DEMOGRAPHIC CHANGE IN THE REPUBLIC OF PALAU

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With the onset of sustained contact with Europeans more than two centuries ago, the islands currently composing the Republic of Palau experienced substantial population change. The following study examines the demographic evolution of these islands, considering changes in total population and shifts in the geographic distribution of population. The study first discusses interaction with cultures from outside Oceania and the demographic impacts of this interaction. It then explores shifts in the regional distribution of population, focusing on data from censuses conducted between 1920 and 1990. Data on fertility, mortality, and mobility provide clues to possible causes of population change in the Republic of Palau over the past two centuries. An examination of the ecological, economic, and sociocultural repercussions of demographic changes point to fundamental development challenges facing this small island nation.

OF THE MANY CHANGES that have occurred throughout Micronesia following the onset of sustained interaction with people from outside Oceania, one of the most important in terms of its effect on native cultures has been demographic change. For those islands that established frequent contact with outsiders, the same demographic scenario usually emerged. Shortly following the beginning of this contact, a period of depopulation commenced --generally due to diseases introduced to native peoples with no previous immunity. Eventually depopulation ceased, most often as a result of increased survivability brought about through improved health care and increased natural immunity. The continued decline in mortality ultimately led to an imbalance with fertility, resulting in population growth throughout much of Micronesia (see Taeuber 1963). As demographic trends shifted from depop-

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ulation to population growth, demands on the natural environment and socio-cultural systems changed accordingly--generating various adjustments as native cultures attempted to cope with fundamentally different adaptive challenges.

The above scenario holds, with some modifications in timing and other specifics, for most major island groups in Micronesia (see Gorenflo and Levin 1991, 1992, 1994; Gorenflo 1993b, 1995). This article examines demographic change in the Republic of Palau, a collection of islands that experienced particularly severe depopulation over a prolonged period of time and that has witnessed only modest population growth during the current century.[1] The study begins with a brief overview of interaction between residents of these islands and people from outside Micronesia, providing the historical foundation necessary to understand the demographic impact of outsiders. Attention then shifts to a discussion of available population data, focusing particularly on eleven censuses conducted between 1920 and 1990. Through examining information on mortality, fertility, and mobility the study attempts to isolate the cause(s) of documented population change. Through examining supplemental information on cultural and economic change, in turn, the study explores repercussions of the demographic evolution of Palau. I conclude by considering the role of recent population change on the future of this emerging island nation.

The History and Demographic Impacts of Non-Micronesians

The Republic of Palau consists of approximately two hundred islands lying at the western edge of the Caroline Archipelago in the west-central Pacific Ocean (Shinn 1984:341-342). The islands that compose the republic are distributed along a northeast-southwest axis roughly 450 miles in length. The main island group in the republic, called the "Palau Islands," contains most of Palau's 171 square miles of land area as well as the majority of its population. The main components of the Palau Islands are Babeldaob, a volcanic island that comprises most of the land area of Palau, volcanic Arakabesan, Koror, and Malakal islands immediately south of Babeldaob, and the coral and limestone islands of Peleliu and Angaur lying south-southwest of the last three (Chief of Engineers 1956:27-31; Soil Conservation Service 1983:1-2). A barrier reef up to twelve miles wide encloses all of the Palau Islands except for Angaur (Force 1960:21; Johannes 1981:1). The remainder of Palau consists of coralline outer islands. Six of these--Dongosaro (formerly Sonsorol), Fanna (Fana), Hatohobei (Tobi), Helen Reef, Meleih (Merir), and Puro (Pulo Anna)--form the "Southwest Islands," a name reflecting their location with respect to the Palau Islands. The other outer island,

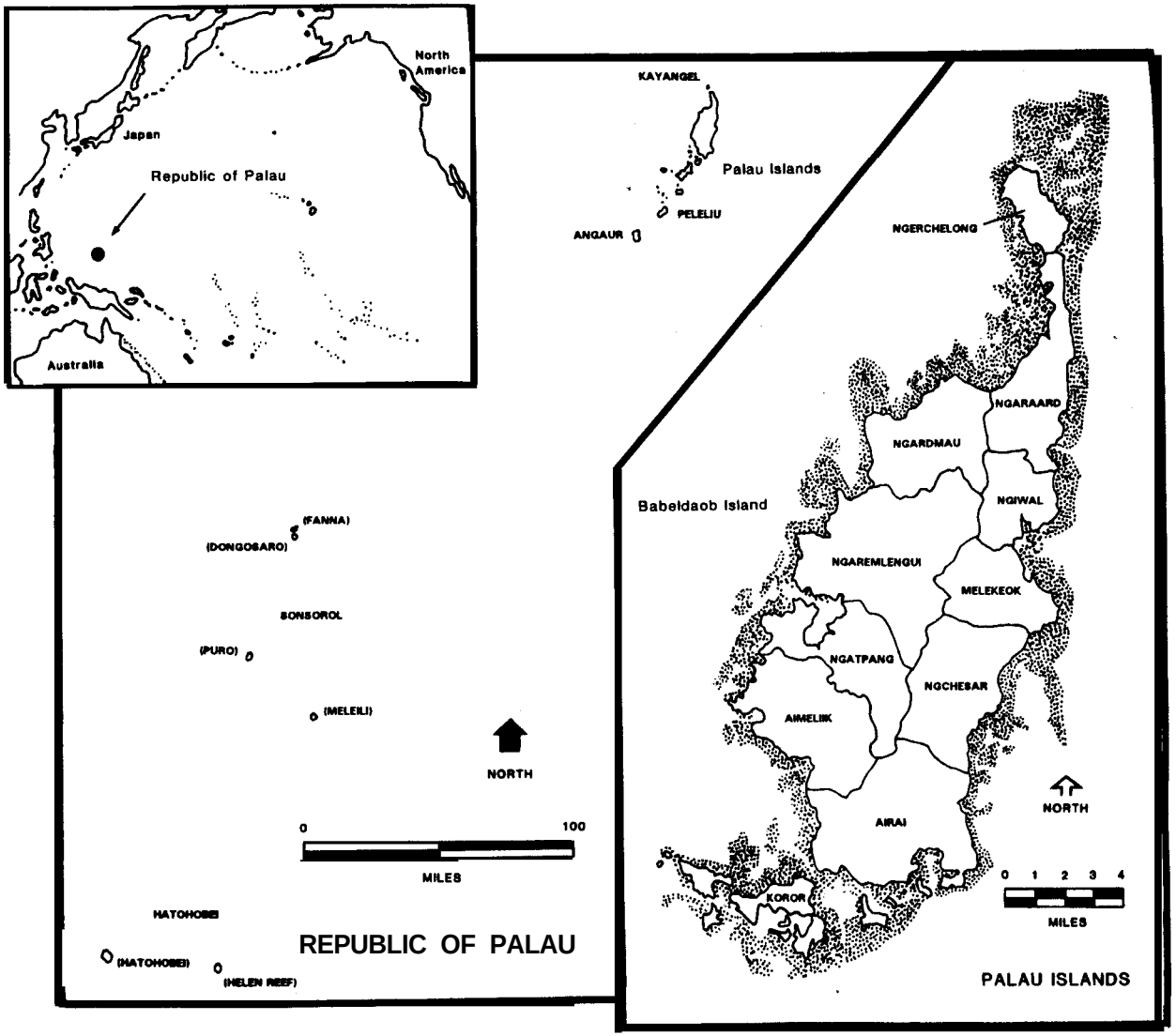


FIGURE 1. **The Republic of Palau (inset of Palau Islands excludes Peleliu and Angaur).**

Kayangel Atoll, lies immediately north of Babeldaob (see Gressitt 1952). In the current political organization of Palau, the outer islands compose three states in the republic: Hatohobei (Hatohobei Island and the usually uninhabited Helen Reef), Kayangel, and Sonsorol (Dongosaro, Fanna, Meleili, and Puro islands). Koror, Malakal, and Arakabesan islands form another state, called Koror. The remaining twelve states in the Republic of Palau consist of divisions of Babeldaob (Figure 1).

People originating in the Philippines, eastern Indonesia, or New Guinea began to colonize the Palau Islands possibly as early as 3000 B.C. (Osborne 1966:464), although proposed dates of early prehistoric occupation vary widely and tend to favor the first millennium B.C. (see Osborne 1966:1-2, 464; Bellwood 1979:281-283; Kiste 1984:14; Lucking 1984:22-23; Masse, Snyder, and Gumerman 1984:123-124; Nero 1987:4; Morgan 1988:3). Intermittent colonization likely occurred throughout the ensuing millennia, with migrants from the Southwest Islands coming to the Palau Islands as recently as A.D. 1600-1750 (Osborne 1966:451). The Southwest Islands themselves, in contrast, probably were settled more recently from the east--possibly as late as the sixteenth century A.D.--a scenario consistent with the general wave of Micronesian colonization that flowed westward from the Marshall Islands or Kiribati as well as the oral traditions of the islanders themselves (see Black 1977:21-23; McKnight 1977:17). Over the centuries complex societies evolved in the Palau Islands, as indicated by the remains of elaborate systems of terraces and roads (Kubary 1873:193; Osborne 1966:150-155, 1979:269; Morgan 1988:2-16). Some consider such elaborate archaeological remains as evidence of large prehistoric populations (de Valencia 1892: 402-403; Chief of Engineers 1956:14).[2]

For European nations active in Oceania during the sixteenth and seventeenth centuries, the legend of Palau's existence tended to precede firsthand knowledge. The Spaniard Gonzalo Gómez de Espinoza, commanding the *Trinidad,* apparently sighted Dongosaro Island in 1522 shortly after he and what remained of Magellan's expedition left the Philippines to return to Europe (Hezel and del We 1972:26). Despite Spanish explorer Ruy López de Villalobos's claim that he discovered the Palau Islands in 1543 (see Burney 1967:231; Office of the Chief of Naval Operations 1944b:21-22), the English privateer Sir Francis Drake and his crew were probably the first Europeans actually to land on these islands, in 1579 (see Lessa 1975). These early visits notwithstanding, the "Pelews" (as the Caroline Islands east of the Philippines came to be called during the seventeenth century) were known more from the accounts of Carolinian castaways in the Philippines than from European experience. Information provided by two groups of castaways in the second half of the 1600s generated sufficient interest for the

local Spanish authorities to organize a series of voyages in search of these islands (see Hezel and del Valle 1972:28-29; Palau Community Action Agency 1976:85-86). Eight such voyages occurred between 1697 and 1711, with success finally coming in late 1710 when Francisco Padilla and the crew of the *Santissima Trinidad* sighted Dongosaro Island and the Palau Islands (Krämer 1917:34-58; Eilers 1935:1-10). A voyage in 1712, led by Bernardo de Egui aboard the Santo Domingo, also reached the Palau Islands and Dongosaro (Krämer 1917:74-101; Eilers 1935: 15-16; Hezel 1983:46-47).

European ships remained rare in the western Carolines throughout the early and mid-eighteenth century. British ships (predominantly) began to appear in the Southwest Islands by the 1760s (Hezel 1983:63), but no noteworthy interaction with islanders from Palau occurred until 1783. In August of that year, the British East India Company's ship *Antelope* struck a reef southwest of Koror. Captain Henry Wilson and his crew of fifty survived, remaining on the Palau Islands under the protection of the paramount chief (the Ibedul) of Koror for the following three months. Wilson's account provides an invaluable glimpse at a society that had experienced little contact with cultures from outside the Pacific (see Keate 1788). In addition, despite the short duration of their stay the *Antelope* castaways had important cultural impacts on Palau, introducing Western items (including firearms) as well as assisting the people of Koror in their battles with other native polities. In the hope of promoting trading ventures in Oceania and Asia, the East India Company sent additional ships to Palau beginning in the early 1790s (see Hezel 1983:76-80). But trading on the scale envisioned never materialized, and despite continued visits by ships from England as well as other countries throughout the early 1800s, Palau began to lapse into obscurity (Office of the Chief of Naval Operations 1944b:23; Hezel 1983:179-180). Even the British, French, and Russian scientific expeditions into the Pacific during the late 1700s and first half of the 1800s failed to shed much light on Palau (see Meares 1790:296-297; Dumont d'Urville 1835:509, 1843: 208-209).

On the rare occasion that outsiders visited Palau during the early nineteenth century, hostility on the part of the islanders often precluded systematic observations--such as the attack on the British whaleship *Syren* by Angaur Islanders in 1823 (Ward 1966:144-149) and the mistreatment in 1832-1834 on Hatohobei of survivors from the wrecked American whaleship *Mentor* (Martin n.d.). The presence of traders, often an important source of early information on Micronesia, was intermittent throughout the early nineteenth century. The first systematic trading ventures were by the Spanish, who searched the Palau Islands in the early 1800s for bêche-de-

mer (Hezel 198383). A resurgence in trading began in the 1840s, led by Scotsman Andrew Cheyne, with subsequent activity by an Australian entrepreneur named Edward Woodin, a German captain called Alfred Tetens, and a German trader-adventurer named Eduard Hernsheim (Tetens 1958; Purcell 1967:37; Shineberg 1971:14, 231-241; Hezel 1983:181-195). But by the 1880s Palau once again had fallen into obscurity, as European trading attention turned toward Yap.

Despite the discontinuous nature of European contact with Palau during the eighteenth and nineteenth centuries, many changes on these islands occurred. As discussed in detail below, one of the most notable was depopulation, with the 20,000-100,000 islanders who possibly inhabited Palau in 1783 declining to roughly 4,000 a century later (see Kubary 1885145; Semper 1982:290).

Ignoring any possible British claims to Palau, Spain had claimed sovereignty over all the Caroline, Marshall, and Mariana Islands since the sixteenth century. As a reaction to growing trading activities throughout Micronesia during the second half of the nineteenth century, Spain established a more active presence in the area beginning in the 1880s. In the case of Palau, this presence was limited primarily to missionary activity (Office of the Chief of Naval Operations 1944b:24, 69; Vidich 1949:53-57; Force 1960:70-71; Force and Force 1972:5). In 1886, shortly after Pope Leo XIII's confirmation of Spain's sovereignty over the Carolines, Spanish Capuchins visited Palau, promising to return once established on Yap; two missionaries eventually arrived in April 1891 (de Valencia 1892:394; Hezel 1991:195-196). Despite their hard work, the Spanish missionaries enjoyed little success in Palau. With such a limited presence, it is not surprising that few demographic impacts occurred during the Spanish administration, apart from a likely reduction in mortality through reinforcement of the ban on native warfare imposed by the British in 1883 (Palau Community Action Agency 1978:iii; Vidich 1980:153-157; see also Kubary 1885:140-141). Depopulation nevertheless *apparently* continued during the Spanish period, with estimates placing the total population somewhere between 3,000 in 1892 (de Valencia 1892:403) and "considerably over 3,000" in 1896 (Christian 1899:16).

After decades of commercial activity in Micronesia by German traders, Germany purchased the Caroline Islands from Spain in 1899 (Fischer and Fischer 1957:47; Brown 1977). As elsewhere in the Pacific, Germany's interest in Palau was mainly commercial, focused primarily on copra production, trepang and shell gathering, and phosphate mining (Vidich 1949:58; Chief of Engineers 1956:5; see also Schnee 1920:352). The Germans introduced key changes to Palauan culture, preparing the way for modernization through modifications of native social and political order designed to benefit selected

trading interests (Hezel 1995:111-124; see also Office of the Chief of Naval Operations 1944b:24-25; Force 1960:71-72; Force and Force 1972:5). Although, the Germans required each adult male to plant coconut trees (see Abe 1986:68), as they did elsewhere in Micronesia, ultimately copra production throughout most of Palau fared poorly in comparison to other parts of the Pacific (see Krämer 1926:42-44). But mining phosphate deposits on Angaur Island, beginning in 1909, compensated for the loss in copra income (Office of the Chief of Naval Operations 1944b:29; Purcell 1967:44; Abe 1986:100-102). To administer its Micronesian possessions, Germany established a network of government offices on main islands throughout the Carolines, with a branch office established in Koror in 1905 and another opened on Angaur in 1910 (Office of the Chief of Naval Operations 1944b:24-25; Vidich 1949:58; Kaneshiro 1958:308). In addition to administration, the Germans built roads, conducted numerous studies of Palau, and in general attempted to improve the lives of the native population. On the whole, Germany succeeded in establishing various programs that led to economic development in Micronesia. Nevertheless, because much of the German effort focused on other parts of their Micronesian empire (particularly Yap, the Marshalls, and the Northern Marianas), development in Palau lagged behind.

Although relatively few Germans relocated to Palau during the early 1900s, important demographic changes occurred. Probably the most important was the likely end of depopulation that had plagued Palau for more than a century. Although available demographic estimates paint a confusing picture, Palau's population fluctuated around 4,000 during the German administration, with figures ranging from as low as 3,000 in 1907 (Hermann 1909:634) to as high as 4,543 in 1914 (Yanaihara 1940:42).

Japanese traders also had been active in Palau since the 1880s, providing the main competition for their German counterparts (Office of the Chief of Naval Operations 1944b:29; Purcell 1967:20; Abe 1986:109-110; Peattie 1988:23-24). When Germany became involved in World War I, Japan quickly moved to take control of all German possessions in Micronesia--on 7 October 1914 landing a small military garrison on Koror, and occupying Angaur and its phosphate mines two days later (Palau Community Action Agency 1978:304; Peattie 1988:43). The Japanese began organizing these newly occupied lands almost immediately, making Palau one of five naval districts established in the area. The League of Nations eventually recognized the Japanese administration of Micronesia in 1920, granting Japan a Class C Mandate for the Carolines, Marshalls, and Northern Marianas (Clyde [1935] 1967). In 1922 Japan formed the Nan'yo-cho (South Seas Bureau) to administer the Mandated Territory, establishing its capital at Koror that same year (Abe 1986:113-114; Peattie 1988:68).

