

## POPULATION PROJECTIONS FOR NEW SOUTH WALES — A REGIONAL ANALYSIS

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*The population of New South Wales is projected to keep growing for the next 30 years but the rate of growth is expected to slow. Population ageing and slowing birth rates are the main contributors to this fall in growth. Over the 30 year projection period we see significant shifts in the structure and distribution of population within New South Wales.*

### INTRODUCTION

The New South Wales Department of Urban Affairs and Planning has published revised population projections for the State, and for each region of the State, incorporating results from the 1996 census.<sup>1</sup> These provide an insight into the future of population distribution in New South Wales if the assumed trends continue.

This paper briefly describes these projected future trends. It focuses on the distribution of population between Sydney and the non-metropolitan coastal and inland parts of the State, describing the changes in population numbers and characteristics in each area and exploring the factors underlying these changes.

### THE POPULATION PROJECTIONS

The projections were compiled using a multi-regional cohort component model.

Major assumptions were

- The total fertility rate in New South Wales will fall from 1.83 children per woman in 1996 to 1.73 in 2016, after which it will remain constant. Existing regional variation in fertility will be maintained.
- Age specific death rates will continue to fall in line with past trends.
- There will be an annual net overseas migration gain of 70,000 to Australia and 29,900 to New South Wales in the long term.
- New South Wales will have a net interstate migration loss of 14,300 per year.
- Future shares of internal migration to each region were assessed based on an analysis of shares of net migration over the period 1991 to 1996 and long-term trend over the thirty years from 1966.

- The age and sex distribution of each migration flow in the year 1995-1996 is assumed to remain constant.

Further information on the assumptions is provided in the projections report, while a more detailed technical report is being prepared.

For the analysis in this paper, regions have been combined into three areas — Sydney Statistical Division, coastal regions and inland regions (see Figure 1) — on the basis of broadly similar projected population trends.

It should be noted that the South Eastern Statistical Division includes both rapidly growing coastal areas and a number of inland areas with static or declining population. For the purposes of this analysis the entire Statistical Division has been included with the coastal regions. Hence, the definition of coastal regions differs slightly from that used in previous analysis of past population trends.

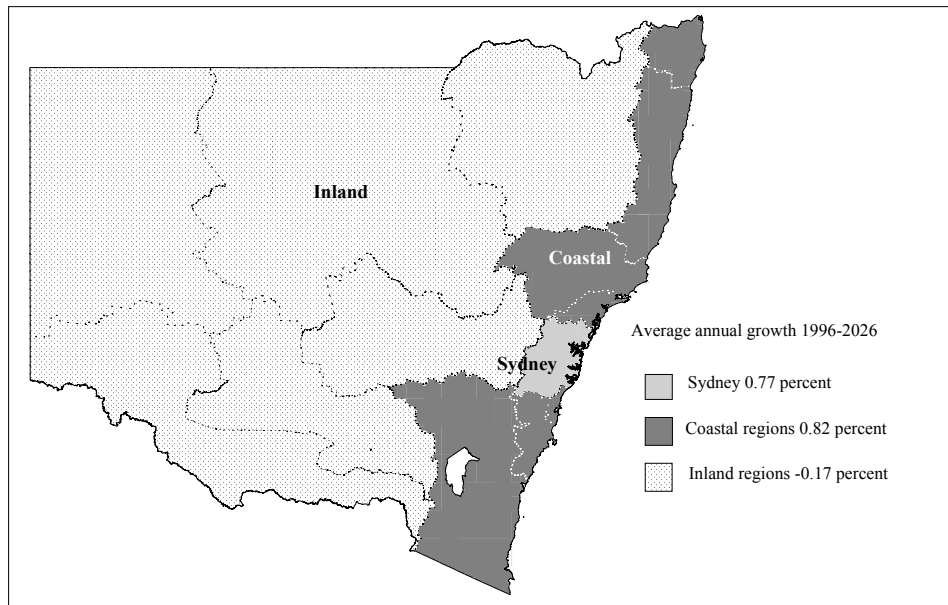
## NEW SOUTH WALES

The population of New South Wales is projected to grow to 7.6 million by 2026. This is an increase of 1.4 million people over a 30 year period.

