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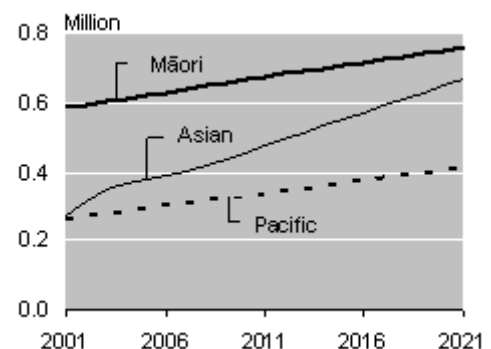
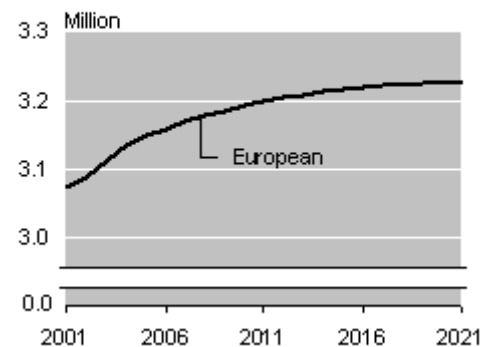
National Ethnic Population Projections: 2001(base) - 2021 update

Highlights

The following highlights are based on Series 6 (which assumes medium fertility, mortality, net migration and inter-ethnic mobility) for each ethnic group:

- New Zealand will have greater ethnic diversity in the future. The Māori, Asian and Pacific populations are all projected to increase their share of New Zealand's population.
- New Zealand's European population is projected to reach 3.23 million by 2021, an increase of 150,000 or 5 percent over the estimated resident population at 30 June 2001 of 3.07 million.
- New Zealand's Māori population is projected to reach 760,000 by 2021, an increase of 170,000 or 29 percent over the 2001 figure of 590,000.
- New Zealand's Asian population is projected to reach 670,000 by 2021, an increase of 390,000 or 145 percent over the 2001 figure of 270,000.
- New Zealand's Pacific population is projected to reach 420,000 by 2021, an increase of 160,000 or 59 percent over the 2001 figure of 260,000.

Projected Ethnic Populations
Series 6



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Commentary

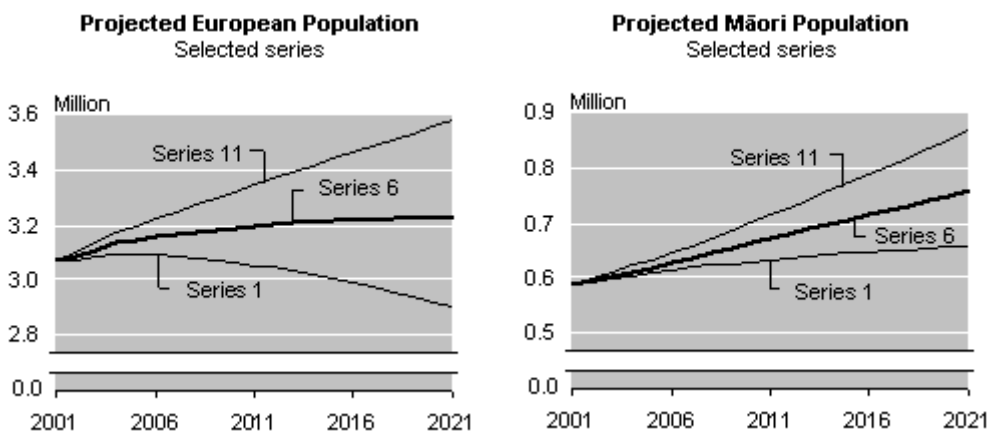
Alternative projection series

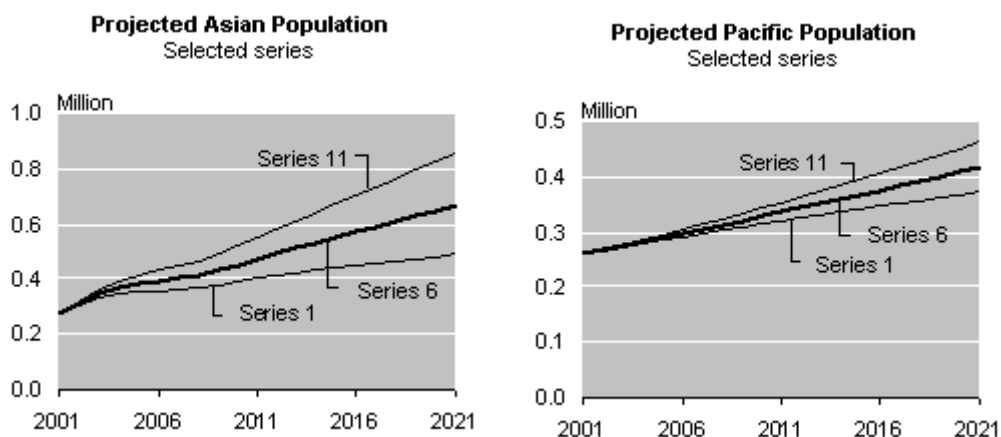
For each ethnicity (European, Māori, Asian and Pacific), eleven alternative series of population projections have been produced using different combinations of fertility, mortality, migration and inter-ethnic mobility assumptions. These series are neither predictions nor forecasts. The projections provide an indication of possible future changes in the size, growth rate and age-sex structure of the European, Māori, Asian and Pacific populations. The series have as a base the estimated resident population of each ethnic group at 30 June 2001, and cover the period 2002–2021.

Each ethnic population consists of all people who identify with that ethnicity, including those who also identify with other ethnicities. It is important to note that these ethnic populations are not mutually exclusive because people can and do identify with more than one ethnicity. People who identify with more than one ethnicity have been included in each ethnic population they identify with.

The European population is projected to increase from 3.07 million at 30 June 2001 to 3.23 million in 2021 (according to Series 6, which assumes medium fertility, medium mortality, medium migration and medium inter-ethnic mobility). Under Series 1 (low fertility, high mortality, low migration, and high inter-ethnic mobility), the European population will be less in 2021 (2.90 million) than in 2001. All other series are projected to have higher European populations in 2021 than in 2001, with Series 11 (high fertility, low mortality, high migration, and low inter-ethnic mobility) projecting the highest population in 2021, at 3.58 million.

The Māori, Asian and Pacific populations are projected to increase during the projection period under all series. The Māori population is projected to increase from 590,000 at 30 June 2001 to between 660,000 (Series 1) and 870,000 (Series 11) in 2021. The Asian population from 270,000 in 2001 to between 490,000 (Series 1) and 860,000 (Series 11). The Pacific population from 260,000 in 2001 to between 370,000 (Series 1) and 460,000 (Series 11).





Which projection series to use?

A number of projection series have been produced to illustrate a range of possible scenarios. Users can make their own judgement as to which projection series is/are most suitable for their purposes. However, at the time of release, Statistics New Zealand considers projection Series 6 the most suitable for assessing future population changes. Series 6 of the ethnic population projections is consistent with mid-range Series 5 of the *national population projections (2004-base, released December 2004)*.

Series 6 makes the following assumptions:

- **Fertility:** For all ethnicities, the total fertility rate and total paternity rate will vary until 2016 and there after remain constant. By 2016, the total fertility rate will be 1.75 births per woman for European women, 2.40 for Māori women, 1.55 for Asian women, and 2.70 for Pacific women. At the same time the total paternity rate (births where the father is of the specified ethnicity, but the mother is not) will be 0.13 children per man for European men, 0.80 for Māori men, 0.20 for Asian men, and 0.90 for Pacific men.
- **Mortality:** Life expectancy at birth will increase for all ethnicities. Life expectancy will increase for the European population by about four years to 81.8 years for males and 86.0 years for females by 2021, for the Māori population by about seven years to 76.3 years for males and 80.3 years for females, for the Pacific population by about six years to 78.1 years for males and 82.6 years for females, and for the Asian population by about four years to 82.1 years for males and 86.5 years for females.
- **Migration:** There will be long-term annual net migration levels of -5,000 for the European population (from 2005), -2,500 for the Māori population (from 2002), 500 for the Pacific population (from 2002), and 14,000 for the Asian population (from 2009).
- **Inter-ethnic mobility:** For the European population there will be zero net inter-ethnic mobility due to people changing their ethnic identity, for the Māori population -0.3 percent, for the Asian population -0.2 percent, and for the Pacific population -0.2 percent.