In contrast to Germany's commercial emphasis, Japan viewed Micronesia as an integral part of its expanding Pacific empire, investing considerable funds in development and introducing a much more elaborate colonial administration (Useem 1946:83; Purcell 1967: 161-162; Palau Community Action Agency 1978:316-317). To ensure Palau's integration within their overall plans, the Japanese combined efforts to generate broad commercial development with the introduction of Japanese culture and language to the native population (Useem 1946:65-67; Vidich 1980:188; Abe 1986:119-120, 144-151). During its administration, Japan expanded mining operations in Palau-beginning to mine phosphate on Peleliu, Hatohobei, and Dongosaro in addition to Angaur and introducing bauxite mining to Ngaremlengui (1936) and Ngardmau (1940) (see Office of the Chief of Naval Operations 1944b:158-159; Chief of Engineers 1956:6; Black 1977:25; Palau Community Action Agency 1978:326-331, 345; Abe 1986:127-131; Peattie 1988:67, 82-83). In addition, the Japanese promoted agriculture (on Babeldaob), commercial fishing, and limited industry (Chief of Engineers 1956:6; Abe 1986:140; Peattie 1988:170-174; Hezel 1995). The success of commercial fishing generated considerable immigration of fishermen to Koror during the early 1930s, mostly Okinawans, which in turn produced secondary economic growth of stores and other infrastructure. At the beginning of the Japanese administration Koror was a sleepy Micronesian settlement; by the mid-1930s it had become a bustling modem town and center of the Mandated Territory, complete with paved streets, a' radio station, a newspaper, and several shops (Price 1944:109-110; Vidich 1980:207-208; see also Force 1960:85).

As the late 1930s approached, Japan began to prepare Palau for possible military action. Although Angaur, Peleliu, and (especially) Babeldaob all provided good sites for military airfields, Palau's main strategic value was its proximity to the Philippines (Peattie 1988:232). General military preparations began during the late 1930s throughout much of the Palau Islands. By early 1941 the construction of military installations was well under way throughout Micronesia, with much of the work done by Korean laborers imported for that purpose (Peattie 1988:252-253). The Japanese built airfields on Babeldaob, Ngesebus (a small island immediately north of Peleliu), and Peleliu; two seaplane bases on Arakabesan; and a navy base on Malakal (Chief of Engineers 1956:7). Most troops were stationed on Babeldaob, although outer islands such as Hatohobei also hosted small garrisons (Black 1983:9). U.S. military forces fought their way westward through Micronesia in 1944 and began to turn their attention toward Palau. U.S. forces bombed locations on Arakabesan, Malakal, Babeldaob, and Koror from March through August 1944 (Hough 1950:14-15; Chief of Engineers 1956:12; Peattie 1988:

279). But the greatest American military efforts were saved for Angaur and Peleliu, both needing to be secured to protect the American flank on a planned, approach to the Philippines. The ferocious battle for Angaur lasted about one month, during September-October 1944 (Smith 1984:499-531); the even-bloodier battle for Peleliu lasted more than two months, between September and November of the same year (Hough 1950; Smith 1984:496-499, 532-575). After bypassing Japanese forces on Arakabesan, Babeldaob, Koror, and Malakal following their neutralization through heavy bombing (Chief of Engineers 1956:12), the fall of Peleliu on 26 November 1944 marked the end of the great World War II battles in Micronesia.

Although the Japanese administration of Palau lasted scarcely three decades, several noteworthy demographic changes occurred. The number of islanders residing in Palau grew very slowly, increasing by about 500 between 1920 and 1935 (Nan'yo-cho 1937). This modest increase occurred amidst dramatic overall population growth due to the immigration of Japanese and Okinawans--initially in pursuit of commercial opportunities and later as part of Japan's military preparations for World War II (Hezel 1995). By 1937, prior to the main military buildup in Palau, about 11,400 Japanese nationals lived there (Japan 1937:88). By 1943 the foreign population of Palau had reached approximately 27,500 persons (Chief of Engineers 1956:15). In preparation for anticipated battles, by 1944 the number of Japanese military personnel alone had increased to roughly 50,000 (Nero 1989: 120).

The United States began to administer Palau and other Micronesian island groups following the defeat of Japanese forces in 1944 and 1945. In 1947 Palau became part of the Trust Territory of the Pacific Islands (TTPI), a strategic area established by the United Nations with the United States named as "administering authority" (Shinn 1984:304-305). Although in some ways promoting a return to traditional ways, the U.S. administration introduced fundamental changes to Palau, including an overriding emphasis on democratic principles of government (Useem 1952a; Force and Force 1965). But for more than a decade following the onset of Trust Territory status, the United States focused little attention on and invested little money in its Micronesian responsibilities. In the early 1960s the United States finally began providing additional funding to support development in Palau, enabling marked improvements in infrastructure and services (Epstein 1986: 61-65; Parmentier 1987:51-57). One of the services most improved was health care, further controlling the effects of disease and generally decreasing mortality. Throughout most of the period following World War II, the population grew steadily. The first postwar estimate placed Palau's population at about 6,000 persons (McGrath 1972:143); by 1990 the total number of inhabitants exceeded 15,100 (U.S. Bureau of the Census 1992c:1).

By mid-1979 each component of the TTPI had formally decided to leave the Trust Territory (Shinn 1984:314, 323, 332, 341). But for many years the newly formed Republic of Palau did not complete the process of establishing independence (see Parmentier 1987:52-53). Several special referendums failed to yield the 75 percent approval necessary to ratify the Compact of Free Association, which would clearly establish Palau's relationship with the United States (including financial commitments) and for all intents and purposes terminate the Trust Territory. With the Northern Mariana Islands becoming a U.S. commonwealth in 1978, and both the Republic of the Marshall Islands and the Federated States of Micronesia forming independent nations that had implemented individual compacts in 1986, for years Palau remained in political limbo as the lone remnant of the TTPI. In November 1993 the people of Palau finally ratified their own Compact of Free Association, in the process taking yet another step toward formal independence. As with the other compacts, the Palauan version includes a stipulation enabling citizens of the republic to migrate freely to the United States and U.S. territories. For a republic whose people have shown a strong propensity to emigrate over the past several decades (see Hezel and Levin 1990:43-46), the Compact of Free Association between Palau and the United States likely will have important demographic implications--both for Palau and for several potential migrant destinations.

Demographic Change in the Republic of Palau

Demographic data for Palau are quite scanty prior to the first Nan'yō-chō census of the Mandated Territory in 1920. This is particularly true for the precontact and early contact periods. Certain types of evidence, such as the archaeological remains of terraced hillsides and large numbers of abandoned villages, bear witness to what almost certainly was a large prehistoric population (see Osborne 1966:150-155; Morgan 1988:10-12). Unfortunately, the amount of depopulation during the eighteenth and nineteenth centuries remains clouded by a lack of reliable precontact demographic figures.

Early population estimates for Palau run as high as 100,000 persons (see McKnight 1960:166), though the most frequently cited maximum is 40,000-50,000, calculated by Semper based on information gleaned from Henry Wilson's account of Palau in 1783 (Semper 1982:289-290).[3] Although islanders with whom Semper spoke felt this estimate was reasonable, the German anthropologist Kramer believed it was too high when he visited Palau during the first decade of the 1900s. Based on an extensive survey of 235 villages (both inhabited and uninhabited), an estimated average of 100

persons per settlement, and a general belief that the resources could never support as many as 40,000 people, Krämer concluded that between 20,000 and 25,000 was a more realistic estimate for Palau's population in 1800 (1919:292). Semper calculated another estimate while in residence in 1862, arriving at a figure of 10,000 based on a survey of men's clubs and extrapolating for average family size to account for women and children (1982:289). Kubary estimated that the population of Palau had declined even further by the early 1870s, proposing a total of 5,000 inhabitants--falling even further to about 4,000 a decade later (1885:145). Demographic estimates from early in the German administration indicate continued depopulation, to 3,823 in 1901, 3,101 in 1903, and as low as 3,000 in 1907 (Senfft 1902:264; Hermann 1909:634). Unfortunately, specific trends are unclear even during the German period of Palau's history; for example, another estimate in 1908 places Palau's population at 4,321 (Yanaihara 1940:42), implying a demographic resurgence that would have been impossible without a massive influx of people from elsewhere (for which there is no indication). The last population estimate for Palau during the German administration was 4,543 (Yanaihara 1940: 42), a figure that included several hundred people exiled in 1911 by the Germans from Pohnpei to Aimeliik following the Sokehs rebellion.[4]

Early population data are even more scarce for the Southwest Islands, which received much less attention from Europeans during the nineteenth century than did the Palau Islands. Table 1 presents available figures for the Palau Islands, Sonsorol State (broken into its main island components), and Hatohobei prior to the Japanese administration. Perplexing are those figures indicating high populations for certain outer islands, including roughly 800 for Dongosaro in 1710 (Eilers 1935:36) and 968 for Hatohobei in 1909 (Eilers 1936:86). Although the Dongosaro figure is highly questionable given its basis on brief observations by an early explorer, the Hatohobei figure resulted from a census and in all likelihood is accurate--though representing an extremely large population for a small, isolated coral island. Oral history supports the notion of high populations and associated pressure on Hatohobei (Johannes and Black 1981:86), though certain researchers suggest that the population of any Southwest Island probably never exceeded 300 individuals (McKnight 1977:15).

Various agencies from different governments conducted censuses of Palau during the twentieth century: four by the Japanese South Seas Bureau (1920, 1925, 1930, and 1935), two by the TTPI administration (1958 and 1973), one by the U.S. Peace Corps in conjunction with the University of Hawai‘i School of Public Health (1967), three by the U.S. Bureau of the Census (1970, 1980, and 1990), and one by the Republic of Palau Office of Planning and Statistics (1986).[5] The U.S. military conducted what certain

TABLE 1. **Early Population Estimates for Palau**

Year	Palau Islands[a]	Sonsorol				Source
		Hatohobei	Dongosaro	Meleili	Puro	
1710			800			Eilers 1935
1788		200				Eilers 1936
1832		350[b]				Eilers 1936
1860[C]	3,000	200	200	100	100	Gulick 1862
1862	10,000					Semper 1982
1870[d]					100	Eilers 1935
1872	5,000					Kubary 1885
1878	200					Eilers 1936
1882	4,000					Kubary 1885
1892	3,000					de Valencia 1892
1896	>3,000		350			Christian 1899
1898		950[b]				Eilers 1936
1900			400[e]		150	Hermann 1909; Eilers 1935
1901	3,823					Senfft 1902
1903	3,101					Hermann 1909
1906				200[f]	43	Hermann 1909
1907[g]	4,155	900	350[e]			*Deutsches Kolonial-Handbuch* 1909; Hermann 1909
1908	4,321					Yanaihara 1940
1909		968	304	73	44	Eilers 1935, 1936
1910	4,000					Krämer 1919
1914	4,543					Yanaihara 1940
1916	4,880					Matsumura 1918

[a] The geographic portion of Palau associated with many of the earl population estimates is uncertain. Because many of these figures come from individuals whose experience focused mainly (if not exclusively) on the Palau Islands and because population figures for the Southwest Islands tended to appear separately, it is likely that the figures under the heading "Palau Islands" in this table in fact refer only to that geographic portion of Palau.

[b] 1832 and 1898 figures appear in Eilers (1936:86) as the ranges 300-400 and 900-1,000, respectively.

[c] Gulick provides no dates for his estimates (1862:363), but notes that his data are "the result of eight years' research" (1862:358), thus *possibly* dating from the early 1850s. Many of the figures also have other years associated--though their connection with population (vs. date of discovery or an earlier visit) is unclear. Given the uncertain dates of Gulick's estimates and their 1862 publication, I use 1860 as a basic point of reference.

[d] According to Useem (1952b:153), 50 persons lived on Angaur Island in 1870.

[e] Includes Dongosaro and Fanna islands. The 1907 figure refers to the beginning of that year; a *November* 1907 total for these two places is 224 persons (Hermann 1909:635).

[f] Refers to an unspecified month in 1906 (Hermann 1909:635); the same source presents a population of only 27 individuals on Meleili Island in November 1906.

[g] *Deutsches Kolonial-Handbuch* 1909:330 presents figures for Dongosaro (350), Hatohobei (900) and the Palau Islands (4,074) without specifying a particular ear. Given the dates of other western Caroline Islands population data in this source and the year of its publication, the Palau figures probably date between 1905 and 1909. Figures for Hatohobei and Dongosaro islands presented in Hermann (1909:635) for 1907 agree, supporting the 1905-1909 range for the undated figures.

TABLE 2. **Population of Palau by Year, Showing Population Change between Census Years: Select Years**

Year	Population	Change from Previous Listed Census Year	Average Annual Change from Previous Listed Census Year	Source
1920	**5,754**	**—**	**—**	**Nan'yo-cho 1937**
1925	**5,957**	**203**	**0.7%**	**Nan'yo-cho 1927**
1930	**6,009**	**52**	**0.2%**	**Nan'yo-cho 1931**
1935	**6,230**	**221**	**0.7%**	**Nan'yo-cho 1937**
1946	5,972	...	...	Useem 1946; McGrath 1972
1947	6,156	...	...	Chief of Engineers 1956
1948	6,357	...	...	U.S. Dept. of the Navy 1948
1949	6,555	...	...	U.S. Dept. of the Navy 1949
1951	7,321	...	...	U.S. Dept. of Interior 1952
1954	7,726[a]	...	...	U.S. Dept. of State 1955
1955	7,656	...	...	U.S. Dept. of State 1956
1956	7,999	...	...	U.S. Dept. of State 1957
1957	8,563	...	...	U.S. Dept. of State 1958
1958	**9,344**	**3,114**	**1.8%**	**Office of the High Commissioner 1959**
1959	9,072	...	...	U.S. Dept. of State 1960
1960	9,320	...	...	U.S. Dept. of State 1961
1961	9,674	...	...	U.S. Dept. of State 1962
1962	9,965	...	...	U.S. Dept. of State 1963
1963	10,280	...	...	U.S. Dept. of State 1964
1964	10,628	...	...	U.S. Dept. of State 1965
1965	10,832	...	...	U.S. Dept. of State 1966
1967	**11,365**	**2,021**	**2.2%**	**School of Public Health n.d.**
1968	11,904	...	...	U.S. Dept. of State 1969
1969	12,291	...	...	U.S. Dept. of State 1970
1970	**11,210**	**-155**	**-0.5%**	**U.S. Bureau of the Census 1972**
1971	12,686	...	...	U.S. Dept. of State 1972
1972	13,025	...	...	U.S. Dept. of State 1973
1973	**12,673**	**1,463**	**4.2%**	**Office of Census Coordinator 1975**
1975	13,446	...	...	U.S. Dept. of State 1977
1976	13,150	...	...	U.S. Dept. of State 1978
1977	13,520	...	...	U.S. Dept. of State 1978
1978	13,910	...	...	U.S. Dept. of State 1979
1979	14,320	...	...	U.S. Dept. of State 1980
1980	**12,116**	**-557**	**-0.6%**	**U.S. Bureau of the Census 1983a**
1984	13,000	...	...	U.S. Dept. of State 1985
1986	**13,873**	**1,757**	**2.3%**	**Office of Planning and Statistics 1987**
1990	**15,122**	**1,249**	**2.2%**	**U.S. Bureau of the Census 1992c**

Notes: Census years in **boldface.** Data for 1920-1935 are for Pacific Islanders only. Intercensal estimates are probably de jure population; figures for remaining years are de facto population. For all tables, "-" denotes zero or a percentage that rounds to less than 0.1; "NA" = not available; ". . ." = not applicable.

[a] Excludes Japanese residing in Angaur State.

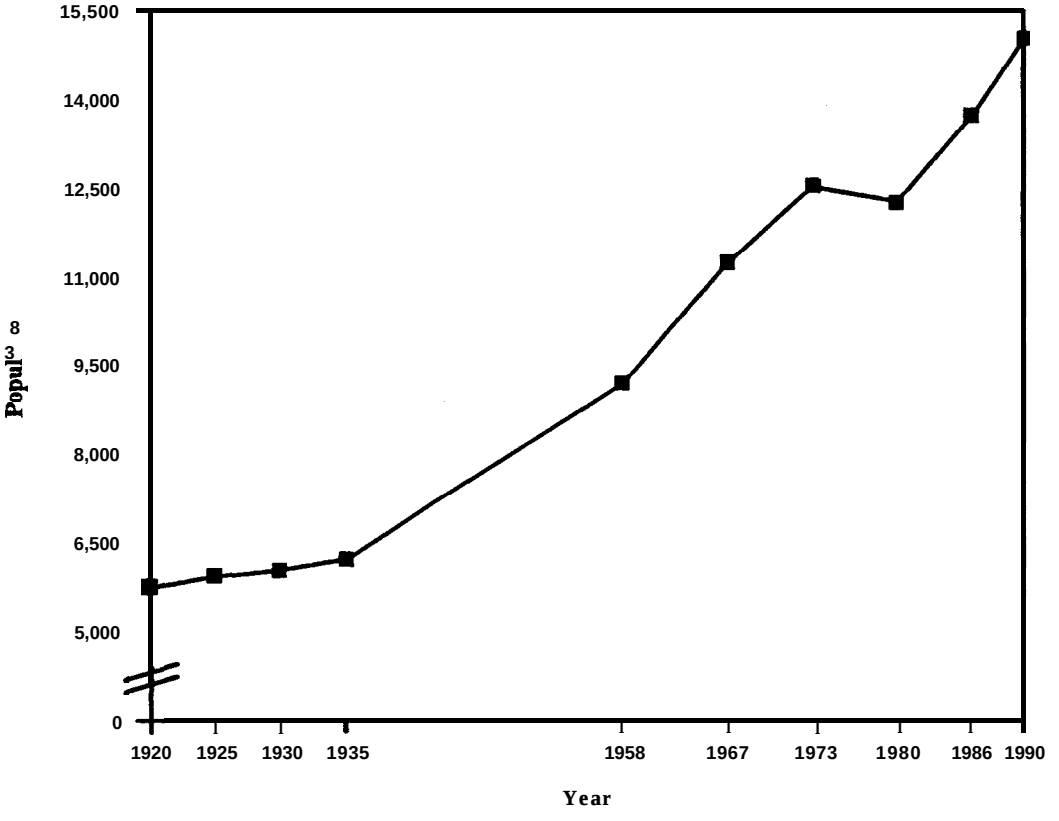


FIGURE 2. **Change in the population of Palau over time (1920, 1925, 1930, and 1935 are Pacific Islanders only).**

researchers have called "censuses" in 1946 and 1947 (Useem 1946:63; Chief of Engineers 1956:19), providing population figures for Palau immediately following World War II, though due to lack of information on the methods employed and an absence of detailed information on demographic structure I do not discuss these figures with the other censuses.[6] The data available indicate that Palau's population grew throughout most of the twentieth century, though at varying rates and (possibly) interrupted by occasional periods of decline (Table 2; Figure 2).