Growth is expected to result from natural increase and net overseas migration gains. A slowing down in growth rates is projected over time as population ageing leads to an increase in the number of deaths. Fewer women moving through the childbearing age groups, coupled with falls in some age-specific fertility rates, will mean a lower proportion of births. For example, in the current five-year period natural increase accounts for two-thirds of total growth. By the end of the projection period, this will fall to 57 per cent.

Declining total fertility rates and population ageing has been occurring in all New South Wales regions and it is anticipated that these trends will continue.

**Figure 1: Projected population growth, NSW regions, 1996 to 2026**



The population aged 65 years and over is projected to double over the next 30 years, reaching 1.6 million in 2026. Much of this increase, however, will occur in the latter half of the projection period, as the relatively large populations now aged in their late 40s and early 50s (the 'baby boomers') reach 65 years or more. This leads to high aged dependency ratios at the end of the projection period for most parts of the State.

Ageing of the population should be seen as an inevitable process. Even under a scenario of high net overseas migration (150,000 per annum), the projected median age of the population in 2026 is 40.8 years. This compares with a median age of 42.0 years in 2026 under the assumption of 70,000 net overseas migration.

#### **SYDNEY**

Sydney's population is projected to grow from 3.9 million in 1996 to 4.9 million in 2026, an increase of 1 million people or 26 per cent over 30 years.

While the population of Sydney will grow over the next 30 years, the rate of change is projected to slow. Between 1996 and 2001 Sydney is projected to grow at 1.0 per cent per annum but by the period 2021 to 2026, this rate is projected to almost halve to 0.6 per cent.

Despite the falling growth rates in Sydney, growth will be higher than the State average, with an average 0.77 per cent per year compared to 0.68 per cent for New South Wales over the projection period. This, together with slowing growth rates in the other regions, means that Sydney's share of the State's population will increase slightly, from 62.6 per cent in 1996 to 64.2 per cent in 2026.

Continued growth in Sydney is due to both net migration gains and natural increase.

Overseas migration to Sydney is a major contributor to population growth

and offsets the losses from migration to the rest of the State and other States and Territories. Historically Sydney has attracted a large proportion of the overseas migrants coming to New South Wales, with about 90 per cent of all migrants arriving in New South Wales living in Sydney. The projections assume an average net overseas migration gain of 27,000 people per year to Sydney.

Sydney has consistently lost people to other States and Territories. This loss is expected to continue, with Sydney projected to lose an average 6,900 people per year to 2026.

Similarly, there has been a net outflow of people from Sydney to other parts of New South Wales. Sydney loses more people to the rest of the State than it does to other States and Territories. Nugent<sup>2</sup> observed that there had been a significant decrease in the net intrastate migration loss between 1991 and 1996. The main reason for this decline and Sydney's continued population growth in that period is fewer people leaving Sydney for other parts of the State. Intrastate migration is expected to account for a loss of 35,000 people from Sydney over the 30 years.

Net intrastate migration loss, however, does not occur in all age groups. Sydney differs from the other regions in that it gains population from internal migration in the 20 to 24 year age group. During the 1991 to 96 period, Nugent<sup>3</sup> identified two peaks in out migration flows to Sydney from the rest of the State. One at age 18, capturing those moving to Sydney on the completion of high school, the other at age 22, possibly depicting people moving to Sydney for employment opportunities.

Sydney's growth from natural increase is projected to contribute an average 25,000 people per annum. Growth from

natural increase will slow over the 30 year period as deaths increase faster than births. Births will increase by two per cent while deaths will increase by 27 per cent.

Sydney's fertility rates are on average lower than those in other regions of the State. The projections assume a fall in the Total Fertility Rate from 1.71 in 1996 to 1.66 in 2016. However, with the constant inflow of people aged 18 to 29 years from other parts of the State adding to the existing number of people in the child-bearing age groups, the absolute number of births will remain relatively stable over the period.

