

# LAUPAI KĀNAKA 

Native Hawaiian Population Forecasts
for 2000 to 2050

Nolan J. Malone, PhD

September 2005
P A S E
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## ESPeedometer

## STRATEGIC PRIORITIES

$\square$ Optimize and Build (Prenatal-8)
Sustain Momentum
(Grades 4-16 \& post-high)Innovate and Optimize (KS K-12 campuses)

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## Purpose of Our Study

Supporting educational initiatives for Native Hawaiians requires an understanding of the demand that will exist for such services among the population, not only in the present, but also across the life spans of the programs. Consequently, Kamehameha Schools' Policy Analysis \& System Evaluation (PASE) staff conducted forecasts of the Native Hawaiian population to help provide program planners and service providers with an understanding of Native Hawaiian population trends in the past, present, and in the years to come.

## What We Learned

- The Native Hawaiian population in the United States will double in size over the next fifty years.
- Children younger than age five will constitute the fastestgrowing segment of the Native Hawaiian population in the state over the next half-century.
- While the number of Native Hawaiians will more than double in the state of Hawai'i over the next fifty years, those residing in the continental United States will grow at a slightly faster rate.


## Key Implications

- Native Hawaiians are a thriving population that is expected to continue to grow well into the new millennium.
- The share of Native Hawaiians living in the continental United States will increase in the coming decades, which has implications for existing or future programs.
- The anticipated growth suggests a heightened need for com-munity-wide focus on young Native Hawaiian children.


# Laupa‘i Kānaka: 

# Native Hawaiian Population Forecasts for 2000 to 2050 

Nolan J. Malone, PhD

## INTRODUCTION

The local media have reported a statewide decrease in the school-age population (children ages five to seventeen) from roughly 218,000 in 2000 to 210,000 in 2004 (Hurley 2005). During the same period, the Native Hawaiian school-age population fell from 71,000 to 67,000 . More recent Census estimates suggest that the population of Native Hawaiians and other Pacific Islanders in the state during 2004 was actually lower than the total in 2000 (Pang 2005). These accounts, however, fail to mention the methodological and demographic forces that cloud the interpretations of these estimates.

The purpose of this report is to promote an understanding of long-term demographic trends and the sources of contemporary population estimates, especially given misperceptions that may result from U.S. Census products and intermittent media accounts. This report presents Native Hawaiian population forecasts conducted by the Policy Analysis \& System Evaluation (PASE) department of Kamehameha Schools. The forecasts indicate that the Native Hawaiian population-in the United States in general, and in the state of Hawai'i in particular—is expected to double by 2050. The largest increase will occur among children younger than age five, suggesting the need for longrange planning and educational initiatives to serve young Native Hawaiian keiki.

## HISTORICAL POPULATION TRENDS

A full historical review should be required reading for all individuals interested in understanding the Native Hawaiian population. This report provides only a general overview of the Native Hawaiian population over time as a prelude to comprehending the forces that affect population growth in the long run. Figure 1 shows (conservative) estimates of the Native Hawaiian population over the past 1,500 years. Prior to the arrival of Western people, customs and ideologies, the Native Hawaiian population experienced high rates of growth, culminating in a total population of 300,000 by $1778 .{ }^{1}$

Figure 1. Native Hawaiian population trends [total population size,* percentage of total population, Hawaiian Islands, 500 to 2000]


Source: Nordyke 1989.
Data sources: 1990 Census of Population; U.S. Census 2000, Summary File 2.
Note: The abrupt drop in the Native Hawaiian population count in 1970 reflects a change in U.S. census policy that removed the "part-Hawaiian" category from the list of racial/ethnic identification responses allowed. The surge in the Native Hawaiian population in 2000 is attributable to the Census Bureau's adoption of multirace/multiethnic reporting, which permits individuals of multiple races/ethnicities to report all of their racial/ethnic affiliations in lieu of choosing a single entry.

* Light bars in the graph represent hypothetical calculations reported in Nordyke (1989), which are based on data presented in Kelly (1986) and Schmitt and Zane (1977).

[^0]The introduction of foreigners brought with it exposure to foreign diseases. These new illnesses not only caused death to many, but also left many Native Hawaiians who survived infertile, resulting in a dramatic reduction in the Native Hawaiian population over the following century. By the end of the nineteenth century, Kānaka Maoli (Native Hawaiians) numbered less than 40,000 and represented only one-fourth of the islands' growing population.

As illustrated in Figure 1, the Native Hawaiian people have rebounded since the turn of the twentieth century and, per available censuses, are fast approaching pre-Western population levels.