The following analysis is based on Series 6 of the ethnic population projections, unless otherwise stated.

What has changed from the previous 2001-base projections?

These ethnic population projections have been updated to incorporate the latest national population projections (released 16 December 2004). The ethnic population projections also make adjustments for the latest demographic information, including birth and death registrations to December 2004.

Compared with the earlier ethnic population projections released in May–June 2003, the mid-range Series 6 of the updated ethnic population projections assumes:

- that the fertility levels will vary until the long-term fertility levels are reached in 2016, then stay constant. By comparison, the original ethnic population projections assumed the long-term fertility levels would be reached in 2011. Fertility levels for 2002–2004 have been adjusted to incorporate the latest birth registrations. The earlier projections underestimated the number of births for this period.
- the life expectancy at birth in 2021 has been marginally increased for all ethnic groups, with the gap between males and females reducing.
- the net migration levels for European and Asian populations have been changed to reflect the increased net migration levels in the 2004-base national population projections. European net migration increases to a long-term level of -5,000 per year, compared to the previous level of -8,000 per year. The Asian net migration initially varies until 2009, when the long-term level of 14,000 per year is reached. The original Asian population projections had net migration reducing (by 500 per year) from 12,000 in 2007 to 5,000 in 2021.

The combined effect of these changes is that the updated ethnic population projections have the European population at 3.23 million, Māori at 760,000, the Asian population at 670,000 and the Pacific population at 420,000 in 2021. By comparison, the original projections had the European population at 3.10 million, the Māori population at 750,000, the Asian population at 600,000 and the Pacific population at 410,000 in 2021.

Summary

The ethnic mosaic of New Zealand's population is changing with the Māori, Pacific and Asian populations making up a growing proportion of the overall New Zealand population. This reflects past and likely future differentials in fertility, as well as the impact of growing miscegenation (intermarriage) and changes in immigration policy. In addition, the Māori, Pacific and Asian populations have a more youthful age structure and thus a greater built-in momentum for growth than the European population. Coupled with higher fertility for Māori and Pacific people, and the assumed net migration levels for Asian people, these ethnic groups are likely to grow at a much faster pace than their European counterparts.

All ethnic groups will age in the coming decades. However, even two decades on, the Māori and Pacific populations will still have a younger age structure than the current New Zealand population.

Population growth

All four ethnic populations are projected to experience growth between 2001 and 2021. The Asian population is projected to have the largest percentage growth, up about 145 percent from 270,000

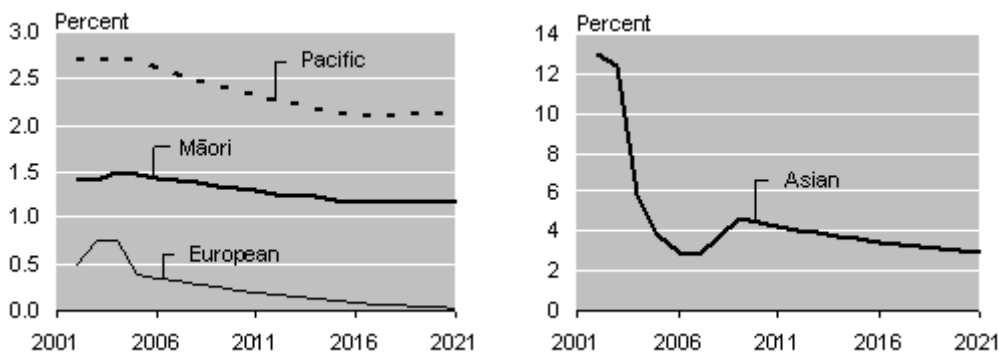
in 2001 to 670,000 in 2021. The Pacific and Māori populations will experience increases of 59 and 29 percent, respectively. By 2021, the Māori population will number almost 760,000 compared with 590,000 in 2001, while the Pacific population will number 420,000 compared with 260,000 in 2001. The European population will increase by 5 percent from 3.07 million in 2001 to 3.23 million in 2021.

In comparison, the total New Zealand population will increase by 18 percent between 2001 and 2021, with the population projected to grow from 3.9 million to almost 4.6 million (assuming medium fertility, medium mortality and long-term annual net migration of 10,000 per year).

All ethnic groups are projected to experience slowing population growth over the projection period, with the annual growth rate of the European population decreasing to almost zero by 2021. Rapid growth in the Asian population between 2001 and 2006 is mainly due to large net migration gains, with smaller net migration gains, and therefore slower population growth, assumed for later periods.

Annual Population Growth Rates

Selected ethnic groups
Series 6



The Māori, Asian and Pacific populations will all increase their share of the New Zealand population over the projection period. The Māori population will make up 16.5 percent of the New Zealand population by 2021 compared with 15.1 percent in 2001. The Asian population will make up 14.5 percent of the New Zealand population by 2021 compared with 7.0 percent in 2001. The Pacific population will make up 9.1 percent of the New Zealand population by 2021 compared with 6.7 percent in 2001.

The increase in the Māori and Pacific population shares is largely driven by their higher fertility rates and their larger proportions in the main childbearing ages. About one-quarter of Māori and Pacific births are contributed by non-Māori and non-Pacific women where the father is Māori and Pacific, respectively. The increase in the Asian share is mainly driven by the assumed levels of net migration.

The European population will make up 70 percent of the New Zealand population by 2021 compared with 79 percent in 2001. The lower than average European growth rate is driven by their lower fertility rates, the assumed net migration loss for most years of the projection period and the older age structure of the European population.

Ethnic Share of New Zealand Population⁽¹⁾⁽²⁾				
By age group 2001 and 2021				
Age Group (years)	Ethnic Share of New Zealand Population (percent)			
	European	Māori	Asian	Pacific
2001(base)				
0-14	74	25	7	11
15-39	75	17	9	8
40-64	83	10	6	4
65 and over	92	4	2	2
All ages	79	15	7	7
2021				
0-14	63	28	17	17
15-39	64	20	16	11
40-64	71	12	15	6
65 and over	86	7	7	3
All ages	70	17	15	9

(1) Ethnic population projections from Series 6. New Zealand population projections from Series 5 (2004-base).

(2) People who identify with more than one ethnicity are included in each ethnic population they identify with.

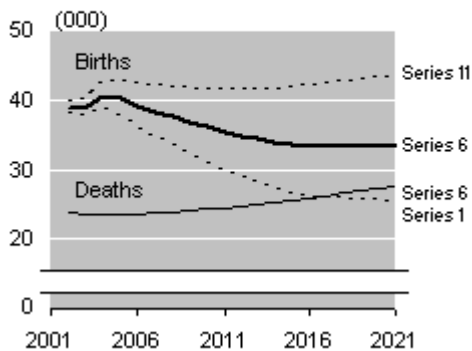
Births and deaths

European births are expected to decrease from 40,000 in 2005 to 33,000 in 2017, and then slowly increase to 34,000 in 2021. The decrease in births is driven mainly by the decline in the number of European women in the childbearing ages. About 7 percent of European births are contributed by non-European women where the father is European. European deaths are expected to increase from 23,000 in 2005 to 28,000 in 2021, due to more European people at older ages. Natural increase (excess of births over deaths) is projected to decline steadily, from 17,000 in 2005 to 6,000 in 2021.

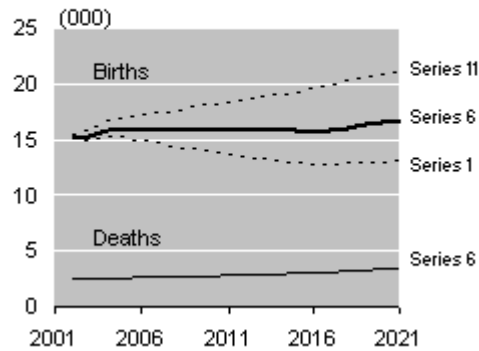
Māori births are expected to fall slightly from 16,000 in 2005 to 15,800 in 2016, and then increase to 16,700 in 2021. This is due to the increase in the number of Māori moving into the childbearing ages, which more than offsets the assumed decline in fertility. Māori deaths are expected to increase from 2,600 in 2005 to 3,400 in 2021, due to more Māori at older ages. Natural increase is projected to vary over the projection period. Under projection Series 6, natural

increase will drop from 13,400 in 2005 to 12,700 in 2016, before rising gradually to 13,300 in 2021.