Growth is projected in Sydney in all age groups. It is in the older age groups (aged 50 years and over) that the largest growth occurs (see Figure 2). This growth means that the proportion aged 65 years

**Table 1: Summary statistics, Sydney**

Summary statistics	1996	2011	2026
Population	3,881,000	4,413,000	4,883,000
Share of NSW (%)	62.6	63.3	64.2
Proportion 65+yrs (%)	11.8	12.5	18.0
Proportion <15 yrs (%)	20.2	18.0	16.3
Median age (years)	33.9	37.5	40.5
Dependency ratio	0.47	0.44	0.53
Average annual growth 1996 to 2026: 0.77%			

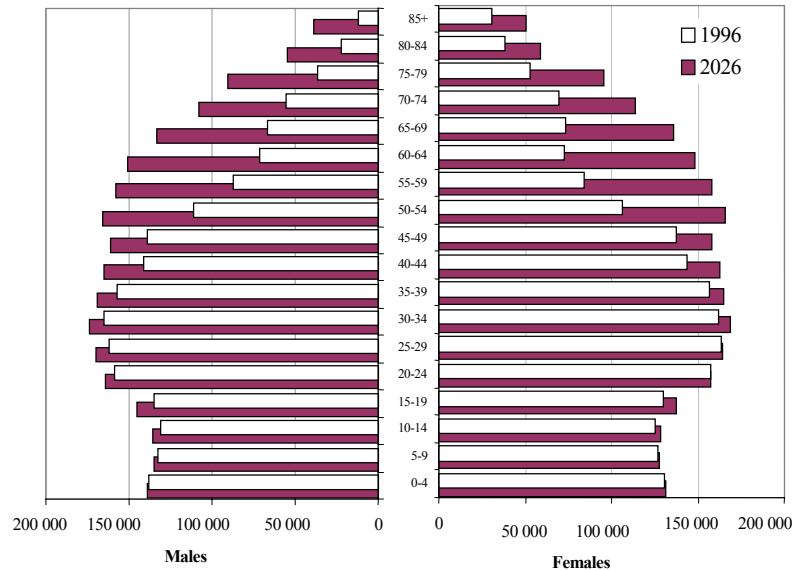
and over will increase over the projection period from 12 per cent in 1996 to 18 per cent in 2026. Interestingly, the greatest increase in this proportion will not occur until the end of the period.

Conversely, the proportion of those aged under 15 years will fall over the 30 years. (See Table 1.)

**COASTAL REGIONS**

Coastal regions will continue to have the fastest growth rates in the State, although growth will be much slower than in the past. Over the next 30 years, the population living in coastal New South Wales

**Figure 2: Age distribution Sydney, 1996 and 2026**



is projected to grow by 440,000 people, or 28 per cent. This represents almost one-third of all growth projected in the State.

By 2026 it is projected that 26 per cent of the State's population will be living in coastal regions outside Sydney.

The main reason for the relatively high population growth in coastal areas is continued high levels of net migration from other parts of the State, with a gain of 341,000 people (11,400 per year) projected over thirty years. Smaller gains from overseas migration also add to the population.

It is expected that the movement of residents from coastal regions in New South Wales to other States and Territories will continue. A net interstate migration loss of 83,000 people is projected over thirty years.

The number of births is projected to increase slightly between 1996 and 2026. A much higher increase in the number of deaths, however, means that natural increase will contribute less and less to

