

***REPUBLIC OF PALAU***

***2000 CENSUS***

***Population and Housing Profile***

OFFICE OF PLANNING AND STATISTICS  
KOROR, REPUBLIC OF PALAU 96940

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## **PREFACE AND ACKNOWLEDGMENTS**

This detailed population and housing profile based on the 2000 Census of the Republic of Palau will help local and U.S. federal policy makers understand current socioeconomic conditions in Palau. The monograph stands alone, although the Basic Tables for the *2000 Census of Population and Housing, Republic of Palau* report and detailed tables available at the Office of Planning and Statistics (OPS) contain more information.

The history of this report goes back before the 1990 Census. In 1989, two staff from the Republic of Palau's Office of Planning and Statistics (OPS) visited Washington for two months to develop tables from the 1980 and 1986 Palau censuses to be used in a monograph. Unfortunately, when these individuals returned to Palau the demands of other projects prohibited their finishing the study. The 1980 census data became outdated, reducing the usefulness of a detailed study. Similarly, in 1990, Palau's indeterminate political status required inclusion in the 1990 US Census, so the Palau government had little say in its questions, tabulations or analysis. The 1990 census of Palau used the questionnaire developed for the other Pacific Islands. In 1991, representatives of the OPS, United States Census Bureau (USBC), and what is now the Office of Insular Affairs, Department of the Interior, decided to prepare a census monograph similar to those prepared during the late 1980s for other Pacific Island polities. Michael J. Levin, of the USBC Population Division, led this effort. Huan F. Hosei, OPS, served as the counterpart from the Republic of Palau, under the direction of Koichi Wong, National Planner, and L.J. Gorenflo took the lead in completing a monograph. Unfortunately, this monograph was not published. However, the 1990 monograph was used internally, and has been used as a model for the Federated States of Micronesia National and State reports following the 1994 and 2000 Censuses, and by several countries in other parts of the Pacific and the world.

The 1995 Republic of Palau Census of Population and Housing was the first to be conducted entirely by the Republic itself, with technical assistance from the Census Bureau. A monograph was developed after that census, also, but was distributed only in draft form. So, this 2000 Census report is the first to be published.

OIA provided financial support for the preparation of the series of monographs. Odessa Mitchell and Darla Knoblock of OIA were early supporters of the project, and Richard Miller and others have been instrumental in continuing funding to finish the project. The late Emily Lennon, USBC Population Division, provided her usual excellent support work, preparing historical tables and figures appearing in the monograph.

Michael J. Levin  
Kyonori Tellames

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## DERIVED MEASURES

The presentation and analysis of census data typically employ various *derived measures*, calculations and coefficients that measure certain characteristics of the data and help to isolate particularly important trends. The general derived measures that appear throughout this document, notably means, medians, and percentages, are discussed here. Other measures, like various types of housing vacancy rates and fertility measures, are discussed in those portions of the monograph that deal with these subjects.

The *mean* is the arithmetic average of a set of values. The mean of a set of numbers is calculated by dividing the sum of all values in the set by the number of members in the set. The use of the mean as a measure of central tendency for a particular collection of data often is augmented with the standard deviation, a measure of how representative the mean is. However, for the sake of simplicity and brevity this report avoids technical statistical concerns and focuses entirely on the mean itself.

The *median* is another measure of central tendency. For a particular set of numbers, the median is that value that divides the set into two halves: half the values are less than the median and the other half are greater than the median. This report computes medians on the basis of each distribution as tabulated. For example, median household income employs the income data presented in the published report for the 1990 census of Palau (U.S. Bureau of the Census, 1992c, Table 19); it rounds values to the nearest dollar, consistent with the presentation of the data themselves. In the case of interval data, the calculation of medians often uses *interpolation* to estimate a figure between two known values. For instance, the calculation of median age uses interpolation to estimate a representative age. Interpolation, unless otherwise stated, is linear.

Finally, this report makes frequent use of *percentages*. For a given topic, this measure helps to assess the relative position of a particular value with respect to the remaining values. One calculates percentages by dividing the value of interest (like the number of individuals aged 4 years or less) by the sum of all observations (the total number of persons enumerated). Closely associated with percentages are *rates* and *ratios*. The former tend to measure the degree of change over time, through comparing an absolute change to the total that existed prior to the change; for instance, the rate of housing growth for one year is the number of housing units added (or lost) over the year divided by the number that existed at the beginning of the year. Ratios, in turn, often compare selected numbers to one another, with the result founded on a base of 100; as an example, the male-to-female ratio is the number of males in a population per 100 females.

## CHAPTER 1. INTRODUCTION

The 2000 Republic of Palau Census of Population and Housing was the second census collected and processed entirely by the Republic itself. This monograph provides analyses of data from the most recent census of Palau for decision makers in the United States and Palau to understand current socioeconomic conditions<sup>1</sup>. The monograph chapters explore topics using data primarily from the 2000 Republic of Palau Census of Population and Housing, but also from the Japanese censuses of the 1920s and 1930s, censuses coordinated by the Trust Territory of the Pacific Islands (TTPI) Administration, US Census Bureau 1970, 1980 and 1990 censuses, and 1995 Republic of Palau census.

Chapter 1 provides background for the analyses, introducing the Republic of Palau, providing a brief history of Palau, and discussing key analytical concepts. Chapter 2 presents a brief overview of the demographic history of Palau. Chapters 3 through 17 explore particular topics, as follows:

- Chapter 3: Geographic distribution
- Chapter 4: Age and sex
- Chapter 5: Households, families, and marital status
- Chapter 6: Fertility
- Chapter 7: Mortality
- Chapter 8: Migration
- Chapter 9: Education and language
- Chapter 10: Religion
- Chapter 11: Labor force participation
- Chapter 12: Occupation, industry and class of worker
- Chapter 13: Income and poverty
- Chapter 14: Estimates and projections
- Chapter 15: Housing characteristics
- Chapter 16: Comparisons of Palauans living inside and outside Palau
- Chapter 17: Comparisons with the United States and its territories

Finally, appendices present information on various technical topics. Appendix A discusses data accuracy, borrowing heavily from the 2000 Census of Population and Housing. Appendix B presents a facsimile of the questionnaire used in the 2000 census.

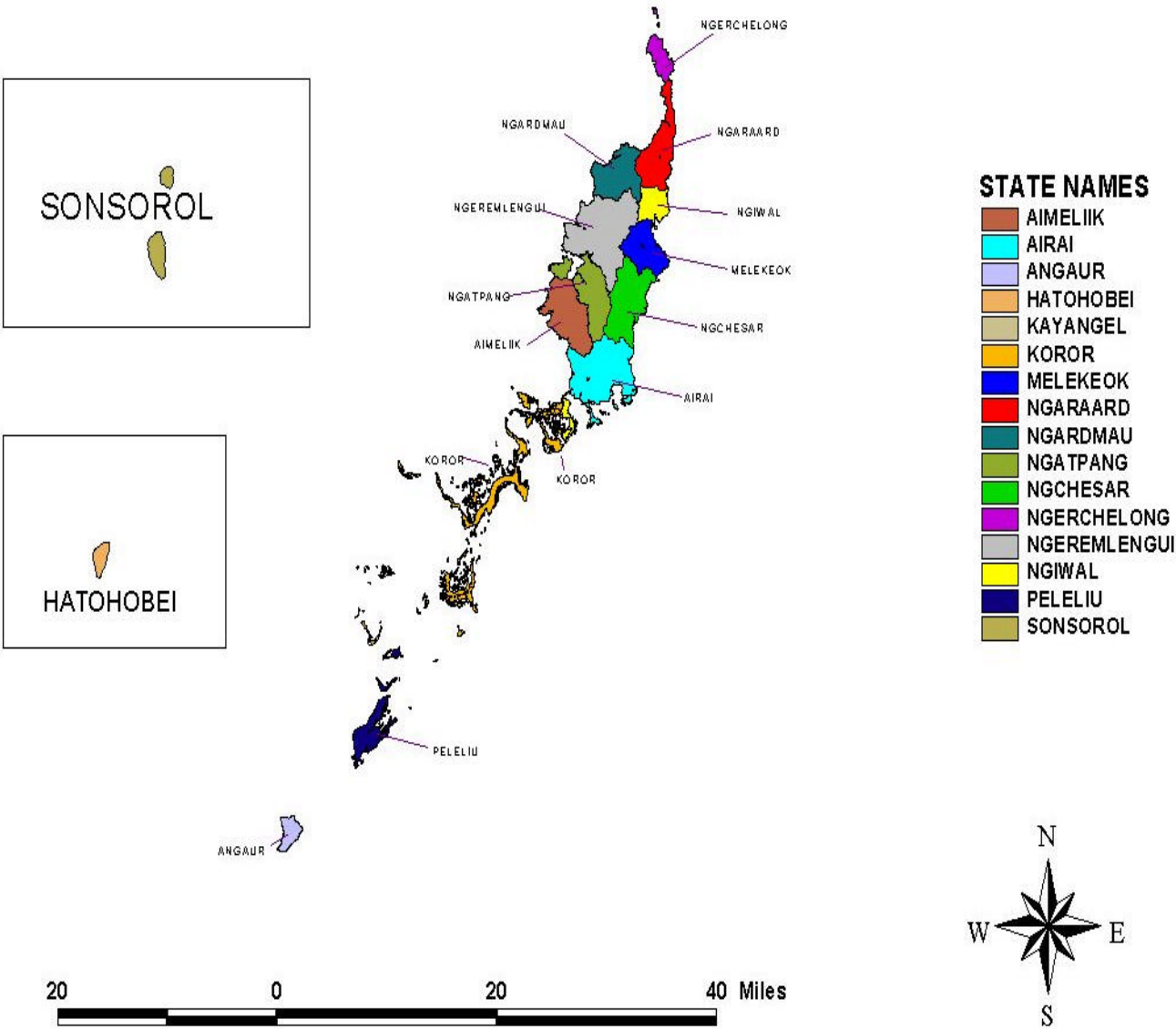
### **THE REPUBLIC OF PALAU**

The Republic of Palau consists of six island groups found at the western edge of the Caroline archipelago in the west central Pacific Ocean (Figure 1.1) (Shinn, 1984, pp. 341-342). The more than 340 individual islands lie along a 700-kilometer length from northeast to southwest. The main island group, called the *Palau Islands*, contains most of Palau's 189 square miles of land area and most of its population. Peleliu and Angaur are to the south, and Kayangel lies to the northeast. The *outer islands* — the four southwest islands of Sonsorol (Dongosaro), Hatohobei, Merir (Melieli), and Pulo Ana (Puro) — have a different culture and history.

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<sup>1</sup> This monograph presents a detailed analysis of the 2000 Republic of Palau Census of Population and Housing. The Republic of Palau's Office of Planning and Statistics collected the data for this analysis with assistance from the U.S. Bureau of the Census through funding by reimbursable agreement with Office of Insular Affairs, Department of the Interior. Cross-tabulations were prepared in Koror and Washington, D.C. by Michael Levin and Kyonori Tellames, and released by the Republic of Palau government in December 2000. Additional data, both on topics not covered in this main published report and for geographical divisions not shown in the report, are contained in summary files, available from the Office of Planning and Statistics.

Palau Map





The northern portion of the Palau Islands is volcanic in origin, characterized by deep dendritic drainage patterns and rounded hills (U.S. Department of Agriculture, 1983, pp. 1-2). Included among the volcanic islands is Babeldaob<sup>2</sup>, the largest island in the republic, as well as Arakabesang, Koror, and Malakal islands. Raised coral limestone islands, known collectively as the "Rock Islands," lie scattered throughout the lagoon. Finally, the southern portion of the main island group consists of the low coral and limestone islands of Angaur and Peleliu. Soil quality and tropical climate of high humidity and warm, relatively uniform year-round temperatures, produce dense vegetation over most islands of the Palau Islands and provide a natural setting for agriculture. In contrast, the rest of the Palau Islands are low coralline islands characterized by limited land and poor soil. Vegetation on the coral islands generally is sparse and the agricultural productivity potential more limited than on the volcanic islands (Useem, 1946:61).

Kayangel is an *atoll* — an irregular ring of coral reef surrounding a lagoon, with some parts of the reef rising slightly above sea level to form dry areas called *islets* (see Wiens, 1962).

The outer islands of Palau are small and formed primarily from coral. All are raised coral islands. Sonsorol (Dongosaro), Merir (Melieli), Fanna, and Pulo Ana (Puro) are the four municipalities of Sonsorol, one of Palau's states. Hatohebei is another of the 16 states. Vegetation on the outer islands generally is sparse because of porous, poor soil and high salinity both in the ground water and from ocean spray. Due in part to the fundamentally different adaptive challenges faced by outer island residents, in part to their history, and in part to geographic separation, the Southwest Islands are distinct culturally from the Palau Islands. The Southwest Islands have closer links to the outer islands of Yap, through their language and migration patterns.

During traditional times, Palau contained chiefdoms — socio-cultural systems characterized by ascribed hierarchical social ranking. Matrilineal descent determined social position, inheritance, kinship structure, residence patterns, and land tenure. A single chiefdom inhabited each smaller island unit, as on Hatohebei and Peleliu. Several chiefs resided on the large island of Babeldaob — dividing the island into separate districts that individual chiefs controlled. Although Palau society has changed dramatically over the past 300 years of contact with people from outside Micronesia, traditional society continues to play important roles both in daily activities and in the political operation of the republic, particularly in more rural areas.

As is the case with most of Micronesia, Palau has a long history of interaction with more technologically advanced societies. In many cases this interaction has had profound effects on the native residents, leading to population change, introducing different strategies of economic development, and ultimately changing the traditional sociocultural system. A brief overview of this history provides useful background for an examination of the 2000 Census of Population and Housing.

### ***A Brief History of Palau***

Early colonists from the Philippines or eastern Indonesia probably settled the Palau Islands between 2000 and 3000 B.C. (Hezel, 1983:3). Most of the outer islands, in contrast, apparently were settled sometime during the first millennium B.C. from the east, as part of a general wave of Micronesian colonization that flowed westward from the Marshall Islands and Kiribati. The islands of Oceania, including those within the current Republic of Palau, were unknown to the West until the 16th century through European "discovery". In May 1522 a Spanish ship commanded by Espinosa sighted the Sonsorol Islands as it sailed northeast from the Philippines (Hezel, 1983, pp. 34). About two decades later another Spanish ship, commanded by Villalobos, possibly sighted the Palau Islands (Office of the Chief of Naval Operations, 1944, pp. 22). Europeans finally made landfall in 1579 when Francis Drake, the famous English privateer, landed on one of the Palau Islands (Lessa, 1975; Hezel, 1983:32). But as occurred throughout most of Micronesia, European interest in Palau waned. Europeans would not see the islands of the republic again for nearly 150 years.

<sup>2</sup> Because of the various colonial and post-colonial administration's differing spelling preferences, the same entity may appear in different parts of the monograph spelled in different ways. Also, written Palauan requires differences as well — we try to maintain use of "Palau" in English and "Belau" when Palauan phrases are presented.

Brief contact occurred once again between Spaniards and the people of Palau in the early 1700s, when ships explored unknown islands that native informants in the Philippines had referred to as "the Pelews." A Spanish ship commanded by Padilla began this effort in 1710, landing first on Sonsorol (Dongosaro) and then on the Palau Islands. A second Spanish ship, under captain Egui, returned two years later (Krämer, 1917:71; Office of the Chief of Naval Operations 1944:22; Hezel 1983:43). But Spanish efforts to discover, explore, and Christianize these islands again were short-lived. When more prolonged contact finally began about 50 years later, it was by British ships — inspired by commercial goals and initiated primarily by the Honorable East India Company. British visits to Palau focused initially (during the 1760s) on the Southwest Islands (Hezel, 1983, pp. 60, 63). During the 1780s, British ships also began to land on the Palau Islands. The wreck of the East India Company ship *Antelope* on a reef west of Koror in 1783 provided an unlikely beginning to prolonged British trade with the people of Palau (see Peacock, 1987, pp. 24-29). Befriended by a native chief, the shipwrecked crew remained on Palau for three months while they constructed a new ship. The knowledge the crew gained on Palauan society, and the interest in Western material culture they generated among the natives, provided a valuable foundation for future interaction. Fueled by the hope of potential trade and an increased familiarity with the natives of Palau, British and Spanish ships continued to call intermittently on various islands during the early 1800s, making Palau one of the most highly acculturated parts of Micronesia outside the Mariana Islands. By the mid-19th century, a few traders came to dominate most interaction between the residents of Palau and Europeans — including Andrew Cheyne, who hoped to establish the center of his Pacific trading empire at Koror. Unfortunately, years of overexploitation eventually depleted many of the marine resources of interest to Europeans, and trading emphasis in the western Carolines shifted to Yap. By the 1870s, most European attention on Palau focused upon scientific research — particularly that conducted by naturalist Jan Kubary, who spent several years in residence at different times during the 1870s and 1880s (Kubary, 1873, 1895, 1900a, 1900b).

As occurred elsewhere in Micronesia, Spain became more active in Palau during the second half of the nineteenth century — primarily to assert its sovereignty in the face of increasing commercial (trading) competition in the area from other European nations. To gain control of the region, German military forces occupied several main islands in the Pacific (including Palau) in 1885. Papal arbitration by Pope Leo XIII settled the dispute between Spain and Germany later that same year, preserving the sovereignty of the former but granting trading and other commercial rights to the latter (Hezel, 1983, pp. 312-313). Despite having its authority recognized internationally, Spain's activity in Micronesia continued to be minimal and its hold on the area tenuous (Force and Force, 1972:5). With the exception of dispatching a few Capuchin priests to establish a mission on Koror and the maintenance of a small military garrison nearby, little evidence exists of Spanish anywhere in the republic (Office of the Chief of Naval Operations, 1944:24). Disputes over sovereignty in Micronesia became moot in 1899 when Germany purchased the Caroline and Northern Mariana Islands following Spain's defeat in the Spanish-American War (Brown, 1977).

The Germans were much more active in administering their newly acquired Pacific islands than were their Spanish predecessors. Motivated primarily by the hope of developing the region commercially, the Germans expanded these activities as copra production (Force and Force, 1972:5). To administer its Micronesian possessions, Germany established a network of government offices on main islands throughout the Carolines and Northern Marianas, with a branch office established in Koror in 1905 and another on Angaur in 1910 (Office of the Chief of Naval Operations, 1944, pp. 24-25). Although most daily administrative functions remained in the hands of native chiefs, all decisions ultimately were subject to German supervision. In addition to their administrative role, the Germans built roads, conducted numerous studies of the area, and in general attempted to improve the lives of the native residents. On the whole, Germany succeeded in establishing various programs that led to economic development in Micronesia. However, because much of the German effort focused on Yap, the Marshall Islands, and the Northern Mariana Islands, development in Palau lagged slightly behind.

Japan had long shown an interest in Micronesia, its traders having established contact with several main islands during the late 19th century. When Germany became involved in World War I, Japan quickly occupied major islands throughout Micronesia. Japanese forces landed on Koror and Angaur in October 1914, with a garrison stationed at the latter a few months later (Office of the Chief of Naval Operations, 1944:25; Peattie, 1988:43). In 1920, the League of Nations recognized Japan's authority over the region with a Class C Mandate (Clyde, 1967). The Japanese period of administration was particularly active, as Palau's new rulers introduced economic development at a scale previously not seen (Useem, 1946:66). Palau became the administrative center of this effort, with the capital of the civilian administration established on Koror in 1922 (Office of the Chief of Naval Operations, 1944:26).

Japanese development schemes varied throughout Micronesia. In Palau the emergence of an administrative center was complemented by agricultural development (mainly on Babeldaob Island), mining (on Angaur Island), and some industry. Japan actively promoted migration (some of it through "black birding" — capturing natives from one island group and physically moving them to another group to work). Persons were moved to certain parts of Palau, both from elsewhere in the Pacific (for instance, to provide labor in the Angaur mines) and from Okinawa and Japan. Moreover, the Japanese attempted to introduce various facets of their culture to Micronesia — including education and the Japanese language. Although Japanese efforts to develop Palau economically met with mixed success, once established as the administrative center of the Mandated Territory the town of Koror began to grow rapidly. Augmented by induced economic growth from the increased population that immigrated to support the center of government, by the mid-1930s Koror had become a busy, modern colonial town (Clyde, 1967, pp. 161-162; Peattie, 1988, pp. 174-176). The population had swelled due to the large number of immigrants. By the end of the 1930s, more than 24,000 immigrants resided in the Palau District of the Mandated Territory (Johannes, 1981:4; Quimby, 1988:125).

As the years of the Japanese administration wore on, development in Micronesia shifted from an emphasis on economic projects to military concerns. During the 1930s, the Japanese began to fortify several islands in the region, including parts of Palau. Despite having large, relatively flat areas that could have served as airfields, the main strategic value of Palau was its proximity to the Philippines (Peattie, 1988:232). Although the Japanese stationed a battalion-strength force on Palau in 1940, adding both an air flotilla and additional personnel in 1941 (Peattie, 1988, pp. 252, 344), the main military buildup occurred elsewhere in the Mandated Territory. Palau eventually became the focus of military conflict in 1944. American forces bombed Koror throughout summer of 1944, virtually destroying the town and forcing Japan to shift the Mandated Territory government to Babeldaob. U.S. Marines landed on Angaur and Peleliu islands in the fall of that same year, eventually defeating the Japanese on each after particularly costly battles (Peattie, 1988, pp. 291-297). By early 1945, Japanese forces on Palau had been defeated or successfully neutralized and bypassed by American forces on their way to the Philippines. The residents of Palau, who survived, both Japanese and native, faced a different challenge — the struggle to find adequate food for the duration of the war. By the time peace was declared in August 1945, more than 2,000 Japanese soldiers and civilians and untold numbers of natives had succumbed to starvation or disease (Peattie, 1988, pp. 300, 304).

The U.S. Navy administered Japan's former Micronesian possessions immediately following World War II. In 1947, the United Nations placed these islands in a strategic trusteeship called the Trust Territory of the Pacific Islands (TTPI), with the United States named as administrating authority (Shinn, 1984, pp. 303-305). In contrast to the Japanese administration, the TTPI phase of Palau's history saw much less active interest on the part of the new administrators. Except for minor efforts to provide essential infrastructure and selected social programs (e.g., education, basic health care), most development under the TTPI administration did not begin until funding increased during the early 1960s (Quimby, 1988, pp. 127-128). By 1979, several island groups chose to modify their political status: the Northern Mariana Islands became a U.S. commonwealth in the mid-1970s. Other groups became independent nations in 1979, with the Marshall Islands forming a republic of the same name and the Yap, Chuuk (Truk), Pohnpei (Ponape), and Kosrae (Kusaie) districts of the TTPI forming the Federated States of Micronesia (FSM). In contrast, while Palau formed a "republic" and began electing a local President and Congress (OEK), it maintained its affiliation with the U.S. as the TTPI. While the Marshall Islands and the FSM chose independence with a Compact of Free Association to define their respective relationships with the United States, Palau's citizens rejected the Compact due to provisions enabling the placement of U.S. nuclear weapons in Palauan territory (Quimby, 1988:110). Six special referendums failed to achieve the two-thirds majority necessary to ratify the Compact. As a result, the Republic of Palau remained the last island group within the TTPI, its political future currently uncertain. Finally, in November 1992, Palau's voters approved an amendment to the Constitution to permit a simple majority vote to ratify the Compact of Free Association with the United States. On October 1, 1994, Palau achieved her independence. Recently, we celebrated our 10<sup>th</sup> Anniversary of political independence.

## CHAPTER 2. DEMOGRAPHIC HISTORY

Chapter 1 presented a brief sketch of Palauan history. That overview emphasized the role of other countries in Palau's past — in part because much of what is known of the history of Palau concerns interaction with people from other nations, but primarily because of the broad range of contacts over the past 250 years resulting from this interaction. This chapter focuses on demographic change to place Palau's 2000 population in historic context.

Palau had the nine censuses conducted between 1920 and 1973 — four by the Japanese government (in 1920, 1925, 1930, and 1935), three conducted by the Navy and the TTPI administration (in 1946, 1958 and 1973), one conducted by the Peace Corps in collaboration with the University of Hawaii School of Public Health (in 1967), and one conducted by the U.S. Bureau of Census (in 1970). A quick examination of each of these censuses will focus on the number of people living in Palau, their geographic distribution among those 16 areas currently comprising the states of the republic, basic age and sex composition, and the likely reasons for the changing number and geographical arrangement of people over time.

### *The Pre-contact and Early Contact Population of Palau*

The pre-contact population of Palau is not well documented. Estimates range from 20,000 to 50,000 inhabitants (Useem, 1946:63), but none are founded on sound data. However, most researchers generally agree that the population of Palau prior to the beginning of prolonged contact with outsiders in the 1780s was substantially greater than that of the early 20th century when more reliable estimates became available (Krämer, 1919:292). The reasons for depopulation included warfare between chiefdoms on Babeldaob and neighboring islands during traditional times. The most likely cause of depopulation was diseases introduced by Europeans to people wholly unprepared biologically for these sicknesses. Smallpox, influenza, syphilis, and measles all probably contributed to the population decline in Palau (Hezel, 1983:291). By the 1860s the situation on Koror Island led a German resident to predict that the end was near for the entire civilization (Tetens, 1958:4).

Population figures for Palau in the late 1800s and early 1900s are more accurate, due to their foundation on systematic observations by the naturalist Kubary and attempts by the German government to develop accurate population estimates (Force and Force, 1972:4). German estimates for Palau were 3,748 in 1901, about 4,321 in 1908, and 4,543 in 1914 (including 369 migrants from Pohnpei) on the eve of the Japanese occupation (Yanaihara, 1967:42). These figures show the population that occurred during the nineteenth century — the number of inhabitants in 1901 was probably less than 8 percent of the pre-contact population (taking the maximum pre-contact estimate, for the sake of argument). The massive population decline experienced earlier clearly was over by the beginning of the twentieth century. So the population grew between 1901 and 1908, and subsequently declined slightly between 1908 and 1914.

### *The Population of Palau During the Japanese Administration: 1920-1935*

The Japanese South Seas Bureau [Nan'yo-cho] conducted its first census of Palau in 1920, recording a total of more than 5,750 Pacific Islander residents (Table 2.1). The 1920 census combined the populations of many current states, recording separate figures for Angaur, Koror, and Peleliu.

Table 2.1. Population by State of Residence: Selected years.

State of Residence	Selected Years								
	1973	1970	1967	1958	1946	1935	1930	1925	1920
Total:	12,673	11,210	11,365	9,344	5,777	6,230	6,009	5,957	5,754
Aimeliik	306	366	364	412	300	200	200	165	NA
Airai	738	561	538	442	585	395	365	322	NA
Angaur	277	438	429	428	316	751	708	798	759
Hatohebei	48	64	60	103	129	172	180	225	NA
Kayangel	162	209	199	181	NA	92	117	101	NA
Koror	7,669	5,431	5,667	3,585	658	1,214	1,277	1,255	972
Melekeok	315	328	356	310	343	304	357	357	NA
Ngaraard	725	622	770	773	767	663	578	569	NA
Ngardmau	206	254	227	558	148	124	126	110	NA
Ngaremlengui	387	428	436	316	266	217	210	196	NA
Ngatpang	89	103	119	88	68	66	50	50	NA
Ngchesar	341	485	449	450	443	344	316	329	NA
Ngerchelung	427	745	615	558	510	522	435	425	NA
Ngiwal	237	355	381	366	265	250	229	210	NA
Peleliu	657	759	682	679	834	716	641	629	582
Sonsorol	88	62	73	95	145	200	220	216	NA

Sources: Nan'yo-cho, 1927, 1931, 1937; School of Public Health, n.d.;

U.S. Bureau of the Census, 1972; Office of Census Coordinator, TTPI, 1975

Notes: Figures for 1920-1935 is for Pacific Islanders only; figures for 1920, 1946, 1967 and 1973 may not sum precisely to totals due to exclusion of individuals whose ages were "Not Stated"

By 1925 the Pacific Islander population of Palau increased to almost 6,000 persons, having grown at the modest average annual rate of 0.7 percent (Table 2.2). For the first time, the 1925 census recorded the population of each state in Palau.

Table 2.2. Population Change Over Time: Selected Years

Selected Years	Number		Average Annual Change from Preceding Year in Percentages
	Population	Change from Preceding Year	
1920	5,754	-	-
1925	5,957	203	0.7
1930	6,009	52	0.2
1935	6,230	221	0.7
1946	5,777	(453)	(0.7)
1958	9,344	3,114	1.8
1967	11,365	2,021	2.2
1973	12,673	1,308	1.8

Sources: Nan'yo-cho, 1927, 1931, 1937; School of Public Health, n.d.; U.S. Bureau of the Census, 1972; Office of Census Coordinator, TTPI, 1975.

More than 21 percent of the total Pacific Islander residents lived in Koror, up from 17 percent in 1920 (Table 2.3). This state, chosen by the Japanese as the capital of the Mandated Territory, saw its population increase by more than 5 percent annually during the first half of the 1920s. In 1925, more than 13 percent of the Pacific Islanders in Palau resided in Angaur State and nearly 11 percent lived in Peleliu State.

Table 2.3. Population Distribution by State (Percentages): Selected years

State	Population Distribution in Years (percentages)								
	1973	1970	1967	1958	1946	1935	1930	1925	1920
Total:	12,673	11,210	11,365	9,344	5,777	6,230	6,009	5,957	5,754
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Aimeliik	2.4	3.3	3.2	4.4	5.2	3.2	3.3	2.8	NA
Airai	5.8	5.0	4.7	4.7	10.1	6.3	6.1	5.4	NA
Angaur	2.2	3.9	3.8	4.6	5.5	12.1	11.8	13.4	13.2
Hatohebei	0.4	0.6	0.5	1.1	2.2	2.8	3.0	3.8	NA
Kayangel	1.3	1.9	1.8	1.9	NA	1.5	1.9	1.7	NA
Koror	60.5	48.4	49.5	38.4	11.4	19.5	21.3	21.1	16.9
Melekeok	2.5	2.9	3.1	3.3	5.9	4.9	5.9	6.0	NA
Ngaraard	5.7	5.5	6.8	8.3	13.3	10.6	9.6	9.6	NA
Ngardmau	1.6	2.3	2.0	6.0	2.6	2.0	2.1	1.8	NA
Ngaremlengui	3.1	3.8	3.8	3.4	4.6	3.5	3.5	3.3	NA
Ngatpang	0.7	0.9	1.0	0.9	1.2	1.1	0.8	0.8	NA
Ngchesar	2.7	4.3	4.0	4.8	7.7	5.5	5.3	5.5	NA
Ngerchelong	3.4	6.6	5.4	6.0	8.8	8.4	7.2	7.1	NA
Ngiwal	1.5	3.2	3.4	3.9	4.6	4.0	3.8	3.5	NA
Peleliu	5.2	6.8	6.0	7.3	14.4	11.5	10.7	10.6	10.1
Sonsorol	0.7	0.6	0.6	1.0	2.5	3.2	3.7	3.6	NA

Sources: Nan'yo-cho, 1927, 1931, 1937; School of Public Health, n.d.; U.S.

Bureau of the Census, 1972; Office of Census Coordinator, TTPI, 1975.

Note: Total percentages for 1967 and 1973 may not sum precisely to 100.0 percent due to exclusion of individuals whose residence was "Not Stated."

The 1925 census provides a clearer picture of the population composition of Palau. In 1925, the percentage of Pacific Islander males living in Palau greatly exceeded the number of females, a substantial difference that probably resulted from immigration from other parts of the Pacific — like the predominantly male population working the mines on Angaur or a selective enumeration of females (that frequently happened earlier in the century when males did the reporting and recording). The median age of Pacific Islander residents of Palau in 1925 was 22.8 years (Nan'yo-cho, 1927).

The Pacific Islander population of Palau exceeded 6,000 in 1930, having grown at an average annual rate of only 0.2 percent since 1925. All but three states gained population between 1925 and 1930. Koror State once again contained the greatest number of inhabitants (Table 2.1). Population continued to be fairly concentrated in a few places, with Koror, Angaur, and Peleliu states together accounting for nearly 44 percent of the total in 1930. The age-sex composition of Palau remained similar to that recorded in 1925, although the population pyramids for these years are not readily comparable. Once again, the census counted more males than females.

The 1930 census also presented the age-sex composition of Palau by state. Age composition varied considerably (Table 2.4). Koror, the state with the highest population, contained relatively more Pacific Islanders aged less than 25 years than did the republic as a whole — probably due to a combination of younger people migrating to the emerging Japanese town of Koror for schooling and jobs. Angaur State contained relatively few persons aged less than 15 years or more than 59 years, the population having more young and middle-aged adults, many probably working in the phosphate mines. The southwest islands contained very small percentages of persons aged 15 years or less.

Table 2.4. Population (Pacific Islanders) by State and Age: 1930

Area	Total Persons		Age Group (Percentage)			
	Persons	Percentage	Less than 15	15 to 24	25 to 59	60 & over
Total:	6,009	100.0	35.6	20.1	39.7	4.7
Aimeliik	200	100.0	34.0	24.0	34.5	7.5
Airai	365	100.0	33.7	15.9	45.8	4.7
Angaur	708	100.0	26.3	32.5	39.8	1.4
Hatohobei	180	100.0	5.6	18.3	71.1	5.0
Kayangel	117	100.0	37.6	19.7	36.8	6.0
Koror	1277	100.0	37.0	24.7	35.3	3.0
Melekeok	357	100.0	45.7	13.7	35.0	5.6
Ngaraard	578	100.0	46.5	13.0	34.6	5.9
Ngardmau	126	100.0	35.7	19.0	42.1	3.2
Ngaremlengui	210	100.0	31.4	18.1	43.3	7.1
Ngatpang	50	100.0	30.0	14.0	48.0	8.0
Ngchesar	316	100.0	44.0	14.9	37.0	4.1
Ngerchelung	435	100.0	33.8	19.8	40.2	6.2
Ngiwal	229	100.0	36.7	18.8	38.0	6.6
Peleliu	641	100.0	46.2	17.0	31.4	5.5
Sonsorol	220	100.0	4.5	9.1	78.2	8.2

Source: Nan'yo-cho, 1931.

Part of the growth in the number of Pacific Islanders in Palau between 1925 and 1930 occurred by natural increase — that is, an excess of births over deaths (Office of the Chief of Naval Operations, 1944:36). However, data from the 1930 census show that migration also played a role in population growth in Palau. Data for place of registration provide important insights on lifetime migration (Table 2.5). Only about 57 percent of the islanders living in Palau in 1930 resided in their place of registration. The more than 31 percent who moved from elsewhere in Palau helped shape the geographic distribution of population as enumerated by the 1930 census. Finally, nearly 12 percent of the Pacific Islanders who lived in Palau in 1930 were registered elsewhere — about 10 percent in some other part of the Mandated Territory and another nearly 2 percent some place outside the Mandated Territory.

Table 2.5. Population of States by Area of Registration: 1930

Area	Population with percentages		In Percentages			
	Persons	Percent	Same Locality	Same District	Other District	Other Location
Total:	6,009	100.0	57.2	31.3	9.8	1.7
Aimeliik	200	100.0	51.0	42.5	4.0	2.5
Airai	365	100.0	65.8	25.5	6.3	2.5
Angaur	708	100.0	25.3	17.8	52.4	4.5
Hatohobei	180	100.0	99.4	0.6	-	-
Kayangel	117	100.0	55.6	42.7	1.7	-
Koror	1,277	100.0	30.5	56.3	12.1	1.0
Melekeok	357	100.0	66.9	32.2	0.8	-
Ngaraard	578	100.0	63.3	33.9	1.9	0.9
Ngardmau	126	100.0	65.9	31.0	2.4	0.8
Ngaremlengui	210	100.0	61.9	33.8	4.3	-
Ngatpang	50	100.0	42.0	56.0	2.0	-
Ngchesar	316	100.0	76.9	23.1	-	-
Ngerchelung	435	100.0	63.2	27.8	0.5	8.5
Ngiwal	229	100.0	72.9	26.6	0.4	-
Peleliu	641	100.0	89.7	10.3	-	-
Sonsorol	220	100.0	84.1	15.9	-	-

Source: Nan'yo-cho, 1931.

The parts of Palau with the largest percentages of immigrant Pacific Islander populations in 1930 included Angaur, Koror, and Ngatpang States. As discussed earlier, many people migrated to Angaur from elsewhere in the Pacific, often at the request of their Japanese administrators, to work in the phosphate mines. Growth in Koror, in turn, probably reflects an early phase of rural-urban migration in Palau, with people from more remote parts of the district relocating to Koror as the Japanese developed their new capital.

Between 1930 and 1935 the Pacific Islander population of Palau continued to grow slowly, the 0.7 percent average annual rate of increase producing a Pacific Islander population of 6,230 (Table 2.1). The relative importance of Koror State declined slightly over this five-year period, probably due to the influx of large numbers of Japanese nationals to the state dominating the competition for land and jobs. Nevertheless, Koror still contained nearly 20 percent of the Pacific Islander population of Palau, with about 12 percent each residing in Angaur and Peleliu states. The age and sex composition of Palau in 1935 was similar to

that seen in 1930. Palau still contained more males than females, but for the second consecutive census the relative difference decreased.

Individual states in Palau continued to show considerable variability in the age composition of their Pacific Islander populations (Table 2.6). Once again, Koror State contained relatively more persons aged less than 15 years than Palau as a whole. The trends in age composition for Angaur, Hatohobei, and Peleliu discussed for 1930 continued in 1935.

Table 2.6. Population (Pacific Islanders) by State and Age: 1935

Area	Total Persons		Age Group (Percentage)			
	Persons	Percent	Less than 15	15 to 24	25 to 59	60 & over
Total:	6,230	100.0	33.9	22.9	38.3	4.9
Aimeliik	200	100.0	31.5	24.0	41.5	3.0
Airai	395	100.0	29.9	23.0	41.5	5.6
Angaur	751	100.0	25.4	33.6	39.0	2.0
Hatohobei	172	100.0	6.4	12.8	78.5	2.3
Kayangel	92	100.0	31.5	18.5	40.2	9.8
Koror	1,214	100.0	38.4	22.7	35.3	3.6
Melekeok	304	100.0	38.8	21.7	32.9	6.6
Ngaraard	663	100.0	43.4	19.5	31.8	5.3
Ngardmau	124	100.0	31.5	23.4	40.3	4.8
Ngaremlengui	217	100.0	30.0	24.9	37.8	7.4
Ngatpang	66	100.0	24.2	30.3	37.9	7.6
Ngchesar	344	100.0	41.3	20.6	31.1	7.0
Ngerchelung	522	100.0	35.4	22.2	36.4	5.9
Ngiwal	250	100.0	36.8	23.2	35.6	4.4
Peleliu	716	100.0	39.0	23.2	32.8	5.0
Sonsorol	200	100.0	5.0	6.0	79.0	10.0

Source: Nan'yo-cho, 1937.

The limited vital statistics available for the early 1930s show that fertility continued to exceed mortality, once more leading to natural increase in the population (Office of the Chief of Naval Operations, 1944:36). Unfortunately, data on mobility were not reported for the 1935 census.

### ***The Population of Palau in 1946 and 1958***

A military census in 1946 reported the total Pacific Islander population of Palau at 5,964 (Useem, 1946:63), as seen in Table 2.7. The census showed about equal numbers of males and females, and a relatively young population, with few elderly persons. By the time of this census, foreigners made up only 8 percent of the population – US Navy personnel and other non-Palauans.

Table 2.7. Age, Sex, and Ethnicity, Palau: 1946

Age Group	Palau			Palauans			Non-Palauans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total:	5,964	3,032	2,932	5,502	2,733	2,769	462	299	163
1 to 4 years	721	366	355	678	337	341	43	29	14
5 to 9	731	358	373	703	344	359	28	14	14
10 to 14	714	350	364	676	327	349	38	23	15
15 to 19	625	332	293	592	307	285	33	25	8
20 to 24	557	284	273	502	240	262	55	44	11
25 to 34	910	459	451	851	414	437	59	45	14
35 to 44	575	278	297	519	241	278	56	37	19
45 to 54	452	226	226	380	187	193	72	39	33
55 to 64	375	203	172	332	179	153	43	24	19
65 to 74	198	114	84	174	103	71	24	11	13
75 and over	106	62	44	95	54	41	11	8	3

Source: Military Census

Note: Zero year olds not shown; ages may be off by one year & Kayangel missing data

The office of the High Commissioner of the TTPI did not conduct a detailed post-war census of Palau until 1958. The total population of Palauans had increased to 8,884 persons over the preceding 23 years (Table 2.7a). Table 2.2 shows the 1958 population of all people residing in Palau, including non-Palauans.

The age-sex composition of Palau's population also changed dramatically over the 23 years preceding the 1958 census. In 1958, male Palauans reached 4,502 and 4,382 females. Moreover, young people had become increasingly important demographically — the median age estimated at 17.5 years. Palau's population became increasingly youthful. Additional, detailed, reliable data on other aspects of Palau's population are unavailable from the 1958 census. From the information at hand — rapid population growth and a population containing relatively many young persons — natural growth probably accounted for much of the population growth between 1935 and 1958.

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Table 2.7a. Age by Place of Birth, Major Ethnic Group, and Sex, TTPI: 1958

5-year Age groups	Population			Males per 100 females	Percent		
	Total	Male	Female		Total	Male	Female
Total, all ages:	8,884	4,502	4,382	102.7	100.0	100.0	100.0
Under 1 year	230	117	113	103.5	2.6	2.6	2.6
1 to 4 years	1,282	673	609	110.5	14.4	14.9	13.9
5 to 9 years	1,471	772	699	110.4	16.6	17.1	16.0
10 to 14 years	943	498	445	111.9	10.6	11.1	10.2
15 to 19 years	937	465	472	98.5	10.5	10.3	10.8
20 to 24 years	730	373	357	104.5	8.2	8.3	8.1
25 to 29 years	488	228	260	87.7	5.5	5.1	5.9
30 to 34 years	495	218	277	78.7	5.6	4.8	6.3
35 to 39 years	467	249	218	114.2	5.3	5.5	5.0
40 to 44 years	455	227	228	99.6	5.1	5.0	5.2
45 to 49 years	273	127	146	87.0	3.1	2.8	3.3
50 to 54 years	262	128	134	95.5	2.9	2.8	3.1
55 to 59 years	225	108	117	92.3	2.5	2.4	2.7
60 to 64 years	163	76	87	87.4	1.8	1.7	2.0
65 to 69 years	186	96	90	106.7	2.1	2.1	2.1
70 to 74 years	112	58	54	107.4	1.3	1.3	1.2
75 to 79 years	58	39	19	205.3	0.7	0.9	0.4
80 to 84 years	47	23	24	95.8	0.5	0.5	0.5
85 years and over	60	27	33	81.8	0.7	0.6	0.8
Median age (years)	17.8	17.1	18.4	...	...	...	...

Source: Office of the High Commissioner, TTPI, 1959

Note: Total population for Palauans only

### The Population of Palau in 1967

The population of Palau continued to grow at the end of the 1950s and into the following decade, reaching nearly 11,400 by 1967. Overall population growth occurred at more than 2 percent annually over the nine years following the 1958 census. The population of Koror grew even more rapidly — in excess of 5 percent annually — and as a result totaled nearly 5,700 persons in 1967, about half the total population. In total, Palau continued to contain more males than females, although the difference once again decreased between census years.

Although the age composition of individual states in Palau continued to vary for the 1967 census, this variability was considerably less than during the Japanese administration (Table 2.8). Compared to Palau as a whole, Koror contained relatively fewer individuals younger than 15 years and older than 59 years — the heavy representation of working-age persons suggesting that migration for employment possibly led to much of the population growth experienced by this state between 1958 and 1967. Heavy under-representation of young persons (aged 24 years or less) continued in the Southwest Islands.

Table 2.8. Population by State and Age: 1967

Area	Total Persons		Age Group (Percentage)			
	Persons	Percent	Less than 15	15 to 24	25 to 59	60 & over
Total:	11,365	100.0	48.4	17.3	24.5	6.5
Aimeliik	364	100.0	47.0	19.5	24.2	9.3
Airai	538	100.0	51.7	14.5	24.5	8.0
Angaur	429	100.0	48.7	19.1	20.7	7.0
Hatothobei	60	100.0	28.3	3.3	38.3	30.0
Kayangel	199	100.0	48.7	21.1	24.6	3.5
Koror	5,667	100.0	46.7	17.7	26.0	4.2
Melekeok	356	100.0	51.1	15.2	21.9	8.7
Ngaraard	770	100.0	50.3	18.2	21.7	8.6
Ngardmau	227	100.0	50.7	17.2	23.8	6.6
Ngaremlengui	436	100.0	51.6	17.4	22.7	7.1
Ngatpang	119	100.0	49.6	19.3	20.2	10.9
Ngchesar	449	100.0	50.8	15.8	24.3	7.8
Ngerchelung	615	100.0	50.7	15.3	23.3	10.1
Ngiwal	381	100.0	53.5	14.4	23.9	7.6
Peleliu	682	100.0	49.6	17.7	21.8	10.6
Sonsorol	73	100.0	34.2	11.0	23.3	24.7

Source: School of Public Health, n.d.

Available data on births show that fertility was relatively high in Palau in 1967 (Table 2.9).

Table 2.9. Total Reported Births and Fertility: 1967, 1970, and 1973.

Years with Reported Births	Total Pop.	Total Births	Crude Birth Rate	General Fertility Rate	Total Fertility Rate
1967	11,365	424	37.3	200.1	7,471.9
1970	11,210	336	30.0	145.2	5,222.9
1973	12,673	401	31.6	162.9	5,574.2

Sources: School of Public Health, n.d.; U.S. Bureau of the Census, 1972;

Office of Census Coordinator, 1975; U.S. Department of State, 1981.



As with other characteristics, fertility varied considerably by state (Table 2.10).

Table 2.10. Fertility by State: 1967.

State	Total Population	Total Births	Crude Birth Rate	General Fertility Rate	Total Fertility Rate
Total:	11,365	408.0	35.9	176.0	6,565
Aimeliik	364	9.0	24.7	125.0	4,292
Airai	538	11.0	20.4	125.0	5,813
Angaur	429	20.0	46.6	250.0	9,729
Hatohebei	60	3.0	50.0	500.0	15,000
Kayangel	199	7.0	35.2	127.7	3,810
Koror	5,667	230.0	40.6	188.6	6,390
Melekeok	356	16.0	44.9	250.0	11,149
Ngaraard	770	15.0	19.5	85.1	4,362
Ngardmau	227	10.0	44.1	179.5	6,306
Ngaremlengui	436	18.0	41.3	212.5	10,669
Ngatpang	119	1.0	8.4	55.6	2,500
Ngchesar	449	14.0	31.2	170.7	7,937
Ngerchelung	615	17.0	27.6	153.8	6,583
Ngiwal	381	13.0	34.1	191.2	9,497
Peleliu	682	21.0	30.8	150.0	6,483
Sonsorol	73	3.0	41.1	300.0	7,667

Source: School of Public Health, n.d.

Notes: "Births" based on infants in population aged one year or less, which differed from the data used in Table 2.8 (reported births) — explaining the discrepancies in the measures presented.

Mortality data for 1967 show that most Palauans died before age 5 (more than 26 percent of all reported deaths in 1967), or after the age of 69 (nearly 31 percent of the year's reported deaths) (Table 2.11-12). Infant mortality as well as the overall crude death rate was quite low (Table 2.11-12), although some caution is in order when considering these figures given the habitual underreporting of deaths throughout Micronesia. An excess of births over deaths probably accounted for most of the population growth in Palau between 1958 and 1967. Reliable data on mobility in Palau for 1967 are unavailable.

Table 2.11-12. Deaths and Age-specific Death Rates by Age: 1967 and 1973.

Age	Death Rate		Age-specific Death Rate	
	1967	1973	1967	1973
Total Population:	11,365	12,673	5.72	4.18
Total Percentage:	100.0	100.0	....	....
less than 1	15.4	34.0	24.27	40.45
1 to 4	10.8	1.9	4.45	0.69
5 to 9	1.5	3.8	0.54	0.99
10 to 14	1.5	1.9	0.60	0.55
15 to 19	3.1	1.9	1.52	0.65
20 to 24	1.5	7.5	1.56	3.71
25 to 29	6.2	-	8.30	-
30 to 34	3.1	1.9	4.71	1.80
35 to 39	1.5	3.8	2.28	3.79
40 to 44	1.5	-	2.43	-
45 to 49	7.7	1.9	11.52	2.29
50 to 54	-	3.8	-	4.78
55 to 59	3.1	9.4	8.37	13.77
60 to 64	6.2	5.7	20.00	14.22
65 to 69	1.5	9.4	5.62	24.39
70 to 74	9.2	11.3	50.42	42.86
75 and over	21.5	1.9	57.38	3.95

Sources: School of Public Health, n.d.; Office of Census Coordinator, TTPI, 1975; U.S. Department of State, 1981.

### **The Population of Palau in 1970**

In 1970 the U.S. Bureau of the Census conducted a census of each district in the TTPI, including Palau. We present the basic 1970 data in this report — the population counts and percentages of total counts for the various states of Palau (see tables 2.1 and 2.3) — for the sake of completeness. However, because the data are flawed we do not examine them further. Fertility data, although not weakened by a census undercount, yielded measures that are of questionable use for comparisons and trends (see Table 2.9).

### **The Population of Palau in 1973**

Because of the aforementioned weaknesses in the 1970 census, the TTPI administration decided to conduct another census in 1973. That census enumerated nearly 12,700 persons living in Palau, showing an average annual increase of about 2 percent over the six years between 1967 and 1973. Koror's population approached 7,700, as the percentage of the total population

living there exceeded 60 percent for the first time. The predominance in the percentage of males over females increased slightly from that recorded in the 1967 census, as did the median age that increased to an estimated 18.8 years.

Data on the age composition of selected states once again show considerable variability, although much of this variation may relate to the small populations in some of the states (e.g., Hatohobei, Kayangel, and Sonsorol) (Table 2.13). Koror contained relatively large numbers of individuals aged 15-59 years.

Table 2.13. Population by State and Age: 1973.

State/Island	Total Persons		Age Group (Percentage)			
	Persons	Percent	Less than 15	15 to 24	25 to 59	60 & over
Total:	12,673	100.0	45.2	20.7	27.3	6.4
Angaur	277	100.0	51.6	16.2	22.7	9.4
Babeldaob	3,771	100.0	51.3	14.5	25.2	8.4
Hatohobei	48	100.0	41.7	10.4	16.7	31.3
Kayangel	162	100.0	64.8	9.3	20.4	4.9
Koror	7,669	100.0	41.5	25.2	28.6	4.4
Peleliu	657	100.0	46.4	10.5	28.6	14.2
Sonsorol	88	100.0	46.6	13.6	22.7	17.0
N.S.	1	100.0	100.0	-	-	-

Source: Office of Census Coordinator, TTPI, 1975.

Fertility decreased from almost 7 1/2 children per woman measured by the 1967 census and births during that year to about 5 1/2 children in 1973, a remarkable decrease of about 2 children per woman. Admittedly, we are dealing with very small numbers here, so rates need to be looked at over a longer term to see real trends. Recorded mortality was almost certainly too low. Natural increase once again accounted for most of the population growth between 1967 and 1973.

Available evidence suggests that mobility within Palau would have contributed substantially to the geographic distribution of population in 1973 (Table 2.14). More than 34 percent of the TTPI-born residents of Palau in 1973 considered home some district other than the one they resided in at the time of the census. The vast majority of these individuals resided in Koror, suggesting that in-migration from other parts of the republic accounted for much of Koror's population increase. About 4 percent of the TTPI-born population of Palau in 1973 moved there from another part of the TTPI. Most of these individuals lived in Koror.

Table 2.14. Place of Usual Residence of TTPI-born Individuals by Home District: 1973

State or Island of Usual Residence	Total Persons	Home District			
		Same municipality	Elsewhere in Palau	Elsewhere in TTP	Outside TTPI
Total:	12,091	61.3	34.4	4.2	0.1
Angaur	260	92.3	6.9	0.8	-
Babeldaob	3,726	92.2	5.0	2.8	-
Hatohobei	46	89.1	10.9	-	-
Kayangel	159	88.1	11.9	-	-
Koror	7,194	40.1	54.2	5.5	0.1
Peleliu	650	93.5	5.2	1.1	0.2
Sonsorol	55	100.0	-	-	-
N.S.	1	-	100.0	-	-

Source: Office of Census Coordinator, TTPI, 1975.

Complementary data on mobility of Palau-born individuals still residing in the TTPI in 1973 provide evidence for migration from many parts of Palau elsewhere in the republic, almost certainly Koror (Table 2.15). In comparison, relatively few individual born in Koror lived elsewhere in Palau — and the percentage reported may be inflated due to women from another part of Palau coming to the Koror hospital to give birth and subsequently returning home (the child thus born in Koror but living in another part of Palau). A full 8 percent of Palau-born individuals lived somewhere in the TTPI other than Palau in 1973, showing emigration seen much more in the 1990 census data (see Chapter 16).

Table 2.15. Area of Birth of TTPI-born Individuals by Place of Residence: 1973.

State or Island of Birth	Total Persons	Home District			
		Same municipality	Elsewhere in Palau	Elsewhere in TTP	Outside TTPI
Total:	12,555	65.5	26.5	8.0	-
Angaur	572	41.8	40.7	17.3	0.2
Babeldaob	5,385	58.1	36.3	5.7	-
Hatohobei	101	41.6	55.4	3.0	-
Kayangel	225	60.0	37.8	2.2	-
Koror	4,943	81.5	8.9	9.5	-
Peleliu	1,183	48.7	43.2	7.5	0.2
Sonsorol	116	63.8	27.6	8.6	-
N.S.	30	-	50.0	50.0	-

Source: Office of Census Coordinator, TTPI, 1975.

*The 1980 Census.* The U.S. Census Bureau conducted a full census in Palau in 1980, the second one in the Decennial series (although, again, the results of the 1958 Census were used as proxy for the 1960 U.S. Census). The decline of 550 persons over the 7 years after the TTPI Census seen in Table 2.2 probably was an artifact of different collection procedures and the recent split up of the TTPI government into constituent parts. All but four of what would become Palau's States experienced depopulation during the period, although no decrease was very great. Koror increased to 63 percent of the total population.

The breakup of the TTPI government caused various types of migration – return from Saipan, but also outward movements, particularly for schooling, but also jobs, to a lesser extent. The 1980 Census for CNMI showed 735 Palauans residing there and 1,335 Palauans were reported as living on Guam. Amount 700 to 1000 Palauans resided in the United States, depending on how "Palauan" is defined.

*The 1986 Census.* The Palau Office of Planning and Statistics conducted a full census in 1986, with technical assistance from the United Nations Development Program. This census was the tenth in the series for Palau. That Census recorded 13,900 people, an average annual increase of 2.3 percent from 1980. Most of the States lost population between 1980 and 1986, as Koror became ever more attractive for its jobs. Data from this census appear in tables in the following chapters.

*The 1990 Census.* Because of Palau's continued political affiliation with the United States, the U.S. Bureau of the Census conducted a census of the republic in 1990. The Bureau conducted this census as part of the general decennial effort for the Pacific Islands, including American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands (CNMI). Data collection, processing, and presentation were consistent with the decennial census for the United States and other U.S. territories. Data from the 1990 Census appear throughout the following chapters.

#### **1995 and 2000 Republic of Palau Censuses of Population and Housing**

##### *Data Collection and Presentation*

Both the 1995 and 2000 Censuses were developed, executed, tabulated, and analyzed completely by personnel within the Republic of Palau's Office of Planning and Statistics, but with technical assistance from and procedures developed by the US Census Bureau. By following these conventions, the Republic of Palau has comparable information to that obtained in the US States and territories needed for US Federal and other programs. Since these conventions do impinge on the usefulness of the data within Palau's ministries, agencies, and the private sector, they were followed whenever possible.

In accordance with normal U.S. Census Bureau practice, the 1995 and 2000 censuses of Palau enumerated each person according to his or her *usual residence*. The usual residence is where a person lives and sleeps, not necessarily the same as legal residence or voting residence. The application of this fundamental criterion resulted in the establishment of categories for certain persons enumerated by the census.

Because details of the enumeration and residence rules employed in the 1995 and 2000 censuses are published elsewhere (see 2000 Census Basic Tables appendices), this report presents only a brief summary. The 1995 and 2000 censuses collected data on each usual resident of the Republic of Palau, including those individuals who normally lived in the republic but were absent on Census Day. The census excluded those persons present in Palau but with a usual residence elsewhere. Individuals who had more than one residence were counted at the place they considered their usual residence. Individuals who had no usual residence were counted where they were staying on Census Day. The census enumerated persons away at school or in institutions at the locations of those places.

The 1995 and 2000 censuses of Palau employed a modified list-enumerate procedure, also known as door-to-door enumeration. Beginning in mid-April 2000, enumerators began visiting each housing unit and conducted personal interviews, recording the information collected on the single questionnaire that contained all census questions. Appendix B presents a facsimile of the questionnaire employed in the 2000 census of Palau. Follow-up enumerators visited all addresses for which questionnaires were missing to obtain the information required for the census.

The completed questionnaires were checked for completeness and consistency of responses, and then brought to OPS for processing. After checking in the questionnaires, OPS staff coded write-in responses (e.g., ethnicity or race, relationship, language). Then data entry clerks keyed all the questionnaire responses. The OPS brought the keyed data to the U.S. Census Bureau headquarters near Washington, DC, where OPS and Bureau staff edited the data using the Consistency and Correction (CONCOR) software package prior to generating tabulations using the Census Tabulation System (CENTS) package. Both packages were developed at the Census Bureau's International Programs Center (IPC) as part of the Integrated Microcomputer Processing System (IMPS).

### **Conclusions**

Population change in Palau generally has followed the same pattern seen elsewhere in the Pacific (Taeuber, 1963; see Gorenflo, 1990, 1992; Gorenflo and Levin 1991, 1992): an extended early period of depopulation following the establishment of prolonged contact with non-Micronesians, producing a population much smaller than that preceding contact; and a subsequent period of population growth, established by the beginning of the 20<sup>th</sup> century and continuing over the decades. The main cause of depopulation was an increase in mortality, accompanied by reduced fertility. The demographic growth resulted from a reversal in these trends — with the number of persons born into the population each year significantly greater than the number that died.

Population growth continued through the early 1970s and, as we shall see in the next chapter, and through the 1990s. But this increase occurred at a rate much less than seen in most other parts of the Pacific. The more modest population growth seen in Palau in recent years is due partly to low fertility. This low fertility was augmented by emigration — removing people and, because of the young adults involved, further reducing fertility at the same time.

## CHAPTER 3. GEOGRAPHIC DISTRIBUTION

The geographic distribution of Palau's population has changed dramatically from pre-contact times, when most people lived in small hamlets and villages along the coast of Babeldaob and smaller inhabited islands. During the present century, Palau's population has become increasingly concentrated in Koror. The trends of population growth and concentration found in Palau are consistent with population trends found in other Pacific Island areas (see Chapter 8). This chapter discusses recent changes in overall population and its distribution in the Republic of Palau.

### Definitions

#### Place of Residence

The 1990, 1995 and 2000 censuses were all modified *de jure* censuses, counting people and recording selected characteristics of each individual according to his or her usual place of residence as of census day. Data were collected for each enumeration district – the households and population in each enumerator assignment – and these enumeration districts were then collected into hamlets in Koror, and the 16 States of Palau.

**Comparability.** The 1980, 1986, 1990, 1995 and 2000 censuses all collected data on place of usual residence at the time of enumeration. Geographic compatibility is available at the Enumeration Districts' (ED) level for several of the censuses, and at the State level for all censuses.

#### Analysis of Geographic Distribution Data

The population of Palau continued to grow over the decades preceding the 2000 census (Table 3.1). The population increased 14 percent between 1980 and 1986 (a six year period) and 9 percent between 1986 and 1990 (a four year period). Once Palau went into a 5-year census cycle, starting with the 1990 Census, it became easier to see the population increase. From 1990 to 1995, the population increased from 15,122 to 17,225 (14 percent), and continued to increase to 19,129 in 2000, another 11 percent increase. Throughout the period, Koror remained by far the largest state.

Table 3.1. Palau Population by State: 1980-2000

State	Population				
	2000	1995	1990	1986	1980
Total:	19,129	17,225	15,122	13,873	12,116
Aimeliik	272	419	439	283	273
Airai	2,104	1,481	1,234	1,021	668
Angaur	188	193	206	214	243
Hatothobei	23	51	22	35	74
Kayangel	138	124	137	115	140
Koror	13,303	12,299	10,501	9,442	7,585
Melekeok	239	261	244	254	261
Ngaraard	638	421	310	468	457
Ngardmau	221	162	149	157	160
Ngaremlengui	367	281	281	301	358
Ngatpang	280	221	62	219	166
Ngchesar	267	228	287	271	364
Ngerchelong	286	253	354	277	372
Ngiwal	193	176	234	218	267
Peleliu	571	575	601	545	609
Sonsorol	39	80	61	42	79
Unorganized	-	-	-	11	40

Sources: U.S. Bureau of the Census, 1982, Table 4; 1992c, Table 1; OPS, 1987, Table A1, 1995 and 2000, table 6.

Despite a total 1990 population that was nearly 25 percent greater than that of 1980, 13 states in Palau lost population during that decade — their relative contribution to the total declining in the process. The two major exceptions to the trend for the 1980s were Koror and Airai states; both having experienced sustained population growth between 1980 and 1990. Between 1990 and 2000, the numbers living in Koror and Airai continued to increase, but while Koror remained at about 70 percent of the total population of Palau, Airai increased to more than 11 percent (from less than 6 percent in 1980) (Table 3.2).

Table 3.2. Percent Distribution of Palau Population by State: 1980-2000

State	Percentage Distribution by Years				
	2000	1995	1990	1986	1980
Total:	100.0	100.0	100.0	100.0	100.0
Aimeliik	1.4	2.4	2.9	2.0	2.3
Airai	11.0	8.6	8.2	7.4	5.5
Angaur	1.0	1.1	1.4	1.5	2.0
Hatohebei	0.1	0.3	0.1	0.3	0.6
Kayangel	0.7	0.7	0.9	0.8	1.2
Koror	69.5	71.4	69.4	68.1	62.6
Melekeok	1.2	1.5	1.6	1.8	2.2
Ngaraard	3.3	2.4	2.0	3.4	3.8
Ngardmau	1.2	0.9	1.0	1.1	1.3
Ngaremlengui	1.9	1.6	1.9	2.2	3.0
Ngatpang	1.5	1.3	0.4	1.6	1.4
Ngchesar	1.4	1.3	1.9	2.0	3.0
Ngerchelung	1.5	1.5	2.3	2.0	3.1
Ngiwal	1.0	1.0	1.5	1.6	2.2
Peleliu	3.0	3.3	4.0	3.9	5.0
Sonsorol	0.2	0.5	0.4	0.3	0.7
Unorganized	-	-	-	0.1	0.3

Sources: U.S. Bureau of the Census, 1982, Table 4; 1992c, Table 1; OPS, 1987, Table A1, 1995 and 2000, table 6.

Koror State is the only urban place in Palau (with "urban" defined by the U.S. Bureau of the Census as places containing 2,500 persons or more). Airai State, north of Koror State, recently experienced similar growth — much less rapid in absolute terms but at a faster rate than its larger neighbor. As a result of these recent trends in population growth, Airai and Koror states have come to contain increasing proportions of the total population. Rural to urban migration accounts for some of the population growth in Koror and Airai states. This phenomenon is occurring in many areas in the Pacific. These states contain the airport, the national government, and most of the businesses. No other areas are showing this kind of in migration (Table 3.3).

Table 3.3. Population Change in Palau by State (Percentages): 1980-2000

State	Total Change				Average. Annual Change			
	1995-2000	1990-1995	1986-1990	1980-1986	1995-2000	1990-1995	1986-1990	1980-1986
Total:	11.1	13.9	9.0	14.5	2.2	2.8	2.3	2.4
Aimeliik	(35.1)	(4.6)	55.1	3.7	(7.0)	(0.9)	13.8	0.6
Airai	42.1	20.0	20.9	52.8	8.4	4.0	5.2	8.8
Angaur	(2.6)	(6.3)	(3.7)	(11.9)	(0.5)	(1.3)	(0.9)	(2.0)
Hatohebei	(54.9)	131.8	(37.1)	(52.7)	(11.0)	26.4	(9.3)	(8.8)
Kayangel	11.3	(9.5)	19.1	(17.9)	2.3	(1.9)	4.8	(3.0)
Koror	8.2	17.1	11.2	24.5	1.6	3.4	2.8	4.1
Melekeok	(8.4)	7.0	(3.9)	(2.7)	(1.7)	1.4	(1.0)	(0.4)
Ngaraard	51.5	35.8	(33.8)	2.4	10.3	7.2	(8.4)	0.4
Ngardmau	36.4	8.7	(5.1)	(1.9)	7.3	1.7	(1.3)	(0.3)
Ngaremlengui	30.6	-	(6.6)	(15.9)	6.1	-	(1.7)	(2.7)
Ngatpang	26.7	256.5	(71.7)	31.9	5.3	51.3	(17.9)	5.3
Ngchesar	17.1	(20.6)	5.9	(25.5)	3.4	(4.1)	1.5	(4.3)
Ngerchelung	13.0	(28.5)	27.8	(25.5)	2.6	(5.7)	6.9	(4.3)
Ngiwal	9.7	(24.8)	7.3	(18.4)	1.9	(5.0)	1.8	(3.1)
Peleliu	(0.7)	(4.3)	10.3	(10.5)	(0.1)	(0.9)	2.6	(1.8)
Sonsorol	(51.3)	31.1	45.2	(46.8)	(10.3)	6.2	11.3	(7.8)
Unorganized	-	-	(100.0)	(72.5)	-	-	(25.0)	(12.1)

Sources: U.S. Bureau of the Census, 1982, Table 4; 1992c, Table 1; OPS, 1987, Table A1, 1995 and 2000, table 6.

Because of Palau's recent geographic patterns, population density in most states is quite low, including the outer islands with relatively little land area (Table 3.4). Koror is the exception, where population density approached 1,500 persons per square mile in 1990, more than 1,700 in 1995, and almost 1,900 people per square mile in 2000. By 2000, Airai had more than 120 persons per square mile, about the same as Peleliu, but still below the density on Kayangel. Changes in the population densities of other states were consistent with the shifts in the distribution of Palau's population over the past two decades.

Table 3.4. Population Density in Palau by State: 1980-2000

State	Land Area in Square Miles	Persons per Square Mile				
		2000	1995	1990	1986	1980
Total:	170.5	112.2	101.0	88.7	81.4	71.1
Aimeliik	19.8	13.7	21.2	22.2	14.3	13.8
Airai	17.5	120.2	84.6	70.5	58.3	38.2
Angaur	3.3	57.0	58.5	62.4	64.8	73.6
Hatohobei	0.6	38.3	85.0	36.7	58.3	123.3
Kayangel	0.7	197.1	177.1	195.7	164.3	200.0
Koror	7.1	1,873.7	1,732.3	1,479.0	1,329.9	1,068.3
Melekeok	10.7	22.3	24.4	22.8	23.7	24.4
Ngaraard	13.9	45.9	30.3	22.3	33.7	32.9
Ngardmau	17.9	12.3	9.1	8.3	8.8	8.9
Ngaremlengui	25	14.7	11.2	11.2	12.0	14.3
Ngatpang	17.6	15.9	12.6	3.5	12.4	9.4
Ngchesar	16.4	16.3	13.9	17.5	16.5	22.2
Ngerchelong	4.1	69.8	61.7	86.3	67.6	90.7
Ngiwal	10.3	18.7	17.1	22.7	21.2	25.9
Peleliu	4.7	121.5	122.3	127.9	116.0	129.6
Sonsorol	0.9	43.3	88.9	67.8	46.7	87.8

Sources: U.S. Census Bureau, 1982, Table 4; 1992c, Table 1; OPS, 1987, Table A5, 1995 &amp; 2000, Table 6.

### Analysis of Hamlet Data

The 1995 and 2000 Palau censuses collected data at the hamlet level for all States having hamlets, but compiled the data for publication only for Koror State. This procedure allows researchers to obtain hamlet data for the other states from OPS, but allows users of data for the larger hamlets in Koror State to have published information for planning. A few of the data items are summarized here, but more data are available in the Basic Tables; we will not be referring to hamlet data in the rest of this profile.

Table 3.5 shows the population distribution of the 12 hamlets in Koror State for 1995 and 2000. Eang, which is part of Ngerkebesang, was separated due to its people's unique ethnicity. The people of Eang are from the Southwest Island states of Sonsorol and Hatohobei, whose ethnicity are Carolinian. The number for Ngerkebesang is inclusive of Eang. The population of the State increased by more than 1,000 persons during the 5 years, an increase of 8 percent. In both 1995 and 2000, Madalaii had the largest population, with more than 3,000 persons; while it looks like Madalaii had a large population decrease during the half-decade, group quarters were coded differently in 1995, so care should be used in analyzing that particular change. But even given that, the proportion residing in Madalaii hamlet decreased from about 3 in 10 to about 1 in 4 during the 5 years.

Table 3.5. Hamlets in Koror State: 1995 and 2000

Hamlets	Population		Percent		Percent Change
	2000	1995	2000	1995	
<b>Koror</b>	<b>13,303</b>	<b>12,299</b>	<b>100.0</b>	<b>100.0</b>	<b>8.2</b>
Dngeronger	646	513	4.9	4.2	25.9
Idid	729	667	5.5	5.4	9.3
Iyebukel	817	680	6.1	5.5	20.1
Ikelaui	432	371	3.2	3.0	16.4
Madalaii	3,116	3,642	23.4	29.6	(14.4)
Meketii	756	584	5.7	4.7	29.5
Meyuns	1,121	894	8.4	7.3	25.4
Ngerbeched	1,757	1,646	13.2	13.4	6.7
Ngerchemai	1,697	1,419	12.8	11.5	19.6
Ngerkebesang	598	559	4.5	4.5	7.0
Eang	306	256	2.3	2.1	19.5
Ngerkesoal	734	721	5.5	5.9	1.8
Ngermid	900	603	6.8	4.9	49.3

Source: 1995 and 2000 Censuses, Table 24

Most of the other hamlets showed considerable increases in the population during the 5-year period. Ngermid increased by almost half, from about 600 to 900 persons, and Dngeronger, Meketii, and Meyuns increased by more than one-fourth.

Table 3.6 shows the numbers and percentage of ethnic Palauans in the Koror hamlets in 1995 and 2000. In 1995, about 7 in every 10 persons of the residents in Koror state were ethnic Palauan, but this decreased to about 2 in every 3 persons in 2000. The largest numbers of Palauans were living in Ngerbeched, Ngerchemai, and Madalaii in each census, but the latter two hamlets switched rankings between 1995 and 2000. Eang was the biggest gainer during the 5 years, from 39 to 86 Palauans, while Ikelaui and Idid and a few others lost Palauans to other hamlets, States, or to the outside. Almost 84 percent of the population of Ngerbeched was Palauan, the largest percentage of any of the Hamlets. At the other end of the continuum, only 28 percent of Eang were Palauan, and 40 percent of Madalaii.

Table 3.6. Palauans in Hamlets in Koror State: 1995 and 2000

Hamlets	Population		Percent		Percent Change	Percent Palauans	
	2000	1995	2000	1995		2000	1995
Koror:	8,870	8,678	100.0	100.0	2.2	66.7	70.6
Dngeronger	416	425	4.7	4.9	(2.2)	64.4	82.8
Idid	513	584	5.8	6.7	(13.8)	70.4	87.6
Iyebukel	638	584	7.2	6.7	8.5	78.1	85.9
Ikelau	263	326	3.0	3.8	(24.0)	60.9	87.9
Madalaii	1248	1292	14.1	14.9	(3.5)	40.1	35.5
Meketii	488	485	5.5	5.6	0.6	64.6	83.0
Meyuns	842	840	9.5	9.7	0.2	75.1	94.0
Ngerbeched	1474	1424	16.6	16.4	3.4	83.9	86.5
Ngerchemai	1337	1256	15.1	14.5	6.1	78.8	88.5
Ngerkebesang	369	292	4.2	3.4	20.9	61.7	52.2
Eang	86	39	1.0	0.4	54.7	28.1	15.2
Ngerkesoal	609	645	6.9	7.4	(5.9)	83.0	89.5
Ngermid	673	525	7.6	6.0	22.0	74.8	87.1

Source: 1995 and 2000 Censuses, Table 28

Table 3.7 shows for Koror State in 1995 and 2000, the population living in the same house as 5 years before the census. About 54 percent of the population 5 years and over in Koror lived in the same house in 1990 as 1995 for the 1995 census, compared to 64 percent for the 2000 Census. That is, a smaller percentage of the population moved in the 5 years preceding the 2000 census than the 5 years preceding the 1995 census. Madalaii and Ngerbeched had the largest numbers of persons residing in the same house 5 years before the 1995 and the 2000 Censuses. However, Madalaii also had the smallest percentage of all its persons living in the same house in 1995 as 2000 (43 percent), still an increase from 27 percent for 1995.

Table 3.7. Same House 5 Years Before, Hamlets in Koror State: 1995 and 2000

Hamlets	Population		Percent		Percent Change	% Same House	
	2000	1995	2000	1995		2000	1995
Koror:	7,946	5,991	100.0	100.0	32.6	63.8	54.1
Dngeronger	425	263	5.3	4.4	61.6	70.6	57.9
Idid	430	383	5.4	6.4	12.3	63.0	62.9
Iyebukel	495	395	6.2	6.6	25.3	64.6	66.8
Ikelau	221	240	2.8	4.0	(7.9)	54.0	72.1
Madalaii	1,285	908	16.2	15.2	41.5	43.0	26.6
Meketii	459	337	5.8	5.6	36.2	64.3	64.7
Meyuns	829	611	10.4	10.2	35.7	79.6	77.5
Ngerbeched	1,341	946	16.5	15.8	41.8	82.5	64.4
Ngerchemai	994	808	12.5	13.5	23.0	63.6	64.6
Ngerkebesang	454	344	5.7	5.7	32.0	96.2	60.5
Eang	204	183	2.6	3.1	11.5	75.0	81.3
Ngerkesoal	554	368	7.0	6.1	50.5	81.0	58.7
Ngermid	459	388	5.8	6.5	18.3	54.9	74.2

Source: 1995 and 2000 Censuses, Table 33

Persons in Ngerkebesang were the least likely to move, with 96 percent of them still residing in the same house in 2000 as 1995, an increase in this hamlet from 60 percent in 1995. About 4 out of every 5 persons in Ngerkesoal and Meyuns also didn't move in the 5 years before the census.

Table 3.8 shows legal residence in Koror State for persons 18 years and over for the Koror hamlets. Almost 3,000 persons living in Koror also voted in Koror. The percentage did not change very much during the 5-year period, decreasing only slightly, from 31 percent in 1995 to 30 percent in 2000. Hence, only about 3 in every 10 persons of voting age living in Koror State actually voted there. In 2000, persons living in Ngerkebesang were most likely to vote in Koror (about 2 in every 3 voters), and more than 2 in every 5 voters in Meyuns, Ngerbeched, Ngerkesoal, and Ngermid voted in Koror. Only about 1 in every 10 voters living Madalaii voted there, still a percentage increase from 1995.



Table 3.8. Legal Residence in Koror State, Hamlets in Koror State for persons 18 years &amp; over: 1995 and 2000

Hamlets	Population		Percent		Percent Change	% Same House	
	2000	1995	2000	1995		2000	1995
Koror. 18 + years:	2,924	2,622	100.0	100.0	11.5	30.2	31.2
Dngeronger	115	96	3.9	3.7	19.8	23.7	29.6
Idid	209	226	7.1	8.6	(7.5)	38.6	51.8
Iyebukel	172	151	5.9	5.8	13.9	31.0	35.2
Ikelau	113	109	3.9	4.2	3.7	33.2	47.2
Madalaii	300	283	10.3	10.8	6.0	11.5	9.4
Meketii	150	124	5.1	4.7	21.0	26.5	31.2
Meyuns	335	342	11.5	13.0	(2.0)	42.7	64.2
Ngerbeched	534	451	18.3	17.2	18.4	44.5	43.4
Ngerchemai	378	336	12.9	12.8	12.5	33.7	38.6
Ngerkebesang	149	133	5.1	5.1	12.0	68.5	56.8
Eang	25	24	0.9	0.9	4.2	14.3	18.0
Ngerkesoal	209	184	7.1	7.0	13.6	41.5	42.3
Ngermid	260	187	8.9	7.1	39.0	41.9	49.6

Source: 1995 and 2000 Censuses, Table 33

This brief discussion shows a few of the differences in the data resulting from the 1995 and 2000 Palau Censuses for the Koror hamlets. Both the 1995 and 2000 Censuses are a rich source of available statistical information for the hamlets and enumeration districts in Koror state. These data should be useful to National, State, and private sector planners.

### Conclusions

Koror and Airai states continue to be the largest states, and continue to grow faster than other areas. Both states became increasingly important during the 1980s and 1990s as persons moved to these States, both from the other States and from other countries. As both the center of government activity, as well as having most modern key public services (e.g., Palau High School, Palau Community College, and the Palau National Hospital), Koror likely will continue to attract in-migrants and immigrants for the foreseeable future. Recent growth in Airai State probably occurred largely because it is right next to Koror. When the capital moves to Melekeok State, the focus of population growth may change — or at least expand to include this third state, and perhaps, adjacent States as well. Unless the Palau government makes a concerted effort to decentralize development, these states will continue to host most government offices and private sector economic activity, and as a result continue to experience rapid growth than other parts of Palau.

## CHAPTER 4. AGE AND SEX

The age and sex composition of a population provides basic information necessary for planning, providing key indicators for social and economic characteristics. Age composition helps identify populations for schooling, employment, voting, and retirement. Sex distribution is important for social characteristics, trends in community structure, and the population's economic potential.

In Chapter 2 we discussed the historical demography of Palau, including age and sex distributions. Among the most noteworthy characteristics was an historic surplus of men, although this discrepancy decreased over time. Palau also saw the emergence of an increasingly youthful population. More recently, the population of Palau has been aging, partly because of reduced fertility (that we discuss in Chapter 6), partly as a result of even more drastic decreases in mortality (examined in Chapter 7), and partly because of the unusual migration patterns featuring large numbers of working age immigrants (discussed in Chapter 8). Recent fertility, mortality, and migration trends — the three main mechanisms by which a population changes over time — have shaped the age and sex composition of modern Palau.

### **Data Description**

#### *Age*

The 2000 census obtained information on age from answers to questionnaire item 5, asked of all persons. The age classification considered the age of each person in complete years as of April 1, 2000. Normally the census used the age response in question 5 for the person's age on the reference date. When this response was unacceptable or unavailable, the census derived a person's age from an acceptable birth date response in question 5.

The Republic of Palau Office of Planning and Statistics uses data on age to determine the applicability of other questions for an individual and to classify other characteristics in census tabulations. Because of the important role played by age data in interpreting most social and economic characteristics, the office tabulates age by single years and by many different groupings.

One of the most important measures derived from data on age is *median age*. This measure divides the age distribution into two equal parts, one-half of the persons younger than the median age and the other half older. In most cases, computing median age employs more detailed age intervals than are shown in census publications. A median based on less detailed data may differ slightly from a corresponding median for the same population based on a more detailed distribution.

Limitations. The 1980 U.S. census substantially overstated counts for persons 100 years old and over. Improvements in questionnaire design and in allocation procedures aimed to minimize this problem for the 1990 and subsequent censuses.

A review of detailed 1990 census information, for example, showed that respondents tended to provide their age as of the date of completion of the questionnaire, not their age as of 1 April 1990. In addition, respondents may have rounded their age up if they were close to having a birthday. As a result of these two tendencies, approximately 10 percent of persons in most age groups probably were one year younger than reported in the census. For most single years of age, the misstatements are largely offsetting. The problem was most pronounced at age zero — both because persons lost to age one may not have been fully offset by the inclusion of babies born after 1 April 1990 and because there possibly was more rounding up to age one to avoid reporting an age of zero years. The 1990 census did not collect age in complete months for infants less than one year old.

Note that the reporting of age one year older than actual age on 1 April 1990 or 2000 possibly occurred more frequently in areas where the census collected data later than that actual date — like in Palau. The magnitude of this problem was much less in previous censuses where age was typically derived from respondent data on birth date.