## CONTEMPORARY POPULATION TRENDS

## Geographic Distribution

The majority of Native Hawaiians currently reside in the state of Hawai'i, as most people would suspect. Table 1 shows that, in the year 2000, nearly 240,000 Native Hawaiians reported Hawai'i as their state of residence in the U.S. census. However, that number accounts for only about 60 percent of the entire U.S. Native Hawaiian population, suggesting that two out of every five Native Hawaiians reside in the continental United States. In fact, Native Hawaiians today can be found in every state within the country-and, very likely, beyond U.S. boarders as well. ${ }^{2}$

[^1]Table 1. Native Hawaiians in the United States: 2000

| State | Total Population | Native Hawaiian Population |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Number | Pct. of total state population | Pct. of U.S. Native Hawaiian population |
| U.S. Total | 281,421,906 | 401,162 | 0.14 | 100.00 |
| Hawai'i | 1,211,537 | 239,655 | 19.78 | 59.74 |
| California | 33,871,648 | 60,048 | 0.18 | 14.97 |
| Washington | 5,894,121 | 13,507 | 0.23 | 3.37 |
| Nevada | 1,998,257 | 8,264 | 0.41 | 2.06 |
| Texas | 20,851,820 | 7,775 | 0.04 | 1.94 |
| Oregon | 3,421,399 | 6,366 | 0.19 | 1.59 |
| Florida | 15,982,378 | 5,285 | 0.03 | 1.32 |
| Arizona | 5,130,632 | 4,906 | 0.10 | 1.22 |
| Colorado | 4,301,261 | 3,990 | 0.09 | 0.99 |
| New York | 18,976,457 | 3,758 | 0.02 | 0.94 |
| Utah | 2,233,169 | 3,642 | 0.16 | 0.91 |
| Virginia | 7,078,515 | 2,795 | 0.04 | 0.70 |
| Illinois | 12,419,293 | 2,506 | 0.02 | 0.62 |
| North Carolina | 8,049,313 | 2,390 | 0.03 | 0.60 |
| Georgia | 8,186,453 | 2,183 | 0.03 | 0.54 |
| Michigan | 9,938,444 | 2,058 | 0.02 | 0.51 |
| Pennsylvania | 12,281,054 | 2,051 | 0.02 | 0.51 |
| Ohio | 11,353,140 | 1,989 | 0.02 | 0.50 |
| Oklahoma | 3,450,654 | 1,932 | 0.06 | 0.48 |
| Alaska | 626,932 | 1,878 | 0.30 | 0.47 |
| Missouri | 5,595,211 | 1,620 | 0.03 | 0.40 |
| Minnesota | 4,919,479 | 1,526 | 0.03 | 0.38 |
| New Jersey | 8,414,350 | 1,501 | 0.02 | 0.37 |
| Maryland | 5,296,486 | 1,475 | 0.03 | 0.37 |
| Indiana | 6,080,485 | 1,402 | 0.02 | 0.35 |
| Massachusetts | 6,349,097 | 1,356 | 0.02 | 0.34 |
| Tennessee | 5,689,283 | 1,302 | 0.02 | 0.32 |
| New Mexico | 1,819,046 | 1,261 | 0.07 | 0.31 |
| Wisconsin | 5,363,675 | 1,143 | 0.02 | 0.28 |
| Idaho | 1,293,953 | 1,139 | 0.09 | 0.28 |
| South Carolina | 4,012,012 | 1,056 | 0.03 | 0.26 |
| Kansas | 2,688,418 | 997 | 0.04 | 0.25 |
| Louisiana | 4,468,976 | 850 | 0.02 | 0.21 |
| Kentucky | 4,041,769 | 845 | 0.02 | 0.21 |
| Alabama | 4,447,100 | 833 | 0.02 | 0.21 |
| Connecticut | 3,405,565 | 781 | 0.02 | 0.19 |
| Arkansas | 2,673,400 | 718 | 0.03 | 0.18 |
| lowa | 2,926,324 | 699 | 0.02 | 0.17 |
| Nebraska | 1,711,263 | 543 | 0.03 | 0.14 |
| Montana | 902,195 | 529 | 0.06 | 0.13 |
| Mississippi | 2,844,658 | 505 | 0.02 | 0.13 |
| Rhode Island | 1,048,319 | 311 | 0.03 | 0.08 |
| New Hampshire | 1,235,786 | 266 | 0.02 | 0.07 |
| West Virginia | 1,808,344 | 264 | 0.01 | 0.07 |
| Maine | 1,274,923 | 243 | 0.02 | 0.06 |
| Wyoming | 493,782 | 233 | 0.05 | 0.06 |
| District of Columbia | 572,059 | 231 | 0.04 | 0.06 |
| South Dakota | 754,844 | 207 | 0.03 | 0.05 |
| Delaware | 783,600 | 140 | 0.02 | 0.03 |
| North Dakota | 642,200 | 132 | 0.02 | 0.03 |
| Vermont | 608,827 | 76 | 0.01 | 0.02 |

[^2]Among the continental states (Figure 2), California hosts the highest sheer number of Native Hawaiian residents $(60,048)$, while Nevada has the highest concentration of Native Hawaiians within its borders (0.4 percent). Concentration is defined as the number of Native Hawaiians within a state relative to the total population in that state, or more simply, the percentage of the state population that is Native Hawaiian. While one out of every five residents of the state of Hawai'i (19.7 percent) is Native Hawaiian, only four out of every thousand residents of Nevada are Kānaka Maoli.

Figure 2. Native Hawaiians in the continental United States: 2000


Source: Kana‘iaupuni (2002).