Demographic change has varied between individual states within the Republic of Palau (Table 3). In part, these differences reflect varying development emphases. For example, Koror maintained the largest population in Palau throughout the period covered by twentieth-century censuses, with considerable growth occurring since 1967. Angaur, on the other hand, featured a relatively large population throughout the pre-World War II years, its postwar demographic decline compensated for by recent growth in Airai

TABLE 3. **Population by State: Census Years**[a]

Area	1920	1925	1930	1935	1946	1947	1958	1967	1970	1973	1980	1986	1990
Republic of Palau	5,754	5,957	6,009	6,230	5,972	6,156	9,344	1,365	11,210	12,673[b]	12,116	13,873	15,122
Aimeliik	NA	165	200	200	300	334	412	364	366	306	273	283	439
Airai	NA	322	365	395	585	733	442	538	561	738	668	1,021	1,234
Angaur	759	798	708	751	316	334	428	429	438	277	243	214	206
Hatohobei	NA	225	180	172	129	141	103	60	64	48	74	35	22
Kayangel	NA	101	117	92	132	113	181	199	209	162	140	115	137
Koror	972	1,255	1,277	1,214	658	1,094	3,585	5,667	5,431	7,669	7,585	9,442	10,501
Melekeok	NA	357	357	304	342	284	310	356	328	315	261	254	244
Ngaraard	NA	569	578	663	767	592	773	770	622	725	457	468	310
Ngardmau	NA	110	126	124	148	186	558	227	254	206	160	157	149
Ngaremlengui	NA	196	210	217	266	255	316	436	428	387	358	301	281
Ngatpang	NA	50	50	66	68	67	88	119	103	89	166	219	62
Ngchesar	NA	329	316	344	443	380	450	449	485	341	364	271	287
Ngerchelong	NA	425	435	522	510	464	558	615	745	427	372	277	354
Ngiwal	NA	210	229	250	265	238	366	381	355	237	267	218	234
Peleliu	582	629	641	716	834	790	679	682	759	657	609	545	601
Sonsorol	NA	216	220	200	209	151	95	73	62	88	79	42	61
Unorg. Is.[c]	...	...	...	...	...	...	...	...	...	...	40	11	...

Sources: Nan'yo-cho 1927, 1931, 1937; Useem 1946; Chief of Engineers 1956; Office of the High Commissioner 1959; McGrath 1972; U.S. Bureau of the Census 1972, 1983a, 1992c; Office of Census Coordinator 1975; Office of Planning and Statistics 1987; School of Public Health n.d.

[a] Figures for 1946 and 1947 are from data collected by the U.S. military government, presented here for the sake of thoroughness. However, as discussed in the main text, because the methods used to collect these data are uncertain I do not accord them the same accuracy as the other censuses (excluding the 1970 census).

[b] Includes 1 individual whose place of residence was "not stated."

[c] The unorganized islands consisted primarily of the Rock Islands off the coast of Koror. These islands, listed either as "Palau Islands (unorg.)" (1980) or "Rock Islands" (1986), were not enumerated separately for other census years--either because they contained no permanent population or because they were combined with another jurisdiction (as in 1990, when they were combined with Koror State).

TABLE 4. **Population Density by State: Census Years (Persons per Square Mile)**

Area	1920	1925	1930	1935	1958	1967	1970	1973	1980	1986	1990
Republic of Palau	34	35	35	37	55	67	66	74	71	81	89
Aimeliik	NA	8	10	10	21	18	19	16	14	14	22
Airai	NA	18	21	23	25	31	32	42	38	58	71
Angaur	230	242	215	228	130	130	133	84	74	65	62
Hatohobei	NA	375	300	287	172	100	107	80	123	58	37
Kayangel	NA	144	167	131	259	284	299	231	200	164	196
Koror	137	177	180	171	505	798	765	1,080	1,068	1,330	1,479
Melekeok	NA	33	33	28	29	33	31	29	24	24	23
Ngaraard	NA	41	42	48	56	55	45	52	33	34	22
Ngardmau	NA	6	7	7	31	13	14	12	9	9	8
Ngaremlengui	NA	8	8	9	13	17	17	16	14	12	11
Ngatpang	NA	3	3	4	5	7	6	5	9	12	4
Ngchesar	NA	20	19	21	28	27	30	21	22	17	18
Ngerchelong	NA	104	106	127	136	150	182	104	91	68	86
Ngiwal	NA	20	22	24	36	37	35	23	26	21	23
Peleliu	124	134	136	152	145	145	162	140	130	116	128
Sonsorol	NA	240	244	222	106	81	69	98	88	47	68
Unorg. Is.[a]	...	...	...	...	...	...	...	...	NA	NA	...

[a] Area of unorganized islands unavailable.

State. Changes in population density over time further document the differences in demographic evolution experienced in various parts of Palau, pointing up the considerable densities that emerged in Koror in contrast to relatively sparse occupation found elsewhere (Table 4).

Let us now turn our attention to the demographic evolution of Palau, discussed in seven sections. The first covers the Japanese administration, a period during which Palau's population maintained slow, steady growth. Each of the remaining six sections discusses one of the postwar censuses, covering a period that saw Palau's population more than double from prewar levels, with increasing numbers of people residing in Koror. This examination of census results emphasizes data on the geographic distribution of population and major characteristics of demographic structure, exploring potential causes of population change when possible.

The Population of Palau during the Japanese Period: 1920, 1925, 1930, and 1935

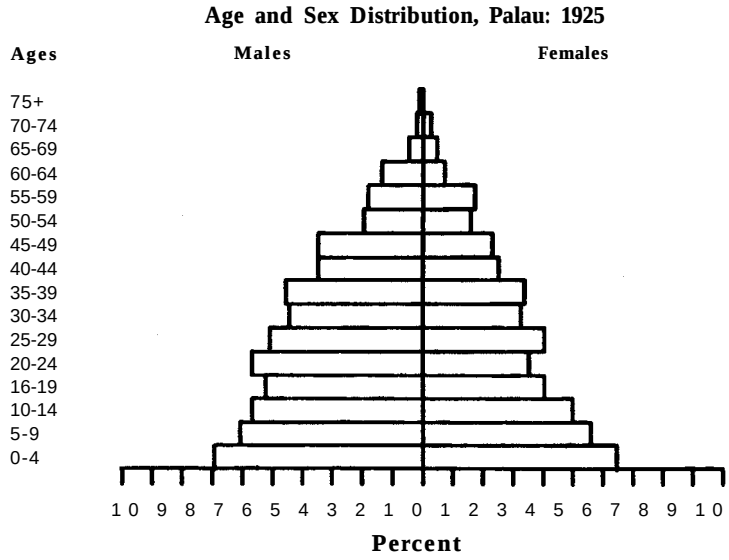
The Japanese South Seas Bureau (Nan'yō-chō) conducted the first census of the Republic of Palau (then the Palau District of the Mandated Territory) in

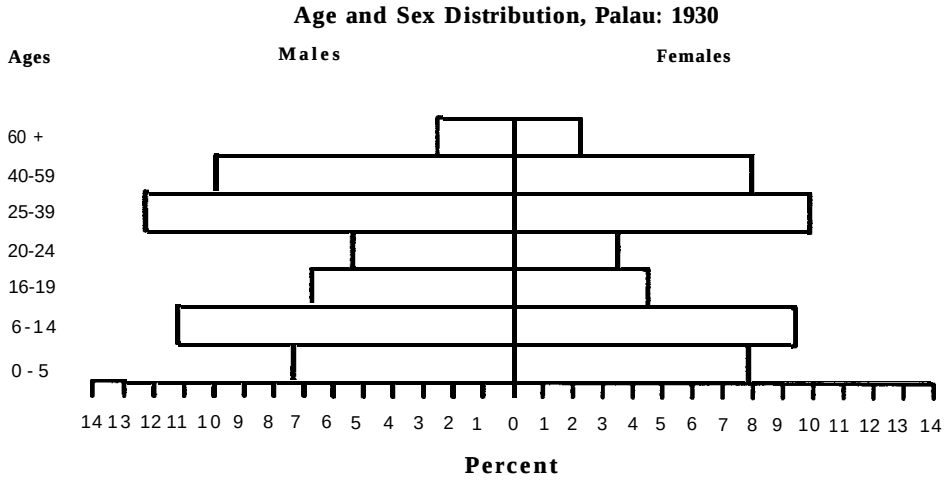
1920, recording slightly more than 5,750 Pacific Islanders (see Table 3; Nan'yo-cho 1937).[7] Population counts are available for three individual states: Angaur, Koror, and Peleliu, Together these three places accounted for slightly more than 40 percent of Palau's population. Although equally detailed demographic data are unavailable for the German period of administration, given the figures discussed earlier it appears that the population increased considerably over the six years preceding the 1920 census.

The number of Pacific Islanders in Palau increased by more than 200 persons between 1920 and 1925, a consequence of 0.7 percent average annual growth over that five-year period (see Table 2; Nan'yo-cho 1927). In addition to recording total population, the 1925 census also provided data on the population of each state in Palau (see Table 3). The three states mentioned above continued to dominate Palau's demography, though Ngaraard also featured a relatively large population. The 1925 census also reported information on the age-sex composition of Palau, recording a population with a median age of 22.8 years and a sex ratio (number of males per 100 females) of 125.4 (Figure 3).

The Pacific Islander population of Palau continued to increase slowly during the second half of the 1920s, the 1930 total of 6,009 resulting from 0.2 percent average annual population growth over the preceding five years (see Table 2; Nan'yo-cho 1931). Koror, Angaur, Peleliu, and Ngaraard states once again had the largest populations (see Table 3). Most states experienced slight increases during the late 1920s, although Angaur's population declined. Data on the age-sex composition of the 1930 population suggest only slight changes from the situation recorded five years earlier, with small declines in both the sex ratio (122.2) and the median age (21.8 years) (see Figure 3). In addition, the 1930 census recorded for the first time information on the age and sex composition of each state (Table 5). Available data indicate considerable variability between places. Some of this variability, such as that found in Hatohobei and Sonsorol states, *in part* is a consequence of the relatively small populations involved--although the contrasts of these states compared to others in Palau do indicate fundamental differences in resident populations. Angaur's 1930 population included a disproportionately large share of individuals aged 15-24 years, no doubt a consequence of importing young-adult Micronesians from elsewhere in the Mandated Territory to labor in the phosphate mines.

Few data on births, deaths, and mobility are available for Palau during the Japanese administration. The general fertility rate between 1923 and 1930 for women aged 15-50 years ranged from 71.1 (1926) to 129.3 (1929) (Yanaihara 1940:35). Crude birth rate for the years 1925 through 1929 averaged 24.4 for Palauans, slightly higher than the average crude death rate of 21.5 for the same years (Yanaihara 1940:46). Relatively detailed data on





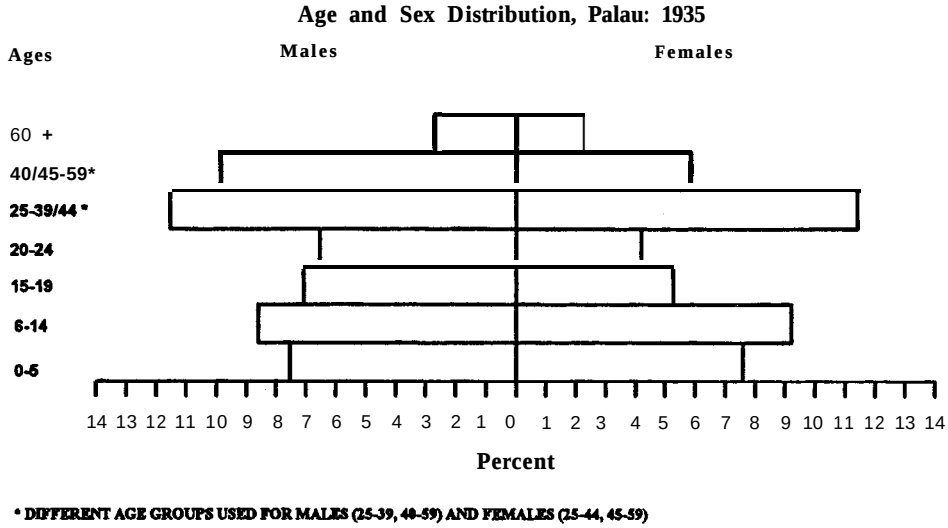


FIGURE 3. **Population pyramids (Pacific Islanders only): 1925, 1930, 1935.**

TABLE 5. **Pacific Islander Population by Age and State: 1930**

Area	Total Persons	Age Group (Percentage)			
		<15	15-24	25-59	60+
Republic of Palau	6,009	35.6	20.1	39.7	4.7
Aimeliik	200	34.0	24.0	34.5	7.5
Airai	365	33.7	15.9	45.8	4.7
Angaur	708	26.3	32.5	39.8	1.4
Hatohobei	180	5.6	18.3	71.1	5.0
Kayangel	117	37.6	19.7	36.8	6.0
Koror	1,277	37.0	24.7	35.3	3.0
Melekeok	357	45.7	13.7	35.0	5.6
Ngaraard	578	46.5	13.0	34.6	5.9
Ngardmau	126	35.7	19.0	42.1	3.2
Ngaremlengui	210	31.4	18.1	43.3	7.1
Ngatpang	50	30.0	14.0	48.0	8.0
Ngchesar	316	44.0	14.9	37.0	4.1
Ngerchelong	435	33.8	19.8	40.2	6.2
Ngiwal	229	36.7	18.8	38.0	6.6
Peleliu	641	46.2	17.0	31.4	5.5
Sonsorol	220	4.5	9.1	78.2	8.2

Source: Nan'yo-cho 1931.

Note: In this and following tables, percentages ma not sum to 100.0 due to rounding. Other reasons for not summing to 100.0% are noted in each case.

TABLE 6. **Pacific Islander Population by State, according to Place of Registration: 1930**

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

Source: Nan'yo-cho 1931.

mobility exist for Palau in 1930, revealing patterns of lifetime migration through comparing place of residence (in 1930) with place of registration by the Japanese administration (Table 6). These data indicate a particularly mobile population, with only about 57 percent of the Pacific Islander population living in the same locality where registered. Most movement occurred within the Palau District, though nearly 10 percent of the total Pacific Islander population came from another part of the Mandated Territory. Most of the individuals registered elsewhere in the mandate lived on Angaur, probably representing mine laborers. Relatively large proportions of the 1930 Angaur and Ngerchelong state populations comprised islanders from outside the Mandated Territory, the former no doubt mine laborers from elsewhere in Oceania and the latter possibly agricultural laborers.

The Pacific Islander population of Palau continued to grow slowly during the early 1930s, with 0.7 percent average annual increase adding another 221 persons between 1930 and 1935 (see Table 2; Nan'yo-cho 1937). The greatest numbers of people once again lived in Koror, Angaur, Peleliu, and Ngaraard states (see Table 3). Demographic change varied geographically, with some states gaining and others losing people. Koror, whose population had barely grown during the late 1920s, experienced a decline in Pacific Islander population between 1930 and 1935, though the immigration of Japanese caused the overall population to grow considerably as the community emerged as a major demographic, economic, and cultural center in the Mandated Territory.

The age-sex characteristics of the Pacific Islander population remained similar to those documented in 1930 (see Figure 3). A slight reduction in the excess of males over females occurred, as the sex ratio fell to 119.4. Overall age composition remained largely unchanged, the median age holding constant at 21.8 years. The age structure of individual municipalities continued to vary, with a decrease in the proportion of islanders aged less than 15 years compensated for by an increase in the percentage aged 15-24 years (Table 7). The presence of particularly high percentages of individuals aged 25-59 years in Hatohobei and Sonsorol states persisted. Disproportionately high representation of individuals aged 15-24 years continued on Angaur. Considerable variation in age composition occurred in all states.

Our understanding of the reasons underlying population change in Palau between 1930 and 1935 once again rests on minimal data. The crude birth rate and crude death rate for islanders both remained low between 1931 and 1935, the former ranging from 22.7 to 30.8 and the latter from 12.5 to 24.2 (Office of the Chief of Naval Operations 1944b:36). Fertility exceeded mortality in each of these five years, indicating that a slow rate of natural increase would have accounted for at least some of the population growth expe-

TABLE 7. **Pacific Islander Population by Age and State: 1935**

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

Source: Nan'yo-cho 1937.

rienced during the early 1930s (see also Yanaihara 1940:46). Detailed mobility data comparable with those presented for 1930 unfortunately are unavailable for 1935.

The Population of Palau in 1958

A 1946 population estimate prepared by the U.S. military reported 5,972 residents of Palau in August of that year (McGrath 1972:143; see also note 6). A second estimate for November 1947 reported 6,156 inhabitants (Chief of Engineers 1956:16). But it was not until 1958 that another census of Palau occurred, conducted by the TTPI administration (Office of the High Commissioner 1959). That census indicated that the population had increased by more than 3,100 persons over the total recorded in 1935, the result of 1.8 percent average annual growth (see Table 2). If the estimate for 1947 is accurate, the annual rate of population growth over the eleven years preceding the 1958 census increases to 4.7 percent--an exceptionally high rate that is highly unlikely, even allowing for the post-1947 repatriation of some Palauans and the inclusion of non-natives in the 1958 census (probably excluded and certainly very rare in 1947).

Despite overall demographic growth during the twenty-three years preceding the 1958 census, four states experienced slight declines in their populations (see Table 3). Two of these decreases occurred in the Southwest Island states, the populations of both Hatohobei and Sonsorol each totaling about 100 individuals in 1958. Angaur also witnessed a population decline, no doubt due to closure of the phosphate mines that for so long had employed immigrant labor. But the population growth in other parts of Palau easily compensated for these declines--particularly in Koror, where due to a nearly threefold increase in population since 1935 more than 38 percent of the republic's inhabitants resided.

Dramatic changes in population structure also occurred over this same period. Although males continued to exceed females, the sex ratio had declined to 102.7 by 1958--once again possibly a result of closing the mines at Angaur. The Palau population had become much younger as well, with the median age declining to 17.8 years (Figure 4). The presence of a larger, more youthful population suggests that natural increase (an excess of births over deaths) played an important role in demographic change between 1935 and 1958. Unfortunately, reliable data on fertility and mortality are unavailable for 1958, as is information on mobility.