Projected European Births and Deaths
Selected series



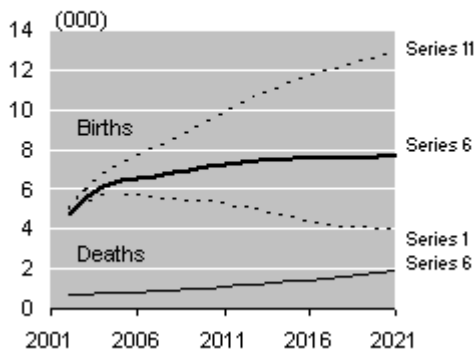
Projected Māori Births and Deaths
Selected series



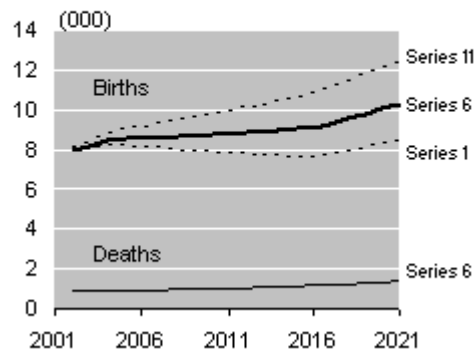
Asian births are expected to increase from 6,500 in 2005 to 7,800 in 2021. The increase in births is driven by more Asian women in the childbearing ages. About 12 percent of Asian births are contributed by non-Asian women where the father is Asian. Asian deaths are expected to increase from 800 in 2005 to 1,900 in 2021, due to more Asian people at older ages. Natural increase is projected to vary over the projection period. Under projection Series 6, natural increase will initially increase, from 5,700 in 2005 to 6,300 in 2013. Then it will steadily decline to 5,800 in 2021. The Asian ethnic group is the only ethnic group where net migration is projected to contribute more than natural increase to population growth.

Pacific births are expected to increase from 8,600 in 2005 to 10,300 in 2021. This is due to the increase in the number of Pacific people moving into the childbearing ages, which more than offsets the assumed decline in fertility. Pacific deaths are expected to increase from 900 in 2005 to 1,400 in 2021, due to more Pacific people at older ages. Natural increase is projected to vary over the projection period. Under projection Series 6, natural increase will average around 7,700 each year during 2005–2009, before rising gradually to 9,000 in 2021.

Projected Asian Births and Deaths
Selected series



Projected Pacific Births and Deaths
Selected series



Ageing population

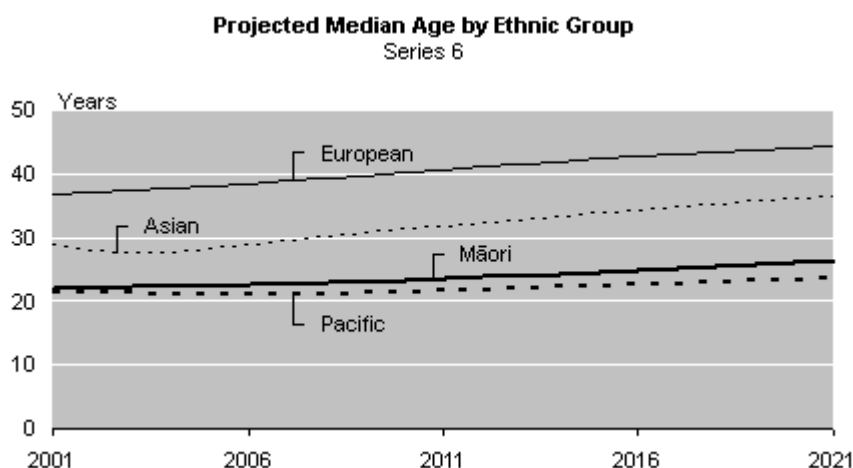
All populations are projected to age over the next two decades.

The European population will continue to have an older age structure than the overall New Zealand population because of lower European fertility rates and the net migration outflow (especially at ages 20–26 years). Half of the European population will be older than 44.3 years by 2021, compared with a median age of 36.9 years in 2001. In comparison, the median age of the New Zealand population will rise from 34.7 to 40.3 years over the same period.

The Māori population will continue to have a much younger age structure than the overall New Zealand population because of higher Māori birth rates. Half of the Māori population will be older than 26.4 years by 2021, compared with a median age of 22.1 years in 2001.

The Asian population will continue to have a younger age structure than the overall New Zealand population, mainly because of immigration. Half of the Asian population will be older than 36.2 years by 2021, compared with a median age of 28.6 years in 2001.

The Pacific population will continue to have a much younger age structure than the overall New Zealand population because of higher Pacific birth rates. Half of the Pacific population will be older than 23.7 years by 2021, compared with a median age of 21.4 years in 2001.



Projected Age Distribution of Ethnic Groups 2001(base) and 2021						
Ethnicity ⁽¹⁾	Projected Age Distribution of Ethnic Groups					Median Age (years)
	0-14	15-39	40-64	65 and over	All ages	
2001(base)						
European	21	34	31	14	100	36.9
Māori	37	40	20	3	100	22.1
Asian	23	48	26	4	100	28.6
Pacific	38	40	18	3	100	21.4
Total NZ	23	36	30	12	100	34.7

2021						
European	16	29	33	22	100	44.3
Māori	30	38	24	7	100	26.4
Asian	21	36	35	8	100	36.2
Pacific	33	39	22	6	100	23.7
Total NZ	18	32	33	17	100	40.3

(1) Ethnic population projections from Series 6. 'Total NZ' from 2004-base national population projections Series 5.

Note: Owing to rounding, individual figures may not sum to give the stated totals.

Children

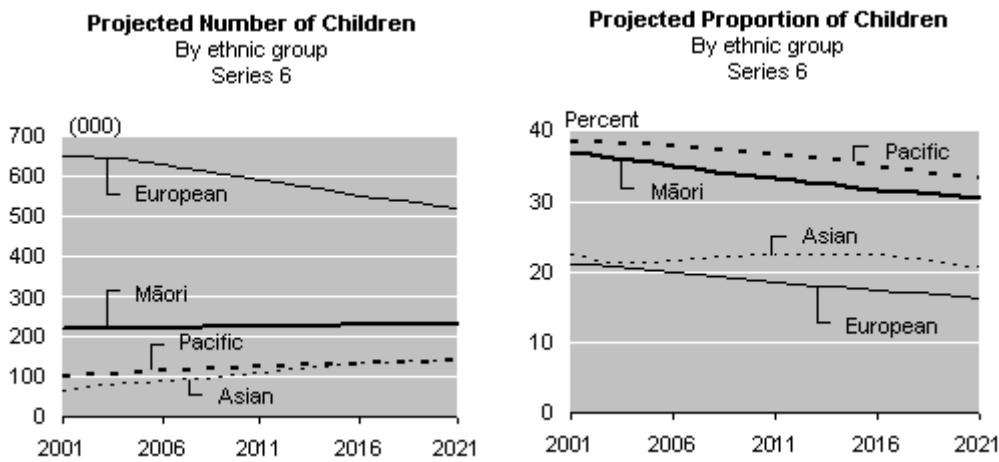
The number of European children (aged 0–14 years) is projected to decrease by 20 percent during the projection period, from 653,000 in 2001 to 521,000 in 2021. Over the same period, children will make up a smaller proportion of the European population, dropping from 21 percent to 16 percent. This smaller proportion is due to the decrease in the number of births and the gradual ageing of the European population.

The number of Māori children is projected to increase 6 percent, from 216,000 in 2001 to 230,000 in 2021. Children will make up a smaller proportion of the Māori population, dropping from 37 percent in 2001 to 30 percent in 2021. This is due to the projected decline in the Māori birth rate and the gradual ageing of the Māori population.

The number of Asian children is projected to more than double, from 61,000 in 2001 to 137,000 in 2021. However, children will make up a smaller proportion of the Asian population, dropping from 23 percent in 2001 to 21 percent in 2021. This smaller proportion is due to the projected decline in the Asian birth rate, the age pattern of Asian immigration and the gradual ageing of the Asian population.

The number of Pacific children is projected to rise steadily, increasing by 39,000 to 139,000 in 2021. Children will make up a smaller proportion of the Pacific population, dropping from 38 percent in 2001 to 33 percent in 2021. This is due to the projected decline in the Pacific birth rate

and the gradual ageing of the Pacific population.