The state with the fewest Native Hawaiians is Vermont, with only seventy-six Native Hawaiian residents in 2000. These seventy-six individuals represented about 0.02 percent of Vermont's total population and roughly 0.01 percent of the total U.S. Native Hawaiian population. In fact, as one examines all the continental states within Figure 2, one finds that the number of Native Hawaiians within each state gradually decreases as
one moves from the western states on the Pacific coast to the states occupying the northeastern portion of the country. This phenomenon, which is ripe for further investigation, represents one segment of the Native Hawaiian diaspora that has evolved since the time of Western arrival to the Hawaiian archipelago.

Within the state of Hawai'i, Kānaka Maoli can be found on each of the seven major islands: Hawai'i (Big Island), Maui, Lāna‘i, Moloka‘i, O’ahu, Kaua'i and Ní'ihau. As shown in Table 2, the highest concentration of Native Hawaiians occurs on the island of Ni'ihau, where roughly four out of every five residents (81.3 percent) are Native Hawaiian. The island of Moloka'i has the second highest concentration at 61.2 percent. Surprisingly, the island with the greatest sheer number of Native Hawaiian residents, O'ahu, has the lowest concentration: only 17.5 percent of all O'ahu residents are Native Hawaiian, even though the number of Native Hawaiians on O'ahu is over 1,000 times greater than that of $\mathrm{Ni}^{\prime}$ ihau and more than thirty times the number on Moloka'i.

Table 2. Native Hawaiians in the state of Hawai'i, by island: 2000

|  |  | Native Hawaiian population |  |  |
| :--- | :---: | :---: | :---: | :---: |
| Geographic unit | Total population | Number | Pct. of total area <br> population | Pct. of state Native <br> Hawaiian population |
| STATE | $1,211,537$ | 239,655 | 19.78 | 100.00 |
| Island of O'ahu | 876,150 | 153,125 | 17.48 | 63.89 |
| Island of Hawai'i | 148,675 | 43,020 | 28.94 | 17.95 |
| Island of Maui | 117,640 | 24,880 | 21.15 | 10.38 |
| Island of Kaua'i | 58,305 | 13,385 | 22.96 | 5.59 |
| Island of Moloka'i | 7,255 | 4,440 | 61.20 | 1.85 |
| Island of Lāna'i | 3,195 | 635 | 19.87 | 0.26 |
| Island of Ni'ihau | 160 | 130 | 81.25 | 0.05 |
| Source: Aloha Counts: Census 2000 Special Tabulations for Native Hawaiians. |  |  |  |  |

Narrowing the geographic detail down to the high school complex gives insights about the characteristics of individual neighborhoods. Table 3 presents statistics for the total population and the Native Hawaiian population in each high school complex within the state.

Table 3. Native Hawaiians in the state of Hawai^i, by high school complex: 2000

| Geographic area |  | Total population | Native Hawaiian population |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Number | Pct. of total area population | Pct. of state Native Hawaiian population |
| STATE |  | 1,211,537 | 239,655 | 19.78 | 100.00 |
| Castle | Windward O'ahu | 52,150 | 15,690 | 30.09 | 6.55 |
| Wai'anae | Leeward O'ahu | 30,830 | 15,640 | 50.73 | 6.53 |
| Kailua | Windward O'ahu | 28,395 | 10,130 | 35.68 | 4.23 |
| Kaimuki | Honolulu, O'ahu | 77,755 | 9,045 | 11.63 | 3.77 |
| Hilo | East Hawai'i | 27,630 | 8,545 | 30.93 | 3.57 |
| Roosevelt | Honolulu, O'ahu | 60,705 | 8,220 | 13.54 | 3.43 |
| Nānākuli | Leeward O'ahu | 11,425 | 7,905 | 69.19 | 3.30 |
| McKinley | Honolulu, O'ahu | 69,345 | 7,690 | 11.09 | 3.21 |
| Campbell | Leeward O'ahu | 43,635 | 7,685 | 17.61 | 3.21 |
| Kealakehe | West Hawai'i | 31,340 | 7,655 | 24.43 | 3.19 |
| Pearl City | Leeward O'ahu | 48,860 | 7,525 | 15.40 | 3.14 |
| Kekaulike | Maui | 33,405 | 7,450 | 22.30 | 3.11 |
| Mililani | Central O'ahu | 45,125 | 7,205 | 15.97 | 3.01 |
| Baldwin | Maui | 22,780 | 6,890 | 30.25 | 2.87 |
| Maui | Maui | 41,635 | 6,715 | 16.13 | 2.80 |
| Farrington | Honolulu, O'ahu | 46,535 | 6,645 | 14.28 | 2.77 |
| Waipahu | Leeward O'ahu | 51,460 | 6,495 | 12.62 | 2.71 |
| Kapa'a | Kaua'i | 24,875 | 6,375 | 25.63 | 2.66 |
| Waiākea | East Hawai'i | 19,765 | 5,775 | 29.22 | 2.41 |
| Aiea | Central O'ahu | 41,275 | 5,765 | 13.97 | 2.41 |
| Kahuku | Windward O'ahu | 17,875 | 5,735 | 32.08 | 2.39 |
| Kalāheo | Windward O'ahu | 37,450 | 5,710 | 15.25 | 2.38 |
| Kapolei | Leeward O'ahu | 25,180 | 5,295 | 21.03 | 2.21 |
| Leilehua | Central O'ahu | 41,610 | 4,830 | 11.61 | 2.02 |
| Kea'au | East Hawai'i | 16,640 | 4,685 | 28.16 | 1.95 |
| Pāhoa | East Hawai'i | 14,765 | 4,650 | 31.49 | 1.94 |
| Moloka'i | Moloka'i | 7,255 | 4,440 | 61.20 | 1.85 |
| Honoka'a | West Hawai'i | 14,255 | 4,405 | 30.90 | 1.84 |
| Moanalua | Central O'ahu | 37,315 | 4,115 | 11.03 | 1.72 |
| Kaua'i | Kaua'i | 22,745 | 4,095 | 18.00 | 1.71 |
| Kalani | Honolulu, O'ahu | 36,575 | 3,960 | 10.83 | 1.65 |
| Kaiser | Honolulu, O'ahu | 30,670 | 3,580 | 11.67 | 1.49 |
| Konawaena | West Hawai'i | 10,710 | 3,305 | 30.86 | 1.38 |
| Waimea | Kaua'i | 10,685 | 2,915 | 27.28 | 1.22 |
| Waialua | Central O'ahu | 12,435 | 2,855 | 22.96 | 1.19 |
| Lahainaluna | Maui | 17,965 | 2,660 | 14.81 | 1.11 |
| Kohala | West Hawai'i | 6,040 | 1,885 | 31.21 | 0.79 |
| Ka'ū | East Hawai'i | 5,750 | 1,720 | 29.91 | 0.72 |
| Radford | Central O'ahu | 29,545 | 1,405 | 4.76 | 0.59 |
| Hāna | Maui | 1,855 | 1,165 | 62.80 | 0.49 |
| Lāna'i | Lāna'i | 3,195 | 635 | 19.87 | 0.26 |
| Laupāhoehoe | East Hawai'i | 1,780 | 395 | 22.19 | 0.16 |
| Ni'ihau | Ni'ihau | 160 | 130 | 81.25 | 0.05 |