Many of these problems did not occur in the 1995 and 2000 Census collected and processed by the Republic of Palau because birth date took precedence over age. When discrepancies occurred, a sophisticated computer edit procedure obtained the best fit for data within and between data records.

**Comparability.** Every census in the Republic of Palau collects age data. Because this information is so important to a census, in cases where age was not reported, clearly appeared to be incorrect, the Census Bureau, and the Republic of Palau employed a procedure called *imputation* to assign ages. This procedure has been used for census data from Palau since 1970. The specific techniques for imputing age have differed in each census, introducing a problem of comparability between censuses (see U.S. Bureau of the Census, 1992c, Appendix B for more information on imputation).

### *Sex*

The 2000 census obtained data on sex from answers to questionnaire item 2, asked of all persons. In most cases when sex was not reported, census personnel determined it by the appropriate entry from the person's given name and household relationship. Otherwise, sex was imputed according to the relationship to the householder and the age and marital status of the person (see U.S. Bureau of the Census, 1992c, Appendix B for more information on imputation).

**Comparability.** Every Republic of Palau census has included a question on sex, asked of all respondents.

### **Analysis of Age and Sex Data**

#### *Age and Sex Distribution*

As Palau's population increased in recent years, it has also aged. The trend towards greater aging began between 1967 and 1973, as discussed in Chapter 2, reversing the early post-World War II trend for an increasingly young Palau population. The three most recent censuses of Palau reveal that the resident population has continued to age. The median age in 1990 approached 26 years (Table 4.1), an increase of nearly seven years during the 1980s. The reasons for the increase in the median age of Palau's population include relatively low fertility, relatively low mortality into old age, and recent migration trends with a youthful emigrant population replaced (in part) by an older immigrant population.

Table 4.1. Population by Age: 1980-2000

Age Group	Population in Year Range				
	2000	1995	1990	1986	1980
Total:	19,129	17,125	15,122	13,873	12,116
0 to 4 years	1,308	1,762	1,513	1,576	1,401
5 to 9 years	1,700	1,551	1,529	1,546	1,701
10 to 14 years	1,555	1,527	1,534	1,727	1,732
15 to 19 years	1,382	1,282	1,464	1,523	1,565
20 to 24 years	1,342	1,427	1,340	1,429	1,081
25 to 29 years	1,910	1,741	1,403	1,158	826
30 to 34 years	2,169	1,717	1,338	1,015	694
35 to 39 years	1,891	1,583	1,243	831	503
40 to 44 years	1,651	1,261	873	637	494
45 to 49 years	1,272	943	666	524	396
50 to 54 years	886	603	513	394	384
55 to 59 years	563	488	403	415	408
60 to 64 years	463	361	387	349	287
65 to 69 years	318	328	332	303	284
70 to 74 years	274	278	249	179	130
75 yrs and over	445	273	335	267	230
Median	30.8	27.1	25.6	22.0	18.9

Source: U.S. Bureau of the Census, 1983, Table 15; 1992c, Table 6; OPS, 1987, Table A1, 1995 and 2000, table 6.

Data on the percentage of Palau's population in 5-year age groups show a steady reduction of those aged less than 15 years between 1980 and 2000 (Table 4.1a). In contrast, the proportion of the republic's population in older age groups tended to increase over the same period; particularly those individuals aged 25 to 54 years.

Table 4.1a. Population Percentages by Age: 1980-2000

Age Group	Percent				
	2000	1995	1990	1986	1980
Total:	100.0	100.0	100.0	100.0	100.0
0 to 4 years	6.8	10.3	10.0	11.4	11.6
5 to 9 years	8.9	9.1	10.1	11.1	14.0
10 to 14 years	8.1	8.9	10.1	12.4	14.3
15 to 19 years	7.2	7.5	9.7	11.0	12.9
20 to 24 years	7.0	8.3	8.9	10.3	8.9
25 to 29 years	10.0	10.2	9.3	8.3	6.8
30 to 34 years	11.3	10.0	8.8	7.3	5.7
35 to 39 years	9.9	9.2	8.2	6.0	4.2
40 to 44 years	8.6	7.4	5.8	4.6	4.1
45 to 49 years	6.6	5.5	4.4	3.8	3.3
50 to 54 years	4.6	3.5	3.4	2.8	3.2
55 to 59 years	2.9	2.8	2.7	3.0	3.4
60 to 64 years	2.4	2.1	2.6	2.5	2.4
65 to 69 years	1.7	1.9	2.2	2.2	2.3
70 to 74 years	1.4	1.6	1.6	1.3	1.1
75 yrs and over	2.3	1.6	2.2	1.9	1.9
Median	-	-	-	-	-

Source: U.S. Bureau of the Census, 1983, Table 15; 1992c, Table 6; OPS, 1987, Table A1, 1995 and 2000, table 6.

Males showed the same change in median ages as the total population. In 1980, the median age of males was only 18.8 years, meaning that half the males were younger than 18.8 years old and half were older (Table 4.2). By 1990, the median age of males had increased to 26.1 years, exceeding the median for females by one year. The 1995 median for males was 28.4 years, an increase of more than 2 years during that 5-year period. The increase continued in the 2000 census, when the median for males was 31.3, an increase of another 3 years during the 5-year period, and a total increase of 5 years during the decade of the 1990s. The male median age probably was higher than the female median because of the selective emigration of younger Palauan males and the selective immigration of working age, often unmarried, non-Palauan males.

Table 4.2. Population by Age and Sex in Percentages: 1980-2000

Age Group	Males in Percentages and Year Percentages					Females in Percentages and Year Range				
	2000	1995	1990	1986	1980	2000	1995	1990	1986	1980
Total:	10,450	9,113	8,139	7,398	6,279	8,679	8,012	6,983	6,475	5,837
Percent:	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0 to 4 years	6.6	10.1	9.4	11.2	11.5	7.1	10.6	10.7	11.5	11.7
5 to 9 years	8.2	8.7	9.7	11.1	14.1	9.7	9.4	10.5	11.2	13.9
10 to 14 years	7.6	8.8	9.9	12.2	14.2	8.8	9.1	10.4	12.7	14.4
15 to 19 years	7.1	7.5	9.8	11.4	13.6	7.4	7.5	9.6	10.4	12.1
20 to 24 years	7.0	7.9	9.1	11.2	10.0	7.0	8.8	8.6	9.3	7.8
25 to 29 years	10.6	10.2	9.8	8.5	6.6	9.3	10.1	8.6	8.2	7.0
30 to 34 years	11.7	11.0	9.4	7.3	6.0	10.9	8.9	8.2	7.3	5.4
35 to 39 years	10.6	10.2	8.8	6.3	3.9	9.1	8.2	7.5	5.6	4.5
40 to 44 years	9.3	8.0	6.3	4.4	4.0	7.8	6.7	5.1	4.8	4.2
45 to 49 years	7.2	6.1	4.6	4.0	3.2	6.0	4.9	4.2	3.5	3.3
50 to 54 years	4.9	3.6	3.4	2.7	3.0	4.3	3.4	3.4	3.0	3.3
55 to 59 years	2.9	2.7	2.6	2.7	3.0	3.0	3.0	2.8	3.4	3.7
60 to 64 years	2.2	1.9	2.2	2.4	2.4	2.7	2.3	3.0	2.7	2.3
65 to 69 years	1.5	1.6	1.9	2.1	1.9	1.8	2.3	2.5	2.3	2.8
70 to 74 years	1.1	1.3	1.4	1.0	0.7	1.8	1.9	1.9	1.6	1.4
75 yrs and over	1.6	0.4	1.5	1.5	1.8	3.2	3.0	3.0	2.4	2.0
Median	31.3	28.4	26.1	21.8	18.8	30.3	27.3	25.1	22.2	18.9

Source: U.S. Bureau of the Census, 1983, Table 15; 1992c, Table 6; OPS, 1987, Table A1, 1995 & 2000, Table 6.

The distribution of ages among males shows the same trends as for the population as a whole — that is, the number of younger males decreased as a percentage of the total male population while the proportion of older males increased. Males aged 0 to 19 years comprised 53 percent of the total male population in 1980, decreasing to only 39 percent in 1990, 35 percent in 1995 and 30 percent in 2000. Conversely, males aged 25 to 54 years increased from 27 percent to 42 percent of the total male population during the 1980 to 1990 decade, and to 54 percent by 2000.

The female median age increased from 18.9 years to 25.1 years between 1980 and 1990, then to 27.3 in 1995 and 30.3 years in 2000 (Table 4.2). Although the median age for females was about the same as the median for males in 1980, by 1990 and onward, the median age for males was one year older than the median age for females — once again due primarily to selective migration. The same changes in relative importance of various age groups occurred for the females as for both the total population and for males, although the shifts were slightly less pronounced.

The age composition of various states in Palau varied substantially in 2000, in part due to various socioeconomic conditions guiding migration patterns and in part because of the small populations residing in certain rural states (Table 4.3). Melekeok had the highest median age, at 33.5 years, followed by Ngchesar, Airai, and Angaur.

Table 4.3. Population by State in Age Groups: 2000

State	Total	Percent	0 to 14 Years	15 to 24 Years	25 to 44 Years	45 to 64 Years	65 years and over	Median Age
Total:	19,129	100.0	23.9	14.2	39.8	16.6	5.4	30.8
Aimeliik	272	100.0	32.4	10.3	32.0	17.6	7.7	29.8
Airai	2,104	100.0	22.3	11.7	43.8	17.1	5.0	32.6
Angaur	188	100.0	33.0	7.5	32.5	15.4	11.7	32.1
Hatothobei	23	100.0	30.4	26.1	13.0	26.1	4.3	21.3
Kayangel	138	100.0	34.1	6.5	26.1	20.3	13.0	28.8
Koror	13,303	100.0	22.5	14.9	41.7	16.5	4.4	30.7
Melekeok	239	100.0	29.7	10.9	30.9	16.7	11.7	33.5
Ngaraard	638	100.0	21.3	18.2	37.1	15.5	7.8	30.4
Ngardmau	221	100.0	32.1	10.9	37.1	13.1	6.8	29.8
Ngaremlengui	367	100.0	27.2	12.5	34.1	19.6	6.5	31.4
Ngatpang	280	100.0	28.2	23.9	29.3	13.6	5.0	22.9
Ngchesar	267	100.0	30.7	12.4	25.8	18.7	12.4	32.7
Ngerchelong	286	100.0	35.7	8.7	21.7	18.2	15.7	30.6
Ngiwal	193	100.0	29.0	11.4	30.0	15.0	14.5	30.3
Peleliu	571	100.0	32.6	12.1	29.9	16.8	8.6	28.7
Sonsorol	39	100.0	35.8	10.2	30.7	20.5	2.6	30.4

Source: Palau OPS, table 6

Koror, with more than two-thirds of Palau's population, influenced the median age of the entire republic. Koror's median age of 30.7 years was about average for all of Palau, unlike in previous years, when it was clear that working-age immigrants pulled this measure up since they tended to live near their work in the urban center.

The percentage of persons aged less than 15 years also was slightly less in Koror than in the republic as a whole, although not all the states. Some rural states had higher median ages than the Palau median, partially due to larger proportions of elderly residents (those aged 65 years and over). Other rural states contained high percentages of both elderly and young persons. For example, more than 1/3rd of the Ngerchelong population in 2000 was younger than 15 years, while about 1/6th was aged 65 years or more. The situation in Ngerchelong was similar to a phenomenon occurring in rural settings throughout the Pacific, where very young people are left with older people while the parents of the former migrate elsewhere for work.

Characteristics of the geographic distribution of male residents of Palau were similar to those for the entire population (Table 4.4). The median ages of males residing in Airai and Koror states were similar to the median for all male residents of the republic, with the former slightly younger and the latter slightly older. The age composition of other states in Palau varied, often considerably — once again, probably in part due to the variability one would expect in the small populations present in many of the more rural states. Hatothobei had a very young male population in 2000; in contrast, the male populations of Ngaremlengui, Airai, Melekeok, and Ngaraard were relatively older compared to the other States.

Table 4.4. Male Population by State in Age Groups: 2000

State	Total	Percent	0 to 14 Years	15 to 24 Years	25 to 44 Years	45 to 64 Years	65 years and over	Median Age
Total:	10,450	100.0	22.4	14.1	42.2	17.2	4.2	31.3
Aimeliik	142	100.0	35.9	8.5	33.1	16.9	5.6	29.4
Airai	1,303	100.0	18.6	11.4	48.7	17.5	3.8	33.4
Angaur	101	100.0	33.7	6.9	35.7	15.9	7.9	30.3
Hatothobei	11	100.0	36.4	27.3	9.1	27.3	-	17.5
Kayangel	76	100.0	32.9	9.2	30.3	18.4	9.2	27.5
Koror	7,115	100.0	21.4	15.0	42.7	17.3	3.6	31.0
Melekeok	121	100.0	28.9	14.0	33.0	14.9	9.1	32.5
Ngaraard	371	100.0	18.3	10.0	51.2	14.8	5.7	32.4
Ngardmau	128	100.0	31.3	11.7	39.8	13.3	3.9	29.5
Ngaremlengui	228	100.0	22.8	14.5	37.3	20.2	5.3	33.1
Ngatpang	166	100.0	22.9	24.1	33.7	15.7	3.6	29.2
Ngchesar	136	100.0	29.4	14.0	30.1	16.9	9.6	31.9
Ngerchelong	141	100.0	39.0	9.9	21.3	18.4	11.3	26.5
Ngiwal	105	100.0	29.5	13.3	34.3	13.3	9.5	27.9
Peleliu	288	100.0	32.3	11.1	30.9	18.4	7.3	29.0
Sonsorol	18	100.0	33.1	11.0	38.7	16.6	-	30.0

Source: 2000 Census, OPS, Table 6

Table 4.5 presents data on population by age and state of residence for females enumerated in the 2000 census. Apart from the geographic variability found in the last two tables, a relatively large proportion of females aged less than 15 years lived in rural areas in 2000. This trend primarily is a result of adult females relocating to urban areas, either to seek employment or further education or to accompany their husbands who migrated to urban places. The presence of younger female populations in rural settings probably also reflects a greater tendency for females to remain behind while males show a greater propensity for rural-urban mobility for work. The median ages of females in Ngatpang and Ngaraard states were particularly young compared to the entire republic. (Ngaraard's female population skewed young because of Bethania High School – an all-female high school in the State). In contrast, several states had female median ages above 33 years.

Table 4.5. Female Population by State in Age Groups: 2000

State	Total	Percent	0 to 14 Years	15 to 24 Years	25 to 44 Years	45 to 64 Years	65 years and over	Median Age
Total:	8,679	100.0	25.6	14.5	37.1	16.0	6.9	30.3
Aimeliik	130	100.0	28.5	12.3	30.8	18.5	10.0	30.0
Airai	801	100.0	28.3	12.4	35.7	16.5	7.1	30.8
Angaur	87	100.0	32.2	8.1	28.8	15.0	16.1	33.6
Hatohebei	12	100.0	25.0	25.0	16.7	25.0	8.3	32.5
Kayangel	62	100.0	35.5	3.2	21.0	22.6	17.7	33.3
Koror	6,188	100.0	23.7	14.9	40.4	15.7	5.3	30.3
Melekeok	118	100.0	30.5	7.6	28.8	18.6	14.4	34.4
Ngaraard	267	100.0	25.5	29.6	17.6	16.5	10.9	19.5
Ngardmau	93	100.0	33.3	9.7	33.3	12.9	10.8	30.5
Ngaremlengui	139	100.0	34.5	9.4	28.8	18.7	8.6	29.3
Ngatpang	114	100.0	36.0	23.7	22.8	10.5	7.0	19.4
Ngchesar	131	100.0	32.1	10.7	21.4	20.6	15.3	33.8
Ngerchelung	145	100.0	32.4	7.6	22.1	17.9	20.0	33.1
Ngiwal	88	100.0	28.4	9.1	25.0	17.0	20.4	36.7
Peleliu	283	100.0	32.9	13.1	29.0	15.2	9.9	28.4
Sonsorol	21	100.0	37.9	9.5	23.7	23.7	4.7	30.6

Source: 2000 Census, OPS, Table 6

Table 4.6 presents data on change by age group from three recent decennial censuses of Palau. The general trend was for numbers of younger persons to decrease while older persons increased. This dual tendency is particularly apparent during the final four years of the 1980s among individuals aged less than 25 years and individuals aged 25 and 54 years. The same general trend occurred between 1990 and 2000, with some exceptions. The causes of these age-specific changes during the 1980s probably were a combination of migration patterns and decreased fertility (see Levin and Retherford, 1986), as discussed further in chapters 6 and 8.

Table 4.6. Change in Population by 5 Year Age Group: 1980-2000

Age Group	Population by Age Group		Change 1990-2000		Population 1980	Change 1980-1990	
	2000	1990	Number	Percent		Number	Percent
Total:	19,129	15,122	4,007	26.5	12,116	3,006	24.8
0 to 4 years	1,308	1,513	(205)	(13.5)	1,401	112	8.0
5 to 9 years	1,700	1,529	171	11.2	1,701	(172)	(10.1)
10 to 14 years	1,555	1,534	21	1.4	1,732	(198)	(11.4)
15 to 19 years	1,382	1,464	(82)	(5.6)	1,565	(101)	(6.5)
20 to 24 years	1,342	1,340	2	0.1	1,081	259	24.0
25 to 29 years	1,910	1,403	507	36.1	826	577	69.9
30 to 34 years	2,169	1,338	831	62.1	694	644	92.8
35 to 39 years	1,891	1,243	648	52.1	503	740	147.1
40 to 44 years	1,651	873	778	89.1	494	379	76.7
45 to 49 years	1,272	666	606	91.0	396	270	68.2
50 to 54 years	886	513	373	72.7	384	129	33.6
55 to 59 years	563	403	160	39.7	408	(5)	(1.2)
60 to 64 years	463	387	76	19.6	287	100	34.8
65 to 69 years	318	332	(14)	(4.2)	284	48	16.9
70 to 74 years	274	249	25	10.0	130	119	91.5
75 yrs and over	445	335	110	32.8	230	105	45.7

Sources: U.S. Bureau of the Census, 1983, Table 15; 1992c, Table 6; OPS, 2000 Census, Table 6

Male residents of Palau experienced changes by age during the 1980s and 1990s similar to those seen in the entire population (Table 4.7). Numbers of males in age groups younger than 20 years decreased during the period. The trends seen in the 1980s continued through the 1990s.

Table 4.7. Change in Population for Males by 5 Year Age Group: 1980-2000

Age Group	Population by Age Group		Change 1990-2000		Population	Change 1980-1990	
	2000	1990	Number	Percent	1980	Number	Percent
Males:	10,450	8,139	2,311	28.4	6,275	1,860	29.6
0 to 4 years	690	766	(76)	(9.9)	719	47	6.5
5 to 9 years	856	793	63	7.9	887	(94)	(10.6)
10 to 14 years	794	807	(13)	(1.6)	890	(83)	(9.3)
15 to 19 years	738	795	(57)	(7.2)	857	(62)	(7.2)
20 to 24 years	731	738	(7)	(0.9)	626	112	17.9
25 to 29 years	1,106	799	307	38.4	415	384	92.5
30 to 34 years	1,219	768	451	58.7	379	389	102.6
35 to 39 years	1,104	720	384	53.3	243	477	196.3
40 to 44 years	976	514	462	89.9	251	263	104.8
45 to 49 years	750	375	375	100.0	202	173	85.6
50 to 54 years	510	279	231	82.8	189	90	47.6
55 to 59 years	306	208	98	47.1	191	17	8.9
60 to 64 years	230	181	49	27.1	150	31	20.7
65 to 69 years	161	154	7	4.5	122	32	26.2
70 to 74 years	115	117	(2)	(1.7)	47	70	148.9
75 yrs and over	164	125	39	31.2	111	14	12.6

Sources: U.S. Census Bureau, 1983, Table 15; 1992c, Table 6; 2000 Census, Table 6

Although the number of females residing in Palau did not increase as much as the ages of males during the 1980s, an overall increase still occurred (Table 4.8). Females in most of the youngest five-year age groups considered in this study tended to decrease during both decades, but by amounts much less than those witnessed among males. Similarly, although the number of females in older age groups increased during the decade, this trend varied, with some remaining constant or even losing population. Again, the general upward trend for females continued throughout the 1990s.

Table 4.8. Change in Population for Females by 5 Year Age Group: 1980-2000

Age Group	Population by Age Group		Change 1990-2000		Population	Change 1980-1990	
	2000	1990	Number	Percent	1980	Number	Percent
Females:	8,679	6,983	1,696	24.3	5,837	1,146	19.6
0 to 4 years	618	747	(129)	(17.3)	682	65	9.5
5 to 9 years	844	736	108	14.7	814	(78)	(9.6)
10 to 14 years	761	727	34	4.7	842	(115)	(13.7)
15 to 19 years	644	669	(25)	(3.7)	708	(39)	(5.5)
20 to 24 years	611	602	9	1.5	455	147	32.3
25 to 29 years	804	604	200	33.1	411	193	47.0
30 to 34 years	950	570	380	66.7	315	255	81.0
35 to 39 years	787	523	264	50.5	260	263	101.2
40 to 44 years	675	359	316	88.0	243	116	47.7
45 to 49 years	522	291	231	79.4	194	97	50.0
50 to 54 years	376	234	142	60.7	195	39	20.0
55 to 59 years	257	195	62	31.8	217	(22)	(10.1)
60 to 64 years	233	206	27	13.1	137	69	50.4
65 to 69 years	157	178	(21)	(11.8)	162	16	9.9
70 to 74 years	159	132	27	20.5	83	49	59.0
75 yrs and over	281	210	71	33.8	119	91	76.5

Sources: U.S. Census Bureau, 1983, Table 15; 1992c, Table 6; 2000 Census, Table 6

Changes in the median age of Palau over the past decades varied both geographically and by sex (Table 4.9). The population of the republic aged markedly during the 1980s and 1990s, more among males than females. In general, persons in rural states were younger than those in urban states. This aging comes from the important role migration patterns play in shaping Palau's population distribution. Many working-age persons migrate to urban areas both from rural areas of Palau and from other countries. Peleliu State provides an interesting exception to this general trend. Peleliu shifted from a relatively young population in 1980 to a relatively old population by 1990, probably because of migration for schooling as well as Peleliu's position as neither urban nor rural (thus enabling it to retain both persons of working age and provide a comfortable setting for older, more traditional individuals). After 1990, however, Peleliu's population remained relatively younger than the other States.

Table 4.9. Median Age for Selected States by Sex: 1980-2000

Sex	Total	Koror	Airai	Peleliu	Other
Total Population:					
2000	30.8	30.7	32.6	28.7	30.3
1995	28.1	28.0	30.3	28.5	26.7
1990	25.6	26.0	25.4	27.0	23.1
1986	22.0	22.3	23.1	23.0	19.9
1980	18.8	19.3	18.3	17.9	16.8
Males:					
2000	31.3	30.7	32.6	28.7	30.3
1995	28.7	28.5	31.9	27.7	29.3
1990	26.1	26.7	25.7	27.5	22.7
1986	21.8	21.9	23.8	21.2	20.7
1980	18.7	19.2	18.6	18.6	16.6
Females:					
2000	30.3	30.3	30.8	28.4	29.9
1995	27.3	27.5	27.0	29.3	25.2
1990	25.1	25.2	25.2	26.4	23.8
1986	22.2	22.8	22.4	25.0	19.2
1980	18.9	19.5	17.9	16.8	17.0

Source: U.S. Census Bureau, 1983, Table 16; 1992c, Table 6; OPS, 1987, Table A1, 1995 & 2000, OPS, Table 6

In 1990 and 2000, the median age of males was greater than the median age of females in Koror, Airai, and Peleliu states, representing a change over the preceding years. In 1986, the median age of females was greater than the median age of males in Palau, and in Koror and Peleliu states. The median age of females exceeded that of males in Palau and the states in Table 4.9 in 1980 as well. The change in Koror State during the 1980s from a female older population to a male older population probably was due to selective migration by age and sex, including the immigration of working age males. One may offer a similar explanation for the change documented in the other, mostly rural states — most notably as increased migration to Koror State by college and other working age males. The change seen in Peleliu State is not so easily explained, unless young females from that state are more likely to leave for schooling and jobs than young males.

### Age and Sex Ratios

Ratios permit comparisons of phenomena over time and between countries and areas. Analyses of age and sex data often require examining large data sets. We can better discuss the complexities of changing age and sex compositions by using ratios. Here we employ two measures — the *sex ratio* and the *dependency ratio*. The former measures the number of males per 100 females, the latter the number of young (less than 15 years of age) and old (65 years of age or older) persons per 100 individuals of working age (aged 15-64 years).<sup>3</sup>

<sup>3</sup> Here we use "Males per 100 females" and "Sex ratio" interchangeably.



*Sex ratio.* In most populations, more males than females are born. However, because male mortality traditionally is higher than female mortality most populations contain more females than males, particularly among older age groups. These generalities tend to hold for Palau, although the situation has changed markedly over the past decades (Table 4.10). For all census years examined, Palau contained more males than females — the ratio increasing over time, except for a slight dip in 1995, partly due to the selective immigration of working age males from outside. Evidence for migration appears in the 1980 data, with excesses of males over females aged 15 through 34 years. This trend increased over time; by 2000, the age groups in which males substantially exceeded females expanded to encompass individuals between 15 and 59 years of age, with ratios among the five-year age groups between 25 and 44 years particularly high.

Table 4.10. Males per 100 Females by Age: 1980-2000

Age Group	Males Per 100 Females				
	2000	1995	1990	1986	1980
Total:	120.4	113.7	116.6	114.3	107.6
0 to 4 years	111.7	108.3	102.5	111.5	105.4
5 to 9 years	101.4	105.7	107.7	112.9	109.0
10 to 14 years	104.3	109.5	111.0	109.3	105.7
15 to 19 years	114.6	114.4	118.8	125.3	121.0
20 to 24 years	119.6	102.7	122.6	137.8	137.6
25 to 29 years	137.6	114.4	132.3	119.3	101.0
30 to 34 years	128.3	141.2	134.7	114.6	120.3
35 to 39 years	140.3	141.3	137.7	127.7	93.5
40 to 44 years	144.6	136.1	143.2	104.8	103.3
45 to 49 years	143.7	141.8	128.9	130.8	104.1
50 to 54 years	135.6	120.1	119.2	102.1	96.9
55 to 59 years	119.1	104.2	106.7	91.2	88.0
60 to 64 years	98.7	93.0	87.9	99.4	109.5
65 to 69 years	102.5	79.2	86.5	100.7	75.3
70 to 74 years	72.3	78.2	88.6	73.8	56.6
75 yrs and over	58.4	14.7	59.5	70.1	93.3

Source: U.S. Census Bureau, 1983, Table 16; 1992c, Table 6; OPS, 1987, Table A1, 1995 &amp; 2000, OPS, Table 6

Sex ratios varied among states in Palau (Table 4.11). As with most of the demographic measures, the small populations of certain states give sex ratios that are not particularly informative. But for most states, sex ratios provide useful insights. With the exception of Ngerchelong, Hatohobei and Sonsorol states, the sex ratio of each state exceeded 100. For Palau, each age group contained more males than females except the group of persons 65 years and older. The geographic variability present in most demographic measures emerged in sex ratios as well. As one might expect, the relatively large population of Koror State resulted in generally close agreement between the age-specific sex ratios here and the whole republic. Koror State had sex ratios in excess of 116 for the three working age groups in Table 4.11, although the values for two of these groups (15-24 and 25-44 years) were lower than those for the entire republic. The sex ratios for Airai, the second most populated state, were much higher, at 163 males for every 100 females.

Table 4.11. Males Per 100 Females by Age and State: 2000

State	Total	Males Per 100 Females				
		0 to 14	15 to 24	25 to 44	45 to 64	65 years
Total:	120.4	105.3	117.1	137.0	129.4	73.7
Aimeliik	109.2	137.8	75.0	117.5	100.0	61.5
Airai	162.7	107.0	149.5	222.0	172.7	86.0
Angaur	116.1	121.4	100.0	144.0	123.1	57.1
Hatohobei	91.7	133.3	100.0	50.0	100.0	-
Kayangel	122.6	113.6	350.0	176.9	100.0	63.6
Koror	115.0	104.0	116.3	121.4	126.8	76.9
Melekeok	102.5	97.2	188.9	117.6	81.8	64.7
Ngaraard	139.0	100.0	46.8	404.3	125.0	72.4
Ngardmau	137.6	129.0	166.7	164.5	141.7	50.0
Ngaremlengui	164.0	108.3	253.8	212.5	176.9	100.0
Ngatpang	145.6	92.7	148.1	215.4	216.7	75.0
Ngchesar	103.8	95.2	135.7	146.4	85.2	65.0
Ngerchelong	97.2	117.0	127.3	93.8	100.0	55.2
Ngiwal	119.3	124.0	175.0	163.6	93.3	55.6
Peleliu	101.8	100.0	86.5	108.5	123.3	75.0
Sonsorol	85.7	75.0	100.0	140.0	60.0	-

Source: OPS, 2000 Census, Table 6.

Sex ratios for rural states in Palau were both more variable and more difficult to explain. Males younger than 15 years were over-represented in several rural states — including those whose relatively large populations would prohibit widely fluctuating figures. The 15-24 year age group showed even more diversity, most overwhelming male but a few being more female. These age groups might show emigration for schooling and entry-level labor force participation, as well as children accompanying parents who moved for work or schooling. Finally, several rural states had more older males than females.

The *dependency ratio* in 2000 for Palau was 41 — meaning, generally, that Palau had only 41 young and old consumers for every 100 individuals of working age (Table 4.12). The dependency ratio decreased continuously throughout the 1980s and 1990s, as the proportion of working age individuals increased. The dependency ratios for both males and females also decreased over the decade, the change for males being stronger. The dependency ratios by sex are for illustrative purposes, since males do not provide exclusively for males nor do females provide exclusively for females.

Table 4.12. Dependency Ratio by Sex: 1980-2000

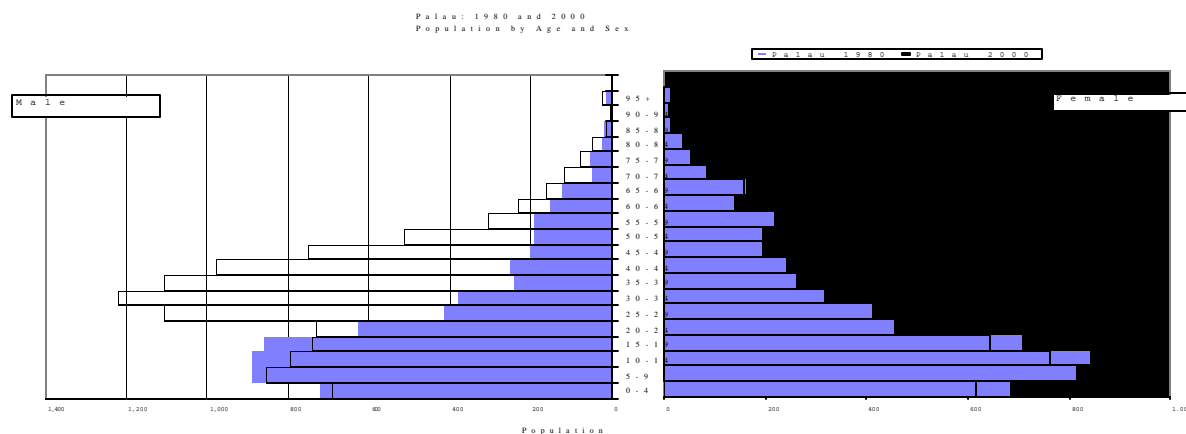
Total	Total	Koror	Airai	Peleliu	Other
2000					
Total	41.4	36.7	37.7	69.9	62.8
Male	36.2	33.3	28.9	64.1	51.9
Female	48.1	40.9	54.9	74.7	78.6
1995					
Total	51.0	45.1	53.6	73.7	75.9
Male	46.2	42.0	43.7	71.1	64.2
Female	56.9	48.7	69.4	76.8	90.9
1990					
Total	57.0	50.2	57.8	73.2	84.5
Male	51.4	44.5	51.9	63.5	80.7
Female	64.2	57.4	66.0	85.2	89.1
1986					
Total	67.6	59.5	59.5	113.7	96.0
Male	64.1	55.8	51.8	117.8	96.1
Female	71.8	64.1	69.8	109.5	95.8
1980					
Total	82.5	72.6	92.0	101.7	104.1
Male	79.2	70.6	83.4	89.7	100.1
Female	86.2	74.9	101.9	114.4	108.7

Sources: U.S. Census Bureau, 1983, Table 15; 1993c, Table 6; OPS, 1987, Table A1, 1995 & 2000 Census, Table 6.

Most parts of Palau experienced changes in dependency similar to those for all of Palau. Reductions in total, male, and female dependency ratios were particularly pronounced in Koror State, with the ratio for males falling to 36 in 2000. Decreases in dependency ratios in Airai State similarly were dramatic, providing the greatest relative changes over the 1980s and 1990s. Even the rural areas, subsumed under "other" in this table, experienced declines in dependency between 1980 and 2000.

#### Accuracy Analysis of Age and Sex Data

The pyramid showing the 1980 and 2000 populations by age and sex displays the effects of the incredible immigration of foreigners in recent years. The 1980 pyramid would be “regular” for a Pacific Islands population at the time, with recent, decreased mortality seen in the lower ages, and a continuing decrease with age for the older age groups. The 2000 population, however, shows the 25 to 40 year age groups as largest, for males and females, a pattern of more-than-modest net immigration.



Evaluating the accuracy of age and sex data collected in a census includes analysis by single years of age and multi-year age groups. For Palau, single years were used to determine whether the age reporting was affected by digit preference. In some populations, more people are reported than expected in ages ending on zero and five because of a greater tendency for people to use these digits — in effect rounding to the nearest five or 10 years. Whipple, Myers, Bachi, Carrier, and Ramachandran have developed indices for analyzing preference for certain digits (U.S. Bureau of the Census, 1971). We used the Census

Bureau's Population Analysis Spreadsheet (PAS) called SINGAGE to calculate Whipple's, Myer's, and Bachi's indices, all of which measure preference in digit reporting.

Whipple's index detects a preference for ages ending in zero, five, or both. If age reporting is consistent, this index should fluctuate slightly around one. The higher the value of the index, the higher the preference for digits zero and five. The Whipple Index for both sexes in 2000 was 1.03, indicating accurate reporting; according to this measure, females reported their ages more accurately than males (Table 4.13). Whipple's Index calculations for the series greater accuracy in age reporting in recent censuses. An explanation to the changes in index values during the 1980s is not obvious, although it is possible that some of the large number of immigrants to Palau during that decade did not know their ages precisely — as a result rounding their ages to five or 10.

Table 4.13. Whipple's Method of Digit Preference: 1980 to 2000

Census Year	Total	Male	Female
2000	1.03	1.06	1.00
1995	1.04	1.06	1.02
1990	1.10	1.07	1.15
1980	1.06	1.08	1.04

Sources: U.S. Bureau of the Census, 1983, Table 16; 1993b, Table 8.

Note: Whipple's method uses ages 23 to 62 only.

The Myers (1940) and Bachi (1951, 1953) indices are similar to one another; although the magnitude of the former is almost double that of the latter. Both indices measure the excess or deficit of persons reporting ages ending in any of the 10 digits, expressing these deviations as percentages. The larger the value of either index, the greater the preference for certain digits. Values close to zero show accurate age reporting in censuses. Both indices show that age one is most aberrant (in a negative direction), followed by age five (positive) and age nine (negative), the last two especially for females (Table 4.14 and 4.14a).

Table 4.14. Myers and Bachi Methods of Measuring Digit Preference: 2000

Terminal digit	Myers Method			Bachi Method		
	Total	Male	Female	Total	Male	Female
Index:	3.3	4.5	2.3	1.8	2.2	2.3
0	0.7	-0.4	0.2	0.8	1.1	0.4
1	-0.2	-0.3	-0.2	0.3	0.3	0.3
2	-0.3	0.4	0.0	0.5	0.2	0.9
3	-0.1	0.1	0.0	-0.4	-0.3	-0.4
4	-0.4	0.9	0.2	-0.3	-1.0	0.6
5	0.2	0.3	0.2	-0.3	-0.3	-0.3
6	0.1	0.6	0.3	-0.1	-0.2	0.0
7	0.6	-0.5	0.1	-0.3	0.3	-0.9
8	-0.2	-0.6	-0.4	-0.3	-0.2	-0.5
9	-0.6	-0.5	-0.5	-0.4	-0.5	-0.3

Source: Unpublished tabulations from the 2000 census.

Notes: The index for Myers method is the sum of the absolute values of the deviations; for the Bachi Method, the index is the sum of the positive deviations (one-half the sum of the absolute deviations).

Table 4.14a. Myers and Bachi Indices: 1990 to 2000

Terminal Digit	Myers Method			Bachi Method		
	Total	Male	Female	Total	Male	Female
2000	3.3	4.5	2.3	1.8	2.2	2.3
1995	2.3	3.7	1.5	2.3	3.1	1.6
1990	6.8	5.5	9.3	3.5	3.3	5.0

Source: Unpublished tabulations from the 1990, 1995 and 2000 census.

In evaluating the quality of age and sex data from the 2000 census, we also calculated United Nations age-sex ratio scores, sex ratio scores, and age-sex accuracy indices (United Nations, 1952). All of these measures are very low, indicating accurate age and sex reporting. United Nations scores are compared to a large group of nations — hence; these values are "very low" compared to this large group of countries.

Table 4.15 shows results of use of the Population Analysis Spreadsheet for age and sex analysis. As noted, Palau had about 120 males for every 100 females in 2000. Except for the oldest ages, more males than females were present at each 5 year age group. The age-sex accuracy index was 50, indicating good reporting, particularly considering the large amount of migration.

Table 4.15. Population, by Age and Sex, and United Nations Age-Sex Accuracy: 2000

5-Year Age Groups	Population		Age ratio		Age Ratio Deviation		Sex ratio (Males per 100 Females)
	Male	Female	Male	Female	Male	Female	
All ages	10,450	8,679	-	-	-	-	120.4
0 to 4 years	690	618	-	-	-	-	111.7
5 to 9 years	856	844	115.4	122.4	15.4	22.4	101.4
10 to 14 years	794	761	99.6	102.3	-0.4	2.3	104.3
15 to 19 years	738	644	96.8	93.9	-3.2	-6.1	114.6
20 to 24 years	731	611	79.3	84.4	-20.7	-15.6	119.6
25 to 29 years	1,106	804	113.4	103.0	13.4	3.0	137.6
30 to 34 years	1,219	950	110.3	119.4	10.3	19.4	128.3
35 to 39 years	1,104	787	100.6	96.9	0.6	-3.1	140.3
40 to 44 years	976	675	105.3	103.1	5.3	3.1	144.6
45 to 49 years	750	522	100.9	99.3	0.9	-0.7	143.7
50 to 54 years	510	376	96.6	96.5	-3.4	-3.5	135.6
55 to 59 years	306	257	82.7	84.4	-17.3	-15.6	119.1
60 to 64 years	230	233	98.5	112.6	-1.5	12.6	98.7
65 to 69 years	161	157	93.3	80.1	-6.7	-19.9	102.5
70 to 74 years	115	159	NA	NA	-	-	72.3
75 yrs and over	164	281	NA	NA	NA	NA	58.4
Scores	-	-	7.6	9.8	-	-	10.8
Age-sex accuracy index = 50.0 Corrected for population (sample) size of 19,129 = 28.1							

Source: U.S. Census Bureau, Population Analysis Spreadsheets

## Conclusions

The age and sex composition of Palau changed substantially between 1980 and 2000. Shifts in the age and sex structure of the Palau population have important implications for future planning, as well as for the future population structure of Palau.

Palau's population during the 1980s and 1990s aged, the median age surpassed 30 years in 2000, an increase of more than 50 percent in the previous 20 years. This increase almost certainly came from the combination of decreased fertility, continued low mortality, and selective migration. Lower fertility reduced births, the low mortality increased the number of older persons surviving, and the migration introduced more working age residents from other countries (primarily Asia). These trends were particularly marked in Koror State, the main destination for the immigrants as well as from rural states in Palau. Conversely, the populations of many of the rural states tended to be younger than all Palau.

As the population of Palau has become older, it has also continued to be skewed male, mainly because of selective migration. This trend started earlier in the century, although the increases seen during the 1980s and 1990s countered the growing numerical importance of females through the late 1960s. As with the aging of Palau's population, the relative importance of males was seen in the increased sex ratio, reaching more than 120 in 2000. The most obvious explanation for these changes is selective immigration, with male immigrants looking for jobs influencing both the sex ratio and the age structure. Internal differences in sex composition roughly paralleled differences in age composition, with the populations of rural states tending to be younger than those of urban states.

## CHAPTER 5. HOUSEHOLDS, FAMILIES, AND MARITAL STATUS

For many years, extended family households consisting of a householder, with a spouse, children, parents, grandparents, grandchildren, siblings, and other relatives were the norm in the Republic of Palau. By the 2000 Census, extended families had become somewhat less common, as fertility and family sizes decreased, more people became employed in the cash (rather than subsistence) economy, and increasing numbers of immigrants arrived with different family structure. Demographic changes and socioeconomic shifts affect changes in household and family structure.

Marriage patterns influence other socio-cultural patterns. As a society becomes less traditional through prolonged acculturation, marriage patterns change — frequently leading to later age at marriage. Later marriage leads to decreases in total fertility. A strong relationship exists between age at first marriage and the number of children a woman has, partly because earlier marriage gives more time for births, partly because younger women are more fertile than older women.

### **Definitions**

#### *HOUSEHOLD TYPE AND RELATIONSHIP*

A *Household* includes all the persons who occupy a housing unit. A housing unit is a house, apartment, mobile home, group of rooms, or single room that is occupied (or, if vacant, intended for occupancy) as a separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and who have direct access from the outside of the building or through a common hall. Occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements. The count of households or householders always equals the count of occupied housing units.

*Persons per household* is obtained by dividing the number of persons in households by the number of households (or householders). In cases where persons in households are cross-classified by ethnic origin or race, persons in the household are classified by the ethnic origin or race of the householder rather than the ethnic origin or race of each individual.

*Relationship to householder* data were derived from questionnaire item 3, asked of all persons.

- ? *Householder* — the person (or one of the persons) in whose name the home is owned, being bought, or rented and who is listed as person 1 on the census questionnaire. If there is no person like this in the household, any adult household member 15 years old and over can be designated as the householder. Households are classified by type according to the sex of the householder and the presence of relatives to the householder. The census distinguished two types of householders: a "family householder" and a "non-family householder." A family householder is a householder living with one or more persons related to the householder by birth, marriage, or adoption. The householder and all persons in the household related to him or her are family members. A non-family householder is a householder living alone or with non-relatives.
- ? *Spouse* — a person married to and living with a householder. This category includes persons in formal marriages, as well as persons in common-law marriages. The number of spouses is equal to the number of "married-couple families" or "married-couple households." The number of spouses, however, generally is less than half the number of married persons with spouse present, since more than one married couple can live in a household but only spouses of householders are specifically identified as spouse. The number of married persons with spouse present includes married-couple subfamilies and married-couple families.
- ? *Child* — sons or daughters by birth, stepchildren, or adopted children of the householder, regardless of the child's age or marital status. The category excludes sons-in-law, daughters-in-law, and foster children.
  - *Natural-Born or adopted son/daughter* — a son or daughter of the householder by birth, regardless of the age of the child. This category also includes sons or daughters of the householder by legal adoption, regardless of the age of the child. If a householder has legally adopted a stepson or stepdaughter, the child still is classified as a stepchild.

- *Stepson/stepdaughter* — a son or daughter of the householder through marriage but not by birth, regardless of the age of the child. If the householder has legally adopted a stepson or stepdaughter, the child is still classified as a stepchild.
- *Own child* — a never married child under 18 years who is a son or daughter by birth, a stepchild, or an adopted child of the householder. In certain tabulations, own child are further classified as living with two parents or with one parent only. Own children of the householder living with two parents by definition are found only in married-couple families. In a subfamily, an own child is a never-married child under 18 years of age who is a son, daughter, stepchild, or an adopted child of a mother in a mother-child subfamily, or either spouse in a married-couple subfamily.
- *Related children* — own children and all other persons under 18 years of age in the household, regardless of marital status, who are related to the householder (except the spouse of the householder). Foster children are not included since they are not related to the householder.

#### *Other Relatives*

- ? *Grandchild* — the grandson or granddaughter of the householder.
- ? *Brother/sister* — the brother or sister of the householder, including stepbrothers, stepsisters, and brothers and sisters by adoption. Brothers-in-law and sisters-in-law are included in the "other relative" category on the questionnaire.
- ? *Parent* — the father or mother of the householder, including a stepparent or adoptive parent. Fathers-in-law and mothers-in-law are included in the "other relative" category on the questionnaire.
- ? *Other relatives* — anyone not listed in a reported category above who is related to the householder by birth, marriage, or adoption (brother-in-law, grandparent, nephew, aunt, mother-in-law, daughter-in-law, cousin, and so forth).
- ? *Non-relatives* — any household member, including foster children, not related to the householder by birth, marriage, or adoption. The following categories may be presented in more detailed tabulations: roomer, boarder, or foster child; housemate or roommate; unmarried partner; and other non-relatives.

When relationship was not reported for an individual, it was imputed according to the responses for age, sex, and marital status for that person while maintaining consistency with responses for other individuals in the household.

*Unrelated individuals* can comprise a householder living alone or with non-relatives only, a household member who is not related to the householder, or a person living in group quarters who is not an inmate of an institution.

*Family type* classifies each family — a householder and one or more other persons living in the same household who are related to the householder by birth, marriage, or adoption. All persons in a household who are related to the householder comprise members of his or her family. A household can contain only one family for purposes of census tabulations. Not all households contain families since a household may comprise a group of unrelated persons or one person living alone. Families are classified by type as either a "married-couple family" or "other family" according to the sex of the householder and the presence of relatives. The data on family type are based on answers to questions on sex and relationship.

- ? *Married-couple family* — a family in which the householder and his or her spouse are enumerated as members of the same household.
- ? *Other family*:
  - Male householder, no wife present — a family with a male householder and no spouse of householder present.
  - Female householder, no husband present — a family with a female householder and no spouse of householder present.

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*Persons per family* is a measure obtained by dividing the number of persons in families by the total number of families (or family householders). In cases where the measure "persons in family" or "persons per family" are cross-tabulated by ethnic origin or race, the ethnic origin or race refers to the householder rather than the ethnic origin or race of each individual.

*Subfamily* is a married couple (husband and wife enumerated as members of the same household) with or without never-married children under 18 years old, or one parent with one or more never-married children under 18 years old, living in a household and related to, but not including, either the householder or the householder's spouse. The number of subfamilies is not included in the count of families, since subfamily members are counted as part of the householder's family. Subfamilies were defined during processing of sample data. In selected tabulations, subfamilies were further classified by type: married-couple subfamilies, with or without own children; mother-child subfamilies; and father-child subfamilies. Lone parents include people maintaining either one-parent families or one-parent subfamilies. Married couples include husbands and wives in both married-couple families and married-couple subfamilies.

*Unmarried-couple household* is a household composed of two unrelated adults of the opposite sex (one of whom is the householder) who share a housing unit with or without the presence of children under 15 years old.

*Foster children* are non-relatives of the householder and are included in the category "roomer, boarder, or foster child" on the questionnaire. Foster children are identified as persons under 18 years old and living in households that have no non-relatives 18 years old and over (who might be parents of the non-relatives under 18 years old).

*Stepfamily* is a "married-couple family" with at least one stepchild of the householder present, where the householder is the husband.

Limitations. There are no systematic errors apparent in the data collected by the 2000 census of Palau on household type and relationship.

Comparability. The 2000 definition of a household is the same as that used in 1980, 1990, and 1995. The 1980 relationship category "son/daughter" was replaced by two categories, "natural-born or adopted son/daughter" and "stepson/stepdaughter." "Grandchild" was added as a separate category. The 1980 non-relative categories: "roomer, boarder" and "roommate" were replaced by the categories "roomer, boarder, or foster child," "housemate, roommate," and "unmarried partner."

## **GROUP QUARTERS**

The Republic of Palau OPS, like the Census Bureau, classifies all persons not living in households as living in group-quarters. The OPS recognizes two general categories of persons in group-quarters: (1) institutionalized persons and (2) other persons in group quarters (also referred to as "non-institutional group quarters"). Group quarters do not yet play a particularly important role in Palau.

Institutionalized persons include persons under formally authorized, supervised care or custody in institutions at the time of enumeration. These persons are classified as patients or inmates of an institution regardless of the availability of nursing or medical care, length of stay, or number of persons in the institution. Generally, institutionalized persons are restricted to the institution buildings or grounds (or must have passes or escorts to leave) and thus have limited interaction with the surrounding community. Also, institutionalized persons generally are under the care of trained staff having responsibility for their safekeeping and supervision. Details on various types of institutions appear in the definitions section of the 2000 Republic of Palau Census of Population and Housing cross-tabulations.

Other persons in group quarters include those who live in group quarters other than institutions. Persons who live in rooming houses, group homes (homes for the mentally ill, mentally retarded, physically handicapped, abusers of drug or alcohol, and other group homes), and religious group quarters are classified as other persons in group quarters when there are 10 or more unrelated persons living in the unit; otherwise, these living quarters are classified as housing units. Persons living in college dormitories, agricultural workers' dormitories, other workers' dormitories, and emergency shelters for homeless persons are classified as living in group quarters regardless of the number of inhabitants, as are crews of maritime vessels and staff residents of institutions. Finally, non-institutional group quarters include individuals living in other non-household living situations (e.g., YMCAs, youth hostels) and in living quarters for victims of natural disasters. Details on various types of non-institutional group quarters appear in the definitions section of the 2000 Republic of Palau Census of Population and Housing cross-tabulations.

**Limitations.** Two types of errors can occur in the classification of types of group quarters: misclassification or no classification. During the 2000 Special Place operations, like those in 1990 and 1995, enumerators determined the type of group quarters associated with each special place in their assignment. Republic of Palau OPS personnel subsequently edited unacceptable codes for group quarters.

**Comparability.** Because few persons in Palau live in institutional group quarters, the definitions have remained relatively consistent over the last few censuses. The changes that did occur should not significantly affect the comparability of data with earlier censuses because of the relatively small number of persons involved.

From the 1980 Census onward, 10 or more unrelated persons living together were classified as living in non-institutional group quarters. The 1990, 1995 and 2000 censuses classified workers' dormitories as group quarters regardless of the number of persons sharing the dorm. In 1980, 10 or more unrelated persons had to share the dorm for it to be classified as group quarters.

In 1990 census data products, the phrase "inmates of institutions" was changed to "institutionalized persons," and the Republic of Palau continued this phrasing in later censuses. Also, persons living in non-institutional group quarters were referred to as "other persons in group-quarters," and the phrase "staff residents" was used for staff living in institutions.

Although the 1990, 1995, and 2000 added institutional categories and non-institutional group quarters categories compared with the 1980 census, most of these categories were never used.

#### **MARITAL STATUS**

The 2000 census collected information on marital status with questionnaire item 6, asked of all persons. The marital status classification referred to the status at the time of enumeration. The Republic of Palau Office of Planning and Statistics tabulated data on marital status only for persons aged 15 years and older. All persons were asked whether they were "now married," "widowed," "divorced," "separated," or "never married." Couples who lived together (unmarried persons, persons in common-law marriages) were allowed to report the marital status they considered the most appropriate.

- ? Never married — includes all persons who never have been married, including persons whose only marriages were annulled.
- ? Ever married — includes persons married at the time of enumeration (including those separated), widowed, or divorced.
- ? Now married, except separated — includes persons whose current marriage has not ended through widowhood, divorce, or separation (regardless of previous marital history). The category also may include couples who live together or persons in common-law marriages, if they consider this category the most appropriate. In certain tabulations, currently married persons are further classified as "spouse present" or "spouse absent."
- ? Consensually married — includes couples who live together or persons in common-law marriages, with or without a legal document, if they consider this category the most appropriate.
- ? Separated — includes persons legally separated or otherwise absent from their spouse because of marital discord. Included are persons who have been deserted or who have parted because they no longer want to live together but who have not obtained a divorce.
- ? Widowed — includes widows and widowers who have not remarried.
- ? Divorced — includes persons who are legally divorced and who have not remarried.
- ? Now married — includes all persons whose current marriage has not ended by widowhood or divorce. This category includes persons defined above as "separated."
- Spouse present — includes married persons whose wife or husband was enumerated as a member of the same household, including those whose spouse may temporarily have been absent for travel or hospitalization.



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- Spouse absent — includes married persons whose wife or husband was not enumerated as a member of the same household. This category also includes all married persons living in group-quarters.
  - Separated — defined above.
- ? Spouse absent, other — includes married persons whose wife or husband was not enumerated as a member of the same household, excluding separated persons. Included is any individual whose spouse was employed and living away from home or in an institution or absent in the Armed Forces.

When a person did not report marital status, the OPS imputed this information according to the relationship to the householder and sex and age of the person.

**Limitations.** There are no obvious limitations in the 2000 census data on marital status.

**Comparability.** The 2000 marital status definitions were about the same as those used in 1990 and 1995, but the 1980 Census used the term “single” instead of “never married.” Also, the category “consensually married” was dropped in the 1990 census, and was included in 1995 or 2000.

### ***Analysis of Data on Households, Families, and Marital Status***

#### ***Households and Families***

Persons in households decreased from 97.5 percent to 81.1 percent of the total Palau population between 1980 and 2000 (Table 5.1). The decrease was small between 1980 and 1990, but after that, the massive immigration of foreign workers greatly influenced the percentage in households and in group-quarters. The absolute number of persons living in households increased by only about 1,000 persons during the decade of the 1990s, but the number living in group quarters increased more than 5 fold during the decade, from about 700 people (including those living in the Palau Community College dormitories) to about 3,600 people.

Table 5.1. Household Characteristics: 1970 to 2000

Characteristics	2000	1995	1990	1980	1970
Total persons:	19,129	17,225	15,122	12,116	11,210
In households	15,520	14,439	14,440	11,813	10,769
Percent	81.1	83.8	95.5	97.5	96.1
In group quarters	3,609	2,786	682	303	441
Percent	100.0	100.0	100.0	100.0	100.0
Inmate of institution	1.8	3.8	9.8	-	4.8
Other	98.2	96.2	90.2	100.0	95.2
Persons per household	4.6	4.9	5.0	5.8	6.2
Persons per family	5.0	5.1	5.3	6.1	NA

Sources: U.S. Bureau of the Census, 1972, Table 5; 1983, Table 15; 1992c, Table 7, 1995 and 2000, Table 7.

The number of persons per household declined substantially between 1970 and 2000, with most of the decline occurring during the first 20 years. More than 6 persons were living in each household, on average, in 1970, and this declined by an average of one person, mostly during the decade of the 1980s. The greatest reduction in persons per household occurred during the 1980s. The number of persons per family also decreased during the 1980s, by about the same amount as the decline in persons per household. Data on the number of persons per family are unavailable for 1970.

The composition of households in Palau also changed between 1970 and 2000 in terms of relationship to the householder (Table 5.2). In 2000, more than 20 percent of the total household members were householders, about the same as in 1990 and 1995, but an increase of nearly 3 percentage points during the 1980s. The increase in the 1980s continued a trend found between 1970 and 1980 and is consistent with the decreasing family and household size noted above for that period. The tendency for family size to decrease as fertility decreases emerges in the declining percentage of children. The percentage of other relatives and non-relatives in Palau households both increased substantially between 1970 and 2000, again, with most of the increase coming before 1990. The increases in these two categories over the 1980s were partly due to changing migration patterns. Growth in the percentage of "other relatives" probably reflects the increased presence of Palauan migrants residing in the home of a relative. Growth in the percentage of non-relatives partly involves immigrants from other countries residing with Palauans or with persons from their own country.

Table 5.2. Relationship to Householder: 1970 to 2000

Characteristics	2000	1995	1990	1980	1970
Total persons:	19,129	17,225	15,122	12,116	11,210
In households	15,520	14,439	14,440	11,813	10,769
Percent	100.0	100.0	100.0	100.0	100.0
Householder	21.6	20.6	20.0	17.3	16.3
Spouse	13.6	13.5	12.8	12.1	11.5
Child	33.2	34.2	36.6	49.0	57.9
Other relative	25.2	26.7	24.1	20.7	13.0
Non-relative	6.5	5.0	6.5	0.9	1.3

Sources: U.S. Bureau of the Census, 1972, Table 5; 1983, Table 15; 1992c, Table 7, 1995 and 2000, table 7.

Koror and Airai states, by virtue of their population sizes, once again greatly influenced the distribution of relationship by state (Table 5.3). Ngatpang and Aimeliik had the largest households on average; Hatohobei had by far the smallest household size.

Table 5.3. Household Characteristics by State in Percentages: 2000

State	Total	Total	Householder	Relatives				Persons per:	
				Spouse	Child	Other	Non-family	Household	Family
Total:	15,520	100.0	21.6	13.6	33.2	25.2	6.5	4.63	5.03
Aimeliik	242	100.0	20.7	11.2	27.3	37.6	3.3	4.84	5.40
Airai	1,498	100.0	22.0	15.8	35.8	22.1	4.3	4.54	4.82
Angaur	188	100.0	25.0	9.0	23.4	37.2	5.3	4.00	4.65
Hatohobei	23	100.0	34.8	13.0	34.8	17.4	-	2.88	3.50
Kayangel	138	100.0	26.8	15.2	29.0	28.3	0.7	3.73	4.26
Koror	10,645	100.0	20.8	13.3	33.5	24.5	7.9	4.80	5.18
Melekeok	239	100.0	25.1	16.3	31.0	21.3	6.3	3.98	4.65
Ngaraard	473	100.0	23.0	13.7	23.9	35.3	4.0	4.34	4.89
Ngardmau	210	100.0	21.9	13.8	36.2	24.3	3.8	4.57	4.81
Ngaremlengui	310	100.0	21.9	13.5	36.8	26.1	1.6	4.56	4.90
Ngatpang	215	100.0	20.5	13.0	28.4	37.2	0.9	4.89	5.59
Ngchesar	263	100.0	27.4	15.2	36.1	20.2	1.1	3.65	4.11
Ngerchelong	280	100.0	25.0	17.1	30.0	27.5	-	4.00	4.44
Ngiwal	189	100.0	22.8	16.9	34.9	22.2	3.2	4.40	4.54
Peleliu	568	100.0	23.8	12.5	34.3	26.5	2.5	4.21	4.66
Sonsorol	39	100.0	30.8	15.4	30.8	23.1	-	3.25	4.38

Source: OPS, Census, 2000, Table 7.

Differences between states in Palau also existed in household composition. The percentage of each household represented by the householder varied little geographically. However, the percentages of other household members differed considerably between states — the data once again dominated by Koror and Airai states. The percentages of household residents who were related to the householder (spouses, children, or other relatives) tended to be greater in most rural states than in the urbanized state of Koror. In contrast, Koror State had households with a larger percentage of non-relatives — probably a consequence of the large foreign immigrant populations residing in this jurisdiction.

### Marital Status

Although information on marital status rarely is used for planning or policy use, it often is of interest to the general public. Data on marital status also are important in connection with fertility. When females delay marriage — for schooling, to enter the work force, or for some other reason — they decrease both their period of exposure to fertility and their total fertility. Reduced fertility, of course, has important direct implications for population structure, and hence important indirect implications for planning and policy issues.

Married males in Palau approached 53 percent of all adult males in 2000, about the same as in 1990, but less than in 1995 (Table 5.4). The proportion of married males over time shows no particular pattern, so may be influenced by the marital status of the particular immigrants coming to Palau over time.

Table 5.4. Marital Status for Males Aged 15 Years and Older: 1970, 1973, 1980, 1990, 1995 &amp; 2000

Marital Status	2000	1995	1990	1980	1973	1970
Males, 15 yrs. & over:	8,110	6,702	5,773	3,783	3,340	3,210
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Single	42.8	37.3	41.8	47.5	45.3	44.6
Married	52.8	57.4	52.8	47.7	50.2	50.6
Separated or divorced	3.2	3.8	4.0	3.1	2.3	3.3
Widowed	1.2	1.5	1.4	1.6	2.1	1.5

Sources: USBC, 1972, Table 6; 1983, Table 15; 1992c, Table 7; Office of Census Coordinator, TTPI, 1975, 1995 & 2000, table 6

Notes: Figures for 1970 only for persons age 14 years & over; figures for 1973 consider only TTPI-born persons

The percentage of females in Palau aged 15 years or more and married also increased between 1980 and 1990, then remained relatively constant over the next two censuses (Table 5.5). The percentage of never married females decreased in the 1970s, but then remained relatively constant over the succeeding decades.

Table 5.5. Marital Status for Females Aged 15 Years and Older: 1970, 1973, 1980, 1990, 1995 &amp; 2000

Marital Status	2000	1995	1990	1980	1973	1970
Females, 15 yrs. & over:	6,456	5,683	4,773	3,499	3,195	3,155
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Single	33.6	31.1	32.4	34.0	33.1	39.3
Married	52.6	53.4	52.6	51.5	54.3	48.1
Separated or divorced	5.5	6.4	5.4	6.1	5.0	7.4
Widowed	8.3	9.1	9.5	8.4	7.5	5.1

Sources: USBC, 1972, Table 6; 1983, Table 15; 1992c, Table 7; Office of Census Coordinator, TTPI, 1975, 1995 & 2000, table 6

Notes: Figures for 1970 only for persons age 14 years & over; figures for 1973 consider only TTPI-born persons

The proportion of females in Palau separated or divorced from their spouses exceeded 5 percent in 2000, again about the same as 1990 and 1995. The percentage of widows in Palau greatly exceeded the percentage of widowed males for all six census years examined in tables 5.4 and 5.5, a consequence of females tending to live longer than males. Data in these two tables also show a substantial increase in the percentage of widowed females over the period of the 1970s and 1980s, while the proportion of widowed males remained relatively constant.

About half the males in the most populated states in Palau, Koror and Airai, were married (Table 5.6). Males in the more rural states tended to be more likely to be married. Rural states were more likely than urban states to contain widowed males in 2000.

Table 5.6. Marital Status for Males by State in Percentage: 2000

State	Total	Percent	Never Married	Now Married	Separated	Widowed	Divorced
Male:	8,110	100.0	42.8	52.8	1.3	1.2	1.9
Aimeliik	91	100.0	38.5	53.8	4.4	2.2	1.1
Airai	1,060	100.0	45.2	50.3	2.4	0.8	1.4
Angaur	67	100.0	43.3	53.7	1.5	1.5	-
Hatohobei	7	100.0	42.9	42.9	14.3	-	-
Kayangel	51	100.0	39.2	45.1	2.0	3.9	9.8
Koror	5,590	100.0	44.8	51.3	1.1	1.2	1.6
Melekeok	86	100.0	27.9	65.1	2.3	1.2	3.5
Ngaraard	303	100.0	16.2	79.2	1.3	1.3	2.0
Ngardmau	88	100.0	38.6	54.5	1.1	-	5.7
Ngaremlengui	176	100.0	33.0	61.4	-	2.3	3.4
Ngatpang	128	100.0	64.8	33.6	-	0.8	0.8
Ngchesar	96	100.0	30.2	53.1	2.1	2.1	12.5
Ngerchelong	86	100.0	27.9	66.3	1.2	1.2	3.5
Ngiwal	74	100.0	33.8	62.2	-	1.4	2.7
Peleliu	195	100.0	37.4	57.9	0.5	1.0	3.1
Sonsorol	12	100.0	33.3	66.7	-	-	-

Source: OPS, 2000 Census, Table 6.

Considerable geographic variability also existed in the marital status of females among the states in Palau in 2000 (Table 5.7). About half the adult females in Koror were married. This percentage of married women in Koror State was less than that found in the republic as a whole — possibly due to migration patterns, possibly to more Westernized urban females to marry later than females living elsewhere. Problems with small numbers limit many of the insights on female marriage patterns for individual states.

Table 5.7. Marital Status for Females by State in Percentage: 2000

State	Total	Percent	Never Married	Now Married	Separated	Widowed	Divorced
Female:	6,456	100.0	33.6	52.6	2.3	8.3	3.2
Aimeliik	93	100.0	32.3	50.5	3.2	10.8	3.2
Airai	574	100.0	25.4	58.9	4.2	9.2	2.3
Angaur	59	100.0	20.3	47.5	3.4	20.3	8.5
Hatothobei	9	100.0	22.2	55.6	-	22.2	-
Kayangel	40	100.0	15.0	60.0	-	17.5	7.5
Koror	4,721	100.0	36.7	50.9	2.3	7.1	3.0
Melekeok	82	100.0	11.0	67.1	2.4	11.0	8.5
Ngaraard	199	100.0	40.2	43.2	1.5	12.1	3.0
Ngardmau	62	100.0	24.2	61.3	-	6.5	8.1
Ngaremlengui	91	100.0	13.2	73.6	-	6.6	6.6
Ngatpang	73	100.0	37.0	54.8	-	6.8	1.4
Ngchesar	89	100.0	14.6	56.2	2.2	23.6	3.4
Ngerchelong	98	100.0	18.4	60.2	1.0	14.3	6.1
Ngiwal	63	100.0	12.7	66.7	1.6	14.3	4.8
Peleliu	190	100.0	28.9	54.7	1.1	13.2	2.1
Sonsorol	13	100.0	23.1	53.8	-	15.4	7.7

Source: OPS, 2000 Census, Table 6.

Changing marriage patterns also emerge in the *singulate mean age at marriage* (Table 5.8), the average age at first marriage for a group of people (Hajnal, 1953). In 2000 the singulate mean of age at marriage for the population of Palau was 28.5 years, having increased steadily, by about 3 years, over the preceding 27 years. The singulate mean age at marriage increased for both males and females between 1973 and 2000, with the mean age of the former exceeding that of the latter in each of the three census years. Since most females in Palau still give birth within marriage, this increase in age at first marriage tends to increase the age when their first child is born — in the process decreasing total fertility.

Table 5.8. Singulate Mean Age at Marriage: 1973, 1980, 1990, 1995 and 2000

Sex	2000	1995	1990	1980	1973
Total:	28.5	27.8	27.7	26.9	25.5
Male	29.4	29.1	29.2	28.3	26.6
Female	27.5	26.2	27.2	25.1	24.8

Sources: Office of Census Coordinator, TTPI, 1975, Table 5; U.S. Bureau of the Census, 1983, Table 19; 1992c, Table 35, 1995 &amp; 2000, table 58.

## Conclusions

Both household composition and marital status have changed in Palau over the past three decades. As immigration to the republic continued, dominated at least in the last decade by working age males, the percentage of the total population living in households has decreased. Barring any major change in migration patterns, this trend for the percentage in households to decline likely will continue. Within Palau, increased evidence exists of relatives moving from rural areas to urban areas for schooling and jobs — changing the composition of the households and families in both the urban and rural areas. The selective emigration of other Palauans for schooling and jobs on Guam, in the CNMI, in Hawaii, and on the U.S. mainland also affects the composition of the families and households remaining in Palau.

Marital patterns also have evolved in Palau over the last 30 years of the 20<sup>th</sup> century. In general, the percentage of married individuals increased between 1970 and 2000 among both males and females. The proportion of males separated or divorced increased substantially, as did the percentage of widowed females — the latter showing increased life expectancy more than change in marital behavior. Both males and females tended to be older when marrying for the first time in 2000. As with household composition and many other topics covered in this monograph, these changes in marital patterns are in part a consequence of recent migration flows, for example, the selective emigration of single individuals and the selective immigration of married males unaccompanied by their families.

## CHAPTER 6. FERTILITY

Fertility plays a vital role in giving shape to the age-sex structure and in producing the change in population size. The age distribution of a population is more sensitive to changes in fertility than to changes in mortality. The proportion of a population that is young or old depends mainly on the birth rate and not on the death rate, because as people live longer, the population structure, as a whole, becomes older rather than younger. A population has an increasing proportion of older people when the birth rates fall and not because the death rates fall. Any decline in mortality makes the age distribution younger as more children survive. The decline in mortality has very little effect at middle ages. On the other hand, any decline in fertility necessarily makes the population older since it reduces the proportion of children.

Measures of fertility quantify the birth performance over time. These measures can be used to compare the fertility levels of different populations during a particular time to show trends in fertility. Fertility measures include crude birth rate, gross fertility rate, general fertility rate, and rate of reproduction. Analysis of fertility trends in the Pacific is not abundant, and Palau is no exception. Although Palau has had regular censuses, and a great deal of information has been collected, no one looked systematically at fertility trends until the mid-1980s (Levin and Retherford 1986).

Like mortality, fertility began to decline in many developing countries in recent decades, and in Palau, the fertility decline in recent years has been striking. However, in spite of significant reductions, birth rates (the number of births per 1,000 population) in Palau remain higher than in the United States and other economically "developed" countries.

### **Definitions**

Census data on fertility (also referred to as *children ever born*, *children surviving*, and *information about last birth*) were derived from answers to questionnaire item 18a, which was asked of women 15 years old and over regardless of marital status. Stillbirths, stepchildren, and adopted children were excluded from the number of children ever born, children surviving, and last births. Ever-married women were instructed to include all children born to them before and during their most recent marriage, children no longer living, and children away from home, as well as children who were still living in the home. Never-married women were instructed to include all children born to them.

Children ever born is the count of all children ever born to a woman without regard to which husband was the father, or whether she was married at the time. Children surviving include all children still alive at the time of the census, whether or not they were living with her. Last births report information about the last birth, without regard to sex of the child, or its current – at the time of the census – vital status.

Data are most frequently presented in terms of the aggregate number of children ever born to women in the specified category and in terms of the rate per 1,000 women. In 1990, for purposes of calculating the aggregate, the open-ended response category '15 or more' children was assigned a value of 15; in 1995 and 2000 the open-ended category was for '20 or more' children and was assigned a value of 20.

Comparability. — The wording of the question on children ever born was the same in 1990, 1995, and 2000 as in 1980. In 1970, however, the terminal category was '12 or more' children ever born. In virtually all of the tables in 1970 census volume, data presented on children ever born to all women assumed that single women were childless, even though it was known that some of the women had had children. Therefore, rates and numbers of children ever born are not comparable between 1980 reports and previous census reports. Data presented for children ever born for the 1980, 1990, 1995 and 2000 reports are comparable as well as all tables for all census years which show data for ever-married women.

In the text of this report, sometimes we use "12 or more" and other times "15 or more", but since few women in Palau have more than 4 or 5 children, the results of tabulations are not affected by these different categorizations.

# Analysis of Fertility Data

## Fertility by Age

Table 6.1 shows the number of children ever born per 1,000 women in the 1980, 1990, 1995, and 2000 censuses. The number of children ever born per 1,000 women is a standard measure used in large countries to give several significant digits.

However, in small areas like Palau, an easier measure to use might be "children per woman". For example, in 2000, each 1,000 women 45 to 49 years old in Palau had 2,854 children. Since there were so few women in this age group in Palau, the last digits in the rate are not significant, and the number is not particularly easy to use. We can think of the rate as 2.9 children per woman, meaning that the average woman 45 to 49 years old in Palau in 2000 had had 2.9 children up to that age. In most cases, fertility is over by that age, so this value gives a pretty good estimate of the total fertility rate for these women — the total number of children these women would have during their reproductive periods.

Table 6.1. Children Ever Born by Age of Woman: 1980 to 2000

Age Group	Children Per 1000 Women			
	2000	1995	1990	1980
Total:	2,129	2,475	2,790	3,286
15 to 19	36	132	87	155
20 to 24	398	564	666	930
25 to 29	847	1,064	1,306	2,114
30 to 34	1,333	1,772	2,044	3,521
35 to 39	1,909	2,405	3,057	4,619
40 to 44	2,247	3,047	3,613	5,214
45 to 49	2,854	3,469	4,416	6,423
50 to 54	3,162	4,277	5,265	6,923
55 to 59	4,206	5,184	6,200	6,235
60 to 64	5,150	5,717	6,553	5,657
65 to 69	5,841	7,027	6,601	5,444
70 to 74	6,503	6,419	5,508	4,651
75 and over	5,690	5,252	4,895	4,437

Sources: U.S. Census Bureau, 1984, Table 19; 1992c, Table 35, 1995 & 2000 Census, Table 58.

So, the average woman 45 to 49 years old in Palau had 2.9 children. If the average woman has about 2.1 children, the population would remain steady, neither increasing nor decreasing (this value might be exactly 2 to replace the mother and the father, but some people die before reproducing, so we factor that in.) At the rate of 2.9 children per woman, the population would double over time. However, the number of children per woman is decreasing over time. For example, in the 1980 census, the average woman in this age group — 45 to 49 years old — had had 6.7 children (and in 1973 the value was 7.7). The value decreased to 4.4 children per woman in 1990 and 3.5 in 1995. Therefore, while the total fertility rate was almost 8 children per woman in the early 1970s, the value declined rapidly during the period to less than 3 children per woman in 2000.

Table 6.1 also shows the total children ever born for all women 15 years and over. These values decreased from 3.3 children per woman in 1980 to 2.8 in 1990, 2.5 in 1995, and then on down to 2.1 in 2000. Since much of the decline was in the youngest age groups, it is likely that this decline will continue.

We see that the values for ages below the 45 to 49 year group tend to be lower. For the younger ages, many women have not completed their fertility, so the values would be lower. Many of these women are controlling their fertility — delaying starting families, waiting longer before having more children, and having fewer children over all. Some of the older women forget children they had, especially those who died young. Others had fewer children because health care wasn't as good in the past, so fewer children were born.

In many societies around the world, children ever born in censuses is only collected from ever married women, but if we did that in Palau, we would lose information about the fertility of the population. While the average woman in 2000 had 2.1 children, the average ever-married woman had 3.0 children, an average of one child more (Table 6.2). What this means is that women who have never married have fewer children than those who do marry, a not unreasonable finding. Women are more likely to have children within marriage than before marriage since the period of time is longer. Table 6.2 shows that at every age the children per 1,000 ever married women in 2000 was greater than the number of children ever born for all women.

Table 6.2. Children Ever Born by Age and Marital Status of Woman: 2000

Age Group	All Women			Ever Married Women		
	Women	Children Ever Born	Children per 1,000 Women	Women	Children Ever Born	Children per 1,000 Women
Total:	6,456	13,742	2,129	4,287	12,842	2,996
15 to 19	644	23	36	19	7	368
20 to 24	611	243	398	158	126	797
25 to 29	804	681	847	428	521	1,217
30 to 34	950	1,266	1,333	662	1,104	1,668
35 to 39	787	1,502	1,909	613	1,344	2,192
40 to 44	675	1,517	2,247	577	1,438	2,492
45 to 49	522	1,490	2,854	449	1,416	3,154
50 to 54	376	1,189	3,162	348	1,169	3,359
55 to 59	257	1,081	4,206	239	1,043	4,364
60 to 64	233	1,200	5,150	212	1,148	5,415
65 to 69	157	917	5,841	153	916	5,987
70 to 74	159	1,034	6,503	158	1,032	6,532
75 and over	281	1,599	5,690	271	1,578	5,823

Source: OPS, 2000 Census, Table 58.

### Fertility by Birthplace of Mother

Mothers born on Palau tended to have higher fertility than immigrant women in every census between 1980 and 2000 (Table 6.3). The average mother aged 15 to 44 years in 2000 had 1.2 children, down from 2.1 in 1980, a decrease of almost one child. The decrease for Palau-born women was less, from 2.1 to 1.5 children per woman, while the decrease for immigrants, going from 1.5 children per woman in 1980 to .6 in 2000 left migrant women with lower fertility than the "native" born women. Some of these differences are explained by young, single immigrant women who have never married (particularly Filipino maids). Also, a general self-selection for migrants without children is likely.

Table 6.3. Children Born to Mothers Aged 15-44 by Birthplace: 1980 to 2000

Children Ever Born	Birthplace			Per 1000 Women		
	Total	Born on Palau	Not Born on Palau	Total	Born on Palau	Not Born on Palau
2000	5,232	4,097	1,135	1,170	1,515	642
1995	5,807	4,583	1,224	1,445	1,775	854
1990	5,306	4,485	824	1,596	1,716	1,156
1980	4,976	4,752	227	2,082	2,121	1,493

Source: U.S. Bureau of the Census, 1984, Table 24; 1992c, Table 46, 1995 and 2000 Census, T53.

In 2000, Palau-born women had higher fertility than women born outside Palau (Table 6.4). The average Palau-born woman had had almost 1.7 children compared to about 1.3 for all women in Palau. So, women born elsewhere had lower fertility. Palau-born females at each age had higher fertility than their immigrant counterparts.

Table 6.4. Children Ever Born to All Women and Palau-born Women by Age of Woman: 2000

Age Group	All Women			Palau-Born Women		
	Women	Children Ever Born	Children per 1,000 Women	Women	Children Ever Born	Children per 1,000 Women
Total:	4,993	6,722	1,346	3,082	5,367	1,741
15 to 19	644	23	36	515	20	39
20 to 24	611	243	398	370	203	549
25 to 29	804	681	847	412	512	1,243
30 to 34	950	1,266	1,333	494	943	1,909
35 to 39	787	1,502	1,909	475	1,212	2,552
40 to 44	675	1,517	2,247	438	1,207	2,756
45 to 49	522	1,490	2,854	378	1,270	3,360

Source: OPS, 2000 Census, Table 73.

Generally a curvilinear relationship existed between fertility and educational attainment, a phenomenon seen in many countries, and usually attributed to lack of knowledge about health and sanitation being related to lack of formal education. The total figures in Table 6.5 do not show this relationship, but may be obscured by small numbers (although women with completed fertility are present in even smaller numbers.) Nonetheless, while the average female in Palau aged 45 to 49 in 2000 had 2.9 children, women who had only finished elementary school had had 3.8 children, those with some high school education had 3.7 children, high school graduates had 2.5 children, those with some college 3.2, and those with college degrees, 2.2. This curve was seen for most of the age groups of women. In general, except for the lowest educational attainment, the higher the educational attainment the lower the fertility. If Palau wants to reduce its fertility, one good method is to encourage women to stay in school longer!

Table 6.5. Children Ever Born Per 1,000 Women by Age and Educational Attainment: 2000

Age Group	Educational Attainment					
	Total	Elementary	High School	High School Graduate	Some College (including AA/AS)	College Graduate
Total:	1,346	1,718	1,229	1,214	1,591	1,376
15 to 19	36	64	23	71	42	-
20 to 24	398	690	813	337	335	-
25 to 29	847	1,207	1,458	648	1,063	508
30 to 34	1,333	1,646	2,248	1,048	1,546	1,065
35 to 39	1,905	2,292	2,609	1,646	2,125	1,472
40 to 44	2,244	2,071	2,677	2,037	2,587	1,977
45 to 49	2,854	3,756	3,727	2,478	3,216	2,203

Source: OPS, 2000 Census, Table 101.

Finally, in this section, we show children ever born by labor force participation of women. It is important to remember that the labor force participation is "current" labor force participation. While women moved in and out of the labor force as they had their children, we only have information for the time of the 2000 census. In 2000, the average woman between 16 and 49 years old had an average of 1.4 children (note that this value is lower than that used above because women aged 50 and over are excluded from this table)(Table 6.6).

Table 6.6. Children Ever Born Per 1,000 Women by Age and Labor Force Participation: 2000

Age Group	Total	In Labor Force				Not in labor force
		Total	Total Employed	35+ hrs	Unemployed	
Total:	1,389	1,357	1,336	1,311	2,124	1,453
16 to 19 years	47	243	267	304	143	-
20 to 24	398	283	269	238	556	590
25 to 29	847	715	689	670	2,300	1,355
30 to 34	1,333	1,149	1,132	1,116	2,000	2,052
35 to 39	1,909	1,751	1,714	1,665	2,944	2,410
40 to 44	2,247	2,064	2,046	2,025	2,900	2,662
45 to 49	2,854	2,597	2,556	2,530	3,909	3,452

Source: OPS, 2000 Census, Table 111A

The average woman 45 to 49 years old in this table had had 2.9 children, with those in the labor force having fewer children than those "not in the labor" force. Women of this age in the labor force had had 2.6 children, while those who were not in the labor force had had 3.5 children, more than one additional child. Women who were employed and at work had about 2.6 children, while those who were unemployed had 3.9 children. Hence, Palau could reduce its fertility by making sure that jobs are available to its women.