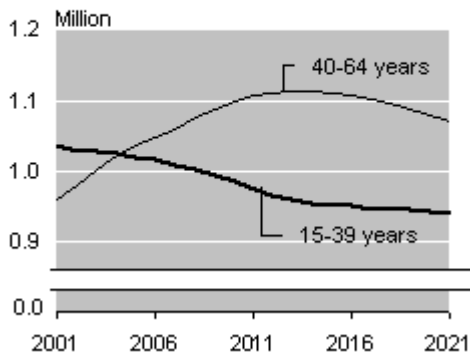
The ethnic composition of New Zealand children will change over the projection period. European children will make up 63 percent of New Zealand children in 2021, compared with 74 percent in 2001. Māori children will make up about 28 percent in 2021, compared with 25 percent in 2001. Asian children will make up about 17 percent in 2021, compared with 7 percent in 2001. Pacific children will make up about 17 percent in 2021, compared with 11 percent in 2001.

Working-age population

The European working-age population (defined as those aged 15–64 years) is projected to increase initially, from 2.00 million in 2001 to 2.08 million in 2010, and then decline to 2.01 million in 2021. People in the working ages will make up 62 percent of the European population in 2021, down slightly from 65 percent in 2001. Within this group, the population aged 15–39 years is expected to decrease from 1.04 million in 2001 to 0.94 million in 2021, a drop of 98,000 or 9 percent. In 2021, 29 percent of the European population will be aged 15–39 years, compared with 34 percent in 2001.

In contrast, the number of Europeans aged 40–64 years is projected to increase by 150,000 between 2001 and 2014, from 0.96 million to 1.11 million. After 2014, their number will decline to 1.07 million in 2021. This age group accounted for 31 percent of the European population in 2001, and is expected to increase slightly to 33 percent in 2021. The contrasting trends of the 15–39 and 40–64 age groups reflect the ageing of the large birth cohorts of the 1950s to 1970s.

Projected European Population in Working Ages
By broad age group
Series 6



The Māori working-age population is projected to increase from 350,000 in 2001 to 473,000 in

2021, an increase of 35 percent. They will make up 62 percent of the Māori population in 2021, up slightly from 60 percent in 2001. Most of the increase in the Māori working-age population will be in the second half of this age group, as the population takes on an older profile. The population aged 40–64 years is expected to increase from 115,000 in 2001 to 185,000 in 2021, an increase of 62 percent. In 2021, 24 percent of the Māori population will be aged 40–64 years, compared with 20 percent in 2001.

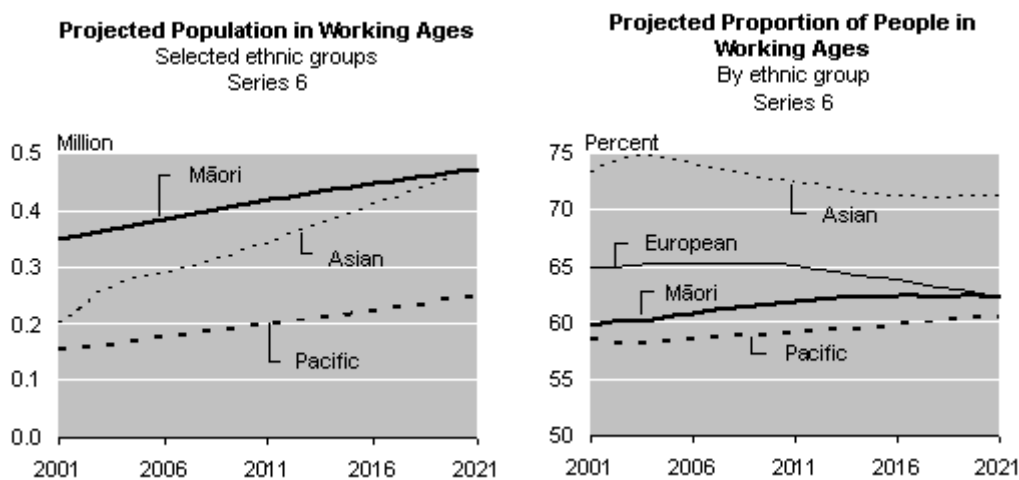
The number of Māori people aged 15–39 years is projected to increase by 22 percent between 2001 and 2021, from 236,000 to 287,000. This age group accounted for 40 percent of the Māori population in 2001, but is expected to drop slightly to 38 percent in 2021.

The Asian working-age population is projected to more than double from 200,000 in 2001 to 474,000 in 2021. They will make up 71 percent of the Asian population in 2021, down slightly from 73 percent in 2001. Within this group, the Asian population aged 15–39 years is expected to increase from 130,000 in 2001 to 240,000 in 2021, with much of the gain from immigration. In 2021, 36 percent of the Asian population will be aged 15–39 years, compared with 48 percent in 2001.

The number of Asian people aged 40–64 years is projected to more than treble between 2001 and 2021, from 70,000 to 234,000. This age group accounted for 26 percent of the Asian population in 2001, but is expected to increase to 35 percent in 2021.

The Pacific working-age population is projected to increase from 153,000 in 2001 to 253,000 in 2021, an increase of 65 percent. They will make up 61 percent of the Pacific population in 2021, up from 58 percent in 2001. The Pacific population aged 15–39 years is expected to increase from 106,000 in 2001 to 162,000 in 2021, an increase of 53 percent. In 2021, 39 percent of the Pacific population will be aged 15–39 years, compared with 40 percent in 2001.

The number of Pacific people aged 40–64 years is projected to almost double between 2001 and 2021, from 47,000 to 90,000. This age group accounted for 18 percent of the Pacific population in 2001, but is expected to increase to 22 percent in 2021.



The ethnic composition of New Zealand's working-age population is projected to have a greater concentration of Māori, Asian and Pacific people in the future. Māori will increase their share from 14 percent in 2001 to 16 percent in 2021, the Asian share will increase from 8 percent to 16 percent, while the Pacific share will increase from 6 percent to 9 percent. Over the same time the European share will drop from 78 percent to 68 percent.

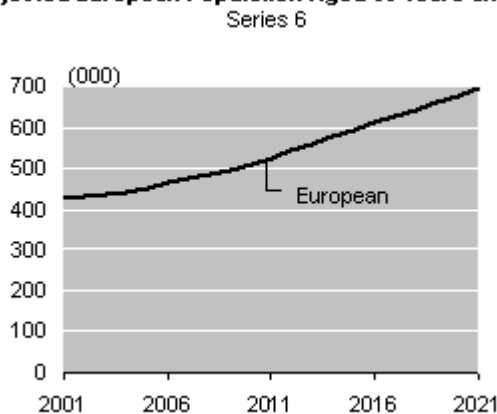
Among the younger workers (aged 15–39 years) the Māori share is projected to be 20 percent in 2021, up from 17 percent in 2001, the Asian share 16 percent in 2021, up from 9 percent, and the Pacific share 11 percent in 2021, up from 8 percent. In contrast the European share will be 64 percent by 2021, compared with 75 percent in 2001. A similar trend emerges for the older workers (aged 40–64 years).

Population aged 65 years and over

The population aged 65 years and over is projected to increase significantly for all ethnicities.

The number of European people aged 65 years and over is projected to reach 695,000 by 2021, up from 426,000 in 2001. In 2021, they will make up 22 percent of the European population, compared with 14 percent in 2001. The European population aged 65 years and over will outnumber the European population aged 0–14 years by 2014.

Projected European Population Aged 65 Years and Over

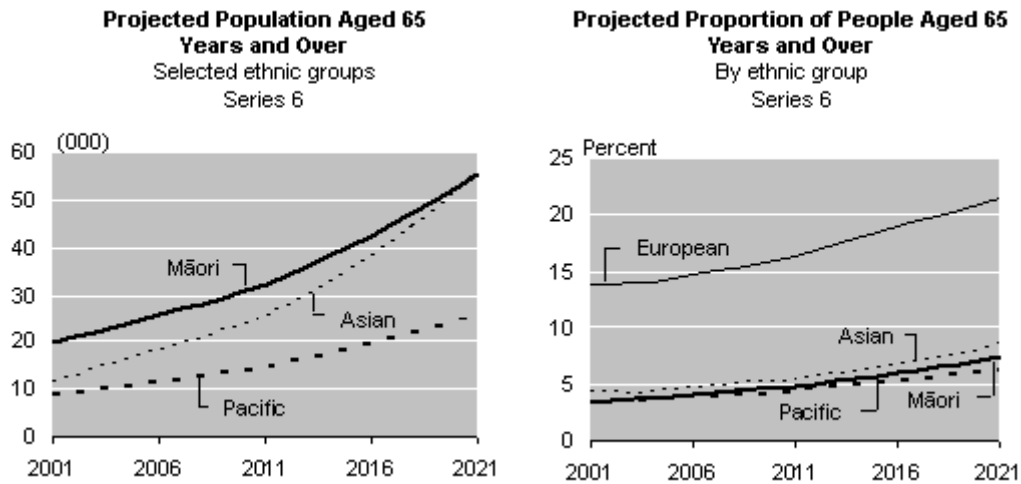


The number of Māori people aged 65 years and over is projected to reach 56,000 by 2021, almost three times the 2001 population of 20,000. In 2021, they will make up 7 percent of the Māori population, compared with 3 percent in 2001.