[^3]These estimates show that in 2000, the Castle High School complex had the largest number of Native Hawaiian residents: 15,690 Native Hawaiians lived there, representing 30.1 percent of the total population in the neighborhood. However, because both $\mathrm{Ni}^{\prime}$ ihau and Moloka'i maintain only one high school on each of their islands, the concentrations of Native Hawaiians in these "neighborhoods" are identical to the island-level statistics presented earlier: 81.3 and 61.2 percent of all residents on Ni'ihau and Moloka'i, respectively, were Native Hawaiian. In fact, in 2000, these two areas were among five high school complexes in which Native Hawaiians represented more than half of all residents: Nānākuli, O’ahu (69.2 percent), Hāna, Maui (62.8 percent) and Wai'anae, O'ahu (50.7 percent) round out the list.

## Demographic Characteristics

The modern Native Hawaiian population is not only geographically unique, as noted above, but also demographically so. This distinction is evidenced by the differences in age structure that can be noted between the general U.S. population and the U.S. Native Hawaiian population. In Figure 3, each horizontal bar represents the percentage of the population in a specific five-year age group, ${ }^{3}$ by sex. The age distributions for males and females are split by a vertical axis to demonstrate any gendered differences in population structure across the age spectrum. It is the resulting shape of the graph, rather than the statistics within it, that provides a snapshot of the demographic characteristics of a population. Early applications of this analytic technique resulted in pyramid-shaped graphs which led to the term "population pyramid" for this methodology, although the graphs can take many forms (rectangles, hour glasses, etc.). ${ }^{4}$ Three broad demographic forces can affect the shape of a population pyramid: fertility, the rate of births within the population; mortality, the rate of deaths within the

[^4]population; and, migration, the combined effects of new arrivals to and departees from the population.

Figure 3. Population pyramids, United States total and Native Hawaiian populations: 2000


The pyramids presented in Figure 3 compare the age structure of the entire U.S. population with that of U.S. Native Hawaiians only. While the Native Hawaiian graph resembles a pyramid, with a broad base tapering to a narrow crown, the total U.S. population graphic is shaped more like an A-frame house, with a rectangular bottom half, tapering to a slightly more narrow crown. These figures suggest salient demographic differences between the Native Hawaiian population and the total U.S. population. The broader base in the Native Hawaiian pyramid shows that the younger ages constitute a large percentage of the population, but in decreasing magnitude as age increases. This could be due to higher fertility in this period, greater out-migration ${ }^{5}$ at older ages, or high mortality rates throughout the life course. Likewise, the narrow crown at the top of the pyramid could be associated with these three forces, but is most often associated with higher mortality, especially among kūpuna (elders) ages sixty-five and older.

[^5]A similar set of pyramids can be created at the state level, specific to the populations in the state of Hawai'i. Like the U.S.-level figures, the pyramids in Figure 4 suggest a younger Native Hawaiian population compared with the general population in the state. Further, because interstate migration is more common than international migration among Native Hawaiians, there are slight differences between the national and state Native Hawaiian populations among middle-range age groups, especially among young adults, who may leave Hawai'i for the continent to pursue educational, occupational or other opportunities. At higher ages, there appears little difference from the national figures: The elderly continue to constitute a lower proportion of the Native Hawaiian population than is witnessed in the general population.