### Direct Estimation of Fertility

Several indices can be calculated based on information on births and population for measuring fertility and reproduction. This information is not always free of errors as provided by vital registers, censuses, and surveys. One of the most frequently used indices is the crude birth rate, which is directly related to natality and population growth. Other indices, like the general fertility rate, age-specific fertility rates, and the total fertility rate, are used for measuring fertility levels and reproduction. Indices less frequently used or analyzed are the gross reproduction rate and the net reproduction rate; both of these are closely related to the concept of reproduction, or "replacement" of the population.

### Crude birth rate (CBR)

The crude birth rate, or the number of infants born in a year per 1,000 persons in a population, is calculated as the number of births occurring in a year divided by the population at midyear, times 1,000. Table 6.7 gives crude birth rates for recent years in Palau.



Table 6.7. Total Number of Live Births; Total Infant and Fetal Deaths; Crude Birth and Death Rates, and Infant and Fetal Mortality Rates, Palau: 1990 to 1999

Year Range	Population	Live Births	Crude Birth Rate	Deaths	Crude Death Rate	Infant Deaths	Infant Mortality Rate	Fetal Deaths
2000	19,200	278	14.5	125	6.5	6	21.6	34
1999	18,790	250	13.5	131	7.1	5	20.0	10
1998	18,380	280	15.2	125	6.7	3	10.7	9
1997	17,970	330	18.4	121	6.7	4	12.1	7
1996	17,560	355	20.2	144	8.2	7	19.7	44
1995	17,150	399	23.3	110	6.4	6	15.0	20
1994	16,740	373	22.3	129	7.7	8	21.4	23
1993	16,330	355	21.7	116	7.1	8	22.5	44
1992	15,920	377	23.7	116	7.3	10	26.5	28
1991	15,510	347	22.4	102	6.6	3	8.6	33
1990	15,100	326	21.6	117	7.7	8	24.5	48

Source: Bureau of Health Services, Republic of Palau, unpublished data.

Notes: Populations are estimated using 1990 and 2000 censuses as base. Crude birth and death rates are per 1,000 persons. Infant mortality rate per 1,000 live births.

The crude birth rate is the most frequently used measure of fertility, not only because it is easy to understand, but also because it requires the least amount of information. It shows the growth of population without considering loss through mortality or migration.

The crude birth rate includes men, children, and women outside reproductive ages in its base. Hence, the level of crude birth rate depends not only on the number of births, but also on the proportion of persons who are not subject to having children. Because it is affected by the sex and age structure of the population, this index is considered a "crude" measure. The crude death rate, another crude measure, will be discussed in the next chapter.

#### **General fertility rate (GFR)**

The simplest measure that limits the number of births to women of childbearing age is the general fertility rate, or the number of births in a year per 1,000 women ages 15 to 49 years. Although the general fertility rate represents a refinement over the crude birth rate, it still has its limitations. The frequency of births varies by age of woman within the span of reproductive ages, and so populations in which women have the same frequency of births at each age may have different general fertility rates due to differing age structures of women within the reproductive ages. We discuss the general fertility rate for Palau in 2000 later in this chapter.

#### **Age-specific fertility rates (ASFR)**

An age-specific fertility rate is calculated as the number of births in a year to mothers of a specified age per woman (or per 1,000 women) of the same age at midyear. ASFR's are usually calculated for women in each 5-year age group for ages 15 to 49 years. Although ASFR's properly measure the fertility of women in each age group it is difficult to use them to make comparisons over time. In addition, they do not easily portray the overall level of fertility. For this, a summary index was developed, called the total fertility rate.

#### **Total fertility rate (TFR)**

The total fertility rate is a summary measure independent of the age and sex composition of a population. It represents the average number of children a group of women would have by the end of their reproductive years if they had children according to a set of age-specific fertility rates pertaining to a particular year. In other words, if a group of women have been exposed to a given set of ASFR's from age 15 to age 50, the average number of children they would have by age 50 is the total fertility rate.

The TFR is derived by cumulating the age-specific fertility rates for all ages of women. When rates are calculated for the seven conventional 5-year age groups, the TFR is the sum of the rates for each age group, multiplied by five (the width of the age-group interval). The TFR can also be interpreted as the number of children that, on average, will replace each woman by age 50 if none of the children die.

**Gross reproduction rate (GRR)**

The gross reproduction rate is a measure analogous to the total fertility rate, but it refers only to female births. Thus, it is derived in the same manner as the TFR but uses a set of age-specific fertility rates calculated based on female births only. As an acceptable approximation, it can also be derived by multiplying the TFR by the proportion of all births that are female. The GRR is usually interpreted as the average number of daughters that would replace each woman in the absence of female mortality from birth through childbearing years, based on a given set of age-specific fertility rates. We discuss the gross fertility rate for Palau in 2000 later in this chapter.

As a fertility measure, the gross reproduction rate has no particular advantage over the total fertility rate. It gives an index of generational replacement: it shows the extent to which a group of women would be "replaced" by female children if the women had children according to a given set of age-specific fertility rates. It is a "gross" measure of replacement because it assumes that none of the girls die before they reach the age of their mothers in the reproductive years. In actual populations, some daughters do die before reaching childbearing ages.

Table 6.8 shows numbers of live births by half-year for the 1989 to 2003 period. Half years are given to assist in making estimates, since mid-year populations are usually used for this purpose. The number of births has jumped around somewhat, partly attributable to the small numbers of total births.

Table 6.8. Births by Sex and by Half-Year, Palau: 1989 to 2003

Year	Total	Male	Female	Males/100 Females	Total	First Hal	Second Hal
2003	312	163	149	109.4	312	143	169
2002	259	142	117	121.4	259	135	124
2001	300	139	161	86.3	300	153	147
2000	278	149	129	115.5	278	125	153
1999	250	141	109	129.4	250	121	129
1998	280	157	123	127.6	280	141	139
1997	330	186	144	129.2	330	158	172
1996	355	164	191	85.9	355	182	173
1995	397	207	190	108.9	397	181	216
1994	370	188	182	103.3	371	184	187
1993	356	184	172	107.0	356	167	189
1992	335	181	154	117.5	372	174	198
1991	344	177	167	106.0	346	155	191
1990	323	175	148	118.2	323	163	160
1989	309	160	149	107.4	309	149	160

Source: Bureau of Public Health, Ministry of Health

Table 6.9 shows births by age of mother, data that can be used to obtain rough age specific fertility rates. (No women over 44 years had births in 1990.) These data can also be summed to obtain a rough total fertility rate.

Table 6.9. Births by Age of Mother, Palau: 1989 to 2003

Year	Total	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	30 to 34 years	35 to 39 years	40 to 44 years	45 to 49 years
2003	312	-	21	71	81	63	56	16	4
2002	259	2	23	44	65	67	44	14	-
2001	300	-	15	60	90	72	50	13	-
2000	278	-	16	57	76	71	37	20	1
1999	250	-	20	40	70	77	33	10	-
1998	280	1	26	68	62	73	37	13	-
1997	330	1	38	79	72	83	46	11	-
1996	356	-	42	82	108	80	37	7	-
1995	397	-	47	94	109	85	55	6	1
1994	371	2	34	109	109	85	27	5	-
1993	356	-	51	76	106	79	38	6	-
1992	371	1	49	88	108	84	33	6	2
1991	346	-	44	93	96	69	37	7	-
1990	320	-	49	102	77	52	33	7	-
1989	309	2	35	83	101	57	28	3	-

Source: Bureau of Public Health, Ministry of Health

Table 6.10 shows unadjusted age specific and total fertility rates based on women interpolated between census enumerations and actual births. In the table, the age specific rates are per 1,000 women, while the total are per woman. The table shows a continuous decline from 2.7 children per woman in 1989 to 1.6 in 2002 before increasing to 2.1 in 2003. Since 2.1 is replacement, if fertility were the only demographic factor in play, the population would eventually decline based on the recent years. However, since many of the women “exposed” to fertility were foreign workers, they artificially lower the age specific and total rates. Similarly, the age specific rates remained low throughout the period. The own children fertility estimates that follow give indirect estimates of the age specific and total fertility based on a single source – in this case the various censuses having available micro-data.

Table 6.10. Age-specific Birth Rates per 1000 Women & Total Fertility per Woman based on Reported Births & Interpolated Woman, Palau: 1989 to 2003

Year	Total	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	30 to 34 years	35 to 39 years	40 to 44 years	45 to 49 years
2003	2.1	-	31.3	127.9	101.4	57.7	64.7	21.1	6.7
2002	1.6	2.6	34.7	76.7	81.2	64.1	52.4	19.1	-
2001	1.9	-	23.0	101.3	112.2	72.2	61.5	18.5	-
2000	1.8	-	24.8	93.3	94.5	74.7	47.0	29.6	1.9
1999	1.6	-	31.5	63.5	86.9	85.3	43.4	15.5	-
1998	1.9	1.3	41.6	104.9	76.8	85.4	50.4	21.0	-
1997	2.3	1.3	61.6	118.5	89.0	102.8	64.9	18.6	-
1996	2.5	-	69.2	119.6	133.3	105.3	54.2	12.5	-
1995	2.8	-	78.6	133.5	134.2	119.4	83.8	11.2	2.6
1994	2.7	2.7	55.5	159.4	141.5	124.3	42.9	10.0	-
1993	2.7	-	81.4	114.6	145.4	120.6	63.0	12.5	-
1992	2.9	1.4	76.5	136.9	157.2	134.0	57.3	14.0	6.0
1991	2.8	-	67.2	149.4	148.7	115.3	67.3	17.8	-
1990	2.7	-	73.2	169.4	127.5	91.2	63.1	19.5	-
1989	2.7	2.8	51.2	142.7	179.6	105.2	56.4	9.3	-

Source: Bureau of Public Health, Ministry of Health

### ***Own Children Fertility Estimates***

The own-children method has been described in earlier publications and needs only to be recapitulated briefly here. (For more detailed accounts, see, for example, Cho 1973 and Retherford and Cho 1978.) The method is a census- or survey-based reverse-survival technique for estimating age-specific birth rates for years before a census or household survey. In most applications, enumerated children are first matched to mothers within households using information on age, sex, marital status, relation to head of household (or householder), and number of children still living. (For the 1973 and 1980 censuses of Palau, matching was based on a special question on mother's line number or person number in the household schedule, if mother was present.) These matched (i.e., own) children, classified by child's age and mother's age, are reverse-survived to estimate numbers of births by age of mother in previous years. Reverse-survival is also used to estimate numbers of women in previous years. After adjustments are made for incorrect enumeration and unmatched (non-own) children, age-specific birth rates are calculated by dividing the number of births by the number of women.

Estimates are computed for each previous year or group of years back to fifteen years before the census. Estimates are not computed further back than fifteen years because births must then be based on children at ages 15 or older at enumeration, a large proportion of whom do not reside in the same household as their mother, and hence cannot be matched. All calculations are done initially by single years of age and time (years before the census). We obtain estimates for groups of ages or groups of calendar years by aggregating numerators and denominators of single-year rates and then dividing the aggregated numerator by the aggregated denominator. For reasons of economy, the method is usually applied to census samples rather than complete counts, but because of Palau's relatively small population, the applications were to the complete counts.

We allocate non-own (unmatched) children to mothers by multiplying each age-specific category of own (matched) children, specified by mother's age, by the corresponding age-specific ratio of all children to own children. Thus the number of own children at a given age is adjusted upward by the same factor regardless of mother's age, thereby introducing some error in the fertility estimates. The proportionate distribution of non-own children by age of mother generally differs somewhat from the proportionate distribution of own children by age of mother.

We cannot specify non-own adjustment factors by age of mother since the mother of an unmatched child is by definition not in the household. Since older women are usually in more stable households than younger women, the nature of the error from not specifying non-own adjustment factors by mother's age is usually to reallocate erroneously a certain proportion of non-own children of a given age from younger mothers to older mothers. This error, if present, usually has little effect on the total fertility rate, but it produces an age pattern of fertility that is too low at the younger ages and too high at the older ages. The error is minor if the adjustment factors for non-own children are low, but sometimes these factors can be quite high.

Table 6.11 shows own children fertility estimates from five censuses. The data mesh well with what we discussed in earlier sections of this chapter. The own children tabulations were made at the East-West Population Institute (EWPI) for the 1973 data, and at the Bureau of the Census for the 1980, 1990, 1995, and 2000 data. The Microcomputer package developed by the East West Center's Population Program greatly facilitated the processing for the data sets — in fact, all four Pacific Islands areas were run in one afternoon for the 1990 censuses. The same program was used for the 1995 and 2000 data. The total fertility rates decreased precipitously throughout this period, roughly from 1960 to 1990, from almost 9 children per woman at the beginning to about 3 per woman in 1990. That is, the average woman in Palau in 1960 had about 9 children during her reproductive period, but this average decreased to 3 by 1980, a decrease of about two-thirds.

Table 6.11. Total fertility Rates and Age-Specific Birth Rates, Derived by Own-child method, Palau: 1973 to 2000

Period of Estimate	Fertility Rate	Age-Specific Birth Rates (per 1000 women)						
		15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years
1973:								
1959-1963	8.25	91	271	376	368	326	140	76
1964-1968	8.47	73	285	357	360	325	208	86
1969-1973	6.62	81	258	294	270	223	144	54
1980:								
1966-1970	7.42	68	267	328	299	283	152	86
1971-1975	6.26	83	232	287	244	193	136	76
1976-1980	4.23	53	185	211	155	100	79	63
1990:								
1976-1980	3.99	54	161	206	166	109	79	23
1981-1985	3.46	48	134	159	153	102	64	32
1986-1990	3.05	38	105	138	146	105	56	21
1995:								
1981-1985	3.03	39	118	132	126	91	53	46
1986-1990	2.70	37	90	118	118	89	54	35
1991-1995	2.67	27	84	129	134	90	47	23
2000:								
1986-1990	2.52	31	93	122	118	81	46	16
1991-1995	2.46	30	73	115	126	83	50	16
1996-2000	1.77	13	53	86	87	69	32	13

Sources: Levin and Retherford, 1986, and unpublished data, US Bureau of the Census

Notes: Rate per woman for TFRs, per 1000 women for Age-Specific Rates

The age specific fertility rates decreased for all ages throughout the whole period. For example, while females 30 to 34 in the early 1960s were having about 360 births per 1000 females in a year, by the late 1970s, this value decreased to 155 births per 1000, less than half of the early figure, and to 118 in 1995 and 126 for 2000; hence, the rate was about  $1/3^{\text{rd}}$  of its original.

The total fertility rate also declined throughout the period as well, from over 8 children per woman in the 1960s to less than 2 during the period immediately before the census. This latter number is deflated somewhat because of the foreign women in Palau. Figure 6.1 graphically shows the continuous decrease in the Total Fertility Rate over time. Here, we include results from the 1967 census as well, although they are a bit shaky because the collection methodology is unknown. The figure shows single year, rather than 5-year estimates, but the decline in the overlap is relatively consistent.

**Figure 6.1. TFR Estimates, Palau: 1967 to 2000**

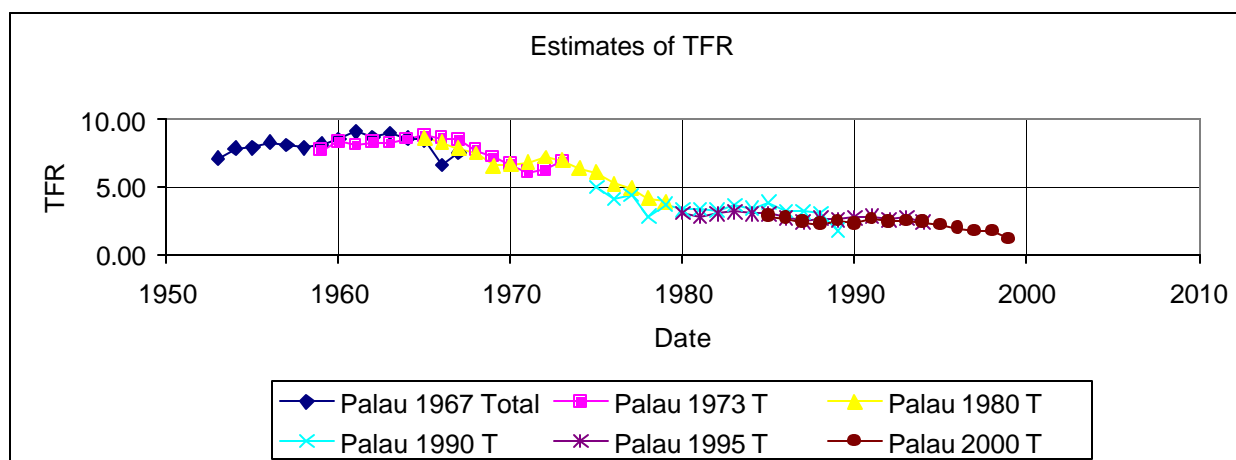
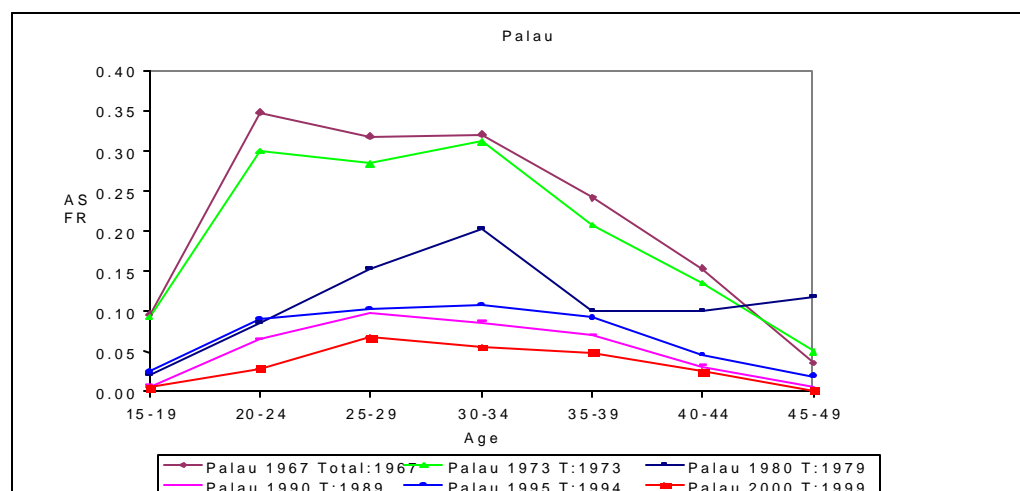
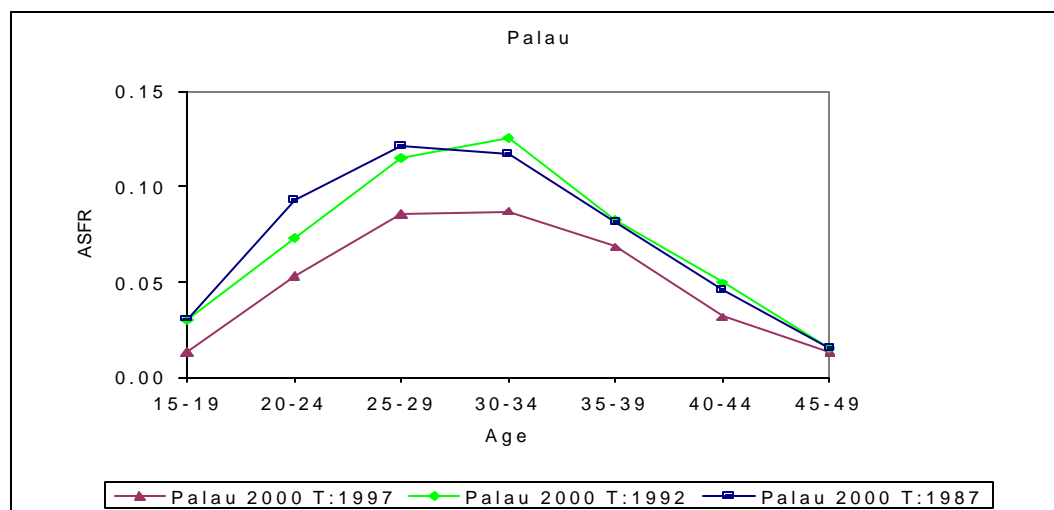


Figure 6.2 shows the age specific fertility rates for the year of the census or the year before the census for each of the 6 censuses, starting in 1967. All age cohorts saw decreases in the age specific rates, with the largest declines coming between the 1973 and 1980 censuses, but with continuing decreases throughout the period.



Finally, Figure 6.3 shows age specific fertility rates for the mid-point of each 5 year period before the 2000 Census. These results also show a continuous decrease in the age specific rates (with one exception at age 30 to 34). Unlike the previous figure, the same females appear in the denominator throughout the series – the numerators, as before, come from the reported births. The results show continuing low fertility, fertility which is likely to continue to decline.



## CONCLUSIONS

In this chapter we have looked at the fertility of Palau's population. Both the direct information on children ever born and the indirect information obtained from the various demographic methods of analysis show dramatic fertility decrease in the recent past. This decrease is apparently continuing as females move into the labor force and either delay onset of fertility or increase the time between adjacent children, or both. The total fertility rate is already among the lowest in the Pacific, and is likely to decrease even more as older women with larger families leave the reproductive years to be replaced with younger women with smaller families.

## CHAPTER 7. MORTALITY

Some censuses ask questions to obtain direct information on mortality. For example, a question will ask "Did anyone die in this household during the last 12 months? If so, who?" However, the 2000 Palau census asked no direct questions on mortality.

Also, some censuses or surveys ask questions to obtain indirect information on mortality. Questions on children ever born and children surviving by age of mother can be used to obtain various indirect measures of mortality. The 1973 and 1980, 1995 and 2000 censuses of Palau asked these questions. However, these questions were not asked on the 1990 census because most of the U.S. Pacific Islands areas had complete vital registration, with almost all deaths recorded. Since the deaths are recorded by age and sex, these data are used to obtain age specific death rates, and other measures derived from them. In this chapter we look at some of these measures.

### **MORTALITY**

The most important demographic event in this century has been the great decline in mortality. Palau has experienced that decline. Mortality levels became more independent of economic development than before. In Palau, this decline was partly because of the intervention of the American administration with its emphasis on health.

When reliable information on deaths and population is available from registers and censuses, direct calculations of mortality can be made. The crude death rate is the most common and the easiest to calculate. Often more complicated measures are needed because they provide additional information. Infant mortality, in particular, is an important indicator of a country's development. Age-specific death rates for other ages are also important in deciding which areas to target for particular programs. Life expectancy is a useful measure because it takes into account the mortality at each age yet expresses the result in a single figure.

Reliable information on population and registered deaths is used to measure the level of mortality in a population. The indices for this measure are:

- (1) crude death rates (with possibilities for direct or indirect standardization); and,
- (2) construction of life tables to obtain life expectancies at birth and other useful mortality functions.

### Crude death rate (CDR)

The most common direct measure of mortality is the crude death rate, or the number of deaths per 1,000 population. It is calculated as the number of deaths occurring in a year divided by the population at midyear, times 1,000.

Table 7.1 shows deaths by 5 years broad age groups from the years 1989 to 2003.

Table 7.1. Deaths by 5-Year Age Group: 1989 to 2003

Age Group	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989
Total:	133	134	136	124	127	122	118	142	108	113	114	92	88	104	96
Less than 5 years	4	6	6	4	3	4	4	10	8	10	10	16	4	13	8
Less than 1 year	2	3	6	3	3	3	4	8	8	7	8	15	3	9	5
1 to 4 years	2	3	-	1	-	1	-	2	-	3	2	1	1	4	3
5 to 9 years	-	-	1	2	1	1	-	-	1	1	1	2	-	2	-
10 to 14 years	2	-	-	-	3	1	-	1	1	-	-	1	-	-	-
15 to 19 years	4	8	1	1	1	2	2	1	1	2	1	1	3	3	-
20 to 24 years	2	2	2	3	3	5	1	3	3	3	3	-	5	4	3
25 to 29 years	4	2	4	3	1	3	5	3	7	5	7	2	3	6	7
30 to 34 years	2	3	3	5	4	7	6	1	6	8	3	8	5	4	3
35 to 39 years	5	7	7	3	6	7	3	5	3	7	5	2	3	4	4
40 to 44 years	6	8	8	9	9	7	5	2	5	3	9	2	4	6	4
45 to 49 years	12	9	8	6	10	10	5	10	6	3	5	6	5	-	5
50 to 54 years	8	6	4	9	9	7	6	6	4	5	4	2	7	6	3
55 to 59 years	7	8	7	10	9	9	6	11	8	12	6	3	5	6	6
60 to 64 years	5	15	5	9	13	9	12	15	10	6	11	3	11	9	4
65 to 69 years	8	10	10	13	5	6	16	17	9	11	8	5	9	8	14
70 to 74 years	21	15	11	10	18	11	10	12	8	7	12	14	9	10	11
75 to 79 years	8	13	24	11	12	11	14	18	11	15	11	13	3	9	13
80 to 84 years	16	12	16	10	10	13	12	13	8	9	10	5	8	10	5
85 years and over	19	10	19	16	10	9	11	14	9	6	8	7	4	4	6

Source: Bureau of Health Services, Republic of Palau, unpublished data.

Table 7.2 shows average numbers of deaths for 1990 (averaging 1989 to 1992), 1995 (averaging 1993 through 1997), and 2000 (averaging 1998 to 2002). By dividing age-specific deaths by the census population for the respective years, we can get an estimate of the age-specific mortality rates, in this case, the rates per 1000 population. Hence, the totals in the last three columns are the crude death rates (CDRs).

Table 7.2. Age-specific Mortality Rates, Palau: 1990 to 2000

Age Group	Average Deaths			Census Population			Crude Death Rates		
	98-02	93-97	89-92	2000	1995	1990	2000	1995	1990
Total:	128.6	119.0	95.3	19,129	17,225	15,122	6.8	7.1	7.1
Less than 1 year	3.6	7.0	8.0	179	341	194	20.1	20.5	41.2
1 to 4 years	1.0	1.4	2.3	1,129	1,421	1,319	0.9	1.0	1.7
5 to 9 years	1.0	0.6	1.0	1,700	1,551	1,529	0.6	0.4	0.7
10 to 14 years	0.8	0.4	0.3	1,555	1,527	1,534	0.5	0.3	0.2
15 to 19 years	2.6	1.4	1.8	1,382	1,282	1,464	1.9	1.1	1.2
20 to 24 years	3.0	2.6	3.0	1,342	1,427	1,340	2.2	1.8	2.2
25 to 29 years	2.6	5.4	4.5	1,910	1,741	1,403	1.4	3.1	3.2
30 to 34 years	4.4	4.8	5.0	2,169	1,716	1,338	2.0	2.8	3.7
35 to 39 years	6.0	4.6	3.3	1,891	1,583	1,243	3.2	2.9	2.6
40 to 44 years	8.2	4.8	4.0	1,651	1,261	873	5.0	3.8	4.6
45 to 49 years	8.6	5.8	4.0	1,272	943	666	6.8	6.2	6.0
50 to 54 years	7.0	5.0	4.5	886	603	513	7.9	8.3	8.8
55 to 59 years	8.6	8.6	5.0	563	488	403	15.3	17.6	12.4
60 to 64 years	10.2	10.8	6.8	463	361	387	22.0	29.9	17.4
65 to 69 years	8.8	12.2	9.0	318	327	332	27.7	37.3	27.1
70 to 74 years	13.0	9.8	11.0	274	278	249	47.5	35.3	44.2
75 to 79 years	14.2	13.8	9.5	212	189	148	67.0	73.0	64.2
80 to 84 years	12.2	10.4	7.0	113	95	93	108.0	109.5	75.3
85 years and over	12.8	9.6	5.3	120	91	94	106.7	105.5	55.9

Source: Bureau of Health Services, Republic of Palau, unpublished data.



Table 7.3 shows male crude death rates higher than those of females because males die younger than females, and shows female crude death rates for the three periods. These rates are lower than for the males.

Table 7.3. Age-specific Mortality Rates by Sex, Palau: 1990 to 2000

Age Group	Average Deaths			Census Population			Crude Death Rates		
	98-02	93-97	89-92	2000	1995	1990	2000	1995	1990
Total Males:	75.6	73.4	65.2	10,450	9,213	8,139	7.3	8.2	8.7
Less than 1 year	2.6	3.2	4.5	99	185	101	26.3	17.3	44.6
1 to 4 years	0.4	0.8	1.3	591	731	665	0.7	1.1	1.9
5 to 9 years	0.8	0.4	0.8	856	797	793	0.9	0.5	1.0
10 to 14 years	0.2	0.4	-	794	798	807	0.3	0.5	-
15 to 19 years	1.8	1.2	1.5	738	684	795	2.4	1.8	1.9
20 to 24 years	2.6	1.8	2.3	731	723	738	3.6	2.5	3.1
25 to 29 years	2.0	4.2	3.8	1,106	925	799	1.8	4.5	4.7
30 to 34 years	3.2	3.6	4.5	1,219	1,005	768	2.6	3.6	5.9
35 to 39 years	4.8	3.6	2.0	1,104	927	720	4.4	3.9	2.8
40 to 44 years	5.2	3.4	3.5	976	727	514	5.3	4.7	6.8
45 to 49 years	6.8	4.4	3.8	750	553	375	9.1	8.0	10.0
50 to 54 years	4.4	4.6	3.8	510	325	279	8.6	14.0	13.4
55 to 59 years	6.4	6.4	3.5	306	245	208	20.9	25.7	16.8
60 to 64 years	5.4	5.6	4.5	230	174	181	23.5	32.2	24.9
65 to 69 years	5.0	7.2	5.8	161	145	154	31.1	49.7	37.3
70 to 74 years	8.2	5.8	7.3	115	122	117	71.3	47.5	62.0
75 to 79 years	6.6	7.2	5.5	78	84	62	84.6	85.7	88.7
80 to 84 years	6.2	5.2	3.5	48	24	36	129.2	216.7	97.2
85 years and over	3.0	4.4	3.3	38	27	27	79.0	163.0	120.4
Total Females:	53.0	45.6	30.8	8,679	8,012	6,983	6.2	5.9	5.1
Less than 1 year	1.0	3.8	3.5	80	156	93	12.5	24.4	37.6
1 to 4 years	0.6	0.6	1.0	538	690	654	1.1	0.9	1.5
5 to 9 years	0.2	0.2	0.3	844	754	736	0.2	0.3	0.3
10 to 14 years	0.6	-	0.3	761	725	727	0.8	-	0.3
15 to 19 years	0.8	0.2	0.3	644	598	669	1.2	0.3	0.4
20 to 24 years	0.4	0.8	0.8	611	704	602	0.7	1.1	1.3
25 to 29 years	0.6	1.2	0.8	804	812	604	0.8	1.5	1.2
30 to 34 years	1.2	1.2	0.5	950	711	570	1.3	1.7	0.9
35 to 39 years	1.2	1.0	1.3	787	656	523	1.5	1.5	2.4
40 to 44 years	3.0	1.4	0.5	675	534	359	4.4	2.6	1.4
45 to 49 years	1.8	1.4	0.3	522	390	291	3.5	3.6	0.9
50 to 54 years	2.6	0.4	0.8	376	274	234	6.9	1.5	3.2
55 to 59 years	2.2	2.2	1.5	257	235	195	8.6	9.2	7.7
60 to 64 years	4.8	5.2	2.3	233	187	206	20.6	27.8	10.9
65 to 69 years	3.8	5.0	3.3	157	182	178	24.2	27.5	18.3
70 to 74 years	4.8	4.0	3.8	159	156	132	30.2	25.6	28.4
75 to 79 years	7.6	6.6	4.0	134	105	86	56.7	62.9	46.5
80 to 84 years	6.0	5.2	3.5	65	71	57	92.3	73.2	61.4
85 years and over	9.8	5.2	2.0	82	64	67	119.5	81.3	29.9

Source: Bureau of Health Services, Republic of Palau, unpublished data.

### Infant mortality rate (IMR)

When vital registration data are available, the infant mortality rate is usually calculated as the ratio of the number of deaths of infants under 1 year of age to the number of live births occurring that year, times 1,000. A more refined rate would take into account a process for relating infant deaths to their actual birth cohort because in reality some of the deaths occurring each year correspond to infants born during the previous year, just as some infants born in the current year will die the following year before reaching their first birthday. For practical purposes, however, the calculation based on one chronological year is a good approximation of the IMR based on a given year's vital registration data or on average of data for several consecutive years.

Table 6.7 showed the Infant Mortality Rate for calendar years 1990 to 2000. The 6 deaths in 2000 for the 278 births made an infant mortality rate of 25 per 1,000.

### Age-specific death rates

While mortality is very high at the early moments of life, it declines rapidly thereafter, reaching its lowest levels between 10 and 15 years of age. In subsequent years, the older the age, the higher the mortality. The age specific death rates are calculated as the number of deaths in a particular age group per 1,000 population in the same group. Table 7.2 shows age specific death rates for Palau based deaths over the 1989 to 2002 period, and the 1990 to 2000 age distribution.

### **Life Expectancy at Birth**

One of the most useful summary measures of the overall level of mortality of a population is the life expectancy at birth. It is a more accurate reflection of mortality than the crude death rate because it is independent of the population's age structure, and it is not influenced by extraneous factors like the selection of a standard population.

Calculation of the life expectancy at birth begins with a set of age-specific death rates, from which probabilities of surviving from one age to the next can be estimated. These survival probabilities are applied to an assumed cohort of births that occurred in the same year, following the survivors as they reach successive ages until all have eventually died. As a result of this procedure, a count can be obtained of the total number of years that the birth cohort as a whole would live under the observed mortality conditions. The ratio of all years lived by the total number of people in the cohort to the original number of births represents the average number of years to be lived by persons born in the same year under the particular mortality conditions of that year. This ratio is the **life expectancy at birth**. These steps calculate the life expectancy at birth and are also the steps required to construct a life table. We pass to that now.

### **Life Tables**

Tables 7.4 and 7.5 show abridged life tables for males and females, respectively, based on deaths and population. A Population Analysis Spreadsheet (PAS) computed a West life table from deaths and population by age and has an option for using an independently calculated or estimated infant mortality rate.

A life table serves useful purposes both within the demographic community and in the world at large. For example, the life table is the source of estimates of the life expectancy at birth. In addition, it provides survival ratios for each age or age group that are used in making population projections.

A life table follows a hypothetical cohort of 100,000 persons born at the same time (called the "radix" of the life table) as they progress through successive ages, with the cohort reduced from one age to the next according to a set of actual death rates by age, until all persons eventually die. A complete, or unabridged, life table is constructed by single years of age, while an abridged life table is constructed by 5-year age groups. A life table can be constructed for both sexes together or, more commonly, for each sex separately.

The construction of a life table consists of calculating various interdependent "functions," using as a base the available age-specific death rates. The first function calculated in the life table is the probability of dying between two exact ages, for example, the probability that a person of exact age 30 will die before reaching his or her 35th birthday. This function is symbolized as  ${}_nq_x$ , where  $x$  represents exact age  $x$  and  $n$  is the age interval. In the above example, the symbol would be  ${}_5q_{30}$ . In applied demography, the only  ${}_nq_x$  function that is frequently used is  ${}_1q_0$  representing the probability of dying between birth and age 1; this is usually called the infant mortality rate.

The next life table function is the number of persons surviving to each exact age. As the life table usually starts with a radix of 100,000 births (at exact age 0), the number of survivors from birth to each exact age is obtained using the probabilities estimated. The number of survivors at each exact age is represented by the symbol  $l_x$ .

The value for survivors at exact age  $x$  ( $l_x$ ) is shown in symbols as

$$l_{x+n} = l_x (1 - {}_nq_x) \text{ where } {}_nq_x \text{ is defined as above and the first } l_x \text{ is } l_0 \text{ and usually is defined as 100,000.}$$

Since  $l_x$  represents the number of persons alive at each exact age  $x$ , the difference between two consecutive values represents the number of deaths between the corresponding ages. This number of deaths between two exact ages is symbolized by  ${}_nd_x$  in the life table.

In symbols, this is shown:  ${}_nd_x = l_x - l_{x+n}$  where  $l_x$  is as defined above.

Actual populations are usually enumerated in a census or survey as the number of persons alive between two ages, for example, the population at age 23 (that is, persons between their 23rd and 24th birthdays) or the population in the age group 15 to 19 years (persons who have reached their 15th birthday but not yet their 20th). A life table includes an analogous population, represented by the  ${}_nL_x$  function, referred to as the "life table population" between exact age  $x$  and  $x+n$ , or the number of survivors between exact age  $x$  and  $x+n$ . For example, the symbol  ${}_5L_{55}$  refers to the life table population at ages 55 to 59 years.

This life table population may be interpreted in three ways, following through time a cohort of births under mortality conditions observed during a year: (1) a "stationary" population with 100,000 annual births and deaths, the number of persons in each age group not changing; (2) persons in a particular age group as the survivors of 500,000 births occurring during a 5-year period (at 100,000 per year); and (3) the total life table distribution may be interpreted as the survivorship pattern of a single cohort of 100,000 births as it passes through all ages. The  ${}_nL_x$  function is calculated as the average of two consecutive  $l_x$  values that represent persons alive at two specified exact ages. This value is obtained:

$${}_nL_x = {}_nk_x l_x + (n - {}_nk_x) l_{x+n} \text{ where } {}_nk_x \text{ and } l_x \text{ are defined above.}$$

The next function refers to the age-specific death rates of the life table population, which are also called central death rates. These rates are derived by dividing the life table number of deaths between two specific ages by the life table population between the same ages. Central death rates are shown as

$${}_nm_x = {}_nd_x / {}_nL_x \text{ where } {}_nd_x \text{ and } {}_nL_x \text{ are as defined above.}$$

Next, the total population of the life table is calculated by summing all the  ${}_xL_x$  values. When the life table is seen as the following of a single cohort through time, the  ${}_nL_x$  values represent the total number of years to be lived by the original birth cohort of 100,000 until all persons have eventually died. A cumulative summation of the  ${}_nL_x$  values from the oldest ages to the youngest one represents, at any given age  $x$ , the total number of years remaining to be lived by all persons who are still alive at age  $x$ . It also represents the population age  $x$  years and over. The cumulative values for each age are represented by the symbol  $T_x$ , the sum of these values.

At this point, the life expectancy can be derived. The ratio of the number of years that the life table population will live from age  $x$  up to the point when all have died, to the number of persons alive at exact age  $x$ , represents the average number of years remaining to be lived by those who are alive at each age  $x$ . These values are the life expectancy at any given age, symbolized by  $e_x$ . For example,  $e_{35}$  represents the number of years of life remaining for a person age 35, while  $e_0$  represents the life expectancy at birth. The life expectancy at age  $x$  is:

$$e_x = T_x / l_x \text{ where } T_x \text{ and } l_x \text{ are as defined above.}$$

Finally, an optional life table function exists, used in making population projections, known as the survival ratio. Since the  ${}_5L_x$  function is the number of persons alive between ages  $x$  and  $x + 5$ , the ratio of two consecutive  ${}_5L_x$  values represents the survival between the two age groups. For example, at the end of the 5-year period, persons in the group  ${}_5L_{30}$  are the survivors of the group  ${}_5L_{25}$ , and hence the ratio of  ${}_5L_{30}$  divided by  ${}_5L_{25}$  represents the average chance that a person in the age group 25 to 29 has of surviving 5 years to ages 30 to 34. This ratio is symbolized by  ${}_5P_{25}$  and is called the 5-year survival ratio for ages 25 to 29. The survival ratio is shown:

$${}_5P_x = {}_5L_{x+5} / {}_5L_x \text{ where } {}_5L_x \text{ is as defined above.}$$

The ratio is used for projecting population by multiplying the population times the survival ratio for any particular population by year. Special attention must be paid to the youngest and oldest groups, but we are not covering that here. Table 7.4 gives the life table for males in Palau in 2000.

Table 7.4. Male Abridged Life Table, Palau: 2000

Age	nMx	na <sub>x</sub>	nq <sub>x</sub>	lx	nd <sub>x</sub>	nL <sub>x</sub>	5P <sub>x</sub>	T <sub>x</sub>	e <sub>x</sub>
0	0.03875	0.150	0.03752	100,000	3,752	96,813	0.95953	6,682,753	66.83
1-4	0.00217	1.540	0.00862	96,248	829	382,953	0.99226	6,585,940	68.43
5-9	0.00088	2.500	0.00437	95,419	417	476,051	0.99605	6,202,987	65.01
10-14	0.00071	2.500	0.00353	95,002	335	474,170	0.99508	5,726,936	60.28
15-19	0.00127	2.500	0.00632	94,667	598	471,838	0.99243	5,252,765	55.49
20-24	0.00177	2.500	0.00884	94,069	831	468,265	0.99107	4,780,927	50.82
25-29	0.00182	2.500	0.00904	93,237	842	464,081	0.99038	4,312,662	46.25
30-34	0.00205	2.500	0.01021	92,395	943	459,617	0.98839	3,848,581	41.65
35-39	0.00262	2.500	0.01303	91,452	1,192	454,279	0.98412	3,388,964	37.06
40-44	0.00379	2.500	0.01876	90,260	1,694	447,066	0.97612	2,934,685	32.51
45-49	0.00590	2.500	0.02909	88,566	2,576	436,392	0.96292	2,487,619	28.09
50-54	0.00927	2.500	0.04532	85,990	3,897	420,208	0.94204	2,051,228	23.85
55-59	0.01477	2.500	0.07121	82,093	5,846	395,851	0.91046	1,631,019	19.87
60-64	0.02312	2.500	0.10928	76,247	8,332	360,406	0.86390	1,235,168	16.20
65-69	0.03625	2.500	0.16621	67,915	11,288	311,355	0.79489	874,762	12.88
70-74	0.05760	2.500	0.25176	56,627	14,257	247,493	0.69681	563,407	9.95
75-79	0.09138	2.500	0.37192	42,370	15,758	172,456	0.45410	315,914	7.46
80+	0.18550	5.391	1.00000	26,612	26,612	143,458	...	143,458	5.39

Source: OPS, 2000 Census, Population Analysis Spreadsheets, U.S. Census Bureau

Table 7.5 shows the female abridged life table.

Table 7.5. Female Abridged Life Table, Palau: 2000

Age	nMx	na <sub>x</sub>	nq <sub>x</sub>	lx	nd <sub>x</sub>	nL <sub>x</sub>	5P <sub>x</sub>	T <sub>x</sub>	e <sub>x</sub>
0	0.02214	0.115	0.02172	100,000	2,172	98,078	0.97650	7,282,090	72.82
1-4	0.00116	1.489	0.00464	97,828	454	390,173	0.99610	7,184,012	73.44
5-9	0.00043	2.500	0.00215	97,375	209	486,349	0.99804	6,793,838	69.77
10-14	0.00035	2.500	0.00176	97,165	171	485,398	0.99770	6,307,489	64.92
15-19	0.00057	2.500	0.00284	96,994	275	484,282	0.99653	5,822,091	60.03
20-24	0.00082	2.500	0.00409	96,719	396	482,604	0.99544	5,337,810	55.19
25-29	0.00101	2.500	0.00503	96,323	485	480,402	0.99438	4,855,206	50.41
30-34	0.00125	2.500	0.00621	95,838	595	477,702	0.99277	4,374,804	45.65
35-39	0.00166	2.500	0.00825	95,243	786	474,250	0.99000	3,897,102	40.92
40-44	0.00237	2.500	0.01177	94,457	1,112	469,506	0.98507	3,422,853	36.24
45-49	0.00366	2.500	0.01812	93,345	1,692	462,498	0.97723	2,953,346	31.64
50-54	0.00558	2.500	0.02750	91,654	2,521	451,967	0.96531	2,490,848	27.18
55-59	0.00860	2.500	0.04208	89,133	3,751	436,288	0.94575	2,038,881	22.87
60-64	0.01386	2.500	0.06696	85,382	5,717	412,619	0.91127	1,602,592	18.77
65-69	0.02374	2.500	0.11207	79,665	8,928	376,006	0.85249	1,189,974	14.94
70-74	0.04136	2.500	0.18742	70,737	13,258	320,542	0.76069	813,967	11.51
75-79	0.07146	2.500	0.30316	57,479	17,425	243,833	0.50584	493,426	8.58
80+	0.16048	6.231	1.00000	40,054	40,054	249,592	...	249,592	6.23

Source: 2000 Census, Population Analysis Spreadsheets, U.S. Census Bureau

Table 7.6 shows summary demographic indicators based on population by age and sex and total deaths. This spreadsheet computes the Coale-Demeny West region model life tables, by sex, consistent with the population, by age and sex, and the crude death rates. In 2000, the life expectancy for females was 73 years and for males has 67 years.

Table 7.6. Summary Demographic Indicators, Palau: 2000

Item	Both sexes	Male	Female
Life expectancy	69.49	66.83	72.82
Infant mortality rate	0.031	0.038	0.022
Crude birth rate per 1,000 population	9.62	9.80	9.41
Crude death rate per 1,000 population	7.11	7.11	7.11
Rate of natural increase (%)	0.251	0.269	0.230
Total deaths	136	74	62

Source: OPS, 2000 Census, U.S. Census Bureau, Population Analysis Spreadsheets

## CONCLUSIONS

Palau continues to experience continued low mortality, and, therefore, high life expectancy at birth. Female life expectancy at birth was 73 years, based on the 2000 census. Both age specific mortality and infant mortality rates are low. Health care on island is very good, with both access and attention very high.

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## CHAPTER 8. MIGRATION

While chapters 6 and 7 examined two basic components of population change — fertility and mortality — here we look at the other main component — migration. Measurement of migration is more complex than measurement of fertility or mortality. Mortality is purely a biological phenomenon; a favorable socioeconomic climate and medical care can postpone death, but cannot stop it. Fertility also is biological, although it can be controlled. Levels of fertility often reflect levels of material well being of a population, affected by individual and societal needs, levels of scientific knowledge, and economic status. The problems of measurement of fertility and mortality arise basically because of lack of reliable vital statistics.

Migration, on the other hand, is a socioeconomic phenomenon affected by many complex mechanisms involving social, psychological, economic, political, institutional, and other determinants. Migration affects the size, structure, and growth of populations. Migration also affects the size of the labor force, the distribution of labor force by skill, education, industry, and occupation, employment status, savings, investment, and productivity. In the process, migration leads to social and psychological affects on both origins and destinations.

Migration involves movement from one residence to another. Migration can be internal (within national or territorial boundaries) or international (across international borders). A migrant who travels from an origin to a destination is an immigrant or in-migrant with respect to the area of destination, and an emigrant or out-migrant with respect to the place of origin; in each case researchers tend to use the former term for international migration and the latter for internal migration.

Over the past two decades, migration has emerged as an extremely important factor shaping the population structure of the Pacific countries (Connell, 1990). Palau is no exception to this trend, although the mobility patterns affecting Palau often differ from those found elsewhere in the region (Gorenflo and Levin, 1992a). The pattern that dominated Palau from the early 1970s and throughout the 1980s was the emigration of Palauans — particularly to the CNMI, Guam, and the U.S. This emigration continues, but it is now more than counteracted by immigration of Filipinos and other Southeast Asians. These migration flows have had a major impact on the population structure of Palau, the most obvious consequence being the minimal population growth in the republic during the 1980s as native Palauans relocated outside the republic. In comparison, other mobility patterns, like the movement from rural to urban areas within Palau, apparently played lesser roles.

This chapter examines migration data from the 2000 census. These data include place of birth and parents' place of birth, citizenship, year of entry to Palau, residence in 1995, and ethnic origin or race. The types of information discussed complement each other, providing a reasonably complete picture of contemporary migration patterns in the republic.

### **Definitions**

#### *Place of Birth and Parents' Place of Birth*

Question 7 on the 2000 census questionnaire concerned an individual's place of birth. Questions 11b focused on father's place of birth and 11a on mother's place of birth. Each place of birth question requested the name of the island, the U.S. state, or the foreign country where a person or a person's parents were born, according to current political boundaries.

OPS staff responsible for data edits assigned a place of birth to those individuals who did not report this information — assigning the birthplace of another family member, or the birthplace of another person or parent with similar characteristics. Instead of allocating a specific foreign country to persons allocated as born outside the area of current residence, editors classified these individuals as "Born abroad, country or area not specified." The places of birth published in volume I of the 2000 census report were those most frequently mentioned by respondents.

Limitations. Because numerous changes in the boundaries of foreign countries have occurred over the past several decades, some persons may have reported their place of birth or their parents' place of birth in terms of boundaries that existed at the time of the birth or emigration, or in accordance with their own national preference. Apart from this minor problem, there are no obvious limitations in the 2000 census for place of birth data categories.

Comparability. Data on birthplace in the 2000 census are comparable to birthplace data collected in the 1980, 1990 and 1995 censuses. Similar data appeared in tabulations for those censuses. However, the 1980 census did not allocate non-response. Instead, the 1980 census reported these people separately in the tables as "Place of birth not reported."

### *Citizenship*

Census questionnaire item 8 in 2000 dealt with citizenship, a question asked of all persons in the Republic of Palau. This question was similar to the question asked in the 1990 and 1995 censuses.

Because of Palau's political status, the 1990 census and subsequent censuses called persons born on Palau as "citizens of Palau." "U.S. citizens" were persons who responded that they were U.S. born, born in a U.S. Territory or Commonwealth, or foreign-born persons who were naturalized. The three categories of U.S. citizenship were: (1) born in the United States or a U.S. Territory or Commonwealth, (2) born elsewhere of U.S. parent or parents, and (3) U.S. citizen by naturalization. Persons "Not born in Palau and not a U.S. citizen" were foreign-born persons who were neither born in Palau nor citizens of the U.S.—including persons who had begun but had not completed the naturalization process at the time of the census.

Limitations. There are no apparent problems with data from the 2000 census on citizenship. Studies of previous censuses indicated that some persons undergoing naturalization reported themselves as citizens before attaining naturalized status, although this shortcoming was not evident in the 2000 data for Palau.

Comparability. The 2000 data can be compared to the 1990 and 1995 census data but not to the 1980 because citizenship was not asked in that Palau census.

### *Year of Entry*

Questionnaire item 9 dealt with year of entry, asked of all persons who were born or resided outside Palau. These persons included U.S. citizens by birth (persons born in the U.S., Puerto Rico, CNMI, or another US territory, or born abroad of American parents) as well as citizens of other nations. To avoid possible confusion concerning the date of entry of U.S. citizens by birth, this report uses the year a person came to Palau to stay rather than year of immigration. The 2000 census questions, tabulations, and census data products about citizenship and year of entry make no reference to immigration.

Limitations. The main limitation of the 2000 census data on year of entry concerns the duration of residence in Palau. The census used the phrase "to stay" to obtain the year in which a person became a resident of the republic. Although the questionnaire directed respondents to record the year they entered the area, it was difficult to ensure that respondents interpreted these guidelines correctly.

Comparability. The 1980, 1990, 1995 and 2000 censuses generally produced comparable data on year of entry. Instead of asking the actual year of entry, the 1980 census provided nine arrival times to be answered by the non-Palau born population.

### *Residence in 1995*

This question was asked only to persons 5 years and older. For individuals who responded that they lived in a different house on April 1, 2000 than on April 1, 1995 (question 14a), the 2000 census asked for the island, U.S. state, or foreign country of residence on this earlier date (question 14b). The census also asked persons living in Palau on April 1, 1995 (but in a different house than April 1, 2000) the name of the village in which they resided.

When an individual provided no information on residence in 1995, OPS data editors employed responses of other family members, if available, to assign a residence in 1995. Editors allocated individuals who did not respond or provided an incomplete response and had no obvious family members associated to the previous residence of other persons with similar characteristics who provided complete information.

The tabulation category "Same house" in the 2000 census included all persons aged five years or more who did not move during the previous five years, as well as those who moved but returned to their 1995 residence by census day, April 1, 2000. The category "Different house" in the census included persons who lived in Palau in April 1995 but in a different housing unit than they occupied on census day 2000. The census then further subdivided these movers according to whether they previously lived elsewhere in Palau or outside Palau in 1995. The tables in this chapter present selected countries for persons who lived outside Palau in 1995, combining into the "Elsewhere" category individuals who resided in countries not listed.

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**Limitations.** For the purpose of studying migration, the data category "Residence in 1995" provides inadequate data on multiple moves over the five-year period in question. In some cases, individuals who lived in the same house in April 1995 and April 2000 had moved in the interim. Similarly, persons who in 2000 lived in a different house than in 1995 may have made one or more intermediate moves.

**Comparability.** The 2000 Census question was similar to the question on the 1990 and 1995 censuses. The 1980 census asked similar questions about previous residence five years earlier, but did not allocate previous residence in the case of a non-response — recording these individuals in the category "Residence in 1975 not reported."

### ***Ethnic Origin or Race***

Item 4 on the 2000 census questionnaire concerned ethnic origin or race. The question relied on self-identification and was open-ended. Ethnic origin or race refers to a person's origin or descent, including an individual's heritage or the place of birth of an individual's ancestors. Persons reported their ethnic group regardless of the number of generations removed from their place of ancestral origin. Responses to the ethnic origin question reflected the ethnic group with which persons identified and not necessarily the degree of attachment or association the persons had with a particular group.

Ethnic origin or race differs from other population characteristics often considered to show ethnicity, namely country of birth and language spoken at home. Most respondents reported their ethnic origin or race by specifying a single ethnic group, but some reported two, three, or more groups. OPS staff identified and coded the first two responses reported.

In published tabulations, the 2000 census designated multiple groups as general open-ended categories — like "Palauan and other group(s)" — rather than specific multiple ethnic groups like "Palauan-Filipino." Thus the census would include a person who reported "Filipino-Palauan" ethnicity in the "Palauan and other group(s)" category and the "Asian and other group(s)" category under "Multiple ethnic group."

While the OPS expects counts are consistent with actual distribution of ethnic groups, the number of reported Carolinians may be low if some enumerators did not fully understand the question.

**Limitations.** The ethnicity category incorporates the strengths and weaknesses of any open-ended question—the advantages of removing possibly undesirable constraints countered by the likelihood of receiving answers that are difficult to deal with or which do not make sense. OPS staff made every effort to impose a systematic coding scheme on the open-ended ethnicity data.

**Comparability.** The 1980 census was the first US Census to contain an open-ended question on ethnic origin or race. Although the 1990, 1995 and 2000 censuses allowed respondents to report more than two ethnic groups, they coded only the first two. Although the 1980 census did not impute ethnic origin information, the 1990, 1995 and 2000 censuses did through the use of related data — parental birthplace and language, other members of the housing unit, or other persons in nearby housing units.

### ***Legal Residence***

This question was asked of everyone, but tabulated for persons 18 years and older. The *legal residence* is the place where the person votes, or would vote if they were eligible to vote.

When an individual provided no information on legal residence, OPS data editors employed responses of other family members, if available, to assign a legal residence. Editors allocated individuals who did not respond or provided an incomplete response and had no obvious family members associated to the previous residence of other persons with similar characteristics who provided complete information.

**Limitations.** Only individuals actually enumerated in Palau reported legal residence, so anyone who votes in a specific Palau State but was away for schooling, the military, or a civilian job, but who would vote in an election in Palau, would not be included.

**Comparability.** The 2000 Census question was similar to the question on the 1995 census. No other census asked for legal residence.

**Analysis of Migration Data***Birthplace*

Migration patterns in Palau started to change during the 1980s, with increasing Palauan emigration. By the late 1980s, a great counter-stream started as many Filipinos and other Southeast Asians started moving into Palau. Data on the birthplace of Palau residents show lifetime migration (Table 8.1). Although about two-thirds of Palau's residents in 2000 were born in Palau, this group declined both in absolute and in relative terms during the 1980 to 2000 period. The biggest gains were for Filipinos and "Other Asians". Only 126 persons born in the Philippines were living in Palau in 1980 compared to almost 3,000 Philippine born in 2000. Similarly, only 5 persons reported to be "Other Asia" born in 1980, but 1,359 were in this category in 2000. Two other groups – those born in the United States and those born in the CNMI – also showed large increases, but many of these persons were actually Palauans whose parents bore them in these places, with the respondents later returning to Palau, and being counted in the Census. The number of USA born increased from 56 to 516 over the two decades, and those born in the CNMI increased from 32 to 214.

Table 8.1. Birthplace of Palau Residents: 1980 to 2000

Birthplace	Population					Percent Change			
	2000	1995	1990	1986	1980	1995 to 2000	1990 to 1995	1986 to 1990	1980 to 1986
Total:	19,129	17,225	15,122	13,873	12,116	11.1	13.9	9.0	14.5
Palau	12,819	12,476	12,321	12,323	11,352	2.7	1.3	0.0	8.6
Marshall Islands	NA	NA	48	88	50	NA	NA	-45.5	76.0
Fed. States of Micronesia	326	282	307	357	233	15.6	-8.1	-14.0	53.2
Northern Mariana Islands	214	159	117	18	32	34.6	35.9	550.0	-43.8
United States	516	535	266	291	56	-3.6	101.1	-8.6	419.6
Asia	4,682	3,392	1,889	760	154	38.0	79.6	148.6	393.5
Japan and Okinawa	290	118	89	81	22	145.8	32.6	9.9	268.2
Korea	141	19	58	32	1	642.1	-67.2	81.3	3100.0
Philippines	2,892	2,654	1,459	517	126	9.0	81.9	182.2	310.3
Other Asia	1,359	601	283	130	5	126.1	112.4	117.7	2500.0
Other Pacific Islands	256	258	144	6	41	-0.8	79.2	2300.0	-85.4
Elsewhere	316	123	30	30	19	156.9	310.0	0.0	57.9
Not stated	-	-	-	-	179	-	-	-	-100.0

Sources: U.S. Bureau of the Census, 1984b, Table 20; 1992c, Table 36; OPS, 1987, Table A5, 1995 and 2000, table 11.

As noted, the influx of non-Palauans increased over the two decades, yielding a Palau-born resident population in 2000 that was 27 percentage points lower in 2000 than 1980 – from 94 percent in 1980 to 82 percent in 1990 and only 67 percent in 2000 (Table 8.2). That is, by 2000, Palau-born persons made up only 2 of every 3 people living in the Republic.

Table 8.2. Percentage Distribution of Birthplace of Palau Residents: 1980 to 2000

Birthplace	Population				
	2000	1995	1990	1986	1980
Total:	19,129	17,225	15,122	13,873	12,116
Percent:	100.0	100.0	100.0	100.0	100.0
Palau	67.0	72.4	81.5	88.8	93.7
Marshall Islands	NA	NA	0.3	0.6	0.4
Fed. States of Micronesia	1.7	1.6	2.0	2.6	1.9
Northern Mariana Islands	1.1	0.9	0.8	0.1	0.3
United States	2.7	3.1	1.8	2.1	0.5
Asia	24.5	19.7	12.5	5.5	1.3
Japan and Okinawa	1.5	0.7	0.6	0.6	0.2
Korea	0.7	0.1	0.4	0.2	0.0
Philippines	15.1	15.4	9.6	3.7	1.0
Other Asia	7.1	3.5	1.9	0.9	0.0
Other Pacific Islands	1.3	1.5	1.0	0.0	0.3
Elsewhere	1.7	0.7	0.2	0.2	0.2
Not stated	-	-	-	-	1.5

Sources: U.S. Census Bureau, 1984b, Table 20; 1992c, Table 36; OPS, 1987, Table A5, 1995 & 2000, Table 11.

Despite migration from the CNMI, U.S., and other Pacific islands during the 1980s and 1990s, the greatest absolute increase in foreign-born individuals came from Asia. Persons born in the Philippines comprised the majority of foreign-born residents of Palau; their continued increase during the 1980s yielding a Philippine-born population in 1990 that was nearly 10 percent of the total. The percentage of the population being Philippines born increased to 15 percent in 1995, where it stayed in 2000. "Other Asians" increased from about 1 percent in 1986, to 2 percent in 1990, doubled again to 4 percent in 1995, and almost doubled yet again in the next 5 years to about 7 percent in 2000. As is the case with the Koreans and Filipinos, most of these other Asians migrated to Palau for employment — primarily as blue-collar workers.



Since the 2000 census, like the 1990 and 1995 censuses, was not full *de jure* census, it does not provide data on the emigration of Palauans, the other half of the mobility equation. In Chapter 16 we look at the statistics on Palau emigrants from various censuses and surveys. Palau-born individuals were certainly leaving the Republic, based on the number of persons remaining. Data in Table 8.1 and Table 8.2 show that the number of Palau-born persons increased slightly between 1980 and 1986, remained constant between 1986 and 1990, and then continued to increase slightly. Given the current natural increase found throughout most of Micronesia, including Palau (see Chapters 6 and 7), the growth during the early 1980s was nominal and the constant population from the late 1980s through the 1990s showed that many Palauans were emigrating. The two most likely destinations were Guam, where 1,201 Palau-born individuals resided in 2003, and the CNMI, with 1,507 Palau-born persons, based on a recent enumeration (see Chapter 16). Another probable destination is the United States. Ironically, Palauans leave their home islands for the same reasons that others migrate there: to get better employment or further their educations. Another reason for growing emigration is marriage to non-Palauans, a phenomenon that has accompanied growing interaction with individuals from other countries over the past few decades.

Migration patterns differed by sex (Tables 8.3 and 8.4). With few exceptions, men were more mobile throughout the period. Of the Palau-born residents of Palau, a greater proportion of women than men resided in the republic in all census years. For example, in 1980 about 87 percent of the male residents of Palau were born in the republic, compared to nearly 91 percent of the females; this decreased to 63 percent of the males and 72 percent of the females in 2000.

Table 8.3. &amp; 8.4. Birthplace of Palau Residents, by Sex: 1986-2000

Birthplace	Population				Percentage			
	2000	1995	1990	1986	2000	1995	1990	1986
<b>Males:</b>	10,450	9,213	8,139	7,398	100.0	100.0	100.0	100.0
Palau	6,545	6,405	6,339	6,409	62.6	69.5	77.9	86.6
Non-Palau	3,905	2,808	1,800	989	37.4	30.5	22.1	13.4
Marshall Islands	NA	NA	34	54	NA	NA	1.9	5.5
Fed. States Micronesia	146	125	186	229	3.7	4.5	10.3	23.2
Northern Mariana Is	108	81	55	10	2.8	2.9	3.1	1.0
United States	333	303	153	174	8.5	10.8	8.5	17.6
Asia	2,960	2,109	1,276	501	75.8	75.1	70.9	50.7
Japan	182	78	69	64	6.1	3.7	5.4	12.8
Korea	108	13	47	26	3.6	0.6	3.7	5.2
Philippines	1,788	1,605	912	296	60.4	76.1	71.5	59.1
Other Asia	882	413	248	115	29.8	19.6	19.4	23.0
Other Pacific Islands	130	136	79	4	3.3	4.8	4.4	0.4
Elsewhere	228	54	17	17	5.8	1.9	0.9	1.7
<b>Females:</b>	8,679	8,012	6,983	6,475	100.0	100.0	100.0	100.0
Palau	6,274	6,071	5,982	5,914	72.3	75.8	85.7	91.3
Non-Palau	2,405	1,941	1,001	561	27.7	24.2	14.3	8.7
Marshall Islands	NA	NA	14	34	NA	NA	1.4	6.1
Fed. States Micronesia	180	157	121	128	7.5	8.1	12.1	22.8
Northern Mariana Is	106	78	62	8	4.4	4.0	6.2	1.4
United States	183	232	113	117	7.6	12.0	11.3	20.9
Asia	1,722	1,283	613	259	71.6	66.1	61.2	46.2
Japan	108	40	20	17	6.3	3.1	3.3	6.6
Korea	33	6	11	6	1.5	0.5	1.8	1.2
Philippines	1,104	1,049	547	221	64.1	81.8	89.2	44.1
Other Asia	477	188	35	15	27.7	14.7	5.7	3.0
Other Pacific Islands	126	122	65	2	5.2	6.3	6.5	0.4
Elsewhere	88	69	13	13	3.7	3.6	1.3	2.3

Sources: OPS, 1987, Tables A1, A2, & A15; U.S. Census Bureau, 1992c, Table 36, 1995 & 2000 Census Table 60.

The decline in the percentage of resident Palau-born males and females is consistent with the growing immigration of foreign-born persons and the growing emigration of native Palauans. With few exceptions, the data in Table 8.2 show that most immigrants to Palau were males — particularly from Japan, Korea, and the Philippines (as well as China and Taiwan, once again included in the "Other Asia" category). These differences between sexes ultimately may have important implications for the population composition of Palau, particularly if the emigration of Palauans and the immigration from other nations increases.

Table 8.5 shows the sex ratio for Palau's total population and for 5-year age groups. The sex ratio increased over the period, except for the 1995 census, as noted earlier. The sex ratio for Palau-born decreased over the 14 years, from 108 males per 100 females in 1986 to 106 in 1990 and 1995, and then to 104 in 2000. The sex ratio for the non-Palau born, however, moved around, from 176 males for every 100 females in 1986 and 180 in 1990 to 145 in 1995, but back up to 162 in 2000.

Table 8.5. Males per 100 Females by Birthplace: 1986 to 2000

Birthplace	Population			
	2000	1995	1990	1986
Males per 100 Females:	120	115	117	114
Palau	104	106	106	108
Non-Palau	162	145	180	176
Marshall Islands	NA	NA	243	159
Fed. States Micronesia	81	80	154	179
Northern Mariana Is	102	104	89	125
United States	182	131	135	149
Asia	172	164	208	193
Japan	169	195	345	376
Korea	327	217	427	433
Philippines	162	153	167	134
Other Asia	185	220	709	767
Other Pacific Islands	103	111	122	200
Elsewhere	259	78	131	131

Sources: OPS, 1987, Tables A1, A2, & A15; U.S. Census Bureau, 1992c, Table 36, 1995 & 2000 Census Table 60.

While the FSM born were among the most "male" in the 1980s, by 2000, every 100 FSM born females had only 80 counterpart males – FSM born were the only sub-population to have a sex ratio of less than 100. In 2000, Palau had 327 Korea-born males for every 100 females, and 182 US-born males for every 100 US-born females.

We have already noted selective immigration (and, by inference, selective emigration) by sex. Table 8.6 looks at Palau-born and Philippines born by age and sex from the 2000 census. As would be expected, at the youngest ages, the percentage of Palau-born people was high – 85 percent of the 0 to 14 years olds were born in Palau (compared to 67 percent of all residents), while only 1 percent of the 0 to 14 year olds were born in the Philippines.

Table 8.6. Age of Palau Residents by Birthplace (Palau and Philippines) and Sex: 2000

Age Group	Total			Male			Female		
	Total	Palau	Philippines	Total	Palau	Philippines	Total	Palau	Philippines
Total:	19,129	67.0	15.1	10,450	62.6	17.1	8,679	72.3	12.7
0 to 14 years	4,563	84.9	1.3	2,340	85.5	1.4	2,223	84.3	1.3
15 to 24 years	2,724	72.4	7.2	1,469	74.1	6.7	1,255	70.5	7.9
25 to 34 years	4,079	46.1	26.8	2,325	41.9	28.8	1,754	51.7	24.2
35 to 44 years	3,542	54.3	27.8	2,080	48.5	29.8	1,462	62.4	24.8
45 to 64 years	3,184	69.3	16.9	1,796	61.1	19.5	1,388	80.0	13.5
65 years & over	1,037	92.9	1.9	440	85.5	4.1	597	98.3	0.3

Source: OPS, 2000 Census, Table 72

The 15 to 24 year olds already started seeing the immigration, at the higher ages of this group – only 72 percent of that age group were born in Palau, while 7 percent of them had been born in the Philippines. But, in the "middle" age groups the immigration was most felt – less than half of the 25 to 34 year olds were born in Palau (compared to about 1 in 4 born in the Philippines), and somewhat more than half of those 35 to 44 were born in Palau (compared to the similar 1 in 4 for Philippines born). In older ages, the percentages shifted back to being mostly Palau-born (although only 2 of every 3 persons 45 to 64 were born in Palau.)

Figure 8.1 provides a pyramid showing the age and sex distribution of the total population and the Palau-born population in the same graphic. The selective nature of the foreign immigration is readily apparent from the very pronounced jutting out at age groups 25 to 39.

Figure 8.1. Palau 2000: Total and Palau-born

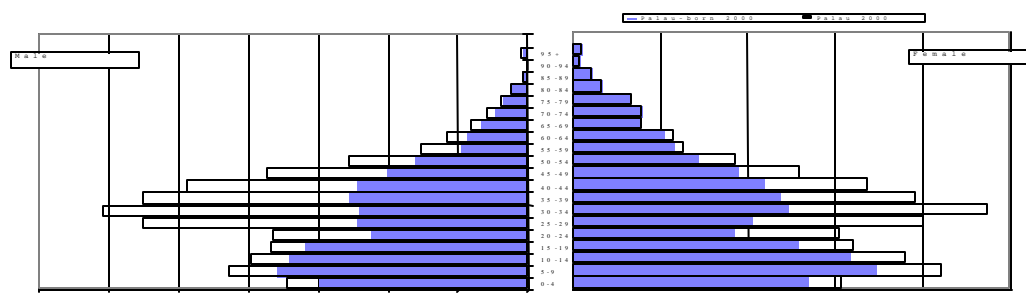
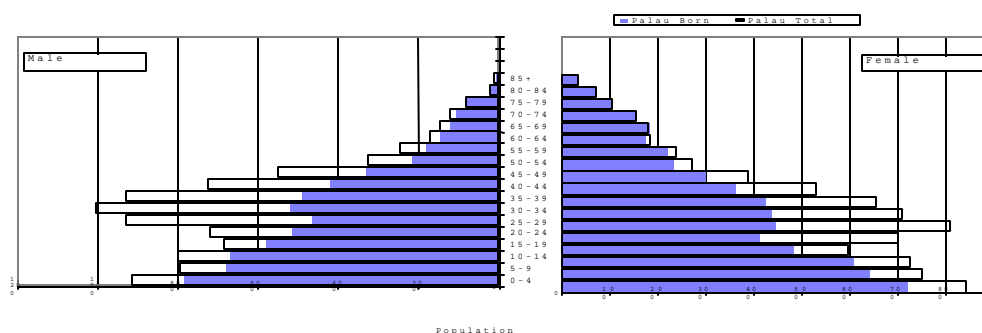


Figure 8.2. shows a similar set of pyramids for the 1995 census. Here, the jutting out is less pronounced, showing less differential immigration of the foreigners (or selective emigration of Palauans in various age groups, or both.)

Figure 8.2. Total and Palau Born: 1995



As noted earlier, females were more likely to have been born and stayed in Palau than males. Less than half of the males 25 to 44 were born in Palau (and only 2 out of every 5 males 25 to 34). About half of the females 25 to 34 were Palau-born compared to about 1 in 4 being Philippines born. The trend, clearly, is towards increased emigration of Palauans in the early earning years, and increased immigration of Philippines and other Asia born.

Table 8.7 shows the vertical percentages for the same information. The patterns for males and for females were similar to the pattern for the whole population. While 30 percent of the Palau-born population was less than 15 years old, only 2 percent of the Philippines born fell in this category. The Palau-born showed a fairly regular distribution for the age distribution for a population experiencing a rapid fertility decline. And, the Philippines population showed a fairly typical pattern for an immigrant population – fewer younger people, and very few older people – although that is likely to change as Filipinos stay in Palau, marry and have families, and eventually retire here.

Table 8.7. Birthplace of Palau Residents (Palau and Philippines) by Age &amp; Sex: 2000

Age Group	Total			Male			Female		
	Total	Palau	Philippines	Total	Palau	Philippines	Total	Palau	Philippines
Total:	19,129	12,819	2,892	10,450	6,545	1,788	8,679	6,274	1,104
Percent:	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0 to 14 years	23.9	30.2	2.1	22.4	30.6	1.8	25.6	29.9	2.5
15 to 24 years	14.2	15.4	6.8	14.1	16.6	5.5	14.5	14.1	9.0
25 to 34 years	21.3	14.7	37.8	22.2	14.9	37.4	20.2	14.4	38.4
35 to 44 years	18.5	15.0	34.0	19.9	15.4	34.7	16.8	14.6	32.9
45 to 64 years	16.6	17.2	18.6	17.2	16.8	19.6	16.0	17.7	17.0
65 years & over	5.4	7.5	0.7	4.2	5.7	1.0	6.9	9.4	0.2

Source: OPS, 2000 Census, Table 72

Migration to Palau varied substantially by State (Table 8.8). Of the 16 states in the republic, two contained the vast majority of persons born elsewhere in 2000, namely Koror and Airai. In addition to containing about 70 percent of Palau's total 2000 population, Koror State also provided the greatest employment in the republic—both private sector and government. Moreover, the majority of housing, educational institutions and most modern amenities were located in this state. Nearly 78 percent of Philippines-born individuals residing in Palau in 2000 lived in Koror, along with the majority of individuals born in the U.S. or a U.S. Territory (about 73 percent of all these individuals in Palau) and most persons born "Elsewhere" (roughly 75 percent of the total). Airai, the second most populated state in Palau in 2000, contained the second greatest number of residents born outside. The remaining states in Palau contained relatively few individuals born outside.

Table 8.8. Birthplace of Palau Residents by State: 2000

State	Total	Palau	U.S. or Territories	Philippines	Elsewhere
Total:	19,129	12,819	986	2,892	2,432
Aimeliik	272	219	15	11	27
Airai	2,104	1,266	135	446	257
Angaur	188	161	10	7	10
Hatohebei	23	21	1	-	1
Kayangel	138	124	12	2	-
Koror	13,303	8,513	719	2,242	1,829
Melekeok	239	212	4	16	7
Ngaraard	638	354	45	18	221
Ngardmau	221	197	4	14	6
Ngaremlengui	367	301	1	62	3
Ngatpang	280	210	13	33	24
Ngchesar	267	249	4	11	3
Ngerchelong	286	259	4	3	20
Ngiwal	193	173	7	8	5
Peleliu	571	528	11	19	13
Sonsorol	39	32	1	-	6

Source: OPS, 2000 Census, Table 11

Parental birthplaces give information about generational migration, the movements of one generation followed by the next. This information is useful for planning, as the government is able to see movements between States of Palau, and into (and sometimes out of) Palau altogether. Data on father's birthplace by State, for example, in general agreed with the data on individual's birthplace by state. Of the residents of Palau in 2000, more than 2 out of every 3 were born to fathers also from Palau (Table 8.9). About 1 in 6 residents had fathers born in the Philippines, with the remainder born in the U.S. or a U.S. Territory, or elsewhere (probably somewhere in Asia). Once again, Koror State contained the greatest number of residents with fathers born elsewhere, primarily the Philippines. Airai was a distant second to Koror State in the number of fathers born outside Palau, with the other states accounting for the relatively few remaining foreign-born fathers.

Table 8.9. Father's Birthplace for Palau Residents by State: 2000

State	Total	Palau	U.S. or Territories	Philippines	Elsewhere
Total:	19,129	12,736	719	3,019	2,655
Aimeliik	272	223	7	11	31
Airai	2,104	1,256	104	465	279
Angaur	188	164	3	7	14
Hatohebei	23	18	-	-	5
Kayangel	138	129	5	2	2
Koror	13,303	8,430	539	2,344	1,990
Melekeok	239	209	4	17	9
Ngaraard	638	368	28	20	222
Ngardmau	221	200	1	14	6
Ngaremlengui	367	297	1	61	8
Ngatpang	280	221	5	33	21
Ngchesar	267	235	7	12	13
Ngerchelong	286	261	4	5	16
Ngiwal	193	173	4	8	8
Peleliu	571	524	6	20	21
Sonsorol	39	28	1	-	10

Source: OPS, 2000 Census, Table 14

Similarly, about 2 in every 3 Palau residents in 2000 had mothers born somewhere in the republic (Table 8.10). Of those mothers born elsewhere, somewhat less than half (46 percent) came from the Philippines (but 15 percent of the total population). However, compared to the birthplaces of fathers, fewer mothers of Palau residents in 2000 came from the Philippines, the U.S. or one of its territories, or elsewhere. As discussed above, in 2000 more male residents of Palau were born outside the republic than female residents. This difference between father's and mother's birthplace probably is due to a larger number of non-Palauan males immigrating to the republic and fathering children with Palauan women.

Table 8.10. Mother's Birthplace for Palau Residents by State: 2000

State	Total	Palau	U.S. or Territories	Philippines	Elsewhere
Total:	19,129	12,717	418	3,006	2,988
Aimeliik	272	228	7	12	25
Airai	2,104	1,323	64	454	263
Angaur	188	169	2	11	6
Hatothobei	23	20	-	-	3
Kayangel	138	134	-	2	2
Koror	13,303	8,777	307	2,333	1,886
Melekeok	239	207	6	17	9
Ngaraard	638	377	22	20	219
Ngardmau	221	203	-	14	4
Ngaremlengui	367	297	2	64	4
Ngatpang	280	218	1	35	26
Ngchesar	267	246	5	11	5
Ngerchelong	286	259	-	3	24
Ngiwal	193	177	2	9	5
Peleliu	571	53	-	21	497
Sonsorol	39	29	-	-	10

Source: OPS, 2000 Census, Table 14

### Citizenship

Data on the citizenship of Palau's population in 2000 are consistent with the general migration patterns seen in place of birth. For the republic as a whole, more than two-thirds of the 2000 residents were born in Palau and hence were designated citizens of the republic (Table 8.11). An additional 400 people in Palau in 2000 claimed to be Palau citizens by naturalization. The majority of the remainder, born neither in the U.S. nor Palau, mostly comprised the Asian community that increased in Palau over the past two decades. At the level of individual states, with the exceptions of Airai and Koror most residents were citizens of Palau. These two states contained the greatest numbers of persons born in the U.S. or its territories, as well as those who were citizens of some country other than the U.S. or Palau. Once again, the large numbers of foreigners in Airai and Koror states reflect primarily the greater economic and educational attraction of these two jurisdictions, as well as the presence of modern amenities (particularly in Koror State). The presence of national government offices in Koror provides an additional attraction to non-Palauans, particularly persons from the U.S. who provide an interface between the American government and the government of Palau.

Table 8.11. Citizenship of Palau Residents by State: 2000

State	Total	Born in Palau	Naturalized Palau Citizen	Born in U.S. or its Territories	Naturalized U.S. Citizen	Born Neither Palau or U.S.
Total:	19,129	12,819	390	597	10	5,313
Aimeliik	272	219	6	9	-	38
Airai	2,104	1,266	65	70	2	701
Angaur	188	161	10	-	-	17
Hatothobei	23	21	1	-	-	1
Kayangel	138	124	4	8	-	2
Koror	13,303	8,513	255	465	5	4,065
Melekeok	239	212	-	4	-	23
Ngaraard	638	354	23	22	-	239
Ngardmau	221	197	4	-	-	20
Ngaremlengui	367	301	1	-	1	64
Ngatpang	280	210	3	10	1	56
Ngchesar	267	249	-	4	-	14
Ngerchelong	286	259	4	-	-	23
Ngiwal	193	173	5	2	1	12
Peleliu	571	528	9	2	-	32
Sonsorol	39	32	-	1	-	6

Source: OPS, 2000 Census, Table 12

**Year of Entry**

Immigration to Palau has continued to increase dramatically in recent years. Of the 6,310 individuals residing in Palau in 2000 who were born outside the republic, more than 3 out of every 4 came to Palau during the preceding five years (Table 8.12). Fewer moved to Palau during the first half of the 1990s, with fewer still immigrating during the 1980s or before.

