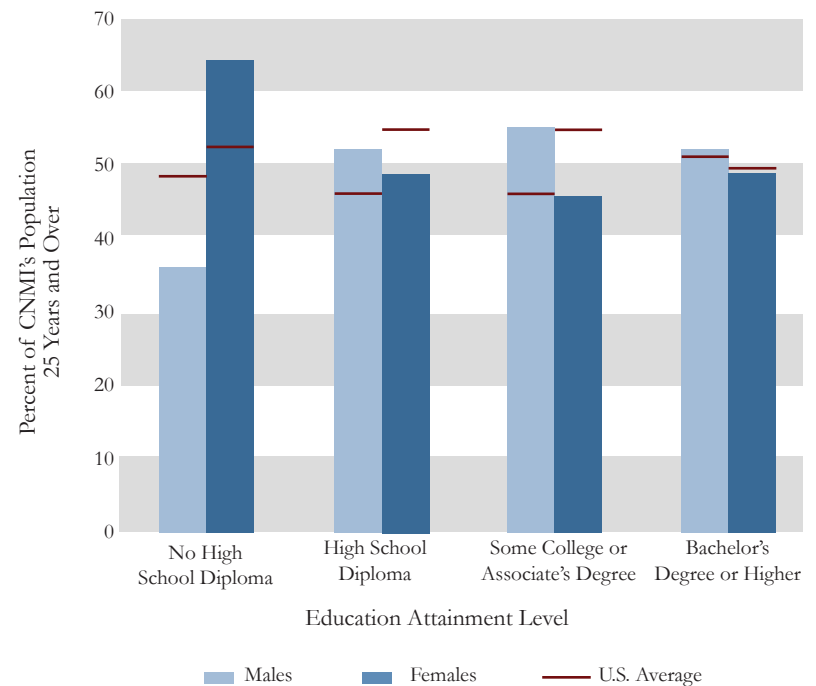


Figure 13. Education attainment by gender for the population aged 25 years and over in 2000.

Source: U.S. Census Bureau, 2000.

Highlighted Issue: Coastal Pollution

In recent years, violations regarding runoff pollution have primarily occurred on the island of Saipan (30). The point and nonpoint land-based sources of pollution threatening the coral reefs around Saipan include sewage outfalls and overflows, wastewater disposal systems, sedimentation from rural runoff of unpaved roads, and chemicals and nutrients from urban runoff (45). For example, some of the reefs off the western shore of Saipan are threatened by nutrient-rich runoff from the Tapochau watershed. Storm water that was once filtered by wetlands now carries nutrient-rich water to coral habitats due to the filling of wetlands (45).



Storm water runoff can carry with it large amounts of sediment, as shown above on Saipan, that in turn can smother reefs.

Credit: Bill Millbouser, NOAA Office of Ocean and Coastal Resource Management

Employment

Industry

In 2000, 62% of the civilian population 16 years of age and over were employed. This percentage represents 42,753 people. The industries that employed the most individuals in 2000 are listed in Table 14. CNMI's economy relies on two major industries, garment manufacturing and tourism (43). These are reflected in the first two categories of Table 14.

Industry	Percent Employed
Manufacturing	41
Arts; entertainment; recreation; accommodation and food services	14
Retail trade	7
Construction	7
Public administration	6
Other services (except public administration)	6
Educational; health and social services	5
Professional; scientific; management; administrative and waste management services	5
Transportation and warehousing; and utilities	3
Finance; insurance; real estate and rental and leasing	2
Wholesale trade	2
Agriculture; forestry; fishing and hunting; and mining	1
Information	1

Table 14. Percent of the population 16 years of age and over employed by industry in 2000. Source: U.S. Census Bureau, 2000.

Commute to Work

For the population over 16 years of age, 99% worked in their same municipality of residence. The primary means of transportation to work were walking (37%) and carpooling (33%). These were followed by driving alone in a private vehicle (23%), working at home (4%), other means (2%), riding a bicycle (1%), and public transportation (1%) (35).

Housing and Development

Housing Units

There were a total of 17,566 housing units in CNMI in 2000. The majority of units (88%) were located in the Saipan Municipality. The Rota and Tinian Municipalities each accounted for 6% of total housing units. Of the total housing units, 26% were owner occupied, 54% were renter occupied, and 20% were reported as vacant (35).

Plumbing Facilities

In 2000, 17% of the housing units lacked complete plumbing facilities (35).

Source of Water

In 2000, over 96% of housing units were connected to public water systems. Of those, 20% were a combination of public and catchment. Wells, catchment tanks, and other water sources made up less than 4% of the total water sources (35).

Sewage Disposal

In 2000, nearly half of the 17,566 housing units were on public sewer connections. Most of the remaining homes (43%) were on septic tank or cesspool systems, while about 8% were reported as using “other means” of sewage disposal (35).

Building Permits²

Between 2003 and 2006, an average of 329 building permits were issued per year for new structures. Of those, an average of 177 per year were for residential construction, and 152 were for commercial construction (10).

Tourism

From 2000 to 2005, an average of 491,769 tourists per year (including same-day visitors) visited CNMI. Over 90% of them came from Asia, East and Southeast/Oceania (34).



Coastal development led to this shoreline alteration on Rota.

Credit: Pat Collins, Program Manager of the Minnesota Lake Superior Coastal Program