Figure 4. Population pyramids, Hawai'i state total and Native Hawaiian populations: 2000


## FUTURE POPULATION TRENDS ${ }^{6}$

Population pyramids not only help to identify certain trends about a population at the time of data collection, but they also provide a glimpse of possible future demographic trends. The changing shape of a population pyramid over time can indicate key transitions in fertility, mortality and/or migration.

[^6]Figure 5 shows general Native Hawaiian population forecasts in the state between 2005 and 2050. According to these estimates, the Native Hawaiian population in the United States will more than double over the next fifty years, reaching the one million mark shortly after the start of the year 2050. Within the state of Hawai'i, the Native Hawaiian population will increase by nearly 300,000 over the same period (orange area). Meanwhile, in the continental United States, the number of Native Hawaiians will nearly triple, reaching roughly 450,000. Assuming that trends in interstate migration will persist, the percentage of Native Hawaiians residing in Hawai'i will decrease slightly, from 59.7 percent in 2000 to 54.4 percent by 2050 .

Figure 5. Native Hawaiian population projections: State of Hawai'i, 2005 to 2050


Contrary to recent media reports, the size of the Native Hawaiian population in the state is not declining. Moreover, the representation of Native Hawaiians in the state will increase slightly over the next twenty years: Figure 6 shows that the percentage of the state population that is at least part-Hawaiian will grow from 20.2 in 2000 to 21.2 percent by 2025 . $^{7}$

[^7]Figure 6. Native Hawaiians as a percentage of total state population: 2000 to 2025


Figure 7 provides a glimpse of population change among four major age groups within the Native Hawaiian population: the very young (children younger than age five); school-age children (ages five to nineteen); working-age adults (ages twenty to sixtyfour); and kūpuna (ages sixty-five and older).

Figure 7. Population forecasts for Native Hawaiians, by age group: State of Hawai'i, 2000 to 2050


The fastest growing age sector in the Native Hawaiian population will be young children, ages four and younger. Figure 8 shows the estimated number of young Native Hawaiians over the next fifty years, increasing from 24,677 in 2000 to 65,870 by 2050. This represents a 167 percent increase. As the number of young Native Hawaiians increases, their relative share as a percentage of the Native Hawaiian population also grows. Based on our forecasts, the number of young Native Hawaiians will grow to represent 12.3 percent of the total Native Hawaiian population by the year 2050, an increase of roughly 19 percent from the 2000 level.

Figure 8. Population forecasts for young Native Hawaiians (under 5 years): State of Hawai‘i, 2000 to 2050


The number of school-age Native Hawaiians in the state will more than double over the next fifty years. Figure 9 presents population trends among all children ages five to nineteen over the next fifty years. A moderate "baby bust" finishes rippling through this age group by 2010, resulting in continuous increases until 2050. The age group of fiveto nineteen-year-olds will increase from 76,029 in 2000 to 165,043 by 2050, representing an increase of 117 percent over the fifty-year period.

Figure 9. Population forecasts for school-age Native Hawaiian children (ages 5 to 19): State of Hawai'i, 2000 to 2050


To summarize all the various population forecasts, Table 4 in the Appendix provides selected age-group and enrollment estimates of the Native Hawaiian population in the state of Hawai'i from 2005 to 2015. The Appendix also contains detailed Native Hawaiian age-group forecasts spanning from 2000 to 2050 for the state of Hawai'i (Table 5) and for the entire United States (Table 6).

Note that although the Native Hawaiian population is expected to grow in the coming decades according to scientific forecasts based on current conditions, any number of economic, social, and political shocks-such as stock market failures, public health epidemics, and wars-can significantly alter the population's demographic outlook. For this reason, continual and consistent population analyses must be conducted to ensure that programs and service providers receive the most reliable data possible over the coming decades.

## IMPLICATIONS

The forecasted increases in Native Hawaiian preschool and school-age child populations have serious implications for the general well-being of the population. Anticipating this continued growth is important to programs serving young Native Hawaiians with education and other services. For example, these data are essential to ongoing planning efforts for the Kamehameha Schools' Ho'omohala Kaiāulu initiative, which is a collaborative effort within communities focusing on keiki ages zero to eight.

Economic well-being is an important consideration, especially for families with children. Figure 10 shows the dependency ratios for the Native Hawaiian population over the period spanning 2005 to 2050. A dependency ratio is the number of would-be dependents—children younger than age eighteen, and seniors age sixty-five and older—present for every working-age adult in the population. This figure illustrates that the dependency ratio rises dramatically from just above a 1-to-1 ratio currently to 1.2 dependents per working-age adult by 2020, where it hovers for the next thirty years. These ratios suggest that the burden on working-age Native Hawaiians will increase in the coming years, placing economic, social and, perhaps, emotional strain on family bread-winners. At the community level, a higher dependency ratio, combined with the large increase of young Native Hawaiians, suggests the need to ensure adequate public and private resources to accommodate their growth.

