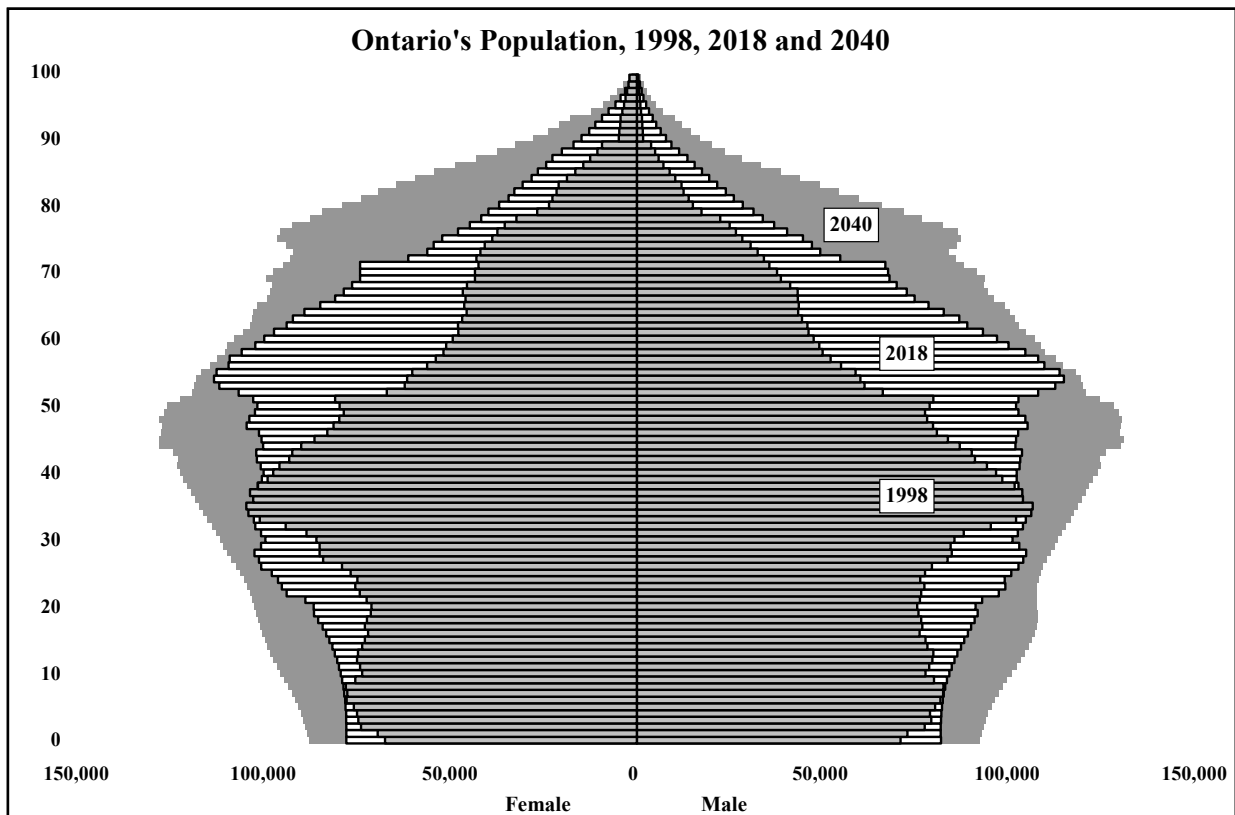


The Urban Futures Institute

Research on Population, Community Change and Land Use

Ontario's Population in the Next Four Decades: Eighteen Million Strong and Growing

By David Baxter and Jim Smerdon



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By David Baxter and Jim Smerdon

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Ontario's Population in the Next Four Decades: Eighteen Million Strong and Growing

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Ontario's Population in the Next Four Decades: Eighteen Million Strong and Growing

By David Baxter and Jim Smerdon, August 1999

1. Population Growth. Ontario's population in 1998 was 11,404,800 people: its projected population in 2010 is 13,367,400; in 2020 is 15,063,500; in 2030 is 16,731,800; and in 2040 is 18,177,500 people. The addition of 6,772,700 people (a 59% increase) to the population over the 42 year period from 1998 to 2040 (an average of 161,300 people per year) is more than the 5,916,200 people added (a 108% increase) to its population in the 42 years from 1956 to 1998 (an average of 140,900 people per year).

2. Growth Rates. The projection for 1999 is for 1.39% growth, slightly more than the 1.34% that occurred in 1998, followed by a gradual decrease to 1.1% by 2025. From then on, even with the assumption of increasing net migration, the annual population growth rate will continue to drop to below the 1% per year level, reaching 0.76% annual growth in 2040. This will be the result of the increase in the number of deaths reducing the contribution of natural increase to population growth from 57,300 additional persons in 1998 to 38,300 in 2010, to the under 10,000 level by 2031, and to negative 20,100 (deaths exceeding births) by 2040.

3. Aging. As a result of the concentration of its population in the 32 to 51 year old age group – the baby boom generation – the current age profile of Ontario looks like a tree with a very thick trunk rather than the standard age pyramid. The typical Ontarian today is a 35 year old, part of the one third of the population who are in the boomer age group. Migration and immigration will be sufficient to slightly expand the trunk of the province's demographic tree while the aging of the baby boom generation will push its upper branches ever closer to the sky: in 20 years the typical person in Ontario will be a 55 year old. Even in 2040, there will be traces of the baby boom in the 74 to 93 year old population, with today's typical person being 77 and still, actually and statistically, alive and kicking forty years from now, but no longer the typical person. Natural increase, net inter-provincial migration and net immigration will expand the population profile, particularly in the under 60 population, resulting in the typical person in Ontario in 2040 being a 45 year old.

Between 1998 and 2040, there will be 995,300 more 45 to 54 year olds (66% more), 1,158,400 more 55 to 64 year olds (116% increase), 1,053,400 (129%) more 65 to 74 year olds, 1,013,500 (220%) more 75 to 84 year olds and 422,700 more people 85 and older (303% increase). The number of people in the under 45 age groups will increase as the result of births, net inter-provincial and net international migration, by between the 25 to 34 age group's 469,600 (27%) increase, and the 600,700 person (40%) increase of the 15 to 24 age group.

4. Dependency Ratios. Ontario's population in 2040 will have a youth dependency ratio of 250 people under the age of 15 for every 1000 people of working age, and an elderly dependency ratio of 342 persons 65 and older per 1000 person of working age. The youth dependency ratio is not significantly different from the 237 people under the age of 15 per 1000 people of working age that would result from natural increase alone. The 342 per 1000 elderly dependency ratio, however, is 42% lower than the 487 people 65 years of age and older that would result from natural increase alone. The direct and indirect impact of inter-provincial and international migration on the age structure of Ontario's population is to significantly reduce the relative number of people supported, to one extent or another, by the working population: migration makes the province's population younger, broadening the trunk of its population tree so that it will be sufficiently strong to support its rapidly branches.