Table 8.12. Year of Immigration to Palau by Age: 2000

Table 6.12: Year of Immigration to Palau by Age, 2000										
Age Group	Total	Palau Born	Year of Immigration for Non-Palau Born							
			Total	1999-2000	1995-1998	1992-1994	1990-1991	1985-1989	1980-1984	Before 1980
All persons:	19,129	12,815	6,310	2,191	2,629	675	260	278	147	130
0 to 4 years	1,308	1,141	167	101	66	-	-	-	-	-
5 to 9 years	1,700	1,413	287	40	153	80	14	-	-	-
10 to 14 years	1,555	1,320	235	27	118	40	17	33	-	-
15 to 19 years	1,382	1,154	228	68	85	13	2	25	35	-
20 to 24 years	1,342	819	523	218	254	15	8	11	14	3
25 to 29 years	1,910	901	1,009	428	452	84	11	13	7	14
30 to 34 years	2,169	979	1,190	456	525	111	42	27	9	20
35 to 39 years	1,891	991	900	329	343	121	48	41	11	7
40 to 44 years	1,651	931	720	245	270	100	49	33	12	11
45 to 49 years	1,272	781	491	155	194	49	33	32	10	18
50 to 54 years	886	613	273	67	93	35	19	34	14	11
55 to 59 years	563	428	135	25	45	14	8	16	14	13
60 to 64 years	463	385	78	17	17	7	8	6	9	14
65 to 74 years	592	540	52	10	9	3	1	4	10	15
75 years and over	445	423	22	5	5	3	-	3	2	4

Source: OPS, 2000 Census, Table 61

Table 8.12 also presents information on year of immigration by age. These data once again show that much of the recent immigration to Palau has been for purposes of employment. Most individuals who moved to the republic were between 19 and 55 years old in 2000, yielding an age distribution that contrasts dramatically with that of Palau-born. The natural aging process requires focusing specifically on the most recent immigrants when examining the age of migrants. Those who migrated many years prior to the 2000 census would have aged between the year they moved and the year of the census, resulting in an older age composition—an effect partially reduced in cases when people return to their home countries as they grow too old to work. Although recent immigrants to Palau included several individuals younger than 20 years of age, most of these individuals probably were offspring of those who came for employment. Some of the non-Palau born residents aged 15 to 24 years were students at Palau Community College in Koror. Some of the non-Palau born persons belonging to older working age groups could be Peace Corps volunteers, Civil Action Team members, and businessmen. Many of this age group also may have been Asian (and non-Asian) contract workers who married Palauans and began families, with many of the remainder employed by the Palau national government.

For purposes of comparison, Table 8.13 presents data on year of immigration by age for 1995. The most obvious trend in tables 8.12 and 8.13 is the very large amount of recent immigration. In 1995, about 4 in every 5 foreign born persons migrated in the five years before the census. As during the late 1990s the majority of immigrants during the early 1990s were working age.

Table 8.13. Year of Immigration to Palau by Age: 1995

Table 8.15: Year of Immigration to Palau by Age, 1995										
Age Group	Total	Palau Born	Year of Immigration for Non-Palau Born							
			Total	1994-1995	1990-1993	1987-1989	1985-1986	1980-1984	1975-1979	Before 1975
All persons:	17,225	12,476	4,745	2,475	1,381	344	146	195	95	113
0 to 4 years	1,762	1,514	248	141	107	-	-	-	-	-
5 to 9 years	1,551	1,335	216	65	69	70	12	-	-	-
10 to 14 years	1,527	1,291	236	82	45	17	24	68	-	-
15 to 19 years	1,282	1,073	209	73	46	14	5	40	31	-
20 to 24 years	1,427	935	492	356	98	1	5	6	14	12
25 to 29 years	1,741	917	824	494	256	27	9	4	9	25
30 to 34 years	1,717	963	754	395	267	52	13	8	5	14
35 to 39 years	1,583	918	665	360	207	46	26	13	7	6
40 to 44 years	1,261	782	479	256	127	38	23	20	7	8
45 to 49 years	943	633	310	144	92	33	12	15	7	7
50 to 54 years	603	456	147	59	36	23	7	7	5	10
55 to 59 years	488	401	87	30	15	8	4	10	7	13
60 to 64 years	361	321	40	10	7	9	4	4	1	5
65 to 74 years	606	570	36	10	6	5	2	-	1	12
75 years and over	373	367	6	-	3	1	-	-	1	-

Source: 1995 Census, Table 61

Increased immigration over time also held for most states in Palau (Table 8.14). About 2 in every 3 of Palau's residents in 2000 were born in Palau. Immigration grew within the decade of the 1990s, with about 3 out of every 4 of the total 2000 residents born outside Palau having moved after 1995. This immigration was seen for Koror and Airai, the states with the largest number of non-Palau born residents. The numbers of immigrants to other states were too small to say much.

Table 8.14. When Palau Residents Came to Palau to Stay by State: 2000

State	Total	Born in Palau		Born Outside Palau	Percent Entered:			
		Number	Percent		Total	1999-2000	1995-1998	Before 1995
Total:	19,129	12,819	67.0	6,310	100.0	34.7	41.7	23.6
Aimeliik	272	219	80.5	53	100.0	26.4	50.9	22.6
Airai	2,104	1,266	60.2	838	100.0	47.7	30.0	22.3
Angaur	188	161	85.6	27	100.0	22.2	59.3	18.5
Hatohebei	23	21	91.3	2	100.0	50.0	-	50.0
Kayangel	138	124	89.9	14	100.0	-	78.6	21.4
Koror	13,303	8,513	64.0	4,790	100.0	30.5	44.8	24.7
Melekeok	239	212	88.7	27	100.0	40.7	22.2	37.0
Ngaraard	638	354	55.5	284	100.0	72.5	21.1	6.3
Ngardmau	221	197	89.1	24	100.0	12.5	50.0	37.5
Ngaremlengui	367	301	82.0	66	100.0	53.0	33.3	13.6
Ngatpang	280	210	75.0	70	100.0	45.7	38.6	15.7
Ngchesar	267	249	93.3	18	100.0	27.8	38.9	33.3
Ngerchelung	286	259	90.6	27	100.0	22.2	22.2	55.6
Ngiwal	193	173	89.6	20	100.0	10.0	75.0	15.0
Peleliu	571	528	92.5	43	100.0	23.3	44.2	32.6
Sonsorol	39	32	82.1	7	100.0	-	57.1	42.9

Source: 2000 Census, Table 12.

### Residence in 1995

Although data on birthplace focus on long term, or lifetime, mobility patterns, the 2000 census also collected data on short-term mobility. Table 8.15 presents the data on Palau residents by place of residence in 1995, necessarily excluding those individuals aged less than five years. Of the remaining 2000 residents, about 1 in every 3 did not live in the same house in 1995 as in 2000. Many of these individuals (about 10 percent of the total 5 years and older) resided in a different house within the same state, or in a different part of Palau. Others resided outside the republic (27 percent of the total), mostly in Asia (about two-thirds of those not living in Palau.). In 2000, Koror State contained the majority of the individuals who in 1995 lived somewhere other than the same house—about 70 percent of all these persons in Palau (down from 80 percent for 1985 in the 1990 census, although not shown here). Although these individuals included persons who migrated from other countries, they also included persons who migrated to Koror from more rural portions of Palau.

Table 8.15. Residence in 1995 by State: 2000

State	Total	Palau			Outside Palau	
		Total	Same House	Different house	Total	Asia
Total:	17,821	13,040	11,307	1,733	4,781	3,534
Aimeliik	250	211	165	46	39	25
Airai	1,964	1,270	962	308	694	538
Angaur	175	150	144	6	25	7
Hatohebei	21	21	7	14	-	-
Kayangel	123	106	88	18	17	1
Koror	12,446	8,936	7,946	990	3,510	2,644
Melekeok	221	201	177	24	20	9
Ngaraard	600	351	283	68	249	174
Ngardmau	196	182	156	26	14	9
Ngaremlengui	337	269	225	44	68	52
Ngatpang	258	199	146	53	59	46
Ngchesar	244	227	160	67	17	3
Ngerchelung	264	255	234	21	9	3
Ngiwal	176	156	152	4	20	8
Peleliu	513	475	444	31	38	15
Sonsorol	33	31	18	13	2	-

Source: 2000 Census, Table 15.

**Ethnic Origin or Race**

Data on ethnicity support the other information on mobility discussed in this chapter. Most of the residents in Palau in 2000 considered themselves Palauan (Table 8.16). Of the remainder, most were Filipino, followed by "Other" which included the large non-Filipino Asian population that migrated to Palau during the 1980s. Relatively few residents of Palau in 2000 considered themselves non-Palauan Micronesian, while fewer still considered themselves "White." Most persons of non-Palauan ethnicity resided in Koror and Airai states, with Filipinos again largest.

Table 8.16. Ethnic Origin of Palau by State: 2000

State		Ethnic Origin of Palau						
		Total	Palauan	Carolinian	White	Filipino	Chinese	Other
	Total:	19,128	13,364	270	360	2,922	1,081	1,132
Aimeliik		272	230	-	6	11	21	4
Airai		2,104	1,378	-	46	445	69	166
Angaur		188	176	-	-	7	-	5
Hatohebei		22	4	18	-	-	-	1
Kayangel		138	132	4	-	2	-	-
Koror		13,303	8,870	215	282	2,274	988	674
Melekeok		239	213	-	2	16	-	8
Ngaraard		638	383	-	19	18	2	216
Ngardmau		221	203	-	-	14	-	4
Ngaremlengui		367	303	-	-	61	-	3
Ngatpang		280	224	-	1	33	-	22
Ngchesar		267	251	-	1	11	-	4
Ngerchelung		286	271	-	-	3	-	12
Ngiwal		193	178	-	2	8	-	5
Peleliu		571	542	-	1	19	1	8
Sonsorol		39	6	33	-	-	-	-

Source: 2000 Census, Table 10.

Data on ethnicity by age in 2000 reveal differences between Palauans and non-Palauans (Table 8.17). Since about 2 out of every 3 residents were Palauan, the total population and the Palauans were younger than the immigrants. Generally, each older 5-year age group was smaller than the preceding one. However, the non-Palauans showed the type of distribution usually seen among newly arrived immigrant groups — the five-year age groups between 19 and 50 years were larger than the younger and older groups. Also, the median age of the non-Palauans was more than 9 years older than that of the Palauans.

Table 8.17. Population by Age and Ethnicity: 2000

5-Year Age Groups	Population by Ethnicity			Percent			Percent Palauan
	Total	Palauan	Non-Palauan	Total	Palauan	Non-Palauan	
Total:	19,129	13,364	5,765	100.0	100.0	100.0	69.9
0 to 4 years	1,308	1,210	98	6.8	10.0	1.7	92.5
5 to 9 years	1,700	1,598	102	8.9	13.1	1.8	94.0
10 to 14 years	1,555	1,458	97	8.1	12.0	1.7	93.8
15 to 19 years	1,382	1,254	128	7.2	10.3	2.2	90.7
20 to 24 years	1,342	840	502	7.0	6.9	8.7	62.6
25 to 29 years	1,910	922	988	10.0	7.6	17.1	48.3
30 to 34 years	2,169	1,009	1,160	11.3	8.3	20.1	46.5
35 to 39 years	1,891	1,002	889	9.9	8.2	15.4	53.0
40 to 44 years	1,651	925	726	8.6	7.6	12.6	56.0
45 to 49 years	1,272	770	502	6.6	6.3	8.7	60.5
50 to 54 years	886	613	273	4.6	5.0	4.7	69.2
55 to 59 years	563	423	140	2.9	3.5	2.4	75.1
60 to 64 years	463	382	81	2.4	3.1	1.4	82.5
65 to 69 years	318	287	31	1.7	2.4	0.5	90.3
70 to 74 years	274	247	27	1.4	2.0	0.5	90.1
75 yrs and over	445	424	21	2.3	3.5	0.4	95.3
Median	30.8	26.7	34.9	...	...	...	...

Source: 2000 Census, Table 59



The percentages of non-Palauans by age seen in Table 8.17 began earlier in the decade and were established at least by 1990 (Table 8.18). But although same general age composition existed in the mid-1980s, fewer ethnic non-Palauans resided in the republic. Comparisons between categories like median age of ethnic Palauans versus non-Palauans further support the growing differences found between 1990 and 2000.

Table 8.18. Population by Age and Ethnicity: 1990

5-Year Age Groups	Population by Ethnicity			Percent			Percent Palauan
	Total	Palauan	Non-Palauan	Total	Palauan	Non-Palauan	
Total:	15,122	12,575	2,547	100.0	100.0	100.0	83.2
0 to 4 years	1,513	1,420	93	10.0	11.3	3.7	93.9
5 to 9 years	1,529	1,441	88	10.1	11.5	3.5	94.2
10 to 14 years	1,534	1,457	77	10.1	11.6	3.0	95.0
15 to 19 years	1,464	1,390	74	9.7	11.1	2.9	94.9
20 to 24 years	1,340	955	385	8.9	7.6	15.1	71.3
25 to 29 years	1,403	1,016	387	9.3	8.1	15.2	72.4
30 to 34 years	1,338	930	408	8.8	7.4	16.0	69.5
35 to 39 years	1,243	853	390	8.2	6.8	15.3	68.6
40 to 44 years	873	626	247	5.8	5.0	9.7	71.7
45 to 49 years	666	500	166	4.4	4.0	6.5	75.1
50 to 54 years	513	410	103	3.4	3.3	4.0	79.9
55 to 59 years	403	344	59	2.7	2.7	2.3	85.4
60 to 64 years	387	353	34	2.6	2.8	1.3	91.2
65 to 69 years	332	312	20	2.2	2.5	0.8	94.0
70 to 74 years	249	240	9	1.6	1.9	0.4	96.4
75 yrs and over	335	328	7	2.2	2.6	0.3	97.9
Median	25.6	23.0	32.2	...	...	...	...

Source: U.S. Bureau of the Census, 1992c, Table 38.

## LEGAL RESIDENCE

Finally, the 2000 Census asked for each person's legal residence. To show the potential voting population based on the 2000 Census, table 8.19 shows the distribution of the self-defined legal residence for people 18 years and older in the 2000 Census. About 62 percent of the resident population considered themselves legal residents of Palau (and, hence 38 percent of the adults did not consider themselves legal residences for voting purposes.) Of those, 5,276, or about 62 percent were living in the same state as their legal residence.

Table 8.19. Legal Residence by State for 18 years &amp; over: 2000

State	Total	Palau		Outside Palau		Asia
		Total	Same State	Different State	Total	
Total 18+ years:	13,667	8,455	5,276	3,179	5,212	4,530
Aimeliik	175	135	116	19	40	32
Airai	1,555	850	600	250	705	631
Angaur	120	107	104	3	13	8
Hatohobei	14	13	12	1	1	1
Kayangel	89	87	79	8	2	2
Koror	9,688	5,676	2,924	2,752	4,012	3,496
Melekeok	161	138	131	7	23	15
Ngaraard	441	231	205	26	210	175
Ngardmau	139	121	108	13	18	15
Ngaremlengui	249	185	172	13	64	63
Ngatpang	161	107	68	39	54	51
Ngchesar	172	161	143	18	11	5
Ngerchelung	177	165	157	8	12	3
Ngiwal	130	116	112	4	14	8
Peleliu	371	343	330	13	28	24
Sonsorol	25	20	15	5	5	1

Source: 2000 Census, Table 15.

For Koror, 52 percent of those living there voted there – the remaining 48 percent voted in other States in the Republic. This phenomenon has implications for public – social and educational – services, and the relationship between the National government and the State governments. About 70 percent of those in Airai vote in that State, the other 30 percent vote in other States. On the other hand, 97 percent of those living in Peleliu vote there.

## **Conclusions**

The 2000 Census data describe a population increasingly affected by both immigration and emigration. Most information in the recent census deals with the former topic. Although this chapter employs several means of assessing immigration and internal migration, much of the story is told by place of birth of republic residents. Nearly 1/3<sup>rd</sup> of the 2000 population of Palau were born elsewhere, mainly in the Philippines or another country in Asia (primarily China, Japan, Korea, or Taiwan). This very rapid immigration started about 1980 and has been increasing over time. In general, more men than women moved to Palau during the 1980s and 1990s, both sexes having large numbers aged 25 to 44 years. The main reason for this immigration was the search for employment, as Filipinos and other Asians moved to Palau for work — often taking menial jobs.

In addition to place of birth, this chapter also discussed citizenship, year of entry, residence in 1995, and ethnic origin or race as means of assessing migration in Palau. In all cases, substantial recent migration of working age persons from Asia, particularly the Philippines, is evident. Evidence for short-term migration is particularly noteworthy; in contrast to other parts of Micronesia where large-scale immigration decreased in recent years (see Gorenflo, 1990), mobility remains a substantial force even over the short term in the Republic of Palau.

Since the 2000 census was modified *de jure*, data on emigration from Palau were not collected. However, in Chapter 16 we look at many of the emigrants — at least, for those in Guam and the CNMI. When we look at birthplace of Palau residents, and their fertility and mortality, we find that the sustained growth of native Palauans that *should* have characterized the 1980s and 1990s did not occur. Palauans migrated elsewhere. Data from the 1990 censuses of the CNMI and Guam showed relatively many residents born in Palau, probably accounting for most of the emigrants from the republic. By 2000, many Palau emigrants were also going to Hawaii and the U.S. Mainland, but those figures are not yet available.

## CHAPTER 9. EDUCATION AND LANGUAGE

Educational statistics from Palau's censuses yield information on the school enrollment and levels of educational attainment. Also, census data on language use provide information for use in bilingual programs in schools and the work place. Generally, a population's levels of formal schooling and language use are good indicators both of social conditions and potential for economic success. For Palau, which is moving from a more traditional economic system to a more Westernized system, data on education and language serve the additional purpose of providing means to evaluate overall cultural change. Moreover, given the important role that education has come to play in various sectors of Palau's economy, and the role of language use in the work place, the study of these two subjects should give insights on the direction of acculturation and the changing economic potential of the republic.

The 2000 census, like the 1990 Census and the 1995 Census, had two items for education: school enrollment and level of educational attainment. The Palau Department of Education collects statistical data annually to obtain information about school enrollment and to assess needs for special programs in bilingual education and special education. Palau's censuses allow more in-depth analysis of the school population's ethnicity, birthplace, and class of worker, income, and language spoken at home. Here we examine education and language data from the 2000 census.

### **Data Description**

#### *SCHOOL ENROLLMENT AND TYPE OF SCHOOL*

The 2000 census obtained data on school enrollment from answers to questionnaire item 12. Persons were classified as enrolled in school if they reported attending a "regular" public or private school or college at any time between February 1, 2000 and enumeration. The question included instructions to "include only pre-kindergarten, kindergarten, elementary school, and schooling which would lead to a high school diploma or a college degree" as regular school. Palau census office personnel instructed enumerators not to include enrollment in a trade or business school, company training, or tutoring unless the course would be accepted for credit at a regular elementary school, high school, or college. Persons who did not answer the enrollment question were assigned the enrollment status and type of school of a person with the same age and sex whose residence was in the same or a nearby area.

*Public and Private School.* This category included persons who attended school in the reference period and reported as enrolled by marking one of the questionnaire categories for "public school, public college" or "private school, private college." The enumerator instructions defined a "public" school as "any school or college controlled and supported by a local or Palau National or State Government." The census defined "schools supported and controlled primarily by religious organizations or other private groups" as "private."

*Level of School in Which Enrolled.* The 2000 census classified persons enrolled in school at the time of the 2000 census as enrolled in "preprimary school," "elementary school," "high school," or "college" according to their response to question 13a (years of school completed or highest degree received). Persons who were enrolled and reported completing pre-kindergarten school or less were classified as enrolled in "preprimary school," which included kindergarten. Similarly, enrolled persons who had completed at least kindergarten, but not eighth grade, were classified as enrolled in elementary. Persons who completed at least the eighth grade, but who were not high school graduates, were classified as enrolled in high school. Enrolled persons who reported completing high school or some college or having received a post-secondary degree were classified as enrolled in "college." Enrolled persons who reported completing the twelfth grade but receiving "No Diploma" were classified as "enrolled in high school." For more information on level of school, see the discussion for *Educational Attainment*.

Limitations. There are no obvious limitations of the school enrollment and type of school data collected in the 2000 census of Palau.

Comparability. School enrollment questions have been included in Palau's censuses since 1970. The pertinent question in the censuses referred to attendance "since February 1". Two exceptions occurred. In 1980, the census was conducted on September 15, 1980, so the reference used was "Since September 1, 1980...". Similarly, in 1995, the census was collected as of September 9, 1995, so an education reference date of September 1, 1995 was used. The 2000 census took place as of April 1, so the February 1 date was used again.

The age range for which enrollment data have been obtained and published has varied between censuses. Information on enrollment was recorded for persons aged 3 years and over in 1980, 1990, 1995 and 2000. In these same censuses, college students were enumerated where they lived while attending college.

Type of school was first introduced in the 1980 census in Palau, where a separate question asked the enrolled persons whether they were in a "public" or "private" school. Grade of enrollment was first available in Palau's 1980 census where it was obtained from responses to the question on highest grade of school completed. Enumerators were instructed that "for a person still in school, the last grade completed will be the grade preceding the one in which he or she was now enrolled." In 1980, grade of enrollment was obtained from the highest grade attended in the two-part question used to measure educational attainment. For more information on grade of enrollment, see the discussion under *Educational Attainment* below.

Data on school enrollment are also collected and published by other Republic of Palau and United States government agencies. Where these data are obtained from administrative records of school systems and institutions of higher learning, they are only roughly comparable with data from population censuses and household surveys because of differences in definitions and concepts, subject matter covered, time references, and enumeration methods. At the local level, the difference between the location of the institution and the residence of the student may affect the comparability of census and administrative data. Differences between the boundaries of school districts and census geographic units also may affect these comparisons.

#### **SCHOOL ENROLLMENT AND LABOR FORCE STATUS**

The tabulation of 2000 census data on enrollment, educational attainment, and labor force status for the population 16 to 19 years old allows for calculation of the proportion of the age group who were not enrolled in school and not high school graduates or "dropouts" and an unemployment rate for the "dropout" population. Definitions of the three topics and descriptions of the census items from which they were derived are presented under the headings *Educational Attainment*, *Employment Status*, and *School Enrollment and Type of School*. The tabulations published in Volume I of the 2000 census report for Palau included both the civilian and Armed Forces populations, but labor force status is provided for the civilian population only. Therefore, the labor force statuses may not add to the total lines high school graduate and not high school graduate; the difference is Armed Forces.

Limitations. There are no obvious limitations of the school enrollment and labor force data collected in the 2000 census of Palau.

Comparability. The tabulation of school enrollment by labor force status prepared for the Volume I report of the 2000 census of Palau is similar to that published in 1980 and subsequent census reports (see U.S. Bureau of the Census, 1984; 1992c). The 1980 census tabulation included a single data line for Armed Forces. However, enrollment, attainment, and labor force status data were shown for the civilian population only.

#### **EDUCATIONAL ATTAINMENT**

The 2000 census of Palau obtained data on educational attainment from answers to questionnaire item 13a. Data were tabulated for persons 3 years old and over. Persons were classified according to the highest grade of school completed or the highest degree received. For persons currently enrolled in school, the question included instructions to report the level of the previous grade attended or the highest degree received. The question included response categories that allowed persons to report completing the twelfth grade without receiving a high school diploma. Respondents were to report as "high school graduate(s)" those persons who received either a high school diploma or the equivalent—including, for example, individuals who passed the Test of General Educational Development (G.E.D.) and did not attend college.

Enumerators were instructed that schooling completed in foreign or ungraded school systems should be reported as the equivalent level of schooling in the regular American system; that vocational certificates or diplomas from vocational, trade, or business schools or colleges were not to be reported unless they were college-level degrees; and that honorary degrees were not to be reported. The instructions gave "medicine, dentistry, chiropractic medicine, optometry, osteopathic medicine, pharmacy, podiatry, veterinary medicine, law, and theology" as examples of professional school degrees, and specifically excluded "barber school, cosmetology, or other training for a specific trade" from the professional school degree category.

Census personnel assigned persons who did not report educational attainment the attainment of a person of the same age and sex who resided in the same or a nearby area.

*High School Graduate or Higher.* This category included persons whose highest degree was a high school diploma or its equivalent, persons who attended college or professional school, and persons who received a college, university, or professional degree. Persons who reported completing the twelfth grade but not receiving a diploma were not included.

*Not Enrolled, Not High School Graduate.* This category included persons of compulsory school attendance age or above who were not enrolled in school and were not high school graduates; these persons may be taken to be "high school dropouts." There is no restriction on when they "dropped out" of school, and they may have never attended high school.

"Percent high school graduate or higher" and "Percent bachelor's degree or higher" are summary measures which can be calculated from the present data and offer quite readily interpretable measures of differences between population subgroups. To make comparisons with data from previous censuses, one can calculate "Percent high school graduate or higher" and approximate "Percent bachelor's degree or higher."

Limitations. There are no obvious limitations of the educational attainment data collected in the 1990, 1995, and 2000 censuses of Palau.

Comparability. Beginning in 1980, censuses of Palau included educational attainment questions on years of school completed. In the 1980 census, a two-part question asking highest grade of school attended and whether that grade was finished was used to construct highest grade or year of school completed. For persons who had not attended college, the response categories in the 1990, 1995 and 2000 educational attainment question should have produced data comparable to data on highest grade completed from earlier censuses.

The response categories for persons who attended college were modified from earlier censuses because there was some ambiguity in interpreting responses in terms of the number of years of college completed. For instance, it was not clear whether "completed the fourth year of college," "completed the senior year of college," and "college graduate" were synonymous. Research conducted shortly before the 1990 census suggests that these terms were more distinct in 1990 and later than in earlier decades, and this change may have threatened the ability to estimate the number of "college graduates" from the number of persons reported as having completed the fourth or a higher year of college. It was even more difficult to make inferences about post-baccalaureate degrees and "Associate" degrees from highest year of college completed. Thus, comparisons of post-secondary educational attainment in this and earlier censuses should be made with great caution.

#### **LANGUAGE SPOKEN AT HOME AND FREQUENCY OF LANGUAGE USAGE**

Data on language spoken at home came from answers to questionnaire item 16. These questions obtained the range of languages other than Palauan spoken at home and how frequently they were spoken relative to Palauan. The questions were asked only of persons 5 years old and over.

*Language Spoken at Home.* Persons were asked in questionnaire item 16a whether they spoke a language other than Palauan at home. Respondents were not to include languages spoken only at school or languages for which the ability was limited to a few words or slang. Persons who spoke only Palauan at home were instructed to answer "No" and to skip the remainder of the language questions.

Those persons who reported speaking a language other than Palauan were asked in question 16b to report the non-Palauan language spoken at home. If more than one non-Palauan language was spoken, the person was asked which language was spoken most often. If it could not be determined which was spoken most often, the first language the person learned to speak was to be recorded. The response was written on the form by the enumerator and later given a three-digit code in a separate operation. Answers were coded using a detailed list of languages. If more than one language was written on the form only the first non-Palauan language was coded.

**Frequency of Language Usage.** Persons who reported in 16a that they spoke a language other than Palauan at home were asked to report in item 16c the frequency with which they spoke the other language relative to Palauan in one of the following categories: "more frequently than Palauan," "both equally often," "less frequently than Palauan," or "does not speak Palauan."

The imputation procedure for persons who failed to report language spoken involved attributing the language of other household members. If that was not possible, the language of a person of the same ethnic origin and other demographic characteristics was imputed. Unreported frequency of use was allocated in a similar manner.

**Limitations.** There are no obvious limitations of the language spoken at home and frequency of language usage data collected in the 2000 census of Palau.

**Comparability.** Questions concerning language spoken at home and frequency of language usage were asked for the first time in the 1980 census. The language categories included in the main report for the 1990 census of Palau were slightly different than those published in 1980, and in 1995 and 2000, "Palauan" rather than "English" was used.

#### **Analysis of Education and Language Data**

Although the population of Palau increased from less than 12,000 in 1970 to more than 19,000 in 2000, the number of persons attending school in the republic remained virtually constant over the first two decades, even in 1995, before increasing again in 2000 (Table 9.1). In part these contrasting trends were due to selective migration, with families and individuals moving out of Palau being replaced primarily by single adults (without children) migrating into the republic, in part to decreasing fertility, and in part to parents sending their children out of Palau for schooling. Enrollment increased from 4,119 in 1990 and 4,178 in 1995, before increasing more rapidly to 4,543 in 2000.

Table 9.1. School Attendance by Type and Level: 1990, 1995 and 2000

Type and Level	Numbers			Percent Change		Percent		
	2000	1995	1990	1995/2000	1990/1995	2000	1995	1990
Persons 3 + yrs & enrolled in school:	4,543	4,178	4,119	8.7	1.4	100.0	100.0	100.0
Preprimary	419	549	97	(23.7)	466.0	9.2	13.1	2.4
Public	365	414	65	(11.8)	536.9	87.1	75.4	67.0
Private	54	135	32	(60.0)	321.9	12.9	24.6	33.0
Elementary (1 to 8)	2,580	2,420	2,365	6.6	2.3	56.8	57.9	57.4
Public	2,244	2,003	1,974	12.0	1.5	87.0	82.8	83.5
Private	336	417	391	(19.4)	6.6	13.0	17.2	16.5
High school (1 to 4)	1,008	825	1,275	22.2	(35.3)	22.2	19.7	31.0
Public	651	532	976	22.4	(45.5)	64.6	64.5	76.5
Private	357	293	299	21.8	(2.0)	35.4	35.5	23.5
College	536	384	382	39.6	0.5	11.8	9.2	9.3

Sources: U.S. Census Bureau, 1992, Table 40; 1995 & 2000 Census, Table 17.

Much of the earlier increase in enrollment probably was due to historic circumstances—the return of many administrators with school age children as the TTPI government closed down in Saipan, increased fertility, and selective migration patterns. Some of these same trends began to reverse in the 1980s, with the flow from Saipan stopping, fertility declining, and Palauan families and individuals emigrating. Then, with return migration, and more importantly, immigration, and the baby boomlet, enrollments started to increase again in the 1990s.

The percentage of students in private schools showed a continuous decline for preprimary students, a slight increase between 1990 and 1995, followed by a decrease to 2000 for elementary school students, and a large increase of 12 percentage points between 1990 and 1995 for high school students, followed by a leveling off. This big increase for high school students was because of the smaller numbers going to public school, since those in private school stayed at about the same level.

Male students outnumbered female students in 1995 and 2000, both in total and for most levels of education (Table 9.2). In 2000, females were slightly more likely to be enrolled in preprimary school than males; the latter were more likely to be in elementary school and college. Females were more likely to be in college than males.

Table 9.2. School Attendance by Type, Level, and Sex: 1995 to 2000

Type and Level	2000 Number			Percent of Females	1995 Number			Percent of Females
	Total	Males	Females		Total	Males	Females	
Persons 3 + yrs & enrolled in school	4,543	2,298	2,245	49.4	4,178	2,165	2,013	48.2
Preprimary	419	201	218	52	549	295	254	46.3
Public	365	173	192	52.6	414	221	193	46.6
Private	54	28	26	48.1	135	74	61	45.2
Elementary (1 to 8)	2,580	1,308	1,272	49.3	2,420	1,271	1,149	47.5
Public	2,244	1,142	1,102	49.1	2,003	1,052	951	47.5
Private	336	166	170	50.6	417	219	198	47.5
High school (1 to 4)	1,008	541	467	46.3	825	416	409	49.6
Public	651	352	299	45.9	532	266	266	50
Private	357	189	168	47.1	293	150	143	48.8
College	536	248	288	53.7	384	183	201	52.3

Source: OPS, 1995 and 2000 Census, Table 17.

## EDUCATIONAL ATTAINMENT

*Educational attainment over time.* The data on educational attainment for individuals aged 25 years and over showed general increases at all levels of schooling between 1990 and 2000, except for college levels between 1995 and 2000 (Table 9.3)<sup>4</sup>. This last decrease could be because of selective immigration of less academically educated workers. As of 1990, nearly 58 percent of the persons in Palau aged 25 years and over had attended four years of high school. About 31 percent of Palau residents had attended college, with more than 10 percent having at least four years of college. In 2000, the percentage being college graduates was about the same, at 1 in 10 of adults 25 years and over, and the percentage of high school graduates continued to increase – from 58 percent in 1990 to 74 percent in 2000. Also, the percentage who had at least attended high school also increased considerably, from 71 percent in 1990 to 85 percent in 2000 – partly a result of almost universal education in Palau itself.

Table 9.3. Cumulative Percents for Educational Attainment by Sex: 1990, 1995 and 2000

Educational Attainment	Total			Male			Female		
	2000	1995	1990	2000	1995	1990	2000	1995	1990
Total, 25 yrs and over:	11,842	9,676	7,742	6,641	5,295	4,240	5,201	4,381	3,502
Percent:									
No school	100.0	100.0	100.0	100.0	100.0	100	100.0	100.0	100
Elementary: 1 to 8 yrs	96.9	96.5	98.2	97.7	97.5	98.5	95.9	95.3	97.9
High school: 1 to 3 yrs	85.4	78.1	70.9	88.7	80.8	75.8	81.3	74.9	64.9
4 years	74.1	60.8	57.6	78.0	62.6	62.1	69.2	58.6	52.2
College: 1 to 3 yrs	28.6	35.4	31.0	27.3	35.7	34.2	30.3	35.0	27.1
4 + yrs	10.0	12.2	10.3	9.8	11.8	10.6	10.2	12.8	10.1

Sources: USBC Table 35; 1992, OPS 1995 and 2000 Census, Table 17.

In general, educational attainment for males showed the same patterns as for the total population. The percentage of adult males being high school graduates increased from 62 percent in 1990 to 78 percent, and increase of 16 percentage points, similar to the increase for females – although the increase, from 52 to 69 for the females was slightly greater, a smaller percentage of females than males finish high school. About the same percentage of males as females, however, complete 4 years or more of college – percentages that increased in 1995, but returned to their 1990 levels in the 2000 census, again, probably because of selective immigration.

<sup>4</sup> Cumulative percents are obtained by summing the percents in categories from the highest level to the lowest. Hence, if 10 percent of the population was reported as “college 4 years and above” and 19 percent are reported as “college 1 to 3 years”, then the cumulative percent is 29 percent for persons in categories “college 1 to 3 years” and above. Similarly, cumulative for “high school and above” includes all persons who also reported some college. The bottom category – in this case “no education” – includes everyone with “no education” and all those with education, which is everyone else, and so is shown as 100 percent since everyone is included.

Although not shown in the tables, because Koror is the capital of Palau with the majority of private and government activities, persons living there were better educated than those living elsewhere. Koror State attracted more educated persons than other states in Palau, primarily because of the presence of high paying jobs requiring skilled persons. Koror also contained more educational institutions than other states in Palau, providing both more opportunity for formal schooling and (at least for college education) introducing the greater likelihood that respondents actually were in Koror to pursue higher education. Rural states, in contrast, provided fewer educational opportunities as well as fewer economic and social attractions to those with formal educations elsewhere. Many persons with college degrees in 2000 living in rural parts of Palau were schoolteachers, government employees or Peace Corps volunteers.

*Educational Attainment by Age.* In 2000, over 85 percent of the persons living in Palau and aged 25 years or older had attended some high school. As level of age increased, the percentage of all individuals claiming a particular level declined (Table 9.4). Less than 2 percent of all residents in Palau aged 25 years or more had education beyond that of a Bachelor's degree. Educational attainment varied considerably with age. For all levels of attainment except elementary school and high school non-graduates, the percentages increased by age to the 45 to 54 year age group, and then decreased.

Table 9.4. Educational Attainment by Age: 2000

Educational Attainment	Total	25 to 34 years	35 to 44 years	45 to 54 years	55 to 64 years	65 years & over
Total, 25 + years:	11,842	4,079	3,542	2,158	1,026	1,037
Elementary School	100.0	100.0	100.0	100.0	100.0	100.0
High School, no diploma	85.4	94.7	93.2	91.3	75.0	20.6
High School graduate	74.1	84.2	82.2	80.1	53.2	15.1
Some college	28.6	28.6	30.2	36.3	27.7	8.4
Associate degree	18.3	16.5	18.7	25.2	22.3	6.1
Bachelor's degree	10.0	7.8	9.7	14.9	15.9	3.3
Higher degree	2.0	1.3	1.8	3.6	3.6	0.5

Source: OPS, 2000 Census, Table 66.

The percentage of high school graduates showed a direct decrease with age, going from 84 percent for those 25 to 34, to 82 percent for those 35 to 44, 80 percent for those 45 to 54, and then down to 53 percent for those 55 to 64 and 15 percent for those 65 years and over. College graduation does not show the same trend – while 15 percent of those 45 to 54 and 16 percent of those 55 to 64 are college graduates, less than 10 percent of those 35 to 44 and only 8 percent of younger adults were college graduates. For the youngest, this figure may have been influenced both by persons being away in school, taking longer than in the past to finish schooling, and the effects of the immigrants on the education statistics.

Recent immigration of less educated individuals to Palau, coupled with the emigration of better educated Palauans to Guam, the CNMI, and the U.S., probably has led to declining levels of educational attainment, particularly among youngest age groups. Migration could explain some of the decline in the proportion of individuals with Bachelor's degrees for younger people.

Educational attainment in 2000 for males in Palau exceeded the attainment of all persons at all levels of schooling (Table 9.5). The patterns for all persons aged 25 years and older held for males as well. The decline in the proportions of males with Bachelor's degrees between age groups 25 and 44 years is particularly noticeable. Immigration of working age males to Palau was particularly heavy during the 1980s and 1990s and accounted for some of the decline in the proportion of males with Bachelor's degrees in the youngest two age groups.

Table 9.5. Educational Attainment by Age for Males: 2000

Educational Attainment	Total	25 to 34 years	35 to 44 years	45 to 54 years	55 to 64 years	65 years & over
Total, 25 + years:	6,641	2,325	2,080	1,260	536	440
Elementary School	100.0	100.0	100.0	100.0	100.0	100.0
High School, no diploma	88.7	93.9	92.8	93.9	83.4	33.2
High School graduate	78.0	83.7	83.0	83.9	63.4	24.8
Some college	27.3	24.2	26.6	36.3	34.0	13.4
Associate degree	17.7	14.3	16.2	24.8	27.6	10.0
Bachelor's degree	9.8	6.5	8.9	14.4	19.0	6.6
Higher degree	2.3	1.5	2.0	3.7	4.1	1.1

Source: OPS, 2000 Census, Table 66.



In contrast to males and all individuals, educational attainment among females in Palau was slightly lower in 2000 at all levels (Table 9.6). Male and female patterns were similar. In addition, differences in the level of educational attainment seen by sex were particularly evident for individuals in the three oldest age groups — evidence of the differing roles of the sexes even in the recent past, with males much more educated than females.

Table 9.6. Educational Attainment by Age for Females: 2000

Educational Attainment	Total	25 to 34 years	35 to 44 years	45 to 54 years	55 to 64 years	65 years & over
Total, 25 + years:	5,201	1,754	1,462	898	490	597
Elementary School	100.0	100.0	100.0	100.0	100.0	100.0
High School, no diploma	81.3	95.6	93.8	87.8	65.9	11.4
High School graduate	69.2	84.9	81.0	74.8	42.0	8.0
Some college	30.3	34.3	35.3	36.3	20.8	4.7
Associate degree	19.2	19.4	22.4	25.7	16.5	3.2
Bachelor's degree	10.2	9.6	10.8	15.6	12.4	0.8
Higher degree	1.6	1.0	1.4	3.3	3.1	-

Source: OPS, 2000 Census, Table 66.

*Educational attainment by birthplace.* Two of the processes influencing the declining educational attainment in Palau are the emigration of Palau-born and the immigration of non-Palau born. Many of these differences emerge in the comparison between persons born in Palau and those born elsewhere, particularly the Philippines, the latter representing the main source of immigrants to Palau (Table 9.7).

Although not shown here, in 1990, each level of educational attainment contained proportionally more individuals born in the Philippines—thus depicting a relatively well-educated immigrant population. The most dramatic cases of Philippine-born individuals having more education than Palau-born persons concern those with at least 4 years of high school. For example, although slightly less than 16 percent of Palau's 1990 adult population was born in the Philippines, nearly 28 percent of all individuals with 4 years of high school and no diploma came from this country. The only individuals with more than 4 years of high school underrepresented among Philippines-born persons were those with associate degrees and those with graduate or professional degrees. In contrast, the only Palau-born persons represented in a level of educational attainment in excess of their proportion of the republic's population are those with 2 years of high school or less and those with an associate occupational degree.

Table 9.7. Cumulative Percents of Educational Attainment by Birthplace, 25 years &amp; over: 2000

Educational Attainment	Total	Palau	U.S. or Territory	FSM	Philippines	Other Asia	Others
Total, 25 + years:	11,842	6,972	326	150	2,635	1,528	231
Elementary School	100.0	100.0	100.0	100.0	100.0	100.0	100.0
High School, no diploma	85.4	78.4	98.2	84.0	95.3	97.7	88.3
High School graduate	74.1	63.3	94.8	66.0	89.0	93.2	80.1
Some college	28.6	31.7	66.0	40.7	21.3	18.0	27.7
Associate degree	18.3	19.2	55.5	27.3	13.0	14.7	19.5
Bachelor's degree	10.0	9.6	42.0	8.0	7.4	9.2	12.1
Higher degree	2.0	1.7	20.2	2.0	0.5	1.8	3.9

Source: OPS, 2000 Census, Table 79.

As Table 9.7 shows, the situation changed drastically by 2000. Although Philippines born had a larger proportion of high school graduates – about 9 of every 10 adults compared to less than 2 of every 3 of Palau-born, by the college graduate level, Palau-born passed the Philippines born. Also, while 1.7 percent of the Palau-born had Master's degrees, this was true for only .5 percent of the Philippines born.

Since the lower age limit for educational attainment used currently is often 18 years rather than 25 years, table 9.7a shows the same information for people 18 years and over. The results are similar. About 63 percent of the Palau born were high school graduates compared to 74 percent of the total population, and 8.4 percent of the Palau born were high school graduates compared to 8.9 percent of the total population.

Table 9.7a. Cumulative Percent of Educational Attainment by Birthplace, 18 years &amp; over: 2000

Educational Attainment	Total	Palau	U.S. or Territory	FSM	Philippines	Other Asia	Others
Total, 18 + years:	13,667	8,182	442	227	2,825	1,728	263
Elementary School	100.0	100.0	100.0	100.0	100.0	100.0	100.0
High School, no diploma	86.4	80.2	97.7	86.8	95.5	97.9	89.0
High School graduate	73.7	63.4	89.8	66.1	89.2	93.3	77.2
Some college	28.4	31.5	56.1	43.6	21.3	17.0	25.9
Associate degree	17.3	17.9	44.3	20.7	13.0	13.8	17.1
Bachelor's degree	8.9	8.4	32.4	5.3	7.3	8.3	10.6
Higher degree	1.7	1.4	15.2	1.3	0.5	1.6	3.4

Source: OPS, 2000 Census, Table 102.

United States-born people, including some people of Palauan ethnicity who were born in the U.S. but later returned to Palau contributed the highest educational levels – 44 percent had at least Associates degrees (as did 49 percent of the “other”-born people), and 32 percent were college graduates. More than 15 percent of those born in the U.S., Guam, CNMI, or another territory, had Master’s degrees. Palau is exerting a positive pull (for the Republic of Palau) of other Freely-Associated States workers. More than 19 percent of the FSM and Marshalls born people 25 years and over had Associates degrees, and 5 percent had Bachelor’s degrees.

*Educational attainment by occupation.* In 2000, almost 86 percent of all employed persons aged 25 years and over were high school graduates, with more than 12 percent having at least a B.S. or B.A. degree (Table 9.8). Levels of educational attainment varied among occupations. For instance, relatively high percentages of all individuals with managerial and professional occupations had at least a high school education. Also, high proportions of persons with these occupations had Bachelor’s degrees or more. Although the individuals employed in technical, sales, and administrative support were more likely to have a high school education than the population as a whole, they were less likely to have at least a Bachelor’s degree than the managers. For the remaining four occupations, persons were less likely to claim either level of educational attainment than found in the entire employed population (except for those in precision production, crafts and repairs with an equivalent percent high school graduates to the whole population).

Table 9.8. Educational Attainment by Occupation, 25 years &amp; over: 2000

Occupation	Total	High School Graduate (%)	College Graduate (%)	Male	High School Graduate (%)	College Graduate (%)	Female	High School Graduate (%)	College Graduate (%)
Employed 25 years & over:	8,486	85.8	12.1	5,324	85.5	10.9	3,162	86.3	14.2
Managerial & professional specialties	2,079	94.3	34.3	1,165	93.2	34.8	914	95.7	33.6
Technical, sales & administrative support	1,764	90.4	12.1	765	92.0	14.5	999	89.2	10.3
Service	1,550	77.4	2.4	701	79.9	1.2	849	75.3	3.4
Farming & fishing	664	77.9	3.2	584	80.0	3.1	80	62.5	3.8
Precision products, crafts & repairs	1,480	86.8	2.1	1,222	86.5	2.3	258	88.4	1.2
Operators, fabricators, laborers	949	76.8	1.7	887	76.9	1.5	62	75.8	4.8

Source: OPS, 2000 Census, Table 123

The columns for employed males in Palau show they were less likely to have either a high school education or a Bachelor’s degree than the total population. However, these differences did not hold for all occupations. For instance, proportionally more males employed in technical, sales, and administrative support positions had a Bachelor’s degree than the total population. In general, proportionally more males in most occupations had at least a high school diploma than in those occupations for all employed persons. Males employed in managerial and professional occupations, as well as those employed in technical, sales, and administrative support occupations, tended to have higher levels of educational attainment than all males.

Employed females in Palau had proportionally higher educational attainment in 2000, both at the high school and college levels, than employed males. However, comparisons of formal education varied among occupations. Female managers and professionals were more likely than their male counterparts to be high school or college graduates. But although female technicians, sales, and administrative support workers were more likely to be high school graduates, males in these occupations were more likely to be college graduates. Females in the remaining occupations tended to have less formal education than the males.

*Educational attainment by class of worker.* In 2000, government employees were more likely to be college graduates than private sector employees (Table 9.9). Part of this difference probably relates to the contrasting work in the public and private sectors. Although in 1990, employed adults working for the federal government were more likely to have high school diplomas than other workers, by 2000 private sector workers were actually more likely than government workers to have high school diplomas. But, almost 20 percent of government workers had Bachelor's degrees compared to only 8 percent of the private sector workers. And, 4 percent of the government workers had Master's degrees compared to 1 percent of the private sector workers.

Table 9.9. Cumulative Percentage of Educational Attainment by Class of Worker and Sex: 2000

Class of Worker	Total	Elementary	High School	High School Graduate	Some College	Associate Degree	Bachelor's Degree	Masters and above
Employed 16 years & over:	9,383	100.0	94.6	85.5	32.0	20.8	11.3	2.3
Private wage & salary	6,500	100.0	95.0	86.3	23.2	14.2	7.8	1.2
Government	2,745	100.0	94.2	83.9	52.8	36.1	19.6	4.4
Other	138	100.0	89.1	76.8	34.1	27.5	15.9	8.0
Males 16 years & over:	5,827	100.0	94.1	84.8	28.2	18.6	10.2	2.4
Private wage & salary	4,131	100.0	94.7	86.6	21.0	13.0	7.4	1.4
Government	1,601	100.0	92.8	80.3	46.4	32.4	17.5	4.6
Other	95	100.0	89.5	80.0	33.7	25.3	11.6	8.4
Females 16 years & over:	3,556	100.0	95.5	86.6	38.3	24.4	13.2	2.0
Private wage & salary	2,365	100.0	95.4	85.8	27.0	16.1	8.4	0.9
Government	1,144	100.0	96.1	88.9	61.8	41.3	22.6	4.1
Other	43	100.0	88.4	69.8	34.9	32.6	25.6	7.0

Source: OPS, 2000 Census, Table 109

As noted earlier, while females made up a much smaller proportion of the labor force than males, they were better educated. About 23 percent of the female government workers had Bachelor's degrees compared to 18 percent of the males, and 89 percent of the female government workers had high school diplomas compared to 80 percent of the male government employees. In the private sector, the females were also better educated – 8.4 percent of the females compared to 7.4 percent of the male private sector employees had Bachelor's degrees, but the males were slightly more likely than the females to be high school graduates.

*Educational attainment and income.* A direct relationship existed in 2000 between personal income and educational attainment. Higher incomes tended to be earned by individuals with higher levels of educational attainment (Table 9.10). The proportion of high school graduates in each income category increased from \$1,000 through \$24,999, but the percentage for those with \$30,000 or more was slightly less than the preceding one. This same pattern held both for male and female workers aged 25 years and over. All except the highest and lowest income categories contained proportionally more females with high school educations than males with similar schooling.

Table 9.10. Educational Attainment by Income, 25 years &amp; over: 2000

Income	Total	High School Graduate (%)	College Graduate (%)	Male	High School Graduate (%)	College Graduate (%)	Female	High School Graduate (%)	College Graduate (%)
Total, 25 yrs & over	8,992	76.7	11.5	5,160	69.6	11.0	3,832	86.3	12.2
Less than \$1 to \$999	470	57.2	2.8	210	35.7	2.9	260	74.6	2.7
\$1,000 to \$1,999	915	62.3	4.2	371	80.3	5.5	544	50.0	3.3
\$2,000 to \$2,999	967	64.7	2.5	513	72.5	1.8	454	55.9	3.3
\$3,000 to \$3,999	1,074	77.7	5.1	552	92.5	4.3	522	62.1	5.9
\$4,000 to \$4,999	784	75.4	5.1	560	74.3	4.1	224	78.2	7.6
\$5,000 to \$7,499	1,762	74.1	5.8	1,164	75.5	4.6	598	71.4	8.2
\$7,500 to \$9,999	983	84.1	9.0	603	90.4	8.4	380	74.1	10.0
\$10,000 to \$19,999	1,469	91.3	24.3	799	92.4	22.4	670	90.0	26.6
\$20,000 to \$29,999	273	93.8	56.8	164	94.7	50.0	109	92.5	67.0
\$30,000 or more	295	92.5	55.9	224	93.7	55.8	71	88.7	56.3

Source: OPS, 2000 Census, Table 141

The correlation between education and income in 1999 generally held for college graduates in Palau as well. For the total working population (and for males) with college degrees, the proportion included increases as the income category increased — including the two highest income categories. The proportion of females increased in each income category except for the highest.

**LANGUAGE**

The percentage of Palau's population 5 years and over speaking Palauan at home decreased from 82 percent in 1990 to 65 percent in 2000 (Table 9.11). This trend was partly the result of a larger percentage of the population speaking English – an increase from 3 percent in 1990 to 9 percent in 2000. But, as noted, immigration had even more impact than the fact that English is increasingly becoming the language of government and commerce. People speaking Philippines languages increased 4 percentage points, from 9.4 percent to 13.5 percent, and the percentage speaking “other” languages took even a bigger jump – from 5 percent to more than 12 percent.

Table 9.11. Language Spoken at Home by State, Palau: 1990 and 2000

State	Language Spoken at Home, 2000						Language Spoken at Home, 1990					
	Total	Percent	Palauan	English	Filipino	Other	Total	Percent	Palauan	English	Filipino	Other
Total 5 yrs. and over:	17,821	100.0	64.7	9.4	13.5	12.5	13,609	100.0	82.2	3.0	1.4	4.0
Aimeliik	250	100.0	81.6	5.6	3.6	9.2	393	100.0	85.8	0.3	5.6	2.5
Airai	1,964	100.0	59.3	8.9	20.7	11.2	1,096	100.0	82.0	4.4	-	4.5
Angaur	175	100.0	92.6	1.7	2.9	2.9	189	100.0	99.5	0.5	-	-
Hatohobei	21	100.0	9.5	4.8	-	85.7	21	100.0	19.0	-	-	81.0
Kayangel	123	100.0	93.5	2.4	0.8	3.3	124	100.0	97.6	0.8	1.6	-
Koror	12,446	100.0	61.2	10.6	14.9	13.3	9,455	100.0	78.2	3.7	1.7	4.5
Melekeok	221	100.0	86.9	3.6	6.8	2.7	222	100.0	99.5	0.5	-	-
Ngaraard	600	100.0	57.7	4.0	2.8	35.5	276	100.0	97.5	2.2	-	-
Ngardmau	196	100.0	90.8	1.5	5.6	2.0	128	100.0	100.0	-	-	-
Ngaremlengui	337	100.0	81.3	12.5	5.3	0.9	253	100.0	99.2	0.8	-	-
Ngatpang	258	100.0	63.6	18.2	11.6	6.6	52	100.0	90.4	1.9	-	-
Ngchesar	244	100.0	93.4	4.9	1.6	-	263	100.0	96.6	0.4	-	1.1
Ngerchelung	264	100.0	95.1	0.8	0.8	3.4	308	100.0	99.4	-	-	0.6
Ngiwal	176	100.0	86.9	9.7	1.7	1.7	217	100.0	98.2	-	-	-
Peleliu	513	100.0	93.6	1.8	3.3	1.4	557	100.0	96.4	0.7	0.2	1.1
Sonsorol	33	100.0	-	-	-	100.0	55	100.0	30.9	-	-	69.1

Source: 1990 Census, Table 12, 2000 Census, Table 16.

The language characteristics of the Republic of Palau varied geographically in 1990. Proportionally fewer individuals in Koror State spoke Palauan at home, but proportionally more spoke a language of the Philippines or English. Relatively high percentages of Airai State residents also spoke a Philippines language or English, a consequence of the large immigrant populations in the more urban states. High percentages of the residents living in most rural states in Palau reported speaking Palauan at home. The exceptions to this latter trend were the Southwest Islands, Hatohobei and Sonsorol states, where high percentages of residents spoke some "other" language — presumably the Carolinian languages traditionally spoken on those islands, but also possibly Indonesian languages spoken by migrants from the nearby islands.

By 2000, considerable changes occurred, as with the total population. In Ngatpang, for example, less than 2 in every 3 people 5 years and over spoke Palauan, while English was spoken by almost 1 in every 5. In Airai about 1 in 5 spoke a Philippines language, up from 1 in 10 in 1990. And, in Koror, with by far the largest population, and, because of government and commerce, the most common reason to speak English, the percentage speaking Palauan decreased from 78 to 61 percent, while English speakers increased from 4 percent to 11 percent of those in Koror, Philippines language speakers from 12 to 15 percent, and “other” speakers from 6 percent to 13 percent. Of course, almost all the speakers in the Southwest Islands continued to speak their own languages.

*Age.* The language characteristics of Palau residents in 2000 also varied according to age (Table 9.12). Relatively high percentages of persons aged less than 15 years or 60 years and older spoke Palauan — that is, the young persons who had yet to learn other languages and the old persons whose behavior (and linguistic abilities) were more traditional. Higher percentages of individuals in the middle age groups spoke English or some other language, most probably some language from the Philippines. The higher proportions of non-Palauan speakers in the middle age groups probably comprised mostly immigrants, working age persons who came to Palau from other countries primarily for jobs. In fact, in the 30 to 44 age group, less than half of Palau's residents spoke Palauan at home – about 1 in 4 spoke a Philippines language, 1 in 10 spoke English, and 1 in 6 spoke another language.

Table 9.12. Language Spoken at Home by Age and Sex, Palau: 2000

Age and Sex	Total	Percent	Palauan	English	Filipino	Others
Total, 5 yrs & over:	17,821	100.0	64.7	9.4	13.5	12.5
Less than 15 years	3,255	100.0	87.4	8.3	1.1	3.2
15 to 29 years	4,634	100.0	60.5	10.2	12.9	16.4
30 to 44 years	5,711	100.0	49.1	10.2	23.1	17.6
45 to 59 years	2,721	100.0	64.4	10.2	15.1	10.3
60 to 74 years	1,055	100.0	85.1	5.8	2.9	6.2
75 years & over	445	100.0	94.8	2.2	0.9	2.0
Males, 5 yrs & over:	9,760	100.0	59.9	9.3	16.0	14.8
Less than 15 years	1,650	100.0	87.5	8.1	1.1	3.3
15 to 29 years	2,575	100.0	59.4	10.5	13.7	16.3
30 to 44 years	3,299	100.0	43.8	8.7	26.6	20.9
45 to 59 years	1,566	100.0	56.7	10.5	18.0	14.8
60 to 74 years	506	100.0	76.7	9.7	4.3	9.3
75 years & over	164	100.0	90.2	4.9	2.4	2.4
Females, 5 yrs & over:	8,061	100.0	70.5	9.5	10.4	9.6
Less than 15 years	1,605	100.0	87.4	8.5	1.1	3.1
15 to 29 years	2,059	100.0	61.9	9.8	11.9	16.4
30 to 44 years	2,412	100.0	56.3	12.4	18.2	13.1
45 to 59 years	1,155	100.0	74.7	9.8	11.3	4.2
60 to 74 years	549	100.0	92.9	2.2	1.6	3.3
75 years & over	281	100.0	97.5	0.7	-	1.8

Source: OPS, 2000 Census Special Tabulation

The age-specific patterns of language spoken at home by males and females resembled those for all residents of Palau. The male population of Palau had relatively more non-Palauan speakers in all age groups than did the total population, many presumably migrants from places that spoke other languages. The female population of Palau had relatively fewer non-Palauan speakers than either the male residents or all residents.

That is, while 6 in every 10 of the males spoke Palauan, mainly because of the selective immigration, more than 7 in 10 Palau resident females spoke Palauan. About 16 percent of the male residents spoke a Philippines language compared to 10 percent of the females, and 15 percent of the males spoke “other” languages compared to 10 percent of the females. English, however, was spoken by about 9 percent of each sex.

Only 44 percent of the Palau resident males 30 to 44 years old spoke Palauan at home, compared to 56 percent of the females that age – even the female numbers are decreasing. In 2000, 27 percent of the males in this age group spoke a Philippines language compared to 18 percent of the females, and 21 percent of the males and 13 percent of the females in this age group spoke an “other” language.

And, in the next lower age group – those 15 to 29 years old – only 59 percent of the males and 62 percent of the females spoke Palauan. For these young adults, 14 percent of the males and 12 percent of the females spoke Philippines languages, and 16 percent of both the males and females spoke “other” languages, a trend that could cause the necessity of bi- or tri-lingualism in the future.

*Frequency of Palauan language speaking.* Data on frequency of language use provides valuable information to planners on Palauan and English use among non-Palauan and non-English speakers. More discussion of English speaking occurs above and in Chapter 16 comparing Palauans inside and outside Palau and in Chapter 17 on comparing Palau with U.S. and its territories.

Of the 6,296 persons 5 years and over who did not speak Palauan at home, 5,114 (81 percent) spoke no Palauan at all. Another 248 (4 percent) spoke Palauan more than the other language, 356 (6 percent) spoke the two languages equally often, and 576 (9 percent) spoke the other languages more than Palauan (Table 9.13). On Kayangel and Hatohobei everyone spoke at least some Palauan. At the other extreme, almost 3,944 people in Koror spoke no Palauan, as well as 708 in Airai, and 230 in Ngaraard (students and construction workers).

Table 9.13. Frequency of Palauan Language Speaking among Non-Palauan Speakers, Palau: 2000

State	Total	Speak other language more	Speak both equally often	Speak more Palauan	Doesn't speak Palauan
Total 5 yrs. and over:	6,294	576	356	248	5,114
Aimeliik	46	3	9	3	31
Airai	800	38	42	12	708
Angaur	13	2	-	-	11
Hatohobei	19	5	14	-	-
Kayangel	8	4	3	1	-
Koror	4,834	452	256	182	3,944
Melekeok	29	15	1	1	12
Ngaraard	252	12	4	6	230
Ngardmau	18	-	-	-	18
Ngaremlengui	63	2	1	-	60
Ngatpang	94	9	4	36	45
Ngchesar	16	1	-	3	12
Ngerchelung	13	7	1	1	4
Ngiwal	23	2	8	-	13
Peleliu	33	4	3	3	23
Sonsorol	33	20	10	-	3

Source: OPS, 2000 Census, Table 16.

## Conclusions

The education and language characteristics of Palau in 2000 showed the influences of mobility in the republic — both in the emigration of Palauans and the immigration of foreigners, primarily Filipinos. School enrollment changed little over the past two decades despite a 25 percent increase in population. Educational attainment, on the other hand, has changed considerably, with the residents of Palau better educated in 2000 than ever before. Moreover, over time increasing numbers of young persons and females have gained access to formal education, yielding growing educational attainment, increasing proportions of individuals with formal education, and declining illiteracy. As one of the first components of Western society systematically introduced by the U.S. administration, the impact of educational change appeared throughout the Republic of Palau. Today many educated Palauans emigrate, often for jobs. Ironically, much of the change in educational attainment has come not from a system of schooling, but rather as persons educated in their home country before moving to Palau.

Despite the influence of other countries for decades — either as colonial powers, administrative authorities, or sources of immigrants — Palau remains largely a Palauan speaking country, but with diminishing numbers and percentages. The minor inroads of other languages in part relate to changes in the education system, but they most certainly reflect the recent immigrants. Language use varied geographically. In places like Koror and Airai states, more Westernized economies and social development make use of English desirable and provide frequent opportunities to do so. Similarly, most of the immigrants, mainly from the Philippines, resided in these two states, providing a greater opportunity to speak those languages. But outside Palau's two "developed" States — Koror and Airai — English and other languages are secondary to Palauan. Language thus provides one measure of the transition from the "traditional" to the "modern" world.

## CHAPTER 10. RELIGION

Because religion is not asked in United States Decennial Censuses, the item appeared only on Palau's 1995 and 2000 Censuses. Since the Republic of Palau conducted these censuses, this important item could be included.

### Definitions

Data on religion were derived from answers to questionnaire item 4a, which was asked of all persons. This item had an open-ended question and the enumerators recorded the responses. These responses were later coded using a list of more than 10 identified religions. Persons who said they had no religion were classified into the *None* category, while those who refused to answer the question were classified into the *refused* category.

### Comparability

The question on religion was asked for the first time in a Palau National Census in the 1995 census, and data were shown for all persons regardless of age.

### Analysis of Religion Data

Since the 1995 and 2000 Censuses showed approximately the same distributions for religions, only the 2000 Census results are shown here. Table 10.1 shows the distributions of religions in the 2000 census. About half of the population stating a religion responded that they were Roman Catholic. The next largest group of religions was the Protestants. The named groups included Seventh Day Adventist (SDA), Mormons, Jehovah's Witnesses, and "other" protestant. The data were collected as social indicators and not as part of a census of religions. About 1 in every 6 people in the census responded that they had no religion, or refused to answer the question. As noted above, these data were only edited for "illegal" responses, but were not imputed.

Table 10.1. Religion by State, Palau: 2000

State	Total	Modekngei	Catholic	Evangelical	Seventh Day Adventist	Other Protestants	Mormons	Jehovah's Witnesses	Other religion	None or refused
Total:	19,129	1,682	7,956	4,373	1,019	80	124	166	599	3,130
Aimeliik	272	39	72	72	27	-	-	-	1	61
Airai	2,104	127	735	276	310	7	15	48	49	537
Angaur	188	4	137	40	2	-	1	-	3	1
Hatohobei	23	1	21	1	-	-	-	-	-	-
Kayangel	138	89	14	19	-	-	-	1	3	12
Koror	13,303	938	6,147	2,664	604	65	105	110	444	2,226
Melekeok	239	1	138	88	4	-	-	-	7	1
Ngaraard	638	49	158	242	2	-	-	-	5	182
Ngardmau	221	6	64	84	6	2	-	-	58	1
Ngaremlengui	367	73	110	143	8	4	-	3	7	19
Ngatpang	280	142	23	46	16	2	-	1	-	50
Ngchesar	267	-	51	187	15	-	-	-	5	9
Ngerchelung	286	97	30	150	1	-	-	-	6	2
Ngiwal	193	4	62	113	1	-	-	-	2	11
Peleliu	571	112	155	248	23	-	3	3	9	18
Sonsorol	39	-	39	-	-	-	-	-	-	-

Source: OPS, 2000 Census, Table 10.

Table 10.2 shows the distribution of religions by State for males. Of the 10,450 males, the largest group were Catholic, with 4,234 or 40 percent of the total – although about 10 percent of the respondents refused to answer the question. The States showed large variations in numbers for the various religions.

Table 10.2. Religion by State for Males, Palau: 2000

State	Total	Modekngai	Catholic	Evangelical	Seventh Day Adventist	Other Protestants	Mormons	Jehovah's Witnesses	Other religion	None or refused
Total Males:	10,450	863	4,234	2,200	523	43	76	80	419	2,012
Aimeliik	142	21	37	34	13	-	-	-	1	36
Airai	1,303	65	456	139	153	6	10	25	31	418
Angaur	101	3	68	24	1	-	1	-	3	1
Hatothobei	11	1	9	1	-	-	-	-	-	-
Kayangel	76	50	9	11	-	-	-	-	1	5
Koror	7,115	464	3,212	1,360	321	30	64	50	317	1,297
Melekeok	121	-	72	41	2	-	-	-	5	1
Ngaraard	371	29	78	86	2	-	-	-	4	172
Ngardmau	128	3	40	43	2	2	-	-	37	1
Ngaremlengui	228	40	79	82	4	4	-	2	7	10
Ngatpang	166	82	10	23	4	1	-	1	-	45
Ngchesar	136	-	25	94	7	-	-	-	4	6
Ngerchelong	141	43	14	82	-	-	-	-	1	1
Ngiwal	105	2	30	62	1	-	-	-	2	8
Peleliu	288	60	77	118	13	-	1	2	6	11
Sonsorol	18	-	18	-	-	-	-	-	-	-

Source: OPS, 2000 Census, Table 10.

Table 10.3 shows similar distributions for females. Again, the largest group was Catholic, followed by Evangelicals, and others. Two States – Hatothobei and Sonsorol – were completely Catholic, while Peleliu, Ngchesar, and Ngaraard had larger numbers of Evangelicals than Catholics, although the numbers were relatively small.

Table 10.3. Religion by State for Females, Palau: 2000

State	Total	Modekngai	Catholic	Evangelical	Seventh Day Adventist	Other Protestants	Mormons	Jehovah's Witnesses	Other religion	None or refused
Total Females:	8,679	819	3,722	2,173	496	37	48	86	180	1,118
Aimeliik	130	18	35	38	14	-	-	-	-	25
Airai	801	62	279	137	157	1	5	23	18	119
Angaur	87	1	69	16	1	-	-	-	-	-
Hatothobei	12	-	12	-	-	-	-	-	-	-
Kayangel	62	39	5	8	-	-	-	1	2	7
Koror	6,188	474	2,935	1,304	283	35	41	60	127	929
Melekeok	118	1	66	47	2	-	-	-	2	-
Ngaraard	267	20	80	156	-	-	-	-	1	10
Ngardmau	93	3	24	41	4	-	-	-	21	-
Ngaremlengui	139	33	31	61	4	-	-	1	-	9
Ngatpang	114	60	13	23	12	1	-	-	-	5
Ngchesar	131	-	26	93	8	-	-	-	1	3
Ngerchelong	145	54	16	68	1	-	-	-	5	1
Ngiwal	88	2	32	51	-	-	-	-	-	3
Peleliu	283	52	78	130	10	-	2	1	3	7
Sonsorol	21	-	21	-	-	-	-	-	-	-

Source: OPS, 2000 Census, Table 10.



Table 10.4 shows the distribution of religions within each State. More than half of Kayangel and Ngatpang were Modekngei, while about half the population of Ngarchelong, and one in every 5 of Ngaremlengui and Peleliu practiced the traditional religion. All of Sonsorol's population was Catholic, as were most of those on Hatohobei, and about 3 of every 4 on Angaur. About 3 in every 4 people in Ngchesar were protestant, as well as more than half of those on Ngiwal and Ngarchelong. About 1 in every 4 people living in Ngardmau had an "other" religion.

Table 10.4. Religion by State in percents, Palau: 2000

State	Percent	Modekngei	Catholic	Evangelical	Seventh Day Adventist	Other Protestants	Mormons	Jehovah's Witnesses	Other religion	None or refused
Total:	100.0	8.8	41.6	22.9	5.3	0.4	0.6	0.9	3.1	16.4
Aimeliik	100.0	14.3	26.5	26.5	9.9	-	-	-	0.4	22.4
Airai	100.0	6.0	34.9	13.1	14.7	0.3	0.7	2.3	2.3	25.5
Angaur	100.0	2.1	72.9	21.3	1.1	-	0.5	-	1.6	0.5
Hatohobei	100.0	4.3	91.3	4.3	-	-	-	-	-	-
Kayangel	100.0	64.5	10.1	13.8	-	-	-	0.7	2.2	8.7
Koror	100.0	7.1	46.2	20.0	4.5	0.5	0.8	0.8	3.3	16.7
Melekeok	100.0	0.4	57.7	36.8	1.7	-	-	-	2.9	0.4
Ngaraard	100.0	7.7	24.8	37.9	0.3	-	-	-	0.8	28.5
Ngardmau	100.0	2.7	29.0	38.0	2.7	0.9	-	-	26.2	0.5
Ngaremlengui	100.0	19.9	30.0	39.0	2.2	1.1	-	0.8	1.9	5.2
Ngatpang	100.0	50.7	8.2	16.4	5.7	0.7	-	0.4	-	17.9
Ngchesar	100.0	-	19.1	70.0	5.6	-	-	-	1.9	3.4
Ngerchelong	100.0	33.9	10.5	52.4	0.3	-	-	-	2.1	0.7
Ngiwal	100.0	2.1	32.1	58.5	0.5	-	-	-	1.0	5.7
Peleliu	100.0	19.6	27.1	43.4	4.0	-	0.5	0.5	1.6	3.2
Sonsorol	100.0	-	100.0	-	-	-	-	-	-	-

Source: OPS, 2000 Census, Table 10.

Table 10.5 shows the distribution of the religions across the States. As with the other variables, because Koror is so large, it influences the distribution for all religions. However, a much smaller percentage of the people practicing the traditional religion – Modekngei – lived in Palau than did practitioners of the other religions. More than 8 percent of all Modekngei lived in Ngatpang. More than 3 of every 4 Catholics lived in Koror, as did slightly smaller percentages of persons practicing "other" religions and "none or refused."

Table 10.5. Percentage of Religion by State, Palau: 2000

State	Modekngei	Catholic	Evangelical	Seventh Day Adventist	Other Protestants	Mormons	Jehovah's Witnesses	Other religion	None or refused
Percentage:	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Aimeliik	2.3	0.9	1.6	2.6	-	-	-	0.2	1.9
Airai	7.6	9.2	6.3	30.4	8.8	12.1	28.9	8.2	17.2
Angaur	0.2	1.7	0.9	0.2	-	0.8	-	0.5	0.0
Hatohobei	0.1	0.3	0.0	-	-	-	-	-	-
Kayangel	5.3	0.2	0.4	-	-	-	0.6	0.5	0.4
Koror	55.8	77.3	60.9	59.3	81.3	84.7	66.3	74.1	71.1
Melekeok	0.1	1.7	2.0	0.4	-	-	-	1.2	0.0
Ngaraard	2.9	2.0	5.5	0.2	-	-	-	0.8	5.8
Ngardmau	0.4	0.8	1.9	0.6	2.5	-	-	9.7	0.0
Ngaremlengui	4.3	1.4	3.3	0.8	5.0	-	1.8	1.2	0.6
Ngatpang	8.4	0.3	1.1	1.6	2.5	-	0.6	-	1.6
Ngchesar	-	0.6	4.3	1.5	-	-	-	0.8	0.3
Ngerchelong	5.8	0.4	3.4	0.1	-	-	-	1.0	0.1
Ngiwal	0.2	0.8	2.6	0.1	-	-	-	0.3	0.4
Peleliu	6.7	1.9	5.7	2.3	-	2.4	1.8	1.5	0.6
Sonsorol	-	0.5	-	-	-	-	-	-	-

Source: OPS, 2000 Census, Table 10.

About 4 in every 10 Protestants lived in Koror, so they were more likely than the Catholics to live in Babeldaob and Peleliu than the Catholics – on a proportional, not purely numeric, basis. More than 11 percent of the Protestants lived in Airai compared to 9 percent of the Catholics.

## CONCLUSIONS

These tables give a brief look at the distribution of religions on the basis of the 2000 Census. A more thorough analysis could look at the age and sex, and other characteristics of the population by religion. Most Palauans practice a religion, with the majority being either Catholic or Protestant, but with a large number of people still practicing the traditional religion.

## CHAPTER 11. LABOR FORCE PARTICIPATION

As Palau continues to develop economically, census-defined labor force participation data provide measures of government and private sector success in providing jobs. The government of Palau can acquire some data on labor force participation from periodic surveys and registration. Data for the whole population can only be obtained from periodic censuses. However, the value of censuses as systematic sources of data is tempered by time between enumerations — a particular problem for economic data, which can fluctuate rapidly over relatively short periods. The implementation of the Compact of Free Association makes dealing with economic fluctuations even more important.

Here we examine the labor force participation data from the 2000 census, and occasionally compare them to earlier data. We focus on basic topics — age, sex, birthplace, language, and educational attainment for labor force status in the week before the census, and age and sex for work in 1999 (the year before the census), and transportation to work. The goal in examining these topics is to emphasize some of the most important, fundamental aspects of labor force participation in Palau, to provide insights on the Palauan economy.

### **Definitions**

#### **EMPLOYMENT STATUS**

The 2000 census obtained data on employment status from answers to questionnaire items 21, 25, and 26, asked of persons 15 years and over. The series of questions on employment status was designed to identify several types of individuals in Palau: persons who worked at a job or business or farm at any time during the reference week; persons who did not do this work during the reference week, but who had jobs or businesses from which they were temporarily absent (excluding layoff); persons on layoff; and persons who did not work during the reference week, but who were looking for work to earn money during the previous four weeks and were available for work during the reference week. The employment status data shown in Volume I of the 2000 census report are for persons 16 years old and over.

*Employed.* Employed persons included all civilians 16 years old and over who were either "At work" (those who did any work at all during the reference week as paid employees or in their own business or profession, or on their own farm, or who worked 15 or more hours as unpaid workers on a family farm or in a family business) or were "With a job but not at work" (those who did not work during the reference week, but who had jobs or businesses from which they were temporarily absent due to illness, bad weather, industrial dispute, vacation, or other personal reasons). Excluded from the employed category were: persons without jobs or businesses whose only activity consisted of work around the house or unpaid volunteer work for religious, charitable, and similar organizations; persons without jobs or businesses who did subsistence activity only during the reference week; and persons on active duty in the U.S. Armed Forces.

*Unemployed.* The category of unemployed persons included all civilians 16 years old and over who: were neither "At work" nor "With a job but not at work" during the reference week, or who did subsistence activity only; were looking for work to earn money during the previous four weeks; and were available to accept a job. Examples of job seeking activities include:

- > Registering at a public or private employment office
- > Meeting with prospective employers
- > Investigating possibilities for starting a professional practice or opening a business
- > Placing or answering advertisements
- > Writing letters of application
- > Being on a union or professional register

Also included in the unemployed category were civilians 16 years old and over who did not work at a job or business during the reference week and were waiting to be called back to a job from which they had been laid off.

*Experienced Unemployed.* Experienced unemployed persons were unemployed individuals who worked at any time in the past.

*Civilian Labor Force.* The civilian labor force consisted of persons classified as employed or unemployed in accordance with the criteria described above.

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*Experienced Civilian Labor Force.* The experienced civilian labor force consisted of the employed and the experienced unemployed.

*Labor Force.* The labor force included all persons classified in the civilian labor force plus members of the Armed Forces (persons on active duty with the U.S. Army, Air Force, Navy, Marine Corps, or Coast Guard).

*Not in Labor Force.* The individuals not in the labor force consisted of all persons 16 years old and over who were not classified as members of the labor force. This category consisted mainly of persons engaged in subsistence activity only, students, housewives, retired workers, seasonal workers enumerated in an off season who were not looking for work, institutionalized persons, and persons doing only incidental unpaid family work (less than 15 hours during the reference week).

*Subsistence Activity.* A person engaged in subsistence activities if he or she mainly produced goods for his or her own or family's use and needs, like growing or gathering food, fishing, cutting copra for home use, raising livestock, making handicrafts for home use, and other productive activities not primarily conducted for commercial purposes. When subsistence activity categories are shown with the "Employed" and the "Not in labor force" categories of the employment status concept, they relate to activities engaged in during the census reference week. Persons who did subsistence activity only during the reference week were not classified as "Employed," unless they were "With a job but not at work" (see definition of "Employed").

*Worker.* This term appears in connection with several subjects—for example, commuting categories, class of worker, weeks worked in 1999, and workers in family in 1999. Its meaning varies and, therefore, should be determined in each case by referring to the definition of the subject in which it appears.

*Actual Hours Worked Last Week.* All persons who reported working at a job or business or farm during the reference week were asked to report in questionnaire item 21b the number of hours that they worked, excluding any time doing a subsistence activity. The statistics on hours worked for "Employed, at work" persons pertain to the number of hours actually worked at all jobs, and do not necessarily reflect the number of hours typically or usually worked or the scheduled number of hours. The concept of "Actual hours" differs from that of "Usual hours worked," described below. The number of persons who worked only a small number of hours probably is understated since these persons sometimes consider themselves as not working. Respondents were asked to include overtime or extra hours worked, but to exclude lunch hours, sick leave, and vacation leave.

*Limitations.* The census may understate the number of employed persons because persons who had irregular, casual, or unstructured jobs sometimes reported themselves as not working. The number of employed persons "At work" probably is overstated in the census (and conversely, the number of employed "With a job but not at work" is understated) since some persons on vacation or sick leave erroneously report themselves as working. This problem has no effect on the total number of employed persons. The reference week for the employment data was not the same for all persons. This lack of a uniform reference week may mean that the employment data do not reflect the employment at any given week. For additional, related information, see the discussion below under *Reference Week*.

*Comparability.* The questionnaire items and employment status concepts for the 1990, 1995 and 2000 censuses were essentially the same as those used in the 1980 census. However, these concepts differed in many respects from those in earlier censuses.

Since employment data from the census are obtained from respondents in households, they differ from statistics based on reports from individual business establishments, farm enterprises, and certain government programs. Persons employed at more than one job are counted only once in the census and are classified according to the job at which they worked the greatest number of hours during the reference week. In statistics based on reports from business and farm establishments, persons who work for more than one establishment may be counted more than once. Moreover, other non-census data series may exclude private household workers, unpaid family workers, and self-employed persons, but may include workers less than 16 years old.

An additional difference in the data arises because persons who had a job but were not at work are included with the employed in the statistics shown in Volume I of the 2000 census report, whereas many of these persons are likely to be excluded from employment figures based on establishment payroll reports. Furthermore, the employment status data in the 2000 census report included persons on the basis of place of residence regardless of where they worked, whereas establishment data report persons at their place of work regardless of where they live. Census data on hours worked during the reference week may differ from data from other sources. The census measures hours actually worked, whereas some surveys measure hours paid for by employers.

## **REFERENCE WEEK**

The data on labor force status and commuting characteristics were related to the reference week — that is, the calendar week preceding the date on which the respondents were interviewed by enumerators. This week was not the same for all respondents since the enumeration was not completed in one week. The occurrence of holidays during the enumeration period could affect the data on actual hours worked during the reference week, but probably had no effect on overall measurement of employment status.

Limitations. There are no systematic limitations associated with the collection of labor force data during a reference week.

Comparability. Enumeration began in September for Palau's 1980 and 1995 censuses, so the reference week was also in September. Enumeration began on April 1 for the 1990 and 2000 Censuses, so the reference week started then.

## **WORK STATUS IN 1999**

The 2000 census obtained data on work status in 1999 from answers to questionnaire item 29.

*Work Status in 1999.* Persons 16 years old and over who worked one or more weeks according to the criteria described below were classified as "Worked in 1999"; all other persons 16 years old and over were classified as "Did not work in 1999." Some tabulations showing work status in 1999 include 15 years olds. These persons were classified as "Did not work in 1999" by definition.

*Weeks Worked in 1999.* The census obtained data on weeks worked in 1999 from answers to questionnaire item 29b. Question 29b ("Weeks worked in 1999") was asked of persons who reported in Question 29a that they worked in 1999. The data on this topic pertain to the number of weeks during 1999 in which a person did any work for pay or profit (including paid vacation and paid sick leave, but excluding subsistence activity) or worked without pay on a family farm or in a family business. Weeks of active service in the Armed Forces also were included.

*Usual Hours Worked per Week Worked in 1999.* The 2000 census obtained data on usual hours worked per week worked in 1999 from responses to questionnaire item 29c, a question asked of persons 16 years and over who reported that they worked in 1999. The respondent was to report the number of hours worked per week in the majority of the weeks he or she worked in 1999. If the hours worked per week varied considerably during 1999, the respondent was to report an approximate average of the hours worked per week. The statistics on usual hours worked per week worked in 1999 are not necessarily related to the data on actual hours worked during the census reference week (question 21b). Persons 16 years old and over who reported that they usually worked 35 or more hours each week during the weeks they worked were classified as "Usually worked full time". Persons who reported that they usually worked 1 to 34 hours are classified as "Usually worked part time."

*Year-Round Full-Time Workers.* The category of "Year-round full time workers" included all persons 16 years old and over who usually worked 35 hours or more per week for 50 to 52 weeks in 1999.

*Number of Workers in Family in 1999.* The number of workers per family was the number of individuals in each family who met the requirements of "Worker," as described above under "Work Status in 1999."