The number of Asian people aged 65 years and over is projected to reach 56,000 by 2021, five times the 2001 population of 11,000. In 2021, they will make up 8 percent of the Asian population, compared with 4 percent in 2001.

The number of Pacific people aged 65 years and over is projected to reach 26,000 by 2021, almost three times the 2001 population of 9,000. In 2021, they will make up 6 percent of the Pacific

population, compared with 3 percent in 2001.



The New Zealand population aged 65 years and over is comprised mainly of European people, partly due to their higher life expectancy. In 2001, the European share was 92 percent. This is projected to drop to 86 percent in 2021. In contrast, the Māori, Asian and Pacific shares are all projected to increase. By 2021, the Māori share will be 7 percent, up from 4 percent in 2001, the Asian share will also be 7 percent, up from 2 percent, and the Pacific share will be 3 percent, up from 2 percent.

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Technical notes

Latest projections

This release contains updated 2001-base projections of the populations of European, Māori, Asian and Pacific ethnicities usually living in New Zealand. These updated series supersede the 2001-base series released in May-June 2003. The updated series cover the period 2002–2021 at one-year intervals, by sex and single year of age (to 90+ years) and incorporate the latest demographic information. The projection period is limited to 20 years because of the uncertainty of ethnic population projections as discussed in the Nature of projections section (below).

These ethnic population projections complement the projections of the New Zealand population (National Population Projections (2004(base) – 2051)), released on 16 December 2004. However, only Series 6 of the respective ethnic population projections and Series 5 of the New Zealand population projections are designed to be directly comparable. Other series cannot be directly compared because the projection assumptions may be incompatible.

It is also important to note that the ethnic populations discussed here are not mutually exclusive because people can and do identify with more than one ethnicity. People who identify with more than one ethnicity have been included in each ethnic population.

Ethnic concept

The ethnic concept used in these projections is the ethnic group or groups that people identify with or feel they belong to. Ethnicity is self-perceived and people can belong to more than one ethnic group. For example, people may identify with the Māori ethnicity even though they may not be descended from a Māori ancestor. Conversely, people may choose to not identify with the Māori ethnicity even though they are descended from a Māori ancestor. Ethnicity does not equate to a birthplace description.

The 2001 Census asked people "Which ethnic group do you belong to? Mark the space or spaces which apply to you". The census usually resident population count of 3,737,277 included 2,871,432 people who identified with a European ethnicity, 526,281 who identified with the Māori ethnicity, 238,176 who identified with an Asian ethnicity, 231,798 who identified with a Pacific ethnicity, 24,993 who identified with other ethnicities and 150,546 who gave no ethnic response. Of the 2,871,432 European people, 9 percent (261,024) also identified with non-European ethnicities, 86 percent (2,458,586) were born in New Zealand and 10 percent (277,437) were born in Europe (including the United Kingdom). Of the 526,281 Māori people, 44 percent (231,555) also identified with non-Māori ethnicities and 99 percent (513,126) were born in New Zealand. Of the 238,176 Asian people, 10 percent (24,615) also identified with non-Asian ethnicities, 22 percent (53,262) were born in New Zealand and 66 percent (156,678) were born in Asia. Of the 231,798 Pacific people, 29 percent (66,153) also identified with non-Pacific ethnicities, 58 percent (133,791) were born in New Zealand and 41 percent (94,992) were born elsewhere in Oceania (including Australia).

The European, Asian and Pacific populations are all diverse populations.

At the 2001 Census, the number of Europeans identifying with various European ethnic groups was: New Zealand European 2,696,724, English 35,082, Dutch/Netherlands 27,507, Australian 20,785, British not further defined 16,572, South African 14,913, Scottish 13,785, Irish 11,706,

German 9,057, American (United States) 8,475 and other European groups 66,270. There were 43,719 people who identified with more than one European ethnicity (eg New Zealand European and German).

Among the Asian population at the 2001 Census, the number identifying with various Asian ethnic groups was: Chinese 105,057, Indian 62,187, Korean 19,026, Filipino 11,091, Japanese 10,026, Sri Lankan 7,014, Cambodian 5,268, Thai 4,554, Vietnamese 3,462, Indonesian 2,073, Malay 2,052 and other Asian groups 9,765. There were 4,605 people who identified with more than one Asian ethnicity (eg Chinese and Indian).

At the 2001 Census, the number of Pacific peoples identifying with various Pacific ethnic groups was: Samoan 115,017, Cook Island 52,569, Tongan 40,716, Niuean 20,148, Fijian 7,041, Tokelauan 6,204 and other Pacific groups 7,335. There were 15,549 people who identified with more than one Pacific ethnicity (eg Samoan and Tongan).

Base population

The **European** population projections have as a base the estimated resident population of European ethnicity of New Zealand at 30 June 2001. This population (3,074,000) was based on the census usually resident population count (2,871,432) at 6 March 2001 and adjusted for:

1. non-response to the census ethnicity question (+114,000)
2. net census undercount (+54,000)
3. residents temporarily overseas on census night (+36,000)
4. births, deaths and net migration between census night (6 March 2001) and 30 June 2001 (-3,000)
5. reconciliation with demographic estimates at ages 0–9 years (+3,000).

The **Māori** population projections have as a base the estimated resident population of Māori ethnicity of New Zealand at 30 June 2001. This population (586,000) was based on the census usually resident population count (526,281) at 6 March 2001 and adjusted for:

1. non-response to the census ethnicity question (+26,000)
2. net census undercount (+26,000)
3. residents temporarily overseas on census night (+5,000)
4. births, deaths and net migration between census night (6 March 2001) and 30 June 2001 (+3,000)
5. reconciliation with demographic estimates at ages 0–9 years (+1,000).

The **Asian** population projections have as a base the estimated resident population of Asian ethnicity of New Zealand at 30 June 2001. This population (272,500) was based on the census usually resident population count (238,176) at 6 March 2001 and adjusted for:

1. non-response to the census ethnicity question (+10,400)
2. net census undercount (+4,600)
3. residents temporarily overseas on census night (+13,100)
4. births, deaths and net migration between census night (6 March 2001) and 30 June 2001 (+5,900)
5. reconciliation with demographic estimates at ages 0–9 years (+300).

The Pacific population projections have as a base the estimated resident population of Pacific ethnicity of New Zealand at 30 June 2001. This population (261,800) was based on the census usually resident population count (231,798) at 6 March 2001 and adjusted for:

1. non-response to the census ethnicity question (+12,700)
2. net census undercount (+11,400)
3. residents temporarily overseas on census night (+4,100)
4. births, deaths and net migration between census night (6 March 2001) and 30 June 2001 (+1,400)
5. reconciliation with demographic estimates at ages 0–9 years (+400).

The estimated and projected resident populations are not directly comparable with census counts because of these adjustments. For more information about the base population, refer to "*Information about the population estimates*", on the Statistics New Zealand website (www.stats.govt.nz).

Alternative series

For each ethnic group, eleven alternative series have been produced using different combinations of fertility, mortality, migration and inter-ethnic mobility assumptions. At the time of this release, projection Series 6 is considered the most suitable for assessing future population changes. The other projection series allow users to assess the impact on population size and structure resulting from changes in the assumptions for each of the components of population change. Series 2, 6 and 10 can be used for assessing the effect of the different fertility assumptions; Series 3, 6 and 9 allow for a comparative mortality analysis; Series 4, 6 and 8 allow for alternative migration levels; and Series 5, 6 and 7 allow for different inter-ethnic mobility rates.