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August 1999

I. Introduction

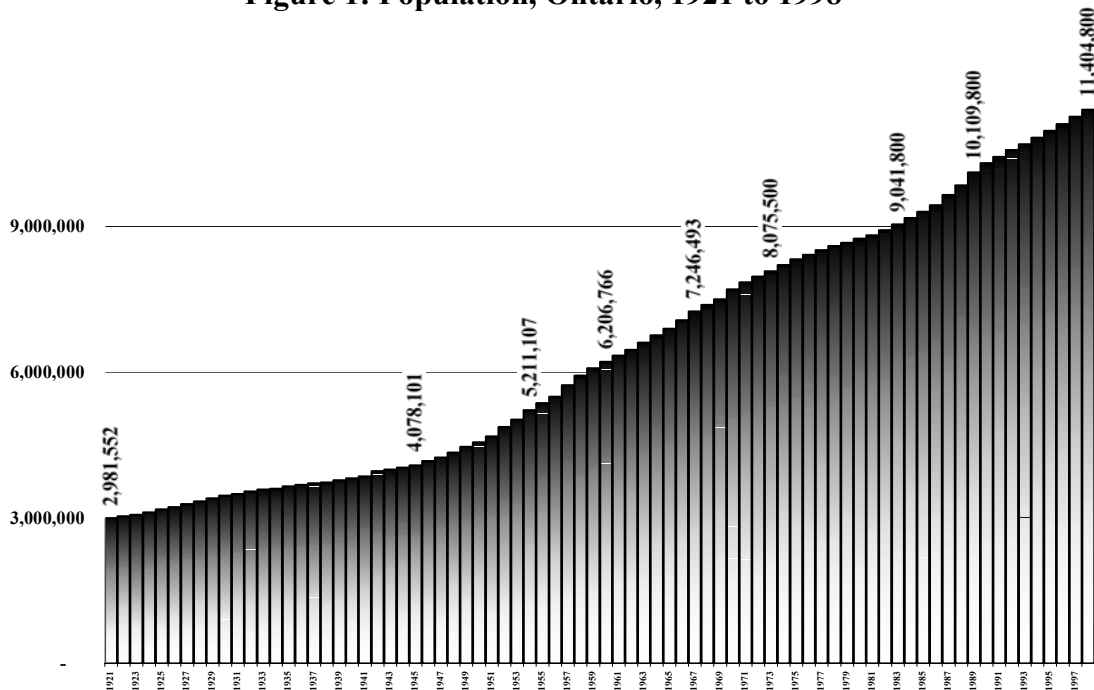
Growth and change has been the history of Ontario's population, and growth and change will be its future. Neither growth nor change has been steady in the past, and neither will be steady in the future. In the short run, economic cycles and change, both within and outside the province, will continue to affect labour markets, and hence will bring variance to projections of population change. In the long run, however, the general stability of major demographic variables and the averaging of cycles that occurs over long periods of time permit projection of population growth and of changes in its composition in terms of orders of magnitude if not with exact precision.

This report presents a trend (or base line) population projection for the province of Ontario for the period 1998 to 2040. The assumptions and values used in this projection are developed from the long run patterns of growth and change shown in the historical data for population trends in Ontario and in Canada.

II. Ontario's Population Past and Present

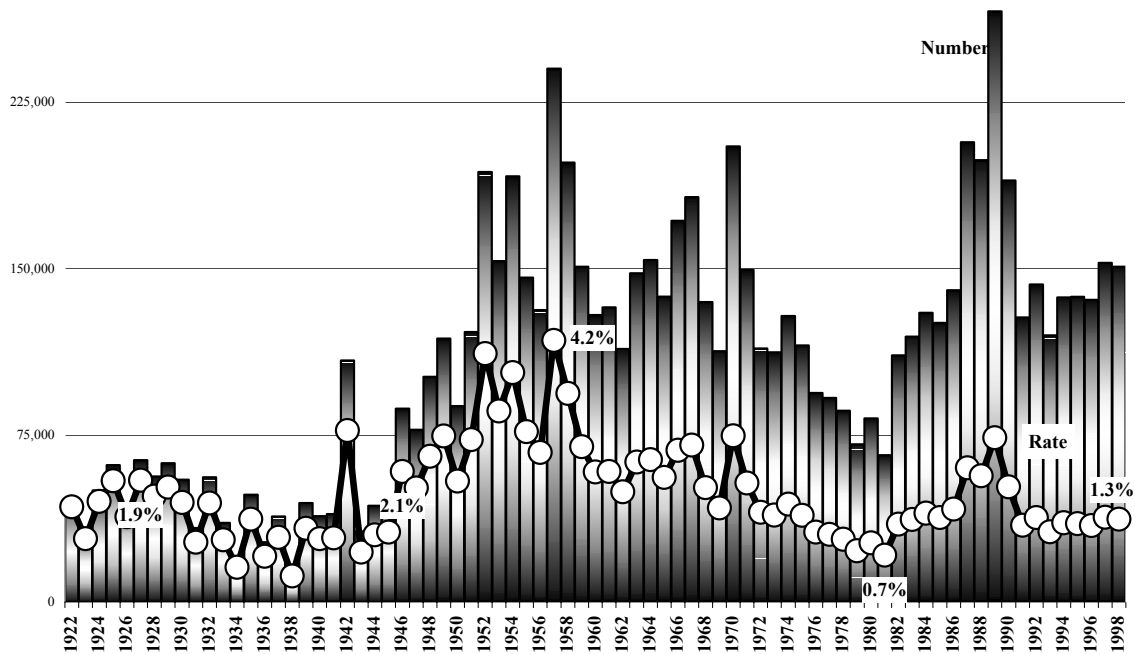
There were just over 11.4 million people in Ontario in 1998¹. The province's population had reached 6 million by 1959, taking thirty-eight years to add 3 million people from its 1921 population of 3 million (Figure 1). It took just 24 years to add another 3 million, reaching 9 million by 1983: it will take only 19 years to add the next 3 million, with the province's population reaching 12 million by 2002. Ontario's population has increased by almost 1 million people since 1991, when it had 10,427,700 residents.

Figure 1: Population, Ontario, 1921 to 1998



The pattern of population growth in Ontario has been one of moderate variability (Figure 2). While its population has always increased, there has been variance in its annual growth, ranging from a high of 266,000 additional people in 1989, to a low of 15,400 in 1938. Since the end of the Second World War, annual population increases have averaged 139,200 people per year (the smallest annual increase was the 66,000 added in 1981). The annual rate of growth in the post-war years has varied from a peak of 4.2% growth in 1957 to a low of 0.7% in 1981.