Figure 10. Dependency ratios among Native Hawaiians: State of Hawai'i, 2000 to 2050


The projected growth of school-age Native Hawaiians-which is derived from a broad examination of historical trends and data sources-may have been overlooked in the recent newspaper article predicting a diminishing school-age population in the state (Hurley 2005). This misinformation reinforces the fact that snapshot population estimates from the U.S. Census Bureau, especially relative to the Native Hawaiian population, must be treated with caution. What one-time population estimates fail to convey is that "dips" in population counts or estimates may be temporary, reflecting lower fertility, high infant mortality or uncommon migration patterns that are relatively brief and ripple their ways through the remaining stages of a population's age structure. Currently, a small "baby bust" is moving its way through the state's school-age population. These children will reach adult ages by 2010. Evidence of this phenomenon can be seen in Figure 11, in which the age structure of the state's Native Hawaiian population in 2000 is juxtaposed with the forecasted Native Hawaiian population of 2050. One can see a general evening out of the pyramid structure overall (signaling improvements in longevity), along with a slightly lower representation of adults in the fifty- to sixty-year-old age categories.

Figure 11. Native Hawaiians in the state of Hawai'i: 2000 and 2050


Applying the same population pyramid tool to Native Hawaiians living in the continental United States, Figure 12 indicates a more equitable distribution of the population, such that Native Hawaiians of all ages are more routinely represented among the continental population. While the size of the Native Hawaiian population on the continent will, indeed, grow, it will not be at the expense of the Native Hawaiian population residing in Hawai'i.

Figure 12. Native Hawaiians on the U.S. continent: 2000 and 2050

2000 (Actual)


2050 Forecast


Because various data sources report Native Hawaiian population statistics-even if all those sources are U.S. Census Bureau products—contradictory interpretations will persist. Accordingly, it is important to note that all data are not the same; comparing two separate data sources, such as censuses and estimates, can lead to inaccuracies.

Perhaps more important, however, is the lack of data. With the completion of Census 2000 came the end of the U.S. census long form, which will be replaced in future years by the less comprehensive (albeit less expensive) American Community Survey. The end of the long form may portend the end of any substantive data related to smaller populations in the United States such as Native Hawaiians. Instead, in most data products, Native Hawaiians will be resigned to the general Native Hawaiian and Other Pacific Islander (NHOPI) race category. Further, the estimates produced by the American Community Survey will be accompanied by large standard errors, meaning that the true Native Hawaiian population total could very well exist among a wide range of possible values. For this reason, federal and state government agencies, as well as organizations that serve Native Hawaiians, should make concentrated efforts to gather data relative to Native Hawaiians and support large-scale surveys and censuses that can better assist with assessing the true demographic trends of the population.

Understanding growth trends within the Native Hawaiian population is critical to the long-range plans of organizations like Kamehameha Schools. Consistent and careful monitoring of Native Hawaiian population trends is also crucial for large agencies such as the Hawai'i Department of Education, as Native Hawaiians constitute the state's largest share of public school students.

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## APPENDIX

Table 4. Baseline population estimates and forecasts for the state of Hawai'i: 2000 to 2015

| Native Hawaiian Population | 2000 |  | 2005 |  | 2010 |  | 2015 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Pct. | Number | Pct. | Number | Pct. | Number | Pct. |
| Total Native Hawaiian population in the United States | 401,000 | 100.0 | 445,000 | 100.0 | 484,000 | 100.0 | 534,000 | 100.0 |
| State of Hawai'i | 240,000 | 59.9 | 260,000 | 58.4 | 279,000 | 57.6 | 304,000 | 56.9 |
| Continental United States | 162,000 | 40.4 | 185,000 | 41.6 | 205,000 | 42.4 | 230,000 | 43.1 |
| Total Native Hawaiian population in the state of Hawai'i | 240,000 | 100.0 | 260,000 | 100.0 | 279,000 | 100.0 | 304,000 | 100.0 |
| 0 to 2 years old | 15,000 | 6.3 | 20,000 | 7.7 | 19,000 | 6.8 | 23,000 | 7.6 |
| 3 to 4 years old | 10,000 | 4.2 | 13,000 | 5.0 | 12,000 | 4.3 | 16,000 | 5.3 |
| 5 to 17 years old | 68,000 | 28.3 | 64,000 | 24.6 | 71,000 | 25.4 | 75,000 | 24.7 |
| 18 years and older | 147,000 | 61.3 | 164,000 | 63.1 | 177,000 | 63.4 | 190,000 | 62.5 |
| Total Native Hawaiian population younger than 18 in the state of Hawai'i | 92,000 | 100.0 | 97,000 | 100.0 | 102,000 | 100.0 | 114,000 | 100.0 |
| 0 to 2 years old | 15,000 | 16.3 | 20,000 | 20.6 | 19,000 | 18.6 | 23,000 | 20.2 |
| 3 to 4 years old | 10,000 | 10.9 | 12,000 | 12.4 | 12,000 | 11.8 | 16,000 | 14.0 |
| 5 to 8 years old | 21,000 | 22.8 | 19,000 | 19.6 | 25,000 | 24.5 | 24,000 | 21.1 |
| 9 to 17 years old | 47,000 | 51.1 | 46,000 | 47.4 | 46,000 | 45.1 | 51,000 | 44.7 |
| Total Native Hawaiian population, ages 5 to 17, enrolled in the state of Hawai'i* | 66,000 | 100.0 | 63,000 | 100.0 | 69,000 | 100.0 | 73,000 | 100.0 |
| Enrolled in public schools | 58,000 | 87.9 | 53,000 | 84.1 | 59,000 | 85.5 | 63,000 | 86.3 |
| Enrolled in Kamehameha Schools** | 3,500 | 5.3 | 5,500 | 8.7 | 5,500 | 8.0 | 5,500 | 7.5 |
| Enrolled in other private schools*** | 4,500 | 6.8 | 4,500 | 7.1 | 4,500 | 6.5 | 4,500 | 6.2 |
| Total children, ages 5 to 17, enrolled in public schools in the state of Hawai'i | 179,000 | 100.0 | 173,000 | 100.0 | 176,000 | 100.0 | 188,000 | 100.0 |
| Native Hawaiian | 58,000 | 32.4 | 53,000 | 30.6 | 59,000 | 33.5 | 63,000 | 33.5 |
| Not Hawaiian | 121,000 | 67.6 | 120,000 | 69.4 | 117,000 | 66.5 | 125,000 | 66.5 |