More detailed projection results, including projections for individual years or projections by age and sex, are available on request. Special projections can also be produced for clients using their own assumptions. For more information and quotes, email demography@stats.govt.nz or phone toll-free 0508 525 525.

Method

A special 'cohort component' method has been used to derive the population projections. The method differs from the conventional cohort component method in two respects:

For each ethnic group, births have been projected separately for women, and for men where the mother is not of that ethnic group.

The projections allow for population change due to inter-ethnic mobility or ethnic category jumping (ie people changing their ethnic identification over time).

In this method the base population is projected forward by calculating the effect of deaths, migration and inter-ethnic mobility within each age-sex group according to specified mortality, migration and inter-ethnic mobility assumptions. New birth cohorts are generated by applying specified fertility assumptions to the female population of childbearing age, and specified paternity assumptions to the male population.

Projection assumptions

Projection assumptions are formulated after analysis of short- and long-term historical trends, recent trends and patterns observed in other countries, government policy, and other relevant information.

Fertility

European

There are three alternative fertility variants – designated low, medium and high – which assume that fertility rates of European women will vary until the year 2016, when the total fertility rate will reach 1.55, 1.75 and 1.95 births per European woman, respectively. After 2016, it is assumed fertility rates will remain constant. The estimated base rate for 2000–2002 was 1.77 births per European woman.

There are three alternative paternity variants – designated low, medium and high – which assume that paternity rates of European men with non-European women will vary until the year 2016, when the total paternity rate will reach 0.08, 0.13 and 0.18 births per European man, respectively. The three alternative paternity variants correspond to the three alternative fertility variants. After 2016, it is assumed paternity rates will remain constant. The estimated base rate for 2000–2002 was 0.13 births per European man.

The medium fertility variant assumes fertility rates of European women aged under 32 years will generally decline between 2001 and 2016, with rates increasing for women aged 32 years and over. The low fertility variant assumes fertility rates of women aged under 35 years will generally decline between 2001 and 2016, with rates increasing for women aged 35 years and over. The high fertility variant assumes fertility rates of women aged under 30 years will generally decline between 2001 and 2016, but the rates for women aged 30 years and over will increase.

The low and medium paternity variants assume paternity rates of European men of all ages will generally decline between 2001 and 2016. By comparison, the high paternity variant assumes paternity rates of men aged under 26 years will generally decline between 2001 and 2016, but the rates for men aged 26 years and over will increase.

An allowance is also made for births to European parent(s) that are not registered as European children. The low, medium and high variants assume that 2.4, 2.9 and 3.4 percent, respectively, of births to European parent(s) are non-European children.

Māori

There are three alternative fertility variants – designated low, medium and high – which assume that fertility rates will vary until the year 2016, when the total fertility rate will reach 2.15, 2.40 and 2.65 births per Māori woman, respectively. After 2016, it is assumed fertility will remain constant. The estimated base rate in 2000–2002 was 2.59 births per Māori woman.

There are three alternative paternity variants – designated low, medium and high – which assume that paternity rates of Māori men with non-Māori women will vary until the year 2016, when the total paternity rate will reach 0.70, 0.80 and 0.90 births per Māori man, respectively. The three alternative paternity variants correspond to the three alternative fertility variants. After 2016, it is

assumed paternity rates will remain constant. The estimated base rate in 2000–2002 was 0.85 births per Māori man.

The medium fertility variant assumes fertility rates of Māori women aged under 31 years will generally decline between 2001 and 2016, with rates increasing for women aged 31 years and over. By comparison, the low fertility variant assumes fertility rates of women of most ages will generally decline between 2001 and 2016. The high fertility variant assumes fertility rates of women aged under 29 years will generally decline between 2001 and 2016, but the rates for women aged 29 years and over will increase.

The medium paternity variant assumes paternity rates of Māori men aged under 38 years will generally decline between 2001 and 2016, with rates increasing for men aged 38 years and over. The low paternity variant assumes paternity rates of men of all ages will decline between 2001 and 2011. By comparison, the high paternity variant assumes paternity rates of men aged under 33 years will generally decline between 2001 and 2016, but the rates for men aged 33 years and over will increase.

An allowance is also made for births to Māori parent(s) that are not registered as Māori children. The low, medium and high variants assume that 4.2, 4.8 and 5.4 percent, respectively, of births to Māori parent(s) are non-Māori children.

Asian

There are three alternative fertility variants – designated low, medium and high – which assume that fertility rates will vary until the year 2016, when the total fertility rate will reach 1.35, 1.55 and 1.75 births per Asian woman, respectively. After 2016, it is assumed fertility rates will remain constant. The estimated base rate in 2000–2002 was 1.67 births per Asian woman.

There are three alternative paternity variants – designated low, medium and high – which assume that paternity rates of Asian men with non-Asian women will vary until the year 2016, when the total paternity rate will reach 0.15, 0.20 and 0.25 births per Asian man, respectively. The three alternative paternity variants correspond to the three alternative fertility variants. After 2016, it is assumed paternity rates will remain constant. The estimated base rate 2000–2002 was 0.25 births per Asian man.

The medium fertility variant assumes fertility rates of Asian women aged under 31 years will generally decline between 2001 and 2016, with rates increasing for women aged 31 years and over. By comparison, the low fertility variant assumes fertility rates of women of most ages will generally decline between 2001 and 2016. The high fertility variant assumes fertility rates of women aged under 29 years will generally decline between 2001 and 2016, but the rates for women aged 29 years and over will increase.

The low and medium paternity variants assume paternity rates of Asian men of all ages will decline between 2001 and 2016. By comparison, the high paternity variant assumes paternity rates of men aged under 33 years will generally decline between 2001 and 2016, but the rates for men aged 33 years and over will increase.

An allowance is also made for births to Asian parent(s) which are not registered as Asian children. The low, medium and high variants assume that 2.4, 3.4 and 4.4 percent, respectively, of births to Asian parent(s) are non-Asian children.

Pacific

There are three alternative fertility variants – designated low, medium and high – which assume that fertility rates will vary until the year 2016, when the total fertility rate will reach 2.45, 2.70 and 2.95 births per Pacific woman, respectively. After 2016, it is assumed fertility rates will remain constant. The estimated base rate in 2000–2002 was 2.94 births per Pacific woman.

There are three alternative paternity variants – designated low, medium and high – which assume that paternity rates of Pacific men with non-Pacific women will vary until the year 2016, when the total paternity rate will reach 0.80, 0.90 and 1.00 births per Pacific man, respectively. The three alternative paternity variants correspond to the three alternative fertility variants. After 2016, it is assumed paternity rates will remain constant. The estimated base rate in 2000–2002 was 1.00 births per Pacific man.

The medium fertility variant assumes fertility rates of Pacific women aged under 36 years will generally decline between 2001 and 2016, with rates increasing for women aged 36 years and over. By comparison, the low fertility variant assumes fertility rates of women of most ages will generally decline between 2001 and 2016. The high fertility variant assumes fertility rates of women aged under 30 years will generally decline between 2001 and 2016, but the rates for women aged 30 years and over will increase.

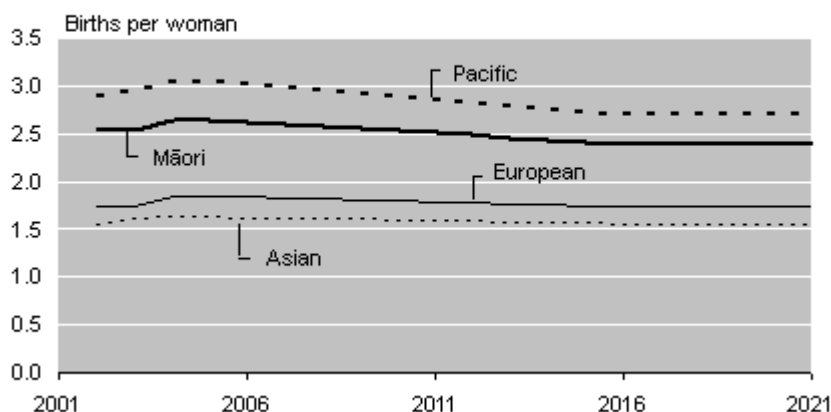
The medium paternity variant assumes paternity rates of Pacific men aged under 39 years will generally decline between 2001 and 2016, with rates increasing slightly for men aged 39 years and over. The low paternity variant assumes paternity rates of men of all ages will decline between 2001 and 2016. The high paternity variant assumes paternity rates of men aged under 33 years will generally decline between 2001 and 2016, but the rates for men aged 33 years and over will increase.