The Population of Palau in 1967

The 1967 census of Palau recorded nearly 11,400 total inhabitants, the result of 2.2 percent average annual growth over the preceding nine years (see Table 2; School of Public Health n.d.). Demographic change once again varied among states (see Table 3). The populations of Hatohobei and Sonsorol states continued to decline, with the total inhabitants in each falling below 75. Ngardmau experienced the greatest population loss, largely erasing the population gains recorded in that state between 1935 and 1958. But once again demographic growth in Koror more than compensated for these losses, as the proportion of the total population residing in this state increased to nearly 50 percent.

Demographic composition remained similar to that recorded in 1958. Although Palau continued to contain more males than females, the sex ratio declined to 102.4. Palau's population continued its trend towards increasing youth as the median age fell to 15.0 years (see Figure 4). Once more the age composition of individual municipalities varied considerably (Table 8). In some cases this variability was a function of the small resident populations, such as in Hatohobei and Sonsorol states. But in most instances the differences in demographic composition probably provide indirect evidence of key population dynamics, including the migration of adults (comprising the 15-24 and 25-59 age groups) to Koror State from more rural places.

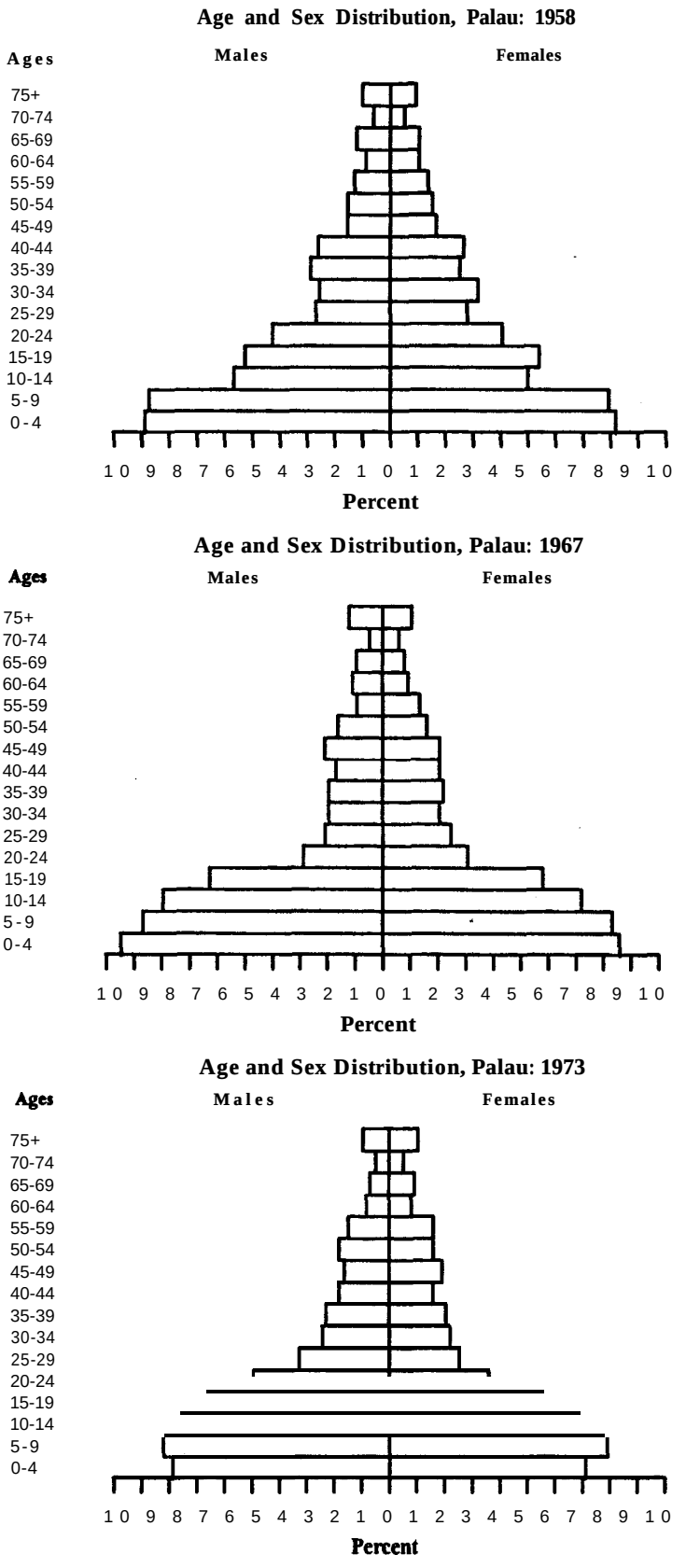


FIGURE 4. **Population pyramids: 1958, 1967, 1973.**

TABLE 8. **Population by Age and State: 1967**

Area	Total Persons	Age Group (Percentage)[a]			
		0-14	15-24	25-59	60+
Republic of Palau	11,365	48.4	17.3	24.5	6.5
Aimeliik	364	47.0	19.5	24.2	9.3
Airai	538	51.7	14.5	24.5	8.0
Angaur	429	48.7	19.1	20.7	7.0
Hatohobei	60	28.3	3.3	38.3	30.0
Kayangel	199	48.7	21.1	24.6	3.5
Koror	5,667	46.7	17.7	26.0	4.2
Melekeok	356	51.1	15.2	21.9	8.7
Ngaraard	770	50.3	18.2	21.7	8.6
Ngardmau	227	50.7	17.2	23.8	6.6
Ngaremlengui	436	51.6	17.4	22.7	7.1
Ngatpang	119	49.6	19.3	20.2	10.9
Ngchesar	449	50.8	15.8	24.3	7.8
Ngerchelong	615	50.7	15.3	23.3	10.1
Ngiwal	381	53.5	14.4	23.9	7.6
Peleliu	682	49.6	17.7	21.8	10.6
Sonsorol	73	34.2	11.0	23.3	24.7

Source: Nan'yō-chō 1937.

[a] Percentages may not sum 100.0 due to exclusion of 385 individuals whose ages were "not specified" or who were "foreign born" (whose precise ages similarly were not specified).

TABLE 9. **Fertility and Mortality Measures for Palau: Select Census Years**

Year	Total Persons	Total Births	Fertility[a]			Mortality	
			Crude Birth Rate	General Fertility Rate	Total Fertility Rate	Crude Death Rate	Infant Mortality Rate[b]
1967	11,365	424	37.3	200.1	7,472	5.7	42.5
1970	11,210	336	30.0	145.2	5,223	6.9	47.6
1973	12,673	401	31.6	162.9	5,574	4.2	44.9
1980	12,116	302	24.9	116.8	3,476	7.8	26.5
1986	13,873	347	25.0	NA	NA	6.3	25.9
1990	15,122	326	21.6	90.1	3,046	7.7	24.5

Sources: School of Public Health n.d.; U.S. Bureau of the Census 1972, 1983a, 1992c; U.S. Dept. of State 1981, 1982; Office of Planning and Statistics 1992.

[a] Fertility measures for 1967 and 1980 differ from those presented in Table 10, due to conflicting data. The data here are reported births in the entire Republic of Palau for each year and thus should be comparable across years. Unfortunately, these same data are not available for each state, requiring that I employ different data sources for Table 10.

[b] Infant mortality rates for 1967, 1973, 1980, and 1990 differ from age-specific mortality rates for individuals aged less than 1 year, presented in Table 12, due to slightly different methods of calculation and data. Calculations here are based on the number of infant deaths (of individuals aged less than 1 year) per 1,000 *live births,* which is the conventional method of calculating infant mortality. The age-specific mortality for persons younger than 1 year presented in Table 12 represents the number of deaths of individuals in that age group per 1,000 *individuals aged less than 1 year.*

Vital statistics from 1967 provide important clues to the mechanisms underlying population change in Palau (Table 9). Fertility grew beyond pre-World War II levels, with crude birth rate increasing by as much as 64 percent (or as little as 21 percent, depending on the prewar figure one uses) and the general fertility rate increasing by as much as 181 percent (or as little as 55 percent, once again depending on the choice of prewar figures). Complementing this apparent growth in fertility, mortality declined to well below the levels recorded during the Japanese administration, the 1967 measures ranging from 24 to 46 percent of those recorded prior to the war. This growing imbalance between mortality and fertility no doubt accounted for much of the postwar increase in population, as discussed in greater detail below. Fertility measures calculated from a different data source than used for Table 9 reveal considerable variability between individual states (Table 10). Two of the three measures calculated were higher in Koror than for Palau as a whole, suggesting that natural increase may have played a relatively important role in the demographic growth experienced in this state (though the measures possibly also reflect people from other areas reporting births in the- Koror hospital; see note 8 below). As one might expect, the largest numbers of deaths in 1967 occurred among the very young (aged 0-4 years) and old (aged 70 years or more) (Table 11), as reflected in age-specific death rates (Table 12). Unfortunately, reliable data on mobility are unavailable for 1967, although as noted above the age composition of rural places compared to Koror State suggest that movement to Koror accounted for much of its postwar growth.

The Population of Palau in 1973

The U.S. Bureau of the Census conducted its first census of the TTPI in 1970 (U.S. Bureau of the Census 1972). Unfortunately, the results are of questionable accuracy, probably due to a combination of errors in recording, editing, and tabulation that occurred in varying degrees throughout much of the Trust Territory. I have presented the total population and the population of individual states above (see Tables 2 and 3) for the sake of completeness. But because of certain puzzling results of this census--such as indications of depopulation during a period marked by steady population growth--coupled with known problems in data processing, I do not present an analysis of the population counts. The lack of confidence in the 1970 census led the TTPI administration to conduct another census in 1973 (Office of Census Coordinator 1975).

The 1973 census recorded nearly 12,700 persons in Palau (see Table 2). Compared to the total recorded in the 1970 census, the 1973 population

TABLE 10. **Fertility Measures by State: 1967 and 1980**

Area	1967					1980				
	Total Persons	Total Births[a]	Crude Birth Rate	General Fertility Rate	Total Fertility Rate	Total Persons	Total Births	Crude Birth Rate	General Fertility Rate	Total Fertility Rate
Republic of Palau	11,365	408	35.9	176.0	6,565	12,116[b]	225	18.6	87.2	2,850
Aimeliik	364	9	24.7	125.0	4,292	273	5	18.3	116.3	5,625
Airai	538	11	20.4	125.0	5,813	668	10	15.0	78.7	2,772
Angaur	429	20	46.6	250.0	9,729	243	2	8.2	55.6	1,667
Hatohobei	60	3	50.0	500.0	15,000	74	2	27.0	200.0	5,000
Kayangel	199	7	35.2	127.7	3,810	140	-	-	-	-
Koror	5,667	230	40.6	188.6	6,390	7,585	160	21.1	88.4	2,846
Melekeok	356	16	44.9	250.0	11,149	261	4	15.3	117.6	3,635
Ngaraard	770	15	19.5	85.1	4,362	457	5	10.9	59.5	1,508
Ngardmau	227	10	44.1	179.5	6,306	160	3	18.8	142.9	4,333
Ngaremlengui	436	18	41.3	212.5	10,669	358	6	16.8	74.1	2,440
Ngatpang	119	1	8.4	55.6	2,500	166	5	30.1	135.1	3,500
Ngchesar	449	14	31.2	170.7	7,937	364	4	11.0	69.0	3,089
Ngerchelong	615	17	27.6	153.8	6,583	372	5	13.4	78.1	1,566
Ngiwal	381	13	34.1	191.2	9,497	267	2	7.5	60.6	1,964
Peleliu	682	21	30.8	150.0	6,483	609	12	19.7	107.1	4,154
Sonsorol	73	3	41.1	300.0	7,667	79	-	-	-	-

Sources: School of Public Health n.d.; U.S. Bureau of the Census 1983b.

Note: Includes infants born to mothers aged <15, >49, and of unknown age; the "unknown" group is used for crude birth rate but not general or total fertility rates.

[a] 1967 natality based on infants aged 1 year and younger recorded by the census for that year, and thus does not account for individuals who died during the first year of life prior to the census.

[b] Includes the 40 individuals on the "Unorganized Islands," where no births were recorded in 1980.

TABLE 11. **Registered Deaths in Palau by Age Group: 1967, 1973, 1980, and 1990**

Age Group	1967[a]	1973	1980	1990
	Number			
Total Deaths	68	53	94	117
	Percentage			
All Ages	100.0	100.0	100.0	100.0
< 1	14.7	34.0	8.5	6.8
1-4	10.3	1.9	3.2	4.3
5-9	1.5	3.8	-	1.7
10-14	1.5	1.9	1.1	-
15-19	2.9	1.9	1.1	2.6
20-24	1.5	7.5	2.1	3.4
25-29	5.9	-	1.1	6.8
30-34	2.9	1.9	2.1	4.3
35-39	1.5	3.8	2.1	3.4
40-44	1.5	-	1.1	5.1
45-49	7.4	1.9	4.3	-
50-54	-	3.8	4.3	4.3
55-59	2.9	9.4	5.3	5.1
60-64	5.9	5.7	8.5	10.3
65-69	1.5	9.4	6.4	4.3
70-74	8.8	11.3	8.5	11.1
75+	20.6	1.9	40.4	26.5

Sources: 1967 calculations based on deaths in the 11.5 months preceding the 1967 census, as presented in School of Public Health n.d.; 1973 and 1980 calculations based on deaths in calendar year, in U.S. Dept. of State 1982; 1990 calculations based on deaths in calendar year recorded in Office of Planning and Statistics 1992.

[a] Percentages do not sum precisely to 100.0 due to 3 individuals whose age at death was "not stated."

represents the result of 4.2 percent average annual increase--a very high growth rate that further suggests an undercount in the 1970 effort. Compared to the 1967 total, the 1973 population represents a more likely average annual increase of 1.8 percent. Population grew in only three of the sixteen states, however, over the six years preceding the 1973 census (see Table 3). One of these places was Koror, where the addition of more than 2,000 residents between 1967 and 1973 easily compensated for the declines experienced elsewhere. As a result of these population changes, in 1973 Koror State accounted for nearly 61 percent of Palau's total inhabitants.

Data on demographic composition reveal certain structural differences between the 1973 and 1967 populations. Males once again exceeded females

TABLE 12. **Age-Specific Death Rates in Palau: 1967, 1973, 1980, and 1990**

Age Group	1967	1973	1980	1990
Total	5.72[a]	4.18[a]	7.76	7.74
<1	24.27	40.45	33.33	41.24
1-4	4.49	0.69	2.58	3.79
5-9	0.54	0.99	-	1.31
10-14	0.60	0.55	0.58	-
15-19	1.52	0.65	0.64	2.05
20-24	1.56	3.71	1.85	2.99
25-29	8.30	-	1.21	5.70
30-34	4.71	1.80	2.88	3.74
35-39	2.28	3.79	3.98	3.22
40-44	2.43	-	2.02	6.87
45-49	11.52	2.29	10.10	-
50-54	–	4.78	10.42	9.75
55-59	8.37	13.77	12.25	14.89
60-64	20.00	14.22	27.87	31.01
65-69	5.62	24.39	21.13	15.06
70-74	50.42	42.86	61.54	52.21
75+	57.38	3.95	165.22	92.54

Sources: See Table 11.

[a] Includes individuals whose age group was "not stated."

in the republic as a whole, the sex ratio increasing considerably to 109.4. Moreover, the 1973 population was older than that recorded in 1967--reversing a trend towards increasing youthfulness that had persisted since 1925 (see Figure 4). Evidence for an older population appears immediately in the median age, which had increased to 16.9 years; much of this change in age occurred as an increase in the proportion of individuals aged 15-24 and 25-59 years, at the expense of individuals younger than 15 years. Available evidence on the age composition of selected components of Palau indicates that most of the republic continued the trend towards increasing youthfulness; the main exception was Koror State, which compared to Palau as a whole contained proportionally fewer individuals in the youngest age group examined and proportionally more in the two central age groups (Table 13).

Available vital statistics for 1973 indicate a decline in all three fertility measures calculated for Palau compared to 1967 levels (see Table 9). This reduction in postwar fertility levels has continued until the present (see Levin and Retherford 1986:52, 58). However, crude death rate also declined over the same six years, preserving a considerable excess of births over deaths.

TABLE 13. **Population by Age and State: 1973**

Area	Total Persons	Age Group (Percentage)[a]			
		<15	15-24	25-59	60+
Republic of Palau	12,673[b]	45.2	20.7	27.3	6.4
Angaur	277	51.6	16.2	22.7	9.4
Babeldaob[c]	3,771	51.3	14.5	25.2	8.4
Hatohobei	48	41.7	10.4	16.7	31.3
Kayangel	162	64.8	9.3	20.4	4.9
Koror	7,669	41.5	25.2	28.6	4.4
Peleliu	657	46.4	10.5	28.6	14.2
Sonsorol	88	46.6	13.6	22.7	17.0

Source: Office of Census Coordinator 1975.

[a] Percentages do not sum to precisely 100.0 due to exclusion of 43 individuals whose ages were "not stated."

[b] Total persons includes 1 individual whose place of residence was "not stated."

[c] Includes Aimeliik, Airai, Melekeok, Ngaraard, Ngardmau, Ngaremlengui, Ngatpang, Ngchesar, Ngerchelong, and Ngiwal states.

TABLE 14. **TTPI-Born Population by Area of Usual Residence, according to Home District: 1973**

Usual Residence	Total Persons	Home District (Percentage)			
		Same Area	Elsewhere in Palau	Elsewhere in TTPI	Outside TTPI
Republic of Palau	12,091[a]	61.3	34.4	4.2	0.1
Angaur	260	92.3	6.9	0.8	-
Babeldaob[b]	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	-	-	-

Source: Office of Census Coordinator 1975.

[a] Total includes 1 individual whose usual residence was "not stated."

[b]Includes Aimeliik, Airai, Melekeok, Ngaraard, Ngardmau, Ngaremlengui, Ngatpang, Ngchesar, Ngerchelong, and Ngiwal states. "Same Area" in this case means on Babeldaob Island--movement between states on the island not qualifying as a change in location.

Age-specific mortality data indicate a substantial increase since 1967 in the mortality of individuals aged less than 1 year, a change compensated for by decreases in the mortality of several other age groups (including 70 years and older) (see Tables 11 and 12).

Mobility data for 1973 provide few clues for the geographic arrangement of Palau's population (Table 14). In general, the TTPI-born population was highly mobile, nearly 39 percent claiming as home some place other than their state of residence. As one might expect, Koror State featured the greatest proportion of immigrants, with nearly 60 percent of its TTPI-born population originating elsewhere. Although the vast majority of the immigrants to Koror came from another part of Palau, more than 5 percent came from elsewhere in the Trust Territory (possibly to attend the Micronesian Occupational College). Koror State clearly dominated the mobility statistics, with at least 88 percent of the residents of other parts of Palau living in their respective home areas.