Limitations. The number of persons who worked in 1999 and the number of weeks worked may have been understated since some respondents forget intermittent or short periods of employment or exclude weeks worked without pay. Also, some persons may not include weeks of paid vacation among their weeks worked. One result is that the census figures possibly understate the number of persons who worked "50 to 52 weeks."

Comparability. The data on weeks worked collected in the 1990, 1995 and 2000 censuses are comparable with data from the 1980 and 1970 censuses. Since the 1970 census in Palau, two separate questions have been used to obtain this information. The first identified persons with any work experience during the year and, thus, reported those persons for whom the questions on number of weeks worked applied. In 1970, persons responded to the question on weeks worked by selecting one of six weeks-worked intervals. In 1980, 1990, 1995 and 2000 persons were asked to provide the specific number of weeks they worked.

### Analysis of Labor Force Participation Data

About 67.5 percent of the population 16 years and over in Palau in 2000 was in the labor force (Table 11.1). The 9,607 individuals in the labor force were either employed or unemployed—remembering that a person had to fulfill the definition of "unemployed" to be unemployed. Persons who were only doing subsistence were considered "not in the labor force". Employed individuals composed 98 percent of the labor force, yielding an unemployment rate of 2.3 percent. The large number of immigrants, almost all of whom worked, caused the very low unemployment rate. Because of the role of subsistence in Palau, the unemployment rate for the Republic probably is something of a combination between a Western-style unemployment rate and self-reported unemployment based on other criteria.

Table 11.1. Labor Force Status by State for Persons 16 years and over: 2000

State	16 years and over	In Labor Force					Not in Labor Force
		Total	Percent	Employed	Unemployed	Percent	
Total:	14,241	9,607	67.5	9,383	224	2.3	4,634
Aimeliik	181	103	56.9	103	-	-	78
Airai	1,603	1,171	73.1	1,161	10	0.9	432
Angaur	124	51	41.1	50	1	2.0	73
Hatohobei	15	6	40.0	6	-	-	9
Kayangel	91	36	39.6	34	2	5.6	55
Koror	10,101	7,128	70.6	7,009	119	1.7	2,973
Melekeok	165	78	47.3	77	1	1.3	87
Ngaraard	469	261	55.7	249	12	4.6	208
Ngardmau	148	80	54.1	80	-	-	68
Ngaremlengui	258	193	74.8	165	28	14.5	65
Ngatpang	185	102	55.1	102	-	-	83
Ngchesar	184	80	43.5	59	21	26.3	104
Ngerchelong	180	87	48.3	85	2	2.3	93
Ngiwal	133	54	40.6	54	-	-	79
Peleliu	379	162	42.7	136	26	16.0	217
Sonsorol	25	15	60.0	13	2	13.3	10

Source: OPS, 2000 Census, table 19

Although the unemployment rate for all of Palau in 2000 was 2.3 percent, some states — like Aimeliik, Hatohobei, Ngardmau, Ngatpang, and Ngiwal — had no unemployment according to the census. Because places like Hatohobei have few paying jobs, an absence of unemployment tends to obscure what really is occurring.

In general, labor force participation rates also varied considerably between states. About 71 percent of Koror State's adult population participated in the labor force, as did nearly 73 percent of Airai's adult population. Most of the other states, being more rural, had much smaller labor force participation percentages.

Male labor force participation in Palau was greater than total labor force participation in 2000 (Table 11.2). About 75 percent of the males aged 16 years and over were in the labor force, with an unemployment rate of 2 percent. Koror State, with more than 76 percent of its adult males in the labor force, and Airai State at almost 83 percent, provided among the highest labor force participation rates. Although several other states had relatively high percentages of male labor force participation, much of this participation represents state government workers. The private sector, except for small retail stores and fishing enterprises, is little developed outside Koror and Airai.

Table 11.2. Labor Force Status by State for Males 16 years and over: 2000

State	16 years and over	In Labor Force					Not in Labor Force
		Total	Percent	Employed	Unemployed	Percent	
Total Male:	7,938	5,948	74.9	5,827	121	2.0	1,990
Aimeliik	90	67	74.4	67	-	-	23
Airai	1,045	863	82.6	857	6	0.7	182
Angaur	66	34	51.5	34	-	-	32
Hatohobei	6	1	16.7	1	-	-	5
Kayangel	51	22	43.1	21	1	4.5	29
Koror	5,472	4,162	76.1	4,105	57	1.4	1,310
Melekeok	84	49	58.3	48	1	2.0	35
Ngaraard	297	225	75.8	216	9	4.0	72
Ngardmau	86	60	69.8	60	-	-	26
Ngaremlengui	169	137	81.1	123	14	10.2	32
Ngatpang	116	77	66.4	77	-	-	39
Ngchesar	96	60	62.5	41	19	31.7	36
Ngerchelong	85	48	56.5	47	1	2.1	37
Ngiwal	70	36	51.4	36	-	-	34
Peleliu	193	101	52.3	90	11	10.9	92
Sonsorol	12	6	50.0	4	2	33.3	6

Source: OPS, 2000 Census, table 19

In contrast to male employment figures, only about 58 percent of the adult females in Palau were employed in 2000 (Table 11.3). More than 64 percent the females in Koror were in the labor force, compared to 55 percent in Airai. The unemployment rate for females in Palau was slightly higher than either the total or male unemployment rates in 2000. Once again, the excessively high unemployment rates for certain states probably are overstated if one strictly follows U.S. definitions.

Table 11.3. Labor Force Status by State for Females 16 years and over: 2000

State	16 years and over	In Labor Force					Not in Labor Force
		Total	Percent	Employed	Unemployed	Percent	
Total Female:	6,303	3,659	58.1	3,556	103	2.8	2,644
Aimeliik	91	36	39.6	36	-	-	55
Airai	558	308	55.2	304	4	1.3	250
Angaur	58	17	29.3	16	1	5.9	41
Hatothobei	9	5	55.6	5	-	-	4
Kayangel	40	14	35.0	13	1	7.1	26
Koror	4,629	2,966	64.1	2,904	62	2.1	1,663
Melekeok	81	29	35.8	29	-	-	52
Ngaraard	172	36	20.9	33	3	8.3	136
Ngardmau	62	20	32.3	20	-	-	42
Ngaremlengui	89	56	62.9	42	14	25.0	33
Ngatpang	69	25	36.2	25	-	-	44
Ngchesar	88	20	22.7	18	2	10.0	68
Ngerchelong	95	39	41.1	38	1	2.6	56
Ngiwal	63	18	28.6	18	-	-	45
Peleliu	186	61	32.8	46	15	24.6	125
Sonsorol	13	9	69.2	9	-	-	4

Source: OPS, 2000 Census, table 19

Labor force participation in Palau varied considerably by age (Table 11.4). Although about 2 out of every 3 adults were in the labor force in 2000, less than 1 in 10 individuals aged 16 to 19 years and 65 years and older were included—many of the young persons having yet to begin working and many of the older persons having already retired. In contrast, more than 4 of every 5 residents in Palau aged 25 to 44 years were in the labor force.

Table 11.4. Labor Force Status for Persons 16 yrs. &amp; Over by Age Group: 2000

Age Group	Total	In Labor Force			Unemployed	
		Number	Percent	Employed	Number	Percent
Total 16 + yrs:	14,241	9,607	67.5	9,383	224	2.3
16 to 19 years	1,057	96	9.1	80	16	16.7
20 to 24 years	1,342	855	63.7	817	38	4.4
25 to 34 years	4,079	3,471	85.1	3,405	66	1.9
35 to 44 years	3,542	2,891	81.6	2,833	58	2.0
45 to 54 years	2,158	1,680	77.8	1,648	32	1.9
55 to 64 years	1,026	498	48.5	486	12	2.4
65 years and over	1,037	116	11.2	114	2	1.7

Source: OPS, 2000 Census, Table 68

Unemployment rates tended to decrease as age increased. Persons aged 16 to 19 years were the most likely to be unemployed, either because they were just entering the labor force, could not find work or because they had trouble keeping their jobs. Once again, due to the nature of Palau's economy it is unclear how many of the unemployed should be classified as "not in the labor force" instead of in the labor force but unemployed—reducing the reliability of these figures.

Male labor force participation also varied with age (Table 11.5), paralleling the general pattern noted above for all residents of Palau. Each male age group had higher percentages in the labor force than for the total population, with the three age groups between 25 and 54 years having labor force participation rates in excess of 80 percent. About 10 percent aged 16 to 19 years were in the labor force, while almost 20 percent of the males aged 65 years or more were similarly classified.

Table 11.5. Labor Force Status for Males 16 yrs. &amp; Over by Age Group: 2000

Age Group	Total	In Labor Force			Unemployed	
		Number	Percent	Employed	Number	Percent
Males 16 + yrs:	7,938	5,948	74.9	5,827	121	2.0
16 to 19 years	566	59	10.4	50	9	15.3
20 to 24 years	731	473	64.7	453	20	4.2
25 to 34 years	2,325	2,076	89.3	2,035	41	2.0
35 to 44 years	2,080	1,824	87.7	1,794	30	1.6
45 to 54 years	1,260	1,089	86.4	1,075	14	1.3
55 to 64 years	536	341	63.6	335	6	1.8
65 years and over	440	86	19.5	85	1	1.2

Source: OPS, 2000 Census, Table 68

Unemployment for males in Palau also varied with age, the pattern seen once again paralleling that described for the entire population. The unemployment rates for males were lower than for the whole population, so the rates for females were higher.

Female labor force participation characteristics resembled those documented for all adult residents of Palau and for adult males, although the participation rates were lower for all age groups (Table 11.6). The percentages of females in each age group within the labor force once again peaked near the middle of the age distribution, with figures in excess of 70 percent recorded for females in the two age groups between 25 and 44 years. Participation in the labor force once again was substantially lower for females in the youngest and oldest age groups than for females in the remaining age groups, with only 5 percent of those aged 65 years and older participating. The data presented show a greater likelihood for younger women to participate in the labor force—probably due both to increased education and training as well as to differences in the behavior of younger and older generations.

Table 11.6. Labor Force Status for Females 16 yrs. & Over by Age Group: 2000

Age Group	Total	In Labor Force			Unemployed	
		Number	Percent	Employed	Number	Percent
Females 16 + yrs	6,303	3,659	58.1	3,556	103	2.8
16 to 19 years	491	37	7.5	30	7	18.9
20 to 24 years	611	382	62.5	364	18	4.7
25 to 34 years	1,754	1,395	79.5	1,370	25	1.8
35 to 44 years	1,462	1,067	73.0	1,039	28	2.6
45 to 54 years	898	591	65.8	573	18	3.0
55 to 64 years	490	157	32.0	151	6	3.8
65 years and over	597	30	5.0	29	1	3.3

Source: OPS, 2000 Census, Table 68

Unemployment rates for adult females in Palau varied according to age similarly to those for all adults and adult males. Overall unemployment for females exceeded that for males, as noted above.

Persons born in Palau were less likely than immigrants to be in the labor force, partially because some Palauans were doing subsistence and other traditional activities and partially because many immigrants came specifically to work (Table 11.7). About 90 percent of those born outside Palau (and also outside the U.S.) were in the labor force, including 96 percent of those born in the Philippines and nearly 98 percent of those born in China. The figure for the Federated States of Micronesia (FSM) was much lower because most were students at the Palau Community College. Although slightly more than 65 percent of the residents of Palau-born in the U.S. were in the labor force, this figure probably includes wives and children of contract and other workers.

Table 11.7. Labor Force Status by Birthplace: 2000

Birthplace	Total	In Labor Force			Unemployed	
		Number	Percent	Employed	Number	Percent
Total 16 + yrs:	14,241	9,607	67.5	9,383	224	2.3
Palau	8,680	4,583	52.8	4,393	190	4.1
Asia	4,565	4,355	95.4	4,347	8	0.2
Philippines	2,827	2,719	96.2	2,711	8	0.3
China	1,058	1,039	98.2	1,039	0	0.0
FSM	238	116	48.7	101	15	12.9
United States	486	318	65.4	308	10	3.1

Source: OPS, 2000 Census, Table 81

About 4 percent of the Palau-born adults residing in Palau were unemployed in 2000, about 2 percentage points higher than the rate for all workers. In contrast, less than 1 percent of the adult residents of Palau who were born in Asia were unemployed, including less than 1 percent of the adult residents born in the Philippines and none of the adult residents born in China. These low unemployment rates for most non-Palau born are understandable. Foreign workers in Palau must work to serve their purpose for being there. If they do not work, they have to return home. Nearly 13 percent of the FSM born were unemployed, providing additional evidence that many were students. About 3 percent adult resident of Palau-born in the U.S. was unemployed.

*Language Spoken at Home and Frequency of Palauan by Labor Force Participation.* Persons who spoke Palauan at home were less likely to be in the labor force than those who spoke some other language (Table 11.8). Although 52 percent of those who spoke Palauan at home were in the labor force, this was true for fully 89 percent of those who spoke another language. As discussed in Chapter 9, very few people in Palau spoke Other Language at home and most of them were not Palauans. The majority of adult residents of Palau in 2000 spoke Palauan rather than English or another language at home, as would be expected. As the frequency of Palauan usage decreased, labor force participation increased. More than 60 percent of those who spoke English and another language equally often at home were in the labor force. But only 53 percent of those who spoke Palauan at home more often than another language were in the labor force. Similarly, 94 percent of the individuals who did not speak Palauan at home at all were in the labor force.

Table 11.8. Labor Force Status by Language and Ability: 2000

Language and Ability	Total	In Labor Force			Unemployed	
		Number	Percent	Employed	Number	Percent
Total 16+ yrs:	14,241	9,607	67.5	9,297	224	2.3
Speak Only Palauan	8,414	4,406	52.4	4,146	190	4.3
Speak Other Language	5,825	5,201	89.3	5,151	34	0.7
More than Palauan	434	301	69.4	292	7	2.3
Both Equally often	245	148	60.4	139	7	4.7
Less than Palauan	182	96	52.7	89	7	7.3
Doesn't speak Palau	4,964	4,656	93.8	4,631	13	0.3

Source: OPS, 2000 Census, Table 114.

Unemployment also varied with language spoken at home, but the numbers are so small that it is difficult to make any definitive statements. About 4 percent of those speaking Palauan only were unemployed compared to less than 1 percent of the non-Palauan speakers.

*Educational Attainment and Labor Force Participation.* A close relationship also existed between educational attainment and employment (Table 11.9). The likelihood of participating in the labor force depends on the level of education obtained. Although figures fluctuated for the lowest levels of education, starting with two years of high school a direct correlation emerged between level of schooling and labor force participation. For example, about 85 percent of the high school graduates in Palau were in the labor force, increasing to almost 88 percent of those with bachelor's degrees and about 92 percent with higher degrees.

Table 11.9. Labor Force Status by Educational Attainment: 2000

Educational Attainment	Total	In Labor Force			Unemployed	
		Number	Percent	Employed	Number	Percent
Total 25+ yrs:	11,842	8,656	73.1	8,486	170	2.0
Elementary: 0 to 7 yrs	1,375	305	22.2	294	11	3.6
8 years	349	179	51.3	163	16	8.9
High School: 1 year	428	197	46.0	188	9	4.6
2 years	273	178	65.2	167	11	6.2
3 years	234	127	54.3	120	7	5.5
4 years	406	282	69.5	269	13	4.6
High school graduate	5,388	4,563	84.7	4,510	53	1.2
Some college	1,216	968	79.6	945	23	2.4
A.S., occupational	553	457	82.6	452	5	1.1
A.S., academic	440	353	80.2	347	6	1.7
Bachelor's degree	945	831	87.9	819	12	1.4
Higher degree	235	216	91.9	212	4	1.9

Source: OPS, 2000 Census, Table 115

Unemployment, in contrast, tended to decrease as level of educational attainment increased. Once again, persons with lower levels of education experienced considerable fluctuation in unemployment. However, beginning with persons having three or more years of high school, unemployment rates decreased as level of education increased.

## WORK IN 1999

Until now, this chapter has examined labor force characteristics during the week preceding the 2000 census. The 2000 census of Palau also collected information about work during all of 1999. Whereas the data on work in the week before the census provides current labor force participation, the data on work the year before the census provide longer-term work patterns.



The total working population in Palau continues to increase because of economic development, and that economic development bringing in many foreign workers (Table 11.10). The absolute count of workers increased from 7,470 in 1994 to 8,748 in 1999. The percentage of persons who worked 50 to 52 weeks increased from 78.9 percent in 1994 (for the 1995 census) to 81.6 percent in 1999. The percentage working 40 to 49 weeks decreased, while the other categories remained about the same.

Table 11.10. Persons Who Worked in Year Before the Census by Hours Worked &amp; Weeks Worked: 1995 &amp; 2000

Hours and Weeks Worked	Number		Percent Change	Percent	
	2000	1995		2000	1995
Total 16+ yrs:	8,748	7,470	17.1	100.0	100.0
50 to 52 weeks	7,139	5,896	21.1	81.6	78.9
40 to 49 weeks	289	469	(38.4)	3.3	6.3
27 to 39 weeks	273	271	0.7	3.1	3.6
1 to 26 weeks	1,047	834	25.5	12.0	11.2
Usually worked 35+ hr/wk	8,495	7,027	20.9	97.1	94.1
50 to 52 weeks	6,984	5,705	22.4	79.8	76.4
40 to 49 weeks	265	431	(38.5)	3.0	5.8
27 to 39 weeks	250	212	17.9	2.9	2.8
1 to 26 weeks	996	679	46.7	11.4	9.1
Usually worked 1-34 hr/wk	253	443	(42.9)	2.9	5.9
50 to 52 weeks	155	191	(18.8)	1.8	2.6
40 to 49 weeks	24	38	(36.8)	0.3	0.5
27 to 39 weeks	23	59	(61.0)	0.3	0.8
1 to 26 weeks	51	155	(67.1)	0.6	2.1

Sources: OPS, 1995 and 2000 Censuses, Table 19

The percentage of full-time workers—those working 35 hours or more per week—increased by 21 percent between 1994 and 1999, from about 94 percent of workers to nearly 97 percent. Thus, even those persons who started working sometime during the year (probably having migrating) tended to work full-time once employed in Palau. The percentage of full-time workers who worked 50 to 52 weeks increased from 76 to 80 percent during the period. Part-time workers decreased by more than 43 percent between 1994 and 1999, from about 6 percent of the workers in 1994 to slightly less than 3 percent in 1999.

The number of males in the labor force in the year before the census increased by almost 19 percent during the 5-year period (Table 11.11). The percentage of full time workers remained at just over 80 percent – about 4 in every 5 male adults. The percentage of males who were working full-time also increased, from 96 percent in 1994 to 98 percent in 1999. Very few males worked only part-time for pay during the year before the census. In general the full time workers increased no matter how many weeks worked, and the percentage doing part-time work decreased.

Table 11.11. Males Who Worked in Year Before the Census by Hours Worked and Weeks Worked: 1995 and 2000

Hours and Weeks Worked	Number		Percent Change	Percent	
	2000	1995		2000	1995
Males 16+ yrs:	5,363	4,518	18.7	100.0	100.0
50 to 52 weeks	4,311	3,650	18.1	80.4	80.8
40 to 49 weeks	152	306	(50.3)	2.8	6.8
27 to 39 weeks	142	130	9.2	2.6	2.9
1 to 26 weeks	758	432	75.5	14.1	9.6
Usually worked 35+ hr/wk	5,261	4,334	21.4	98.1	95.9
50 to 52 weeks	4,248	3,569	19.0	79.2	79.0
40 to 49 weeks	144	290	(50.3)	2.7	6.4
27 to 39 weeks	138	113	22.1	2.6	2.5
1 to 26 weeks	731	362	101.9	13.6	8.0
Usually worked 1-34 hr/wk	102	184	(44.6)	1.9	4.1
50 to 52 weeks	63	81	(22.2)	1.2	1.8
40 to 49 weeks	8	16	(50.0)	0.1	0.4
27 to 39 weeks	4	17	(76.5)	0.1	0.4
1 to 26 weeks	27	70	(61.4)	0.5	1.5

Sources: OPS, 1995 and 2000 Censuses, Table 19

The number of females working in Palau in the year before the census increased by 15 percent during the 5-year period (Table 11.12). The percentage of females working the whole year – 50 to 52 weeks – increased by 26 percent. About 76 percent of the female workers in 1994 worked the whole year, compared to 84 percent of those in 1999. Also, the full-time full-year female workers increased from 91 percent to 96 percent of the total. As with the total, and with the males, very few females were reported as part-time workers.

Table 11.12. Females Who Worked in Year Before the Census by Hours Worked and Weeks Worked: 1995 and 2000

Hours and Weeks Worked	Number		Percent	Percent	
	2000	1995	Change	2000	1995
Females 16 + yrs:	3,385	2,952	14.7	100.0	100.0
50 to 52 weeks	2,828	2,246	25.9	83.5	76.1
40 to 49 weeks	137	163	(16.0)	4.0	5.5
27 to 39 weeks	131	141	(7.1)	3.9	4.8
1 to 26 weeks	289	402	(28.1)	8.5	13.6
Usually worked 35+ hr/wk	3,234	2,693	20.1	95.5	91.2
50 to 52 weeks	2,736	2,136	28.1	80.8	72.4
40 to 49 weeks	121	141	(14.2)	3.6	4.8
27 to 39 weeks	112	99	13.1	3.3	3.4
1 to 26 weeks	265	317	(16.4)	7.8	10.7
Usually worked 1-34 hr/wk	151	259	(41.7)	4.5	8.8
50 to 52 weeks	92	110	(16.4)	2.7	3.7
40 to 49 weeks	16	22	(27.3)	0.5	0.7
27 to 39 weeks	19	42	(54.8)	0.6	1.4
1 to 26 weeks	24	85	(71.8)	0.7	2.9

Sources: OPS, 1995 and 2000 Censuses, Table 19

About 61 percent of the workers in Palau aged 16 years and over worked in 1999, but, of those, 97 percent were working full-time (Table 11.13). Proportionally fewer of those born in Palau worked full-time in 1999 (little more than half) than those born in Asia (83 percent) or elsewhere (62 percent). In contrast, 4 percent of Palau-born workers in Palau worked part-time in 1999, more than the proportion of workers born in Asia or elsewhere.

Table 11.13. Work Status in 1999 by Birthplace: 2000

Work Status in 1999	Total	Palau	Asia	Others
Total 16 + yrs:	14,241	8,680	4,565	996
Worked in 1999	8,748	4,357	3,777	614
Percent	61.4	50.2	82.7	61.6
Usually worked 35+ hrs/wk	8,495	4,147	3,749	599
Percent	97.1	95.2	99.3	97.6
Usually worked 15-34 hrs/wk	214	179	21	14
Percent	2.4	4.1	0.6	2.3
Did not work in 1999	5,493	4,323	788	382

Source: OPS, 2000 Census, Table 81

Although about 4 of every 5 workers in Palau worked 50 to 52 weeks in 1999, the number of weeks worked varied with age (Table 11.14). For example, about 72 percent of the 16 to 19 year olds worked the entire year, compared to about 85 percent of workers aged 35 to 64 years. About 12 percent of workers in the youngest age group worked 13 weeks or less in 1999, with decreasing percentages by age until those of retirement age.

Table 11.14. Weeks Worked in 1999 by Age: 2000

Weeks Worked in 1999	Total	16-19 years	20-24 years	25-34 years	35-54 years	55-64 years	65 yrs years
Worked in 1999:	8,748	60	745	3,107	4,222	503	111
Percent:	100.0	100.0	100.0	100.0	100.0	100.0	100.0
50 to 52 weeks	81.6	71.7	73.0	79.1	84.6	85.3	82.0
40 to 49 weeks	3.3	1.7	3.4	3.8	3.0	2.2	7.2
27 to 39 weeks	3.1	5.0	4.2	3.4	2.5	5.0	1.8
14 to 26 weeks	5.3	10.0	8.3	5.7	4.6	4.2	3.6
1 to 13 weeks	6.6	11.7	11.1	7.9	5.2	3.4	5.4

Source: OPS, 2000 Census, Table 68.

Palau-born persons were more likely to have worked all of 1999 than resident workers born in Asia or elsewhere (Table 11.15). Although nearly 82 percent of all workers in Palau worked 50 to 52 weeks, this was true for almost 89 percent of those born in Palau. In contrast, only 3 percent of the Palau-born workers fell within the “one to 13 week” category in 1999, compared to nearly 11 percent of the workers born in Asia and almost 6 percent of those born elsewhere. In general, all workers showed a tendency to work the entire year of 1999.

Table 11.15. Work Status of Employed Persons in 1999 by Place of Birth: 2000

Work Status in 1999	Total	Palau	Asia	Others
Worked in 1999:	8,748	4,357	3,777	614
Percent:	100.0	100.0	100.0	100.0
50 to 52 weeks	81.6	89.1	73.1	80.8
40 to 49 weeks	3.3	2.8	3.8	3.9
27 to 39 weeks	3.1	2.1	4.2	3.6
14 to 26 weeks	5.3	3.3	7.5	5.9
1 to 13 weeks	6.6	2.6	11.4	5.9

Source: OPS, 2000 Census, Table 81

About 82 percent of the full-time workers in Palau worked 50 weeks or more in 1999 (Table 11.16). About 91 percent of the Palau-born full-time workers worked the whole year compared to 73 percent of the Asia born and 82 percent of the “other” born workers.

Table 11.16. Work Status of Full-time Employees in 1999 by Birthplace: 2000

Work Status in 1999	Total	Palau	Asia	Others
Usually work 35+ hrs/wk:	8,495	4,147	3,749	599
Percent:	100.0	100.0	100.0	100.0
50 to 52 weeks	82.2	90.5	73.2	81.5
40 to 49 weeks	3.1	2.5	3.7	3.8
27 to 39 weeks	2.9	1.7	4.2	3.3
14 to 26 weeks	5.2	2.9	7.5	5.7
1 to 13 weeks	6.6	2.3	11.4	5.7

Source: OPS, 2000 Census, Table 81

The largest group of workers in 1999 was aged 35 to 54 years, followed by those aged 25 to 34 years (Table 11.17). More than 74 percent of the adult populations in both of these age groups worked in 1999, with over 97 percent of the workers in each group working full-time. All age groups 20 to 64 years old had more than 96 percent working full-time – about 15 percent of those younger than 20 years old and older than 64 years were working part time.

Table 11.17. Work Status in 1999 by Age: 2000

Work Status in 1999	Total	16-19 years	20-24 years	25-34 years	35-54 years	55-64 years	65 yrs & over
Total 16+ yrs:	14,241	1,057	1,342	4,079	5,700	1,026	1,037
Worked in 1999	8,748	60	745	3,107	4,222	503	111
Percent	61.4	5.7	55.5	76.2	74.1	49.0	10.7
Usually worked 35+ hrs/wk	8,495	51	720	3,042	4,110	482	90
Percent	97.1	85.0	96.6	97.9	97.3	95.8	81.1
Usually worked 15-34 hrs/wk	214	9	22	56	94	16	17
Percent	2.4	15.0	3.0	1.8	2.2	3.2	15.3
Did not work in 1999	5,493	997	597	972	1,478	523	926

Source: OPS, 2000 Census, Table 68.

Of the workers in Palau who worked full-time in 1999, more than 82 percent worked that entire year (Table 11.18). Although the number of weeks varied for full-time workers in the year before the 2000 census by age, in general, workers in Palau – at all ages – tended to work the whole year. In fact, those few working part-time tended to be young, so were probably working their way into the labor force.

Table 11.18. Work Status of Full-time Workers in 1999 by Age: 2000

Work Status in 1999	Total	16-19 years	20-24 years	25-34 years	35-54 years	55-64 years	65 yrs & over
Usually work 35+ hrs/wk:	8,495	51	720	3,042	4,110	482	90
Percent:	100.0	100.0	100.0	100.0	100.0	100.0	100.0
50 to 52 weeks	82.2	78.4	73.8	79.7	85.1	86.3	86.7
40 to 49 weeks	3.1	-	3.2	3.6	2.9	2.3	4.4
27 to 39 weeks	2.9	3.9	4.2	3.3	2.3	4.1	1.1
14 to 26 weeks	5.2	5.9	8.1	5.5	4.5	4.4	3.3
1 to 13 weeks	6.6	11.8	10.8	8.0	5.2	2.9	4.4

Source: OPS, 2000 Census, Table 68.

The proportion of inhabitants aged 16 years and over who worked in 1999 varied substantially among the states of Palau, ranging from more than 64 percent in Koror and Airai to a low of less than 40 percent in Augaur, Kayangel, and Peleliu (Table 11.19). Rural states tended to have proportionally fewer adult residents who worked in 1999, the usefulness of the values for many states (including Hatothobei) limited due to the small numbers of persons involved. The majority of workers in all but Ngaraard and Ngchesar states worked 50 to 52 weeks in 1999. About 85 percent of the workers in Koror and nearly 76 percent of the workers in Airai worked all of 1999. Similarly, the majority of workers in all states of Palau worked full-time in 1999. Included were more than 98 percent of the workers living in Koror and Airai. Lower percentages of full-time workers occurred in more rural states, but in no case did the proportion of full-time workers fall below 68 percent of all workers.

Table 11.19. Work Status in 1999 by State: 2000

State	Worked in 1999			Worked 50-52 Weeks		Usually Work 35+ hr/week	
	Total	Number	Percent	Number	Percent	Number	Percent
Total 16 + yrs:	14,241	8,748	61.4	7,139	81.6	8,495	97.1
Aimeliik	181	92	50.8	85	92.4	86	93.5
Airai	1,603	1,050	65.5	797	75.9	1,024	97.5
Angaur	124	42	33.9	36	85.7	38	90.5
Hatothobei	15	6	40.0	5	83.3	5	83.3
Kayangel	91	33	36.3	31	93.9	28	84.8
Koror	10,101	6,540	64.7	5,540	84.7	6,388	97.7
Melekeok	165	68	41.2	62	91.2	65	95.6
Ngaraard	469	237	50.5	87	36.7	236	99.6
Ngardmau	148	79	53.4	73	92.4	73	92.4
Ngaremlengui	258	155	60.1	107	69.0	154	99.4
Ngatpang	185	91	49.2	53	58.2	84	92.3
Ngchesar	184	79	42.9	32	40.5	67	84.8
Ngerchelong	180	78	43.3	70	89.7	73	93.6
Ngiwal	133	54	40.6	49	90.7	37	68.5
Peleliu	379	130	34.3	99	76.2	123	94.6
Sonsorol	25	14	56.0	13	92.9	14	100.0

Source: OPS, 2000 Census, Table 19.

### Subsistence activities

A subsistence worker is one whose sole economic work is to provide food for his or her own family and to sometimes give subsistence production away to friends or relatives for no payment, but not to sell. Two questions in the 2000 Census collected data on subsistence – (1) whether a person 16 years and over did subsistence activities, whether also working for pay or not, and (2) if they did subsistence, the type or types of subsistence they did. Table 11.20 shows that about 5 percent of all workers in Palau in 2000 did subsistence alone (454 people) or in addition to paid employment (266 people). These numbers clearly are undercounts of actual subsistence activities. For example, no subsistence at all is reported for Sonsorol and Hatothobei, clearly not the case. In general, censuses of this type under-report subsistence, either because the enumerator has trouble framing the questions properly, or because the respondents are reluctant to answer, either because of a feeling of a stigma being attached to subsistence activities or a fear that job opportunities may be denied, because of a perception that the person was already working.

Table 11.20. Paid Work and Subsistence Activity by State: 2000

State	Total	Paid work, no subsistence	Doing Subsistence		Paid work & subsistence	Subsistence only	No work
			Total	Percent			
Total 16 + yrs:	14,241	9,028	720	5.1	266	454	4,493
Aimeliik	181	97	7	3.9	5	2	77
Airai	1,603	1,126	113	7.0	28	85	364
Angaur	121	41	16	13.2	5	11	64
Hatothobei	15	6	-	-	-	-	9
Kayangel	91	30	13	14.3	2	11	48
Koror	10,106	6,867	166	1.6	89	77	3,073
Melekeok	165	66	19	11.5	8	11	80
Ngaraard	469	244	86	18.3	5	81	139
Ngardmau	148	73	22	14.9	6	16	53
Ngaremlengui	258	148	12	4.7	4	8	98
Ngatpang	183	84	34	18.6	16	18	65
Ngchesar	184	24	91	49.5	34	57	69
Ngerchelong	180	55	55	30.6	28	27	70
Ngiwal	133	35	27	20.3	19	8	71
Peleliu	379	119	59	15.6	17	42	201
Sonsorol	25	13	-	-	-	-	12

Source: OPS, 2000 Census Special Tabulations.

Besides the Southwest states, Koror had the lowest percentage doing subsistence, at less than two percent. Only Airai, Aimeliik, and Ngaremlengui of the other States had values below 10 percent of all workers. On the other hand, more than half of all workers in Ngchesar were doing subsistence, as well as 3 in every 10 workers in Ngarchelong.

Actual subsistence activities are also difficult to obtain in this type of census. Table 11.21 shows results of the item on types of subsistence activities asked of all persons claiming to be doing subsistence in the week before the census. Many of the people did more than one type of subsistence activity so they appear in the table more than once. Gardening was the largest category, with 473 people, followed by fishing with 320, and animal-raising with 100. As noted above, these figures will be low.

Table 11.21. Subsistence Activity by State: 2000

State	Total	Gardening	Animal-raising	Fishing	Gardening and Animal-raising	Gardening & Fishing	Fishing and Animal-raising	Garden.,fish. & Animal-raising	Handi-craft	Other
Subsistence 16 + yrs:	747	290	16	179	53	110	11	20	24	44
Aimeliik	9	1	1	2	-	-	-	4	-	1
Airai	114	50	3	16	14	16	-	1	4	10
Angaur	16	11	-	1	-	2	1	1	-	-
Hatohobei	-	-	-	-	-	-	-	-	-	-
Kayangel	13	4	1	3	-	-	-	-	4	1
Koror	178	59	4	52	9	17	4	5	9	19
Melekeok	19	5	-	3	3	4	1	1	1	1
Ngaraard	92	38	1	12	15	16	2	4	2	2
Ngardmau	22	3	3	2	-	13	-	-	-	1
Ngaremlengui	13	3	-	7	1	-	1	-	-	1
Ngatpang	35	15	-	12	1	5	-	1	1	-
Ngchesar	93	41	-	23	2	22	-	3	-	2
Ngerchelong	56	27	-	14	1	10	1	-	2	1
Ngiwal	27	15	-	11	1	-	-	-	-	-
Peleliu	60	18	3	21	6	5	1	-	1	5
Sonsorol	-	-	-	-	-	-	-	-	-	-

Source: OPS, 2000 Census Special Tabulations.

## Conclusions

Insights about Palau's economy from census data are inherently limited by the relatively long periods between censuses. To complicate matters, as Palau evolves economically from a more traditional, subsistence-based economy to a more market-based economy, many of the statistics collected by conventional censuses are of limited use. Nevertheless, examining systematically collected data on economic topics provides a basic understanding of Palau's economy. In this chapter, we focused on labor force participation and associated issues.

A number of trends emerge from data collected by the 2000 census. More than half the residents of Palau in 2000 were part of the labor force at some time in 1999. With few exceptions, labor force participation was stronger among males than among females. Similarly, the greatest labor force participation in both absolute and relative terms occurred among individuals in middle age groups, those aged 20 to 64 years old. Foreign-born residents of Palau tended to have higher rates of labor force participation than Palau-born persons — in part because most foreigners must work in order to stay in Palau and in part because most foreigners migrate to Palau specifically for jobs. Labor force participation tended to increase with the amount of English spoken at home and with level of educational attainment.

In this chapter we looked at several facets of the Palauan economy. One of the most important, recurring themes is the growing role played by workers from other countries. The tendency for immigrants to work full-time emerged time and again, as did their tendency to work for less than an entire year prior to the most recent census — testimony both to their interest in working and to their impermanence. A second theme concerns the importance of education in the Palau's increasingly Westernized culture coupled with the importance of some facility in speaking English. As Palau's economic foundation continues to evolve, educational attainment and ability to communicate in English will probably continue to grow in economic importance.

## CHAPTER 12. OCCUPATION, INDUSTRY, AND CLASS OF WORKER

Although labor force participation — whether people have jobs is important — the type of work gives a more complete understanding of a country's economy. Now we examine occupation, industry, and class of worker to explore issues related to Palau's workforce.

### **Definitions**

#### **INDUSTRY, OCCUPATION, AND CLASS OF WORKER**

Industry, occupation, and class of worker data were derived from answers to questionnaire items 26, 27, and 28. Industry is a worker's kind of business or government agency and occupation is the kind of work a person does, class of worker is whether they work in the public or private sector.

For employed persons, data on industry, occupation, and class of worker refer to the respondent's job during the reference week. For individuals who worked at two or more jobs, the data refer to the job at which the person worked the greatest number of hours. For unemployed persons, the data concerning work type refer to their last job. The industry and occupation statistics are based on the detailed classification systems developed for the 1990 census. These systems were also used in 1995 and 2000. The *Classified Index of Industries and Occupations* provides additional information on the industry and occupation classification systems.

Respondents provided data for census tabulations by reporting information on their industry and occupation. In 2000, the descriptions obtained were referred to clerical staff in the Office of Planning and Statistics processing office for coding. The clerical staff converted the written questionnaire descriptions to codes by comparing these descriptions to entries in the *Alphabetical Index of Industries and Occupations*.

### **Industry**

The industry classification system developed for the 1990, 1995 and 2000 censuses consisted of 235 categories for employed persons, organized in 13 major industry groups. Since 1940, the industrial classification was based on the *Standard Industrial Classification Manual* (SIC). The 2000 census classification was developed from the 1987 SIC published by the Office of Management and Budget, Executive Office of the President of the United States. Palau uses the U.S. definitions in its economic variables.

The SIC was designed primarily to classify establishments by the type of industrial activity in which they were engaged. However, census data, which were collected from households, differ in detail and nature from those obtained from establishment surveys. As a result of this difference, the census classification systems (although defined in SIC terms) cannot reflect the full detail of all categories. There are several levels of industrial classification found in census products.

### **Occupation**

The occupational classification system developed for the 2000 census consisted of 500 specific occupational categories for employed persons arranged into 6 summary and 13 major occupational groups. This classification was developed to be consistent with the *Standard Occupational Classification (SOC) Manual: 1980*, published by the Office of Federal Statistical Policy and Standards, U.S. Department of Commerce. Tabulations with occupation as the primary characteristic present several levels of occupational detail.

Some occupation groups are related closely to certain industries. Operators of transportation equipment, farm operators and workers, and private household workers account for major portions of their respective industries of transportation, agriculture, and private households. However, the industry categories include persons in other occupations. For example, persons employed in agriculture include truck drivers and bookkeepers; persons employed in the transportation industry include mechanics, freight handlers, and payroll clerks; and persons employed in the private household industry include occupations like chauffeur, gardener, and secretary.

**Class of Worker**

The 2000 census obtained data on class of worker from answers to questionnaire item 28. The information on class of worker referred to the same job as a respondent's industry and occupation and categorizes persons according to the type of ownership of the employing organization. The 2000 Palau Census defined class of worker categories as follows:

*Private Wage and Salary Workers* — Included persons who worked for wages, salary, commission, tips, pay-in-kind, or piece rates for a private for profit employer or a private not-for-profit, tax-exempt, or charitable organization. Self-employed persons whose business was incorporated were included with private wage and salary workers because they were paid employees of their own companies. Some tabulations presented data separately for the following subcategories: "For profit," "Not for profit," and "Own business incorporated." Employees of foreign governments, the United Nations, or other formal international organizations were classified as "Private-not-for-profit."

*Government Workers* — Included persons who were employees of any local, State, Palau National, or U.S. Federal governmental unit, regardless of the activity of the particular agency. For some tabulations, the data were presented separately for the various levels of government.

*Self-Employed Workers* — Included persons who worked for profit or fees in their own unincorporated business, profession, or trade, or who operated a farm.

*Unpaid Family Workers* — Included persons who worked 15 hours or more without pay in a business or on a farm operated by a relative.

*Salaried/Self-Employed* — In tabulations that categorized persons as either "Salaried" or "Self-employed," the salaried category included private and government wage and salary workers. "Self-employed" included self-employed persons and unpaid family workers.

The industry category "Public administration" was limited to regular government functions like legislative, judicial, administrative, and regulatory activities of governments. Other government organizations like schools, hospitals, liquor stores, and bus lines were classified by industry according to the activity in which they were engaged. On the other hand, the class of worker "Government categories" included all government workers.

Occasionally respondents supplied industry, occupation, or class of worker descriptions that were not sufficiently specific for precise classification or did not report on these items at all. Some of these cases were corrected through the field editing process and during coding and tabulation operations. In the coding operation, certain types of incomplete entries were corrected using the *Alphabetical Index of Industries and Occupations*. For example, it was possible in certain situations to assign an industry code based on the occupation reported.

Following the coding operations, a computer edit first determined whether a respondent was in the universe that required an industry and occupation code. The codes for the three items (industry, occupation, and class of worker) were checked to ensure they were valid and were edited for their relation to each other. Invalid and inconsistent codes were either blanked or changed to a consistent code. If one or more of the three codes were blank after the edit, a code was assigned from a similar person based on other items. If all the labor force and income data also were blank, all these economic items were assigned from one other person who provided all the necessary data.

Limitations. There are no obvious limitations of the data on industry, occupation, and class of worker collected in the 1990, 1995 and 2000 censuses.

Comparability. Comparability of industry and occupation data was affected by a number of factors, primarily the systems used to classify the questionnaire responses. Changes in the 2000 Census for Palau were needed to recognize the birth of new industries and occupations, the death of others, and the growth and decline in existing industries and occupations, as well as the desire of analysts and other users for more detail in the presentation of the data. Probably the greatest cause of incomparability is the movement of a segment of one category to a different category in a subsequent census. Unfortunately, changes in the nature of jobs and respondent terminology, and refinement of category composition, made these movements necessary.

The 1990, 1995 and 2000 occupational classification systems essentially were the same as that for the 1980 census. However, the conversion of the census classification to the SOC in 1980 meant that the 1990, 1995 and 2000 classification system was less comparable to the classifications used prior to the 1980 census.

Other factors that affected data comparability included the universe to which the data referred, how the industry and occupation questions were worded on the questionnaire, improvements in the coding procedures, and the handling of "Not reported" cases. In 1970, an allocation process was introduced that assigned these cases to major groups. In 1990, 1995 and 2000, as in 1980, the "Not reported" cases were assigned to individual categories. Selected publications contain information on the various factors affecting comparability and are particularly useful for understanding differences in the occupation and industry information from earlier censuses (U.S. Bureau of the Census, 1968, 1972b, 1988). For citations for earlier census years, see the 1980 Census of Population report, PC80-1-C/D, *Detailed Population Characteristics* (1984).

The 1990 census introduced an additional class of worker category for "Private not-for-profit" employers. This category is a subset of the 1980 category "Employee of private employer," so no comparable data exist before 1990. Also, the 1990 census classified employees of foreign governments, the United Nations, etc., as "Private not-for-profit," rather than "Federal Government" as in 1970 and 1980. Although in theory change in comparability took place, in practice the small number of U.S. residents working for foreign governments made this change negligible. The 1995 and 2000 censuses used the same definitions as the 1990 census.

Comparability between the statistics on industry and occupation from the 1990, 1995 and 2000 censuses and statistics from other sources was affected by many of the factors described in the section on "Employment status." These factors primarily were geographic differences between residence and place of work, different dates of reference, and differences in counts because of dual job holding. Industry data from population censuses covered all industries and all kinds of workers, whereas, data from establishments often excluded private household workers, government workers, and the self-employed. Also, the replies from household respondents may have differed in detail and nature from those obtained from establishments.

Occupation data from the census and data from government licensing agencies, professional associations, trade unions, etc., may not be as comparable as expected. Organizational listings often include persons not in the labor force or persons devoting all or most of their time to another occupation. Similarly, the same person may be included in two or more different listings. In addition, relatively few organizations, except for those requiring licensing, attained complete coverage of membership in a particular occupational field.

#### **Analysis of Occupation, Industry, and Class of Worker Data**

### **INDUSTRY**

The number of employed persons aged 16 years and over in Palau more than doubled between 1980 and 1990 and almost doubled again between 1990 and 2000 (Table 12.1). The latter increase in particular was much greater than general population growth, an indication that the expansion of employment and the creation of new jobs both occurred at a substantial pace during the 1980s and the 1990s.

Table 12.1. Industry for Palau: 1980 to 2000

Industry	Number				Percent			
	2000	1995	1990	1980	2000	1995	1990	1980
Employed 16 yrs. and over:	9,382	7,759	5,599	2,745	100.0	100.0	100.0	100.0
Agriculture, fish, mining	668	724	446	81	7.1	9.3	8.0	3.0
Construction	1,232	1,087	861	476	13.1	14.0	15.4	17.3
Manufacturing	65	78	93	75	0.7	1.0	1.7	2.9
Non-durables	4	-	35	60	0.0	-	0.6	2.2
Durables	61	78	58	15	0.7	1.0	1.0	0.7
Transportation	318	281	335	164	3.4	3.6	6.0	6.0
Communication, other public utilities	181	154	142	64	1.9	2.0	2.5	2.3
Wholesale trade	1,875	699	130	115	20.0	9.0	2.3	4.2
Retail trade	994	749	670	221	10.6	9.7	12.0	8.1
Finance, insurance & real estate	130	122	119	45	1.4	1.6	2.1	1.6
Business and repair	224	296	178	62	2.4	3.8	3.2	2.3
Personal entertainment & recreation service	1,277	1,090	750	77	13.6	14.0	13.4	2.8
Professional and related services	1,245	1,184	1,045	812	13.3	15.3	18.7	29.6
Health	292	301	201	146	3.1	3.9	3.6	5.3
Education services	665	672	632	575	7.1	8.7	11.3	20.9
Other professional service	288	211	212	91	3.1	2.7	3.8	3.3
Public administration	1,166	1,295	830	465	12.4	16.7	14.8	17.1
Primarily subsistence activity	-	-	NA	80	-	-	NA	2.9

Sources: U.S. Bureau of the Census, 1984, Table 23; 1992c, Table 17, 1995 and 2000 Censuses, Table 21.

The distribution of jobs in Palau by industry also changed considerably during the past two decades. As the private sector has developed, more and more people are moving into it, although people working in the public sector also increased during the 20 years. The percentage of those working in professional and related services decreased from 30 to 13 percent, with the percentage in education decreasing from 21 percent to only 7 percent (although the actual numbers of education workers increased from 575 to 669.)



The percentage in construction also decreased from 17 percent to 13 percent, while the actual numbers tripled, from 476 in 1980 to 1,232 in 2000. The percent reported in wholesale increased from 4 to 20 percent (at 1,879 workers) although this figure could be the result of miscoding, or that many wholesale operations are also retail operations as well. The numbers and percentages in agriculture and fishing industries increased throughout the period, from 81 (3 percent of the 1980 workers) to 668 (7 percent of all workers in 2000). Other large categories in 2000 included retail trade at 10 percent (about the same percentage throughout the two decades, although, again, this is probably influenced in 2000 by combined wholesale-retail operations). Also, personal entertainment and recreation services increased to about 14 percent of industries about 1990 and continued at that level for the next decade.

The work force grew by 104 percent between 1980 and 1990 (Table 12.2). In both absolute and relative terms, the greatest increases occurred in personal entertainment and recreational services, which grew by 874 percent due to the recent growth in Palau's tourist industry. The number of persons employed in agriculture, forestry, fisheries, and mining grew by nearly 451 percent. In contrast, number of individuals employed in other industrial categories increased much more slowly. Manufacturing grew by less than 18 percent during the 1980s, and wholesale trade by 13 percent. In general, the industry data show a booming economy, as the number of persons employed in Palau grew rapidly.

Table 12.2. Industry: 1980 to 2000

Industry	Number				Percent Change		
	2000	1995	1990	1980	1995-2000	1990-1995	1980-1990
Employed 16 yrs. and over:	9,383	7,759	5,599	2,745	20.9	38.6	104.0
Agriculture, fish, mining	668	724	446	81	(7.7)	62.3	450.6
Construction	1,232	1,087	861	476	13.3	26.2	80.9
Manufacturing	65	78	93	79	(16.7)	(16.1)	17.7
Non-durables	4	-	35	60	...	(100.0)	(41.7)
Durables	61	78	58	19	(21.8)	34.5	205.3
Transportation	318	281	335	164	13.2	(16.1)	104.3
Communication, other public utilities	181	154	142	142	17.5	8.5	...
Wholesale trade	1,879	699	130	115	168.8	437.7	13.0
Retail trade	994	749	670	221	32.7	11.8	203.2
Finance, insurance & real estate	130	122	119	45	6.6	2.5	164.4
Business and repair	224	296	178	62	(24.3)	66.3	187.1
Personal entertainment & recreation service	1,277	1,090	750	77	17.2	45.3	874.0
Professional and related services	1,249	1,184	1,045	812	5.5	13.3	28.7
Health	292	301	201	146	(3.0)	49.8	37.7
Education services	669	672	632	575	(0.4)	6.3	9.9
Other professional service	288	211	212	91	36.5	(0.5)	133.0
Public administration	1,166	1,295	830	469	(10.0)	56.0	77.0
Primarily subsistence activity	-	-	-	80	...	...	(100.0)

Sources: U.S. Bureau of the Census, 1984, Table 23; 1992c, Table 17, 1995 and 2000 Censuses, Table 21.

After 1990, Palau continued to experience enormous growth, just not at the levels between 1980 and 1990. Overall job growth was 39 percent between 1990 and 1995, and 21 percent between 1995 and 2000. A few industry groups lost workers during the 1990s – while the numbers in agriculture and fishing increased by 62 percent between 1990 and 1995 (after previously experiencing explosive growth) the numbers decreased in the late 1990s. The numbers in business and repair services also decreased during the late 1990s. In what might be considered a positive development in some quarters, the number in public service also decreased in the late 1990s, from 1,295 in 1995 to 1,166 in 2000.

On the other hand, many industries continued to see large increases in the late 1990s. As noted previously, wholesale trade saw a very large increase. Retail trade also increased considerably in numerical terms in the late 1990s, as did construction.

The total number of employed males 16 years and over also increased substantially between 1980 and 2000 (Table 12.3). However, although employed males comprised the majority of the work force growth during the decades, they grew at a slightly slower pace than the total work force. The number of employed males increased in the agriculture, forestry, fisheries, and mining industry by nearly 508 percent and those in personal entertainment and recreation services by slightly more than 697 percent during the 1980s. In contrast, male employment in manufacturing nondurable goods and education services declined during that decade. The percentage of males in professional and related service industries decreased from 22 percent of the work force in 1980 to about 11 percent in 1990, although the number of these male workers remained about the same. Most of the decline was in education, with a loss of roughly 11 percentage points, presumably as more female teachers moved into the classroom at the expense of the males. The percentage of males in public administration also decreased markedly, from 21 percent to 17 percent of the male work force—in part no doubt due to development in the private sector.

As noted above, a substantial increase in the number of males working in agricultural, forestry, fishing, and mining occurred during the 1980s. Because of this growth, this industry's share of the male work force grew from less than 4 percent in 1980 to more than 11 percent in 1990. The percentage of the male work force involved in personal entertainment and recreational services increased from less than 2 percent in 1980 to nearly 8 percent a decade later. These figures show increased importance of the private sector in general, and tourism and other retail activities in particular.

Table 12.3. Industry for Males: 1980 to 2000

Industry	Number				Percent			
	2000	1995	1990	1980	2000	1995	1990	1980
Employed Males 16 yrs. and over:	5,827	4,718	3,542	1,810	100.0	100.0	100.0	100.0
Agriculture, fish, mining	555	655	401	66	9.6	13.9	11.3	3.6
Construction	1,153	1,032	824	413	19.8	21.9	23.3	22.8
Manufacturing	53	59	76	71	0.9	1.3	2.1	3.9
Non-durables	3	-	25	53	0.1	-	0.7	2.9
Durables	50	59	51	18	0.9	1.3	1.4	1.0
Transportation	236	219	268	150	4.1	4.6	7.6	8.3
Communication, other public utilities	147	130	121	54	2.5	2.8	3.4	3.0
Wholesale trade	1,311	387	88	61	22.5	8.2	2.5	3.4
Retail trade	285	206	290	79	4.9	4.4	8.2	4.4
Finance, insurance & real estate	55	53	48	18	0.9	1.1	1.4	1.0
Business and repair	121	163	160	51	2.1	3.5	4.5	2.8
Personal entertainment & recreation service	565	438	271	34	9.7	9.3	7.7	1.9
Professional and related services	508	474	404	398	8.7	10.0	11.4	22.0
Health	80	95	55	44	1.4	2.0	1.6	2.4
Education services	271	269	253	318	4.7	5.7	7.1	17.6
Other professional service	157	110	96	36	2.7	2.3	2.7	2.0
Public administration	834	902	591	384	14.3	19.1	16.7	21.2
Primarily subsistence activity	-	-	-	31	-	-	-	1.7

Sources: U.S. Bureau of the Census, 1984, Table 23; 1992c, Table 17, 1995 and 2000 Censuses, Table 21.

In 2000, the largest percentage of male workers was in wholesale trade, followed by construction, and public administration. In 1980, the largest three categories were construction, professional services, and public administration. The increases and decreases for males were similar to those for the whole population.

In relative terms, the growth in the female work force in Palau during the 1980s and the 1990s was even more pronounced than that experienced by the males, the total in 1990 more than double that recorded in 1980, and continuing upward in 2000 (Table 12.4). Much of this increase occurred among females in personal entertainment and recreational services, which increased by more than 1,000 percent over the decade of the 1980s. Other industries also showed enormous relative growth, though many started with very small numbers. Females continue to contribute in large numbers in Palau's labor force.

Table 12.4. Industry for Females: 1980 to 2000

Industry	Number				Percent			
	2000	1995	1990	1980	2000	1995	1990	1980
Employed Females 16 yrs. and over:	3,556	3,041	2,057	935	100.0	100.0	100.0	100.0
Agriculture, fish, mining	109	69	45	15	3.1	2.3	2.2	1.6
Construction	79	55	37	63	2.2	1.8	1.8	6.7
Manufacturing	12	19	17	8	0.3	0.6	0.8	0.9
Non-durables	1	-	10	7	0.0	-	0.5	0.7
Durables	11	19	7	1	0.3	0.6	0.3	0.1
Transportation	82	62	67	14	2.3	2.0	3.3	1.5
Communication, other public utilities	34	24	21	10	1.0	0.8	1.0	1.1
Wholesale trade	568	312	42	54	16.0	10.3	2.0	5.8
Retail trade	709	543	380	142	19.9	17.5	18.5	15.2
Finance, insurance & real estate	75	69	71	27	2.1	2.3	3.5	2.9
Business and repair	103	133	18	11	2.9	4.4	0.9	1.2
Personal entertainment & recreation service	712	652	479	43	20.0	21.4	23.3	4.6
Professional and related services	741	710	641	414	20.8	23.3	31.2	44.3
Health	212	206	146	102	6.0	6.8	7.1	10.9
Education services	398	403	379	257	11.2	13.3	18.4	27.5
Other professional service	131	101	116	55	3.7	3.3	5.6	5.9
Public administration	332	393	239	85	9.3	12.9	11.6	9.1
Primarily subsistence activity	-	-	-	49	-	-	-	5.2

Sources: U.S. Bureau of the Census, 1984, Table 23; 1992c, Table 17, 1995 and 2000 Censuses, Table 21.

In all, females employed in professional and related services in 2000 represented about 21 percent of the female work force, compared to the 44 percent employed by this industry in 1980. On the other hand, the percentage of females employed in personal entertainment and recreational services grew from less than 5 percent of the work force in 1980 to more than 23 percent a decade later, and 20 percent in 2000. Growth in the percentage of females employed in other industries was more modest, except for wholesale trade, which increased a lot.

Once again, the trends seen in the 1980s for females continued into throughout the 1990s. The largest industry groups for females in 1980 were education (28 percent), retail trade (15 percent), and health services (11 percent). In 1990, the largest groups were personal entertainment and recreation services (23 percent), education (18 percent) and public service (12 percent). By 2000, about shift occurred and the largest groups were personal entertainment and recreation services (20 percent), retail trade (20 percent), and education (11 percent).

Table 12.5 shows Palau-born employed people only. The number of Palau-born employed people increased from 3,711 in 1990 to 4,330 in 1995, but barely moved after that, with only 4,393 Palau-born employed as of the 2000 census. Unfortunately, these figures show large emigration for Palau-born, but as seen in Table 12.6, these workers were more than replaced by foreigners.

Table 12.5. Industry for Palau-born Persons 16 Years and Over: 1990 to 2000

Industry	Number			Percent			Percent Palau-born		
	2000	1995	1990	2000	1995	1990	2000	1995	1990
Employed Palau-born 16 yrs. and over:	4,393	4,330	3,711	100.0	100.0	100.0	46.8	55.8	66.3
Agriculture, fish, mining	177	197	127	4.0	4.5	3.4	26.5	27.2	28.5
Construction	231	265	351	5.3	6.1	9.5	18.8	24.4	40.8
Manufacturing	28	28	60	0.6	0.6	1.6	43.1	35.9	64.5
Non-durables	3	-	26	0.1	-	0.7	75.0	-	74.3
Durables	25	28	34	0.6	0.6	0.9	41.0	35.9	58.6
Transportation	179	215	281	4.1	5.0	7.6	56.3	76.5	83.9
Communication, other public utilities	171	146	115	3.9	3.4	3.2	94.5	94.8	83.8
Wholesale trade	566	387	111	12.9	8.9	3.0	30.1	55.4	85.4
Retail trade	291	239	455	6.6	5.5	12.4	29.3	31.9	68.5
Finance, insurance & real estate	106	112	101	2.4	2.6	2.7	81.5	91.8	84.9
Business and repair	137	184	82	3.1	4.2	2.2	61.2	62.2	46.1
Personal entertainment & recreation service	388	388	344	8.8	9.0	9.3	30.4	35.6	45.9
Professional and related services	1,054	995	895	24.0	23.0	24.1	84.4	84.0	85.6
Health	260	262	178	5.9	6.1	4.8	89.0	87.0	88.6
Education services	597	580	538	13.6	13.4	14.5	89.2	86.3	85.1
Other professional service	197	153	175	4.5	3.5	4.8	68.4	72.5	84.4
Public administration	1,065	1,174	781	24.2	27.1	21.0	91.3	90.7	94.1

Sources: U.S. Bureau of the Census, 1984, Table 28; 1992c, Table 55, 1995 and 2000 Censuses, Table 83.

In 1990, the largest industry categories for Palau-born were Public administration (21 percent), education (14 percent), and retail trade (12 percent). By the 2000 census, the two largest groups remained (at 24 percent and 14 percent, respectively), but wholesale replace retail trade for third place. The numbers and percentages of Palau-born in construction decreased considerably over the decade, as did transportation workers.

The table also shows the percentage of all workers in the category that were Palau-born. That is, in 1990, 66 percent or about 2 of every 3 workers in the Republic were Palau-born. However, this figure decreased to 56 percent in 1995 and less than 47 percent in 2000. That is, between 1990 and 2000, the proportion of Palau-born workers decreased from about 2 in 3 to less than half of all workers.

Of course, more than 90 percent of workers in public administration in 2000 were Palau-born. Other large percentages of Palau-born occurred in communications, education, health, finance, and non-durable manufacturing. The smallest percentages of Palau-born occurred in construction, retail trade, wholesale trade, and personal entertainment and recreation services.

Table 12.6 shows similar information for non-Palau born. The number of employed non-Palau born increased from 1,888 in 1990 to 3,429 in 1995 (an increase of 82 percent), and to 4,990 in 2000 (an increase of another 46 percent in the late 1990s), or 164 percent for the decade! The biggest increase was seen in wholesale trade, although retail trade also more than tripled during the decade, and construction workers and personal entertainment and recreation workers doubled in numbers. On the other hand, very few non-Palau born workers were in the professional services or in public administration.

Table 12.6. Industry for Non-Palau-born 16 Years and Over: 1990 to 2000

Industry	Number			Percent		
	2000	1995	1990	2000	1995	1990
Employed non-Palau-born 16 yrs. & over:	4,990	3,429	1,888	100.0	100.0	100.0
Agriculture, fish, mining	491	527	319	9.8	15.4	16.9
Construction	1,001	822	510	20.1	24.0	27.0
Manufacturing	37	50	33	0.7	1.5	1.7
Non-durables	1	-	9	0.0	-	0.5
Durables	36	50	24	0.7	1.5	1.3
Transportation	135	66	54	2.8	1.9	2.9
Communication, other public utilities	10	8	23	0.2	0.2	1.2
Wholesale trade	1,313	312	19	26.3	9.1	1.0
Retail trade	703	510	211	14.1	14.9	11.2
Finance, insurance & real estate	24	10	18	0.5	0.3	1.0
Business and repair	87	112	96	1.7	3.3	5.1
Personal entertainment & recreation service	885	702	406	17.8	20.5	21.5
Professional and related services	195	185	150	3.9	5.5	7.9
Health	32	35	23	0.6	1.1	1.2
Education services	72	92	94	1.4	2.7	5.0
Other professional service	91	58	33	1.8	1.7	1.7
Public administration	101	121	49	2.0	3.5	2.6

Sources: U.S. Bureau of the Census, 1984, Table 28; 1992c, Table 55, 1995 and 2000 Censuses, Table 83.

As noted in Chapters 9 and 11, educational attainment has come to play an increasingly important role in employment in the Republic of Palau. Indeed, the percentage of employed persons in Palau who were high school graduates exceeded 74 percent in 1990 (Table 12.7). Although not shown here, the figure increased from about 53 percent from the 1980 census. Employed females were more likely to be high school graduates than employed males in both 1980 and 1990, the former increasing their lead in this category to almost 80 percent.

Table 12.7. Industry by Percent High School Graduates by Sex: 1990 to 2000

Industry	2000			1995			1990		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Employed 16 yrs and over:	85.8	85.5	86.3	71.5	68.1	77.0	74.3	71.2	79.6
Agriculture, fish, forestry	88.1	90.0	78.4	46.4	43.4	75.9	69.1	70.6	55.6
Construction and mining	86.5	86.3	88.9	67.4	66.8	80.4	63.3	62.5	81.1
Manufacturing	87.5	86.8	90.9	78.6	75.5	88.2	71.0	68.5	82.4
Communications, transportation	81.8	79.2	90.5	72.7	67.7	94.4	65.8	60.9	87.5
Wholesale trade	89.9	90.2	89.1	81.3	80.5	82.4	66.2	62.6	73.8
Retail trade	85.4	82.2	86.7	67.8	77.5	63.7	73.9	75.6	72.6
Finance, ins. and real estate	95.9	96.2	95.7	89.2	88.0	90.2	88.2	79.0	94.4
Business and repair services	80.9	82.3	79.2	70.8	76.0	64.7	68.0	66.9	77.8
Personal entertainment, recreation	79.0	79.5	78.6	70.5	72.8	69.1	73.2	73.9	72.8
Professional and related services	91.7	92.6	91.1	86.0	86.9	85.4	85.9	89.1	83.9
Public administration	80.3	77.6	87.2	70.2	65.0	82.7	81.3	77.5	90.8

Source: U.S. Bureau of the Census, 1992c, Table 69, 1995 and 2000 Censuses, table 131.

The 1995 census showed a dip in percent of employed high school graduates, but the 2000 census showed a major increase, to 86 percent of workers – and about the same for male and female workers (unlike in 1995 when female workers were 9 percentage points higher). It is possible that the 1995 census shows anomalous data, but this seems unlikely since exactly the same procedures were used in each of the censuses.

The highest percentage of high school graduates within an industry in 1990 was the 88 percent in finance, insurance, and real estate, with 94 percent of the females employed in this industry having high school diplomas. Nearly 86 percent of those employed in professional and related services had high school educations, the percentage of males exceeding the percentage of females. In contrast, only about 63 percent of the individuals employed in construction and mining had high school educations, with the percentage of females again greater than the percentage of males.

Despite the relatively low percentages of high school graduates in certain industries, all showed substantial increases in this level of education over the decade of the 1990s. By 2000, almost 96 percent of finance, insurance, and real estate workers and 92 percent of professional and related service workers were high school graduates. The only industry category with less than 80 percent was personal entertainment and recreation. The figures were remarkably consistent across the industry categories.

In 2000, the largest occupational category in Palau was managers and professionals, containing nearly 2,200 workers (Table 12.8). The largest industrial category was wholesale trade with 1,879 workers. But the best-represented occupation by industry was managers and professionals in the professions and related services category (797 workers).

Table 12.8. Industry by Occupation: 2000

Industry	Total	Managerial Professional	Tech., Sales Admin. Supp.	Service	Farm., Fish., Forestry	Prec. Prod., Craft, Repair	Oper., Fabric, Laborers
Total:	9,383	2,187	2,026	1,762	734	1,592	1,082
Agriculture., forestry, fisheries	668	93	62	27	393	21	72
Construction	1,232	103	175	53	16	598	287
Manufacturing	65	11	13	19	-	15	7
Transportation, communication, utility	499	97	102	32	86	50	132
Wholesale trade	1,879	376	526	241	56	375	305
Retail trade	994	107	239	293	3	309	43
Finance, insurance	130	49	69	5	-	4	3
Business services	131	75	22	20	-	1	13
Repair services	93	15	10	-	-	49	19
Personal services	1,266	125	233	750	72	52	30
Entertainment, recreation	11	2	2	-	-	-	7
Professional and related services	1,249	797	241	129	8	29	45
Public administration	1,166	333	332	193	100	89	119

Source: OPS, 2000 Census, Table 126

Table 12.9 shows the percentage distribution of industries within the various occupations. As noted earlier, about 20 percent of all workers were in wholesale trade. For technical, sales, and administrative positions and laborers, wholesale trade was the largest category. However, professional and related services was the largest industry category for managers and professionals, personal services (at 43 percent) the largest for services, agriculture, fishing and forestry for agriculture and fishing workers, and construction for precision production, crafts and repair workers.

Table 12.9. Occupation by Industry in Percentages: 2000

Industry	Total	Managerial Professional	Tech., Sales Admin. Supp.	Service	Farm., Fish., Forestry	Prec. Prod., Craft, Repair	Oper., Fabric, Laborers
Total:	9,383	2,187	2,026	1,762	734	1,592	1,082
Percent:	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture., forestry, fisheries	7.1	4.3	3.1	1.5	53.5	1.3	6.7
Construction	13.1	4.7	8.6	3.0	2.2	37.6	26.5
Manufacturing	0.7	0.5	0.6	1.1	0.0	0.9	0.6
Transportation, communication, utility	5.3	4.4	5.0	1.8	11.7	3.1	12.2
Wholesale trade	20.0	17.2	26.0	13.7	7.6	23.6	28.2
Retail trade	10.6	4.9	11.8	16.6	0.4	19.4	4.0
Finance, insurance	1.4	2.2	3.4	0.3	0.0	0.3	0.3
Business services	1.4	3.4	1.1	1.1	0.0	0.1	1.2
Repair services	1.0	0.7	0.5	0.0	0.0	3.1	1.8
Personal services	13.5	5.9	11.5	42.6	9.8	3.3	2.8
Entertainment, recreation	0.1	0.1	0.1	0.0	0.0	0.0	0.6
Professional and related services	13.3	36.4	11.9	7.3	1.1	1.8	4.2
Public administration	12.4	15.2	16.4	11.0	13.6	5.6	11.0

Source: OPS, 2000 Census, Table 126

Industry classified by occupation provides a slightly different picture of employment in Palau (Table 12.10). Managerial and professional workers, which employed the greatest percentage of all workers in 2000, also dominated several separate industries—including finance and insurance, entertainment and recreation, professional and related services, and public administration. In other industries different occupations were prominent, in many cases as expected. In general, industries varied both in terms of the occupations represented and in terms of one occupation's prominence (e.g., construction, repair services, and professional and related services) compared to more even distributions.

Table 12.10. Industry by Occupation in Percentages: 2000

Industry	Total	Percent	Managerial Professional	Tech., Sales Admin. Supp.	Service	Farm., Fish., Forestry	Prec. Prod., Craft, Repair	Oper., Fabric, Laborers
Total:	9,383	100.0	23.3	21.6	18.8	7.8	17.0	11.5
Agriculture., forestry, fisheries	668	100.0	13.9	9.3	4.0	58.8	3.1	10.8
Construction	1,232	100.0	8.4	14.2	4.3	1.3	48.5	23.3
Manufacturing	65	100.0	16.9	20.0	29.2	0.0	23.1	10.8
Transportation, communication, utility	499	100.0	19.4	20.4	6.4	17.2	10.0	26.5
Wholesale trade	1,879	100.0	20.0	28.0	12.8	3.0	20.0	16.2
Retail trade	994	100.0	10.8	24.0	29.5	0.3	31.1	4.3
Finance, insurance	130	100.0	37.7	53.1	3.8	0.0	3.1	2.3
Business services	131	100.0	57.3	16.8	15.3	0.0	0.8	9.9
Repair services	93	100.0	16.1	10.8	0.0	0.0	52.7	20.4
Personal services	1,266	100.0	10.2	18.4	59.2	5.7	4.1	2.4
Entertainment, recreation	11	100.0	18.2	18.2	0.0	0.0	0.0	63.6
Professional and related services	1,249	100.0	63.8	19.3	10.3	0.6	2.3	3.6
Public administration	1,166	100.0	28.6	28.5	16.6	8.6	7.6	10.2

Source: OPS, 2000 Census, Table 126

**OCCUPATION**

The occupation distribution also changed substantially between 1990 and 2000 (Table 12.11). The percentage of managers and professionals stayed about the same over the decade, declining from 24 to 23 percent. In fact, while all major occupational categories experienced increases in numbers over the decade, the percentage distribution in 2000 was very similar to the distribution in 1990.

Table 12.11. Occupation: 1990 to 2000

Occupation	Number			Percent		
	2000	1995	1990	2000	1995	1990
Employed 16 yrs and over:	9,383	7,759	5,599	100.0	100.0	100.0
Managerial and professional	2,187	1,832	1,346	23.3	23.6	24.0
Executive, administrative	1,193	923	641	12.7	11.9	11.4
Professional	994	909	705	10.6	11.7	12.6
Technical, sales, admin. Support	2,026	1,699	1,208	21.6	21.9	21.6
Technicians	325	244	168	3.5	3.1	3.0
Sales	595	524	402	6.3	6.8	7.2
Administrative support	767	931	638	8.2	12.0	11.4
Service	1,762	1,455	1,107	18.8	18.8	19.8
Private households	573	482	312	6.1	6.2	5.6
Protective service	291	238	185	3.1	3.1	3.3
Other service	898	735	610	9.6	9.5	10.9
Farming, forestry, and fishing	734	773	359	7.8	10.0	6.4
Precision production craft	1,592	1,342	942	17.0	17.3	16.8
Operators, fabricators, laborers	1,082	658	637	11.5	8.5	11.4
Machine operator, assembler	117	73	113	1.2	0.9	2.0
Transportation, material move	720	468	297	7.7	6.0	5.3
Handlers, equip. cleaners, labor	245	117	227	2.6	1.5	4.1

Sources: U.S. Bureau of the Census; 1992c, Table 16, 1995 and 2000 Censuses, Table 20.

The number of males employed in each occupational category increased between 1990 and 2000, but as with the total population, the categories were remarkably consistent (Table 12.12). The largest major occupation categories in both 1990 and 2000 were precision production and crafts (although declining from 26 percent to 22 percent during the decade), managers and professionals, operators, fabricators and laborers.

Table 12.12. Occupation for Males: 1990 to 2000

Occupation	Number			Percent		
	2000	1995	1990	2000	1995	1990
Employed Males 16 yrs and over:	5,827	4,718	3,542	100.0	100.0	100.0
Managerial and professional	1,226	963	775	21.0	20.4	21.9
Executive, administrative	769	560	438	13.2	11.9	12.4
Professional	457	403	337	7.8	8.5	9.5
Technical, sales, admin. Support	848	659	472	14.6	14.0	13.3
Technicians	284	183	124	4.9	3.9	3.5
Sales	139	116	152	2.4	2.5	4.3
Administrative support	425	360	196	7.3	7.6	5.5
Service	814	623	463	14.0	13.2	13.1
Private households	151	82	46	2.6	1.7	1.3
Protective service	274	232	180	4.7	4.9	5.1
Other service	389	309	237	6.7	6.5	6.7
Farming, forestry, and fishing	646	683	332	11.1	14.5	9.4
Precision production craft	1,286	1,170	907	22.1	24.8	25.6
Operators, fabricators, laborers	1,007	620	593	17.3	13.1	16.7
Machine operator, assembler	113	67	95	1.9	1.4	2.7
Transportation, material move	702	456	291	12.0	9.7	8.2
Handlers, equip. cleaners, labor	192	97	207	3.3	2.1	5.8

Sources: U.S. Bureau of the Census; 1992c, Table 16, 1995 and 2000 Censuses, Table 20.

Females in Palau employed by occupation were more highly concentrated in certain occupations than the males, but showed consistent trends as well (Table 12.13). The largest categories for females were technical, sales and administrative support (36 percent in 1990 declining to 33 percent in 2000), service (31 percent down to 26 percent over the decade), and managers and professionals (28 to 27 percent). Precision productions and crafts increased during the decade from 2 percent in 1990 to 9 percent in 2000.

Table 12.13. Occupation for Females: 1990 to 2000

Occupation	Number			Percent		
	2000	1995	1990	2000	1995	1990
Employed Females 16 yrs & over:	3,556	3,041	2,057	100.0	100.0	100.0
Managerial and professional	961	869	571	27.0	28.6	27.8
Executive, administrative	424	363	203	11.9	11.9	9.9
Professional	537	506	368	15.1	16.6	17.9
Technical, sales, admin. Support	1,178	1,040	736	33.1	34.2	35.8
Technicians	41	61	44	1.2	2.0	2.1
Sales	456	408	250	12.8	13.4	12.2
Administrative support	342	571	442	9.6	18.8	21.5
Service	948	832	644	26.7	27.4	31.3
Private households	422	400	266	11.9	13.2	12.9
Protective service	17	6	5	0.5	0.2	0.2
Other service	509	426	373	14.3	14.0	18.1
Farming, forestry, and fishing	88	90	27	2.5	3.0	1.3
Precision production craft	306	172	35	8.6	5.7	1.7
Operators, fabricators, laborers	75	38	44	2.1	1.2	2.1
Machine operator, assembler	4	6	18	0.1	0.2	0.9
Transportation, material move	18	12	6	0.5	0.4	0.3
Handlers, equip. cleaners, labor	53	20	20	1.5	0.7	1.0

Sources: U.S. Bureau of the Census; 1992c, Table 16, 1995 and 2000 Censuses, Table 20.

Compared to all employed persons in Palau, those working as managers and professionals were under-represented in the young age categories — as expected, since it usually takes time to work up to managerial ranks (Table 12.14). Young persons were relatively over-represented in technical, sales, and administrative occupations and among those working in service. Older persons were more heavily represented in the managerial and professional occupations.

Table 12.14. Occupation by Age: 2000

Occupation	Total	16-24 years	25-34 years	35-44 years	45-64 years	65 yrs & over
Employed 16+ yrs:	9,383	897	3,405	2,833	2,134	114
Percent:	100.0	100.0	100.0	100.0	100.0	100.0
Managerial and professional	23.3	12.0	16.4	23.2	38.1	45.6
Technical, sales, and admin	21.6	29.2	23.9	20.8	16.2	14.0
Service	18.8	23.6	20.5	17.5	15.5	14.0
Farm., forestry, and fishing	7.8	7.8	8.3	8.3	6.6	6.1
Precision prod, craft, repair	17.0	12.5	18.1	18.5	15.3	10.5
Oper., fabricators, laborers	11.5	14.8	12.8	11.7	8.0	9.6

Source: OPS, 2000 Census, Table 69.

The greatest percentages of males aged 16 to 25 years in Palau worked in service and as operators, fabricators, and laborers in 2000 (Table 12.15). The highest percentages of individuals in the two oldest age groups were in the managerial and professional occupation categories — about 1 in 3 for the 45 to 64 year olds and more than half of those 65 years and over. Precision production, crafts and repair services peaked with the 35 to 44 year olds. The representation of other occupations in Palau varied substantially among the age groups.

Table 12.15. Occupation by Age for Males: 2000

Occupation	Total	16-24 years	25-34 years	35-44 years	45-64 years	65 yrs & over
Employed Males 16+ yrs:	5,827	503	2,035	1,794	1,410	85
Percent:	100.0	100.0	100.0	100.0	100.0	100.0
Managerial and professional	21.0	12.1	13.6	19.4	35.1	54.1
Technical, sales, and admin	14.6	16.5	16.0	13.9	13.0	8.2
Service	14.0	22.5	16.8	11.7	10.2	7.1
Farm., forestry, and fishing	11.1	12.3	12.2	11.6	8.5	3.5
Precision prod, craft, repair	22.1	12.7	21.2	26.5	21.5	14.1
Oper., fabricators, laborers	17.3	23.9	20.2	16.9	11.3	12.9

Source: OPS, 2000 Census, Table 69.

The greatest percentages of employed females aged 16 to 25 years in Palau worked in service and as technical, sales and administrative support workers in 2000 (Table 12.16). The highest percentage of females in the second oldest age group – the last one to have many females -- was in the managerial and professional occupation category (about 43 percent). Technical, sales, and administrative support occupations were most common throughout the age groups. The representation of other occupations in Palau varied substantially among the age groups.

Table 12.16. Occupation by Age for Females: 2000

Occupation	Total	16-24 years	25-34 years	35-44 years	45-64 years	65 yrs & over
Employed Females 16 + yrs:	3,556	394	1,370	1,039	724	29
Percent:	100.0	100.0	100.0	100.0	100.0	100.0
Managerial and professional	27.0	11.9	20.6	29.7	43.8	20.7
Technical, sales, and admin	33.1	45.4	35.6	32.6	22.5	31.0
Service	26.7	25.1	26.1	27.6	26.5	34.5
Farm., forestry, and fishing	2.5	2.0	2.5	2.5	2.2	13.8
Precision prod, craft, repair	8.6	12.2	13.5	4.8	3.2	-
Oper., fabricators, laborers	2.1	3.3	1.8	2.7	1.4	-

Source: OPS, 2000 Census, Table 69.

As with industry, occupation varied between individuals born in Palau and those born elsewhere. As noted earlier, the percentage of Palau-born employed in the work force decreased from about 2 in every 3 workers to less than half of all workers during the 1990s (Table 12.17). About 29 percent of the Palau-born workers were managers and professionals in 1990, but this increased to about 33 percent in 2000. The second largest category – technical, sales, and administrative support people – increased only slightly, from 28 to 30 percent. On the other hand, Palau-born in service occupations decreased from 17 percent of the Palau-born workers to 14 percent in 2000, and precision production workers from 9 percent to 6 percent.

Table 12.17. Occupation for Palau-born for Ages 16 Years and Over: 1990 to 2000

Occupation	Number			Percent			Percent Palau-born		
	2000	1995	1990	2000	1995	1990	2000	1995	1990
Employed Palau-Born:	4,393	4,330	3,711	100.0	100.0	100.0	46.8	55.8	66.3
Managerial and professional	1,458	1,362	1,078	33.2	31.5	29.0	66.7	74.3	80.1
Executive, administrative	717	667	518	16.3	15.4	14.0	60.1	72.3	80.8
Professional	741	695	560	16.9	16.1	15.1	74.5	76.5	79.4
Technical, sales, admin. Support	1,298	1,203	1,052	29.5	27.8	28.3	64.1	70.8	87.1
Technicians	137	138	137	3.1	3.2	3.7	42.2	56.6	81.5
Sales	353	344	351	8.0	7.9	9.5	59.3	65.6	87.3
Administrative support	560	721	564	12.7	16.7	15.2	73.0	77.4	88.4
Service	611	646	628	13.9	14.9	16.9	34.7	44.4	56.7
Private households	47	59	15	1.1	1.4	0.4	8.2	12.2	4.8
Protective service	241	209	169	5.5	4.8	4.6	82.8	87.8	91.4
Other service	323	378	444	7.4	8.7	12.0	36.0	51.4	72.8
Farming, forestry, and fishing	225	323	125	5.1	7.5	3.4	30.7	41.8	34.8
Precision production craft	271	338	328	6.2	7.8	8.8	17.0	25.2	34.8
Operators, fabricators, laborers	530	458	500	12.1	10.6	13.5	49.0	69.6	78.5
Machine operator, assembler	26	22	58	0.6	0.5	1.6	22.2	30.1	51.3
Transportation, material move	412	367	269	9.4	8.5	7.2	57.2	78.4	90.6
Handlers, equip. cleaners, labor	92	69	173	2.1	1.6	4.7	37.6	59.0	76.2

Sources: U.S. Bureau of the Census, 1992c, Table 54, 1995 and 2000 Censuses, Table 82.