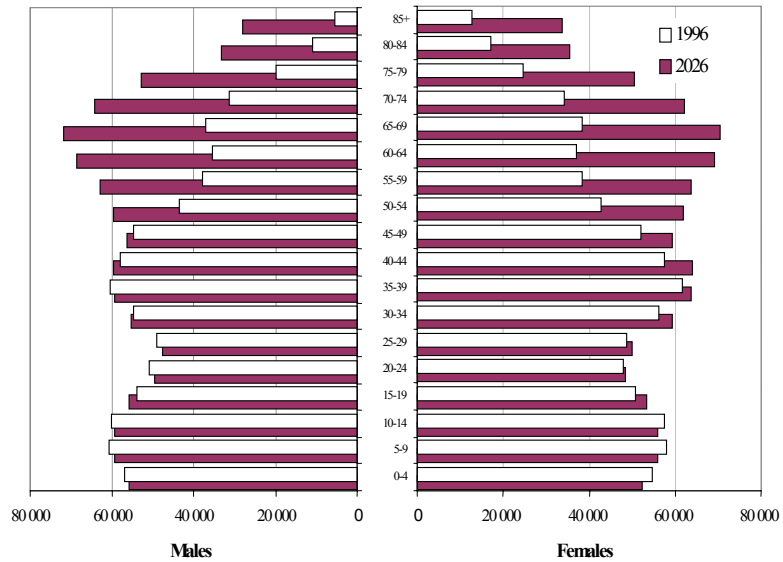
growth. For example, in the period 2021 to 2026, natural increase is projected to contribute only two per cent of total growth, compared to 34 per cent in the current 1996 to 2001 period. Thus, in thirty years time, net migration will be the main component underpinning population growth.

The reasons for the drop in natural increase are twofold. Firstly, the outflow of young adults has resulted in an age structure with a relatively low number of people aged 20 to 29 years. In combination with lower fertility rates this means lower crude birth rates. Secondly, immigration of older people and ageing of the existing population results in a larger proportion of people aged over 65 years, which causes a higher number of deaths. (See Table 2 and Figure 3.)

It is projected there will be half a million people aged 65 years and over living in the coastal regions by 2026, over one-quarter of all residents.

There is some variation in growth patterns in coastal regions, with slower

**Figure 3: Age distribution coastal regions, 1996 and 2026**



growth in Newcastle and Wollongong compared to the rest of the coast. However, the overall patterns of growth and the resultant age structures are fairly consistent across the coastal regions.

#### INLAND REGIONS

The population of inland regions of New South Wales is projected to fall from 753,000 in 1996 to 716,000 by 2026, a decrease of 37,000 or five per cent. Most of this decline is expected to occur in the last ten years of the projection period.

Population change is expected to range from an average increase of 400 per year in the 1996 to 2001 period to a loss of 3,300 per year by 2026. As a result the inland regions' share of the State population will decline from 12.2 per cent to 9.5 per cent.

The major reason for the projected population loss is a net loss from migration of 101,000 people over the thirty year period, an average loss of 3,400 per year.

Interestingly, total net migration to Sydney and other parts of New South Wales does not play a significant part in the population decline. Indeed, migration within the State is expected to contribute a gain of 10,000 people over the projection period. Thus the projected population declines in the inland are not attributable to a mass flow of population to Sydney or to coastal regions of the State.

The major factor is losses to interstate, projected to total 137,000 over the thirty years, or 4,600 per year.

Overseas migration will also serve to partly offset the interstate migration losses, adding a total of about 26,000 to the population of the inland regions over the projection period.

**Table 2: Summary statistics, coastal regions**

Summary measure	1996	2011	2026
Population	1,570,000	1,806,000	2,009,000
Share of NSW population (%)	25.3	26	26.3
Proportion aged 65+ yrs (%)	14.7	18.1	25
Proportion aged <15 yrs (%)	22.2	17.5	16.9
Median age (yrs)	36.0	41.8	45.0
Dependency ratio	0.58	0.55	0.72
Average annual growth 1996 to 2026 0.82%			

The projections assume that migration flows remain relatively constant over the projection period. The accelerating population losses in inland regions are not due to any assumptions about changing economic circumstances and the impact of this on migration. Rather they are due to significant changes in the number of births and deaths.

Natural increase is projected to add 64,000 people to the inland regions over the thirty years covered by the projections, an average of 2,100 per year. In the first five years to 2001 natural increase will total 4,000 per year. However a projected 24 per cent decline in births and a 24 per cent increase in deaths means that the contribution of natural increase will drop to zero by 2026.