The 1973 census also collected information that provides insights on emigration, although in comparing place of birth with usual residence for TTPI-born individuals these data are not strictly comparable with those presented immediately above.[8] Available information indicates that of the more than 12,500 Palau-born individuals counted in the 1973 census, less than 66 per-

TABLE 15. **TTPI-Born Population by Place of Birth, according to Area of Usual Residence: 1973**

		Usual Residence (Percentage)			
Place of Birth	Total Persons	Same Area	Elsewhere in Palau	Elsewhere in TTPI	Outside TTPI
Republic of Palau	12,555[a]	65.5	26.5	8.0	-
Angaur	572	41.8	40.7	17.3	0.2
Babeldaob[b]	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	7.9	0.2
Sonsorol	116	63.8	27.6	8.6	-

Source: Office of Census Coordinator 1975.

[a] Total includes 30 individuals whose place of birth was "not stated"; calculations exclude these persons.

[b] Babeldaob includes Aimeliik, Airai, Melekeok, Ngaraard, Ngardmau, Ngaremlengui, Ngatpang, Ngchesar, Ngerchelong, and Ngiwal states. "Same Area" in this case means on Babeldaob Island--movement between states on the island not qualifying as a change in location.

cent resided in the area of birth (Table 15). As one might expect, more-rural parts of Palau experienced the greatest emigration, with more than half the persons, born in Angaur, Hatohobei, and Peleliu states moving elsewhere (most often to another part of Palau, probably Koror). In contrast to the rest of Palau, only about 18 percent of the persons born in Koror relocated outside their place of birth, most often to another part of the Trust Territory. In general, these data support the proposition that rural-urban migration in Palau accounted for much of the demographic growth experienced in Koror State.

The Population of Palau in 1980

The U.S. Bureau of the Census conducted its second census of Palau in 1980, recording a decline of more than 550 persons over the preceding seven years (see Table 2; U.S. Bureau of the Census 1983a).[9] All but four states experienced depopulation during this period, although no decrease exceeded 268 persons (see Table 3). Koror joined the list of states whose population declined following the 1973 census, though its share of the total grew to nearly 63 percent.

Population composition in 1980 generally resembled that documented in 1973. Males continued to exceed females, though the sex ratio fell slightly to 107.6 (Figure 5). Median age, on the other hand, continued to increase, reaching 18.8 years as the population grew slightly older (U.S. Bureau of the Census 1983a:11). The age structure of individual states once again varied widely. The relatively high percentages of individuals in Koror State aged 15-24 and 25-59 years suggest a continuation of people moving to the main economic and demographic center in search of education or employment opportunities (Table 16).

Data on fertility for Palau indicate a decrease between 1973 and 1980 for all three measures calculated (see Table 9; see also Levin and Retherford 1986:58). Fertility measures for individual states, once again employing different data than used for Palau as a whole, indicate low fertility in most parts of the republic (see Table 10)--in many cases falling well below that found in the Japanese period. Mortality apparently increased over the same seven-year period, a decline in infant mortality (evident from both data sources employed) more than compensated for by an increase in mortality among individuals aged 70 years and older (see Table 12). Based on these two shifting trends, one would expect a reduction in the population *growth rate,* though because fertility still exceeds mortality natural increase should continue.

The third main component of demographic change, namely migration,

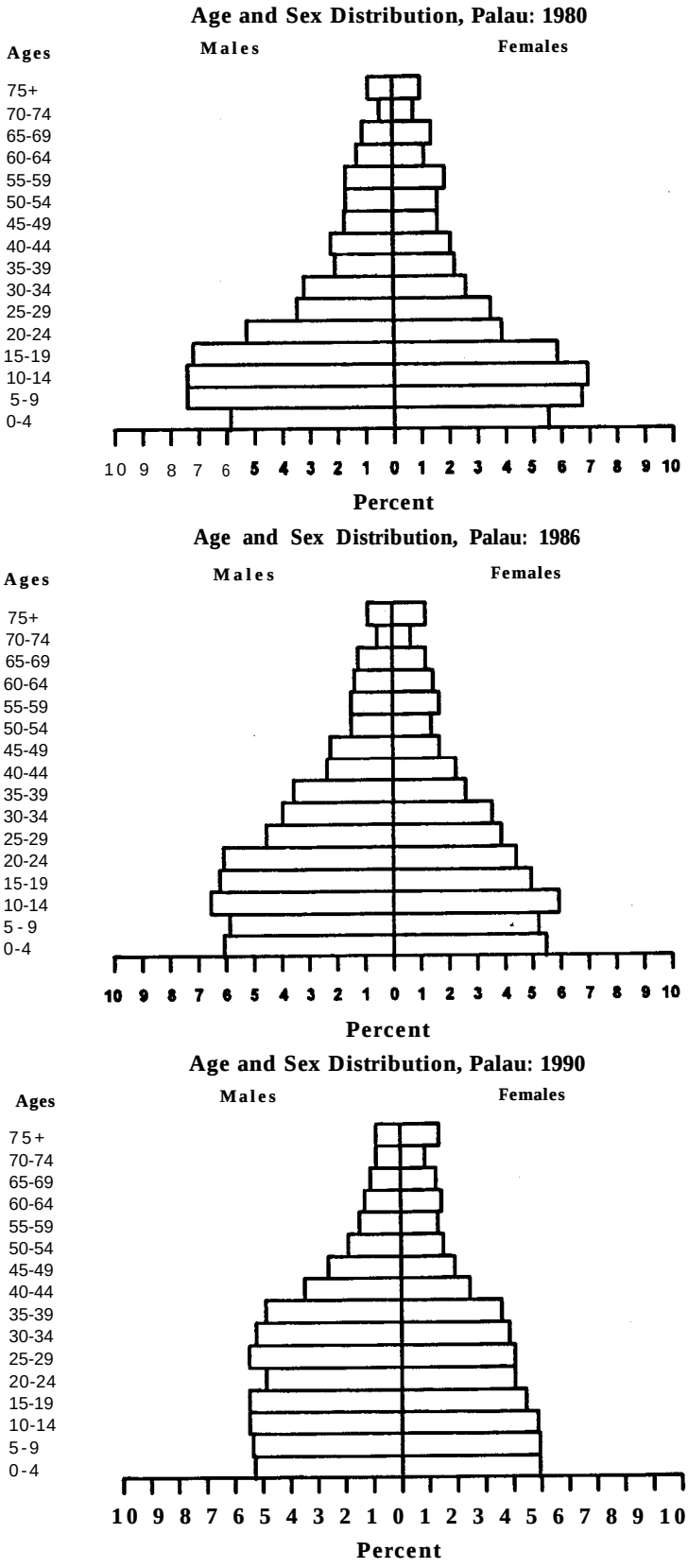


FIGURE 5. **Population pyramids: 1980, 1986, 1990.**

TABLE 16. Population by Age and State (or Area): 1980

Area	Total Persons	Age Group (Percentage)			
		<15	15-24	25-59	60+
Republic of Palau	12,116	39.9	21.8	30.6	7.7
Aimeliik	273	45.8	19.0	24.9	10.3
Airai	668	40.7	20.2	28.1	10.9
Angaur	243	46.5	14.0	26.7	12.8
Hatohobei	74	44.6	10.8	29.7	14.9
Kayangel	140	50.7	14.3	25.7	9.3
Koror	7,585	38.2	23.4	32.9	5.5
Melekeok	261	41.4	20.3	25.7	12.6
Ngaraard	457	42.5	17.1	28.0	12.5
Ngardmau	160	44.4	21.9	23.1	10.6
Ngaremlengui	358	38.5	25.4	26.5	9.5
Ngatpang	166	39.8	27.7	27.7	4.8
Ngchesar	364	44.0	18.7	27.5	9.9
Ngerchelong	372	40.6	19.6	25.3	14.5
Ngiwal	267	42.3	18.7	26.6	12.4
Peleliu	609	42.4	17.9	28.1	11.7
Sonsorol	79	60.8	7.6	21.5	10.1
Palau Is. (unorg.)	40	40.0	25.0	20.0	15.0

Source: U.S. Bureau of the Census 1983a.

could account for the population decline between 1973 and 1980. Unfortunately, detailed data on emigration from Palau largely are unavailable. It is likely that two of the main destinations of Palauan emigrants were the Commonwealth of the Northern Mariana Islands (CNMI) and Guam, for decades attractive to other Micronesians because of employment and educational opportunities. Data from the 1980 census indicate that 735 Palauans resided in the CNMI (most probably on Saipan, capital of the TTPI) and 1,335 Palauans lived in Guam that year (U.S. Bureau of the Census 1984a:9, 1984b: 9). Another 692 to 1,027 Palauans resided in the United States in 1980, the discrepancy depending on how one defines "Palauan" (see Barringer, Gardiner, and Levin 1993:286, 298). Such levels of emigration certainly could account for the population decline between 1973 and 1980, *if* many relocated after the 1973 census.

More detailed data are available on mobility *within* Palau, through comparing residence in 1980 with residence in 1975. These data indicate relatively little short-term migration, with only about 8 percent of the total population aged 5 years and older having relocated from outside their 1980 state of residence (Table 17). As with age composition, these mobility patterns

TABLE 17. **Population by State, according to Place of Residence in 1975: 1980**

Area	Total Persons	Place of Residence in 1975 (Percentage)			
		Same State	Elsewhere in Palau	Elsewhere in TTPI	Outside TTPI
Republic of Palau	9,938[a]	91.9	4.2	1.7	2.0
Aimeliik	229	93.9	4.4	1.3	0.4
Airai	574	85.4	11.8	0.9	1.2
Angaur	199	96.0	2.0	1.0	1.0
Hatohobei	61	95.1	3.3	1.6	-
Kayangel	125	100.0	-	-	-
Koror	6,088	90.6	3.9	2.3	3.0
Melekeok	224	100.0	-	-	-
Ngaraard	380	87.9	9.2	1.8	0.5
Ngardmau	142	100.0	-	-	-
Ngaremlengui	320	91.6	7.2	0.6	0.6
Ngatpang	142	96.5	-	3.5	-
Ngchesar	316	98.4	1.6	-	-
Ngerchelong	322	98.4	1.2	0.3	-
Ngiwal	222	100.0	-	-	-
Peleliu	534	97.2	2.4	-	0.2
Sonsorol	60	65.0	33.3	1.7	-

Source: U.S. Bureau of the Census 1983b.

[a] Includes only those individuals aged 5 years and older; percentages may not sum precisely to 100.0 due to exclusion of 23 individuals whose residence in 1975 was not given; data in this table exclude 40 individuals whose residence was recorded as "Palau Islands, Unorganized."

varied between places. In four rural states, none of the population aged 5 years and older had relocated from elsewhere, either from within Palau or beyond. In contrast, slightly more than 9 percent of the population of Koror State immigrated over the five years preceding the 1980 census, with people from other parts of Palau, other parts of the Trust Territory, and beyond the Trust Territory all represented in similar amounts.

The Population of Palau in 1986

In 1986 the Palau Office of Planning and Statistics, with technical assistance from the United Nations Development Program, conducted the tenth census of Palau (Office of Planning and Statistics 1987). The census recorded nearly 13,900 persons, the result of a resurgence in demographic growth that averaged 2.3 percent annually over the preceding six years and added more than

1,700 to the total population (see Table 2). Most states actually lost population following the 1980 census, with the Southwest Island states each reporting populations below 50 individuals (see Table 3). But growth in two states more than compensated for these declines: Koror, which added more than 1,850 to its population as its share of the total grew to more than 68 percent; and Airai, a state whose population increased by nearly 53 percent (though by only 353 persons) over the same time period, probably attributable to the bridge connecting Koror and Babeldaob (at Airai) that opened in the late 1970s.

Certain characteristics of demographic composition that had emerged in the early 1970s persisted in the 1986 census. The sex ratio, which had reached its lowest point in 1967, increased to 114.3. Similarly, Palau's population once more increased in age, reaching a median of 21.8 years, last recorded more than five decades earlier at the height of the Japanese administration (see Figure 5). The increased age occurred primarily as reductions in the percentages of the total population aged less than 25 years, complemented by growth in the proportions aged 25 years and older. Relatively high percentages of individuals in the two central age groups characterized both Airai and Koror, likely due to immigration from rural areas (Table 18). The demographic struc-

TABLE 18. **Population by Age and State (or Area): 1986**

Area	Total Persons	Age Group (Percentage)			
		<15	15-24	25-59	60+
Republic of Palau	13,873	35.0	21.3	35.9	7.9
Aimeliik	283	39.6	17.3	32.5	10.6
Airai	1,021	31.5	22.7	37.3	8.4
Angaur	214	41.6	15.9	33.2	9.3
Hatohobei	35	45.7	11.4	22.9	20.0
Kayangel	115	55.7	13.0	22.6	8.7
Koror	9,442	33.2	22.8	37.8	6.2
Melekeok	254	37.8	13.4	33.5	15.4
Ngaraard	468	37.8	27.1	24.4	10.7
Ngardmau	157	40.8	17.8	29.9	11.5
Ngaremlengui	301	42.2	13.6	32.9	11.3
Ngatpang	219	34.7	33.3	26.5	5.5
Ngchesar	271	41.7	12.5	31.4	14.4
Ngerchelong	277	40.8	10.8	33.2	15.2
Ngiwal	218	40.4	14.2	28.0	17.4
Peleliu	545	42.0	10.6	32.5	14.9
Sonsorol	42	69.0	4.8	19.0	7.1
Rock Islands	11	-	27.3	36.4	36.4

Source: Office of Planning and Statistics 1987.

TABLE 19. **Population by Place of Usual Residence, according to Previous Place of Residence: 1986**

		Previous Residence (Percentage)			
Usual Residence	Total Persons	Same State	Elsewhere in Palau	Outside Palau	Not Stated
Republic of Palau	13,704[a]	66.6	20.2	12.6	0.6
Aimeliik	288	59.7	32.6	7.3	0.3
Airai	1,027	49.4	35.1	15.6	-
Angaur	220	85.9	10.9	3.2	-
Hatohobei	35	11.4	88.6	-	-
Kayangel	119	71.4	24.4	4.2	-
Koror	9,206	68.2	16.2	14.9	0.6
Melekeok	242	73.1	16.9	7.4	2.5
Ngaraard	481	50.3	33.3	16.4	-
Ngardmau	159	56.6	39.0	4.4	-
Ngaremlengui	307	77.9	15.3	6.2	0.7
Ngatpang	217	42.4	54.8	2.8	-
Ngchesar	276	74.6	23.9	0.7	0.7
Ngerchelong	294	62.9	34.0	2.4	0.7
Ngiwal	223	83.0	14.8	2.2	-
Peleliu	556	83.1	11.5	3.2	2.2
Sonsorol	42	26.2	73.8	-	-
Rock Islands	12	-	83.3	16.7	-

Source: Office of Planning and Statistics 1987.

[a] Does not include 168 individuals enumerated by the 1986 census whose usual residence was outside Palau and 1 person whose usual residence was not given.

ture of the remaining states continued to vary, with many of the more-rural places featuring particularly high percentages of old and young persons who tend to stay home while others emigrate in search of schooling or work.

Available vital statistics indicate that natural increase probably played an important role in the demographic growth recorded in Palau between 1980 and 1986. Based on limited data, fertility apparently grew only slightly over these six years (see Table 9). Mortality, in contrast, declined over the same period, increasing the difference between births and deaths.

The contribution of migration to total population change, either into or out of Palau, is uncertain due to a lack of data. Immigrants comprised 1,550 persons in the Republic of Palau in 1986 (Office of Planning and Statistics 1987:33), although their contribution to 1980-1986 population growth is unknown because precisely *when* they immigrated is not given. The contribution of mobility to the geographic distribution of Palau's population, on the other hand, is clearer--though playing varying roles throughout the republic.

Data on lifetime mobility indicate that two-thirds of the 1986 population lived in the same state as their previous residence (Table 19). About 20 percent had lived elsewhere in Palau, with nearly 13 percent coming from outside the ‘republic. Airai and Koror states, which experienced considerable demographic growth between 1980 and 1986, both featured populations consisting of large percentages of immigrants; indeed, more than half the population of Airai in 1986 claimed a previous residence elsewhere in Palau or beyond. Of those who had relocated, nearly 48 percent had moved within two years of the 1986 census (Office of Planning and Statistics 1987:35). Without exception, every state in Palau contained persons who claimed a previous residence outside that state. The apparently high incidence of immigration characterizing many of the rural parts of Palau, including the Southwest Island states, probably represents some type of circular mobility--people moving for a time somewhere else (most likely Koror) before returning to their home island.

The Population of Palau in 1990

The 1990 census of Palau, conducted by the U.S. Bureau of the Census, recorded a total population of 15,122 persons--the result of 2.2 percent average annual growth over the preceding four years (see Table 2; U.S. Bureau of the Census 1992c). Nine of the sixteen states experienced population increase (see Table 3). The greatest gains once again occurred in Airai and (especially) Koror states, Koror now accounting for more than 69 percent of the republic’s population. Many rural parts of Palau continued to feature small populations, in some cases (such as Ngatpang) losing a considerable number of people during the second half of the 1980s.

The gap between males and females increased further in 1990, the sex ratio growing to 116.6. Palau’s population aged considerably over the same time period, with the median age reaching 25.6 years (see Figure 5; see also U.S. Bureau of the Census 1992c:6). Much of the change in age composition occurred as a substantial decline in the percentage of individuals aged less than 15 years and a substantial increase in the percentage of individuals aged 25-59 years. The age composition of Koror State featured an even smaller proportion of the youngest age group and a larger proportion of the 25-59 group than the republic as a whole, once again indirect evidence of immigration of working-age individuals (Table 20). The populations of rural states tended to comprise larger percentages of young and old persons than the republic as a whole.