Table 5. Native Hawaiian population forecasts: state of Hawai'i, 2000 to 2050

| Age group | Census | Forecast estimates |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| State of Hawai'i |  |  |  |  |  |  |  |  |  |  |  |
| Total | 239,655 | 259,846 | 278,645 | 303,773 | 329,496 | 355,896 | 384,527 | 416,598 | 452,899 | 493,109 | 536,947 |
| 0 to 4 years | 24,677 | 32,208 | 30,851 | 38,754 | 40,417 | 42,403 | 45,932 | 50,768 | 56,201 | 61,276 | 65,870 |
| 5 to 9 years | 26,675 | 24,054 | 31,675 | 30,270 | 38,153 | 39,814 | 41,798 | 45,321 | 50,149 | 55,572 | 60,639 |
| 10 to 14 years | 25,660 | 26,195 | 23,667 | 31,236 | 29,834 | 37,710 | 39,372 | 41,356 | 44,878 | 49,704 | 55,125 |
| 15 to 19 years | 23,694 | 25,270 | 25,862 | 23,317 | 30,860 | 29,465 | 37,315 | 38,973 | 40,953 | 44,465 | 49,278 |
| 20 to 24 years | 18,011 | 23,158 | 24,800 | 25,352 | 22,826 | 30,321 | 28,937 | 36,738 | 38,388 | 40,358 | 43,852 |
| 25 to 29 years | 16,539 | 17,360 | 22,572 | 24,152 | 24,702 | 22,196 | 29,640 | 28,268 | 36,017 | 37,658 | 39,617 |
| 30 to 34 years | 16,427 | 15,907 | 16,819 | 21,938 | 23,505 | 24,053 | 21,569 | 28,953 | 27,595 | 35,281 | 36,911 |
| 35 to 39 years | 17,488 | 15,853 | 15,416 | 16,281 | 21,342 | 22,894 | 23,438 | 20,983 | 28,289 | 26,947 | 34,553 |
| 40 to 44 years | 15,866 | 16,929 | 15,380 | 14,917 | 15,772 | 20,763 | 22,295 | 22,833 | 20,413 | 27,623 | 26,301 |
| 45 to 49 years | 13,795 | 15,272 | 16,373 | 14,827 | 14,373 | 15,213 | 20,106 | 21,609 | 22,139 | 19,767 | 26,841 |
| 50 to 54 years | 11,015 | 13,100 | 14,601 | 15,632 | 14,149 | 13,691 | 14,523 | 19,252 | 20,727 | 21,226 | 18,944 |
| 55 to 59 years | 8,814 | 10,280 | 12,334 | 13,730 | 14,735 | 13,303 | 12,879 | 13,661 | 18,188 | 19,583 | 20,077 |
| 60 to 64 years | 6,363 | 8,019 | 9,421 | 11,315 | 12,617 | 13,559 | 12,227 | 11,824 | 12,560 | 16,766 | 18,070 |
| 65 to 69 years | 5,149 | 5,562 | 7,077 | 8,314 | 10,022 | 11,186 | 12,044 | 10,844 | 10,479 | 11,141 | 14,912 |
| 70 to 74 years | 4,078 | 4,293 | 4,667 | 5,943 | 6,998 | 8,454 | 9,448 | 10,185 | 9,165 | 8,843 | 9,416 |
| 75 to 79 years | 2,720 | 3,184 | 3,359 | 3,644 | 4,654 | 5,467 | 6,627 | 7,394 | 7,995 | 7,181 | 6,932 |
| 80 years and older | 2,684 | 3,203 | 3,769 | 4,150 | 4,535 | 5,404 | 6,379 | 7,636 | 8,766 | 9,717 | 9,610 |