Figure 2: Net Annual Population Growth, Ontario, 1922 to 1998



Over the past 25 years, Ontario has experienced two cycles in population growth. The 1970s were marked by a gradual slowing in the annual increment and rate of growth, from 205,100 (2.7%) growth in 1970 to 66,000 (0.7%) in 1981. With the province's recovery from the early 1980s recession, annual growth increased to reach the record increment of 266,000 (2.6%) more people in 1989. Then, with the onset of the 1990 recession², the increase dropped to 120,000 (1.1%) by 1993: with recovery, growth has increased slowly, with 151,000 people (1.3%) added to the population in 1998. From 1982 to 1990, Ontario's population increased by an average of 165,400 people per year: from 1991 to 1998, it increased by an annual average of 138,100 people.

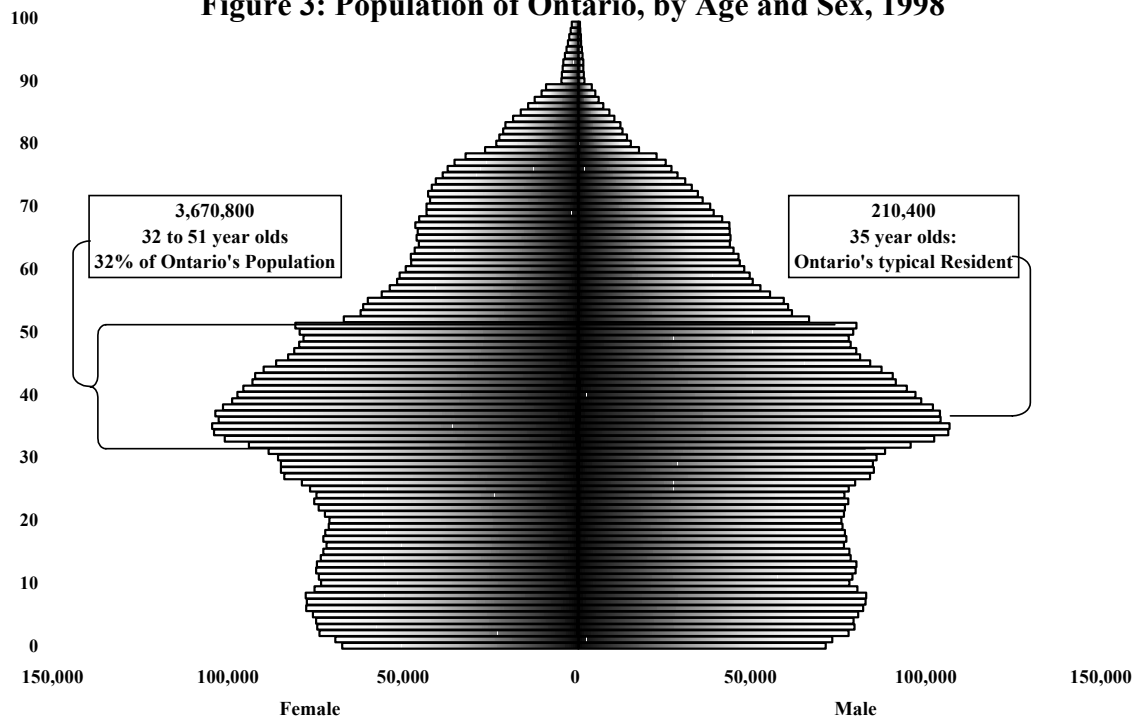
The typical³ Ontarian in 1998 was a 35 year-old (Figure 3): there were 210,400 people aged 35, more than the number of people of any other age: of the 35 year-olds, there were 105,900 males and 104,500 females, so the typical Ontarian was a 35 year old male. (Note that the typical Ontarian was female, as there were 5,620,100 males and 5,784,700 females resident in the province in 1998.) The average⁴ age of an Ontarian in 1998 was 36.7 years old, 35.6 for males and 37.7 for females. Half of the population in Ontario in 1998 was under 35 years of age⁵.

Ontario's population demonstrates a distinct "baby boomer bulge" age profile. In the old days, population profiles were called pyramids: the youngest age groups were largest as mortality reduced the number of people with increasing age. Such pyramids only exist when there have been long periods of stable birth and death rates and little migration, none of which characterize Ontario. Like all other regions where there was a post world war two boom in births, its age profile looks more like a tree with a very thick trunk than a pyramid.

The baby boom generation – the single largest generation in history, accounting for one third of the country's population – was born between 1947 and 1966 (or 1946 and 1965, or a number of other combinations in this range – assuming that a generation is a 20 year age group). This means that in 1998 baby boomers were between the ages of 32 and 51, with the typical Ontarian being the typical baby boomer, a 35 year old. The bulge of the baby boom is made up of 33 to 38 year-olds, with over 200,000 people of each age in this 6 year age group in 1998.

In 1998, 32% of Ontario's population were baby boomers, that is, were between the ages of 32 and 51. There were 2,005,400 people aged 32 to 41 and 1,665,400 people aged 42 to 51 for a total of 3,670,800 boomers. The generation before the baby boom, now aged 52 to 71, is smaller than the baby boom, the result of the very low level of births that occurred in the 1930 Depression and pre-War period: 17% of the population was in this older generation in 1998. The generation following the baby boom were 1998's 12 to 31 year olds: this generation is also smaller than the baby boom generation, the result of the low level of births that urbanization and the birth control pill brought to the 1967 to 1986 period. Twenty-seven percent of the population was in the 12 to 31 year-old age group in 1998. The remaining population was divided among the 92 plus (0.3%), 72 to 92 (7.0%), and under 12 (15.6%) age groups.

Figure 3: Population of Ontario, by Age and Sex, 1998



Populations are often described in terms of the ratio of the number of people in one age group compared to the number in another. The most common such ratios are the elderly and youth “dependency” ratios: the number of people 65 and older (elderly), and under 15 (youth), divided by the number of people of working age (15 to 64). These ratios are meant to generally represent the magnitude of the relationship between the beneficiary population (of pension plans and health care or education) and the contributory population (those of working age who contribute via taxation and plan installments).

In 1998, there were 184 persons 65 and older, and 297 persons under the age of 15, per 1,000 people of working age in Ontario, for a total dependency ratio of 481 persons per 1,000 persons of working age. This compares to 1966's elderly dependency ratio of 136 per 1,000 people of working age, and a youth dependency ratio of 526 per 1,000. Over the past 32 years, the total dependency ratio has declined by 27%, the net result of a 44% drop in the youth dependency ratio, and 35% increase in the elderly dependency ratio. As is shown by the population projection presented later in this report, the aging of Ontario's population is going to bring a dramatic increase to the elderly dependency ratio, and almost none to the youth dependency ratio.