As a consequence of the various changes seen between 1990 and 2000, the proportions of certain occupations filled by Palau-born individuals changed over the decade. The percentage of Palau-born managers decreased from about 4 in 5 to 2 in 3 during the decade. Similarly, the decrease was from 87 percent to 64 percent for technical sales, and administrative support workers, and from 57 to 35 percent for service workers. Operators, fabricators and laborers experienced the largest decrease, from 78 percent in 1990 to 49 percent – less than half – in 2000.

Given the magnitude of the shifts, the numbers of all Palau-born persons employed in various occupations experienced comparatively small changes during the 1990s. The large changes occurred because of the emigration of Palauans, and the immigration of foreigners.



All major occupation categories in Palau had increases in non-Palau born workers between 1990 and 2000 (Table 12.18). The increase for all non-Palau born workers was 164 percent during the decade, as noted earlier. The precision production, crafts and repair workers experienced a 100 percent increase during the decade. For all other categories the increases were much greater – 118 percent for farming and fishing workers, 140 percent for service workers, 172 percent for managers and professionals, 303 percent for operators, fabricators and laborers, and 366 percent for technical, sales, and administrative support workers.

Table 12.18. Occupation for Non-Palau Born for Ages 16 Years and Over: 1990 to 2000

Occupation	Number			Percent		
	2000	1995	1990	2000	1995	1990
Employed non-Palau-Born:	4,990	3,429	1,888	100.0	100.0	100.0
Managerial and professional	725	470	268	14.6	13.7	14.2
Executive, administrative	476	256	123	9.5	7.5	6.5
Professional	253	214	145	5.1	6.2	7.7
Technical, sales, admin. Support	728	496	156	14.6	14.5	8.3
Technicians	188	106	31	3.8	3.1	1.6
Sales	242	180	51	4.8	5.2	2.7
Administrative support	207	210	74	4.1	6.1	3.9
Service	1,151	809	479	23.1	23.6	25.4
Private households	526	423	297	10.5	12.3	15.7
Protective service	50	29	16	1.0	0.8	0.8
Other service	575	357	166	11.5	10.4	8.8
Farming, forestry, and fishing	505	450	234	10.2	13.1	12.4
Precision production craft	1,321	1,004	614	26.5	29.3	32.5
Operators, fabricators, laborers	552	200	137	11.1	5.8	7.3
Machine operator, assembler	91	51	55	1.8	1.5	2.9
Transportation, material move	308	101	28	6.2	2.9	1.5
Handlers, equip. cleaners, labor	153	48	54	3.1	1.4	2.9

Sources: U.S. Bureau of the Census, 1992c, Table 54, 1995 and 2000 Censuses, Table 82.

The percentages for certain categories became larger parts of the whole. For example, while the percentage of non-Palau born being managers remained fairly constant at less than 15 percent, the percentage being technical support workers increased from 8 percent to 15 percent during the decade, and operators, fabricators, and laborers increased from 7 to 11 percent, while those in precision production and crafts decreased from 32 percent to 26 percent.

Occupation by state in Palau varied considerably in 2000 (Table 12.19). With their numerical advantage, the patterns in Koror and Airai states greatly influenced the patterns for all Palau, with managerial and professional occupations the most frequently found in the former and technical, sales, and administrative occupations more prevalent in the latter. Other states showed greater variation in proportional distributions of major occupations, the magnitude of the fluctuations often an artifact of the small numbers of total workers involved.

Table 12.19. Occupation by State in Percentages: 2000

State	Total	Percent	Managerial Professional	Tech., Sales Admin. Supp.	Service	Farm., Fish., Forestry	Prec. Prod., Craft, Repair	Oper., Fabric, Laborers
Total:	9,383	100.0	23.3	21.6	18.8	7.8	17.0	11.5
Aimeliik	103	100.0	23.3	10.7	8.7	48.5	5.8	2.9
Airai	1,161	100.0	20.1	21.4	15.6	3.8	20.1	19.1
Angaur	50	100.0	32.0	18.0	18.0	8.0	16.0	8.0
Hatothobei	6	100.0	33.3	16.7	50.0	0.0	0.0	0.0
Kayangel	34	100.0	35.3	14.7	17.6	14.7	8.8	8.8
Koror	7,009	100.0	24.0	22.8	20.3	7.1	16.7	9.0
Melekeok	77	100.0	32.5	11.7	27.3	7.8	7.8	13.0
Ngaraard	249	100.0	13.7	16.1	10.0	6.0	16.9	37.3
Ngardmau	80	100.0	17.5	11.3	18.8	25.0	18.8	8.8
Ngaremlengui	165	100.0	13.3	15.2	4.8	9.1	31.5	26.1
Ngatpang	102	100.0	23.5	18.6	13.7	2.9	28.4	12.7
Ngchesar	59	100.0	35.6	16.9	13.6	11.9	6.8	15.3
Ngerchelung	85	100.0	27.1	14.1	3.5	31.8	10.6	12.9
Ngiwal	54	100.0	25.9	9.3	13.0	38.9	5.6	7.4
Peleliu	136	100.0	27.2	19.1	18.4	12.5	5.1	17.6
Sonsorol	13	100.0	30.8	15.4	15.4	15.4	7.7	15.4

Source: 2000 Census, Table 82.

**CLASS OF WORKER**

Changes in the proportions of different classes of workers over time reflect the major changes experienced by Palau's economy (Table 12.20). Although statistics from the seven census years are not strictly comparable due both to changing definitions and to the unavailability of certain types of data for certain years, major trends nevertheless emerge. In 1967, most workers were doing unpaid family labor — probably the last vestiges of a traditional Micronesian economy in Palau. A second phase occurred for 1970, 1973, and 1980, when government workers comprised the majority of workers in Palau.

The heavy representation of government employees has been a characteristic of many economies in Micronesia over the past several decades. The final phase, which began in 1990, and continues, saw an increase in the proportion of private wage and salary employees at the expense of government employment. The percentage being private wage and salary workers increased from 37 percent in 1980 to 59 percent in 1990, an increase of 22 percentage points. The increases continued throughout the 1990s, to 63 percent in 1995, and 69 percent in 2000. An increase in work outside the government, as represented in the surge of private wage and salary workers in the last census, is obviously crucial to the development of a healthy, self-sufficient economy in the Republic of Palau.

Table 12.20. Class of Worker and Sex: 1967, 1970, 1973, 1980, 1990, 1995 and 2000

Class of Worker & Sex	2000	1995	1990	1980	1973	1970	1967
Total 16 yrs and over:	9,383	7,759	5,599	2,745	2,258	1,842	7,010
Percent:	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Private wage and salary	69.3	62.6	59.3	37.0	38.4	41.0	6.8
Government worker	29.3	34.3	37.8	56.9	52.2	50.1	8.8
Self-employed	1.1	2.7	2.7	3.1	8.9	7.2	12.5
Unpaid family	0.4	0.3	0.2	-	0.1	1.7	71.9
Males 16 yrs and over:	5,827	4,718	3,542	1,810	1,619	1,324	3,428
Percent:							
Private wage and salary	70.9	63.1	60.0	35.0	36.8	43.0	9.9
Government worker	27.5	33.6	36.6	59.1	52.4	48.5	14.4
Females 16 yrs and over:	3,556	3,041	2,057	935	639	518	3,582
Percent:							
Private wage and salary	66.6	61.9	58.2	41.0	42.4	36.1	3.9
Government worker	32.2	35.4	39.9	52.7	51.6	54.1	3.4

Sources: U.S. Census Bureau, 1972, Table 15; 1984, Table 23; 1992c, Table 16; School of Public Health, Table 7; Office of Census Coordinator, TTPI, 1975, Table 20, 1995 and 2000 Censuses, Table 21

Note: Data for 1973 are for individuals aged 15 years and over.

Similar changes in class of worker over time documented above for all workers in Palau also occurred for male and female workers, although we examine only private wage and salary versus government workers. The 1967 data by sex were similar to the total, but with females represented in much lower proportions for both private and government occupations than males. Both sexes saw a surge in wage employment in the 1970s, particularly in government jobs — with the proportions of workers from each sex employed in the private and public sector varying between 1970 and 1980. Finally, both male and female workers employed in the private sector exceeded the number employed in government jobs in 1990, and the increases continued throughout the 1990s. By 2000, more than 70 percent of the males and about 2 of every 3 female workers were in the private sector.

The majority of private sector workers in 2000 fell within the ages of 25 to 44 years, as would be expected (Table 12.21). Young workers tended to go into the private sector, getting established, and waiting for government job openings; those openings used to develop over time, but often no longer do. The percentage working for the national government in 2000 increased from 13 percent for the 16 to 24 year olds, to 17 percent for the 25 to 34 year olds, and then up to about 1 in 3 of those 45 to 64 years old.

Table 12.21. Class of Worker by Age: 2000

Class of Worker	Total	16-24 years	25-34 years	35-44 years	45-64 years	65 yrs & over
Employed 16+ yrs:	9,383	897	3,405	2,833	2,134	114
Percent:	100.0	100.0	100.0	100.0	100.0	100.0
Private wage and salary:	69.3	76.5	76.7	68.5	55.8	60.5
National government	22.2	12.6	16.8	23.3	33.3	19.3
State government	5.4	6.8	4.1	5.5	6.6	13.2
US or other government	1.6	1.3	1.7	1.4	1.9	1.8
Self-employed	1.1	0.3	0.6	1.0	2.0	4.4
Unpaid family	0.4	2.5	0.1	0.1	0.4	0.9

Source: OPS, 2000 Census, Table 70.

Males were more likely than females to be working in the private sector, but differences occurred by age (Tables 12.22 and 12.23.) For 16 to 24 year olds, 74 percent of the males were in the private wage and salary sector compared to 80 percent of the females. The male private sectors peaked in the 25 to 34 year old group, while females decreased with age, except for the 24 females 65 years and over in the labor force.

Table 12.22. Class of Worker for Males by Age: 2000

Class of Worker	Total	16-24 years	25-34 years	35-44 years	45-64 years	65 yrs & over
Employed Males 16+ yrs:	5,832	503	2,035	1,794	1,410	90
Percent:	100.0	100.0	100.0	100.0	100.0	100.0
Private wage and salary:	70.8	74.0	78.8	71.2	58.5	60.0
National government	19.9	12.5	14.6	20.5	29.2	16.7
State government	6.7	7.8	5.0	6.3	8.7	16.7
US or other government	0.9	1.0	1.1	0.6	1.1	1.1
Self-employed	1.1	0.6	0.5	0.5	2.3	4.4
Unpaid family	0.5	4.2	-	0.1	0.3	1.1

Source: OPS, 2000 Census, Table 70.

Table 12.23. Class of Worker for Females by Age: 2000

Class of Worker	Total	16-24 years	25-34 years	35-44 years	45-64 years	65 yrs & over
Employed Females 16+ yrs:	3,551	394	1,370	1,039	724	24
Percent:	100.0	100.0	100.0	100.0	100.0	100.0
Private wage and salary:	66.7	79.7	73.6	64.0	50.6	62.5
National government	25.9	12.7	20.1	27.5	41.3	29.2
State government	3.4	5.6	2.7	4.1	2.5	-
US or other government	2.8	1.8	2.6	3.0	3.6	4.2
Self-employed	0.9	-	0.6	1.2	1.5	4.2
Unpaid family	0.3	0.3	0.3	0.2	0.6	-

Source: OPS, 2000 Census, Table 70.

On the other hand, except for the oldest males, the percentage of workers in the National government increased with age, from 12 percent for males 16 to 24 years, to 29 percent for those 45 to 64 years. For females, the percentages working in the national government increased from 13 percent for the 16 to 24 year olds to 41 percent for those 45 to 64 years old. In 2000, for all ages, private sector employment surpassed government employment.

Employment among different classes of workers varied among the states in Palau in 2000 (Table 12.24), in part according to the availability of different types of employment. Both Airai and Koror had larger percentages of private sector for-profit workers in 2000 than all of Palau, in part because most of these types of jobs were available in these two most Westernized states. Several of the States on Babeldaob had very healthy private sectors, in contrast to earlier census data. Koror State also contained a higher percentage of federal employees, largely due to its role as the center of the republic's government. Some of the more rural states, in contrast, had work forces composed of proportionally large amounts of local and territorial government employees, with these occupational classes in most cases representing the majority of the resident labor forces.

Table 12.24. Class of Worker by State: 2000

State	Total	Percent	Private Wage and Salary		Government		Employed	Unpaid Family
			Profit	Not for profit	National	State		
Employed 16+ yrs:	9,383	100.0	69.3	22.2	5.4	1.6	1.1	0.4
Aimeliik	103	100.0	40.8	44.7	12.6	-	1.9	-
Airai	1,161	100.0	76.9	18.5	2.1	2.2	0.3	-
Angaur	50	100.0	28.0	28.0	34.0	6.0	2.0	2.0
Hatohebi	6	100.0	-	33.3	66.7	-	-	-
Kayangel	34	100.0	8.8	52.9	35.3	2.9	-	-
Koror	7,009	100.0	72.1	22.5	2.6	1.5	0.9	0.5
Melekeok	77	100.0	32.5	36.4	26.0	2.6	2.6	-
Ngaraard	249	100.0	77.1	9.2	9.6	1.6	1.2	1.2
Ngardmau	80	100.0	38.8	23.8	28.8	-	8.8	-
Ngaremlengui	165	100.0	64.2	9.1	26.1	0.6	-	-
Ngatpang	102	100.0	64.7	23.5	10.8	1.0	-	-
Ngchesar	59	100.0	23.7	33.9	28.8	6.8	6.8	-
Ngerchelong	85	100.0	9.4	23.5	61.2	4.7	1.2	-
Ngiwal	54	100.0	24.1	20.4	24.1	1.9	29.6	-
Peleliu	136	100.0	30.9	28.7	36.8	1.5	-	2.2
Sonsorol	13	100.0	-	46.2	53.8	-	-	-

Source: 2000 Census, Table 21

## **Conclusions**

Census data on occupation, industry, and class of worker provide valuable insights on the economy of Palau, in some cases adding new perspectives on the republic's economy and in other cases supporting ideas developed elsewhere in this monograph. Most occupations and industries gained workers during the 1980s and the 1990s—primarily a consequence of the generally rapid growth in the total work force of Palau over the decade, with much of this growth attributable to immigrants. Particularly rapid growth occurred in personal entertainment and recreation services, primarily due to the rapidly expanding tourism industry. Differences existed between occupational patterns based on sex (employment of males, for instance, increasing more rapidly than that of females in construction) and place of birth (non-Palau born occupation in agriculture, forestry, and fishing growing markedly compared to Palau-born individuals). Increased formal training was evident in most occupations, whether measured by vocational training or by high school education. Finally, Palau shifted from majority public sector employment to majority private sector.

Perhaps the most valuable message concerns the changes in the Palau's economy. Many of these changes are not particularly positive, as the economy fights the transition from a traditional base to a market foundation. Palau's work force grew substantially during the two decades. However, much of this growth was due to the addition of labor from other countries, primarily Asia. Moreover, the economy still does not produce much — rather it provides services, with the greatest growth occurring among the tourism industry. But in contrast to many economies in Micronesia, during the 1980s the economy of Palau shifted from a majority of reliance on government employment to employment in the private sector. The latter shift was not dramatic, and government employment remains a major player in the overall economic system. Nevertheless, in achieving economic independence by supporting itself, Palau's public-private sector shift in economic emphasis will be well received.

## CHAPTER 13. INCOME AND POVERTY

The finances of individuals and households provide important information for planning and policy making. Two categories of financial data are: *income* (the amount of money from various sources for some fixed period) and *poverty conditions*. Earnings of Palau's residents are a measure of the health of the Republic's economy.

This chapter looks at the distribution of individual and household income and poverty in Palau. In addition to describing income and poverty data, we also explore income levels by sex, education, occupation and other variables, both for the 2000 census and over time. These data provide insights into Palau's economy as it continues its transition from subsistence to wage labor and a market economy.

### **Definitions**

#### **INCOME IN 1999**

The 2000 census obtained data on income in 1999 from answers to questionnaire items 30 and 30a. The census requested information on money income received in the calendar year 1999 from persons 15 years old and over.

*Total income* is the algebraic sum of the amounts reported separately for wage or salary income; net non-farm self-employment and farm self-employment income; interest, dividend, or net rental or royalty income; Social Security or railroad retirement income; public assistance or welfare income; retirement or disability income; remittance income; and all other income.

The category *Earnings* denotes the algebraic sum of wage or salary income and net income from farm and non-farm self-employment. Earnings represent the amount of income received regularly before deductions for personal income taxes, Social Security, bond purchases, union dues, Medicare deductions, and so on.

The census excluded receipts from the following sources as income: money received from the sale of property (unless the recipient was engaged in the business of selling this kind of property); the value of income in kind from food stamps, public housing subsidies, medical care, employer contributions for persons, etc.; withdrawal of bank deposits; money borrowed; tax refunds; exchange of money between relatives living in the same household; and gifts and lump-sum inheritances, insurance payments, and other types of lump-sum receipts.

#### **Income Type in 1999**

The 2000 census reported eight types of income, as follows:

- ?? *Wage or salary income* — included total money earnings received for work performed as an employee during calendar year 1999. This income type includes wages, salary, Armed Forces pay, commissions, tips, piece-rate payments, and cash bonuses earned before deductions were made for taxes, bonds, pensions, union dues, etc.
- ?? *Self-employment income* — included several types of income. Non-farm self-employment income comprised net money income (gross receipts minus expenses) from one's own business, professional enterprise, or partnership. Gross receipts included the value of all goods sold and services rendered. Expenses included costs of goods purchased, rent, heat, light, power, depreciation charges, wages and salaries paid, business taxes (not personal income taxes), etc. Farm self-employment income included net money income (gross receipts minus operating expenses) from the operation of a farm by a person on his or her own account, as an owner, renter, or sharecropper. Gross receipts included the value of all products sold, government farm programs, money received from the rental of farm equipment to others, and incidental receipts from the sale of wood, sand, gravel, etc. Operating expenses included cost of feed, fertilizer, seed, and other farming supplies, cash wages paid to farm hands, depreciation charges, cash rent, interest on farm mortgages, farm building repairs, farm taxes (not personal income taxes), etc. The census did not include the value of fuel, food, or other farm products used for family living as part of net income.
- ?? *Interest, dividend, or net rental income* — included interest on savings or bonds, dividends from stockholdings or membership in associations, net income from rental of property to others and receipts from boarders or lodgers, net royalties, and periodic payments from an estate or trust fund.

- ?? *Social Security income* — included Social Security pensions and survivors' benefits; permanent disability insurance payments made by the Social Security Administration prior to deductions for medical insurance; and railroad retirement insurance checks from the U.S. Government. This income type did not include Medicare reimbursements.
- ?? *Public assistance income* — included supplementary security income payments made by federal or state welfare agencies to low income persons aged 65 years old or over, blind, or disabled; aid to families with dependent children; and general assistance. This type of income excluded separate payments received for hospital or other medical care (vendor payments).
- ?? *Retirement or disability income* — included retirement pensions and survivor benefits from a former employer, labor union, or federal, state, county, or other governmental agency; disability income from sources like worker's compensation, a particular company or union federal, state, or local government, and the U.S. military; periodic receipts from annuities and insurance; and regular income from IRA and KEOGH plans.
- ?? *Remittance income* — included money received from relatives who were civilians living outside the household or in the military outside the household.
- ?? *All other income* — included unemployment compensation, Veterans' Administration (VA) payments, alimony and child support, contributions received periodically from persons not living in the household, military family allotments, net gambling winnings, and other kinds of periodic income other than earnings.

*Income of Households.* Household income included the income of the householder and all other persons 15 years old and over in the household, whether related to the householder or not. Because many households comprised only one person, average household income usually was less than average family income.

*Income of Families and Persons.* In compiling statistics on family income, the 2000 census summed and treated as a single amount the incomes of all members 15 years old and over in each family. However, for persons 15 years old and over the total amounts of their own incomes were used. Although the income statistics covered the calendar year 1999, the characteristics of persons and the composition of families referred to the time of enumeration (for Palau, April 1, 2000). Thus, the income of the family did not include amounts received by persons who were members of the family during all or part of the calendar year 1999 if these persons no longer resided with the family at the time of enumeration. Family income amounts reported by related persons who did not reside with the family during 1999 but who were members of the family at the time of enumeration were included. However, the composition of most families was the same during 1999 as in April 2000.

*Median Income.* The median divides the income distribution into two equal parts, one having incomes above the median and the other having incomes below the median. For households and families, the median income is based on the distribution of the total number of units, including those with no income. The census computed medians for persons based on persons with income. The census computed median income values for all households, families, and persons on the basis of more detailed income intervals than shown in most published tabulations. Median income calculations employed linear interpolation.

*Mean Income.* Mean income represents the total income of a particular statistical universe divided by the number of units in that universe. Thus, mean household income is total household income divided by the total number of households. For the various types of income the means are based on households having those types of income. *Per capita income* is the mean income computed for every man, woman, and child in a particular group. The Census office derived per capita income by dividing the total income of a particular group by the total population in that group.

Be careful in interpreting mean income values for small subgroups of the population. Because extreme values in a distribution strongly influence the mean, this measure of central tendency is especially susceptible to the effects of misreporting and processing errors. The median is not affected by extreme values and thus serves as a better measure of central tendency than the mean when the population base is small. Its inherent problems notwithstanding, the mean is shown in some data products for most small subgroups because, when weighted according to the number of cases, the means can be added to obtain summary measures for areas and groups other than those shown in census tabulations.

Limitations. Since questionnaire entries for income frequently are based on memory and not on records, many persons forget minor or irregular sources of income, leading them to underreport. Underreporting tends to be more pronounced for income sources that are not derived from earnings, like Social Security, public assistance, interest, dividends, and net rental income.

Errors in reporting income also occur due to the misunderstanding of certain census questions like reporting gross rather than net dollar amounts for the question on net self-employment income, yielding an overstatement of this item. Another common error is the reporting of identical dollar amounts in two of the eight types of income items where a respondent with only one source of income assumed that the second amount should be entered to represent total income.

The Republic of Palau's Office of Planning and Statistics used extensive computer editing procedures to process data from the 2000 census, both to reduce reporting errors and to improve the accuracy of the income data. These procedures corrected various reporting deficiencies and improved the consistency of reported income items associated with work experience and information on occupation and class of worker. For example, if persons reported that they were self-employed on their own farm, not incorporated, but had reported wage and salary earnings only, the latter amount was shifted to net self-employment income. Also, if a respondent reported total income only, OPS personnel generally assigned the amount to one type of income according to responses to the work experience and class-of-worker questions. Another problem involved non-reporting of income data. Where income information was not reported, procedures were devised to impute appropriate values with either no income or positive or negative dollar amounts for the missing entries.

In income tabulations for households and families, the lowest income group (for example, less than \$2,500) includes units classified as having no 1999 income. Many of these persons lived on income in kind, savings, or gifts, were newly created families, or represented families in which the sole breadwinner recently had died or left the household. Many of the households and families who reported no income in fact probably had some money income that was not recorded in the census. In Palau, some of these families did subsistence activities only.

The income data presented in the 2000 census tabulations covered money income only. Thus, for example, the large portion of income to farm families in the form of free housing and goods produced and consumed on the farm rather than in money influenced the income of farm and non-farm residents. Of course, some non-farm residents also received non-money income in the form of business expense accounts, use of business transportation and facilities, or partial compensation by business for medical and educational expenses. Some low-income families may have also received non-money in kind income from public welfare programs. Finally, when comparing income data for 1999 with earlier years it is important to remember that an increase or decrease in money income does not necessarily represent a comparable change in real income unless adjusted for inflation.

Comparability. Although the income data collected in the 1980, 1990, 1995 and 2000 censuses were similar, variations occurred in the detail of the questions. For example, in comparison to the information presented above for the 1990, 1995 and 2000 censuses under income type, the 1980 census required each person to report the following seven types of income: wage or salary income; net non-farm self-employment income; net farm self-employment income; interest, dividend, or net rental or royalty income; Social Security income; public assistance income; and income from all other sources.

In addition, between the 1980 and the subsequent censuses minor differences existed in the processing of income data. In both censuses, Census office personnel designated all persons with missing values in one or more of the detailed types of income items and total income as allocated. Each missing entry was imputed either as a *no* or as a dollar amount. If a respondent reported total income but did not answer one or more type of income fields, census personnel generally assigned total income to one of the income types according to the socioeconomic characteristics of the income recipient, designating this person as unallocated. In 1980 and subsequently, all non-respondents with income not reported (whether householders or other persons) were assigned the reported income of persons with similar characteristics.

In 1980, census personnel coded income amounts less than \$100,000 in tens of dollars, and amounts of \$100,000 or more in thousands of dollars; \$5 was added to each amount coded in tens of dollars and \$500 to each amount coded in thousands of dollars. Entries of \$999,000 or more were treated as \$999,500 and losses of \$9,999 or more were treated as minus \$9,999. In 1990, census personnel keyed income amounts less than \$999,999 in dollars, while treating amounts of \$999,999 or more as \$999,999 and losses of \$9,999 or more as minus \$9,999 in all of the computer derivations of aggregate income. The 1990, 1995, and 2000 recorded the actual dollar amounts, so the above method wasn't used.

If a person reported a dollar amount in wage or salary, net non-farm self-employment income, or net farm self-employment income, the 1990, 1995 and 2000 censuses considered this person as unallocated only if it imputed no further dollar amounts for any additional missing entries.

**POVERTY STATUS IN 1999**

The 1990, 1995 and 2000 census obtained data on poverty status from answers to the same questions as the income data, questionnaire items 30 and 31. Poverty statistics presented in all of Palau's census publications employ a definition of poverty devised originally by the Social Security Administration in 1964 and subsequently modified by federal interagency committees in 1969 and 1980. Office of Management and Budget Directive 14 designated this modified definition as the standard to be used by U.S. Federal agencies for statistical purposes, and to apply for Federal grants. At the core of the definition was the 1961 economy food plan, the least costly of four nutritionally adequate food plans designed by the U.S. Department of Agriculture. The 1955 survey of food consumption by the Department of Agriculture determined that families of three or more persons spend approximately one-third of their income on food. Hence, the poverty level for these families was set at three times the cost of the economy food plan. For smaller families and persons living alone, the cost of the economy food plan was multiplied by factors that were slightly higher to compensate for the relatively larger fixed expenses for these smaller households.

The income cutoffs used by the Republic of Palau OPS for 1995 and 2000 and the Census Bureau for 1990 to determine the poverty status of families and unrelated individuals included a set of 48 thresholds arranged in a two-dimensional matrix consisting of family size (from one person to nine or more persons) cross-classified by presence and number of family members under 18 years old (from no children present to eight or more children present). The OPS further differentiated unrelated individuals and two-person families by age of the householder (under 65 years old and 65 years old and over). The total income of each family or unrelated individual in the sample was tested against the appropriate poverty threshold to determine the poverty status of that family or unrelated individual. If the total income was less than the corresponding cutoff, the census classified that family or unrelated individual as *below the poverty level*. The number of persons below the poverty level was the sum of the number of persons in families with incomes below the poverty level and the number of unrelated individuals with incomes below the poverty level.

The poverty thresholds are revised annually to allow for changes in the cost of living, as reflected in the U.S. Consumer Price Index. The average poverty threshold for a family of four persons was \$17,029 in 1999 (Table 13.1). The Census Bureau applies poverty thresholds on a national basis for the U.S. and does not make adjustments to account for regional, state, or local variations in the cost of living. Obviously, conditions in Palau differ, but we use the U.S. poverty levels for comparison with the U.S. and the other Insular Areas.

Table 13.1. Poverty Thresholds in 1999 by Size of Family and Number of Related Children Under 18 Years, in tens of dollars: 2000

Size of Family Unit	Weighted average thresholds	Related children under 18 years								
		None	One	Two	Three	Four	Five	Six	Seven	Eight +
One	\$ 8,501									
Under 65 years	8,667	\$ 8,667								
65 years and over	7,990	7,990								
Two	10,869									
Under 65 years	11,214	11,156	\$ 11,483							
65 years and over	10,075	10,070	11,440							
Three	13,290	13,032	13,410	\$ 13,423						
Four	17,029	17,184	17,465	16,895	\$16,954					
Five	20,127	20,723	21,024	20,380	19,882	\$ 19,578				
Six	22,727	23,835	23,930	23,430	22,964	22,261	\$ 21,845			
Seven	25,912	27,425	27,596	27,000	26,595	25,828	24,934	\$23,953		
Eight	28,967	30,673	30,944	30,387	29,899	29,206	28,327	27,412	\$ 27,180	
Nine +	34,417	36,897	37,076	36,583	36,169	35,489	34,554	33,708	33,499	\$32,208

Source: U.S. Census Bureau Current Population Survey (www.census.gov)

*Persons for Whom Poverty Status is Determined.* Poverty status was determined for all individuals except institutionalized persons, persons in military group quarters and in college dormitories, and unrelated individuals aged less than 15 years. These groups also were excluded from the denominator when calculating poverty rates.

*Specified Poverty Levels.* Since the poverty levels currently in use by the U.S. Federal government do not meet all the needs of data users, the Census office presented some of the data for alternate levels. These specified poverty levels were obtained by multiplying the income cutoffs at the poverty level by the appropriate factor. For example, the average income cutoff at 125 percent of poverty level was \$21,286 (\$17,029 x 1.25) in 1999 for a family of four persons.



**Weighted Average Thresholds at the Poverty Level.** The average thresholds shown in the first column of Table 13.1 are weighted by the presence and number of children. For example, the weighted average threshold for a given family size is obtained by multiplying the threshold for each presence and number of children category within the given family size by the number of families in that category. These products then are aggregated across the entire range of presence and number of children categories, and the aggregate is divided by the total number of families in the group to yield the weighted average threshold at the poverty level for that family size.

Since the basic thresholds used to determine the poverty status of families and unrelated individuals are applied to all families and unrelated individuals, the weighted average poverty thresholds are derived using all families and unrelated individuals rather than just those classified as below the poverty level. To obtain the weighted poverty thresholds for families and unrelated individuals below alternate poverty levels, the weighted thresholds shown in Table 13.1 may be multiplied directly by the appropriate factor. The weighted average thresholds presented in the table are based on the *March 1999 Current Population Survey*. However, these thresholds would not differ significantly from those based on the 2000 census.

**Income Deficit.** Income deficit represents the difference between the total income of families and unrelated individuals below the poverty level and their respective poverty thresholds. In computing the income deficit, families reporting a net income loss were assigned zero dollars and for these cases the deficit was equal to the poverty threshold.

This measure provided an estimate of the amount required to raise the incomes of all poor families and unrelated individuals to their respective poverty thresholds. The income deficit thus is a measure of the degree of impoverishment of a family or unrelated individual. However, one must use caution when comparing the average deficits of families with different characteristics. Apparent differences in average income deficits may, to some extent, be a function of differences in family size.

**Mean Income Deficit.** This measure represents the amount obtained by dividing the total income deficit of a group below the poverty level by the number of families (or unrelated individuals) in that group.

**Limitations.** The most fundamental limitation in the census data on poverty status for 1999 concerns the lack of adjustment for regional, state, or local variation. This limitation is particularly problematic for a place like Palau, which is a separate country with cultural and income characteristics that differ considerably with those of the U.S. Criteria for poverty status defined for the U.S. thus have limited value for the Republic of Palau.

**Comparability.** The poverty definition used in the 1980, 1990, 1995 and 2000 censuses was the same.

### **Analysis of Income and Poverty Data**

#### **Household and Family Income**

The median household income in 1999 for the 3,350 households in Palau was \$13,421 (Table 13.2). In other words, half the households in Palau in 1999 had incomes above \$13,421 and half below. The mean income for these same households was \$19,975 — higher than the median because some of the households had comparatively high incomes, increasing both the total income and the mean calculated from it.

Table 13.2. Household and Family Income in 1999 by State: 2000

State	Households			Families		
	Total	Median Income	Mean Income	Total	Median Income	Mean Income
Total:	3,350	\$13,421	\$19,975	2,951	\$14,738	\$21,402
Aimeliik	50	8,750	13,034	43	9,500	14,676
Airai	330	15,446	19,775	303	16,435	20,902
Angaur	47	4,375	7,162	37	4,861	7,498
Hatohebei	8	3,333	4,034	6	3,750	4,878
Kayangel	37	6,100	8,371	31	6,625	9,427
Koror	2,219	16,607	23,033	1,959	17,795	24,519
Melekeok	60	6,455	36,695	48	7,000	43,130
Ngaraard	109	7,125	8,898	93	9,100	9,998
Ngardmau	46	9,000	14,656	43	9,167	15,358
Ngaremlengui	68	7,500	9,133	62	8,500	9,598
Ngatpang	44	9,333	12,749	37	11,250	14,135
Ngchesar	72	5,857	7,452	61	6,857	7,999
Ngercheliong	70	6,333	8,923	61	6,583	9,545
Ngiwal	43	6,167	8,872	41	6,500	9,114
Peleliu	135	5,214	9,669	118	6,077	10,779
Sonsorol	12	7,000	6,196	8	7,667	8,289

Source: OPS, 2000 Census, Table 23

The median family income in 1999 for the 2,951 families in Palau was nearly \$14,738, somewhat higher than the household median, partly because families required at least two related people living together. As was the case for households, the mean income for families was greater than the median income for families.

Household incomes varied geographically throughout Palau. Koror State had the highest median household income in 1999, exceeding \$16,607. This is not surprising, as Koror State had the best and highest paying jobs. Koror's mean household income was not the highest of all states in Palau – Melekeok, at \$36,695 had that honor. Koror's mean household income was second at \$23,033. In contrast, rural states tended to report low 1999 household incomes. Angaur and Hatohobei had median incomes below \$5,000, and the medians for Peleliu and Ngchesar were between \$5,000 and \$6,000. Better access to better paying jobs in Koror State helps account for the comparatively low-income levels in more rural states. Small numbers of cases affect these data. The small number of households present helps to explain some of the seeming anomalies in the data.

Family incomes similarly varied considerably between states in Palau. Koror State once again had the highest income, with the median family income at \$18,000 and the second highest mean. On the other hand, the median family incomes for Angaur and Hatohobei states all fell at or below \$5,000 for 1999; the mean family incomes for the two states were less than \$7,500 in the same year. Many family income discrepancies in Palau come from differential access to jobs in the more Westernized, urban Koror and Airai states.

Married couple families had higher median incomes in 1999 than families with female householders with no spouse present (Table 13.3). This discrepancy is not surprising: families headed by females without spouses usually have fewer workers earning money. Moreover, females alone often have more trouble finding both full-time jobs and better jobs. The median income for married couple families in 1999 was nearly \$16,000, about \$3,000 more than the median income for households with female householders with no husband present.

Table 13.3. Median Family Income in 1999 by Type of Family and State: 2000

State	Families			Median Income		
	Total	Married Couple Family	Female, no husband present	Total	Married Couple Family	Female, no husband present
Total	2951	2116	608	\$14,778	\$15,747	\$12,804
Aimeliik	43	27	9	\$9,464	\$7,917	na
Airai	303	236	53	\$16,550	\$17,125	\$12,031
Angaur	36	16	17	\$4,750	\$7,500	\$3,750
Hatohobei	6	3	2	\$3,750	\$3,750	\$5,000
Kayangel	31	21	7	\$7,031	\$7,917	\$5,625
Koror	1961	1414	404	\$18,027	\$18,959	\$15,246
Melekeok	48	39	6	\$6,818	\$6,932	na
Ngaraard	93	65	21	\$8,594	\$9,464	\$6,875
Ngarchelong	61	48	8	\$6,696	\$7,045	\$5,000
Ngardmau	43	29	6	\$9,219	\$9,792	na
Ngaremlengui	62	42	8	\$8,333	\$7,955	na
Ngatpang	36	27	7	\$10,000	\$9,464	na
Ngchesar	61	40	14	\$6,625	\$7,500	na
Ngiwal	41	32	9	\$6,607	\$6,250	\$7,083
Peleliu	118	71	35	\$6,346	\$8,021	\$3,281
Sonsorol	8	6	2	\$8,333	\$7,500	\$10,000

Source: Unpublished tabulation, 2000 Palau Census

Family incomes varied considerably between the states in Palau, both for married couples and for female householders with no husband present. In the states with sufficient families present, Koror once again had families with the highest mean incomes — for total, married couple, and "female householder with no husband" families. Rural-urban differences account for most differences in family income between states, regardless of the type of family. Median family incomes for families having female householders with no husband present were particularly low in many rural states, showing the financial constraints placed upon these families in much of Palau.

Of the more than 14,566 persons aged 15 years and over in Palau in 2000, 9,779 had money income in 1999 (Table 13.4). The median personal income of the average adult in 1999 was \$5,200, with the median for males exceeding the median for females by about \$1,328. The mean income of persons with income in 1999 was \$8,004; the mean income for males was about \$1,363 more than the mean for females.

Table 13.4. Income of Persons in 1999 Aged 15 Years and Older by Sex: 2000

Income	Number			Percent		
	Total	Male	Female	Total	Male	Female
Total:	14,566	8,110	6,456	...	...	...
Total with income	9,779	5,578	4,201	100.0	100.0	100.0
\$1 to \$999 or loss	552	253	299	5.6	4.5	7.1
\$1,000 to \$1,999	1,024	424	600	10.5	7.6	14.3
\$2,000 to \$2,999	1,060	562	498	10.8	10.1	11.9
\$3,000 to \$3,999	1,221	604	617	12.5	10.8	14.7
\$4,000 to \$4,999	862	604	258	8.8	10.8	6.1
\$5,000 to \$7,499	1,962	1,292	670	20.1	23.2	15.9
\$7,500 to \$9,999	1,034	635	399	10.6	11.4	9.5
\$10,000 to \$19,999	1,493	814	679	15.3	14.6	16.2
\$20,000 to \$29,999	276	166	110	2.8	3.0	2.6
\$30,000 or more	295	224	71	3.0	4.0	1.7
Median	\$5,200	\$5,662	\$4,335	...	...	...
Mean	\$8,004	\$8,608	\$7,245	...	...	...

Source: OPS, 2000 Census, Table 134

Note: Medians and means in 1999 dollars.

About 6 percent of persons aged 15 years or more in Palau made \$20,000 or more in 1999, including roughly 7 percent of the males but less than 5 percent of the females. On the other hand, slightly more than 7 percent of the females made less than \$1,000 in 1999 compared to only 4.5 percent of the males. In fact, relatively more females than males were in the low-income groups, and relatively more males were in the upper income groups (\$20,000 or more in 1999).

Table 13.5 shows the change in income between 1994 and 1999, both in contemporary dollars and in 1999 dollars (adjusting the 1994 figures to account for inflation). The data show an increase in median personal income between 1994 and 1999, but a decrease in mean income (meaning fewer people making a lot of money but more making incomes near the middle). The adjusted median annual income for individuals in Palau aged 15 years and more increased from \$5,000 in 1994 to about \$5,200 in 1999. Mean income fell between 1994 and 1999, from more than \$8,600 to slightly more than \$8,000. So, depending on the measure, the average person had less or more buying power in 1999 than in 1994.

Table 13.5. Income of Persons in 1994 and 1999 Aged 15 Years and Older by Sex: 1995 and 2000

Income	In Contemporary Dollars			In 1994 Dollars		
	Total	Male	Female	Total	Male	Female
2000						
Median	\$ 5,200	\$ 5,575	\$ 4,335	\$ 5,200	\$ 5,575	\$ 4,335
Mean	\$ 8,004	\$ 8,574	\$ 7,245	\$ 8,004	\$ 8,574	\$ 7,245
1995						
Median	\$ 4,419	NA	\$ 3,803	\$ 5,015	NA	\$ 4,316
Mean	\$ 7,611	\$ 8,657	\$ 6,377	\$ 8,638	\$ 9,826	\$ 7,237

Source: OPS, 1995 &amp; 2000 Census, Table 134

As expected, median income for individuals 15 years and older generally increased with age through 55 to 59 years, then decreased with age for most of the remaining age groups (Table 13.6). Median income for females followed a similar pattern.

Table 13.6. Personal Income in 1999 by Age: 2000

Age Group	Number			Median			Mean		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
15 & Over									
Total:	14,566	8,110	6,456	\$5,200	\$5,575	\$4,335	\$8,004	\$8,574	\$7,245
15 to 19 years	1,382	738	644	2,667	2,815	1,625	2,844	3,034	2,542
20 to 24 years	1,342	731	611	3,887	4,564	3,665	4,330	4,658	3,974
25 to 29 years	1,910	1,106	804	4,427	4,725	3,887	5,218	5,503	4,831
30 to 34 years	2,169	1,219	950	4,624	4,841	4,088	6,443	6,690	6,129
35 to 39 years	1,891	1,104	787	5,658	5,765	5,400	7,408	7,432	7,375
40 to 44 years	1,651	976	675	5,981	6,092	5,712	9,338	9,489	9,117
45 to 49 years	1,272	750	522	6,914	6,846	7,367	12,304	11,828	13,025
50 to 54 years	886	510	376	7,536	8,341	6,643	11,785	13,037	9,923
55 to 59 years	563	306	257	7,705	8,000	7,133	13,181	15,072	10,323
60 to 64 years	463	230	233	6,184	7,304	5,333	8,811	10,461	6,801
65 to 69 years	318	161	157	4,400	6,438	2,719	9,126	13,349	4,553
70 to 74 years	274	115	155	3,779	5,929	2,409	7,481	8,068	6,899
75 to 79 years	212	78	134	2,170	2,650	1,803	3,501	4,928	2,336
80 to 84 years	113	48	65	2,205	2,750	1,850	3,861	5,258	2,709
85 years & over	120	38	82	1,893	3,000	1,500	3,134	4,162	2,469

Source: OPS, 2000 Census, Table 134

Notes: Medians and means in 1999 dollars.

Mean 1999 income figures for five-year age groups was similar to that documented for median income. For all persons, mean income increased through 55-59 years when it approached \$13,200, subsequently declining. Mean income by age followed a similar pattern for males, also reaching a maximum for individuals aged 55-59 years before declining. In contrast, the mean 1999 income for females increased through ages 45-49 years before declining.

The median income for Palau-born individuals in 1999 exceeded the median for those born outside Palau, with the exception of those whose birthplace was the United States (Table 13.7). With the exception of females who were born in "Other Places", the median 1999 income for all individuals exceeded that of females — males had higher incomes than females both for individuals born in Palau and for individuals born elsewhere.

Table 13.7. Person's Income in 1999 by Birthplace: 2000

Birthplace	Number			Median			Mean		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total:	14,566	8,110	6,456	\$5,200	\$5,575	\$4,335	\$8,004	\$8,574	\$7,245
Palau	8,945	4,544	4,401	6,849	7,213	6,412	9,621	10,141	9,019
Guam	98	51	47	5,500	5,400	6,500	6,937	6,945	6,921
CNMI	70	35	35	6,333	8,000	6,000	8,598	11,642	5,554
United States	346	247	99	16,667	20,217	9,375	21,940	24,346	14,185
FSM	250	117	133	5,818	6,500	4,125	7,402	8,878	6,058
Asia	4,573	2,901	1,672	3,575	4,024	3,038	4,498	5,206	3,433
Philippines	2,832	1,756	1,076	3,329	3,819	2,394	3,694	4,077	3,093
China/Taiwan	1,059	615	444	3,636	4,000	3,528	4,138	4,915	3,233
Others	284	215	69	3,716	3,611	7,333	6,786	5,887	12,472

Source: OPS, 2000 Census, Table 136

Note: Medians and means in 1999 dollars.

Mean 1999 income similarly was higher for Palau-born persons than for those born elsewhere, the differences once again substantial. The mean income of males exceeded that of females for all birthplaces, although the values for FSM-born males and females were virtually identical.

The median income in 1999 for persons who spoke Palauan at home was about \$1,500 more than the median for everyone 15 years and over (Table 13.8). Those speaking Palauan had a median income of nearly \$6,800, about \$1,600 more than for those speaking English at home. The 1999 median income for persons speaking a Filipino language at home was less than \$3,500. People who spoke both English and Palauan, however, had high incomes than almost any of the other groups.

Table 13.8. Person's Income in 1999 by Language &amp; English Use: 2000

Language Spoken At Home	Total	Less than \$999	\$1,000 to \$1,999	\$2,000 to \$2,999	\$3,000 to \$3,999	\$4,000 to \$4,999	\$5,000 to \$7,499	\$7,500 to \$9,999	\$10,000 to \$19,999	\$20,000 to \$29,999	\$30,000 or more	Median	Mean
Total 15 years & over:	9,779	712	1,424	1,559	1,898	1,275	2,468	1,135	1,616	289	328	\$ 5,200	\$ 8,004
Palauan	5,589	317	418	426	381	353	1,299	850	1,191	211	143	6,765	9,404
Carolinian	111	5	6	11	19	13	29	16	10	-	2	5,115	6,165
Other Micronesian	15	1	4	2	1	2	3	1	1	-	-	3,750	4,407
Asian	2,939	160	403	500	680	417	506	101	125	14	33	3,658	4,528
Filipino	1,886	92	323	334	391	334	299	63	46	1	3	3,485	3,812
Japanese	180	6	5	8	14	9	40	20	51	10	17	8,733	11,929
Korean	50	1	2	6	2	5	9	4	13	-	8	7,800	13,916
Chinese/Taiwanese	809	61	70	151	270	65	158	14	13	2	5	3,635	3,936
Other	159	2	29	24	42	27	19	2	10	1	3	3,635	4,918
English	966	67	164	97	98	50	106	64	156	50	114	5,159	11,251
More frequently than Palauan	132	10	17	13	10	5	13	14	28	4	18	7,333	12,773
Both equally often	112	6	3	8	7	6	14	10	28	14	16	11,333	15,552
Less frequently than Palauan	92	2	6	3	5	1	15	17	29	4	10	10,111	13,953
Does not speak Palauan	630	49	138	73	76	38	64	23	71	28	70	3,790	9,773

Source: OPS, 2000 Census, Table 140

Notes: Medians and means in 1999 dollars. Filipino includes any language spoken in the Philippines.

Mean 1999 incomes exceeded median 1999 incomes for language use. As before, Philippines-born and Chinese persons tended to have lower incomes than the other groups, with averages below \$4,000. Japanese and Koreans, however, had mean incomes above \$10,000 per year.

In general, a direct relationship existed between educational attainment and personal income for individuals who at least had high school diplomas: the greater a person's education, the greater his or her income (Table 13.9). The median income for high school graduates was more than \$4,400 in 1999, increasing steadily for other levels of educational attainment to more than \$24,000 for persons with more than a Bachelor's degree. The same general patterns held for mean 1999 income, with the mean reaching more than \$30,000 for individuals with graduate degrees. Median incomes for individuals without a high school diploma tended to fluctuate when compared with educational attainment, exceeding \$5,000 for individuals with one year of high school before declining once again. Mean incomes similarly fluctuated for individuals who had not obtained a high school degree.

Table 13.9. Income (Median &amp; Mean) in 1999 by Educational Attainment for 25 years &amp; over by Sex: 2000

Educational Attainment	Number			Median			Mean		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total, 25 + years:	11,842	6,641	5,201	\$ 5,380	\$ 5,710	\$ 4,607	\$ 8,340	\$ 8,909	\$ 7,573
None	365	154	211	2,438	3,182	2,211	3,797	4,340	3,244
Elem.: 1 to 4 years	368	112	256	2,285	4,611	1,859	3,756	6,354	2,374
5 and 6 years	552	245	307	3,104	3,846	2,320	5,337	5,219	5,453
7 years	90	45	45	4,286	5,000	3,875	4,887	4,645	5,181
8 years	349	195	154	4,597	5,280	3,536	4,706	5,218	3,791
High Sch.: 1 year	428	225	203	5,013	5,520	3,396	5,919	6,802	4,604
2 years	273	170	103	4,114	4,667	2,417	4,887	5,043	4,570
3 years	234	125	109	4,867	5,615	3,571	5,484	6,527	3,969
4 yrs, no diploma	406	192	214	3,932	4,881	2,813	5,146	6,078	4,214
High School graduate	5,388	3,363	2,025	4,473	4,889	3,759	6,226	6,292	6,124
Some college	1,216	641	575	7,854	7,716	8,036	9,300	9,991	8,473
Assoc. degree, occup	553	330	223	8,687	8,600	8,781	12,641	12,322	13,158
Assoc. degree, acad.	440	196	244	10,743	10,018	11,250	12,104	12,955	11,378
Bachelor's degree	945	497	448	12,728	13,602	11,854	16,438	19,304	13,191
Higher Degree	235	151	84	24,038	NA	21,154	30,685	34,135	24,716

Source: OPS, 2000 Census, Table 141

Median incomes in 1999 for females were similar to median incomes for all persons by educational attainment — that is, considerable income fluctuation for levels of education below a high school diploma, and increasing income as educational attainment increased for females with a high school diploma or more education. Median incomes of females were lower than those of the total population for all levels of educational attainment except for "Some college" and Associate degrees, showing that the median income for males exceeded female income in nearly all educational categories. Mean 1999 incomes fluctuated for both males and females with less than a high school diploma, and then generally increased with education for individuals who had completed high school or had additional formal schooling. Mean 1999 income of males generally exceeded that of females.

Of all the occupations shown here, persons in managerial and professional positions had the highest incomes in 1999, with a median in excess of \$11,700 (Table 13.10). The median income for persons with technical, sales, and administrative support jobs also was relatively high, exceeding the total median by \$1,000. Median income was less for females in each occupational category than for males, with the median for all females being \$500 less than the median for all persons.

Table 13.10. Income (Median &amp; Mean) in 1999 by Occupation for 16 years &amp; over by Sex: 2000

Occupation	Number			Median			Mean		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total, 16 + years:	9,383	5,827	3,556	\$ 5,583	\$ 5,710	\$ 5,252	\$ 8,520	\$ 8,829	\$ 8,062
Managerial & professional	2,187	1,226	961	11,726	12,516	11,031	16,170	17,849	14,190
Technical, sales, and Admin	2,026	848	1,178	6,663	7,348	6,310	8,561	9,161	8,172
Service	1,762	814	948	3,491	4,911	2,479	4,608	5,846	3,551
Farm, fish, forestry	734	646	88	4,622	5,017	2,750	4,886	4,945	4,520
Prec. prod, craft	1,592	1,286	306	3,970	4,453	3,583	5,215	5,741	3,201
Oper, fabric, laborers	1,082	1,007	75	5,028	5,088	4,143	5,601	5,649	5,061

Source: OPS, 2000 Census, Table 144

Mean 1999 income by occupation showed a pattern similar to that for median income—that is, higher figures for "managerial ..." and "technical, ..." occupations than the mean for the total population. Similarly, mean male income for 1999 exceeded the mean female income for all occupational categories. As with other topics in this chapter, mean incomes were higher than median incomes.

Extremely high percentage of employed individuals worked for some government agency. Much of the explanation for this situation lies in the income levels available for government jobs compared to private sector and self-employment. In 1999, the median income for private sector jobs (for profit and not for profit jobs) was substantially less than the medians for government jobs (Table 13.11). Median incomes for self-employed individuals fell between the medians for private sector and government jobs. The median income for unpaid family members in 1999 was slightly higher than the median for private sector jobs. The median 1999 income for females was below the median for males except for National and State government employees, showing gender equality in the government work force.

Table 13.11. Income (Median &amp; Mean) in 1999 by Class of Worker for 16 years &amp; over by Sex: 2000

Class of Worker	Number			Median			Mean		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total, 16 + years:	9,383	5,827	3,556	\$ 5,583	\$ 5,710	\$ 5,252	\$ 8,520	\$ 8,829	\$ 8,062
Private wage and salary:	6,500	4,131	2,369	4,297	4,730	3,745	6,621	12,516	6,049
National government	2,080	1,157	923	10,810	10,726	10,900	13,613	7,348	12,828
State government	511	391	120	5,175	5,152	5,286	6,284	4,911	6,101
US or other government	154	53	101	8,889	10,875	8,143	12,237	5,017	10,078
Self-employed	99	67	32	6,500	8,000	3,750	13,738	4,453	10,163
Unpaid family	39	28	11	6,250	6,500	6,000	6,886	5,088	6,215

Source: OPS, 2000 Census, Table 144

Mean 1999 incomes by class of worker were similar to the median incomes just discussed in that government jobs paid much better than private sector jobs. However, in contrast to the median incomes, self-employed individuals had higher mean incomes than most of the other classes of worker.

Most families in Palau contained two or more workers in 2000, with 13.1 percent containing no workers (Table 13.12). The number of workers per family varied among states, although most families in most states also contained two or more workers. Extreme values in state-level statistics often reflect the small populations living in certain jurisdictions — Hatohebei contained only 6 families in 2000.

Table 13.12. Workers in Family for Families with Income by State: 2000

State	Workers in Families				Percents			
	Total	None	One	Two or more	Total	None	One	Two or more
Families with Income:	2,951	386	926	1,639	100.0	13.1	31.4	55.5
Aimeliik	43	7	18	18	100.0	16.3	41.9	41.9
Airai	303	26	105	172	100.0	8.6	34.7	56.8
Angaur	37	15	13	9	100.0	40.5	35.1	24.3
Hatohebei	6	1	5	0	100.0	16.7	83.3	0.0
Kayangel	31	8	17	6	100.0	25.8	54.8	19.4
Koror	1,959	165	560	1,234	100.0	8.4	28.6	63.0
Melekeok	48	11	19	18	100.0	22.9	39.6	37.5
Ngaraard	93	38	34	21	100.0	40.9	36.6	22.6
Ngardmau	43	6	19	18	100.0	14.0	44.2	41.9
Ngaremlengui	62	13	17	32	100.0	21.0	27.4	51.6
Ngatpang	37	3	20	14	100.0	8.1	54.1	37.8
Ngchesar	61	13	30	18	100.0	21.3	49.2	29.5
Ngerchelung	61	18	18	25	100.0	29.5	29.5	41.0
Ngiwal	41	13	12	16	100.0	31.7	29.3	39.0
Peleliu	118	49	34	35	100.0	41.5	28.8	29.7
Sonsorol	8	0	5	3	100.0	0.0	62.5	37.5

Source: OPS, 2000 Census, Table 22

So, most families in Palau had two or more workers in 2000. As expected, the number of workers in a family influenced family income — with more workers generating higher mean incomes (Table 13.13). Families with no workers had particularly low mean incomes, their finances determined primarily by government funds, like welfare, and financial contributions by relatives.

Table 13.13. Mean Income in 1999 for Families with Income by Workers in Family and State: 2000

State	Workers in Families				Mean Income by Family Size			
	Total	None	One	Two or more	Total	None	One	Two or more
Families with Income:	2,951	386	926	1,639	\$19,071	\$ 5,343	\$12,803	\$ 25,845
Aimeliik	43	7	18	18	14,676	4,012	9,167	24,332
Airai	303	26	105	172	20,902	9,425	14,074	26,805
Angaur	37	15	13	9	7,498	2,847	7,362	15,446
Hatothobei	6	1	5	-	4,878	4,404	4,973	-
Kayangel	31	8	17	6	9,427	2,478	8,426	21,529
Koror	1,959	165	560	1,234	21,992	5,846	14,703	27,459
Melekeok	48	11	19	18	9,505	6,741	5,654	15,259
Ngaraard	93	38	34	21	9,998	6,385	10,423	15,848
Ngardmau	43	6	19	18	10,707	2,773	6,745	17,534
Ngaremlengui	62	13	17	32	9,598	3,431	6,309	13,851
Ngatpang	37	3	20	14	14,135	8,333	10,664	20,337
Ngchesar	61	13	30	18	7,999	2,518	7,241	13,221
Ngerchelong	61	18	18	25	9,545	6,309	7,327	13,472
Ngiwal	41	13	12	16	9,114	3,257	8,575	14,277
Peleliu	118	49	34	35	9,830	3,386	9,365	19,303
Sonsorol	8	-	5	3	8,289	-	6,850	10,687

Source: OPS, 2000 Census, Table 22

As discussed earlier in this chapter, 1999 mean family income was highest in Koror State — with rural states tending to have much lower mean family incomes. For all states, families with more workers had higher mean 1999 incomes. However, these incomes varied considerably by state. The mean income with one worker was highest in Koror State, followed closely by Airai. In contrast, both Hatothobei and Melekeok states had very low mean incomes for one-worker families in 1999. Koror State also had the highest mean family incomes for families with two or more workers, followed closely by Airai, Aimeliik, and Kayangel and Ngatpang states. Families in Hatothobei State with two or more workers had comparatively low mean income. The mean income for families with no workers was not very high, with the mean for Sonsorol State at \$0.00.

### Poverty

The U.S. poverty definition does not work very well in Palau, where the minimum wage is much lower, many people live at least partially by subsistence, and housing conditions differ considerably from those found in the U.S. Nevertheless, we use this definition to evaluate income in Palau to provide comparable statistics. By the U.S. definition, more than 59 percent of the families and about a little above 65 percent of the persons living in Palau in 2000 were in poverty in 1999 (Table 13.14).

Table 13.14. Families and Persons in Poverty by State: 2000

State	Families			Persons		
	Total	In Poverty		Total	In Poverty	
		Number	Percent		Number	Percent
Families with Income:	2,951	1,765	59.8	15,520	10,119	65.2
Aimeliik	43	35	81.4	242	202	83.5
Airai	303	163	53.8	1,498	906	60.5
Angaur	37	34	91.9	188	175	93.1
Hatothobei	6	6	100.0	23	23	100.0
Kayangel	31	27	87.1	138	122	88.4
Koror	1,959	1,024	52.3	10,645	6,310	59.3
Melekeok	48	38	79.2	239	197	82.4
Ngaraard	93	74	79.6	473	408	86.3
Ngardmau	43	37	86.0	210	183	87.1
Ngaremlengui	62	54	87.1	310	264	85.2
Ngatpang	37	31	83.8	215	166	77.2
Ngchesar	61	52	85.2	263	231	87.8
Ngerchelong	61	51	83.6	280	240	85.7
Ngiwal	41	32	78.0	189	158	83.6
Peleliu	118	99	83.9	568	495	87.1
Sonsorol	8	8	100.0	39	39	100.0

Source: OPS, 2000 Census, Table 22

The state income levels discussed earlier for families and individuals obviously influence the geographic patterns of poverty. Koror and Airai States, with the highest family income, also had the lowest percentage of families below the poverty line (about 52 to 54 percent, while Angaur was about 51 percent). States with lower income levels had higher percentages of persons in poverty. All families living in Hatothobei and Sonsorol states had incomes below the U.S. poverty line.

Personal poverty levels were similar to those for families. About 2 out of every 3 people in Palau in 1999 lived in U.S. defined poverty. Nearly 6 of every 10 persons living in Koror State in 2000 fell below the poverty line in 1999.

Table 13.15 shows poverty ratios, once again based on the U.S. definition of poverty. The values in the 100% columns are the same as those shown for persons in poverty in Table 13.14. Some U.S. Federal programs require numbers and characteristics of persons living at different levels of poverty. For example, if an administrator needs to have the percentage of persons living at 50 percent of the poverty level, he or she should look at the columns in Table 13.15 with 50% at the top. The 50 percent level is obtained by dividing the values in the cells in Table 13.1 by 2 and then determining how many persons or families fall below these new levels. Both the number and the percent of individuals in each state living at 50 percent of poverty is obviously going to be much less than those living at 100 percent of poverty -- these persons may be considered the really poor, poor. On the other hand, some researchers and administrators may want to use these lower levels for analysis to partly account for the role of subsistence in the economy. If the 125 and 185 percent are used, more people are included, so the numbers and percents of persons at these levels increase. That is, for a program which requires numbers of persons at 185 percent of poverty or below — that is, if the poverty level was set at \$10,000, then we would be looking at persons or families making \$18,500 or less -- then, obviously more people are included.

Table 13.15. Ratio of Income to Poverty Level in 1999 by State: 2000

State	Persons Below Percent of Poverty Level -- Number					Persons Below Percent of Poverty Level -- Percent			
	Total	50%	100%	125%	200%	50%	100%	125%	200%
Persons in Households:	15,520	8,112	10,119	11,733	13,986	52.3	65.2	75.6	90.1
Aimeliik	242	164	202	212	235	67.8	83.5	87.6	97.1
Airai	1,498	665	906	1,103	1,345	44.4	60.5	73.6	89.8
Angaur	188	166	175	186	187	88.3	93.1	98.9	99.5
Hatohebei	23	23	23	23	23	100.0	100.0	100.0	100.0
Kayangel	138	114	122	135	135	82.6	88.4	97.8	97.8
Koror	10,645	4,770	6,310	7,521	9,393	44.8	59.3	70.7	88.2
Melekeok	239	191	197	206	223	79.9	82.4	86.2	93.3
Ngaraard	473	371	408	444	461	78.4	86.3	93.9	97.5
Ngardmau	210	163	183	191	204	77.6	87.1	91.0	97.1
Ngaremlengui	310	234	264	308	308	75.5	85.2	99.4	99.4
Ngatpang	215	140	166	172	177	65.1	77.2	80.0	82.3
Ngchesar	263	221	231	248	260	84.0	87.8	94.3	98.9
Ngerchelung	280	230	240	259	272	82.1	85.7	92.5	97.1
Ngiwal	189	156	158	173	186	82.5	83.6	91.5	98.4
Peleliu	568	465	495	513	538	81.9	87.1	90.3	94.7
Sonsorol	39	39	39	39	39	100.0	100.0	100.0	100.0

Source: OPS, 2000 Census, Table 22

## Conclusions

As Palau's economy changes from subsistence based to market based, financial accumulation and dispersion of money are becoming increasingly important. This transition rarely occurs smoothly at the national level and Palau is no exception. Income dropped in real terms between 1994 and 1999. Annual incomes for Palau's residents in 2000 placed nearly 2/3<sup>rd</sup> below the U.S. defined poverty line.

Palau's economic base is developing, and the data here show many of the characteristics of that development. The data show, for example, a direct relationship between the level of educational attainment and income. Development programs which enable higher education attainment and increased skills should promote Palau's economic development. The important economic role of government employment, on the other hand, could delay development. Government employment still pays much better than most private sector jobs. Because of this discrepancy, individuals will continue to search most actively for government jobs, increasing the pressure on this sector of the economy with more difficult economic times. In attracting many of the best and brightest in Palau, government employment removes people with important skills from other sectors of the economy — delaying the development of a more broadly based, self-sufficient economy.



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## CHAPTER 14. ESTIMATES AND PROJECTIONS

Population and housing censuses provide the crucial sources of data on the size, structure, and distribution of population and housing, but are taken only periodically. Censuses require tremendous expenditures of money and human energy at all phases — planning, enumeration, compilation, analysis, and publication. Because the Government of Palau needs information about the size and structure of the republic's population between censuses to address its needs, estimates of the population between censuses and projections are important planning tools. Data from recent censuses, surveys, and other sources of statistical data can be used to prepare estimates between complete population counts. Data from recent censuses and compilations of vital statistics, in turn, can be used to prepare population projections — providing information on likely future challenges to the republic and its government.

In this chapter we discuss post-censal estimates and projections for the years following 2000. Estimates and projections use census, survey, and administrative records and assumptions for their foundations. Obviously, the accuracy of these calculations depends on the quality of the data and assumptions used to prepare them. The initial data used as the base from which to make post-censal population estimates and projections should have no errors. The components of population change — fertility, mortality, and migration — are likely to follow certain courses. Assumptions, which deviate from the actual courses of these components, will reduce the accuracy of the estimate or projection. Furthermore, as the period of a post-censal population estimate or projection increases, the likelihood of error similarly increases, for the assumptions on which the calculations are based may not hold for long periods. Ultimately, the accuracy of population estimates or projections tends to depend more on the extent to which underlying assumptions prove correct than the level of sophistication of the method used to compute the figures. The information on estimates and projections presented in this monograph, particularly the information for fertility and mortality, come directly from the data in the 2000 Census and or vital registration.

### ***Projection Method***

The International Programs Center at the U.S. Census Bureau has developed a program called *Rural Urban Projections* (RUP) to project populations for countries around the world. The RUP program employs a cohort component method which projects each age and sex group over time based on the three main components of population change. Annual births and deaths and migration create new numbers — either increasing or decreasing cohort size — depending on the contribution of each component.

Certain features of the RUP program enable considerable flexibility for specifying projected trends in fertility, mortality, and migration. The program also permits a range of output options giving a detailed examination of the results.

The features of the RUP program used for the population projections in this chapter include the following:

- ?? The program produces projections by single years of age. This feature allows use of special age groups that are not conventional five-year age groups. It also allows tracking population cohorts that may be smaller or larger than surrounding cohorts due to past demographic events. In the projections prepared here, we use data on single years of age by sex collected by the 2000 census.
- ?? The program produces annual projections. This feature enables the inputting of information on demographic events for a particular year (e.g., excess mortality due to a typhoon or tidal wave) without spreading the effect over a five-year period. It also provides planners with projections for each year rather than requiring interpolations between projections for surrounding years.
- ?? In addition to accepting mortality and fertility rates as input (as do most programs), the RUP program also allows the input of numbers of births, deaths, or migrants. This feature enables updating a base population with recent actual data on vital events. For instance, because in addition to the 1990, 1995 and 2000 censuses, we have available information on registered births by age of mother and deaths by age and sex for years before the census, we can include these vital statistics in the projection without having to estimate associated fertility and mortality rates. We project the 1990 and 2000 census populations by age and sex using life tables consistent with the numbers of deaths (by age and sex) and mortality patterns for surrounding years, age-specific fertility rates consistent with numbers of births (by age of mother), and the known number of migrants between 1985 and 1990, 1990 and 1995, and 1995 and 2000. For subsequent years, the program uses the projected trends of these components to calculate future populations.

The program provides output of a wide variety of demographic measures for any specified year of the projection. These outputs include:

- ? Population by age and sex (single years, five-year age groups, special groups) and summary measures of age (e.g., percentages, sex ratios, median ages, dependency ratios);
- ? Summary rates (e.g., crude birth rates, life expectancy at birth, infant mortality rates, and total fertility rates);
- ? Life tables;
- ? Net numbers of migrants or migration rates by age and sex;
- ? Number of deaths, by age and sex; and
- ? Number of births, by age of mother, and age-specific fertility rates.

The flexibility of the RUP package allows a researcher to create a projection model that accurately reflects what is known about the demographic situation in a particular country, making maximum use of available data in a form as close as possible to the original. However, "this flexibility comes at a price as it places a burden on the user (1) to decide on the best way to model the situation (since the program does not limit the options) and (2) to provide accurate data for all the inputs required to run the program."

### **Analysis of Population Projections**

As discussed in the chapters of this monograph dealing with various demographic topics, the population dynamics of Palau recently have been quite volatile, particularly in the area of migration. Although the population remained around 12,000 persons for more than a decade, immigration has caused fairly rapid growth in recent years — to more than 15,000 in 1990 and more than 19,000 in 2000. Almost all of the population increase was due to net immigration. Although Palauans continued to leave Palau, these emigrants were more than offset by other people — primarily Asians, mostly from the Philippines — moving to the republic to live and work. It is not known whether this rapid immigration will continue.

Similarly, as discussed in Chapter 6, fertility continues to decrease rapidly, although the exact extent of the continued decrease is unknown. The current total fertility rate (**TFR**) of 1.5 children is one of the lowest in the Pacific as well as the world. It is not clear whether the Asian immigrants have lower or higher fertility than the Palauans, nor is it clear whether the current level of fertility for the immigrants would continue after arriving in Palau.

Chapters 6 and 7 examine birth and death rates for Palau in detail; Table 14.1 summarizes these measures as derived from the RUP program. The crude birth rate of 20 per 1,000 persons reflects the current low fertility in Palau, and the death rate of 7 per 1,000 persons is also low. These levels of fertility and mortality produce a natural growth rate of 1.8 percent in 1999 and a doubling time of 37 years.

Table 14.1. Demographic Indicators: 2000 and 2025

Indicator	2000	2025
Crude Birth Rate (CBR) per 1000	13.45	9.82
Crude Death Rate (CDR) per 1000	6.85	8.85
Rate of natural increase (percent)	0.66	0.097
Annual rate of growth (percent)	1.96	0.096
Life expectancy at birth (years)	70.48	76.62
Infant deaths per 1,000 live births	18.25	9.18
Total fertility rate (per woman)	1.54	1.62

Source: U.S. Census Bureau International Data Base

The age-specific fertility rates used in the projections were derived from the vital registration data (for the numerators) and the 2000 census results (for denominators), as discussed in Chapter 6. Table 14.2 presents these measures again, for reference purposes. Because the birth rates already are low, the projections assumed unchanging fertility (though we speculated about continued fertility decline in Chapter 6).

Table 14.2. Age-specific &amp; Total Fertility Rates for Projections

Age Group	Age-specific Fertility Rate
15 to 19 years	13
20 to 24 years	53
25 to 29 years	86
30 to 34 years	87
35 to 39 years	69
40 to 44 years	32
45 to 49 years	13
Total Fertility Rate	1.77

Source: U.S. Census Bureau International Data Base

Life expectancy at birth is estimated to be about 70 years for both sexes combined. This level probably is higher than the actual life expectancy in the republic, but it is important to remember that the majority of Palau's population lives close to the hospital and receives free medical (out-patient) attention and medicine. Moreover, it is unlikely that registered deaths include all deaths of Palauans, particularly those leaving the republic for medical attention and dying elsewhere. Infant mortality was measured at about 18 infant deaths per 1,000 live births.

We estimated migration indirectly, since the Republic of Palau does not collect data on immigrants and emigrants. Obtaining information on immigrants was fairly straightforward. After the 2000 census, we chose to use the number of persons not living in Palau in 1995, but enumerated in the census in 2000. For example, Table 14.3 shows 3,022 males who lived outside Palau in 1995 but in Palau in 2000. Some of these individuals might have been Palau-born persons who left Palau and were outside the republic in 1995, but had returned by 2000. On the other hand, we assumed about an equal number of non-Palauans to have been in Palau in 1995, but left Palau by 2000.

Table 14.3. Male Migration between 1995 &amp; 2000 of Palau Born to Guam &amp; CNMI &amp; from Outside to Palau: 2000

Age	Net Migrants		Immigrants	Emigrants		
	Total	Per year		Total	Guam	CNMI
Total males:	2,837	567.4	3,022	185	105	80
5 to 9 years	45	9.0	65	20	10	10
10 to 14 years	45	9.0	53	8	4	4
15 to 19 years	31	6.2	51	20	10	10
20 to 24 years	236	47.2	271	35	20	15
25 to 29 years	543	108.6	568	25	15	10
30 to 34 years	629	125.8	648	19	15	4
35 to 44 years	828	165.6	863	35	20	15
45 to 54 years	382	76.4	390	8	4	4
55 to 64 years	81	16.2	85	4	4	-
65 years and over	20	4.0	28	8	4	4

Source: 2000 Palau Census and 2000 Censuses of Guam and CNMI

Note: The Census Bureau rounded the data for Guam and CNMI so they don't sum.

For emigrants from Palau, we used tables similar to Table 14.3 from the 2000 Censuses of Guam and the CNMI — thus assuming that all out-migration of Palauans was to these two areas. This assumption admittedly is inaccurate; as discussed in Chapter 8, many Palauans also migrated to the U.S. and other places when, for example, they join the Armed Forces. Unfortunately, we had no information on destinations other than Guam and the CNMI of Palauan emigrants when preparing these projections. We found 185 males living in Palau in 1995, but living in either Guam (105) or the CNMI (80) in 1990. These figures do not represent all of the total Palauans living in the Marianas, which would be much higher; in fact, the number of Palau-born in Guam and CNMI was higher in previous censuses. If a male moved from Palau to Guam before 1995 he would not be included here despite being an emigrant to one of the two destinations of interest. In all, for example, about 2,800 more males migrated to Palau between 1995 and 2000 than migrated to Guam or the CNMI, making net immigration roughly 1,000. Since the period from 1995 to 2000 was five years, the average annual immigration of males for the last half of the 1990s was about 550.

About the same number of females as males moved from Palau to Guam or the CNMI between 1995 and 2000 (Table 14.4). However, many fewer females than males migrated to Palau — about 1766 during the five-year period. Combining immigration and emigration figures for females yielded a net immigration of about 1,546 between 1995 and 2000, or about 300 per year. Net annual in-migration of males and females combined during the last half of the 1990s averaged about 850 persons during the last half of the 1980s. However, because we are using the U.S. Census Bureau's official estimates and projections, we did not use this value for the projections.

Table 14.4. Female Migration between 1995 &amp; 2000 of Palau Born to Guam &amp; CNMI &amp; from Outside to Palau: 2000

Age	Net Migrants		Immigrants	Emigrants		
	Total	Per year		Total	Guam	CNMI
Total females:	1,546	309.2	1,766	220	160	60
5 to 9 years	57	11.4	65	8	4	4
10 to 14 years	43	8.6	57	14	10	4
15 to 19 years	29	5.8	79	50	40	10
20 to 24 years	152	30.4	232	80	70	10
25 to 29 years	355	71.0	380	25	15	10
30 to 34 years	368	73.6	393	25	15	10
35 to 44 years	365	73.0	373	8	4	4
45 to 54 years	133	26.6	141	8	4	4
55 to 64 years	30	6.0	34	4	4	-
65 years and over	4	0.8	12	8	4	4

Source: 2000 Palau Census and 2000 Censuses of Guam and CNMI

Note: The Census Bureau rounded the data for Guam and CNMI so they don't sum.

The following paragraphs describe the results obtained by the U.S. Census Bureau in developing its estimates and projections.

The estimated midyear population for Palau in 2000 was 19,257 persons (Table 14.5). The growth rate gradually declines during the period — both for the past, with the actual figures, and into the future, with the projected figures. The Census Bureau assumes decreasing net immigration over time, until migration is offset by natural growth after 2010. These assumptions don't follow the current actual practices which include much larger immigration than emigration. But, with these assumptions, the population would continue increasing until about 2010, when it would plateau.

Table 14.5. Mid-year Population Estimates &amp; Average Annual Period Growth Rate: 1950 to 2050

Year	Population	Year	Population	Period	Growth Rate
1950	7,251	1995	17,153	1950-1960	3.08
1960	9,482	1996	17,600	1960-1970	2.66
1970	12,005	1997	18,061	1970-1980	1.09
1980	13,311	1998	18,494	1980-1990	1.42
1990	15,207	1999	18,882	1990-2000	2.66
2000	19,257	2010	21,867	2000-2010	1.36
2001	19,626	2020	22,638	2010-2020	0.35
2002	19,976	2030	22,841	2020-2030	0.09
2003	20,304	2040	22,301	2030-2040	(0.24)
2004	20,610	2050	21,047	2040-2050	(0.56)

Source: U.S. Census Bureau International Data Base

Table 14.6 shows continuously declining crude birth rates, and gradually increasing death rates as the population ages (and is not replaced with younger people through births or net immigration). Net immigration, in fact, is shown to stop after 2005, so natural growth rates and total growth rates are the same after that, and negative later in the century.

Table 14.6. Population and Growth Rates: 1980 to 2050

Year	Population	Crude Birth Rate	Crude Death Rate	Net Migration Rate	Natural Growth Rate	Total Growth Rate
1980	13,311	22.24	7.06	(8.20)	1.518	0.698
1985	13,804	24.42	6.88	(8.23)	1.754	0.931
1990	15,207	21.44	7.69	9.34	1.375	2.308
1995	17,153	23.26	6.41	8.28	1.685	2.513
2000	19,257	13.45	6.85	13.03	0.660	1.963
2005	20,891	13.45	6.56	6.03	0.689	1.292
2010	21,867	11.98	6.63	-	0.535	0.535
2015	22,342	10.38	7.03	-	0.335	0.336
2020	22,638	9.85	7.82	-	0.203	0.203
2025	22,813	9.82	8.85	-	0.097	0.096
2030	22,841	9.63	10.16	-	(0.053)	(0.053)
2035	22,671	9.40	11.78	-	(0.238)	(0.238)
2040	22,301	9.06	13.27	-	(0.421)	(0.422)
2045	21,742	8.83	14.72	-	(0.589)	(0.589)
2050	21,047	8.84	15.77	-	(0.693)	(0.694)

Source: U.S. Census Bureau International Data Base

Table 14.7 shows the population distribution for midyear 2010 (July 1). About 8 percent of the population would be less than five years of age and slightly more than 25 percent was less than 15 years of age. At the other end of the age distribution, about 5 percent of the population would be 65 years and over. Finally, about 110 males would be residing in Palau in 2010 for every 100 females.

Table 14.7. Population by Age and Sex: 2010

Age Group	Number			Percents			Males per 100 Females
	Total	Males	Females	Total	Males	Females	
Total:	21,982	11,534	10,448	100.0	100.0	100.0	110.4
0 to 4 years	1,795	922	873	8.2	8.0	8.4	105.6
5 to 9 years	1,825	940	889	8.3	8.1	8.5	105.7
10 to 14 years	1,807	929	878	8.2	8.1	8.4	105.8
15 to 19 years	1,770	913	857	8.1	7.9	8.2	106.5
20 to 24 years	1,508	773	735	6.9	6.7	7.0	105.2
25 to 29 years	1,345	684	665	6.1	5.9	6.4	102.9
30 to 34 years	1,442	725	717	6.6	6.3	6.9	101.1
35 to 39 years	1,706	876	830	7.8	7.6	7.9	105.5
40 to 44 years	1,891	1,010	881	8.6	8.8	8.4	114.6
45 to 49 years	1,877	1,066	811	8.5	9.2	7.8	131.4
50 to 54 years	1,636	935	701	7.4	8.1	6.7	133.4
55 to 59 years	1,308	720	588	6.0	6.2	5.6	122.4
60 to 64 years	871	469	402	4.0	4.1	3.8	116.7
65 to 69 years	510	258	252	2.3	2.2	2.4	102.4
70 to 74 years	309	145	164	1.4	1.3	1.6	88.4
75 to 79 years	177	83	94	0.8	0.7	0.9	88.3
80 + years	197	86	111	0.9	0.7	1.1	77.5
Median	33.2	34.2	32.3	...	...	...	...

Source: U.S. Census Bureau International Data Base

Continuing on to 2020, the portion of Palau's population aged less than five years is projected to remain at about 8 percent in 2020, as would the percentage of the population younger than 15 years (Table 14.8). The percentage of individuals older than 65 years would increase slightly. The median age of the population projected for 2020 is 34.4 years.

Table 14.8. Population by Age and Sex: 2020

Age Group	Number			Percents			Males per 100 Females
	Total	Males	Females	Total	Males	Females	
Total:	23,835	12,298	11,537	108.4	106.6	110.4	106.6
0 to 4 years	1,727	888	839	7.5	7.7	8.0	105.8
5 to 9 years	1,725	885	840	7.8	7.7	8.0	105.4
10 to 14 years	1,792	919	873	8.2	8.0	8.4	105.3
15 to 19 years	1,825	938	887	8.3	8.1	8.5	105.7
20 to 24 years	1,793	918	875	8.2	8.0	8.4	104.9
25 to 29 years	1,748	897	851	8.0	7.8	8.1	105.4
30 to 34 years	1,490	757	733	6.8	6.6	7.0	103.3
35 to 39 years	1,327	670	657	6.0	5.8	6.3	102.0
40 to 44 years	1,414	706	708	6.4	6.1	6.8	99.7
45 to 49 years	1,668	846	822	7.6	7.3	7.9	102.9
50 to 54 years	1,818	953	865	8.3	8.3	8.3	110.2
55 to 59 years	1,745	960	785	7.5	8.3	7.5	122.3
60 to 64 years	1,447	794	653	6.6	6.9	6.3	121.6
65 to 69 years	1,077	570	507	4.5	4.9	4.9	112.4
70 to 74 years	652	334	318	3.0	2.9	3.0	105.0
75 to 79 years	327	153	174	1.5	1.3	1.7	87.9
80 + years	260	110	150	1.2	1.0	1.4	73.3
Median	34.4	34.6	34.1	...	...	...	...