Available vital statistics indicate that fertility declined between 1986 and 1990, with all three fertility measures calculated lower than 1980 levels as well

TABLE 20. **Population by Age** and **State: 1990**

Area	Total Persons	Age Group (Percentage)			
		<15	15-24	25-59	60+
Republic of Palau	15,122	30.3	18.5	42.6	8.6
Aimeliik	439	33.3	21.2	36.9	8.7
Airai	1,234	30.5	18.6	42.3	8.6
Angaur	206	30.1	18.0	35.9	16.0
Hatohobei	22	27.3	36.4	18.2	18.2
Kayangel	137	36.5	20.4	29.2	13.9
Koror	10,501	29.1	18.9	45.3	6.7
Melekeok	244	34.8	16.8	31.1	17.2
Ngaraard	310	35.8	18.4	30.0	15.8
Ngardmau	149	35.6	11.4	44.3	8.7
Ngaremlengui	281	38.8	16.7	33.5	11.0
Ngatpang	62	29.0	8.1	50.0	12.9
Ngchesar	287	35.5	17.1	29.6	17.8
Ngerchelong	354	35.6	16.9	30.2	17.2
Ngiwal	234	34.2	12.8	35.0	17.9
Peleliu	601	29.5	17.0	37.6	16.0
Sonsorol	61	34.4	31.1	26.2	8.2

Source: U.S. Bureau of the Census 1992c.

(see Table 9). Mortality, in contrast, increased above levels recorded in 1986, a shift one might expect in a population that increased in age as much as Palau's did. The greatest number of deaths occurred among individuals aged 70 years and older. Although the percentage of total deaths accounted for by infants younger than 1 year declined during the 1980s, the age-specific death rate for this age group actually increased over the same period due to changes in the overall demographic structure (see Tables 11 and 12). Nevertheless, fertility greatly exceeded mortality in 1990, indicating that natural increase once again likely accounted for much of Palau's population growth over the preceding four years.

Rural-urban migration no doubt continued during the late 1980s, but unfortunately data that provide insights on such movement are at present unavailable from the 1990 census. As a result, one must explore internal mobility indirectly, such as through the contrasting age profiles found in various states discussed above. International migration, which has played some role in Palauan demography throughout much of the twentieth century, increased in importance in 1990. Nearly 17 percent of the 1990 population of Palau was non-Palauan, the vast majority of these immigrants coming from Asia (particularly the Philippines). Of those individuals born outside the republic, nearly

52 percent relocated between 1988 and 1990, with only 19 percent living in Palau prior to 1985 (U.S. Bureau of the Census 1992c:16, 56).

Given evidence for natural increase as well as considerable immigration, one would expect much more population growth in Palau during the late 1980s than apparently occurred. The most feasible explanation is that Palauans continued to emigrate outside the republic, with the CNMI and Guam among the most likely destinations. The 1990 census of each of these places recorded 1,407 and 1,233 residents born in Palau, respectively (U.S. Bureau of the Census 1992a:16, 1992b:15). Although as of 1990 Palauans could not migrate freely to the United States, the 1,439 respondents in the 1990 U.S. census who identified themselves as Palauan indicate that a considerable number had found some means of relocating there (U.S. Bureau of the Census 1991).

The Mechanisms of Population Change in the Republic of Palau

Due to a variety of causes, Palau experienced considerable depopulation over the century following the onset of sustained contact with Europeans in 1783. Estimates of Palau's population about this time range from 20,000 to 100,000 (McKnight 1960:166). By the early 1880s the naturalist Kubary estimated that Palau's population had declined to roughly 4,000 (1885:145). Although Krämer (1919:292) felt that depopulation had ceased by Kubary's time, available evidence suggests that population decline may have continued through the nineteenth century--with one estimate by a newly arrived missionary placing about 3,000 people in the Palau Islands in 1892 (de Valencia 1892:403). Certainly by the time of the German administration the population had stopped its decline, exceeding 4,500 by 1914 and approaching 5,800 Pacific Islanders by 1920 (Yanaihara 1940:42; see Table 2). Between the first Japanese census in 1920 and the most recent census in 1990, Palau's population increased by more than 262 percent, at a steady growth rate of about 1.4 percent annually. Thus over a period of about two hundred years, Palau's population declined by at least 70 percent (perhaps considerably more) and then more than quadrupled (though probably still not reaching pre-European levels). Given the nature of Palau's demographic evolution, two questions naturally follow: what were the causes of the massive depopulation and subsequent population growth observed in Palau over the past two centuries, and what were (and are) the repercussions of these dramatic demographic shifts? The rest of this article focuses on these two issues.

Of the three potential causes of demographic change in any setting--mortality, fertility, and mobility--the first probably was the main cause of depopulation in Palau during the nineteenth century. Although some of the

most knowledgeable researchers familiar with Palau during this period attributed depopulation to, among other things, slavery, papal decrees, avarice, proselytizing, the introduction of metal tools, abuse of alcohol and tobacco, and the general destruction of native culture by Europeans (Semper 1982: 291-293; Krämer 1919:293-294), the most important cause surely was increased deaths due to illnesses introduced from outside Micronesia. Despite claims that smallpox and other contagious diseases were absent during the 1860s (Semper 1982:292), a host of introduced illnesses occurred throughout Palau in the nineteenth century. Influenza, tuberculosis and other respiratory disorders, smallpox, dysentery and other intestinal illnesses, whooping cough, and measles caused many deaths between the 1780s and 1880s (see Robertson 1876/1877:45; Kubary 1885:145-146; Krämer 1919:293-298; Office of the Chief of Naval Operations 1944b:32; Price 1944:164; Force and Force 1972:7; Palau Community Action Agency 1978:371; Hezel 1983: 271). Kubary witnessed firsthand a massive number of deaths in several villages during an influenza epidemic in February 1872; by then the disease had become so prevalent that Palauans expected an outbreak annually (Kubary 1873:187, 1885:145-146). A later visitor attributed much of the disease-related mortality to dysentery, with one outbreak in the late 1800s allegedly killing up to half the native population (Price 1944:164). These diseases came to Palau from outside Micronesia, through direct contact with people from several nations (Shineberg 1971:231-234) as well as indirect contact via Palauans returning after exposure to foreign illnesses (e.g., Delano 1817:74-75). Although one tends to attribute the introduction of such maladies to Europeans, given the proximity to southeast Asia and evidence that Asians occasionally visited Palau at least by the late eighteenth and early nineteenth centuries (e.g., Dumont d'Urville 1843:208-209), it is entirely possible that others brought the maladies as well. Deaths due to introduced illnesses continued throughout much of the nineteenth century, with an influenza epidemic occurring as late as 1892 (Hezel 1991:199).

Hard data on mortality associated with diseases are scarce for the entire nineteenth century, unfortunately. Kubary recorded 56 deaths, many probably resulting from introduced illnesses, between November 1882 and 1883 in thirteen villages on Babeldaob--from a total population of only about 400 (1885:146). He also recorded 50 deaths (in eight villages) on Arakabesan, from a population of about 300, and 35 deaths (in ten villages) on Koror, from a total population of roughly 750 (Kubary 1885: 147). Assuming that Kubary's figures are accurate and cover about one year, crude death rates in the three described settings would equal 140.0, 166.7, and 46.7, respectively--all quite high (especially the first two), particularly after roughly a century of exposure to the illnesses concerned. Although introduced diseases occurred main-

ly on the Palau Islands because of their greater contact with Westerners, the outer islands did not escape such maladies. For example, the population of Hatohobei declined by as much as one-half during the two years that the *Mentor* castaways resided there in the early 1830s, apparently from a combination of disease and malnutrition (Black 1978:311-312).

Frequent warfare between native polities also plagued much of Palau, particularly the Palau Islands, providing another potential source of high mortality during the nineteenth century. But the warfare conducted during traditional times served primarily as a social institution, a means to gain status and extract tribute (Kubary 1873: 197-198, 1885: 124-137; McKnight 1960:84; Palau Community Action Agency 1976:70-72, 107; Semper 1982: 23; see also Keate 1788:136-137). Palauans recognized two types of warfare: small-scale raids, often involving head-hunting and designed primarily to kill one or two enemies; and large-scale conflicts designed to inflict greater damage on enemy forces and property (Kubary 1885: 127-141; Krämer 1926: 298-307). Despite the presence of the latter type of conflict, with few exceptions (such as Koror's defeat of Peleliu in 1790; see Nero 1987:236) traditional Palauan warfare rarely caused large numbers of deaths. Although some have argued that the introduction of firearms in the late eighteenth century by the British made native warfare a much deadlier affair (e.g., Delano 1817: 68; Office of the Chief of Naval Operations 1944b:54; Vidich 1949:38), the difficulty of using period firearms probably reduced the number of fatalities rather than increased them (see Nero 1987:295-297). Conflicts also occurred in the Southwest Islands, with forces from Dongosaro, Meleili, and Puro occasionally clashing (Office of the Chief of Naval Operations 1944b:54). Mortality levels from warfare are unknown.

Other sources of mortality no doubt contributed to depopulation in Palau during the 1800s, though their magnitude is elusive. Typhoons occasionally strike the western Carolines. For example, at least three noteworthy storms occurred during the 1860s alone: in 1862, 1866, and 1868-1869 (Office of the Chief of Naval Operations 1944b:8; Parmentier 1987:27). But the demographic impacts of these storms is unknown, and there is no indication that any storm in this or any other period caused deaths comparable in magnitude to those from disease.

Complementing the increase in mortality between the 1780s and 1900 was an apparent decline in reproduction. Many observers remarked on the increasingly small families and fewer births (see Delano 1817:37; Kubary 1873:194). Pertinent data once again are rare. Robertson observed in 1875 that many young adults were unmarried, that fewer than 40 percent of the women who had spouses had children, and that two or three children defined a large family (1876/1877:45). Kubary's observations support the

general picture of low fertility. In the same thirteen communities on Babeldaob studied in 1882-1883, he recorded only seven births (Kubary 1885: 146)--for a population of 400 this represented a crude birth rate of 17.5. Seven of the thirteen villages had no live births at all during the year in question. Writing about the early 1890s, de Valencia also remarked on how few women had children (1892:420-421). Based on tabulations of the numbers of births for selected families between 1783 and 1910, Krämer eventually concluded that low birth rate in conjunction with an unsettled family life were the main causes of depopulation in Palau (1919:294-296).

Likely reasons for low fertility appear to be several. Semper felt that the health risks of pregnancy and childbirth reduced many women's desire to reproduce (1982:106). Kubary suggested that the heavy work required of women coupled with postmarital residence patterns--husbands and wives often living separately--were the main causes of reduced fertility (1885: 147-148). Venereal disease probably also contributed to low fertility (Force and Force 1972:85; Nero 1987:300; Hezel 1995:116). Syphilis possibly arrived in Palau prior to European contact by way of the Philippines (Krämer 1926: 330-332). Widespread gonorrhea during the second half of the nineteenth century, however, likely played the greatest role in decreasing fertility (Kubary 1895:89; see also Pirie 1971). Deaths among persons of childbearing age no doubt also reduced fertility.

Little immigration occurred during this phase of Palau's past. A few beachcombers or small numbers of traders did little to compensate for the increased loss of population (e.g., Hezel 1983:86). In only a few documented cases did larger numbers of people relocate to Palau. As early as the 1790s several Burmese, Indian, Malayan, and Indonesian servants accompanied a former East India Company captain when he tried to establish a trading station on Koror, apparently departing a few months later (Force 1960:68; Hezel 1983:80). The German trader Tetens brought 50 Chinese laborers in 1867 to work on his cotton plantations, repatriating them at a later date (Tetens 1958: 88). As late as 1901 immigration to Palau remained limited; a survey conducted by a German official from Yap recorded only 75 foreigners in the islands, mostly Chamorros (43) and Japanese (23) (Senfft 1902:264).

Ultimately it was the imbalance between high mortality and low fertility that caused the massive depopulation of Palau during the nineteenth century. Migration had little effect, neither contributing many people to the population nor removing many people from it. The inability of reproduction to keep step with mortality eventually reached a point where two individuals familiar with Palau during the late 1800s predicted extinction for the islanders (Kubary 1885:145; Tetens 1958:4).

Depopulation in Palau apparently ceased sometime during the last decade

of the nineteenth century and the first decade of the twentieth century, a more precise determination precluded by conflicting population counts for uncertain geographic foci (see note 3). Pertinent data are scarce, but the most likely reason for this shift in demographic trends was a change in the very processes that led to depopulation, ultimately bringing mortality and fertility roughly in balance with one another. Given the lack of reference to high mortality caused by diseases that had plagued Palau for decades, it appears that their impacts had diminished by the onset of the twentieth century. Although one of the aims of the German administration was to improve public health, the only medical facility in Palau was a small dispensary on Angaur and the only physician in the western Carolines a German doctor on Yap (Office of the Chief of Naval Operations 1944b:109; Palau Community Action Agency 1978:369). Acquired natural immunity probably had as much as anything to do with the reduction of deaths associated with epidemics. Indeed, the greatest instance of disease-related depopulation during the German administration occurred on Hatohobei--one of the most remote parts of Palau generally not subject to frequent contact with outsiders (and whose people were thus less likely to develop natural immunity to introduced diseases)--where roughly 200 died (and another 52 were evacuated) shortly after the German Südsee Expedition visited there in 1909 (Eilers 1936:82-83). German efforts to promote better home life, notably through improved treatment of women and a reduction in prostitution that characterized clubhouses (Hezel 1995:116-117), had an unknown effect on mortality (or fertility).

Changes in migration patterns possibly also helped to curtail depopulation in the early 1900s. Most immigration occurred primarily in support of phosphate mining on Angaur. When mining operations began on this island in 1909, the personnel on hand included 23 Europeans, 55 Chinese, and 98 Yapese (Office of the Chief of Naval Operations 1944b:29; Chief of Engineers 1956:251); by 1913 the workforce on Angaur had increased to roughly 100 Chinese and 500 Pacific Islanders, the latter mostly from Yap and other parts of Palau (Purcell 1967:48). Lesser numbers of islanders migrated elsewhere in Palau. For example, during the first decade of the 1900s, 36 Chamorros lived in Palau, many possibly remaining from the preceding Spanish period (*Deutsches Kolonial-Handbuch* 1909:329); by 1911 approximately 80 Chamorros resided in northern Ngerchelong (Hezel 1991:206). The German government relocated several hundred persons from Pohnpei Island to southern Babeldaob in 1911, following a rebellion the preceding year (Office of the Chief of Naval Operations 1944a:20; see note 4). The emigration that occurred during the German administration was of a much smaller scale--such as the relocation of islanders from Dongosaro and Hatohobei islands to

Yap as laborers in the copra industry (Office of the Chief of Naval Operations 1944b:169) and the exile of native religious leaders who resisted German rule to Yap between 1910 and 1914 (Vidich 1980:171-172). Mobility during this time period also began to change the distribution of population *within* Palau. The most important instance of such movement occurred in the evacuation of most (possibly all) islanders from Dongosaro, Fanna, Meleili, and Puro islands to the Palau Islands in 1905 following a devastating typhoon the previous year (Eilers 1935:303; Office of the Chief of Naval Operations 1944b:60; McKnight 1977:17-18). Relocated initially to the south coast of Babeldaob (in Aimeliik), the Southwest Islanders eventually moved to Arakabesan Island. Many people from Hatohobei Island also moved to the Palau Islands about the same time--with their Southwest Islander neighbors beginning a trend of migration from outliers to the main islands of Palau that has persisted to the present (see Black 1977:49-50, 1983:8-9).

The steady demographic growth that has characterized Palau throughout most of the twentieth century probably began shortly before the Japanese administration, as indicated by apparent population increases during the second half of the preceding German period of rule. Despite the many changes that occurred between the first decade of the twentieth century and 1990, similar demographic mechanisms likely caused population growth throughout much of this period: moderate fertility, slightly in excess of mortality, augmented by net in-migration.

Certainly by the time of the Japanese administration, mortality had fallen well below the levels observed during the second half of the 1800s. Health services had improved, with hospitals established on Angaur and Koror islands in 1922 providing much more access to modem health care than before (Office of the Chief of Naval Operations 1944b:109; Purcell 1967:238; Peattie 1988:87). Nevertheless, several diseases that helped devastate the Palauan population during the nineteenth century persisted at least into the late 1930s, though with markedly less impact, including tuberculosis (11 dead in 1937), bronchial pneumonia and lung fever (17 dead in 1937), and dysentery (14 dead in 1929 and 1931, 3 dead in 1937) (Office of the Chief of Naval Operations 1944b:104-106). Other diseases present during the Japanese period, including dengue fever which erupted in major outbreaks in 1927 and 1929, apparently caused few if any deaths (Purcell 1967:243). Certain other illnesses continue to cause deaths in Palau to this day, especially diseases of the circulatory and respiratory systems (Office of Planning and Statistics 1992:122), but their effects are considerably less than during the previous century.

Given the ferocity of the battles on Angaur and Peleliu, World War II could have devastated the population on those islands. Fortunately, the Japa-

nese evacuated most natives from both places prior to the U.S. landings (see Hezel 1991:223), limiting the fatalities among islanders. The demographic impacts of bombing those parts of Palau where American forces did not land, particularly Babeldaob and the main islands immediately to its south, are uncertain, though the damage was considerable (McGrath 1972:139; Nero 1989: 117). Conditions deteriorated markedly during the last year in the war; more than 2,000 Japanese and an unknown number of Palauans died of disease or starvation (Peattie 1988:300, 304; see also Nero 1989:120, 127-130). Alleged Japanese plans to execute the entire islander population of Palau thankfully were never carried out (Hezel 1995:241). Although the overall effects of the war on islanders are unknown, by 1973 Palauans had lodged 10,700 claims for deaths of relatives (Palau Community Action Agency 1978:419). Despite the potential devastation of the war, the first systematic population estimate following the Japanese surrender indicated only slight demographic decline.

Prior to the war the Japanese administration had promoted a program to reduce women's work in an attempt to raise fertility. But reproduction remained low throughout their administration with an average of only 2.7 children per family (Useem 1946:64-65). Possible reasons for persisting low fertility were several. Childbearing remained precarious both for mother and infant--even with increasingly modem health care, infant mortality measured 134.3 throughout the Japanese administration (Useem 1946:64). Venereal diseases also possibly played a key role in suppressing fertility. Useem mentioned a high incidence of such diseases immediately following the war, though he does not identify the specific illnesses (1946:64). Gonorrhea apparently was widespread throughout the western Carolines during the Japanese administration (Office of the Chief of Naval Operations 1944b:105). Although likely more prevalent in the Yap District, which experienced depopulation into the 1950s (Gorenflo and Levin 1991:101-102), gonorrhea apparently occurred in Palau as well (Palau Community Action Agency 1978:371). This malady was not limited to the Palau Islands; for instance, virtually all women on Hatohobei had become sterile due to gonorrhea by the late 1920s (Black 1978:317-318). Nevertheless, fertility has exceeded mortality in all census years for which we have vital statistics. During the Japanese administration, the excess of births over deaths was slight, probably helping to account for the relatively small increases in native population, during that phase of Palau's history. During the years following World War II, fertility has been much greater than mortality (see Tables 9, 10, and 12), although levels of fertility remained much lower than in most of Micronesia and have decreased since the late 1960s (see Levin and Retherford 1986:48-66).