III. Components of Population Growth

Population growth is the net result of births, deaths, in-migration from other provinces, out-migration to other provinces, immigration from other countries, the return of Canadians who have been resident outside of Canada, emigration to other countries, and the net change in the number of non-permanent residents (foreign students, diplomats, etc.) living in the province. While we consider each of these components separately and in detail in subsequent sections of this report and in the projection, they are generally grouped into three categories for discussion (Figure 4): natural increase (births minus deaths), net inter-provincial migration (in-migration minus out-migration), and net immigration (immigration plus returning Canadians minus emigration plus net change in non-permanent residents).

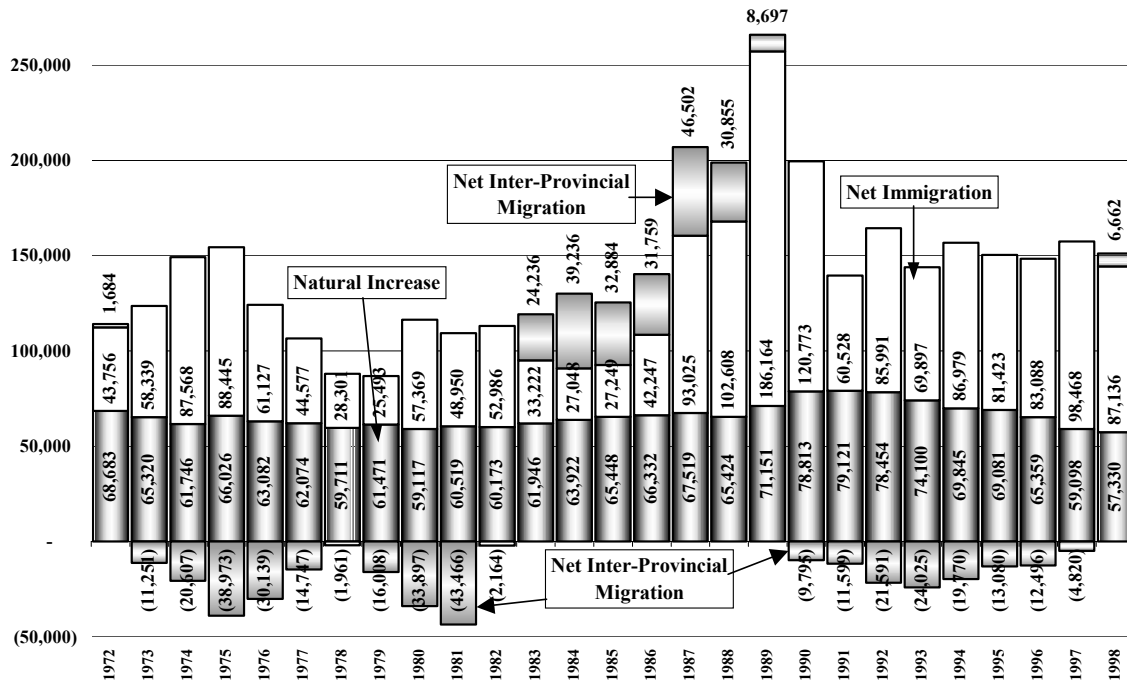
Net immigration (immigration plus returning Canadians plus the change in non-permanent residents minus emigration) has added no fewer than 25,000 people to the population of Ontario every year since 1972: during the 1997/1998 year, it added 87,136 people to the province's population. The smallest addition to the population attributable to net immigration was in 1979, when 25,500 more people came to the province from other countries than left Ontario for them. The largest contribution of net immigration to the province's population was in 1989, when a net of 186,200 more people immigrated to the province than emigrated from it. The past decade has been one of relative high net immigration, the result of an overall increase in immigration to Canada. The general pattern of net immigration to a limited extent reflects general economic conditions within the country and the province, with relatively low levels of net immigration during the recessionary early 1980s and 1990s, and higher levels in the late 1980s and 1990s.

Relative economic conditions play a significant role in inter-provincial migration, as much of the flow of people between provinces is comprised of labour force migrants. The highest levels of net inter-provincial migration to Ontario occurred during periods of relatively strong economic conditions in the province (the 30,000 to 40,000 per year in the 1980s) while Alberta and BC were mired in their resource recessions. Conversely, in periods of relatively poor economic conditions in the province, net inter-provincial migration is negative, with more people leaving the province than coming to it, as labour force migrants are pushed from the province and pulled into other stronger provincial economies (witness the net losses of up to 43,000 per year in the 1970s and 9,000 to 24,000 during the 1990s). The recovery of the Ontario economy in the past year is shown in the fact that, for the first time in a decade, net inter-provincial migration to the province was a positive 6,662 in 1998.

Natural increase is much less volatile than net immigration or net inter-provincial migration: this is the result of the stability of the variables that affect births and deaths, and the fact these numbers are strongly determined by the size of the population. Population growth attributable to natural increase has remained relatively constant, ranging from a low of 59,100 (1980 and 1997) to a high of 79,100 in 1991. Since 1991, the contribution of natural increase to the province's population growth has declined, the result of the number of deaths in the province increasing while the number of births has remained relatively constant. While future higher levels of

population growth will lead to an increase in the annual number of births, the aging of the population will lead to an even greater increase in the number of deaths each year. As a result, natural increase will play a smaller role in population growth in the future than it has in the past.

Figure 4: Components of Net Annual Increase, Ontario, 1972 to 1998



In spite of the fluctuations in the three sources of growth, the population of the province has grown every year over the past quarter century. The smallest population increase was recorded in 1981 when there was net immigration of 49,000, natural increase of 60,500, and a net loss of 43,500 inter-provincial migrants. The greatest population increase was 1989's increase of 266,100, the result of a natural increase of 71,200 persons, net immigration of 186,200, and net inter-provincial in-migration of 8,700. 1998's 151,100 person increase was comprised of net immigration of 87,100 persons, natural increase of 57,300 persons, and a net gain of 6,700 persons due to inter-provincial migration (the first gain from inter-provincial migration in a decade, and only the 9th positive flow in the last 25 years).

Each source of population growth changes both the size and the characteristics of the population, not only in terms of age and gender composition, but also in terms of the myriad of other characteristics by which populations may be measured. In the following sections the effects of each of these sources of population on the age and gender composition of Ontario's population are presented. However, the most important factor that will bring change to Ontario's population in the future is not something that causes it to grow or decline, but does cause it to change, in both the short and long run. This is birthdays, or in the language of demographics, aging.