Table 6. Native Hawaiian population forecasts: United States, 2000 to 2050

| Age group | $\begin{gathered} \hline \text { Census } \\ 2000 \end{gathered}$ | Forecast estimates |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| United States |  |  |  |  |  |  |  |  |  |  |  |
| Total | 401,162 | 444,910 | 483,945 | 534,081 | 584,834 | 637,298 | 693,572 | 756,396 | 825,869 | 903,491 | 987,602 |
| 0 to 4 years | 41,051 | 55,583 | 52,740 | 65,971 | 69,015 | 73,438 | 80,275 | 89,901 | 99,490 | 110,334 | 119,296 |
| 5 to 9 years | 42,518 | 40,933 | 55,423 | 52,589 | 65,782 | 68,817 | 73,228 | 80,044 | 89,643 | 99,205 | 110,017 |
| 10 to 14 years | 40,759 | 42,455 | 40,872 | 55,341 | 52,510 | 65,684 | 68,714 | 73,118 | 79,925 | 89,509 | 99,057 |
| 15 to 19 years | 39,403 | 40,597 | 42,286 | 40,710 | 55,122 | 52,303 | 65,424 | 68,442 | 72,829 | 79,608 | 89,155 |
| 20 to 24 years | 33,357 | 39,134 | 40,320 | 41,997 | 40,432 | 54,746 | 51,946 | 64,978 | 67,975 | 72,332 | 79,065 |
| 25 to 29 years | 29,563 | 33,110 | 38,843 | 40,019 | 41,685 | 40,132 | 54,339 | 51,560 | 64,495 | 67,470 | 71,795 |
| 30 to 34 years | 29,345 | 29,302 | 32,820 | 38,499 | 39,665 | 41,317 | 39,777 | 53,860 | 51,106 | 63,927 | 66,876 |
| 35 to 39 years | 30,762 | 29,015 | 28,969 | 32,449 | 38,062 | 39,214 | 40,847 | 39,326 | 53,249 | 50,526 | 63,201 |
| 40 to 44 years | 27,283 | 30,334 | 28,611 | 28,563 | 31,996 | 37,528 | 38,663 | 40,274 | 38,774 | 52,504 | 49,819 |
| 45 to 49 years | 22,766 | 26,743 | 29,735 | 28,046 | 27,996 | 31,362 | 36,782 | 37,895 | 39,474 | 38,005 | 51,462 |
| 50 to 54 years | 18,432 | 22,074 | 25,927 | 28,831 | 27,193 | 27,141 | 30,407 | 35,658 | 36,735 | 38,267 | 36,843 |
| 55 to 59 years | 13,978 | 17,588 | 21,070 | 24,746 | 27,522 | 25,957 | 25,901 | 29,023 | 34,029 | 35,056 | 36,519 |
| 60 to 64 years | 9,870 | 13,003 | 16,361 | 19,612 | 23,029 | 25,619 | 24,161 | 24,099 | 27,010 | 31,660 | 32,614 |
| 65 to 69 years | 8,000 | 8,847 | 11,654 | 14,665 | 17,592 | 20,651 | 22,981 | 21,673 | 21,606 | 24,223 | 28,383 |
| 70 to 74 years | 6,095 | 6,802 | 7,526 | 9,913 | 12,474 | 14,979 | 17,578 | 19,570 | 18,455 | 18,385 | 20,621 |
| 75 to 79 years | 3,982 | 4,777 | 5,326 | 5,898 | 7,767 | 9,774 | 11,753 | 13,785 | 15,357 | 14,480 | 14,412 |
| 80 years and older | 3,998 | 4,614 | 5,461 | 6,231 | 6,992 | 8,639 | 10,795 | 13,191 | 15,717 | 18,000 | 18,467 |


[^0]:    ${ }^{1}$ Stannard (1989) estimates that the total Native Hawaiian population at the time of Western arrival ranged from 800,000 to one million.

[^1]:    ${ }^{2}$ Owing to data deficiencies and lack of international coordination of data sources, the number of Native Hawaiians residing outside the United States remains unknown.

[^2]:    Source: Census 2000, SF1 Data Files

[^3]:    Source: Aloha Counts: Census 2000 Special Tabulations for Native Hawaiians.

[^4]:    ${ }^{3}$ The terminal age category, " $85+$," is open-ended and therefore represents the percentage of all individuals, by sex, who have survived beyond their $85^{\text {th }}$ birthday.
    ${ }^{4}$ For a population in which the same number of births (to each sex) occurred, there was no migration, and every individual survived beyond their $85^{\text {th }}$ birthday, the resulting "population pyramid" would be a perfect rectangle in which each bar represented roughly 5.6 percent of the population.

    Kamehameha Schools - PASE

[^5]:    ${ }^{5}$ Given that these graphs represent the entire country, it is likely that very little international migration occurs that would influence the Native Hawaiian pyramid.

    Kamehameha Schools - PASE

[^6]:    ${ }^{6}$ Native Hawaiian population forecasts were conducted by a team led by demographer David Swanson, Chair of the Department of Sociology and Anthropology, as well as Director of the Center for Population Studies, at the University of Mississippi.

    Kamehameha Schools - PASE

[^7]:    ${ }^{7}$ These percentages are calculated by using PASE Native Hawaiian population forecasts alongside U.S. Census Bureau forecasts of the total state population during the same period.

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