Source: U.S. Census Bureau International Data Base

The demographic changes projected for the first half of this century is expected to continue — becoming less pronounced as the population grows through natural increase while the number of annual in-migrants stops. Fertility is expected to hover between 1.5 and 1.6. The life expectancy at birth is projected to rise steadily through the 70's during the next 30 years while the infant mortality rate falls to below 10 by 2015. The two pyramids in Figures 14.1 and 14.2 show a population with low fertility, continued low mortality, and selective immigration.

Figure 14.1 Palau: 2010

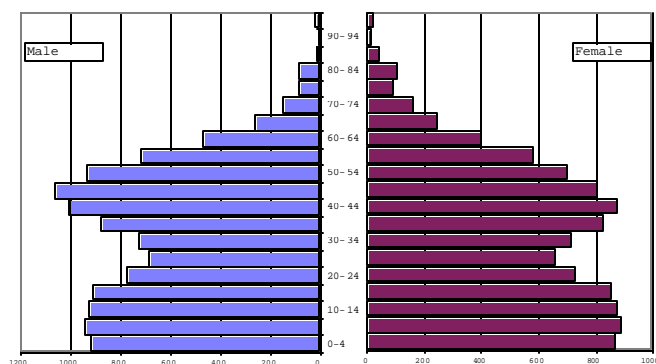
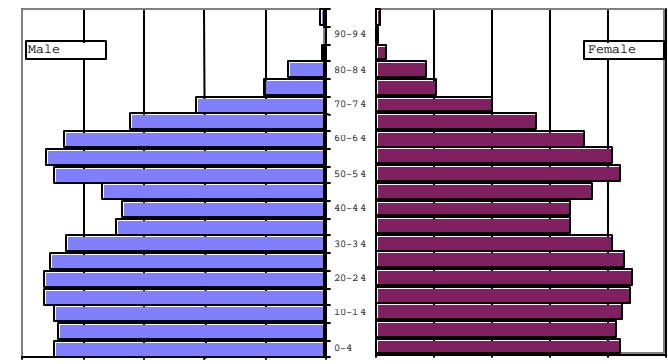


Figure 14.2 Palau: 2025



## Conclusions

Here we present one set of population projections for the Republic of Palau, beginning with the 2000 census and continuing for several decades. Key characteristics of the population are likely to change, with increasing numbers of working age persons, growth in the overall age of the population, and an increasing male-female ratio. The growing age of Palau's population with time, coupled with the relative increase in males over females, help to explain the projected changes in fertility and mortality.

The discussion on population projections is necessarily brief. Since the OPS intends to prepare additional projections (as well as post-censal estimates) based on differing series of fertility and migration assumptions, the projections here are illustrative, providing an example of likely population increase in Palau over the coming decades if current trends in fertility, mortality, and migration continue.

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## CHAPTER 15. HOUSING CHARACTERISTICS

The study of housing characteristics is important because everyone must live somewhere. Studying various aspects of housing provides important insights for development — often showing relationships between traditional cultural systems and modernization. The 2000 census of Palau acknowledges the important role played by housing by collecting and presenting data on various aspects of the republic's housing stock.

We have organized this examination of housing characteristics into four major sections:

- ?? general housing characteristics (total counts of various unit types, tenure, vacancy characteristics, and age);
- ?? structural characteristics (number of housing units per structure, rooms per housing unit, and bedrooms per housing unit; material used for the construction of roofs, outer walls, and foundations);
- ?? utilities (electricity, water, and sewer); and
- ?? equipment (general plumbing; toilet, bathing, and kitchen facilities).

We present definitions and the related considerations of data limitations and comparability, to assist in understanding description and analysis of the housing characteristics. These definitions draw heavily on the information presented in Volume I of the report on the 2000 Republic of Palau Census of Population and Housing. The most pervasive data limitation concerns comparisons between census years; housing data presented for 1980 typically concerned year-round housing units, while data presented for 1986 considered only occupied units and those presented for 1990, 1995 and 2000 concern total housing units (and occasionally occupied housing units by tenure). Because the 1986 census report did not contain detailed definitions for housing characteristics (see OPS, 1987, pp. 10-12), and the 1980, 1990, 1995 and 2000 censuses are used in comparison. In general, we present data for total housing units – occasionally deviating from this trend for comparisons between 2000 and earlier censuses.

### **Data Description**

#### *General Housing Characteristics*

A *housing unit* is a house, apartment, mobile home or trailer, or group of rooms or single room occupied as separate living quarters — or, if vacant, intended for occupancy as a separate living quarters. Separate living quarters are those in which the occupants live and eat apart from any other persons in the building and have direct access only from outside the building or through a common hall. If living quarters contained ten or more unrelated persons the 1990, 1995 and 2000 censuses classified them as *group quarters*. If living quarters contained nine or fewer persons unrelated to the householder or person in charge, the census recorded them as a housing unit. This chapter deals exclusively with housing units.

The 2000 census included both occupied and vacant housing units as part of the housing inventory. It included recreational vehicles, boats, vans, tents, etc. only if used as usual place of residence on Census Day 2000. The census classified a housing unit as *occupied* if it was the usual residence of the person or group of persons at the time of enumeration, or if the occupants were only temporarily absent. The census included vacant mobile homes provided that they were intended for occupancy.

A *vacant* housing unit was one that contained no residents at the time of enumeration, unless its occupants were only temporarily absent. The census also considered vacant those units temporarily occupied at the time of enumeration by persons who usually resided elsewhere. A new unit not yet occupied was classified as vacant if construction had reached the point where all exterior windows and doors, and final usable floors, were in place. The census did not consider unoccupied units open to the elements as vacant. Also excluded from vacant units were buildings used entirely for non-residential purposes, like a store, office, or storage facility.

Item H3 on the 2000 census distinguished between owner-occupied and renter-occupied housing units, or *tenure*. The census classified a housing unit as *owner-occupied* if the owner or co-owner resided in the unit on census day, even if the unit was mortgaged or not fully paid for. The remaining occupied housing units were classified as *renter-occupied*, regardless of whether cash was paid. The census recorded a housing unit as *Rented for cash rent* if any money rent was paid or contracted for; this rent could come from individuals either living in the unit or elsewhere, or from an organization. Rental units classified under *No cash rent* generally were those provided free by friends or relatives, or in exchange for services like those provided by a resident manager.

The 2000 census defined the *homeowner vacancy rate* as the percentage of the total homeowner inventory vacant and for sale. *Rental vacancy rate*, in turn, was the percentage of the total rental inventory vacant and for rent.

Questionnaire item H8 concerned the year the structure was built. Census personnel tried to obtain year of construction for both occupied and vacant housing units. Data on the year built refer to when the building was first constructed, not when it was remodeled, added to, or converted. Recently built structures that met the housing unit definitional requirements (all exterior windows, doors, and final usable floors installed) were assigned to the *1999 to March 2000* category.

**Limitations.** The 2000 census data concerning housing unit definitions, tenure, and occupancy status contain no particular limitations. Data on the year built are more susceptible to errors of response and non-reporting than the other general housing characteristics considered in this chapter, as respondents relied on their memory or on estimates of other persons familiar with their housing unit. Evidence shows that respondents often underreport year of construction of older units.

**Comparability.** There was no change in the definition of housing units or occupancy status between the 1980, 1990, 1995 and 2000 censuses. The Census offices began collecting data on tenure for housing in Palau in 1970. The 1980 decennial census reported tenure only for year-round housing units — units intended for year-round use — a category no longer employed. In addition, the 1990 census expanded response categories to allow respondents to report whether a housing unit was owned with a mortgage or free and clear. Although the intention of this change was to improve the count of owner-occupied units (based on studies of U.S. respondents to earlier censuses), the possible change in count decreases the compatibility between this and previous censuses. The U.S. Census Bureau similarly began collecting data on vacancy status for housing in Palau in 1970. Census reports through 1980 once again presented these data only for year-round housing units. For 1990, the category "Seasonal/recreational/occasional use" combined unoccupied units classified in 1980 under "Seasonal or migratory" and "Held for occasional use" categories. Finally, decennial censuses began collecting information on the year a structure was built for housing in Palau in 1970, although these data were shown only for year-round housing units through 1980. The 1990, 1995 and 2000 census reports presented these data for all housing units, in the process adding appropriate response categories to accommodate units built during the intervening periods. Recent censuses have added a category "Don't know" in an effort to minimize the response error on year of construction, as discussed above.

### **Structural Characteristics**

The 2000 census obtained information on the number of housing units in a structure from questionnaire item H2, recorded for all housing units. In the Republic of Palau, a structure comprised a separate building that either had open space on all four sides or was separated from other structures by dividing walls that extended from ground to roof.

**Type of Structure.** The statistics presented in the 2000 census report that refer to the number of housing units in separate structures of specified type and size consider the following categories:

- ?? *One family house, detached* – a single-unit structure detached from any other structure (except a shed or garage). A one-family house that contained a business was considered detached as long as the building had open space on all four sides. Mobile homes or trailers to which one or more permanent rooms have been added or built also were classified under this category.
- ?? *One family house, attached* – a one-unit structure that had one or more walls extending from ground to roof separating it from adjoining structures. In row houses and townhouses, double houses, and houses attached to non-residential structures, each housing unit was an individual attached structure if the dividing or common wall extended from ground to roof.
- ?? *Building with two or more apartments* – housing units in structures containing two or more housing units, further categorized as units in structures with two, three or four, five to nine, 10 to 19, 20 to 49, and 50 or more units.
- ?? *Boat, houseboat or yacht* – questions asked for people living on boats or houseboats, also known as "live-aboards" and yachts.
- ?? *Other* – any housing unit that did not fit the previous categories, like abandoned cars, campers, vans, and shacks.

**Rooms.** The 2000 census obtained information on the number of rooms per housing unit from questionnaire item H12, with resulting information recorded both for occupied and vacant housing units. The intent of this question was to count the number of whole rooms used for living purposes. For each unit, whole rooms included living rooms, dining rooms, kitchens, bedrooms, finished recreation rooms, enclosed porches suitable for year-round use, and lodger's rooms. Excluded were kitchenettes, strip or Pullman kitchens, bathrooms, open porches, balconies, halls or foyers, utility rooms, unfinished attics or basements, and other unfinished space used for storage.



**Bedrooms.** Data on bedrooms were obtained from questionnaire item H13, with resulting information recorded for both occupied and vacant housing units. The number of bedrooms refers to the count of rooms designed to be used as bedrooms — the number of rooms that one would count as bedrooms when listing a housing unit for sale or for rent. The 2000 census included as bedrooms all rooms *intended* for use as bedrooms even if residents were using them for some other purpose on Census Day. Housing units comprising a single room, like an efficiency apartment, by definition were classified as having no bedroom.

**Roof.** The census collected data on the material used for the roofs of housing units with questionnaire item H10; the results recorded both for occupied and vacant housing units. The census classified each housing unit according to the type of material used most in the construction of its roof. The material categories employed were "Poured concrete," "Metal" (including zinc, steel, tin, etc.), "Wood" (including woodboard, plywood, etc.), "Thatch" (including sugar cane leaves, palm or pandanus thatch, palm leaves, straw, etc.), and "Other" — the last category accounting for all materials not covered by the previous four categories.

**Walls.** Information on the material used for the outside walls of housing units was obtained from questionnaire item H9, once again both for occupied and vacant housing units. The census classified each unit according to the type of material used most in the construction of its outside walls. Separate categories included as "Poured concrete," "Concrete blocks" (including those where plaster cement covered the wall), "Metal" (including zinc, steel, tin, etc.), "Wood" (including wood board, plywood, etc.), and "Other" — the latter once more accounting for all construction materials not covered by the four specific categories.

**Foundation.** The 2000 census collected data on type of material used for the foundation of housing units with questionnaire item H11, both for occupied and vacant housing units. Census personnel classified each housing unit according to the type of material used most in its foundation. The categories employed were "Concrete," "Wood pier or pilings," and "Other" — the latter comprising units with foundations built with materials that could not be described by the first two categories as well as units with no foundation.

**Limitations.** No apparent limitations affect any of the structural characteristics considered in this report.

**Comparability.** The Census offices first collected information on the number of units per structure in Palau in 1970 — reporting the results only for year-round housing units through 1980, in contrast to the total units reported in 1990. Data on the number of rooms per unit, similarly collected in Palau for the first time in 1970, were shown for year-round housing units through 1980 and for all housing units in 1990. Data on the number of bedrooms were first collected for Palau in 1980. The 1980 definition of a bedroom *excluded* rooms designed for use as a bedroom but employed for some other purpose (though tests conducted with data from the U.S. revealed virtually no differences in the information obtained with these different questions). As with data on all rooms, bedroom statistics were shown only for year-round units in 1980 and for all housing units in 1990. Information on the material used for roofs and outside walls were collected for the first time in 1980 and shown only for year-round units — as opposed to data on all housing units presented in the 1990, 1995, and 2000 census reports. Data on the material used for foundations were collected for the first time in 1990.

### **Utilities**

**Electricity.** The 2000 census collected data on electric power with questionnaire item H18, recorded both for occupied and vacant housing units. The census considered units to have electric power if they were so equipped — even if the current was shut off for some reason.

**Source of Water.** Data on source of water were obtained from questionnaire item H23, also recorded for occupied and vacant housing units. In Palau, common source supplying water through underground pipes to five or more units was classified as "Public (government) system only;" this included water supplied by a municipal water system, water district, or water company as well as water from a well that supplied five or more housing units. A water source classified as "Public (government) system and catchments," in turn, described those instances where running water came from a public (government) system *and* some type of catchments system. Housing units receiving water from a well located on the same property or nearby that serves four or fewer housing units were classified under the "Individual well" category. Included in this last type were units receiving well water that was hand drawn, wind drawn, or engine drawn; piped or not piped; and stored in tanks or used directly from the well. A housing unit was classified under "Catchments, tanks, or drums only" if the sole source of water was rainwater collected in the named equipment. Housing units whose source of water was a "Public standpipe or street hydrant" comprised those receiving water from an elevated tank, vertical storage cylinder, or street hydrant that was connected to a public system. Finally, residential units receiving water privately from springs, rivers, irrigation canals, creeks, or other sources not included in the preceding six categories were classified under "Some other source...."

Data on *water supply*, also referred to as "Piped water" and closely associated with source of water, were obtained from questionnaire items H14 to H17 and H23 to H26 and H31 — recorded both for occupied and unoccupied housing units. Piped water signified a housing unit where water was available at a sink, wash basin, bathtub, or shower. The piped water may have been located within a housing unit, in a hallway associated with the unit, or in a room used by several other households in the building containing the unit (even if occupants had to go outdoors to reach that part of the building). If both hot and cold water were available, the census recorded the type of energy used by the water heater ("Electricity," "Gas," "Solar," or "Other fuels"). The census did not categorize as hot water that supplied by an electric faucet attachment at the kitchen sink, an electric shower attachment, or other similar equipment.

*Sewage.* The census obtained data on sewage disposal from questionnaire item H26, recorded both for occupied and vacant housing units. Housing units were classified as connected to a "Public sewer," connected to a "Septic tank or cesspool," or disposing of sewage by "Other means." A public sewer may be operated by a government body or by a private organization. A housing unit was considered connected to a septic tank or cesspool when it had an underground pit or tank for sewage disposal. The *other* category included housing units that disposed of sewage in any manner not covered by the other two specific categories.

Limitations. No apparent limitations affect any of the utility characteristics considered in this report.

Comparability. The 1980 census asked a question on electrical power, supplier, and source, but reported these data only for year-round housing units; the 1990, 1995 and 2000 censuses recorded these data for all housing units. Data on source of water similarly were collected beginning in 1980, but reported for year-round units in that year instead of the total units used in 1990 and later. Data on water supply and sewage disposal were collected and reported similarly for year-round units in 1980 and total units in 1990, 1995, and 2000.

### **Equipment**

The 2000 census obtained information on plumbing facilities from questionnaire items H14 to H17 for occupied and unoccupied housing units. In Palau, a unit was considered to have complete plumbing facilities when it had piped water, a flush toilet, and a bathtub or shower — regardless if these facilities were located in the unit being enumerated or inside the building that contained that unit.

Data on *sinks with piped water* were obtained from questionnaire item H31, recorded for both occupied and vacant housing units. For classification as a housing unit possessing a sink with piped water, the sink must be in the unit itself or inside the building containing the housing unit enumerated.

Questionnaire items H17 addressed the *type of toilet facilities* both in occupied and vacant housing units. A flush toilet consisted of any toilet connected to piped water and emptied into a public sewer, septic tank, or cesspool. If the unit did not have a flush toilet, the census asked a respondent to identify the type of toilet facility in his or her housing unit — categorized as "Outhouse or privy" or "Other or none."

The 2000 census collected data on bathtub or shower with questionnaire item H16 both for occupied and vacant housing units. A bathtub or shower was counted only if connected permanently to piped running water — thus excluding equipment like portable bathtubs.

Questionnaire items H27 concerned *cooking facilities* and were asked at both occupied and vacant housing units. Main cooking facilities were those used most often for the preparation of meals; they could be located either "Inside" or "Outside" the housing unit enumerated or in the building containing that housing unit. The 2000 census classified units with cooking facilities according to the energy used to power them, although the present study does not consider this information. A housing unit with "No cooking facilities" comprised a unit with no cooking facilities available either inside or outside the building containing it.

Finally, the census obtained data on *refrigerators* from questionnaire item H30, recorded for occupied and vacant housing units. A refrigerator could be located in the housing unit enumerated or in a kitchen elsewhere in the building containing the unit. Housing units with "No refrigerator" were those utilizing any type of cooling system other than an electric or gas refrigerator, as well units that did not possess this appliance.

Limitations. No apparent limitations affect any of the equipment characteristics considered in this report.

**Comparability.** All data related to plumbing were reported for year-round housing units in 1980 and for total housing units in 1990, 1995 and 2000. Information on cooking facilities in Palau similarly was collected first in 1980; data were reported for year-round housing units in 1980 and all housing units in 1990. The 1980 census distinguished between mechanical and ice refrigerators that it reported for year-round housing units. In 1990 and later, the census distinguished between electric and gas refrigerators, classifying units with ice refrigerators under "No refrigerator" and reporting the results for total housing units.

### **Analysis of Housing Characteristics Data**

#### *General Housing Characteristics*

The 2000 Republic of Palau census recorded 3,350 occupied housing units, an increase of 13 percent over the nearly 2,973 units reported in the 1995 census (Table 15.1). The number of occupied units, as well as owner- and renter-occupied units, increased during the 1980s and 1990s. The rental inventory grew until 1995, but then dropped off somewhat in 2000.

Table 15.1. Tenure by Occupancy: 1986 to 2000

Tenure	Year			
	2000	1995	1990	1986
Total:	3,350	2,973	2,885	2,501
Owner-occupied	2,654	2,254	2,204	1,823
Renter-occupied	696	719	681	618
Cash-rent	475	379	263	190
No cash rent	221	340	418	428
Not stated	-	-	-	60

Source: OPS, 1995 & 2000 Censuses, Table H01;

The increase in rental vacancy rate during the 1980s and 1990s was probably a result of this portion of the housing inventory developing very rapidly over the decade and having relatively little time to adjust to evolving market demands — particularly in light of the large influx of immigrants who use this type of housing. Moreover, although the number of renter-occupied units in Palau increased by nearly two-and-one-half times between 1980 and 2000, it still totaled fewer than 700 units at the end of the decade.

As Table 15.2 shows, the 114 vacant units enumerated in the 2000 were a very tiny part of the total housing inventory. Of course, the definition of a “vacant” unit in the Pacific Islands is more difficult than elsewhere because insulation, heating, and cooling are not required. The low vacancy rate thus also translates into a small absolute number of vacant units that could disappear very quickly with slight changes in market conditions.

In 2000 Koror State contained the majority of all housing units as well as each type of occupied unit in Palau (Table 15.2). Housing inventories typically respond to market demand. Much of this demand in Koror probably resulted from the increase in the state's immigrant population during the 1980s. In addition, as the center for government and economic activity in the republic, Koror State hosts people temporarily in residence on official activities or business, providing another source of demand for rental housing. The amount of housing in Airai State was a distant second to that of Koror, with the remaining states containing relatively small numbers of each type of housing unit considered.

Table 15.2. Housing Units by Occupancy, Vacancy and State of Residence: 2000

State of Residence	Total Housing Units	Occupied Housing Units	Owner-occupied Housing Units			Renter occupied Housing units			Vacant Units
			Total	With Mortgage	Without/No Mortgage	Total	For Cash rent	No Cash rent	
Total:	3,464	3,350	2,654	476	2,178	696	475	221	114
Aimeliik	67	50	48	9	39	2	1	1	17
Airai	338	330	257	46	211	73	27	46	8
Angaur	47	47	45	14	31	2	1	1	-
Hatoihobei	8	8	8	-	8	-	-	-	-
Kayangel	43	37	37	6	31	-	-	-	6
Koror	2,240	2,219	1,612	297	1,315	607	445	162	21
Melekeok	77	60	60	16	44	-	-	-	17
Ngaraard	125	109	108	18	90	1	1	-	16
Ngerchelom	72	72	70	6	64	2	-	2	-
Ngardmau	74	70	69	14	55	1	-	1	4
Ngaremlengui	46	46	46	1	45	-	-	-	-
Ngatpang	68	68	67	33	34	1	-	1	-
Ngchesar	44	44	42	3	39	2	-	2	-
Ngiwal	43	43	41	1	40	2	-	2	-
Peleliu	160	135	132	12	120	3	-	3	25
Sonsorol	12	12	12	-	12	-	-	-	-

Source: 2000 Census, Table H01, OPS

Most houses in Palau were constructed relatively recently (Table 15.3). As of Census Day 2000, about 1 in every 5 of the housing units had been constructed during the 5 years before the census, 1 in 3 in the 1990s, and about 2 of every 3 in the 20 years before the census. Koror State influenced much of the republic-wide residential construction trends. Airai State, with its recent growth in population and housing, contained a relatively large proportion of units constructed in 1990 or later.

Table 15.3. Year Structure Built, Palau: 2000

State	Total	1999-2000	1995-1998	1990-1994	1980-1989	1970-1979	1960-1969	1940-1969	Before 1940	Don't Know
Total:	3,350	182	481	556	908	598	290	98	12	225
Kayangel	37	6	5	6	10	6	-	2	-	2
Ngarchelong	70	4	1	21	26	12	4	2	-	-
Ngaraard	109	12	11	25	24	24	8	3	-	2
Ngwal	43	1	4	2	7	19	9	-	-	1
Melekeok	60	2	12	16	11	12	3	4	-	-
Ngchesar	72	2	6	6	18	13	7	16	3	1
Airai	330	19	69	66	127	35	4	3	2	5
Aimeliik	50	1	5	5	22	8	3	1	-	5
Ngatpang	44	3	3	9	21	7	1	-	-	-
Ngardmau	46	2	11	12	10	6	3	2	-	-
Ngaremlengui	68	6	15	10	11	14	9	-	1	2
Angaur	47	-	2	5	12	10	13	4	-	1
Peleliu	135	2	8	23	35	36	18	8	1	4
Koror	2,219	114	321	350	571	395	208	53	5	202
Sonsorol	12	5	5	-	2	-	-	-	-	-
Hatohobei	8	3	3	-	1	1	-	-	-	-

Source: 2000 Census, Table H02, OPS

Table 15.4 shows the year the householder moved into the housing unit. About 16 percent of the householders moved into their unit in 1999 or 2000, within about a year of the census. Since 38 percent moved into their units in 1995 or later, and 55 percent in 1990 or later, the majority of householders moved into these specific units within 10 years of the census. The census conventions were that if a house was torn down and rebuilt, the time of initial moving was to be used, but it is difficult to assess whether the respondents and enumerators fully grasped this concept. Since buildings in the tropics don't last as long as in other climates, and the large amount of both internal and international migration, it is not surprising that data show much recent movement.

Table 15.4. Year Householder Moved Into Unit, Palau: 2000

State	Total	1999-2000	1995-1998	1990-1994	1985-1989	1975-1984	1974 or Earlier
Total:	3,350	528	729	582	431	613	467
Kayangel	37	7	9	7	4	5	5
Ngarchelong	70	4	2	22	11	23	8
Ngaraard	109	19	21	20	8	24	17
Ngwal	43	3	6	2	-	11	21
Melekeok	60	5	13	15	7	8	12
Ngchesar	72	6	16	9	9	15	17
Airai	330	48	89	67	46	63	17
Aimeliik	50	4	9	8	8	16	5
Ngatpang	44	4	8	10	10	9	3
Ngardmau	46	3	12	11	6	9	5
Ngaremlengui	68	9	17	10	6	13	13
Angaur	47	1	5	6	5	12	18
Peleliu	135	8	24	24	20	29	30
Koror	2,219	398	490	371	291	374	295
Sonsorol	12	6	5	-	-	1	-
Hatohobei	8	3	3	-	-	1	1

Source: 2000 Census, Table H08, OPS

### Structural Characteristics

The majority of housing units recorded in the 2000 census of Palau were single, detached structures — about 75 percent (or 3 of every 4) of all occupied units (Table 15.5). Most of the remaining units were in single attached structures, with multiple-unit structures accounting for all but a few remaining units. The 2000 census counted a few units classified as "other," like campers, vans, and shacks.

Table 15.5. Occupied Housing Units in Structure: 1980 to 2000

Number of Units	Year			
	2000	1995	1990	1980
Total:	3,350	3,183	2,885	2,039
1 unit detached	2,503	2,385	2,355	1,676
1 unit attached	456	326	262	228
2 apartments	65	45	33	24
3 or 4 apartments	89	82	55	55
5 or more apartments	222	141	132	56
Mobile home/trailer	-	-	4	-
Other	15	19	44	-

Sources: 1995 &amp; 2000 Censuses, Table H02, 1990 Census, Table H01, &amp; 1980 Census, Table 3.

Notes: (1) Data for 1995 include all housing units comprising occupied &amp; vacant housing units

(2) "Other" in 1995 includes 162 housing units not reported

The distribution of housing in Palau by number of units was similar to the distribution reported over the two decades. The most evident changes over the decades were relative increases in owner-occupied and a relative decrease in renter-occupied single detached units. The former trend no doubt resulted from the construction boom during the 1980s and 1990s. Despite increasing Western influence and changes in the types of housing available, Palauans continue to live in single, detached units — a unit type particularly suitable for the larger families and fluid residential patterns. The relative decrease in renter-occupied single detached housing units, conversely, was a consequence of the more rapid growth in multi-unit rental property during the 1980s and 1990s.

In 2000, all states in Palau had single, detached occupied housing units — the traditional type of residential structure found in the republic (Table 15.6). Other unit types were much less universal, with most located in Koror. With very few exceptions, Koror State contained all multi-unit residential structures. Few housing units were classified under "Other" — non-traditional housing options chosen by individuals residing in the two most rapidly growing states in the republic.

Table 15.6. Occupied Housing Units in Structure by State of Residence: 2000

State of Residence	Total	Units in Structure					Other
		1 unit detached	1 unit attached	Two apartments	3 or 4 apartments	5 or more apartments	
Total:	3,350	2,510	449	65	89	222	15
Aimeliik	50	41	9	-	-	-	-
Airai	330	256	58	6	3	7	-
Angaur	47	45	-	-	-	-	2
Hatohebei	8	5	3	-	-	-	-
Kayangel	37	32	5	-	-	-	-
Koror	2,219	1,534	322	57	85	211	10
Melekeok	60	56	4	-	-	-	-
Ngaraard	109	87	18	2	1	-	1
Ngerchelung	72	71	1	-	-	-	-
Ngardmau	70	69	1	-	-	-	-
Ngaremlengui	46	45	1	-	-	-	-
Ngatpang	68	58	8	-	-	-	2
Ngchesar	44	39	5	-	-	-	-
Ngiwal	43	34	9	-	-	-	-
Peleliu	135	127	4	-	-	4	-
Sonsorol	12	11	1	-	-	-	-

Source: 2000 Census, Table H02, OPS

In addition to growth in the total number of housing units in Palau and changes in their types of structures, the size of the structures also changed. In 1980 the median number of rooms per occupied housing unit was only 3.2. Over the decades, this measure increased to 4.0 by 1990, 4.5 in 1995, and 4.8 in 2000 (Table 15.7). The number of residential units with three or fewer rooms decreased over the same time period, while the number of housing units containing six or more rooms increased. Although many of these changes in Palau's housing stock were due to new construction, the modification of existing units through building additions to existing small structures produced the same result. Whatever the means used to change size, homes had more rooms during the 1990s than the 1980s.

Table 15.7. Occupied Housing Units by Number of Rooms: 1980 to 2000

Number of Rooms	Housing Units			
	2000	1995	1990	1980
Total:	3,350	3,183	3,312	2,039
1 room	127	96	219	230
2 rooms	300	245	348	430
3 rooms	530	433	600	531
4 rooms	855	751	899	430
5 rooms	828	746	717	270
6 rooms	393	379	308	106
7 rooms	156	187	126	31
8 or more rooms	161	175	95	11
Not reported	-	171	-	-
Median	4.8	4.5	4.0	3.2

Sources: 1995 &amp; 2000 Census, Table H04; 1990 Census Table 102; 1980 Census, Table 3.

Notes: Data for 1990 &amp; 1995 include all housing units comprising occupied &amp; vacant housing units

The number of rooms per occupied housing unit varied among Palau's states in 2000 (Table 15.8). Koror State, which contained nearly two-thirds of the republic's occupied housing units, also contained units with the largest number of rooms. The median number of rooms in the occupied housing of all other states was less. Housing units with many rooms generally reflect Western influence, helping to account for the difference between Koror, the most Westernized state in Palau, and the remaining states in the republic — many of the latter, like Hatohebei and Sonsorol, maintaining much of their traditional way of life.

Table 15.8. Occupied Housing Units by Number of Rooms and State of Residence: 2000

State of Residence	Total	Number of Rooms by Occupied Housing Units							
		1 room	2 rooms	3 rooms	4 rooms	5 rooms	6 rooms	7 rooms	8 or more
Total:	3,350	127	300	530	855	828	393	156	161
Aimeliik	50	2	6	12	15	9	5	1	-
Airai	330	10	35	67	75	86	26	23	8
Angaur	47	1	2	18	15	6	3	1	1
Hatohebei	8	4	1	3	-	-	-	-	-
Kayangel	37	4	2	11	14	5	-	1	-
Koror	2,219	73	195	274	515	594	306	114	144
Melekeok	60	2	6	9	22	16	3	2	-
Ngaraard	109	5	11	27	42	16	5	1	2
Ngerchelong	72	11	10	13	26	6	6	-	-
Ngardmau	70	2	3	10	28	14	8	5	-
Ngaremlengui	46	3	4	18	11	7	2	1	-
Ngatpang	68	1	5	13	17	18	9	2	3
Ngchesar	44	2	3	11	17	5	5	1	-
Ngiwal	43	2	6	17	11	7	-	-	-
Peleliu	135	1	6	22	45	39	15	4	3
Sonsorol	12	4	1	5	2	-	-	-	-

Source: 2000 Census, Table H04, OPS

Another measure of housing unit structure is number of bedrooms per unit. As was the case with the number of total rooms per unit, the median number of bedrooms per unit increased during the 1980s and 1990s (Table 15.9). The number of units with no formal bedrooms — traditional Palauan residential structures — declined over the decade while the number of units with one or more bedrooms increased. The biggest percentage increases occurred in housing units with three or more bedrooms, once again probably representing the growing influence of Western culture.

Table 15.9. Bedrooms: 1980 to 2000

Number of Bedrooms	2000	1995	1990	1980
Total:	3,350	3,014	3,312	2,265
No bedrooms	72	22	252	362
1 bedroom	645	567	634	573
2 bedrooms	1,062	1,005	1,126	721
3 bedrooms	950	846	898	424
4 bedrooms	388	356	257	149
5 or more bedrooms	233	218	145	36
Median:	2.4	2.4	1.7	1.3

Sources: 1995 &amp; 2000 Census, Table H04; 1990 Census Table 102; 1980 Census, Table 3.

Note: 1980 data are for year-round units; in 1995, 169 group-quarters didn't report bedrooms

In addition to containing the most housing units in Palau, the state of Koror contained a disproportionate number of units with three or more bedrooms (Table 15.10). This state contained virtually all of the residential units with four or more bedrooms — and relatively few units with zero or one bedroom. More remote places in Palau, probably by virtue of less exposure to Western influence, less accessibility, and generally lower income (making the construction of larger housing units more difficult), had larger proportions of housing units with few or no bedrooms.

Table 15.10. Occupied Housing Units by Number of Bedrooms and State of Residence

State of Residence	Total	Number of Bedrooms in Occupied Housing Units				
		None	One	Two	Three	Four or more
Total:	3,350	72	645	1,062	950	621
Aimeliik	50	4	14	16	14	2
Airai	330	1	65	98	109	57
Angaur	47	-	16	19	9	3
Hatohebei	8	3	3	2	-	-
Kayangel	37	3	8	19	6	1
Koror	2,219	26	399	634	656	504
Melekeok	60	-	16	30	10	4
Ngaraard	109	6	24	57	17	5
Ngerchelong	72	19	12	31	8	2
Ngardmau	70	3	10	28	21	8
Ngaremlengui	46	-	26	18	2	-
Ngatpang	68	1	14	19	21	13
Ngchesar	44	-	15	18	7	4
Ngiwal	43	1	10	18	14	-
Peleliu	135	1	12	49	55	18
Sonsorol	12	4	1	6	1	-

Source: 2000 Census, Table H01, OPS

In contrast to recent changes in the composition of housing, the materials used to construct housing units in Palau changed relatively little over the decades. Here we focus on three parts of a residential structure — the roof, outside walls, and foundation. In 1980, most roofs of housing units in Palau were metal, a trend that continued throughout the 1980s and 1990s (Table 15.11). The portion of housing units with concrete roofs tripled during the 1980s, and increased by about half during the 1990s, accompanying the introduction of new construction methods and the increase of multiple unit structures (most of the latter being built with concrete roofs). The units with wood or thatch roofs, in contrast, decreased during the two decades. Their decline in absolute numbers of units implies the replacement of roofs that no longer serve their purpose or the replacement of entire older units. Most of the new housing built between 1980 and 2000 had roofs constructed from the latter two materials — the persistence of metal due in part to its much lower cost compared to concrete.

Table 15.11. Occupied Housing Units by Roof Material: 1980 to 2000

Type of Roof Material	Occupied Housing Units and Years				
	2000	1995	1990	1986	1980
Total:	3,350	3,183	3,312	2,501	2,265
Concrete	581	387	348	185	114
Metal	2,615	2,460	2,874	2,200	1,986
Wood	114	84	43	36	124
Thatch	12	66	22	21	29
Other	28	25	25	6	12
Unknown	-	161	-	53	-

Sources: 1995 &amp; 2000 Census, Table H04; 1990 Census Table 102; 1986, Table B4; 1980 Census, Table 3.

Notes: (1) Data for 1980 include year-round housing units (2) Data for 1990 &amp; 1995 incl. all occupied &amp; vacant units

Koror State is having more modern housing as seen in the material used for roofs. More than 95 percent of the total residential units in this state had roofs of metal or poured concrete (Table 15.12). Virtually all cases of the latter, an indication of modern construction and often a feature of multiple unit residential structures, were found in Koror and Airai states. More remote, rural states contained greater percentages of housing with roofs built from traditional materials — with both wood and thatch recorded under "Other" in Table 15.12. A large percentage of rural housing units had metal roofs.

Table 15.12. Occupied Housing Units by Roof Materials and State of Residence

State of Residence	Total	Type of Roof Materials in Occupied Housing units				
		Concrete	Metal	Wood	Thatch	Other
Total:	3,350	581	2,615	114	12	28
Aimeliik	50	-	47	2	-	1
Airai	330	66	254	5	-	1
Angaur	47	3	42	-	-	2
Hatohebei	8	-	5	-	3	-
Kayangel	37	1	35	1	-	-
Koror	2,215	480	1,633	78	6	22
Melekeok	60	3	57	-	-	-
Ngaraard	105	4	102	2	1	-
Ngerchelung	70	1	67	1	-	1
Ngardmau	70	1	58	11	-	-
Ngaremlengui	48	3	42	2	1	-
Ngatpang	67	2	64	1	-	-
Ngchesar	45	3	41	1	-	-
Ngiwal	43	3	37	2	-	1
Peleliu	135	11	120	4	-	-
Sonsorol	12	-	11	-	1	-

Source: 2000 Census, Table H03, OPS

The material used for outside walls of residential units also changed during the 1980s and 1990s — a move towards increasingly modern construction. The use of concrete increased between 1980 and 2000, with both larger numbers and percentages of housing units with poured concrete and concrete block walls (Table 15.13). The number and percentage of housing units with walls constructed from wood similarly increased during the decades. Conversely, the frequency of units with walls of metal or "Other" (primarily thatch) materials decreased during the 1980s and 1990s. Although metal is not a traditional construction material, its use for residential construction has long been prevalent in Micronesia. Concrete and wood replace metal walls because they are sturdier. They are also more expensive. The slight discrepancies in trends for wall construction in the 1986 data probably are due to differences in definitions and data collection procedures used by the different censuses.

Table 15.13. Occupied Housing Units by Outside Walls' Material: 1980 to 2000

Outside Walls Material	Occupied Housing Units and Census Years				
	2000	1995	1990	1986	1980
Total:	3,350	3,183	3,312	2,501	2,265
Concrete	1,354	1,059	879	594	378
Poured	407	230	136	214	71
Blocks	947	829	743	380	307
Metal	760	906	1,495	1,330	1,347
Wood	1,202	1,024	924	485	523
Other	34	34	14	38	17
Unknown	-	160	-	54	-

Sources: 1995 &amp; 2000 Census, Table H04; 1990 Census Table 102; 1986, Table B4; 1980 Census, Table 3.

Notes: (1) Data for 1980 include year-round housing units (2) Data for 1990 &amp; 1995 incl. all occupied &amp; vacant units

In 2000, most of the housing units in Palau with concrete walls were found in Koror, Airai, and Peleliu states (Table 15.14). Because the first two states have experienced the greatest recent growth in population and housing, it is not unreasonable to expect their residential construction to feature more modern, expensive material. Relatively few housing units in the other rural states of Palau had concrete walls, with the most remote states of Hatohobei and Sonsorol having none at all. The walls of housing units in most rural states were metal, a relatively inexpensive, available, and easily transported alternative to the thatch used in traditional times and the concrete of more modern construction.

Table 15.14. Occupied Housing Units by Wall Materials and State of Residence

State of Residence	Total	Type of Wall Materials in Occupied Housing units				
		Poured Concrete	Concrete Blocks	Metal	Wood	Other
Total:	3,350	407	947	760	1,202	34
Aimeliik	50	1	11	25	12	1
Airai	330	23	116	74	114	3
Angaur	47	3	5	15	22	2
Hatohobei	8	-	-	5	3	-
Kayangel	37	1	3	13	20	-
Koror	2,219	346	677	400	773	23
Melekeok	60	4	9	11	36	-
Ngaraard	109	6	10	21	72	-
Ngerchelung	70	3	8	22	37	-
Ngardmau	46	3	2	24	17	-
Ngaremlengui	68	8	9	35	15	1
Ngatpang	44	-	6	24	12	2
Ngchesar	72	-	5	35	27	1
Ngiwal	43	-	10	21	12	-
Peleliu	135	9	76	30	19	1
Sonsorol	12	-	-	1	11	-

Source: 2000 Census, Table H03, OPS

The foundations of most housing units in Palau in 2000 were constructed of concrete, with most of the remainder built from wood (Table 15.15). As with other portions of a housing unit, concrete represents a more expensive, modern alternative to traditional materials. However, concrete foundations are much more prevalent throughout most of the republic — probably in part due to their long-established dominance among materials used to construct Western-style housing. Most of the units with concrete foundations in 2000 were located in Koror, Airai, and Peleliu states, although Ngaremlengui contained a relatively large percentage of these units. Concrete foundations were much scarcer in the other rural states, with few or none found in Hatohobei and Sonsorol states.

Table 15.15. Occupied Housing Units by Foundation Materials and State of Residence: 2000

State of Residence	Total	Foundation Material for Occupied Housing Units		
		Concrete	Wood pier or pilings	Other
Total:	3,350	2,143	1,173	34
Aimeliik	50	25	23	2
Airai	330	203	126	1
Angaur	47	27	19	1
Hatohobei	8	-	8	-
Kayangel	37	19	18	-
Koror	2,219	1,551	646	22
Melekeok	60	21	39	-
Ngaraard	109	41	67	1
Ngerchelung	70	39	31	-
Ngardmau	46	23	23	-
Ngaremlengui	68	28	39	1
Ngatpang	44	20	24	-
Ngchesar	72	8	64	-
Ngiwal	43	27	13	3
Peleliu	135	111	21	3
Sonsorol	12	-	12	-

Source: 2000 Census, Table H03, OPS



## Utilities

More than 98 percent of all housing units in Palau had electricity by 2000, this percentage having grown substantially since 1980 (Table 15.16). (The figure for 1995 of 100 percent probably is anomalous, and due to the computer editing procedures.) Because the housing stock also increased rapidly over the same decade, the growing proportion of residential units with electricity shows that most new units had electric power and many units without in 1980 became connected over the next 20 years.

Table 15.16. Housing Units with Electric Power: 1980 to 2000

Electric Power	2000	1995	1990	1986	1980
Housing Units	3,350	2,973	3,312	2,501	2,265
With Electricity	3,284	2,973	2,898	2,137	1,715
Percent	98.0	100.0	87.5	85.4	75.7
No Electricity	66	-	414	312	550
Not Stated	-	-	-	52	-

Sources: U.S. Census for 1980 and 1990; OPS for 1986, 1995 and 2000

Nearly all of the housing units in Koror State had electricity in 2000 (Table 15.17). Electrification was widespread on Babeldaob Island as well, with many units in all states having electric power in 2000. More populated states outside Koror and Babeldaob, like Angaur and Peleliu, also had widespread electrification. Neither Sonsorol nor Hatohobei State reported using electricity in 2000. To complement data on electric power, Table 15.17 also presents data on other housing indicators. About 30 percent of all units had a microwave oven, a relatively new question on Palau's census form. About 93 percent of the units had a sink with piped water, 91 percent had a telephone, 90 percent had a radio, and 86 percent had television. As would be expected, Koror generally had the highest percentage for each of these indicators, usually followed by Airai, and then the other States. More historic detail on selected items appears below.

Table 15.17. Housing Indicators by State of Residence: 2000

State of Residence	Housing Units	Households With											
		Microwave Oven		Sink with piped water		Electricity		Telephone		Radio		Television	
		Units	%	Units	%	Units	%	Units	%	Units	%	Units	%
Total:	3,350	1,012	30.2	3,107	92.7	3,284	98.0	3,050	91.0	3,007	89.8	2,884	86.1
Aimeliik	50	11	22.0	47	94.0	48	96.0	40	80.0	46	92.0	35	70.0
Airai	330	92	27.9	319	96.7	327	99.1	302	91.5	324	98.2	305	92.4
Angaur	47	3	6.4	41	87.2	46	97.9	41	87.2	36	76.6	28	59.6
Hatohobei	8	-	-	1	12.5	-	-	-	-	6	75.0	-	-
Kayangel	37	1	2.7	10	27.0	35	94.6	32	86.5	35	94.6	19	51.4
Koror	2,219	818	36.9	2,142	96.5	2,200	99.1	2,063	93.0	2,007	90.4	2,031	91.5
Melekeok	60	6	10.0	58	96.7	58	96.7	58	96.7	51	85.0	46	76.7
Ngarard	109	6	5.5	90	82.6	95	90.8	90	82.6	72	66.1	57	52.3
Ngerchellong	70	6	8.6	67	95.7	70	100.0	67	95.7	64	91.4	53	75.7
Ngardmau	46	5	10.9	40	87.0	46	100.0	36	78.3	41	89.1	31	67.4
Ngaremlengui	68	11	16.2	56	82.4	66	97.1	55	80.9	61	89.7	51	75.0
Ngatpang	44	8	18.2	32	72.7	43	97.7	40	90.9	41	93.2	34	77.3
Ngchesar	72	10	13.9	46	63.9	68	94.4	65	90.3	55	76.4	58	80.6
Ngiwal	43	8	18.6	43	100.0	43	100.0	39	90.7	39	90.7	31	72.1
Peleliu	135	27	20.0	115	85.2	135	100.0	122	90.4	124	91.9	105	77.8
Sonsorol	12	-	-	-	-	-	-	-	-	5	41.7	-	-

Source: 2000 Census, Table H07, OPS

In 1990, only 1 in every 3 units in Palau had at least one telephone (Table 15.18). By 1995, more than half the units had a phone, and by 2000, more than 9 in 10 units had phones.

Table 15.18. Housing Units by Whether Have Telephone, Radio, Television and Air-Conditioning: 1990, 1995 and 2000

Housing Indicators	Housing Indicators by Census Years			Percentages		
	2000	1995	1990	2000	1995	1990
Telephone						
Housing Units	3,350	2,973	2,885	100.0	100.0	100.0
No Telephone	300	1,365	1,925	9.0	45.9	66.7
At least one telephone	3,050	1,608	960	91.0	54.1	33.3
Radio						
Housing Units	3,350	2,973	2,885	100.0	100.0	100.0
No Radio	343	510	432	10.2	17.2	15.0
At least one radio	3,007	2,463	2,453	89.8	82.8	85.0
Television						
Housing Units	3,350	2,973	2,885	100.0	100.0	100.0
No Television	466	722	1,202	13.9	24.3	41.7
At least one television	2,884	2,251	1,683	86.1	75.7	58.3
Air-Conditioning						
Housing Units	3,350	2,973	3,312	100.0	100.0	100.0
No Air-Conditioning	1,298	720	2,861	38.7	24.2	13.6
At least one Air-Condition	2,052	2,253	451	61.3	75.8	86.4

Sources: USBC 1990, Table 104; 1995 &amp; 2000 Censuses, OPS, Table H07

In 1990, fully 85 percent of Palau's units had a radio. This percentage dropped to 83 percent in 1995, and the absolute numbers increased, suggesting new units for immigrants were not yet equipped with radios. By 2000, about 90 percent of the units had radios. The number of units having televisions showed the same explosive growth as telephones. While 58 percent of Palau's units in 1990 had a television, by 1995 that figure grew to 76 percent, and was 86 percent in 2000. Many of the remaining units did not have electricity.

Furthermore, the percentage of units with air conditioning also increased greatly during the 1990s. In 1990, 14 percent of the units had air conditioning. By 1995, almost 1 in 4 units were equipped, and by 2000, almost 2 in 5. Of course, this large increase in capacity has implications for the utilities' capacity in the Republic; as more households have more and more appliances, capacity will have to keep up.

Koror had the most occupied units that were air-conditioned (Table 15.19). Palau had 2,052 occupied units (about 61 percent) that were not air-conditioned, with Hatohebei and Sonsorol without any air-conditioning.

Table 15.19. Occupied Housing Units by Air-Conditioning and State of Residence: 2000

State of Residence	Total	Air-Conditioning			No Air-conditioning	
		Total	Central System	1 room unit		2 or more rooms
Total:	3,350	1,298	253	651	394	2,052
Aimeliik	50	9	2	6	1	41
Airai	330	119	19	66	34	211
Angaur	47	3	2	1	-	44
Hatohebei	8	-	-	-	-	8
Kayangel	37	2	-	2	-	35
Koror	2,219	1,097	221	531	345	1,122
Melekeok	60	13	1	9	3	47
Ngaraard	109	8	2	6	-	101
Ngerchelongo	70	2	1	1	-	68
Ngardmau	46	1	-	-	1	45
Ngaremlengui	68	3	-	3	-	65
Ngatpang	44	7	1	5	1	37
Ngchesar	72	4	-	2	2	68
Ngiwal	43	2	-	1	1	41
Peleliu	135	28	4	18	6	107
Sonsorol	12	-	-	-	-	12

Source: 2000 Census, Table H07, OPS

Another important indicator of modern development is water supply. The number of housing units in Palau with piped water more than doubled between 1980 and 1990, and continued the upward trend to the 2000 Census (Table 15.20). Although the majority of these units had cold water only, the number of units with both hot and cold piped water nearly tripled over the decade of the 1980s, and then more than doubled between 1990 and 2000. In 2000, only 128 units (4 percent of the total) had no piped water, down from 401 housing units (about 12 percent of the total units) in 1990, which in itself was less than half the number without piped water in 1980.

Table 15.20. Occupied Housing Units by Hot and Cold Piped Water: 1980 to 2000

	2000	1995	1990	1980
Hot and Cold Piped Water				
Total:	3,350	2,973	3,312	2,039
Hot and Cold Piped Water	848	618	402	125
Cold water only	2,374	2,188	2,509	1,192
No piped water	128	167	401	722

Sources: 1995 & 2000 Censuses, Table H06, OPS; 1990 Census, Table I03; 1980 Census, Table I0.

Note: Data for 1990 include all housing units comprising occupied and vacant units

In 2000, most of the housing units with piped water were located in Koror State (Table 15.21). Included were virtually all the units with hot piped water. In contrast, the states of Hatohobei and Sonsorol contained no housing units in 2000 with piped water. Remaining states in the republic fell somewhere between the extremes of Koror State and the latter two. Most units usually possessed cold piped water but many had hot water as well.

Table 15.21. Occupied Housing Units by Hot and Cold Piped Water and State of Residence: 2000

State of Residence	Total	Hot and Cold Piped Water					
		In the Unit	In the Building	Cold Water only in Unit	Cold Water only in Building	Cold Water only Outside	No piped Water
Total:	3,350	364	484	1,048	1,183	143	128
Aimeliik	50	2	3	6	34	2	3
Airai	330	16	55	238	4	14	3
Angaur	47	5	8	14	16	3	1
Hatohobei	8	-	-	-	-	-	8
Kayangel	37	-	1	4	4	3	25
Koror	2,219	324	348	633	806	71	37
Melekeok	60	4	2	45	7	1	1
Ngaraard	109	1	5	48	35	11	9
Ngerchelung	70	-	10	4	46	10	-
Ngardmau	46	-	3	3	35	1	4
Ngaremlengui	68	5	9	7	42	3	2
Ngatpang	44	1	4	2	20	13	4
Ngchesar	72	-	-	1	44	8	19
Ngiwal	43	3	25	5	9	1	-
Peleliu	135	3	11	38	81	2	-
Sonsorol	12	-	-	-	-	-	12

Source: 2000 Census, Table H07, OPS

Most housing units in Palau received water through the public utility system (often also supplemented by a catchments system) in 2000 (Table 15.22). Alternative sources of water, both less modern and less reliable than a public system, declined over the same 20-year period to less than 5 percent of all the occupied units.

Table 15.22. Occupied Housing Units by Source of Water: 1980 to 2000

Source of Water	2000	1995	1990	1986	1980
Total:	3,350	2,973	3,312	2,501	2,265
Public system	1,633	2,745	2,875	1,964	1,493
Public system & catchments	1,565	na	45	155	90
Catchments, tanks, drums	118	175	325	295	560
Other source	34	53	67	87	122

Sources: 1995 &amp; 2000 Censuses, Table H06, OPS; 1990 Census, Table 104; 1980 Census, Table B5

Note: (1) Data for 1990 include all occupied and vacant housing units

(2) Data for 1980 include year-round housing; (3) Other source includes public standpipe

The vast majority of households receiving water from a public system in 2000 were in Koror and Airai states (Table 15.23). Even in the relatively modern setting of Koror State, many units had access both to the public water system and catchments, should the former fail for some reason. The same states that had little or no piped water — namely Hatohobei, Kayangel, and Sonsorol — also had little or no access to public water systems. Remaining rural states often had "Other" water sources, usually catchments systems, occasionally complemented by tanks.

Table 15.23. Occupied Housing Units by Source of Water and State of Residence: 2000

State of Residence	Total	Source of Water				
		Public System	Public System and Catchments	Catchments, Tanks or Drums	Public Standpipe	Some Other Source
Total:	3,350	1,633	1,565	118	10	24
Aimeliik	50	34	7	6	1	2
Airai	330	88	239	2	-	1
Angaur	47	18	28	1	-	-
Hatohobei	8	-	-	8	-	-
Kayangel	37	1	2	32	-	2
Koror	2,219	1,215	974	16	7	7
Melekeok	60	29	27	4	-	-
Ngaraard	109	58	40	9	1	1
Ngerchelung	70	15	54	1	-	-
Ngardmau	46	44	1	1	-	-
Ngaremlengui	68	50	13	4	-	1
Ngatpang	44	3	38	1	1	1
Ngchesar	72	29	15	19	-	9
Ngiwal	43	37	6	-	-	-
Peleliu	135	12	121	2	-	-
Sonsorol	12	-	-	12	-	-

Source: 2000 Census, Table H06, OPS

The majority of units did not drink water from the public system, but rather relied on rainwater (Table 15.24). This use of rainwater was prevalent in all States. Some units in Koror, in particular, purchased bottled water, but bottled water was either unavailable or too expensive in the other States.

Table 15.24. Occupied Housing Units by Source of Drinking Water and State of Residence: 2000

State of Residence	Total	Source of Drinking Water			
		Public water	Rainwater	Bottled water	Rain & Bottled water
Total:	3,350	545	2,254	401	150
Aimeliik	50	1	46	-	3
Airai	330	40	255	21	14
Angaur	47	2	44	1	-
Hatohebei	8	-	8	-	-
Kayangel	37	1	34	-	2
Koror	2,219	280	1,450	377	112
Melekeok	60	33	25	-	2
Ngaraard	109	61	44	-	4
Ngerchelung	70	13	56	-	1
Ngardmau	46	27	17	1	1
Ngaremlengui	68	46	22	-	-
Ngatpang	44	-	41	1	2
Ngchesar	72	14	55	-	3
Ngiwal	43	27	11	-	5
Peleliu	135	-	134	-	1
Sonsorol	12	-	12	-	-

Source: 2000 Census, Table H06, OPS

Data on sewage disposal for housing units in Palau show that the percentage of units connected to the public sewer increased from 3 percent in 1980 to 30 percent in 1990 and on to more than half in 2000 (Table 15.25). The numbers themselves also showed these great increases, with 66 units connected to public sewers in 1980 compared to 1,702 units in 2000. The number of units using a septic tank or cesspool, or some other means, increased considerably between 1980 and 1990, but less spectacularly between 1990 and 2000.

Table 15.25. Sewage Disposal: 1980 to 2000

Sewage Disposal	2000	1995	1990	1980
Total:	3,350	2,973	3,312	2,265
Public sewer	1,702	1,239	978	66
Percent	50.8	41.7	29.5	2.9
Septic tank--cesspool	931	885	490	378
Other source	717	849	1,844	1,821

Sources: 1995 &amp; 2000 Censuses, Table H06, OPS; 1990 Census, Table 104; 1980 Census, Table B5.

State-level data on sewage disposal in 2000 show that public sewer connections were in Koror State (Table 15.26) — making use of the sewage treatment plant there. Septic tanks and cesspools, modern alternatives to public systems, existed primarily in Koror and Airai states — with a few scattered elsewhere. However, with the exception of Koror, housing units in Palau tended to use other methods of sewage disposal. The widespread use of "other" disposal shows how far the government needs to go to reduce the health risks that often accompany less modern means of sewage disposal and treatment.

Table 15.26. Occupied Housing Units by Sewage System and State of Residence: 2000

State of Residence	Total	Sewage System		
		Public Sewer	Septic tank or Cesspool	Other means
Total:	3,350	1,702	931	717
Aimeliik	50	1	30	19
Airai	330	18	246	66
Angaur	47	3	22	22
Hatohebei	8	-	-	8
Kayangel	37	1	4	32
Koror	2,219	1,663	377	179
Melekeok	60	-	53	7
Ngaraard	109	-	29	80
Ngerchelung	70	1	31	38
Ngardmau	46	2	3	41
Ngaremlengui	68	1	35	32
Ngatpang	44	2	32	10
Ngchesar	72	-	18	54
Ngiwal	43	6	29	8
Peleliu	135	4	22	109
Sonsorol	12	-	-	12

Source: 2000 Census, Table H06, OPS

## Plumbing

The number of housing units in Palau with complete plumbing increased from about 12 percent to about 18 percent during the two decades (Table 15.27). The number of residential units with hot and cold running water and the units with just cold running water both grew during the decades, the latter increasing at a much faster pace. Nevertheless, most housing units in Palau still lacked U.S.-defined complete plumbing facilities in 2000.

Table 15.27. Occupied Housing Units by Plumbing Facilities: 1980 to 2000

Plumbing Facilities	2000	1995	1990	1980
Total:	3,350	2,973	2,885	2,039
With complete plumbing	605	569	1,001	245
With hot & cold water	311	248	322	116
With cold water only	298	321	679	129
Lacking complete plumbing	2,741	2,404	1,884	1,794

Sources: 1995 &amp; 2000 Censuses, Table H05, OPS; 1990 Census, Table 103; 1980 Census, Table 10.

In 2000 Koror State continued to contain most of the housing units in Palau with complete plumbing facilities and 92 percent of the units with hot water (Table 15.28). Airai State contained most of the remaining occupied residences with plumbing. Although most housing units in more rural states lacked complete plumbing in 2000, so did most units in Koror State.

Table 15.28. Occupied Housing Units by Plumbing Facilities and State of Residence: 2000

State of Residence	Total	Complete plumbing with:			Without complete plumbing
		Total	Hot and Cold water	Cold water Only	
Total:	3,350	609	311	298	2,741
Aimeliik	50	2	2	-	48
Airai	330	48	16	32	282
Angaur	47	2	1	1	45
Hatohebei	8	-	-	-	8
Kayangel	37	-	-	-	37
Koror	2,219	531	288	243	1,688
Melekeok	60	17	2	15	43
Ngaraard	109	5	-	5	104
Ngerchelung	70	-	-	-	70
Ngardmau	46	-	-	-	46
Ngaremlengui	68	-	-	-	68
Ngatpang	44	1	-	1	43
Ngchesar	72	-	-	-	72
Ngiwal	43	1	-	1	42
Peleliu	135	2	2	-	133
Sonsorol	12	-	-	-	12

Source: 2000 Census, Table H05, OPS

The number of housing units in Palau with flush toilets inside the unit increased dramatically during the 1980s and 1990s (Table 15.29). While about 14 percent of the units in 1980 had inside flush toilets, this value increased to 35 percent in 1990, 52 percent in 1995, and fully 64 percent in 2000 – that is, in 20 years the increase was from 1 in every 7 units to 2 of every 3.

Table 15.29. Occupied Housing Units by Toilet Facilities: 1980 to 2000

Toilet Facilities	2000	1995	1990	1980
Total:	3,350	2,973	3,312	2,039
Flush toilet inside	2,129	1,545	1,147	291
Flush toilet outside	468	320	386	153
Outhouse or privy	712	1,049	1,725	1,442
Other or none	41	55	54	153

Sources: 1995 &amp; 2000 Censuses, Table H06, OPS; 1990 Census, Table 103; 1980 Census, Table 10.

Note: Data for 1990 include all housing units comprising occupied &amp; vacant units

As for the other characteristics, Koror State contained most of the modern toilets in the Republic of Palau in 2000, with most of the remainder located in Airai State (Table 15.30). Koror State was the only state in the republic with more than half its housing units having a flush toilet. In contrast, a large proportion of the residential units located elsewhere in Palau had no flush toilet — including states generally associated with more traditional housing facilities, like Hatohobei and Sonsorol, as well as more developed states like Airai, Angaur, and Peleliu.

Table 15.30. Occupied Housing Units by Toilet Facilities and State of Residence: 2000

State of Residence	Total	Toilet Facilities				
		Flush Toilet In the Unit	Flush Toilet in Building	Flush Toilet Outside	Outhouse or Privy	Other or None
Total:	3,350	735	1,394	468	712	41
Aimeliik	50	3	11	14	15	3
Airai	330	50	157	45	78	-
Angaur	47	3	7	-	37	-
Hatohobei	8	-	-	-	7	1
Kayangel	37	1	2	2	30	2
Koror	2,219	618	1,083	276	222	20
Melekeok	60	26	17	5	12	-
Ngaraard	109	11	17	10	70	1
Ngerchelong	70	6	17	6	36	5
Ngardmau	46	-	3	12	31	-
Ngaremlengui	68	7	19	12	30	-
Ngatpang	44	5	11	14	14	-
Ngchesar	72	-	12	7	51	2
Ngiwal	43	1	16	19	7	-
Peleliu	135	4	22	46	60	3
Sonsorol	12	-	-	-	8	4

Source: 2000 Census, Table H06, OPS

As seen in Table 15.31, the percentage of units with a bathtub or shower increased phenomenally between 1980 and 1990 (from 15 percent of the units to 93 percent), stayed at about that level in 1995, then increased again to about 97 percent of the units in the 2000 Census. Of all the changes in Palau's housing characteristics during the 1980s, one of the greatest increases occurred in the number of units with bathtubs or showers. The number of housing units lacking these bathing facilities decreased accordingly.

Table 15.31. Occupied Housing Units by Bathtub or Shower: 1980 to 2000

Bathtub or Shower	2000	1995	1990	1980
Total:	3,350	2,973	3,312	2,039
Bathtub or Shower	3,255	2,789	3,086	309
Percent	97.2	93.8	93.2	15.2
No Bathtub or Shower	95	184	226	1,730

Sources: 1995 &amp; 2000 Censuses, Table H06, OPS; 1990 Census, Table 103; 1980 Census, Table 10.

Note: Data for 1990 include all housing units comprising occupied &amp; vacant units

Only the most rural states in Palau generally lacked a complete inventory of modern bathing facilities in 2000 (Table 15.32). Although Koror State contained relatively few housing units that lacked this equipment, several other states had a greater percentage of units with a bathtub or shower. The trait distinguishing rural and urban housing units appears to be the location of bathing facilities. In contrast to most states in the republic where bathtubs and showers were located outside housing units, nearly half the Koror State units had these features located inside the residence.

Table 15.32. Occupied Housing Units by Bathtub or Shower and State of Residence: 2000

State of Residence	Total	Bathtub or Shower:			No Bathtub or Shower
		Total	In the Unit	In the Building	
Total:	3,350	3,255	695	1,444	95
Aimeliik	50	46	3	11	4
Airai	330	328	50	154	2
Angaur	47	47	3	8	-
Hatohobei	8	8	-	-	-
Kayangel	37	31	1	2	6
Koror	2,219	2,181	601	1,108	38
Melekeok	60	60	20	18	-
Ngaraard	109	102	11	18	7
Ngerchelong	70	65	-	20	5
Ngardmau	46	43	-	4	3
Ngaremlengui	68	64	1	24	4
Ngatpang	44	42	1	12	2
Ngchesar	72	53	-	13	19
Ngiwal	43	42	2	15	1
Peleliu	135	132	6	37	3
Sonsorol	12	11	-	-	1

Source: 2000 Census, Table H06, OPS

## KITCHEN FACILITIES

The final type of residential equipment is kitchen facilities. One of the most important pieces of kitchen equipment is a refrigerator. Although the data on refrigerators are not strictly comparable over time, either in the housing unit types considered or in the data on refrigerators themselves, an increase in the percentage of housing with this item is apparent (Table 15.33). While about 54 percent of the units in 1980 had a refrigerator, this amount increased steadily over time, to 67 percent in 1990, 83 percent in 1995, and fully 93 percent in the 2000 census.

Table 15.33. Occupied Housing Units by Refrigeration: 1980 to 2000

Refrigeration	2000	1995	1990	1980
Total:	3,350	2,973	3,312	2,039
Refrigeration	3,129	2,467	2,212	1,102
Percent	93.4	83.0	66.8	54.0
No refrigeration	221	506	1,100	937

Sources: 1995 &amp; 2000 Censuses, Table H07, OPS; 1990 Census, Table 104; 1980 Census, Table 10.

Note: Data for 1990 include all housing units comprising occupied &amp; vacant units

Table 15.34 shows cooking facilities by type and by State for the 2000 Census. About equal numbers of households used electricity, gas, and kerosene, but distributions varied by State. About 1,000 households used more than one source.

Table 15.34. Occupied Housing Units by Fuel for Cooking and State of Residence: 2000

State of Residence	Total	Electricity	Gas	Kerosene	Electricity and Gas	Electricity and Kerosene	Gas and Kerosene	Electricity, Gas and Kerosene	Other	No Fuel
Total:	3,350	778	700	722	331	277	342	167	1	32
Aimeliik	50	5	1	6	7	13	2	16	-	-
Airai	330	57	74	56	53	26	50	13	-	1
Angaur	47	2	2	23	-	13	5	2	-	-
Hatohebei	8	-	1	6	-	-	-	-	-	1
Kayangel	37	1	1	20	1	3	8	1	1	1
Koror	2,219	694	544	350	229	144	159	85	-	14
Melekeok	60	-	11	11	13	4	8	5	-	8
Ngaraard	109	3	11	65	3	4	19	3	-	1
Ngerchelong	70	-	2	24	4	13	15	12	-	-
Ngardmau	46	-	2	29	1	5	6	2	-	1
Ngaremlengui	68	2	4	13	3	18	10	16	-	2
Ngatpang	44	3	18	3	6	4	6	1	-	3
Ngchesar	72	2	8	29	4	12	14	3	-	-
Ngwal	43	1	6	27	-	2	6	1	-	-
Peleliu	135	8	14	50	7	15	34	7	-	-
Sonsorol	12	-	1	10	-	1	-	-	-	-

Source: 2000 Census, Table H07, OPS

## VEHICLES

Finally, the Republic of Palau saw an explosion in the number of vehicles during the decade before the 2000 census (Table 15.35). In 1990, about 48 percent – about half – of the housing units had no vehicle, but by 1995 this value decreased to about 1 in 3, and to less than 1 in 4 by 2000.

Table 15.35. Occupied Housing Units by Vehicles: 1990 to 2000

Vehicles	Housing Units			Percent		
	2000	1995	1990	2000	1995	1990
Housing Units	3,350	2,973	2,885	100.0	100.0	100.0
At least one vehicle	2,601	1,903	1,504	77.6	64.0	52.1
No vehicle	749	1,070	1,381	22.4	36.0	47.9

Source: U.S. Census for 1990; 1995 and 2000 Censuses, OPS

## Conclusions

The data on housing characteristics collected by the 2000 census of Palau were extensive, providing a remarkably detailed picture of the housing stock in the republic. Due to limitations of time and space, this chapter has focused on a small portion of these data — to show some aspects of housing of interest to planners and other government officials interested in development.

Most characteristics of the housing in Palau were dominated by the residential inventory in Koror State. In addition to containing most of the total housing units and occupied units, this state also contained the majority of modern innovations in Palau associated with housing — multiple unit structures, residential units with many total rooms and bedrooms, units constructed by new techniques and with more expensive materials, housing with the greatest access to public utilities and modern equipment, etc. Although the analysis of virtually every characteristic of housing in Palau inevitably begins by focusing on Koror, the characteristics of this state can be compared to the other states. In contrast to Koror State, the most rural, remote states of Hatohebei and Sonsorol feature housing stocks dominated by traditional construction and with few modern amenities.

## CHAPTER 16. COMPARISONS OF PALAUANS LIVING INSIDE AND OUTSIDE PALAU

The 1990 and 2000 censuses of Palau took place at the same time as censuses in Guam, the Commonwealth of the Northern Mariana Islands<sup>5</sup> (CNMI) and the U.S. — the three main destinations of emigrants from Palau at the time of the 1990 census, but Hawaii and the U.S. becoming much more important by 2000. The census reports for Guam and CNMI provide information on the Palau-born residents in each place, including age, marital status, fertility, citizenship, year of relocation, birthplace of parents, ethnic origin, residence 5 years before the census, language spoken at home, educational characteristics, labor force characteristics, occupation, and commuting characteristics.

The American administration of the TTPI encouraged, and in many ways the government of Palau continues to encourage, emigration for schooling and jobs. Higher education and improved training in selected skills have long been seen as the means of building strong foundations for future economic and political self-reliance. Many Palauans leave Palau, primarily in search of education or employment, and many of these individuals have yet to return to Palau. Some will not return. Emigration has reached levels affecting the population structure of those remaining in Palau.

This chapter examines data on Palau-born residing in Palau, Guam or the CNMI in 1990 and Palau in 2000 with Palau-born on Guam, CNMI, and Hawaii from the 2003 Censuses of Micronesian Migrants. These data will help to better understand both the reasons for emigration and the activities of Palau emigrants while living in these two places. So, the chapter provides useful complementary information to Chapter 8 — presenting data on the other half of the migration equation.

### Data Description

The topics discussed in this chapter already have received attention in this monograph, in the various chapters that dealt with similar topics for Palau itself. Rather than repeat a series of definitions, and comments on limitations and comparability with previous censuses, readers should refer to the appropriate chapter for the topics.

### Analysis of Data on Palau-born Inside and Outside Palau

#### Age and Sex

Of the 15,122 persons in Palau in 1990, 12,321 (81.5 percent) were born in Palau, an amount that decreased to 12,819 of 19,129 (67.0 percent) in 2000 (Table 16.1). The absolute number of Palau-born in Palau, though, increased by about 500 during the decade, or about 50 per year. Since Palau has about 350 births and 150 deaths each year, net out migration are about 150 per year. These figures are seen, to a certain, small extent in the numbers migrating to Guam, CNMI, and Hawaii discussed here, but, as with the Federated States of Micronesia and the Marshall Islands, the larger trend is to the United States mainland for both education and jobs.

Table 16.1. Palau-born Population by Age Group: Palau, Guam, CNMI and Hawaii: 1990 and 2000/3

Age Group	Total, 1990	Palau 1990	Guam 1990	CNMI 1990	Total, 2000/3	Palau 2000	Guam 2003	CNMI 2003	Hawaii 2003
Total:	14,961	12,321	1,233	1,407	15,793	12,819	1,201	1,507	266
0 to 4 years	1,472	1,391	23	58	1,440	1,141	137	151	11
5 to 9 years	1,432	1,355	28	49	1,823	1,413	157	246	7
10 to 14 years	1,574	1,411	48	115	1,707	1,320	154	228	5
15 to 19 years	1,597	1,342	107	148	1,420	1,154	104	129	33
20 to 24 years	1,330	934	178	218	971	819	39	40	73
25 to 29 years	1,353	1,002	150	201	1,108	901	74	93	40
30 to 34 years	1,238	920	133	185	1,229	979	95	132	23
35 to 39 years	1,114	848	145	121	1,243	991	103	135	14
40 to 44 years	826	623	103	100	1,146	931	94	108	13
45 to 49 years	641	499	86	56	936	781	71	76	8
50 to 54 years	535	408	75	52	759	613	60	71	15
55 to 59 years	436	348	59	29	518	428	32	49	9
60 to 64 years	436	358	54	24	452	385	36	26	5
65 to 69 years	347	312	22	13	330	289	23	14	4
70 to 74 years	277	241	12	24	272	251	14	4	3
75 years and over	353	329	10	14	439	423	8	5	3
Median	25.3	23.5	33.1	27.9	27.4	28.1	25.6	20.0	25.5

Sources: 1990 Censuses, 2000 Census of Palau, 2003 Census of Micronesian Migrants

Note: Total for 2000 possibly double-counting as Census of Micronesians was done 3 years after the 2000 Census of Palau

<sup>5</sup> For this chapter, we use the term "the Marianas" for Guam and the Commonwealth of the Northern Mariana Islands together.



The 1990 Census for Guam counted 1,233 Palau-born and the CNMI census counted 1,407. Unfortunately, as of this writing, data are not yet available on characteristics from the 2000 Censuses for Palau-born in Guam, CNMI, or the United States. However, in 2003, the Office of Insular Affairs, Department of the Interior, funded surveys of Freely Associated States migrants to Guam, CNMI, and Hawaii. We show results from those surveys here. And, because we expect little change between 2000 and 2003, we will use the dates interchangeably in this short analysis. Hence, the total numbers in Guam were 1,201, CNMI were 1,507 and 266 were in Hawaii.

The median age in 1990 for all Palau-born was about 25.3 years – slightly lower than for any of the groups, but this is explained by the method of determining the median, using 5-year age groups. Once again, the median age is that age which divides the population exactly in half – half being older and half being younger. The median age for Palau and CNMI in 1990 was 27.9, while the median age for Guam's Palau-born was slightly higher, at 33.1. The median increased to 27.4 years in 2000, showing reduced fertility of Palau-born, and longer life expectancy. The median for Palau-born in Palau increased 4 ½ years, from 23.5 to 28.1 years, while median for Guam decreased by about 8 years, and the median for CNMI decreased during the 13 years, from 27.9 to 20.0 years. The median age for Hawaii's Palau-born was 25.5 in 2003, about the same as for Guam.

The age composition of the Palau-born populations in the three places in 1990 and four places in 2000/2003 differed considerably, as expected when comparing the resident population of Palau with the migrant populations of Guam and the CNMI. These differences are seen both in the relative size of each age group and in median ages. For 1990, for example, the largest percentages of Palau-born residents in Palau were in the age groups under 20 years old, with each of the five-year groups containing at least 11 percent of the population and together comprising more than 45 percent of the total. In contrast, the ages most heavily represented among Palau-born migrants to Guam or the CNMI were between 15 and 29 years, with the largest group aged 20-24 years. Young adults were more prevalent among the migrants while even younger persons were more prevalent among Palau-born in Palau. Because very few old people migrate, more older Palau-born people lived in Palau than outside Palau — yielding similar median ages for Palau and the two main migrant destinations.

In 2000, the numbers also showed large numbers for younger ages of Palau-born in Palau, decreasing with age. Guam and CNMI showed baby boomlets where whole families of Palau-born are apparently now resident (compared to more single people in 1990).

Table 16.2 shows the same table for males. In 1990, about 6,300 males residing in Palau were born in Palau, while 1,200 male residents of Guam and CNMI were born in Palau. The age distribution of Palau-born males was similar to that noted for all Palau-born — that is, proportionally more young males resided in Palau while the Palau-born males of Guam and the CNMI were more likely to be young adults. The Palau-born male population in these three areas was younger than the total Palau-born population. Males had similar median ages for the three areas — 22.6 years for the entire Palau-born male population, 23.0 for Palau-born males residing in Palau, and 26.9 for males living in the Marianas.

Table 16.2. Palau-born Males by Age Group: Palau, Guam, CNMI and Hawaii: 1990 and 2000/3

Age Group	Total, 1990	Palau 1990	Guam 1990	CNMI 1990	Total, 2000/3	Palau 2000	Guam 2003	CNMI 2003	Hawaii 2003
Total:	7,531	6,339	526	666	7,992	6,545	593	717	137
0 to 4 years	745	703	15	27	742	600	74	62	6
5 to 9 years	742	695	15	32	921	717	80	122	2
10 to 14 years	829	746	22	61	877	684	81	109	3
15 to 19 years	834	722	42	70	765	639	52	58	16
20 to 24 years	688	500	81	107	528	449	20	19	40
25 to 29 years	709	553	62	94	603	489	39	53	22
30 to 34 years	624	490	49	85	619	485	54	67	13
35 to 39 years	560	455	60	45	633	516	49	59	9
40 to 44 years	424	335	42	47	612	493	48	62	9
45 to 49 years	311	249	35	27	466	403	24	34	5
50 to 54 years	254	201	29	24	391	326	28	31	6
55 to 59 years	209	164	34	11	233	194	16	21	2
60 to 64 years	194	156	23	15	198	174	11	12	1
65 to 69 years	155	139	10	6	153	136	9	7	1
70 to 74 years	124	112	3	9	101	93	7	1	-
75 years and over	129	119	4	6	150	147	1	-	2
Median	24.5	23.0	32.7	26.9	26.4	26.9	22.4	22.0	25.3

Sources: 1990 Censuses, 2000 Census of Palau, 2003 Census of Micronesian Migrants

Note: Total for 2000 possibly double-counting as Census of Micronesians was done 3 years after the 2000 Census of Palau

The median age for Palau-born males in Palau increased by about 4 years during the decade (from 23 to 27 years), while the age for Guam dropped by about 10 years to 22.4, and decreased slightly for CNMI to Guam's level. Hawaii's median age of 25 years was slightly less than Palau's.

The 1990 and 2000 censuses showed similar trends for females, as would be expected, with the female ages slightly higher than the males because females have longer life expectancy (Table 16.3). The median age for Palau-born females increased by about 2 ½ years between 1990 and 2000, from about 26.1 to 28.7 years. The median age for Palau-born females in Palau increased even more, by about 5 years, from 24.1 to 29.6. The median age for Palau-born females on Guam also decreased by 5 ½ years, and CNMI's median age decreased by 3 years, mostly because of the large number of girls 5 to 14 years old, perhaps girls who are staying with sponsors while going to school. The median age for Palau-born females in Hawaii was 25.4, about the same as for the males.

Table 16.3. Palau-born Females by Age Group: Palau, Guam, CNMI and Hawaii: 1990 and 2000/3

Age Group	Total, 1990	Palau 1990	Guam 1990	CNMI 1990	Total, 2000/3	Palau 2000	Guam 2003	CNMI 2003	Hawaii 2003
Total:	7,430	5,982	707	741	7,801	6,274	608	790	129
0 to 4 years	727	688	8	31	698	541	63	89	5
5 to 9 years	690	660	13	17	902	696	77	124	5
10 to 14 years	745	665	26	54	830	636	73	119	2
15 to 19 years	763	620	65	78	655	515	52	71	17
20 to 24 years	642	434	97	111	443	370	19	21	33
25 to 29 years	644	449	88	107	505	412	35	40	18
30 to 34 years	614	430	84	100	610	494	41	65	10
35 to 39 years	554	393	85	76	610	475	54	76	5
40 to 44 years	402	288	61	53	534	438	46	46	4
45 to 49 years	330	250	51	29	470	378	47	42	3
50 to 54 years	281	207	46	28	368	287	32	40	9
55 to 59 years	227	184	25	18	285	234	16	28	7
60 to 64 years	242	202	31	9	254	211	25	14	4
65 to 69 years	192	173	12	7	177	153	14	7	3
70 to 74 years	153	129	9	15	171	158	7	3	3
75 years and over	224	210	6	8	289	276	7	5	1
Median	26.1	24.1	33.4	28.7	28.7	29.6	27.9	19.4	25.4

Sources: 1990 Censuses, 2000 Census of Palau, 2003 Census of Micronesians Migrants

Note: Total for 2000 possibly double-counting as Census of Micronesians was done 3 years after the 2000 Census of Palau

The sex ratio is the percentage of males in the populations, usually presented as males per 100 females. So, in Table 16.4, the figure of 101 for 1990 means that in the four Areas, 101 males were present for each 100 females.

Table 16.4. Palau-born Males per 100 Females by Age Group: Palau, Guam, CNMI and Hawaii: 1990 and 2000/3

Age Group	Total, 1990	Palau 1990	Guam 1990	CNMI 1990	Total, 2000/3	Palau 2000	Guam 2003	CNMI 2003	Hawaii 2003
Total:	101.4	106.0	74.4	89.9	102.4	104.3	97.5	90.8	106.2
0 to 4 years	102.5	102.2	187.5	87.1	106.3	110.9	117.5	69.7	120.0
5 to 9 years	107.5	105.3	115.4	188.2	102.1	103.0	103.9	98.4	40.0
10 to 14 years	111.3	112.2	84.6	113.0	105.7	107.5	111.0	91.6	150.0
15 to 19 years	109.3	116.5	64.6	89.7	116.8	124.1	100.0	81.7	94.1
20 to 24 years	107.2	115.2	83.5	96.4	119.2	121.4	105.3	90.5	121.2
25 to 29 years	110.1	123.2	70.5	87.9	119.4	118.7	111.4	132.5	122.2
30 to 34 years	101.6	114.0	58.3	85.0	101.5	98.2	131.7	103.1	130.0
35 to 39 years	101.1	115.8	70.6	59.2	103.8	108.6	90.7	77.6	180.0
40 to 44 years	105.5	116.3	68.9	88.7	114.6	112.6	104.3	134.8	225.0
45 to 49 years	94.2	99.6	68.6	93.1	99.1	106.6	51.1	81.0	166.7
50 to 54 years	90.4	97.1	63.0	85.7	106.3	113.6	87.5	77.5	66.7
55 to 59 years	92.1	89.1	136.0	61.1	81.8	82.9	100.0	75.0	28.6
60 to 64 years	80.2	77.2	74.2	166.7	78.0	82.5	44.0	85.7	25.0
65 to 69 years	80.7	80.3	83.3	85.7	86.4	88.9	64.3	100.0	33.3
70 to 74 years	81.0	86.8	33.3	60.0	59.1	58.9	100.0	33.3	-
75 years and over	57.6	56.7	66.7	75.0	51.9	53.3	14.3	-	200.0

Sources: 1990 Censuses, 2000 Census of Palau, 2003 Census of Micronesians Migrants

Note: Total for 2000 possibly double-counting as Census of Micronesians was done 3 years after the 2000 Census of Palau

The places shown had slightly more Palau-born males than females in both 1990 and 2000. But male-female ratios differed considerably between those residing in Palau and those living on Guam or in the CNMI, the latter two containing only about 9 males for every 10 females. Hawaii had 106 males for every 100 females in 2003. In 1990, Palau's Palau-born showed a predominance of males in the early ages, and females in the older ages, as would be expected in a non-migrating population experiencing normal mortality. Guam's Palau-born males predominated in the 0 to 9 ages, and by a fluke, in the 55 to 59 year age group, while a shift upward of 5 years occurred in CNMI. In 2000, the Palau distribution was similar to that of 1990, while Guam had become more male, particularly in the young adult ages. CNMI's total changed little although its distribution did change somewhat, and the small number of total Palau-born in Hawaii showed considerable variation over the ages.