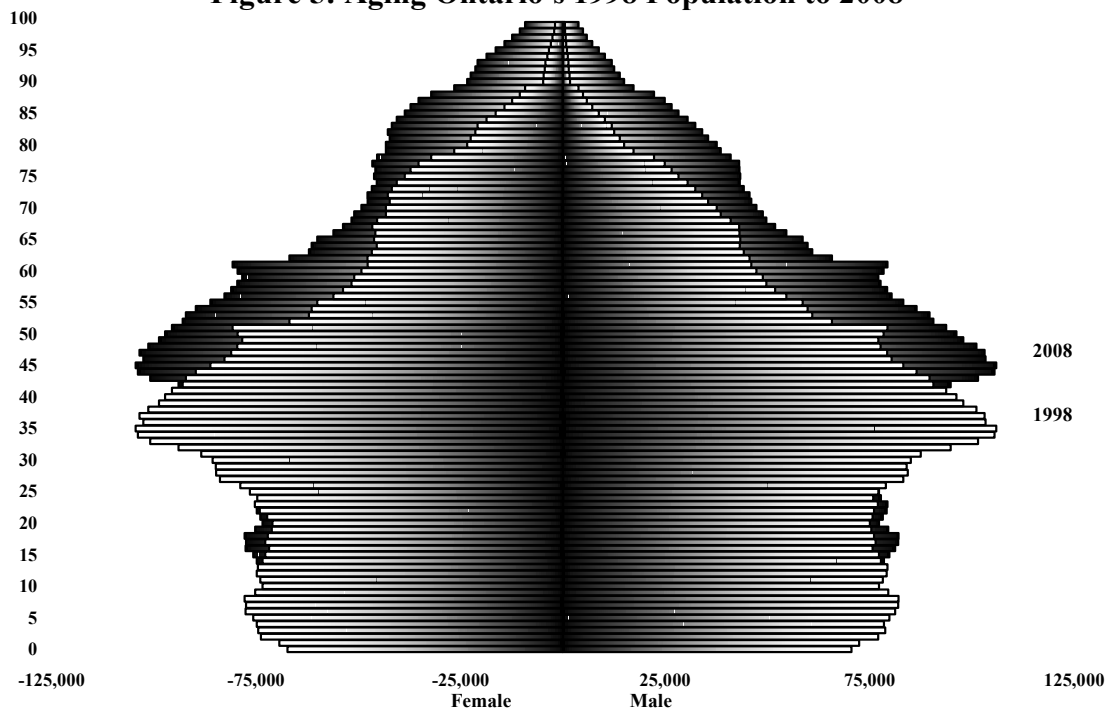
IV. Aging

The most important factor affecting Ontario's population in the future will be aging, as this process affects everyone. While a population might increase by 1% or 2% per year, 100% (well, almost 100%) of the population gets a year older each year. The effects of aging can be illustrated by simply shifting the age profile up (as is shown on Figure 5): in ten years, the population of Ontario, with no in- or out-migration, no deaths or births, no immigration or emigration, would be precisely ten years older than it is today. Aging with no deaths – seems a bit of a stretch – but it is the reality for the vast majority of the population: mortality rates are not significant in the under 75 population, particularly in the 32 to 51 age groups where most of Ontario's population is today. As is demonstrated in the next sections, aging will have, in the short term, a much greater impact on the composition of the population than migration or natural increase. As a result, the future population of Ontario will, to a large extent, be an older version of today's population.

Given the "tree" shape of Ontario's population, aging alone would result in 2008's typical Ontarian being a 45 year-old rather than a 35 year-old. In ten years, aging alone would mean that the 1,665,400 people aged 42 to 51 in 1998 would be 1,665,400 people aged 52 to 61 in 2008. As there were only 1,103,900 people aged 52 to 61 in 1998, aging alone would mean that the number of 52 to 61 year olds would increase by 561,500 people, a 51% increase.

This aging would also mean that the number of people aged 32 to 41 would decline, as 1998's 2,005,400 32 to 41 year olds would become 2008's 42 to 51 year olds. The 1,616,200 22 to 31 year olds in 1998, who would become 2008's 32 to 41 year olds, are not numerous enough to replace the people aging out of this age group. Migration and immigration, therefore, will be required in order to offset a 389,200 person (19%) decline in the 32 to 41 population that would otherwise be brought about simply by the aging of the baby boom generation.

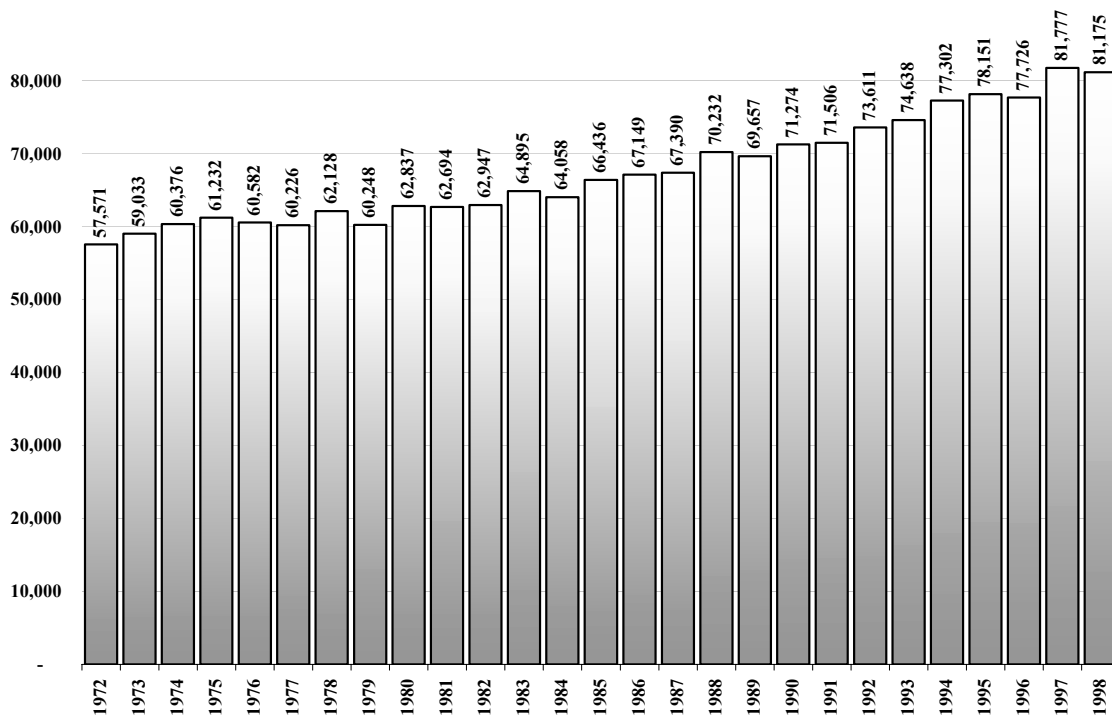
Figure 5: Aging Ontario's 1998 Population to 2008



V. Mortality

It has been said that the only thing worst than aging is its alternative, death. Mortality is the ultimate demographic variable, and one that affects both the size and the composition of the population. The number of deaths in Ontario has increased from 57,600 in 1972 to 81,200 in 1997 and 1998 (Figure 6). This increase is the result of the growth, and the aging, of the province's population, offset by a slight decline in mortality rates over the past quarter century.