An allowance is also made for births to Pacific parent(s) that are not registered as Pacific children. The low, medium and high variants assume that 3.0, 3.5 and 4.0 percent, respectively, of births to Pacific parent(s) are non-Pacific children.

All ethnicities

A sex ratio at birth of 105.5 males per 100 females is assumed, based on the historical annual average of the total population.

Assumed Total Fertility Rates by Ethnic Group
Medium variant



Mortality

European

There are three alternative mortality variants – designated low, medium and high – which assume that mortality rates will continue to drop so that the average life expectancy at birth for European males will increase to 82.7, 81.8 and 81.0 years, respectively, by 2021. The corresponding life expectancies for European females in 2021 will be 86.6, 86.0 and 85.3 years. The estimated base life expectancies in 2000–2002 were 77.4 years for males and 82.2 years for females.

Mortality rates are assumed to decrease at the same rate at most ages. Between 2001 and 2021, European male mortality rates are assumed to decrease by about 33, 28 and 22 percent for the low, medium and high mortality variants, respectively. By comparison, European female mortality rates are assumed to decrease by about 31, 26 and 21 percent for the low, medium and high mortality variants, respectively.

Māori

There are three alternative mortality variants – designated low, medium and high – which assume that mortality rates will continue to drop so that the average life expectancy at birth for Māori males will increase to 77.1, 76.3 and 75.4 years, respectively, by 2021. The corresponding life expectancies for Māori females in 2021 will be 81.1, 80.3 and 79.4 years. The estimated base life expectancies in 2000–2002 were 69.0 years for males and 73.2 years for females.

Mortality rates are assumed to decrease at the same rate at most ages. Between 2001 and 2021, Māori male mortality rates are assumed to decrease by about 46, 42 and 38 percent for the low, medium and high mortality variants, respectively. By comparison, Māori female mortality rates are assumed to decrease by about 46, 42 and 38 percent for the low, medium and high mortality variants, respectively.

Asian

There are three alternative mortality variants – designated low, medium and high – which assume that mortality rates will continue to drop so that the average life expectancy at birth for Asian males will increase to 83.0, 82.1 and 81.3 years, respectively, by 2021. The corresponding life expectancies for Asian females in 2021 will be 87.2, 86.5 and 85.8 years. The estimated base life expectancies in 2000–2002 were 78.0 years for males and 83.0 years for females.

Mortality rates are assumed to decrease at the same rate at most ages. Between 2001 and 2021, Asian male mortality rates are assumed to decrease by about 35, 30 and 25 percent for the low, medium and high mortality variants, respectively. By comparison, Asian female mortality rates are assumed to decrease by about 33, 28 and 23 percent for the low, medium and high mortality variants, respectively.

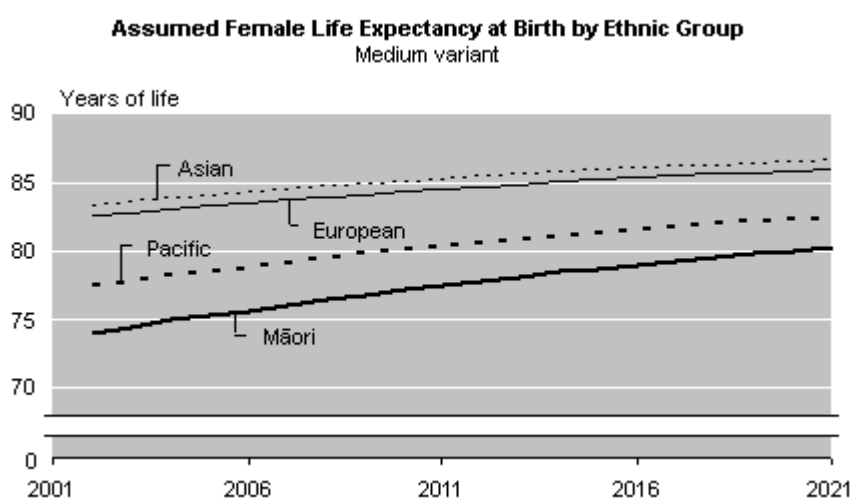
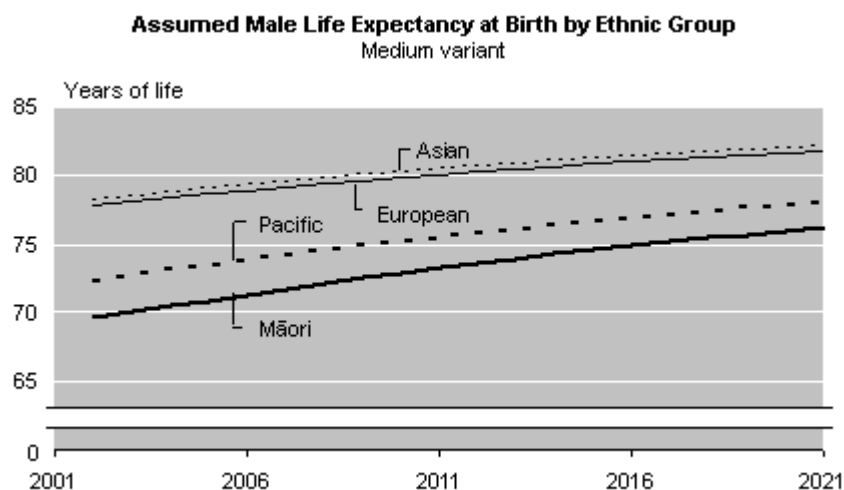
Pacific

There are three alternative mortality variants – designated low, medium and high – which assume that mortality rates will continue to drop so that the average life expectancy at birth for Pacific males will increase to 78.9, 78.1 and 77.3 years, respectively, by 2021. The corresponding life expectancies for Pacific females in 2021 will be 83.4, 82.6 and 81.7 years. The estimated base life expectancies in 2000–2002 were 71.5 years for males and 76.7 years for females.

Mortality rates are assumed to decrease at the same rate at most ages. Between 2001 and 2021, Pacific male mortality rates are assumed to decrease by about 45, 41 and 36 percent for the low, medium and high mortality variants, respectively. By comparison, Pacific female mortality rates are assumed to decrease by about 42, 38 and 33 percent for the low, medium and high mortality variants, respectively.

All ethnicities

It is important to note that the objective of population projections is not to specifically measure or project the life expectancy of the population. For projection purposes it is more important to have a realistic yet tractable model for projecting mortality trends (and death numbers) into the future. Therefore, ethnic life expectancies at birth should not be used as a precise measure of ethnic mortality or of mortality differentials between ethnic groups.



Migration

European

There are three alternative migration variants – designated low, medium and high – which assume long-term annual net migration of -10,000, -5,000 and zero, respectively. The medium migration variant assumes net migration of the European population of zero in the 2002 June year, 8,000 in 2003 and 6,000 in 2004. The low and high migration variants are 5,000 lower and higher, respectively, than the medium variant for each year.

The age-sex patterns of net migration assume net inflow at ages 29–33 years associated with returning New Zealanders. The highest net outflows are assumed at ages 20–26 years, being associated with New Zealanders embarking on overseas travel. Ethnicity is not collected in external migration data, but the assumed migration is based on an assessment of recent and expected trends of arrivals and departures of New Zealand citizens and non-New Zealand citizens by birthplace.

Māori

There are three alternative migration variants – designated low, medium and high – which assume annual net migration of the Māori population of -3,500, -2,500 and -1,500, respectively. The age-

sex patterns of net migration assume a net outflow at all ages, with the highest net outflows at ages 18–27 years. Ethnicity is not collected in external migration data, but the assumed migration is based on an assessment of recent and expected trends of arrivals and departures of New Zealand citizens and non-New Zealand citizens.