## Language

While less than 2 percent of all Palau-born residents of Palau, Guam, and the CNMI spoke English at home in 1990, this figure increased to 12 percent in 2000 (Table 16.5). However, language use differed based on place of residence: less than 1 percent of the Palau-born in Palau spoke English at home in 1990 compared to 9 percent in 2000. The percentage of English speakers increased from 12 percent to 30 percent on Guam, and 2 percent to 32 percent in the CNMI (the 2003 survey was taken on Saipan only). Although Hawaii was not included in early surveys, 30 percent of the Palau-born living there spoke English at home. The larger percentage for Palau-born on Guam in 1990 who spoke English at home suggests both that Palauans have been moving to Guam over a longer period of time than to the CNMI, and that these migrants have integrated more fully into the English-speaking community. Since good jobs and education on Guam clearly are related to English use, these figures were not surprising. All places saw increased use of English, with CNMI's use passing Guam in 2000, indicating the importance of English in government and private sector work, and in daily activities.

Table 16.5. English Speaking Palau-born at Home: Palau, Guam, CNMI and Hawaii: 1990 and 2000/3

English Speaking Palau-born at home	Total, 1990	Palau 1990	Guam 1990	CNMI 1990	Total, 2000/3	Palau 2000	Guam 2003	CNMI 2003	Hawaii 2003
Total 5 years & over	13,489	10,930	1,210	1,349	20,447	17,821	1,064	1,356	206
English Only at home	252	74	145	33	2,490	1,675	317	437	61
Percent	1.9	0.7	12.0	2.4	12.2	9.4	29.8	32.2	29.6
Other languages	13,237	10,856	1,065	1,316	17,957	16,146	747	919	145

Sources: 1990 Censuses, 2000 Census of Palau, 2003 Census of Micronesians Migrants

Note: Total for 2000 possibly double-counting as Census of Micronesians was done 3 years after the 2000 Census of Palau

## Education

The data in Table 16.6 show educational attainment of Palau-born persons aged 25 years and over in terms of cumulative percentages. For example, in 1990 the 54 percent of all Palauans who were high school graduates (or equivalent) means that 54 percent had at least a high school diploma — including the 1 percent with graduate or professional degrees, the 8 percent with Bachelor's degrees, and so on. Of all the Palauans considered in this analysis, more than 32 percent had fewer than 8 years of formal education and about 27 percent had some post high school education.

Table 16.6. Palau-born 25 years & over by Educational Attainment (Percentage): Palau, Guam, CNMI & Hawaii: 1990 & 2000/3

Educational Attainment	Total, 1990	Palau 1990	Guam 1990	CNMI 1990	Total, 2000/3	Palau 2000	Guam 2003	CNMI 2003	Hawaii 2003
Total, 25 years & over	7,556	5,888	849	819	8,432	6,972	610	713	137
Elementary	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
High school	68.2	64.8	79.2	81.2	80.3	78.4	90.0	88.1	94.9
High school graduate	53.9	50.5	64.3	67.4	64.9	63.3	68.4	73.2	84.7
Some college	27.4	27.0	31.4	25.9	31.7	31.7	36.2	21.7	59.1
Associate degree	16.6	17.6	10.5	15.9	18.3	19.2	12.6	13.0	24.1
Bachelor's degree	7.9	8.0	7.1	8.3	9.3	9.6	8.0	7.0	16.1
Graduate degree	1.4	1.3	1.4	1.8	1.7	1.7	2.1	1.0	2.9

Sources: 1990 Censuses, 2000 Census of Palau, 2003 Census of Micronesians Migrants

Note: Total for 2000 possibly double-counting as Census of Micronesians was done 3 years after the 2000 Census of Palau

In 1990, slightly more than half the Palau-born in Palau had at least a high school diploma, compared to nearly 2 out of 3 of all Palauans residing on Guam or in the CNMI. The Palau-born population of the Marianas had larger proportions of persons with some college background (but no degree) and graduate or professional degrees. Palau, in contrast, contained proportionally more individuals with associate and Bachelor's degrees. Palau-born individuals residing in the CNMI in 1990 had a distribution very similar to that seen for Palau-born in Palau for those with some college or more education. As noted, however, while 2/3rds of the Palau-born adults in CNMI had high school diplomas, this was true for only half of those born in Palau. Palau contained larger percentages of Palauans aged 25 years or more with fewer than 8 years of formal schooling. Once again, educated migrants (including Palauans) are more likely to migrate, although it is impossible to determine with the data available whether this education was obtained before or after they left Palau.

By the time of the 2000 census, the percentage of high school graduates for all Palau-born in these four places was 65 percent, an increase of 11 percentage points during the decade (discounting the influence of adding Hawaii in 2000.) The percentage being high school graduates increased from 50 to 63 percent for those in Palau, 64 to 68 percent for Guam, 67 to 73 percent for CNMI, and 85 percent of the Palau-born 25 years and older and living in Hawaii in 2000 were high school graduates.

Palau-born with Bachelor's degrees did show as much increase. The percentage for all Palau-born in these places increased only from 7.9 percent in 1990 to 9.3 percent in 2000. The percentage with Bachelor's degrees in Palau increased from 8 percent to 10 percent, Guam increased slightly, CNMI decreased slightly, and 16 percent of the Palau-born in Hawaii had Bachelor's degrees, showing out-migration of highly educated Palauans.

The percentage of Palau-born males 25 years and over with high school diplomas increased from 58 percent in 1990 to 62 percent in 2000 (Table 16.7). As with the total population, Palau-born in Palau had lower educational attainment than those living outside. In 2000, while about 6 in every 10 Palau-born males in Palau were high school graduates, about 7 in every 10 of those on Guam and in the CNMI fell in this category, as did 9 of 10 of those in Hawaii. The percentage of college graduates changed very little for Palau-born in Palau, CNMI or Guam. However, about 1 in every 5 Palau-born in Hawaii was a college graduate, about twice the proportion for Palau and Guam, 3 times the proportion in CNMI.

Table 16.7. Palau-born Males 25 years &amp; over by Educational Attainment (Percentage): Palau, Guam, CNMI &amp; Hawaii: 1990 &amp; 2000/3

Educational Attainment	Total, 1990	Palau 1990	Guam 1990	CNMI 1990	Total, 2000/3	Palau 2000	Guam 2003	CNMI 2003	Hawaii 2003
Total, Males 25 years & over	3,693	2,973	351	369	3,855	3,152	286	347	70
Elementary	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
High school	72.2	69.6	84.3	82.1	80.0	77.5	92.0	89.3	97.1
High school graduate	58.2	54.8	72.6	71.5	62.0	59.6	70.3	71.8	90.0
Some college	31.0	31.0	36.2	25.5	34.8	35.4	39.2	18.2	68.6
Associate degree	18.6	19.6	13.4	14.9	20.1	21.3	14.7	11.8	30.0
Bachelor's degree	8.4	8.4	9.1	8.1	8.9	8.9	9.8	6.1	20.0
Graduate degree	1.8	1.7	2.0	2.7	1.9	1.7	3.8	1.4	2.9

Sources: 1990 Census, 2000 Census of Palau, 2003 Census of Micronesians Migrants

Note: Total for 2000 possibly double-counting as Census of Micronesians was done 3 years after the 2000 Census of Palau

Less than half the Palau-born adult females in 1990 were high school graduates, compared to 63 percent in 2000 (Table 16.8). Palau-born females in Palau increased from 46 percent in 1990 to 61 percent in 2000, while those for Guam increased from 58 percent to 67 percent, those in the CNMI from 64 percent to 75 percent, and, in Hawaii, the percentage was 79 percent in 2000.

Table 16.8. Palau-born Females 25 years &amp; over by Educational Attainment (Percentage): Palau, Guam, CNMI &amp; Hawaii: 1990 &amp; 2000/3

Educational Attainment	Total, 1990	Palau 1990	Guam 1990	CNMI 1990	Total, 2000/3	Palau 2000	Guam 2003	CNMI 2003	Hawaii 2003
Total, Females 25 years & over	3,863	2,915	498	450	4,273	3,516	324	366	67
Elementary	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
High school	64.4	60.0	75.5	80.4	77.1	74.7	88.3	86.9	92.5
High school graduate	49.8	46.2	58.4	64.0	62.6	60.7	66.7	74.6	79.1
Some college	24.0	23.0	28.1	26.2	31.3	31.4	33.6	25.1	49.3
Associate degree	14.7	15.5	8.4	16.7	17.8	18.8	10.8	14.2	17.9
Bachelor's degree	7.4	7.6	5.6	8.4	9.2	9.5	6.5	7.9	11.9
Graduate degree	1.0	0.9	1.0	1.1	1.3	1.4	0.6	0.5	3.0

Sources: 1990 Census, 2000 Census of Palau, 2003 Census of Micronesians Migrants

Note: Total for 2000 possibly double-counting as Census of Micronesians was done 3 years after the 2000 Census of Palau

The percentage of Palau-born female college graduates increased during the decade for Palau, from 7.6 percent to 9.5 percent, and Guam, from 5.6 to 6.5 percent. The figures for CNMI decreased slightly, from 8.4 percent in 1990 to 7.9 percent in 2003. And, 12 percent of the Palau-born females in Hawaii were college graduates.

### Labor Force Participation

One of the main reasons given for migration from Palau to Guam and the CNMI is to look for jobs. The remainder of this chapter explores employment characteristics of Palauans residing in Palau and the Marianas.

*Labor force participation.* Slightly more than 55 percent of all Palau-born persons living in Palau or the Marianas and aged 16 years or older were in the labor force the week before the 1990 census (Table 16.9). This value was 54 percent in 2000, showing little change over the decade. As noted in Chapter 11, though, labor force participation rates are very susceptible to short-term economic trends, so not too much should be read into these figures.

Table 16.9. Palau-born 16 years &amp; over by Labor Force Participation: Palau, Guam, CNMI &amp; Hawaii: 1990 &amp; 2000/3

Labor Force Participation	Total, 1990	Palau 1990	Guam 1990	CNMI 1990	Total, 2000/3	Palau 2000	Guam 2003	CNMI 2003	Hawaii 2003
Total, 16 years & over	10,146	7,874	1,118	1,154	10,487	8,680	722	847	238
In Labor Force	5,624	4,161	648	815	5,679	4,583	420	533	143
Percent	55.4	52.8	58.0	70.6	54.2	52.8	58.2	62.9	60.1
Males, 16 years & over	5,047	4,045	468	534	5,269	4,398	341	408	122
In Labor Force	3,249	2,503	339	407	3,244	2,616	246	305	77
Percent	64.4	61.9	72.4	76.2	61.6	59.5	72.1	74.8	63.1
Females, 16 years & over	5,099	3,829	650	620	5,218	4,282	381	439	116
In Labor Force	2,375	1,658	309	408	2,435	1,967	174	228	66
Percent	46.6	43.3	47.5	65.8	46.7	45.9	45.7	51.9	56.9

Sources: 1990 Census, 2000 Census of Palau, 2003 Census of Micronesians Migrants

Note: Total for 2000 possibly double-counting as Census of Micronesians was done 3 years after the 2000 Census of Palau

About 53 percent of the Palau-born population in Palau in both 1990 and 2000 were in the labor force, and the percentage for Guam was 58 percent in both 1990 and 2003. For CNMI, however, the percentage decreased from 71 percent in 1990 to 63 percent in 2003 – part of the decrease was probably the result of the smaller numbers of people in the labor force. For Hawaii, the labor force participation rate was 60 percent in 2003.

In both censuses and in all places, male labor force participation was higher than the comparable female rate. Male labor force participation decreased from 64.4 percent in 1990 to 61.6 percent in 2000, a drop of almost 3 percentage points. Female labor force participation remained constant at less than 47 percent. The male rate for Palau and CNMI decreased slightly for the two points in time, while it held steady for Guam. The female rate for Palau and Guam increased, while the rate for CNMI decreased by 14 percentage points – it is likely that females in CNMI were either working in the garment factories in 1990 and not in 2003, or were working in subsidiary enterprises in 1990. The male rate for Hawaii in 2003 was about 6 percentages higher than for females.

### Occupation and Class of Worker

As noted earlier, the number of employed Palau-born people in Palau, Guam, and CNMI (and Hawaii in the later set) more than doubled, from 5,081 in 1990 to 10,378 in 2000 (Table 16.10). However, most of the increase was in Palau itself, since Guam and CNMI both saw losses in the employed population during the decade as Palau-born moved elsewhere. The 135 Palau-born in Hawaii also represents a decrease from Palau-born residents in earlier years.

Table 16.10. Palau-born Employed 16 years & over by Occupation: Palau, Guam, CNMI & Hawaii: 1990 & 2000/3

Occupation	Total, 1990	Palau 1990	Guam 1990	CNMI 1990	Total 2000/3	Palau 2000	Guam 2003	CNMI 2003	Hawaii 2003
Employed, 16 years & over	5,081	3,711	602	768	10,378	9,383	395	465	135
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Managerial & professional specialty	25.2	29.0	13.0	16.3	22.6	23.3	14.4	19.1	12.6
Technical, sales & admin. support	29.4	28.3	28.7	35.0	22.3	21.6	23.5	34.4	28.1
Service	19.1	16.9	32.1	19.5	18.8	18.8	26.3	12.7	20.0
Farming, forestry and fishing	2.8	3.4	0.7	1.7	7.2	7.8	1.8	0.9	3.0
Precision production, craft & repair	9.2	8.8	12.0	8.5	16.4	17.0	13.2	6.5	19.3
Operators, fabricators & laborers	14.3	13.5	13.6	19.0	12.3	11.5	17.2	24.5	10.4
Unknown	-	-	-	-	0.4	-	3.5	1.9	6.7

Sources: 1990 Censuses, 2000 Census of Palau, 2003 Census of Micronesian Migrants

Note: Total for 2000 possibly double-counting as Census of Micronesians was done 3 years after the 2000 Census of Palau

The largest category of workers in 1990 was technical, sales, and administrative support workers, although the percentage decreased from 29 percent in 1990 to 23 percent in 2000. The percentage of people in managerial and professional specialty occupations was second in 1990, at 25 percent, but decreased to 23 percent in 2000, where it was first. Service occupations were third in both years, remaining at 19 percent. The next two categories exchanged places between 1990 and 2000 – operators, fabricators and laborers were 14 percent of the employed in 1990 but 12 percent in 2000, while precision production, crafts, and repair personnel increased from 9 percent in 1990 to 16 percent in 2000. The percentage of people doing farming, forestry, and fishing increased from 3 percent in 1990 to 7 percent in 2000, mostly because of the large numbers of these workers in Palau itself by 2000.

The percentages seen for all Palau-born were mirrored in the percentages for Palau-born in Palau, mostly because most of the Palau-born were still in Palau. The percentages for Guam also showed some shifts – a larger percentage of people being operators, fabricators, and laborers, and smaller percentages of “technical, sales, and administrative support” personnel, and service workers. And the CNMI saw a large decrease – from 20 to 13 percent – of service workers, while having a large increase in operators, fabricators, and laborers – from 19 to 24 percent. The largest numbers of Hawaii’s employed were in technical, sales and administrative support, service, and precision production, crafts and repairs.

*Class of Worker.* In 1990 slightly more than half of all employed Palau-born in Palau, Guam, and the CNMI worked in the private sector for wages and salary compared to about 7 in 10 in 2000 (Table 16.11). About 44 percent of the workers were in the government in 1990 compared to about 29 percent in 2000. The decade also saw a large drop in the percentages that were “other” workers – self-employed and unpaid family workers.

Table 16.11. Palau-born Employed 16 years & over by Class of Worker: Palau, Guam, CNMI & Hawaii: 1990 & 2000/3

Class of Worker	Total, 1990	Palau 1990	Guam 1990	CNMI 1990	Total, 2000/3	Palau 2000	Guam 2003	CNMI 2003	Hawaii 2003
Employed, 16 years & over	5,081	3,711	602	768	10,378	9,383	395	465	135
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Private sector	50.7	41.1	77.6	76.4	69.9	69.3	86.6	72.0	56.3
Government	44.1	53.3	17.2	21.6	28.6	29.3	11.4	27.7	40.0
Others	5.2	5.6	5.2	2.0	1.5	1.4	2.0	0.3	3.7

Sources: 1990 Censuses, 2000 Census of Palau, 2003 Census of Micronesian Migrants

Note: Total for 2000 possibly double-counting as Census of Micronesians was done 3 years after the 2000 Census of Palau

In 1990, more than half of Palau's Palau-born workers were in the government, but by 2000, only about 3 in 10 of the workers were in the government. In the other Areas, however, the vast majority of workers were in the private sector – more than 3 in 4 of the 1990 Guam and CNMI workers, and as may as 87 percent of Guam's 2003 workers, along with 72 percent of the CNMI Palau-born workers. Hawaii had very few workers, but of those, about 4 in 10 were Government workers.

The signs for a better division between private and government employment in Palau are promising, as the private sector clearly strengthened over the decade. Since, in a “real” economy, the private sector must support the public sector, it is very promising to see the emergence of a strong private sector.

### **Conclusions**

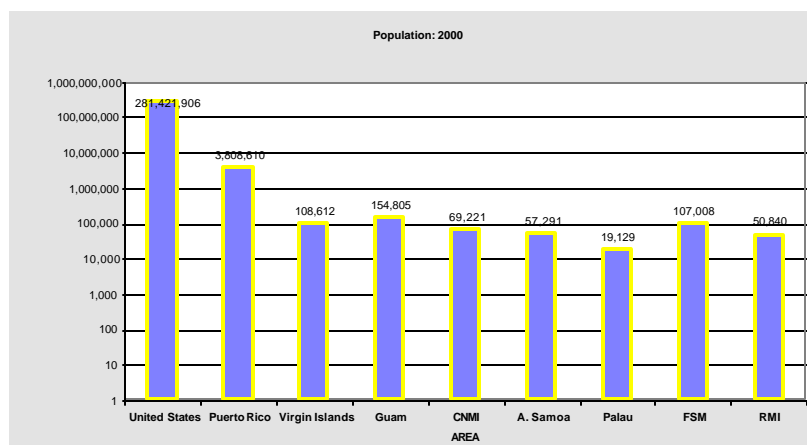
This chapter has compared demographic, social, and employment characteristics of Palau-born persons residing in Palau, on Guam, in the CNMI and in Hawaii. The comparisons made in this chapter have contrasted two fundamentally different groups of people — the resident Palauan population in the Republic of Palau with the migrant Palauan populations in the Marianas and Hawaii. Many differences came from migrant Palauans having moved for jobs and education.

The data presented here confirm that the majority of Palauans residing on Guam, the CNMI, and Hawaii were attending school or employed in wage labor. Many of these migrants have obtained, or are obtaining, valuable skills that could serve Palau well should they choose to return. In the case of employment, the original reason for emigration also becomes the main reason for not returning to Palau — more jobs exist in the Marianas, Hawaii, and the U.S. mainland than in Palau. As long as places outside Palau offer higher paying jobs, many of the Palauans who already have migrated likely will remain, and other Palauans quite probably will follow. The only obvious means to stem the flow of Palau-born migrants, and possibly begin return migration to Palau, is through reducing the differences in the job markets of Palau and the outside world.

## CHAPTER 17. COMPARISONS WITH THE UNITED STATES AND ITS TERRITORIES

This monograph presented historical data and data leading to and including the 2000 Census of the Republic of Palau to show past and current demographic, social, economic, and housing conditions in Palau. We have tried to present information in a way that is both easily understood and easily used by planners and policy makers. While the focus of the monograph was on Palau, we want to take the opportunity in this chapter to look at how Palau compares with the other territories and with the United States. We will look at population characteristics from the 1980, 1990 and 2000 Censuses of Population and Housing for the United States, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), and the Republic of Palau. Data on housing characteristics for the United States and its territories will be presented in a separate paper.

For the 2000 censuses, the Census Bureau worked with the governments of Guam, American Samoa, and the Northern Mariana Islands to develop items that were as close as possible to the U.S. items, but also permitted satisfying local needs. In most cases, the questionnaire items were identical. The Republic of Palau decided, in 1999, to have a concurrent census with the United States and the United States Insular Areas to obtain comparable data for planning.



Monographs based on the 2000 census are planned for the Pacific Islands areas to look at historical trends for the population and housing items. The governments of Guam (Barcinas, Levin, and Naval 1988), and American Samoa (Filiga and Levin 1988) published 1980 census volumes. The CNMI also developed a 1980 census volume (Borja and Levin, ms) but did not publish it. The present 2000 Census volume for Palau follows the monographs prepared by the Federated States of Micronesia for its 2000 Census, and so is the second in the series for the 2000 censuses.

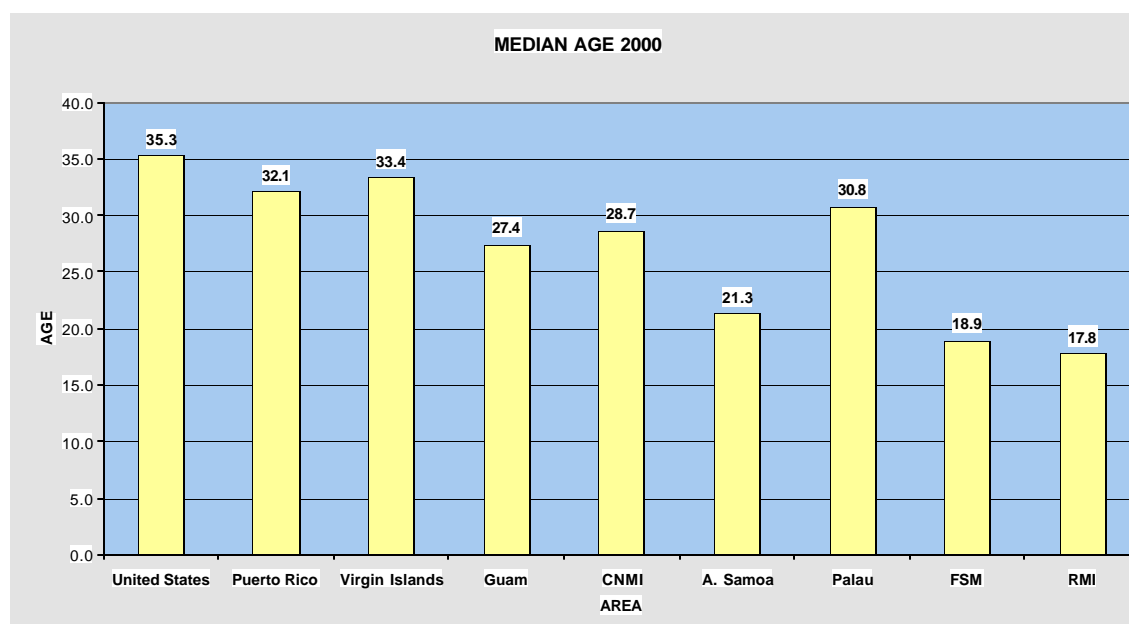
### DEMOGRAPHIC CHARACTERISTICS

**Median Age.** The median age in the United States in 2000 — that age halving the population into younger and older parts — was 35.3 years, an increase of about 2 ½ years from the 32.9 years in 1990 (Table 17.1). The median age in 2000 for the United States was about 5 years older than for Palau, the oldest of the Pacific Islands areas. CNMI followed at 28.7 years, Guam at 27.4, and American Samoa had the youngest population, at 21.3 years, fully 14 years younger than the median for the United States. Between 1980 and 2000, the median age for United States increased about 5 years, as it did for Guam, and only 2 ½ years for American Samoa. But because of immigration, the CNMI saw its median age increase by 9 years, while Palau's increase was even more, from 18.8 years to 30.8 years — going from ties with American Samoa as the youngest of the group, to being alone as the oldest median age.

Table 17.1. Median Age by Area: 1980 to 2000

Year	Palau	Guam	Northern Mariana Is	American Samoa	United States
2000	30.8	27.4	28.7	21.3	35.3
1990	25.6	25.0	27.4	20.9	32.9
1980	18.8	22.2	19.6	18.8	30.0

Source: Decennial Censuses



The difference in the age distributions are represented by looking at one group — those aged less than 5 (Table 17.2). While about 7 percent of the total U.S. population and Palau was less than 5 years old, about 8 percent of CNMI's population was in this category, 11 percent of Guam's, and almost 14 percent of American Samoa's population. All of the Areas saw decreases in this age group, showing a general aging of their populations. The smaller this age group, the fewer classrooms and clinics will be needed in the near future.

Table 17.2. Percentage of Population Less than 5 years: 1980 to 2000

Year	Palau	Guam	Northern Mariana Is.	American Samoa	United States
2000	6.8	10.8	8.4	13.6	6.8
1990	10.0	11.3	9.5	14.9	7.4
1980	11.6	12.3	14.7	14.8	7.2

Source: Decennial Censuses

**Males per 100 Females** . Most human populations have more females than males because male mortality is higher. The common demographic measure is the number of males per 100 females. Hence, the number of males per 100 females in the United States increased only slightly between 1980 and 2000 — from 94.5 to 96.3 (partly because of increased female mortality) (Table 17.3).

Table 17.3. Males per 100 Females: 1980 to 2000

Year	Palau	Guam	Northern Mariana Is.	American Samoa	United States
2000	120.4	104.7	85.9	104.4	96.3
1990	116.6	114.0	111.0	105.6	95.1
1980	107.6	109.2	110.7	103.0	94.5

Source: Decennial Censuses

Each of the Pacific Islands areas, except the CNMI, had more males than females. Because of the garment factories in the CNMI, its population went from a surplus of males (construction in the 1980s and early 1990s influenced having immigrant males in the population) to a surplus of females in 2000, with the garment industry still fully operational. While the number of males per 100 females in the CNMI stayed at about 111 between 1980 and 1990, it dipped to 86 in 2000. The number of males per 100 females increased from 103 to 104 in American Samoa between 1980 and 2000, Guam increased from 109 to 114 then decreased to 105, and Palau increased from 108 to 117 between 1980 and 1990, and then to 120 in 2000. Although increased female mortality may be contributing a small amount to this change, most of the change is due to selective immigration of males to these areas, particularly to Palau.

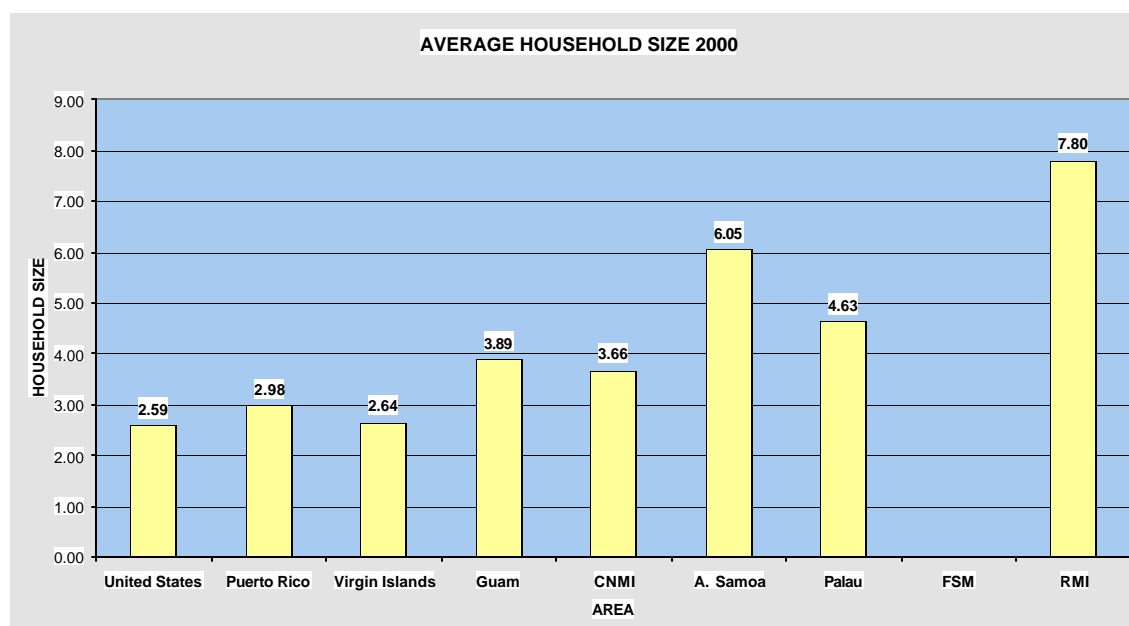


**Persons per Household.** The average number of persons per household decreased in the United States and all of the Pacific Islands areas between 1980 and 2000. The decrease in the United States was from 2.75 persons per household in 1980 to 2.59 in 2000 (Table 17.4). None of the Pacific areas, of course, had this small number of persons per household. Guam, the closest to the United States economically, was also closest demographically, in this case about 4 persons per household, down slightly from 1980 to 1990 to 2000. The number of persons per household in American Samoa remained very high, at 6 persons per household, showing continued housing of extended families, even with a decline of one person between 1990 and 2000. Palau's households decreased by 1 1/2 people during the 20 years, while the CNMI decrease was even greater, to 3.7 per household, even lower than Guam's level.

Table 17.4. Persons per Household: 1980 to 2000

Year	Palau	Guam	Northern Mariana Is	American Samoa	United States
2000	4.6	3.9	3.7	6.1	2.6
1990	5.0	4.0	4.6	7.0	2.6
1980	5.8	4.1	5.4	7.1	2.8

Source: Decennial Censuses



**Family Type.** About 75.9 percent of all families in the United States in 2000 were married-couple families, that is, at least a husband and wife, whether or not children were present as well. In 1980, 83 percent of the U.S. families were in this category (Table 17.5). The percentage of married-couple families also decreased in every one of the Insular Areas shown over the 20-year period. Between 1980 and 1990, Guam and the Northern Marianas showed declines in approximately the same percentage as for the U.S., while Palau and American Samoa remained relatively constant. However, while the U.S. experienced a further decrease of 3 percentage points between 1990 and 2000, American Samoa's decline was 11 percentage points, Palau's was 12, Guam's was 20, and CNMI's was a rather drastic 30 percentage point decrease during the decade.

Table 17.5. Percent of Married-Couple Families: 1980 to 2000

Year	Palau	Guam	Northern Mariana Is	American Samoa	United States
2000	63.2	58.5	68.5	70.6	75.9
1990	75.5	78.1	74.3	81.8	78.6
1980	75.4	84.8	79.7	81.1	82.8

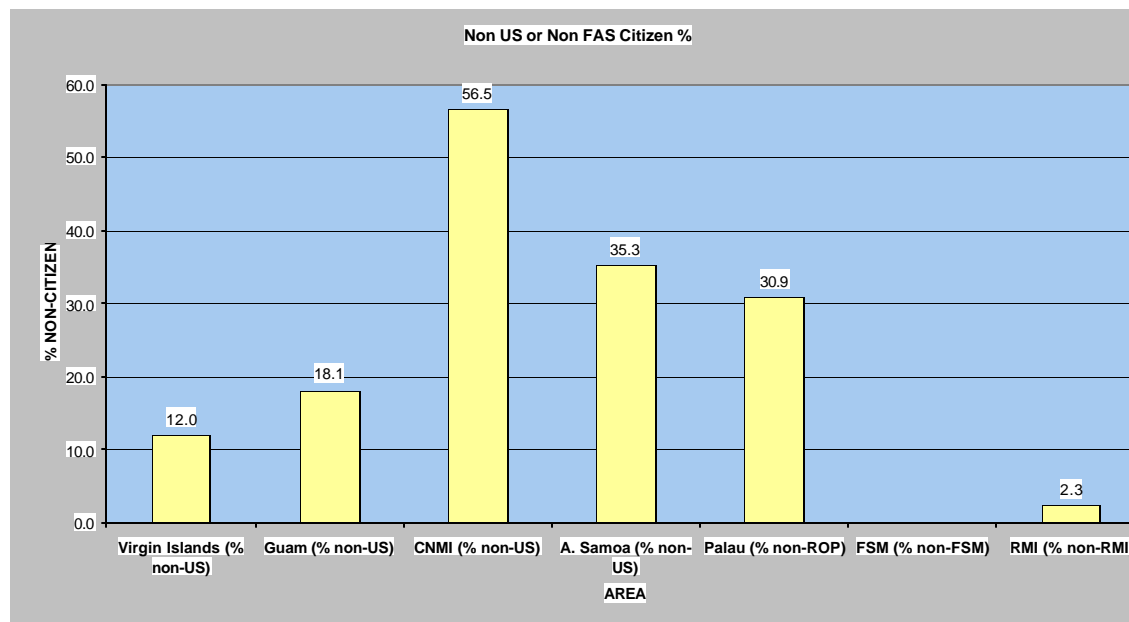
Source: Decennial Censuses

The percentage of U.S. families with a female householder having no husband present increased between 1980 and 1990, from 14.0 percent of the families in 1980 to 16.5 percent in 1990, but then to 17.9 percent in 2000 (Table 17.6). More than 18 percent of Palau's families were in this category in 2000, compared to 16 percent for Guam, 15 percent for American Samoa, and 12 percent of the families in the CNMI.

Table 17.6. Percent of Families with Female Householder: 1980 to 2000

Year	Palau	Guam	Northern Mariana Is.	American Samoa	United States
2000	18.1	16.2	11.8	15.0	17.9
1990	18.1	14.0	14.0	12.2	16.5
1980	17.6	11.1	12.1	12.7	13.9

Source: Decennial Censuses



## SOCIAL CHARACTERISTICS

**Birthplace.** The percentage of persons born and living in the United States decreased somewhat between 1980 and 2000, from 94 percent in 1980 to 92 percent and 89 percent in 2000 (Table 17.7). Hence, in 2000, about 11 percent of the U.S. population was born outside the United States.

Table 17.7. Percent Born in Area of Residence: 1980 to 2000

Year	Palau	Guam	Northern Mariana Is.	American Samoa	United States
2000	67.0	52.2	35.9	56.7	88.9
1990	81.5	47.7	38.6	54.7	92.1
1980	96.0	49.2	71.5	57.5	93.8

Source: Decennial Censuses

Palau remained the Area with the largest percentage of native born, but this percentage decreased sharply during the two decades. While 96 percent of the people living in Palau in 1980 were born here – a percentage even higher than the United States – by 2000 only 67 percent were born in Palau. The decline was continuous during the two decades, as shown by the 82 percent being native born in 1990.

The percentages for American Samoa and Guam were intermediary – in both cases, the percentage native born decreased between 1980 and 1990, before increasing between 1990 and 2000. It is likely that these increases had to do with harder economic times, so less immigration took place.

But, CNMI experienced by far the biggest decrease in percentage born in CNMI. While 72 percent of the Commonwealth's population was born in the Commonwealth in 1980, this percentage decreased to 39 percent in 1990, and then to only 36

percent in 2000, attributable to the extremely large influx of foreign workers.

**Residence 5 Years Before the Census.** Residence 5 years before the census shows short-term migration, contrasted to data on birthplace, giving long-term migration. More than half of the United States population 5 years and over in 1990 — 53 percent — had lived in the same house in 1985 as 1990, about the same as those living in the same house in 1995 and 2000. Similarly, the percentages for U.S. residents in 2000 living outside the US in 1995 was only one percentage point higher than the 2 percent who lived outside the United States in 1985 but inside in 1990 (Table 17.8).

Table 17.8. Percent Persons 5 years & over Living in Same House or Outside: 1990 & 2000

Year	Palau	Guam	Northern Mariana Is.	American Samoa	United States
2000					
Same House	63.4	53.0	37.8	75.0	54.1
Outside	26.8	17.4	37.6	13.4	2.9
1990					
Same House	65.9	56.3	29.3	77.2	53.3
Outside	16.8	32.7	53.2	15.8	2.2

Source: Decennial Censuses

The Pacific Islands areas showed considerable variation for this item. For Guam, with its large military and migrant populations, the percentage living in the same house was somewhat less than for the U.S., but about 1/3rd of all the persons over 5 living on Guam in 1990 actually lived outside Guam in 1985. The rest — about 21 percent — lived in another house on Guam in 1985. By 2000, the percentage living in the same house on Guam decreased somewhat to 53 percent, but the percentage living outside Guam 5 years before decreased by 15 percentage points, showing less military movements, less movement of Freely-associated persons to Guam, and fewer immigrants from Asia and elsewhere.

The CNMI, showed a similar phenomenon, but with much higher percentages. Fully 53 percent of CNMI's 1990 population lived outside CNMI in 1985, but had moved to CNMI by 1990, meaning that more than half of CNMI's resident population in 1990 had moved there within the 5 years before the census, pretty astounding even given the special case of CNMI and its open-armed attitude toward the immigrants. By 2000, the percentage of those outside had decreased to 38 percent, still a very large percentage. At the same time, by 2000, many of the immigrants had settled permanently in the CNMI, so that the percentage in the same house increased from less than 3 in every 10 persons who lived in the same house in 1985 as 1990 to almost 4 in 10 in 2000.

American Samoa was a different case. More than 3/4ths of American Samoa's population lived in the same house in 1985 as 1990 and 1995 as 2000, but only 16 percent lived outside American Samoa in 1985 but inside in 1990 decreasing to 13 percent in 2000.

Palau's population showed a different situation from all the others. While, like American Samoa, it showed a modest decline in the percentage living in the same house in 1985 as 1990 and 1995 as 2000, the percentage living outside Palau 5 years before the census showed a big jump, from 17 percent in the 1990 census to 27 percent in the 2000 census. These migration patterns mirror those of the CNMI during its big in-rush of migrants.

**Speak a Language Other Than English at Home.** The percentage of persons 5 years old and over in the United States who spoke a language other than English at home in 2000 was 18 percent, up from 11 percent in 1980, and 14 percent due to increased immigration during the decades (Table 17.9).

Table 17.9. Persons 5 years & over Speaking non-English at home (%): 1980 to 2000

Year	Palau	Guam	Northern Mariana Is.	American Samoa	United States
2000	90.6	61.7	89.2	97.1	17.9
1990	97.0	62.7	95.2	97.0	13.8
1980	99.0	64.3	95.0	96.1	11.0

Source: Decennial Censuses

Guam had the lowest percentages speaking a language other than English in all the three census years, the percentage decreasing from 64 to 62 percent during the two decades. American Samoa remained the most homogeneous, with 97 percent not speaking English — presumably speaking Samoan. The CNMI saw an increase in English speakers, from about 5 percent in 1980 and 1990 to 11 percent in 2000. And Palau's increase was even greater, from only one percent speaking English in 1980 and 3 percent in 1990 to 9 percent in 2000.

**Educational Attainment.** About 4 in every 5 people 25 years old and over in 2000 were high school graduates, up from 3 in every 4 in the United States in 1990 and 2 in every 3 in 1980 (Table 17.10). The percentages for Guam were slightly lower in each census year. The other areas had much lower high school graduation rates in the 1980 and 1990 censuses, but each experienced large increases over the decade. The CNMI went from 45 percent high school graduates to 69 percent during the two decades, and American Samoa increased from 42 percent in 1980 to 66 percent in 1990, an increase of 24 percentage points. But Palau had the biggest increase, from 34 percent in 1980 to 74 percent in 1990, and increase of 40 percentage points, with almost 3 in every 4 people 25 years and over being high school graduates.

Table 17.10. Persons 25 years &amp; over being High School graduates (%): 1980 to 2000

Year	Palau	Guam	Northern Mariana Is	American Samoa	United States
2000	74.1	76.3	69.2	66.1	80.4
1990	57.6	73.3	66.3	54.5	75.2
1980	33.9	65.6	44.7	42.1	66.5

Source: Decennial Censuses

The percent of college graduates aged 25 years and over in the United States increased from 16 percent to 24 percent during the two decades, going from about 1 in 6 to 1 in 4 (Table 17.11). (The 1980 data were collected in terms of number of years in school, making them not completely comparable with the 1990 and 2000 data that collected highest degree obtained.) The percent of college graduates on Guam did not change between 1980 and 1990, but jumped to 1 in every 5 people 25 years and over in 2000. However, the college graduates increased from 11 percent to 16 percent of CNMI's adult population between 1980 and 1990, and then remained at that level in 2000. And, Palau's increase between 1980 and 1990 was from 5 to 10 percent in Palau, where it remained in 2000. The percentage of college graduates in American Samoa remained at about 7 percent throughout the period. (Because of the continuing influx migrants in the various Areas, it is possible that the rate of college graduates could go down without the number decreasing.)

Table 17.11. Percent 25 years &amp; over being College graduates: 1980 to 2000

Year	Palau	Guam	Northern Mariana Is	American Samoa	United States
2000	10.0	20.0	15.5	7.4	24.4
1990	10.3	17.5	15.6	6.9	20.3
1980	5.4	17.5	11.3	7.6	16.2

Source: Decennial Censuses

## ECONOMIC CHARACTERISTICS

**Labor Force Participation.** Labor force participation depends on the current economic situation at the time of the census. However, even with these snapshots, we can see some general trends. The overall labor force participation of persons 16 years and over during the week before the census in the U.S. in 2000 was 64 percent, down from 65 percent, but up from 62 percent in 1980 (Table 17.12). All of the Pacific Islands areas also experienced increases in labor force participation rates during the decade of the 1980s. Except for Guam, all the Areas saw increases between 1990 and 2000 as well.

Table 17.12. Percent 16 years &amp; over in the Labor Force: 1980 to 2000

Year	Palau	Guam	Northern Mariana Is	American Samoa	United States
2000	67.5	61.4	84.1	52.0	63.9
1990	59.3	72.7	81.8	50.7	65.3
1980	41.6	66.6	63.6	45.5	62.0

Source: Decennial Censuses

The labor force participation on Guam increased from 67 percent to 73 percent during the decade, higher than the rate for the U.S. because of the large number of alien workers in construction, tourism, and related activities, and, perhaps because of the presence of the military. Then, again because of economic conditions, Guam showed a great decrease, to 61 percent, lower than all Areas except American Samoa. This great decrease could be attributed to fluctuations in the numbers of military personnel, migration of Freely-Associated States personnel and foreign workers, and Asian economic troubles at the time of the census.

The CNMI experienced by far the largest increase in the 1980s — from 64 percent in 1980 to 82 percent in 1990 — partially because of the emerging private sector, and this trend continued to 84 percent of adults in the labor force in 2000. With virtually full employment, almost anyone wanting a job would be able to have one. The very large immigrant population was almost completely in employment, since most could not stay in the CNMI without employment.

American Samoa showed the smallest increase in labor force participation – even in 2000, only slightly more than half of the adults were in the labor force. While United Nations and other agencies consider subsistence workers as part of the labor force, the United States does not, and, therefore the rate is lower than it would be if all “economically active” people were included. On the other hand, many of the people doing subsistence activities would have done paid labor, if it had been available.

Palau is the great success story of the Areas shown here. The percentage in the work force increased from just 2 in every 5 adults in 1980 to 2 in 3 in 2000. Of course, many of the workers were foreign workers, particularly in the private sector. Nonetheless, only CNMI had a high labor force participation rate in 2000.

The labor force participation of males in the United States decreased during the two decades, while female labor force participation increased considerably between 1980 and 1990, and continued upward in 2000. This improvement in female labor force participation was seen in all of the territories (except Guam) as well — with American Samoa increasing by 8 percentage points, Palau by 28, and CNMI by 34 points (Table 17.13). Guam females increased by about 10 percentage points between 1980 and 1990, before declining about 2 points between 1990 and 2000. While about half of the CNMI adult females were in the labor force in 1980, about 3 in 4 were in 1990, and more than 4 of every 5 in 2000.

Table 17.13. Percent 16 years &amp; over in the Labor Force by Sex: 1980 to 2000

Year	Palau	Guam	Northern Mariana Is	American Samoa	United States
<b>Males</b>					
2000	74.9	73.1	86.6	60.0	67.8
1990	68.3	83.8	87.4	58.8	74.4
1980	52.6	82.2	77.1	55.6	75.1
<b>Females</b>					
2000	58.1	57.8	82.1	43.8	57.5
1990	48.4	59.5	75.3	42.4	56.8
1980	29.7	49.2	47.6	35.5	49.9

Source: Decennial Censuses

The percentage of CNMI males in the labor force was even greater — almost 7 out of every 8 adult males was in the labor force (compared to 2 of 3 in the U.S.) in 2000. Much of this elevated employment has to do with the very large number of immigrants who must be working to legally remain in the CNMI. Guam's male labor force rate was also very high, but decreased by 10 percentage points between 1990 and 2000, placing it below Palau's rate for males. The rate for American Samoa males continued to increase throughout the two decades.

The difference in participation rates between males and females remains striking. While U.S. males had participation rates about 10 percentage points more than the females, the difference for the CNMI was less than 5 percentage points, showing the large numbers of female garment workers there. For the others, females were not doing as well – the difference for American Samoa was 16 percentage points, was 15 percentage for Guam, and 17 percentage point for Palau.

**Class of Worker**. The percentage of private sector workers in the United States increased slightly between 1980 and 1990, from less than 76 percent to more than 77 percent, and continued to increase in the 2000 Census (Table 17.14). The only Pacific area with a larger percentage in the private sector in 2000 was the CNMI at 87 percent, up from 56 percent in 1980 to 85 percent in 1990.

Table 17.14. Employed 16+ years Private Wage &amp; Salary Workers (%): 1980 to 2000

Year	Palau	Guam	Northern Mariana Is	American Samoa	United States
2000	69.3	69.0	87.2	67.9	78.5
1990	59.3	65.3	84.8	63.4	77.4
1980	37.0	50.7	55.7	46.0	75.6

Source: Decennial Censuses

Palau also experienced an enormous increase, from 37 percent to 59 percent between 1980 and 1990, and another percentage points, to 69 percent in 2000. Hence, while almost 4 in every 10 workers in 1980 worked in the private sector in 1980, the reverse was true in 1990, almost 4 in every 10 did not work for the private sector in 1990, and only 3 in 10 in 2000. The percentage of private sector employment on Guam increased from 51 percent to 69 percent during the two decades, and in American Samoa from 46 to 68 percent. While only about half the workers in the Areas in 1980 were in the private sector, about 2 in every 3 were in the private sector by 2000 (and 7 of 8 in the CNMI).

**Household Income.** The median household income in the United States in 1989 based on the 1990 census was \$30,000, and was \$42,000 for 1999 based on the 2000 Census (Table 17.15). These figures are not adjusted for inflation. Again, the median is the value that divides household income in half — so, 1989, half the households in the United States had incomes above \$30,000, half had incomes below. The median for Guam was slightly higher at \$30,800 in 1989, but lower at \$39,300 in 1999.

Table 17.15. Median Household Income in Year before Census: 1990 & 2000

Year	Palau	Guam	Northern Mariana Is.	American Samoa	United States
2000	\$ 13,421	\$ 39,317	\$ 22,898	\$ 18,219	\$ 41,994
1990	\$ 8,882	\$ 30,755	\$ 20,644	\$ 16,114	\$ 30,056

Source: Decennial Censuses

But the median incomes for the other Pacific areas lagged behind Guam. The median household income in the CNMI was \$20,600 in 1989 (increasing only to \$22,900 in 2000, probably because of the low wages paid to garment factory workers – but still much higher than for American Samoa or Palau). American Samoa also showed only a small increase in absolute terms, from \$16,100 in 1989 to \$18,200 in 1999. But Palau, while less than one-third of the US Median in 1989 at \$8,882 was the lowest of all, moved to \$13,400 in 1999, still only one-third of the wages earned in the U.S. or Guam; this value in itself would be reason for many Palauans to consider emigrating for a “better” life.

## CONCLUSIONS

This chapter has presented comparative information from the 1980, 1990 and 2000 Censuses of the United States, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and the Republic of Palau. Later, comparative analyses for Pacific Islanders in the United States and in the Pacific Islands similar to those developed after the 1980 census will be possible (see, for example, Levin 1992, Ahlburg and Levin 1990).

This monograph focused for the first time on historical demographic, social, economic, and housing data for Palau. Here, for the first time planners and policy makers can use data compiled from earlier censuses, and cross-tabular data from the 2000 census, to assist in planning Palau's future. The Office of Planning and Statistics has also started a program of intercensal statistical work that has already seen taking and publishing results from Household Income and Expenditures Surveys, Agriculture Censuses, Labor Force Surveys, and the Statistical Yearbook Series. This monograph is Palau's first analytical document for any Census, and so, while extensive, will be even more extensive after the next census, when further trends are obtained. Until then, we hope that Palau's government and its growing private sector will find these data and analyses useful.

## BIBLIOGRAPHY

- Ahlburg, Dennis and Michael J. Levin (1990) *The Northeast Passage*. Canberra: Australia National University Press.
- Arriaga, E., 1968. *New Life Tables for Latin American Populations in the Nineteenth and Twentieth Centuries*. Population Monograph Series No. 3. Berkeley: University of California.
- Bachi, R., 1951. "The Tendency to Round Off Age Returns: Measurement and Corrections." *Bulletin of the International Statistical Institute* 33:195-222.
- \_\_\_\_\_, 1953. "Measurement of the Tendency to Round Off Age Returns." *Bulletin of the International Statistical Institute* 34:129-137.
- Barcinas, Peter R., Michael J. Levin, and Cynthia Naval (1987) *Guam's People*. Agana: Government of Guam.
- Borja, Juan S. and Michael J. Levin (ms) *1980 Census Report for the Commonwealth of the Northern Mariana Islands*, manuscript.
- Brown, R.G., 1977. "The German Acquisition of the Caroline Islands, 1898-1899." In *Germany in the Pacific and Far East, 1870-1914*, edited by J.A. Moses and P.M. Kennedy, pp. 137-155. St. Lucia: University of Queensland Press.
- Carrier, N.H., and A.M. Farrag, 1959. "The Reduction of Errors in Census Populations for Statistically Underdeveloped Countries." *Population Studies* 12:240-285.
- Clyde, P.H., 1967. *Japan's Pacific Mandate*. Port Washington, NY: Kennikat Press (Reissue of 1935 edition).
- Connell, J., 1983. *Migration, Employment and Development in the South Pacific: Country Report No. 13, Palau*. Noumea: South Pacific Commission.
- \_\_\_\_\_, 1990. "Modernity and its Discontents: Migration and Change in the South Pacific." In *Migration and Development in the South Pacific*, Pacific Research Monograph No. 24, edited by J. Connell, 1-28. Canberra: Australian National University.
- Filiga, Vai and Michael J. Levin (1988) *The Population of American Samoa Based on the 1980 Census*. Pago Pago: Government of American Samoa.
- Force, R.W., and M. Force, 1972. *Just One House: A Description and Analysis of Kinship in the Palau Islands*. Honolulu: Bishop Museum Press.
- Gorenflo, L., 1990. "Regional Discontinuities of Planning Objectives in the Republic of the Marshall Islands." *Environment and Planning C* 8:297-314.
- \_\_\_\_\_, 1992a. "Changing Regional Organization in the Federated States of Micronesia: Contrasting Planning Challenges in an Emerging Island Nation." *Environment and Planning C* (forthcoming).
- \_\_\_\_\_, 1992b. "Sociocultural Implications of Population Change in the Federated States of Micronesia." Manuscript.
- \_\_\_\_\_, 1993. "Demographic Change in Kosrae State, Federated States of Micronesia." *Pacific Studies* 16 (forthcoming).
- Gorenflo, L., and M.J. Levin, 1989. "The Demographic Evolution of Ebeye." *Pacific Studies* 12(3):91-128.
- \_\_\_\_\_, 1991. "The Evolution of Regional Demography in Yap State, Federated States of Micronesia." *Pacific Studies* 14(3):97-145.
- \_\_\_\_\_, 1992a. "The Changing Role of Migration in the Federated States of Micronesia." Paper presented at the 1992 annual meeting of the Association for Social Anthropology in Oceania, New Orleans, LA.

- \_\_\_\_\_, 1992b. "The Evolution of Regional Demography in Pohnpei State, Federated States of Micronesia." *Pacific Studies* 15(1):1-49.
- Hajnal, J., 1953
- Hezel, F.X., 1983. *The First Taint of Civilization: A History of the Caroline and Marshall Islands in the Precolonial Days, 1521-1885*. Honolulu: University of Hawaii Press.
- Krämer, A., 1917. "Palau." In *Ergebnisse der Südsee-Expedition, 1908-1910*, edited by G. Thelinius. II Ethnographie; B, Mikronesien. Band 3, Teilband 1. Hamburg: Friederichsen.
- Kubary, J., 1873. "Die Palau-Inseln in der Südsee." *Journal de Museum Godeffroy* 1:181-238.
- \_\_\_\_\_, 1895. *Ethnographische Beiträge zur Kenntnis der Karolinischen Inselgruppe und Nachbarschaft, I; Die Sozialen Einrichtungen der Pelauer*. Berlin: Ascher.
- \_\_\_\_\_, 1900a. "Die Todten-Bestattung auf den Palau-Inseln." In *Die Mikronesischen Kolonien aus Ethnologischen Gesichtspunkten*, edited by A. bastian, pp. 37-48. Berlin: Ascher.
- \_\_\_\_\_, 1900b. "Die Verbrechen und das Strafverfahren auf den Palau-Inseln." In *Die Mikronesischen Kolonien aus Ethnologischen Gesichtspunkten*, edited by A. Bastian, pp. 1-36. Berlin: Ascher.
- Lessa, W.A., 1975. *Drake's Island of Thieves*. Honolulu: University Press of Hawaii.
- Levin, Michael J. (1992) "The Pacific Islanders" in *Asians and Pacific Islanders in the United States* by Herb Barringer, Robert Gardner and Michael Levin. New York: Russell Sage.
- Levin, M.J., and L. Gorenflo, 1992. "Cultural Adaptation on Eauripik Atoll: Population Change, Demographic Controls, and Shifting Constraints in the Twentieth Century." ms.
- Myers, R., 1940. "Errors and Bias in the Reporting of Ages in the Census Data." *Transactions of the Actuarial Society of America* 41:411-415.
- Nan'yo-cho, 1927. *Nan'yo Gunto Tosei Chosa Hokoku, Taisho Juyo-nen* [Census Report of the South Seas Islands, 1925]. Koror: Nan'yo-cho.
- \_\_\_\_\_, 1931. *Nan'yo Gunto Tosei Chosa -sho, Showa 5 nen* [A Summary of Conditions in the Japanese Mandate Territories, 1930]. 4 volumes. Koror: Nan'yo-cho.
- \_\_\_\_\_, 1937. *Nan'yo Gunto Tosei Chosa-sho, Showa 10 nen* [A Summary of Conditions in the Japanese Mandate Territories, 1935]. 2 volumes. Tokyo: Nan'yo-cho.
- Office of Census Coordinator, TTPI, 1975. *1973 Population of the Trust Territory of the Pacific Islands*. Saipan: Office of Census Coordinator.
- Office of Planning and Statistics, 1987. *1986 Census of Population and Housing of the Republic of Palau (Belau)*. Koror: Office of Planning and Statistics.
- Office of the Chief of Naval Operations, 1944. *Civil Affairs Handbook: West Caroline Islands*. OPNAV 50E-7. Washington: Navy Department.
- Office of the High Commissioner, TTPI, 1959. *Census Report, 1958*. Agana: Office of the High Commissioner.
- Peacock, D.J., 1987. *Lee Boo of Belau, A Prince in London*. Honolulu: University of Hawaii Press.
- Peattie, M.R., 1988. *Nan'yo: The Rise and Fall of the Japanese in Micronesia, 1885-1945*. Honolulu: University of Hawaii Press.



School of Public Health, n.d. *1967 Population Census, Trust Territory of the Pacific Islands – Palau District*. Honolulu: School of Public Health, University of Hawaii.

Shinn, R., 1984. "Trust Territory of the Pacific Islands." In *Oceania: A Regional Study*, edited by F.M. Bunge and M.W. Cooke, pp. 295-348. Foreign Area Studies, American University. Washington: Government Printing Office.

Taeuber, I.B., 1963. "Demographic Instability in Island Ecosystems." In *Man's Place in the Island Ecosystem*, edited by F.R. Fosberg, pp. 226-251. Honolulu: Bishop Museum Press.

United Nations, 1952. *Accuracy Tests for Census Age Distributions Tabulated in Five-year and Ten-year Groups*. Population Bulletin No. 2. New York: United Nations.

U.S. Bureau of the Census, 1971. *Number of Inhabitants, Trust Territory of the Pacific Islands*. PC(1)-A58. Washington: Government Printing Office.

\_\_\_\_\_, 1972. *General Population Characteristics, Trust Territory of the Pacific Islands*. PC(1)-B58. Washington: Government Printing Office.

\_\_\_\_\_, 1982. *Number of Inhabitants, Trust Territory of the Pacific Islands Excluding the Northern Mariana Islands*. PC80-1-A57B. Washington: Government Printing Office.

\_\_\_\_\_, 1983. *General Housing Characteristics, Trust Territory of the Pacific Islands Excluding the Northern Mariana Islands*. HC80-1-A57B. Washington: Government Printing Office.

\_\_\_\_\_, 1984a. *Detailed Housing Characteristics, Trust Territory of the Pacific Islands Excluding the Northern Mariana Islands*. HC80-1-B57B. Washington: Government Printing Office.

\_\_\_\_\_, 1984b. *Detailed Social and Economic Characteristics, Trust Territory of the Pacific Islands Excluding the Northern Mariana Islands*. PC80-1-C/D57B. Washington: Government Printing Office.

\_\_\_\_\_, 1992a. *Social, Economic, and Housing Characteristics, Commonwealth of the Northern Mariana Islands*. 1990 CPH-6-CNMI. Washington: Government Printing Office.

\_\_\_\_\_, 1992b. *Social, Economic, and Housing Characteristics, Guam*. 1990 CPH-6-G. Washington: Government Printing Office.

\_\_\_\_\_, 1992c. *Social, Economic, and Housing Characteristics, Republic of Palau*. 1990 CPH-6-P. Washington: Government Printing Office.

U.S. Department of Agriculture, 1983. *Soil Survey of Islands of Palau, Republic of Palau*. Soil Conservation Service. Washington: Government Printing Office.

Useem, J., 1946. *Report on Yap and Palau*. Honolulu: U.S. Commercial Company.

Wiens, H.J., 1962. *Atoll Environment and Ecology*. New Haven, CT: Yale University Press.

Yanaihara, T., 1967. *Pacific Islands Under Japanese Mandate*. Westport, CT: Greenwood Press (reissue of 1940 edition).

## APPENDIX A. ACCURACY OF THE DATA

### ***Confidentiality of the Data***

The 1995 and 2000 Censuses of Palau followed United States Census Bureau standards for confidentiality and editing of data. To maintain confidentiality as required by U.S. law (Title 13, United States Code), the Bureau of the Census applies a confidentiality edit to its census data to ensure that published data do not contain information about specific individuals, households, and housing units. One result of this edit is the introduction of a small amount of uncertainty into some of the census characteristics to prevent identification. The Census Bureau controls the confidentiality edit so that it does not affect the counts.

### ***Editing of Unacceptable Data***

The goal of census data processing is to produce a set of data that described the population as clearly and accurately as possible. To meet this objective, crew leaders reviewed and edited questionnaires during field data collection to ensure consistency, completeness, and acceptability. Census clerks also reviewed questionnaires for omissions, certain inconsistencies, and population coverage. Census personnel conducted a telephone or personal visit follow-up to obtain missing information. The follow-ups considered potential coverage errors as well as questionnaires with omissions or inconsistencies beyond the completeness and quality tolerances specified in the review procedures.

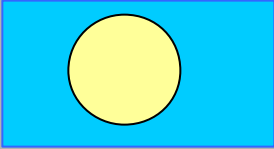
Following field operations, census staff assigned remaining incomplete information and corrected inconsistent information on the questionnaires using imputation procedures during the final automated edit of the data. The use of allocations, or computer assignments of acceptable data, occurred most often when an entry for a given item was lacking or when the information reported for a person or housing unit on an item was inconsistent with other information for that same person or housing unit. In all of Palau's censuses, the general procedure for changing unacceptable entries was to assign an entry for a person or housing unit that was consistent with entries for persons or housing units with similar characteristics. The assignment of acceptable data in place of blanks or unacceptable entries enhanced the usefulness of the data.

### ***Sources of Error***

Human and machine-related errors occur in any large-scale statistical operation. Researchers generally refer to these problems as *non-sampling errors*. These errors include the failure to enumerate every household or every person in a population, failure to obtain all required information from residents, collection of incorrect or inconsistent information, and incorrect recording of information. In addition, errors can occur during the field review of the enumerators' work, during clerical handling of the census questionnaires, or during the electronic processing of the questionnaires. To reduce various types of non-sampling errors, Census office personnel used several techniques during planning, data collection, and data processing activities. Quality assurance methods were used throughout the data collection and processing phases of the census to improve the quality of the data.

Census staff implemented several coverage improvement programs during the development of census enumeration and processing strategies to minimize under-coverage of the population and housing units. A quality assurance program improved coverage in each census. Telephone and personal visit follow-ups also helped improve coverage. Computer and clerical edits emphasized improving the quality and consistency of the data. Local officials participated in post-census local reviews. Census enumerators conducted additional re-canvassing where appropriate.

## APPENDIX B. QUESTIONNAIRES

<b>P2005-1</b>  <b>2000 CENSUS OF POPULATION AND HOUSING</b>    <b>REPUBLIC OF PALAU</b>	<b>A. ED:</b>	<b>B. Block:</b>	<b>C. Household No.:</b>				
	<b>D. Enumerator:</b>						
	<b>E. Village/Hamlet:</b>		<b>F. State:</b>				
	<b>G. Address C Location description</b>						
	<b>H. Respondent's name:</b>		<b>I. Phone number:</b>				
<p>The 2000 Census of the Republic of Palau counts each person at his or her "usual residence." The usual residence is the place where the person lives and sleeps most of the time.</p> <p><b>Include</b></p> <table style="width: 100%;"> <tr> <td style="width: 50%;">         ? Everyone who usually lives here such as family members, housemates and roommates, foster children, roomers, boarders, and live-in employees          ? Persons who are temporarily away on a business trip, on vacation, in a general hospital, or for customs/traditional purposes          ? High School or College students who stay here while in school       </td> <td style="width: 50%;">         ? Persons in the Armed Forces who live here          ? Newborn babies still in the hospital          ? Children in boarding schools below the college level          ? Persons who stay here most of the week while working even if they have a home somewhere else          ? Persons with no other home who were staying here on April 1       </td> </tr> </table> <p><b>Do NOT include</b></p> <table style="width: 100%;"> <tr> <td style="width: 50%;">         ! Persons who usually live somewhere else          ! Persons who are away in an institution such as a prison, mental hospital, or a nursing home       </td> <td style="width: 50%;">         ! College students who live somewhere else while attending college          ! Persons in the Armed Forces who live somewhere else          ! Persons who stay somewhere else most of the week while working       </td> </tr> </table>				? Everyone who usually lives here such as family members, housemates and roommates, foster children, roomers, boarders, and live-in employees ? Persons who are temporarily away on a business trip, on vacation, in a general hospital, or for customs/traditional purposes ? High School or College students who stay here while in school	? Persons in the Armed Forces who live here ? Newborn babies still in the hospital ? Children in boarding schools below the college level ? Persons who stay here most of the week while working even if they have a home somewhere else ? Persons with no other home who were staying here on April 1	! Persons who usually live somewhere else ! Persons who are away in an institution such as a prison, mental hospital, or a nursing home	! College students who live somewhere else while attending college ! Persons in the Armed Forces who live somewhere else ! Persons who stay somewhere else most of the week while working
? Everyone who usually lives here such as family members, housemates and roommates, foster children, roomers, boarders, and live-in employees ? Persons who are temporarily away on a business trip, on vacation, in a general hospital, or for customs/traditional purposes ? High School or College students who stay here while in school	? Persons in the Armed Forces who live here ? Newborn babies still in the hospital ? Children in boarding schools below the college level ? Persons who stay here most of the week while working even if they have a home somewhere else ? Persons with no other home who were staying here on April 1						
! Persons who usually live somewhere else ! Persons who are away in an institution such as a prison, mental hospital, or a nursing home	! College students who live somewhere else while attending college ! Persons in the Armed Forces who live somewhere else ! Persons who stay somewhere else most of the week while working						
<b>1a. Please give me the name of each person living here on Saturday, April 1, 2000, including all persons staying here who have no other home. If EVERYONE is staying here temporarily and usually lives somewhere else, give me the name of each person. Begin with the household member in whose name the home is owned, being bought, or rented. If there is no such person, start with any adult household member. Print last name, first name, and middle initial for each person.</b>							
1	6						
...	...						
5	10						
<b>1b. If EVERYONE listed above is staying here only temporarily and usually lives somewhere else, ask Where do these people usually live? Write their address here:</b>			<b>J. Population:</b>				
			<b>K. Last Resort:</b>				
<b>Office of Planning and Statistics, Republic of Palau</b>	<b>L. If vacant:</b> 1. Regular      2. UHE		<b>If Occupied, FORM _____ of _____</b>				

<b>2000 CENSUS OF PALAU --HOUSING</b>		
<b>H1a</b> When you told me the names of persons living here on April 1, did you leave anyone out because you were not sure if the person should be listed C for example, someone temporarily away on a business trip, vacation, a newborn baby still in the hospital, or a person who stays here once in a while and has no other home? 1. Yes <span style="float: right;">Determine if you should add the person(s) based on the instructions for Question 1a.</span>  2. No	<b>H7</b> When did (Person listed on line 1) move into this (house/apartment)? <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; width: 30px; height: 30px;"></div> <div style="border: 1px solid black; width: 30px; height: 30px;"></div> <div style="border: 1px solid black; width: 30px; height: 30px;"></div> <div style="border: 1px solid black; width: 30px; height: 30px;"></div> </div>	
<b>H1b</b> When you told me the names of persons living here on April 1, did you include anyone even though you were not sure that the person should be listed C for example, a visitor who is staying here temporarily or a person who usually lives somewhere else? 1. Yes <span style="float: right;">Determine if you should delete the person(s) based on the instructions for Question 1a.</span>  2. No	<b>H8</b> About when was this building first built? <span style="float: right;"><div style="border: 1px solid black; width: 40px; height: 30px;"></div></span>  <div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;">1. 1999 or 2000</div> <div style="width: 33%;">4. 1990 to 1994</div> <div style="width: 33%;">7. 1940 to 1959</div> <div style="width: 33%;">2. 2000 to 2003</div> <div style="width: 33%;">5. 1980 to 1989</div> <div style="width: 33%;">8. 1939 or earlier</div> <div style="width: 33%;">3. 2000 to 1999</div> <div style="width: 33%;">6. 1960 to 1979</div> <div style="width: 33%;">9. Don't know</div> </div>	
<b>H2</b> Which best describes this building? Include all apartments, flats, etc., even if vacant. 1 A one-family house detached from any other house 2 A one-family house attached to one or more houses 3 A building with 2 apartments 4 A building with 3 or 4 apartments 5 A building with 5 to 9 apartments 6 A building with 10 to 19 apartments 7 A building with 20 or more apartments 8 A boat, houseboat, or yacht 9 Other <span style="float: right;"><div style="border: 1px solid black; width: 40px; height: 30px;"></div></span>	<b>H9</b> What is the MAIN type of material used for the outside walls of this building? <i>Read each category and mark (X) ONE box.</i> 1. Poured concrete 2. Concrete blocks 3. Metal 4. Wood 5. Other <span style="float: right;"><div style="border: 1px solid black; width: 40px; height: 30px;"></div></span>	
<b>H3</b> Is this (house/apartment) C 1. Owned by you or someone in this household with a mortgage or loan? 2. Owned by you or someone in this household free and clear (without a mortgage, incl traditional/customary practices?) 3. Rented for cash rent? 4. Occupied without payment of cash rent? <span style="float: right;"><div style="border: 1px solid black; width: 40px; height: 30px;"></div></span>	<b>H10</b> What is the MAIN type of material used for the roof of this building? <i>Read each category and mark (X) ONE box.</i> 1. Poured concrete 2. Metal 3. Wood 4. Thatch 5. Other <span style="float: right;"><div style="border: 1px solid black; width: 40px; height: 30px;"></div></span>	
<b>H4</b> <i>Ask only if someone in this household OWNS OR IS BUYING this house, apartment, mobile home, or boat</i> C What is the value of this property; that is, how much do you think this (house and lot) would sell for it if were for sale? \$	<b>H11</b> What is the MAIN type of material used for the foundation of this building? 1. Concrete 2. Wood pier or pilings 3. Other <span style="float: right;"><div style="border: 1px solid black; width: 40px; height: 30px;"></div></span>	
<b>H5</b> <i>Ask only if this house is RENTED FOR CASH RENT</i> C What is the monthly rent? <i>If rent is NOT PAID BY THE MONTH, see your job instructions on how to figure a monthly rent.</i> \$	<b>H12</b> How many rooms do you have in this house/apartment? Count living rooms, dining rooms, kitchens, and bedrooms, but do NOT count bathrooms, balconies, foyers, or halls.  <div style="text-align: right;"><div style="border: 1px solid black; width: 40px; height: 30px;"></div></div>	
<b>H6</b> <i>If this is a ONE-FAMILY HOUSE</i> C Is there a business (such as a store or barber shop) or a medical office on this property?  <div style="text-align: right;"><div style="border: 1px solid black; width: 40px; height: 30px;"></div></div>	<b>H13</b> How many bedrooms do you have; that is, how many bedrooms would you list if this (house/apartment) were on the market for sale or rent?  <div style="text-align: right;"><div style="border: 1px solid black; width: 40px; height: 30px;"></div></div>	
<b>VACANT UNITS C FOR ENUMERATOR USE</b>		
<b>C1</b> Vacancy Status 1. For rent 2. For sale only 3. Rented or sold, not occupied 4. For seasonal/recreational/Occasional 5. For migrant workers 6. Other vacant <span style="float: right;"><div style="border: 1px solid black; width: 40px; height: 30px;"></div></span>	<b>C2</b> Is this unit boarded up? 1. Yes 2. No <span style="float: right;"><div style="border: 1px solid black; width: 40px; height: 30px;"></div></span>	<b>D</b> Months vacant 1. Less than 1 2. 1 up to 2 3. 2 up to 6 4. 6 up to 12 5. 12 up to 24 6. 24 or more <span style="float: right;"><div style="border: 1px solid black; width: 40px; height: 30px;"></div></span>

2000 CENSUS OF PALAU --HOUSING	
<b>H14</b> Do you have hot and cold piped water? 1. Yes, in this unit 2. Yes, in this building 3. No, only cold piped water in this unit 4. No, only cold piped water in this building 5. No, only cold piped water outside this building 6. No piped water	<b>H26</b> Is this building connected to a public sewer? 1. Yes, connected to public sewer 2. No, connected to septic tank or cesspool 3. No, use other means
<b>H15</b> If Yes, What type of energy does your water heater use most? 1. Electricity 2. Gas 3. Solar 4. Other fuels	<b>H27</b> Are your MAIN cooking facilities inside or outside this building? 1. Inside this building } Go to H28 2. Outside this building } 3. No cooking facilities C Skip to H30
<b>H16</b> Do you have a bathtub or shower? 1. Yes, in this unit 2. Yes, in this building 3. Yes, outside this building 4. No	<b>H28</b> Which FUEL is used MOST for cooking in this (house/apartment)? 1. Electricity 2. Gas: bottled or tank (LPG) 3. Kerosene 4. Electricity and Gas 5. Electricity and Kerosene 6. Gas and Kerosene 7. Electricity, Gas, and Kerosene 8. Other 9. No fuel used
<b>H17</b> Do you have a flush toilet? 1. Yes, in this unit 2. Yes, in this building 3. Yes, outside this building 4. No, outhouse or privy 5. No, other or none	<b>H29</b> Do you also use a microwave oven? 1. Yes 2. No
<b>H18</b> Does this house/apartment have electric power? 1. Yes 2. No	<b>H30</b> Do you have a refrigerator in this building? If "Yes," ask C What type? 1. Yes, electric 2. Yes, gas 3. No refrigerator
	<b>H31</b> Do you have a sink with piped water? 1. Yes 2. No
<b>H19</b> Do you have a telephone in this (house/apartment)? 1. Yes 2. No	<b>H32</b> How many automobiles, vans, and trucks of one-ton capacity or less are kept at home for use by members of this household?
<b>H20</b> Do you have a battery operated radio? Count car radios, transistors, and other battery operated sets in working order or needing only new battery for operation. 1. Yes, 1 or more 2. No	<b>H33</b> What is the average monthly cost for electricity for this house/apartment? \$
<b>H21</b> Do you have a television set? 1. Yes 2. No	<b>H34</b> What is the average monthly cost for gas (not kerosene) for this house/apartment? \$
<b>H22</b> Do you have air conditioning? 1. Yes, a central air-conditioning system 2. Yes, 1 individual room unit 3. Yes, 2 or more individual room units 4. No	<b>H35</b> What is the average monthly cost for water for this house/apartment? \$
<b>H23</b> Do you get water from C 1. A public system only? 2. A public system and cistern? 3. A cistern, tanks, or drums only? 4. A public standpipe? 5. Some other source like an individual well or a spring?	<b>H36</b> What is the average monthly cost for kerosene, oil, coal, etc. for this house/apartment? \$
<b>H24</b> Do you use the public water system for cooking? 1. Yes 2. No, use rainwater 3. No, use bottled water 4. No, use both rainwater and bottled water	<b>H37</b> How many boats are kept at home for use by members of this household?
<b>H25</b> Do you use the public water system for drinking? 1. Yes 2. No, use rainwater 3. No, use bottled water 4. No, use both rainwater and bottled water	<b>H38</b> How much remittances did this household give or send to all persons inside or outside Palau last year? \$ Where was the largest amount sent outside of Palau?



## 2000 CENSUS OF PALAU POPULATION

***IF ... WAS BORN AFTER 1990, GO TO NEXT PERSON***

**19** Has ... ever been on active -duty military service in the Armed Forces of the United States or ever been in the United States military Reserves or the National Guard? "Active duty" does NOT include training for the military Reserves or National Guard.

1. Yes, now on active duty  
 2. Yes, on active duty in past, but not now  
 3. Yes, service in Reserves or National Guard only  
 4. No

☐

**20a** Did .. work at any time LAST WEEK, either full time or part time? Work includes part-time work such as delivering papers, or helping without pay in a family business or farm; it also includes active duty in the Armed Forces. Work does NOT include own housework, school work, or volunteer work. Subsistence activity includes fishing, growing crops, etc., NOT primarily for commercial purposes.

1. Yes, worked full time or part time at a job or business AND did NO subsistence activity - *Skip to 21*  
 2. Yes, worked full time or part time at a job or business AND did subsistence activity  
 3. Yes, did subsistence activity only  
 4. No *C Skip to 23*

☐

**20b** For people who did subsistence last week, ask What kind of subsistence activity did ... do most last week?

1. Gardening  
 2. Animal raising  
 3. Fishing  
 4. Gardening & animal raising  
 5. Gardening and fishing  
 6. Fishing and animal raising  
 7. Gardening, fishing & animal raising  
 8. Handicrafts

☐

9. Other, specify:

**21** If this person did paid work - How many hours did ... work LAST WEEK at all jobs? Subtract any time off and add any overtime or extra hours worked:

**22** In what hamlet did ... work most LAST WEEK?

*If did PAID work, Skip to 26-28*

**23** Was ... on layoff from a job or business LAST WEEK? If "No," ask C Was ... temporarily absent or on vacation from a job or business last week?

1. Yes, on layoff  
 2. Yes, on vacation, illness,  
 3. No, labor dispute, etc.

☐

**24a** Has ... been looking for work during the last 4 weeks?

1. Yes  
 2. No *C Skip to 25*

☐

**24b** Could ... have taken a job LAST WEEK if one had been offered? If "No," ask C For what reason?

1. No, already has a job  
 2. No, temporarily ill  
 3. No, other reasons (in school, etc.)  
 4. Yes could have taken a job

☐

**25** In what year did ... last work, even for a few days? If Never worked, write "Never worked".

*If Never worked, or last worked in 1999 or earlier, skip to 30*

**26-28** The following questions ask about the job worked last week. If ... had more than one job, describe the one ... worked the most hours. If ... didn't work, the questions refer to the most recent job or business since 2000.

**26** For whom did ... work? If now on active duty, write "Armed Forces"; otherwise, print the name of the company, business or other employer.

**27** What kind of work was ... doing?

**28** Was ... employee of:

1. Private company or business or of an individual, for wages, salary, commissions  
 2. National Government  
 3. State Government  
 4. U.S./Other Government  
 5. Self employed  
 6. Working without pay

☐

**29a** Last year (1999), did ... work, even for a few days, at a paid job or in a business or farm?

1. Yes  
 2. No *C Skip to 30*

☐

**29b** How many weeks did ... work in 1999? Count paid vacation, paid sick leave, and military service? \_\_\_\_\_ Weeks

**29c** During the weeks WORKED in 1999, how many hours did .. usually work each week? \_\_\_\_\_ Hours

**30** The following questions are about income received during 1999. If an exact amount is not known, accept a best estimate.

**30a** How much ... earn in income from wages, salary, commissions, bonuses, or tips? Report amount before deductions for taxes, bonds, dues, etc. \$

**30b** How much did ... earn from (his/her) own farm or non-farm business, proprietorship, or partnership? Report net income after business or operating expenses. \$

**30c** How much did ... receive in customs payments? \$

**30d** How much did ... receive in Social Security payments or from retirement, survivor, or disability pension(s)? For Social Security, include income payments to retired workers, dependents, and disabled workers. For retirement, include payments from companies, unions, Federal or Palau government, and U.S. military. \$

**30e** How much did ... receive in remittances from persons living on Guam and the CNMI? \$

**30f** How much did ... receive in remittances from Hawaii or the U.S. mainland? \$

**30g** How much did ... receive in remittances from all other places? \$

**30h** How much did ... receive from unemployment compensation, child support or alimony, or any other REGULAR source of income? Do NOT include lump-sum payments such as money from an inheritance or the sale property. \$

**31** Do not ask this question if 30a through 30h are complete. Instead, sum these entries and enter the amount below. What was ...'s total income in 1999?

**PEOPLE WHO HAVE LEFT HOME**

In order to get a better idea about the amount of migration out of Palau, and about the possibilities of Palauans who are currently out of Palau but coming back to help the Republic grow economically, we need to know about people in your housing unit who have left Palau. Please fill in the information below for each person in your household who is currently away.

E1 Name	E2 Sex	E3 Age	E4 Current Activity	E5 Educational Attainment	E6 Occupation	E7 Left ROP for the First Time		E8 Last time went away		E9 In ROP, Oct 1, 1994?
						When	Reason	When left	Time away	
1.	M F		Schooling Military Working							1. Yes 2. No
2.	M F		Schooling Military Working							1. Yes 2. No
3.	M F		Schooling Military Working							1. Yes 2. No
4.	M F		Schooling Military Working							1. Yes 2. No
5.	M F		Schooling Military Working							1. Yes 2. No

**INTERVIEWER REMINDERS:**

Be sure you have recorded C

- Information for State, village/hamlet, house, and Line Number, Population, and Complete after (when necessary), Address or location on the front cover of the questionnaire
- The respondent's name and the respondent's telephone number (if any) in the appropriate boxes on the front cover.
- Your signature (name) and the date in the boxes below on this page.

Also, be sure you have C

- Completed as many of the questions as possible, including the last resort questions.
- Completed the Vacant Units Boxes on Page 2 if this is a vacant unit.
- Entered the required information on the address listing page in the address register and on the map.
- Written all entries legibly.

**CERTIFICATION C** I certify the entries I have made on this questionnaire are true and correct to my knowledge.

Enumerator's signature

Date

**NOTES:**