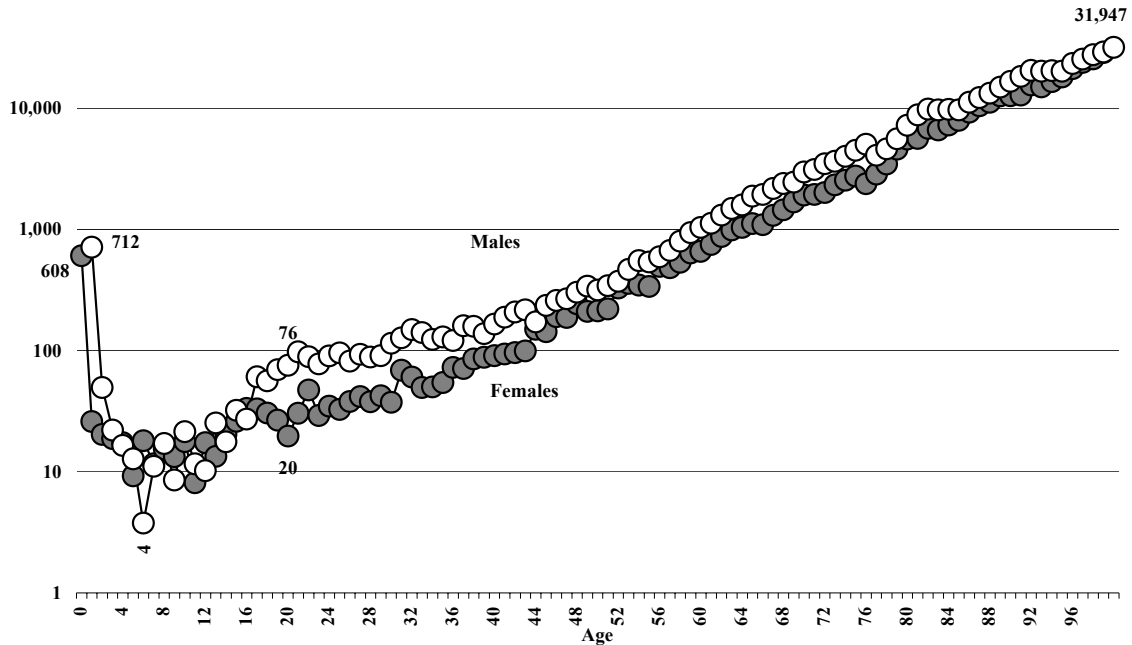
Figure 6: Annual Number of Deaths, Ontario, 1972 to 1998



A mortality rate is the number of people of a particular age who die in a year divided by the total number of people in the population in that year (Figure 7). These rates are expressed as number of deaths per 100,000 people to avoid having miniscule numbers for rates in the younger ages. As Figure 7 indicates, mortality rates generally increase with increasing age, and rates for males are higher than for females of the same age (hence males have a lower probability of reaching the next age, resulting in females' greater life expectancies). The mortality rates for the new born (608 deaths per year per 100,000 females and 712 per 100,000 for males in their first year of life) are higher than for older children and adults up to the age of 57, showing the vulnerability of the youngest additions to our population. The lowest mortality rates are for people from 2 to 15 years of age, with rates in the range of 4 to 32 deaths per year per 100,000 people.

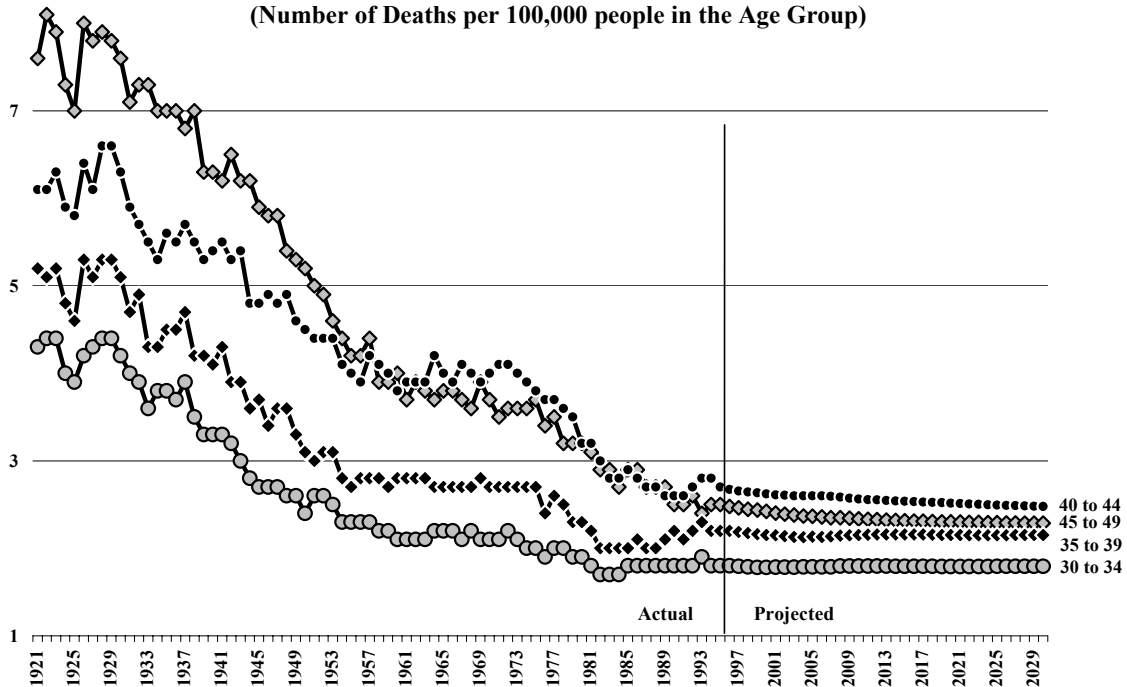
Once males reach the age of 16, their probability of dying increases significantly with each passing year, to 76 deaths per year per 100,000 males aged 20, almost four times the 20 per 100,000 rate for females of the same age (the difference is largely explained by the higher number of male deaths each year in each adult age group due to accidents, violence, and adverse affects). After age 50, the mortality rates for males and females become closer, although female mortality rates remain lower than male rates until after age 90. The two rates move together, through the 1 in 100 range (1,000 in 100,000) in people's sixties, 1 in 10 in their mid-eighties, to almost 1 in 3 in their late nineties. There are so few people in the 100 plus age group that no data are available for each single year of age: at some point the rate will be 1 in 1.

Figure 7: Age Specific Death Rates, Ontario, 1996/97 average, Log Scale
(Number of Deaths per 100,000 People of the Specified Age)



Mortality rates for both males and females have declined significantly over the past seventy-five years, to the extent that male life expectancies have increased by over 16 years and female life expectancies by over 20 years⁶. Figure 8 shows the example of the historical and projected changes at the national level in mortality rates for males in the 30 to 49 age groups⁷.