Declining age-specific fertility rates play some role in this trend. However, as in the coastal regions, it is mainly due to the impact of changes in the age structure of the population due to migration. As Nugent<sup>4</sup> observed, there has been a large outflow of young adults from inland regions. This is assumed to continue, resulting in relatively low numbers of people in the 20 to 29 years age group. The effect on births is compounded in the later years of the projections, when these smaller cohorts begin to reach childbearing age themselves.

Inland areas continue to have the highest fertility rates in New South

Wales. The projected Total Fertility Rates for the year 2016 onwards vary from 1.98 children per woman in the Far West to 2.28 children per woman in the North Western region.

Ageing of the existing population, combined with the impact of migration reducing the numbers of young adults, means that the population of inland regions will age rapidly. The median age is projected to increase from 34.2 years in 1996 to 45.2 years in 2026.

The proportion aged 65 years and over will almost double from 12.6 per cent in 1996 to 24.6 per cent in 2026. However, as in other regions, this does not happen continually over the projection period. In the first fifteen years to 2011 only a modest increase to 16.3 per cent is expected. When combined with a fall in the number

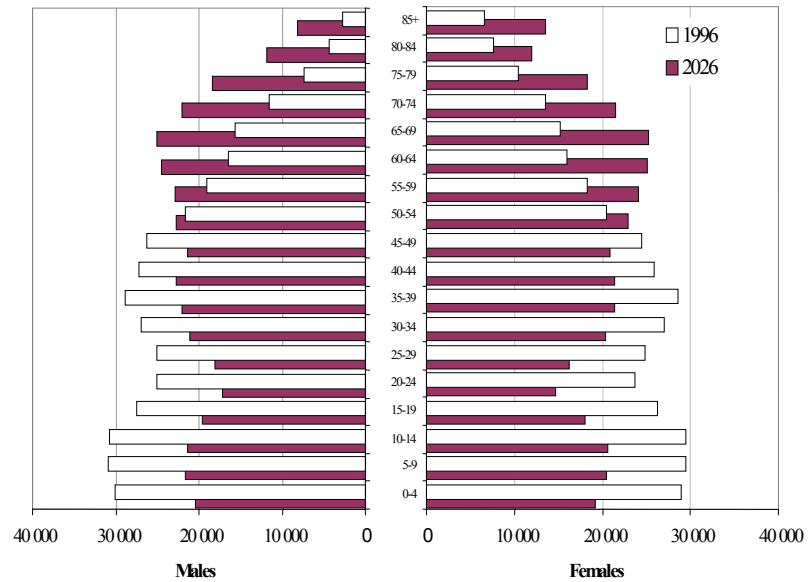
**Table 3: Summary statistics, inland regions**

Summary measure	1996	2011	2026
Population	754,000	749,000	717,000
Share of NSW population (%)	12.2	10.7	9.5
Proportion aged 65+ yrs (%)	12.6	16.3	24.6
Proportion aged <15 yrs (%)	23.9	19.2	17.3
Median age (yrs)	34.2	40	45.2
Dependency ratio	0.57	0.55	0.72
Average annual growth 1996 to 2026	-0.17%		

of people aged less than 15 years, the overall dependency ratio is expected to fall from 0.57 to 0.55. As the baby boomers reach the age of 65 from 2011 onwards there will be a large increase in the dependency ratio to 0.72 by 2026. (See Table 3 and Figure 4.)

Overall the projections show a decline in the number of people in inland regions in all age groups under the age of 50 years.

**Figure 4: Age distribution inland regions, 1996 and 2026**



## COMPARISONS

The three broad regions of New South Wales share similar shaped growth curves over the projection period, despite having different factors behind their growth or decline.

It is interesting to compare the projected age distributions (Figures 2,3 and 4). The inland and coastal age pyramids for 2026 are similar, despite the inland experiencing population decline and the coast having population growth.

Sydney has a very different age distribution to the rest of New South Wales, even though it has average growth similar to that of the coast (Figure 5). Its structure remains relatively stable over the next 30 years, whereas the coastal and inland regions undergo quite dramatic shifts in age structure.