Mobility has played a very important role in Palau's demography throughout most of the twentieth century. During the Japanese administration, this

primarily took the form of immigration. With the addition of administrative personnel, the Japanese government of Palau was much larger than its German predecessor. Moreover, Koror also served as the capital of the Mandated Territory, requiring yet additional staff. Japan actively promoted migration to parts of the Mandated Territory, including Palau, in the interest of general development that continued into the late 1930s (Palau Community Action Agency 1978:357). Although present during the 1920s, Japanese and Okinawan civilians flocked to Koror beginning in the early 1930s, to capitalize on either certain successful Japanese development schemes (such as the commercial fishing and mother-of-pearl industries) or the secondary economic activity that subsequently evolved (see Office of the Chief of Naval Operations 1944b:35; Chief of Engineers 1956:35). In contrast, relatively few Japanese moved to Babeldaob; even after the agricultural success enjoyed there during the second half of the 1930s, fewer than 300 Japanese families resided on the large island as late as 1940 (Peattie 1988:172-174; see also Kaneshiro 1958:292).

Pacific Islanders also relocated to Palau during the Japanese administration. Since the inception of phosphate mining on Angaur, foreigners had supplied much of the labor for the mines. This practice continued throughout the Japanese administration, with a heavy reliance on islanders from other parts of the Pacific who remained for periods of four months to one year (Useem 1946:79; Purcell 1967:191-194; Palau Community Action Agency 1978:333; Peattie 1988:82-83; see also Decker 1940:130-150). Available data for the period 1933-1937 indicate that 250 to 300 laborers came to Angaur annually from elsewhere in the Mandated Territory, mostly from the Truk District (Chuuk) (Office of the Chief of Naval Operations 1944b:170). The mining operations initiated by the Japanese on Peleliu, which were smaller than those on Angaur, relied primarily on Japanese, Okinawan, and native Palauan workers--at one count numbering 120 individuals in all (Chief of Engineers 1956:255). Mining on Hatohobei, conducted at an even-smaller scale, used local workers as well as an unknown number of Polowat Islanders (Black 1977:25). Labor recruitment practices for the mines on Dongosaro are unknown.

As conflict in the Pacific neared, the Japanese government brought additional people to Palau to help in its military effort. The number of Japanese military personnel in Palau reached an estimated 25,000 by 1943 and roughly double that number by the end of the war, with large contingents stationed on Angaur, Babeldaob, Koror, and Peleliu (Chief of Engineers 1956:8; Johannes 1981:4; Nero 1989:120) and much-smaller garrisons stationed on selected outer islands (Black 1977:92). The Japanese also imported foreign laborers to help in military preparations. Most of these laborers were Oki-

nawans and Koreans, the latter numbering nearly 2,500 by 1943 (Office of the Chief of Naval Operations 1944b:169; Chief of Engineers 1956:15-16). Another 435 Indians and 103 Indonesians, repatriated in 1947, as well as a number of Chamorros (about 200, according to Hezel 1995:238) who escaped from Babeldaob to U.S. Navy ships in 1944, probably also served as laborers during the war (Palau Community Action Agency 1978:425-427; Nero 1989: 126). The U.S. Navy repatriated all foreigners residing in Palau in 1946 and 1947, except for 350 Japanese laborers and technicians pressed into service on Angaur by an American firm that took over the phosphate mining operation after the war (Useem 1946:79-80, 105; Chief of Engineers 1956: 15,252; Palau Community Action Agency 1978:481-482; see also Useem 1952b:149-150). Roughly 300 Japanese remained on Angaur as late as 1952 (Connell 1983:5).

Internal mobility within Palau played only a minor role in the demography of Palau during Japan's administration. The Japanese controlled all such movement, generally to further commercial development early in their administration and for military purposes later. The Japanese regularly recruited labor for various government projects, with young men often required to relocate temporarily to other parts of Palau (Useem 1946:106). As the war approached, the Japanese repatriated most Southwest Islanders living on Arakabesan to their home islands, dispersing the remainder throughout Babeldaob (McKnight 1977:20). The Japanese moved most of the Chamorros who had worked on Angaur to Ngardmau State by 1941, to work in the newly opened bauxite mines (Hezel 1991:223). Many of the islanders working on Angaur had been moved elsewhere as mining operations expanded (Hezel 1991:223). A few young Palauans actually joined the Japanese war effort, providing support as "survey groups" to troops in New Guinea (Hezel 1995:223). As the conflicts on Angaur and Peleliu approached, the Japanese supposedly evacuated most islanders to other places (primarily Babeldaob) (Useem 1952b:154; Peattie 1988:298; Nero 1989:128). Although American forces found few Dongosaro Islanders on Peleliu, they encountered 182 Palauans on Angaur (Palau Community Action Agency 1978:431, 446). When the U.S. military government became established in Koror State in October 1945, all Japanese nationals were relocated to Babeldaob Island to await repatriation (McGrath 1972:139); Pacific Islanders similarly were evacuated from the town of Koror, to valleys on that island or to Babeldaob (Useem 1946:71; Hezel 1995:225).

Both external and internal mobility increased markedly following World War II. Among the most energetic islanders, Palauans began emigrating to other parts of the Pacific earlier than other Micronesians--despite lacking a heritage of mobility through seafaring (McCutcheon 1981:82). As early as

1970 an estimated 2,500 Palauans lived outside the republic, mostly in Guam, the CNMI, and Hawai'i (Force and Force 1972:123; McGrath 1972:134; Hezel and Levin 1990:45). The number of Palauans living on Guam increased slightly over the ensuing two decades, reaching 1,233 Palau-born individuals by 1990 and 1,858 ethnic Palauans the same year (U.S. Bureau of the Census 1992b:15, 19). Since the war, the Palauan community had become so stable on Guam that it retained the basic family and sociopolitical structure found in the republic itself (Shewman 1981). The number of Palauans residing in the CNMI increased substantially over the same twenty years; in 1990 the commonwealth contained 1,407 residents born in Palau and 1,620 ethnic Palauans (U.S. Bureau of the Census 1992a:16, 20). Note that the figures on ethnicity do not include mixed ethnic groups, thus overlooking many individuals in both places who are part Palauan, Large numbers of Palauans also live in the United States, the total reaching 1,439 by 1990 (U.S. Bureau of the Census 1991).

Although the topic demands further study, most Palauans probably emigrate in search of improved employment and educational opportunities. With the recent adoption of a Compact of Free Association, which includes a provision for open migration to the United States and its territories as noted above, Palauan emigration likely will increase considerably over the coming years unless the republic develops increased economic opportunities for its citizens.

As Palauans leave their home republic, citizens of other countries have begun to immigrate in increasing numbers to Palau. As recently as 1980 the ethnic composition of Palau was predominantly Palauan; only about 1 percent of the total population was ethnic Asian, most coming from the Philippines (U.S. Bureau of the Census 1984c:122). During the first years of the 1980s, foreign workers began to move to Palau in greater numbers, reaching an estimated 350 by about 1982 (Connell 1983:25). By 1990 this situation had changed considerably. Although still composed primarily of Palauans, nearly 13 percent of the republic's population was Asian, the vast majority once again coming from the Philippines (U.S. Bureau of the Census 1992c: 19). As with emigration, immigration into Palau by many of these Asian ethnic groups likely will increase over the coming years--if the republic continues to provide employment opportunities desirable to the groups in question.

Lastly, mobility has played an important role in shaping the geographic arrangement of population within Palau over the past four decades. Shortly after World War II, people living elsewhere in Palau began to migrate to Koror (Kaneshiro 1958:292-293). As noted above, evidence of this trend emerged in the form of increasing percentages of Palau's population living in Koror each census year, growing from about 38 percent in 1958 to slightly

more than 69 percent in 1990. Much of this increase is a result of migration in search of employment opportunities, education, modem health care, and other Western amenities (Force 1960:26). The vast majority of immigrants from other countries also move to Koror, most likely searching for employment (McGrath 1972:141). More than a decade ago, one researcher identified decentralization as the greatest challenge facing Palau, as well as the most elusive goal given the disproportionate investment in Koror's infrastructure (Connell 1983:27-29). The construction of a bridge between Koror and Babeldaob had some effect on the distribution of population, allowing people to live in nearby Airai and still have an easy commute to Koror itself. Plans to relocate the capital of Palau to Melekeok in the near future theoretically could change the geographic arrangement of population considerably, although its ultimate impact will rest largely on the changing distribution of opportunities that accompany the relocation.

Repercussions of Changing Regional Demography in the Republic of Palau

As discussed above, Palau's population has changed considerably over the past two hundred years, declining throughout the nineteenth century and growing throughout most of the twentieth century. Demographic shifts of the magnitude documented almost certainly introduced many other changes to the republic (Force and Force 1972:4). Considerable acculturation for two centuries makes it difficult to isolate the main causes of certain changes, but it is possible to identify likely consequences of the demographic evolution of Palau, as well as their implications for the future of this small island nation. Let us begin by characterizing traditional geographical, political, and social organization.[10]

At the onset of interaction with Europeans in the late eighteenth century, Palau consisted of a collection of independent districts or village-states, best known as the *beluu* of the Palau Islands but present in similar form as independent chiefdoms on the outer islands as well (Kubary 1873:209; Vidich 1980:80; Black 1994:10; see also Service 1971:133-169). Currently the republic comprises sixteen states, which represent the remnants of this traditional organization. With the possible exception of Sonsorol, which consists of four separate islands, the modem states generally correspond to the native districts present at the end of the nineteenth century when the German administration began to stabilize islander politics.

Thanks to the efforts of various eighteenth- and nineteenth-century explorers, traders, and scientists, the Palau Islands are the area best known in terms of traditional geopolitical organization--particularly Babeldaob, Koror,

and the islands proximal to Koror. At the beginning of the twentieth century, each district on these islands usually consisted of a main village and several small hamlets. Even on Babeldaob, districts included coastline as well as interior areas. All settlements tended to lie near the coast, most having moved from more elevated, defensible inland locations earlier in the nineteenth century and consolidated into village-hamlet complexes (Robertson 1876/1877: 46; Kaneshiro 1958:291; Masse, Snyder, and Gumerman 1984:112; Parmentier 1987:58). Competition among native polities occurred throughout the Palau Islands and Kayangel Atoll in the past. By the time of the German administration, two main confederacies existed in the Palau Islands: a southern group led by Koror and a northern group led by Melekeok (Force 1960:34, 38; Force and Force 1972:10).

Access to resources in Palau was organized systematically within the *beluu* (McCutcheon 1981:44-66). Each *beluu* had access to territory that included terrestrial areas--cultivated lands, settlements, mangrove swamps, and so on--as well as parts of the lagoon and reef, with boundaries extending into the sea (see Johannes 1977:123). In general one may classify the land associated with a particular *beluu* into two categories: public community land and land owned by a corporate kin group. The first type of land, called *chutem buai,* ultimately was administered by the paramount chief (McCutcheon 1981:47-51). It could be used by anyone living in the *beluu,* as well as by anyone whose mother was a strong member of a clan in the *beluu.* The second type of land, *chetemel a blai,* consisted of land belonging to the *blai,* a term meaning "house" that Palauans use in a generic sense to signify some type of corporate kin group. Administered by the chief of the relevant corporate kin group, in pre-European times *blai* land included house sites, garden plots, woodlots, and palm forests (Kaneshiro 1958:297; McCutcheon 1981:56-65). Matrilineal members of the particular kin unit automatically had the right to use *blai* land; patrilineal descendants and more-distant relatives could achieve the right through fulfilling certain obligations to the kin unit in question.

Over the years the geographic and social organization of Palau, as well as access to resources, have deviated from the ideals so far discussed. Although it would be unfair to ascribe all sociocultural developments that occurred in Palau to demographic change, in some cases underlying population change certainly would have played an important role. At the heart of such a statement is the notion that traditional social structure, land use, authority, and inheritance rested on strict rules that required the presence of certain components of society--components that dramatic population change would modify. Kubary began to observe sociocultural shifts in the 1870s and 1880s that he attributed to demographic decline. Such changes occurred within

communities, taking the form of shifts in political authority as certain powerful clans became increasingly weak and certain important families had virtually no male heirs (Kubary 1885:80-81). A few generations later, many clans survived only in memory, having long since disappeared due to depopulation; minor villages rarely featured either the ten clans or four lineage classes that characterized *ideal* sociopolitical structure (McKnight 1960:44). Kinship, which had long served as a means of acquiring wealth, evolved accordingly, producing shifts in inheritance rules and marriage patterns (Force 1960:36). Inheritance evolved to include the transfer of titles to men's sons, and adoption emerged as an important means of providing heirs in a society where they no longer existed under traditional social regulations (Kubary 1885:122-123, 149-150; de Valencia 1892:420-421; Smith 1983:35). Change also occurred on a larger geographic scale. Once separate clans and communities combined, based largely on kinship affiliations of those who remained and in response to declining populations in the original settlements (Kubary 1885:142-144; Useem 1946:68). As late as the 1940s Palauans remained concerned about small clans and villages that disrupted various aspects of social organization (McGrath 1972:133).

Many features of modem Palauan culture probably represent the persistence of earlier responses to population decline. For instance, although descent ideally is matrilineal, in reality individuals also trace descent through the male line. Rather than a truly bilateral system, descent in modem Palau is ambilateral--meaning that both lines of descent are recognized but one usually dominates (see Firth 1957:5). In the case of Palauans, for whom the acquisition of power and wealth has long been of considerable importance, the descent line emphasized is the one providing the greatest advantage (Vidich 1949:31; Force 1960:48-49; McKnight 1960:42; Force and Force 1972:42-43). Some researchers see the shift from unilineal to ambilateral descent as a result of depopulation (and possibly acculturation) (Useem 1946: 67; Force and Force 1972:42-43; see also Kubary 1885:80).

Land tenure, which remains very important in modem Palau, similarly has changed dramatically since traditional times, in part possibly due to depopulation and its disruption of inheritance and land-use patterns. Both the German and Japanese administrations viewed much of the *chutem buai* as unused and associated with no individual or component of the native society, perceiving that there was more land than the Palauans could use (Vidich 1980:256; McCutcheon 1985b:67-69). As a result, both administrations annexed this land for use by the government, commercial enterprises, and even private individuals (Bamett 1949:102; Force 1960:73; Vidich 1980:256; McCutcheon 1981:52, 91-93; Abe 1986:69-74). Although the incorrect evaluation of the status of this land can, in part, be attributed to a lack of cultural

understanding by foreign administrators, ultimately a reduced population did in fact require fewer resources, thus making more land available. Moreover, as various corporate kin groups died out or were incorporated into other kin groups, the associated *blai* land could have become either *chutem buai* or part of the *blai* land belonging to other corporate groups. In the case of the former consequence, such land simply became part of the inventory viewed as unused and unowned, and hence available to one foreign administration or another. In the case of the latter consequence, depopulation of the inheriting *blai* could result in a similar loss of land control. Regardless of the ultimate disposition of the land in question, population decline enabled (indeed, in some cases *required*) a shift in tenure patterns. Traditional land inheritance patterns ultimately became so disturbed that in many parts of Palau they have never recovered (Force 1960:73), the trend today leaning toward individual ownership.

The slow population growth that has occurred more recently in Palau has accompanied different social and geographical developments. One demographic change that demands attention is the increasing concentration of population in Koror State. Koror has played an important role in the political, economic, and (probably) demographic composition of Palau since the early 1800s, when that polity rose to power in part abetted by various British benefactors. Nevertheless, despite receiving disproportionate attention from the German and early Japanese administrations, this state still contained fewer than 17 percent of the total Pacific Islander population in 1920. Subsequent nurture of Koror's development throughout the remainder of the Japanese administration and the TTPI period resulted in more than 69 percent of the total population residing in this one polity by 1990.

Such a concentration of population can have both positive and negative consequences. On the one hand, it represents a concentration of demand that reduces the need to redistribute consumer goods, public services, and so on. Moreover, the concentration of population in a single place provides a focus for developing potential productivity. Both of these qualities are important in developing island nations where people often are scattered across vast expanses of ocean and movement is difficult. But such geographic distributions of population can have negative effects as well. Excessive demographic concentration often causes severe pressure on limited natural resources, public services, and economic components of the emerging population center. Social deterioration also can occur as traditional mores become less important among populations with differing social connections--such a breakdown was possibly responsible for some of the juvenile delinquency, drunk and disorderly conduct, criminal behavior, and alcoholism that emerged in Koror town by the late 1960s (McGrath 1972:142). Moreover,

because such demographic change largely results from rural-urban migration, as early as the mid-1950s many migrant origins had lost key components of their populations to Koror (Force 1960:26), mainly young and middle-aged adults who relocated in search of education or employment. As a result, much of rural Palau has become under-productive, due to a lack of key human resources, and increasingly unable to maintain its own sociocultural system--a problem occurring with alarming regularity throughout more isolated parts of Micronesia (see Marshall 1979; Levin and Gorenflo 1994). In Palau's case this process goes one step further than in most developing countries: many individuals migrating from rural parts of the republic to Koror as well as those originating in Koror ultimately leave Palau, removing a key component of the society from the republic as a whole. Emigration of Palauans has been countered recently by immigration from other countries, particularly the Philippines. Immigrants often are working-age males, skewing the age and sex composition of the republic. Moreover, these immigrants bring with them vastly different sociocultural backgrounds. Although such immigration dampens the numerical effects of Palauan emigration, it introduces additional cultural impacts.