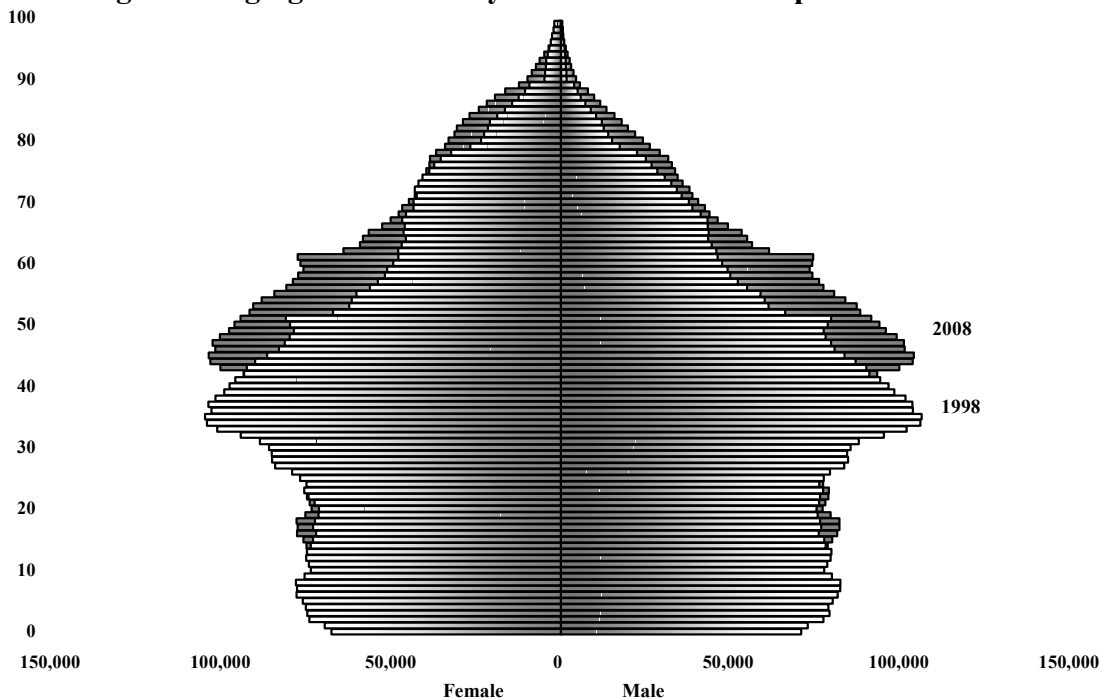
Figure 8: Male Mortality Rates, 1921 to 2030, Selected Age Groups
(Number of Deaths per 100,000 people in the Age Group)



Note that the big declines in mortality rates occurred between 1921 and 1961, with the rate of decline slowing since then. While it is certain that medical technology will result in a continuing decline of mortality rates, the law of diminishing returns will continue to apply. This means that future declines will be much more modest, and more difficult to achieve, than the declines that have been achieved in the past. For this projection, the trend of change in mortality rates at the national level was applied to the rates for the corresponding age groups in Ontario: this represents the assumption that mortality rates in the province will change at the same rate as they do in the country as a whole. The result is an assumption of mortality rates will stabilize by 2030.

In population projections, the focus is not on mortality, but rather on survivorship. Survivorship rates, the percentage of people in each age group who do not die in a year and hence who age into the next older age group, are the inverse of the mortality rates. Applying projected survivorship rates to the aging of Ontario's current population shows the impact of mortality on the age profile of the province's population (Figure 9).

Figure 9: Aging and Mortality of Ontario's 1998 Population to 2008



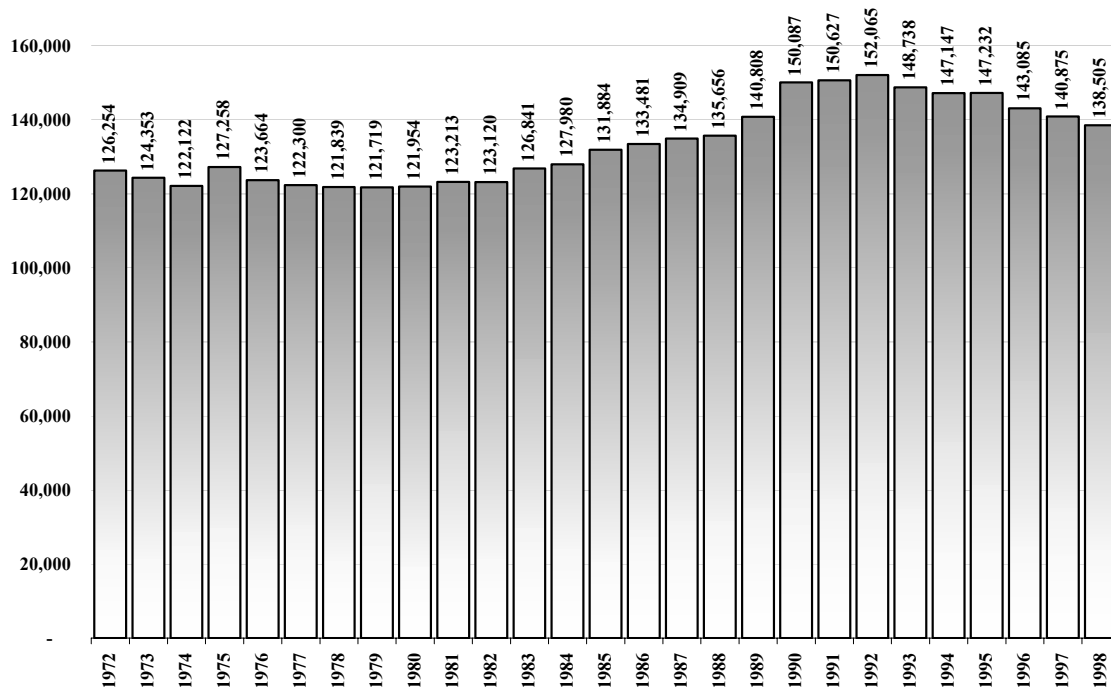
Over the next decade aging and mortality alone will not generally change the baby boom age profile of Ontario's population: the profile will shift up and the typical person in the population will be ten years older than the typical Ontarian of today. Where the noticeable difference between aging alone and aging with mortality will be in the over 75 population: the top of the population tree is a lot narrower in Figure 9 than in Figure 5.

There were 1,665,400 people who were between the ages of 42 and 51 in 1998: in 2008 aging and mortality would mean there would be 1,969,600 people, rather than the 2,005,400 (today's 32 to 41 year olds) there would be if there was no mortality (a 1.2% difference). In comparison, there were 868,400 people in the 62 to 71 age group and 586,500 people in the 72 to 81 age group in 1998: aging alone would move the 868,400 62 to 71 year olds into the 72 to 81 age group between 1998 and 2008, while aging and mortality would result in this age group having only 680,600 survivors in 2008, 28% fewer than without mortality. Thus, mortality has a small impact in younger and middle age groups, but significant impact in older age groups.