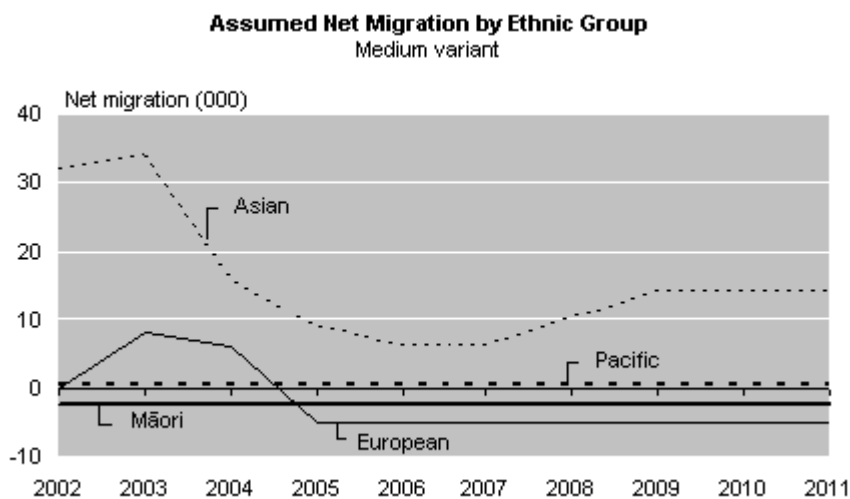
Asian

There are three alternative migration variants – designated low, medium and high – which assume long-term annual net migration of 8,000, 14,000 and 20,000, respectively. The medium migration variant assumes net migration of the Asian population of 32,000 in the 2002 June year, 34,000 in 2003, 16,000 in 2004, 9,000 in 2005, 6,000 in 2006, 6,000 in 2007 and 10,000 in 2008. The low and high migration variants are 6,000 lower and higher, respectively, than the medium variant for each year.

The age-sex patterns of net migration assume net inflows at most ages, with the highest net inflows at ages 15–20 years associated with students arriving for educational purposes. After 2003, there is an increasing net outflow at ages 21–27 years associated with students returning overseas after studying in New Zealand and young New Zealanders embarking on overseas travel. Ethnicity is not collected in external migration data, but the assumed migration is based on an assessment of recent and expected trends of arrivals and departures of New Zealand citizens and non-New Zealand citizens by birthplace.

Pacific

There are three alternative migration variants – designated low, medium and high – which assume annual net migration of the Pacific population of zero, 500 and 1,000, respectively. The age-sex patterns of net migration assume net inflow at ages under 20 years and at 29–41 years. The highest net inflows are at ages 13–19 years and the highest net outflows at ages 21–27 years. Ethnicity is not collected in external migration data, but the assumed migration is based on an assessment of recent and expected trends of arrivals and departures of New Zealand citizens and non-New Zealand citizens.



Inter-ethnic mobility

European

There are three alternative inter-ethnic mobility variants – designated low, medium and high – which assume annual net change to the European population of 0.2, zero and -0.2 percent, respectively. The age pattern of inter-ethnic mobility is applied to each sex and assumes the highest net mobility at ages 11–25 years.

Māori

There are three alternative inter-ethnic mobility variants – designated low, medium and high – which assume annual net change to the Māori population of zero, -0.3 percent and -0.6 percent, respectively. The age pattern of inter-ethnic mobility is applied to each sex and assumes the highest net mobility at ages 11–25 years.

Comparisons of demographic estimates and census populations during 1966–1991 suggest that inter-ethnic mobility resulted in a loss from the Māori population of between 0.3 and 0.9 percent per year. However, changes to the ethnicity question between the 1991, 1996 and 2001 Censuses make it difficult to measure inter-ethnic mobility during 1991–1996 and 1996–2001. In recent years there has been greater awareness of Māori issues which may have increased the propensity of people to identify with Māori ethnicity. Therefore, the 2001-base projections assume inter-ethnic mobility loss from the Māori population to continue, but at a lower rate than in previous projection series.

Asian

There are three alternative inter-ethnic mobility variants – designated low, medium and high – which assume annual net change to the Asian population of zero, -0.2 and -0.4 percent, respectively. The age pattern of inter-ethnic mobility is applied to each sex and assumes the highest net mobility at ages 11–25 years.

Pacific

There are three alternative inter-ethnic mobility variants – designated low, medium and high – which assume annual net change to the Pacific population of zero, -0.2 and -0.4 percent, respectively. The age pattern of inter-ethnic mobility is applied to each sex and assumes the highest net mobility at ages 11–25 years.

Nature of projections

Demographic projections are designed to meet both short-term and long-term planning needs, but are not designed to be exact forecasts or to project specific annual variation. These projections are based on assumptions made about future fertility, mortality, net migration, and inter-ethnic mobility patterns of the population. Although the assumptions are carefully formulated to represent future trends, they are subject to uncertainty. Therefore, the projections should be used as guidelines and an indication of the overall trend, rather than as exact forecasts.

The projections do not take into account non-demographic factors (eg war, catastrophes, major government and business decisions) which may invalidate the projections. Demographic trends are monitored regularly and, when it is necessary, the projections are revised to reflect new trends and to maintain their relevance and usefulness.

Projections of ethnic populations are more uncertain than projections of the total population for several reasons:

1. Unlike other demographic characteristics such as age and sex, ethnicity can change over time. This may occur because of different people responding to the ethnicity question. For example, the ethnicity of babies and young children is usually identified initially by their parents. However, in a later census when these children are old enough to complete their own forms, they will decide for themselves which ethnicity they identify with. This may differ from the original ethnicity identified by their parents.
2. There are greater difficulties in establishing past trends in fertility, mortality and migration. Different ethnicities can be reported in different collections (eg birth registration form, death registration form, census form), which makes the derivation of ethnic-specific fertility and mortality rates problematic. Furthermore, the measurement of ethnicity has changed over time in many collections, while it is not captured at all in some collections (eg external migration data).
3. Ethnic populations are not mutually exclusive because people can and do identify with more than one ethnicity. People are not asked to prioritise their ethnic responses. Hence, Statistics New Zealand includes people in each of their reported ethnic groups.
4. There is the added complication of births to parents of different ethnicity. The child may be considered by the parents to belong to one or more of their ethnicities, or indeed to another ethnicity.
5. There is greater future uncertainty about the components of population change. For example, it is uncertain whether the fertility and mortality of different ethnicities will converge, and if so, at what pace. Assumptions about future migration, notably for people of Asian and Pacific ethnicities, are particularly susceptible to changes in immigration policy.

Statistics New Zealand incorporates these issues into its methodology for ethnic population projections and develops alternative projection scenarios to illustrate uncertainty. However, it is because of these issues that Statistics New Zealand does not currently attempt to project the population of ethnicities other than the broad Māori, Pacific, Asian and European ethnic groups.

For more information about the projections, refer to "[*Information about the demographic projections*](#)" on the Statistics New Zealand website (www.stats.govt.nz).

Definitions

The **estimated resident population** of New Zealand is an estimate of all people who usually live in New Zealand at a given date. It includes all residents present in New Zealand and counted by the census (census usually resident population count), residents who are temporarily overseas (who are not included in the census), and an adjustment for residents missed or counted more than once by the census (net census undercount). Visitors from overseas are excluded.

Inter-ethnic mobility refers to people changing their ethnic identification over time. This may occur because of different people responding to the ethnicity question. For example, the ethnicity

of babies and young children are identified initially by their parents. However, in a later census when these children are old enough to complete their own forms, they will decide for themselves which ethnicity they identify with. This may differ from the original ethnicity identified by their parents. Inter-ethnic mobility can also occur when different ethnicities are reported in different collections (eg birth registration form, death registration form, census form).

Life expectancy is the average length of life remaining at a given age. As derived from a period life table, it assumes that a person experiences the age-specific mortality rates of a given period from the given age onwards. It represents the average longevity of the whole population and does not necessarily reflect the longevity of an individual.

Replacement fertility generally refers to a total fertility rate of 2.1 children per woman, which equates to the average number of children per woman that is required for the population to replace itself in the long-term. The rate allows for the sex ratio at birth (roughly 105 males born for every 100 females) and for some mortality of females between birth and childbearing.

The **resident population concept** is a statistical basis for a population in terms of those who usually live in a given area at a given time. The census usually resident population count is a census measure of the resident population concept, and the estimated resident population is a demographic measure of the resident population concept. In terms of vital statistics, the resident population concept refers to events that relate to residents of New Zealand only.

The **total fertility rate** is the average number of live births that a woman would have during her life if she experienced the age-specific fertility rates of a given period (usually a year).

The **total paternity rate**, for example, as used in the European population projections, is the average number of live births that a European man would have with non-European women during his life.

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Tables

The following tables can be downloaded from the Statistics New Zealand website as an Excel spreadsheet. If you do not have access to Excel, you may use the [*Excel file viewer*](#) to view, print and export the contents of the file.

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