This can be explained by the current population distributions in the regions, and the projected age schedules of migration flows. All areas outside Sydney, even the growing coastal regions, lose

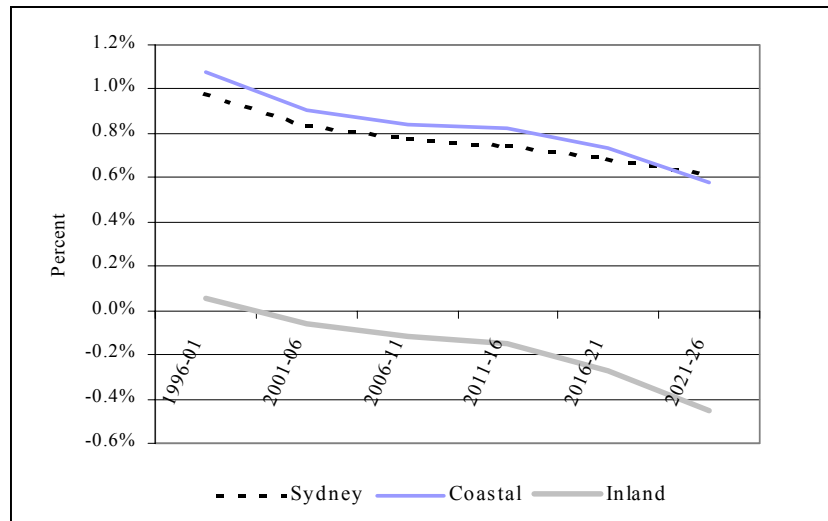
young adults to the metropolitan centres. The compounding effects of continued out-migration of young adults from both coastal and inland regions and the associated lower number of births are leading to population pyramids with a narrowing base.

In contrast, natural increase is projected to maintain a constant proportion of growth in Sydney due to the continued in-migration of young adults. In the other regions it contributes a decreasing proportion.

All of the regions, however, show a widening at the top of the population pyramid, due to the ageing process that is happening throughout New South Wales. Ageing in the Coastal regions is accelerated by in-migration to the area for various retirement and lifestyle reasons.

The ageing of the populations is not expected to be significant until the end of the first fifteen years of the projection period, following the first baby boomers as they reach 65 years in 2011.

**Figure 5: Average annual projected growth, New South Wales regions, 1996 to 2026**



As the proportion of the population aged 65 years and over increases the number of deaths increase. Increasing deaths combined with falling births and migration loss will lead to declining growth rates in all regions.

It is projected that all the inland regions will undergo population decline by the end of the 30 year projection period. The reason for this decline in the inland regions and what differentiates it from the rest of the State is the significant out-migration.

This regional comparison shows that growth rates and the age structure of the population can be quite independent. Sydney and the coastal regions share similar growth rates, but their projected age structures are fundamentally different. The inland and coastal regions share similar projected age structures, yet their growth rates are vastly different.

#### **CONCLUSION**

Migration flows will play an increasingly important role in population outcomes in New South Wales. As natural increase is projected to fall in all parts of the State, especially in the latter part of the 30 year projection period, net migration gains represent a higher proportion of total growth.

#### **References**

- <sup>1</sup> S. Nugent, 'Why Sydney keeps growing — trends in population distribution in New South Wales, 1991 to 1996', *People and Place*, vol. 6, no. 4, 1998, pp. 24-32
- <sup>2</sup> *ibid.*
- <sup>3</sup> *ibid.*
- <sup>4</sup> *ibid.*

The projections for coastal regions illustrate that while high net migration gains keep growth rates relatively strong, they will not address the issue of population ageing. Indeed, the inflow of older people through retirement migration from Sydney and other parts of New South Wales is increasing the proportions aged 65 and over in the coastal regions.

This has implications for inland regions, in that attracting larger inflows of interstate and intrastate migrants may only have short-term growth benefits, unless more young adults can be attracted to these regions.

These conclusions are the outcome of the assumptions used in preparing the projections. Changes in government policy may also impact on future population levels, particularly at the regional level.

#### **Note**

The views expressed are those of the authors and do not necessarily represent the views of the Department of Urban Affairs and Planning. Copies of the population projections report Population Projections for NSW (Preliminary) may be obtained from

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