Demographic changes also have affected the Southwest Islands and Kayangel Atoll. Our best glimpse of the outer-island cultures in Palau comes from the research of Black on Hatohobei Island (see Black 1977). Based on this work, we know that the matrilineal chiefdoms characteristic of most of the Carolines were found in the Southwest Islands as well. All the outer islands in Palau with the exception of Kayangel Atoll have experienced considerable depopulation. In the case of Hatohobei this is particularly true, its population declining by nearly 98 percent between 1909 and 1990. In 1972 when the islands population numbered 126, composed mainly of the old and young, three of the five main clans had become virtually extinct (Black 1977:35, 38-41, 52); with a 1990 population roughly one-sixth that recorded eighteen years earlier, any social order founded on these clans is a thing of the past. Similar changes occurred on other outer islands. By the mid-1950s Meleili Island had lost most of its population to Koror State, the few young and old persons remaining poorly suited to collect coconuts or grow taro (Osborne 1966:49); in 1990 this small island was uninhabited. Although chiefs retained remnants of their traditional power in many of these places (see Black 1983:7-9), the matrilineages that formed the basis of social organization had all but disappeared.

Since World War II, Palau has joined the other island groups associated with the former Trust Territory in becoming increasingly dependent on assistance from the United States. With the recent signing of the Compact of Free Association, the question of Palau's national status appears resolved.

Yet if other Micronesian examples of ratifying the compact are any indication, the funds earmarked for development assistance that accompany the agreement do not guarantee a move toward self-sufficiency. During the Japanese administration earlier this century, Palau emerged as a productive part of the Mandated Territory despite supporting a population much larger than today's With the recollection of this prior success, and given the constraints as well as possibilities embodied in the current demographic situation, what are Palau's prospects for the future?

The Japanese administration focused on three main areas of development in Palau: fishing, agriculture, and mining (Peattie 1988:170). Of the three, agriculture played a relatively minor role until late in the Japanese administration. Copra, the agricultural mainstay of most of the Mandated Territory, never realized the success it enjoyed elsewhere in the region. Although the Japanese attempted to explore the potential of other crops at three agricultural research stations and eventually introduced commercial alternatives to copra (such as pineapple; Useem 1946:114), agricultural development was never the unqualified success it was elsewhere in the Mandated Territory. That stated, after considerable effort agriculture eventually became quite productive during the 1930s (Peattie 1988:102, 174). Fishing became very successful in Palau, also during the 1930s, attracting large numbers of Okinawans and generating much of the secondary economic development experienced in Koror during that decade. As previously discussed, mining helped to compensate for some of the early disappointments in agricultural development.

The development experienced during the Japanese administration required considerable investments of funds and planning, but success with a population much larger than currently found attests to the republic's potential. Unfortunately, although useful in terms of providing insights to possible areas of development, certain realities during the Japanese administration no longer hold. Most notably, the phosphate deposits on Angaur have long since been exhausted, while deposits elsewhere in Palau proved inadequate to justify continued mining. Bauxite deposits similarly were not sufficiently rich to attract extended attention. But fishing and agriculture remain potentially important options for development, along with tourism.

A focus on fisheries potential in Palau is justifiable given the richness of the natural environment, particularly that associated with the Palau Islands and the barrier reef that defines an enormous lagoon rich in resources (Kubary 1895:122; Johannes 1981:1-2). Estimates indicate a potential annual harvest of up to eleven thousand tons of fish per year within the reef alone (Johannes 1981:79), the waters lying beyond the reef containing many additional resources (Read 1971), though reduced catches in recent years pro-

vide a keen reminder of the need to manage national fisheries carefully (Stolzenberg 1996). Traditional adaptive strategies reinforce the wisdom of a focus on fishing, as Palauans became some of the best and most knowledgeable fishermen in Micronesia (see Helfman and Randall 1973). Combining rich natural resources, an indigenous population with great talent for exploiting the sea, and energetic Okinawan immigrants, Palau successfully made the transition from subsistence to commercial fishing during the Japanese administration. Despite rich resources and a heritage of high productivity, by the early 1970s Palau imported about one-third of its animal protein in addition to other types of food (Johannes 1981:71). Reasons for this pattern include damage to marine resources during World War II, but the main problem is underdevelopment of both subsistence and commercial fisheries, compounded by poor marketing and distribution, which yield irregular supplies.

Agricultural development at first glance shows great promise. During traditional times agriculture played an important role in providing subsistence --dominated by taro, but with coconut, banana, sweet potato, tapioca, pineapple, citrus, mango, breadfruit, tobacco, and assorted vegetables also important (many of these crops introduced by early explorers) (Kubary 1892: 156-162; Krämer 1926:41-107; Eilers 1935:24-27, 169-175, 304-306; Useem 1946:61; Force 1960:29-31; Read 1972:14-15; Black 1981; Abe 1986: 37-39; McCutcheon 1986). Current agriculture in the republic generally consists of small-scale subsistence production practiced by only part of the population. Although the growing urban center generates a constant demand for fresh produce, the potential identified in the mid-1980s for rural market gardens to meet this demand never came close to realization (McCutcheon 1985a; see also Hankin and Dickenson 1972). The reason for the lack of recent agricultural development is not solely an absence of desire on the part of Palauans; there also are fundamental organizational problems, primarily nonspecialization (McCutcheon 1981:232). The eventually successful agricultural production during the Japanese period was not without cost. One of the most important was soil depletion, primarily through deforestation that led to widespread erosion and nutrient reduction.

As is the case with islands throughout Micronesia, most of Palau is not well-suited for large-scale agricultural production. Limitations of coral and limestone islands are obvious, with a relatively thin layer of humus atop otherwise very poor soil (Useem 1946:61; Wiens 1962:332-352). But important limitations also characterize the volcanic islands of Palau (Vessell and Simonson 1958). Most bottom land is mucky and poorly drained, its agricultural potential limited to a crop such as the wetland taro that was so important in traditional Palau. Wetland taro, however, requires much more intensive cul-

tivation than most modem Palauans are willing to invest for a commercial crop. Upland soils are better drained and fine-textured, making them more attractive for a broader range of crops. But as in many tropical settings, the quality of these soils relies heavily on the maintenance of a forest canopy that protects them from leaching by heavy rains, retains nutrients, continually replenishes organic content, and provides protection from erosion. Soil scientists recommend forest crops in this natural setting. Consistent with such a general strategy, they recommend the avoidance of clean-tilled agriculture. Unfortunately, most of the modem agriculture in Palau is the latter type, emphasizing crops such as taro, cassava, sugarcane, sweet potato, and various vegetables (like eggplant and tomato). This has produced widespread erosion that continues to hinder much of Palauan agriculture (Office of the Chief of Naval Operations 1944b:17; Chief of Engineers 1956:92-94; Soil Conservation Service 1983:11-39). Compounded by additional problems, such as the presence of aluminum in some soils that inhibits plant growth (Soil Conservation Service 1983:42), agriculture unfortunately is not the development panacea that many think.

Palau's development options were explored systematically in the recently adopted national Master Development Plan (Republic of Palau 1995). The above paragraphs at best provide a cursory examination of certain major development options explored in the plan in greater detail. But one cannot help thinking that the levels of success once achieved in the republic should be within reach again. In one sense demography supports such a contention: there are substantially fewer people living in Palau now than during the Japanese administration, even discounting the massive influx of military personnel during World War II. But the demographic situation also provides certain constraints. One is the geographic distribution of population, with nearly 70 percent of the total residing in the urban center of Koror. Another is the demographic composition of the republic, greatly altered by both internal and external migration patterns. As in other parts of Micronesia, successful development in Palau will require careful attention to demographic issues. But whereas elsewhere this attention must focus on controlling excessive demographic growth, Palau's challenge is one of retaining a sufficient Palauan population to provide a solid base for development.

Concluding Remarks

Population change in Palau over the past two centuries in general has resembled that found throughout most of Micronesia: an extended period of depopulation following the establishment of prolonged contact with Europeans, and a subsequent period of population growth throughout most of

the present century. The main cause of depopulation was an increase in mortality, probably accompanied by reduced fertility. Demographic growth initially resulted from a reversal in the relationship of these two mechanisms, the number of persons born into the population each year greater than the number that died. Over the past three decades international migration has begun to play a particularly important role in the demographic evolution of Palau--initially in the emigration of many Palauans to other places, in part counteracted more recently by the immigration of relatively large numbers of southeast Asians. Inadequate data on the size of Palau's precontact population leaves uncertain the amount of depopulation that occurred during the nineteenth century. However, even using the conservative estimate of 20,000 inhabitants prior to European contact and a minimum of 3,500 inhabitants around 1900, depopulation in excess of at least 82 percent apparently occurred in little more than one century. In part due to the dampening effect of emigration, Palau's population has yet to reach 20,000 again.

Palau has been blessed with much potential for future development. To begin with, Palauans have long been known as some of the most energetic, competitive people in Micronesia. Building on the sustained contact with non-Micronesians that began in the late eighteenth century, Palau rapidly became one of the most highly acculturated parts of Micronesia, its inhabitants anxious to learn the ways and acquire the technology of outsiders. In addition, the nation's natural setting provides more potential for development than much of Micronesia. Although probably the most valuable mineral deposits were removed earlier this century, the potential for fisheries and agricultural development remains unrealized. With the great majority of Palau's population residing on Babeldaob and Koror islands, and a recently constructed road on Babeldaob, transportation to match availability with demand is not nearly as much of a challenge as found in other multi-island polities throughout Micronesia (see Gorenflo 1990, 1993a). Finally, Palau's proximity to Japan already has borne fruit in the form of a well-established tourism industry, an area of development that also shows great promise.

With the recent signing of a Compact of Free Association between Palau and the United States, the republic will have available considerable funding with which to pursue various development options. Many of these options have emerged in the national Master Development Plan. Unfortunately, for Palauan development the compact is a two-edged sword. On the one hand, it will provide the funding necessary to pursue many development goals, but on the other, it will also make it easier for Palauans to emigrate to the United States and any U.S. territory. Given their tendency to emigrate, Palauans may well take advantage of this new status and leave the republic in greater numbers, thereby removing many of the young, educated, and more enter-

prising people from the republic. Time will tell with regard to the ultimate impact of the Compact of Free Association on Palau. Given the potential for successful development in the republic, as well as the potential for increased loss of the Palauan population, the implementation of a realistic, workable national Master Development Plan is increasingly important in this emerging island nation on the western edge of Micronesia.[11]

NOTES

Mayda Riopedre, of the Smithsonian Institution Anthropology Library, kindly made available several rare sources central to this research. Dave Kelly and other members of the Library of Congress reference staff helped track down other key sources. Some of the data compilation and analysis discussed in this study occurred while I examined the demography and economy of Palau as a consultant to the U.S. Department of Interior Office of Territorial and International Affairs (OTIA). The OTIA work was a collaborative effort with Huan Hosei and Mike Levin, both of whom provided a number 'of insights on the evolution of Palau's population. Mary McCutcheon generously made available both her personal library and her time, lending sources and answering several questions about the economy, ecology, and social organization in the republic; in addition, she read and commented on a preliminary draft of this article, recommending several improvements.

By way of a more extended acknowledgement, I would like to thank Dale Robertson for publishing the six-paper series of demographic studies (three coauthored with Mike Levin) of the Caroline and Marshall Islands in *Pacific Studies*--despite their length and difficulty of publication--thereby providing a single, high-quality location for these related efforts. Finally, I thank Sharlene Rohter for her tireless and absolutely first-rate editorial efforts in producing all six articles, making all look and read better than I would have ever thought possible.

1. In the interest of clarity and consistency, I follow modem conventions and use the terms "Palau" or "Republic of Palau" to denote the polity on the western edge of Micronesia currently designated by the latter name. I use the term "Palau Islands" to identify the islands extending from Babeldaob Island in the north to Angaur Island in the south, thus excluding Kayangel Atoll as well as the Southwest Islands. Throughout this article I refer to the sixteen main political components of the Republic of Palau as "states," although these geopolitical entities were known as municipalities, divisions, or *beluu* earlier this century. The spellings used for the individual states correspond to those in the *Statistical Yearbook 1992* (Office of Planning and Statistics 1992): Aimeliik, Airai, Angaur, Hatohobei, Kayangel, Koror, Melekeok, Ngaraard, Ngardmau, Ngaremlengui, Ngatpang, Ngchesar, Ngerchelong, Ngiwal, Peleliu, and Sonsorol. These names differ slightly from those used in the 1990 census publications (as well as other sources).

2. The role of prehistoric terraces on Palau is uncertain. Functions as diverse as agricultural field boundaries, defensive earthworks, and village locations have been proposed by various researchers (see Parmentier 1987:30-32; Masse; Snyder, and Gumerman 1984: 119-120). The most popular interpretation is that the terraces were agricultural (see Osborne 1966:79, 269; Lucking 1984), though research still has not demonstrated this con-

clusively. The presence of such elaborate agricultural terraces, evidence for intensive food production in parts of the republic where such land use has not occurred during historic times, helps support the contention that Palau once supported a very large population.

3. There are two main problems with the pre-Japanese population figures. The first concerns the accuracy of the numbers themselves. Although this difficulty is characteristic of noncensus population data, it is particularly a problem when discussing the precontact estimates for Palau, which range widely. Other researchers with an interest in the history of Micronesia believe that precontact estimates of 40,000 or higher are excessive (F. Hezel, personal communication, 1995), a point with which I tend to agree. Unfortunately, neither adequate data nor systematic studies exist to support a convincing argument in favor of one particular figure. For present purposes, I have provided the estimates prepared by others interested in this topic, for the reader's consideration. Regardless of the precontact figure accepted, the important point to bear in mind is that considerable depopulation occurred during the century following the onset of reasonably sustained contact with Europeans in the late 1700s.

The second problem with the pre-Japanese population figures is geographical,. concerning precisely *what* part of Palau any one estimate represents. Many early figures probably refer to Koror, Malakal, Arakabesan, and Babeldaob islands, the places where several of the early estimators were most active, including Semper, Kubary, and Krämer. In some cases, estimates possibly included Peleliu and Angaur as well, although data available for Angaur alone suggest that this was not always the case (see Table 1). Pre-Japanese estimates of Palau's population probably excluded the Southwest Islands, a part of the modem Republic of Palau that contained relatively large numbers of people during the early 1900s but remained conceptually and politically separate until the Japanese administration.

4. Figures for the number of people exiled from Pohnpei following the Sokehs rebellion range from 369 (Yanaihara 1940:42) to 460 (Hezel 1995). One of the higher totals, 447, included 21 individuals from districts other than Sokehs (Office of the Chief of Naval Operations 1944a:20), possibly helping to explain part of the discrepancy with smaller figures.

5. The Palau Community Action Agency conducted a census of Palau in 1979-1980. I have not discussed this census with the others largely because key aspects of how it was conducted are uncertain and because it did not involve systematic census techniques, such as a formal edit that would help to minimize problems such as double-counting. The omission of this census does not imply a belief that it was inaccurate, an issue that is impossible to address given the techniques employed. Instead, its exclusion reflects a lack of methodological comparability with the other censuses considered.

6. The precise nature of the counts of population in the former Japanese Mandated Territory conducted shortly after World War II are uncertain. Most likely these efforts fell somewhere between estimates and formal de jure or de facto censuses. The "head count" conducted by native police in Chuuk State probably represents what occurred throughout the area (Pelzer and Hall 1946:6). In a previous study of Kosrae I treated the data collected by one of these postwar enumeration efforts as a census, in part because the relatively simple geographical setting should have enabled an extremely accurate population count and in part because the data included information on age and sex composition

(Gorenflo 1993b:85-86). Greater caution probably is in order when examining most of the censuses conducted in Micronesia immediately after the war, however, particularly in a complex geographic setting such as Palau. Tables 2 and 3 present the population figures recorded by the U.S. military in 1946 and 1947, in the interest of making available as much data as possible, but I have avoided careful analyses or drawing many conclusions from these figures.

7. Because my primary aim is to explore demographic change in a functioning sociocultural system, this study focuses mainly on Pacific Islanders in the 1920, 1925, 1930, and 1935 censuses. The numbers of Japanese residing in parts of the Mandated Territory varied dramatically over the three decades that Japan controlled the area. The Japanese government regulated migration in its Micronesian possessions, promoting increased relocation of Japanese and Okinawans to many of these islands for commercial or military purposes during the 1920s and 1930s. Considering such *imposed* in-migrants would cloud our understanding of the demographic evolution of Palau, Only on Angaur, where the Japanese promoted the immigration of Pacific Islanders (which all four Nan'yo-cho censuses would have recorded), do the census counts from the Japanese administration include many islanders who probably would not have resided in a particular place unless somehow strongly encouraged to do so. Similar migration *possibly* occurred on Dongosaro, Hatohobei, and Peleliu islands. Unfortunately, particulars on the mining operations at each place are sketchy--though we do know that the mines were much smaller and more short-lived than those on Angaur and thus would have required fewer imported laborers.

8. Exploring modem Micronesian mobility patterns defined with data on "place of birth" can introduce problems beyond those of simple consistency. Women from rural places often give birth in hospitals, returning home shortly thereafter. Subsequent questions concerning place of birth often receive responses identifying the location of the hospital instead of where the mother normally resided, thereby providing confusing information on mobility. In lieu of alternative information, I present data on emigration where "origin" is defined by place of birth, to provide a glimpse of emigration in a Pacific nation where mobility has long played an important role.

9. A population decline between 1973 and 1980, during a period generally characterized by demographic growth, might cause one to question the accuracy of the 1980 census. However, as noted elsewhere in this study other factors apparently played an important role in shaping Palau's 1980 population, notably evidence of considerable emigration. These additional considerations, coupled with the tendency of mobility to occur in cycles (introducing the possibility that emigration might have been more important in the late 1970s than during the early 1970s or mid-1980s), make it difficult to dismiss summarily the accuracy of the 1980 census. More easily discounted is the 1970 census, with its questionable counts and widely recognized methodological problems.

10. The outline of Palauan social structure presented here considerably simplifies a very complex situation. One reason I cite so many references on social organization is that several researchers have interpreted Palauan social structure differently. In addition to complications of the system itself, Palauans use key terms in various ways--often employing the same term to describe vastly different components of the native social order (see Force 1960:44-48; Force and Force 1972:43-49). Even characterizing Palauan social structure as matrilineal is not strictly correct, as discussed in greater detail below.

11. The government of Palau conducted a census between September and December 1995 (M. Levin, personal communication, 1996). Unfortunately, data from the 1995 census were unavailable when this article was completed. Preliminary results indicate continued population growth during the first half of the 1990s, with the number of inhabitants in both Koror and Airai increasing as well. A strong representation of Asians also appears to persist, suggesting continued immigration, though specific conclusions on this and other aspects of the demography of 1995 must await a careful analysis of the most recent census data once they are processed and released.

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