VI. Births

There were 159,200 children born in 1960 in Ontario: this was 20,700 more than the 138,500 births in 1998. In the last quarter century, the number of births rose steadily from 126,250 in 1972 to reach a high of 152,100 in 1992, the highest birth total in the province since the end of the baby boom (152,700 births in 1964). Since 1992, the annual number of births has dropped every year: the 138,500 births in was the lowest number of births in Ontario since 1989.

Figure 10: Number of Births, Ontario, 1972 to 1998



The number of births each year is a function of the number of women in the child bearing ages (14 to 50 years of age) and the probability that they will have a child during a year. This rate is calculated as the number of women of each age who give birth during a year divided by the total number of women of that age resident in the province. As Figure 11 shows, there is a very distinct pattern to age specific birth rates. The highest age specific birth rates are for women in the 26 to 32 age group, where between 9.8% and 11.7% of the women have a child each year. The rates increase steeply from 0.1% for women of age 14 to reach a plateau of 11.7% at ages 28, 29 and 30, and then drop sharply back to 0.1% by age 44, becoming negligible by the age of 46.

Age specific birth rates have changed dramatically over the past seventy-five years, doubling for all but the oldest age groups between the pre world war two and post war periods, and then dropping back to the pre war levels by the 1970s (Figure 12). Since 1977, there has been a reversal in the pattern of decline in the 30 and older age groups, with the continuing declines in the younger age groups being matched by these increases. Thus, the typical woman giving birth is now in the 30 to 34 age group, rather than the 20 to 24 age group of the 1960s. Continuing the trends of the past twenty years will result in a stabilization of age specific birth rates within the next decade or so, with the rates for women in the 30 to 34 age group being the highest of all age groups. These trended birth rates are used in the population projection presented in this report.

Figure 11: Age Specific Birth Rates, Ontario, 1996

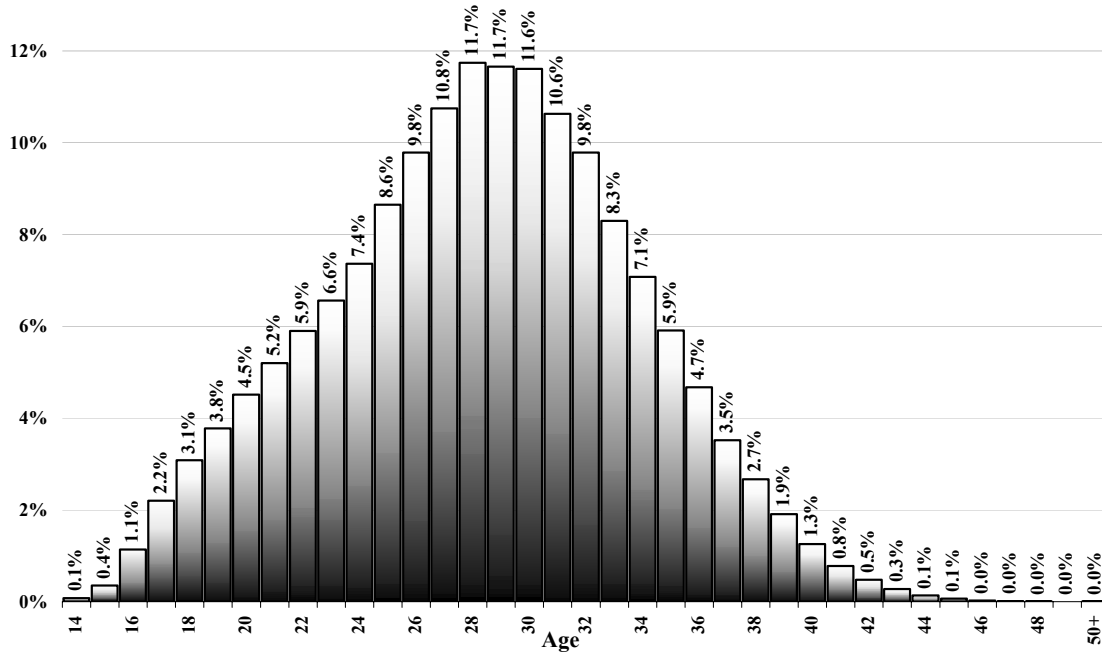
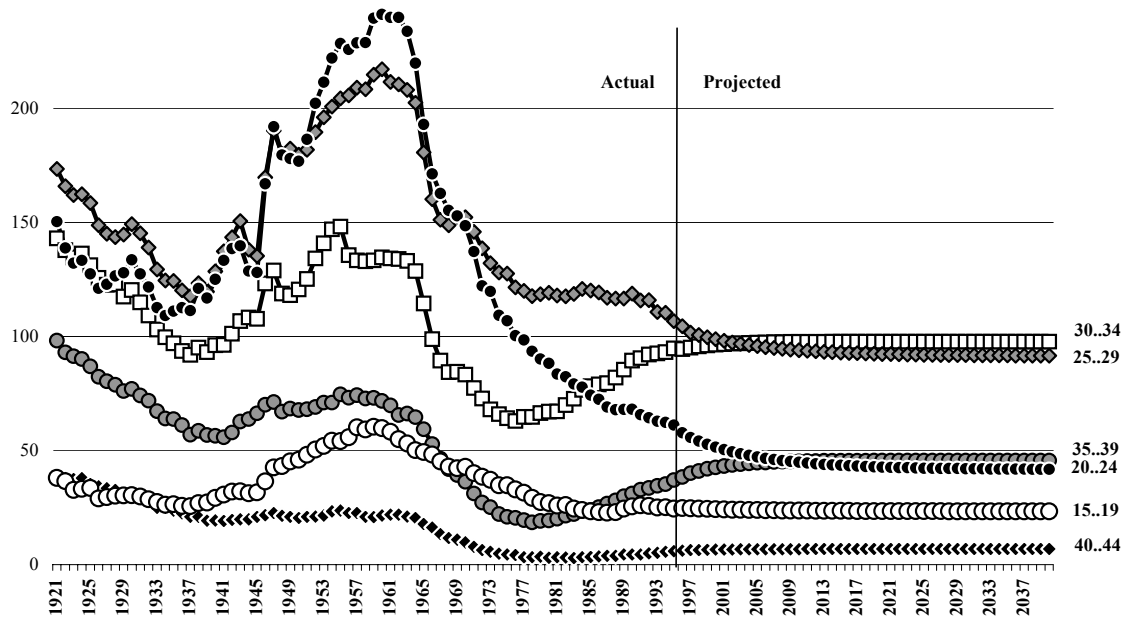


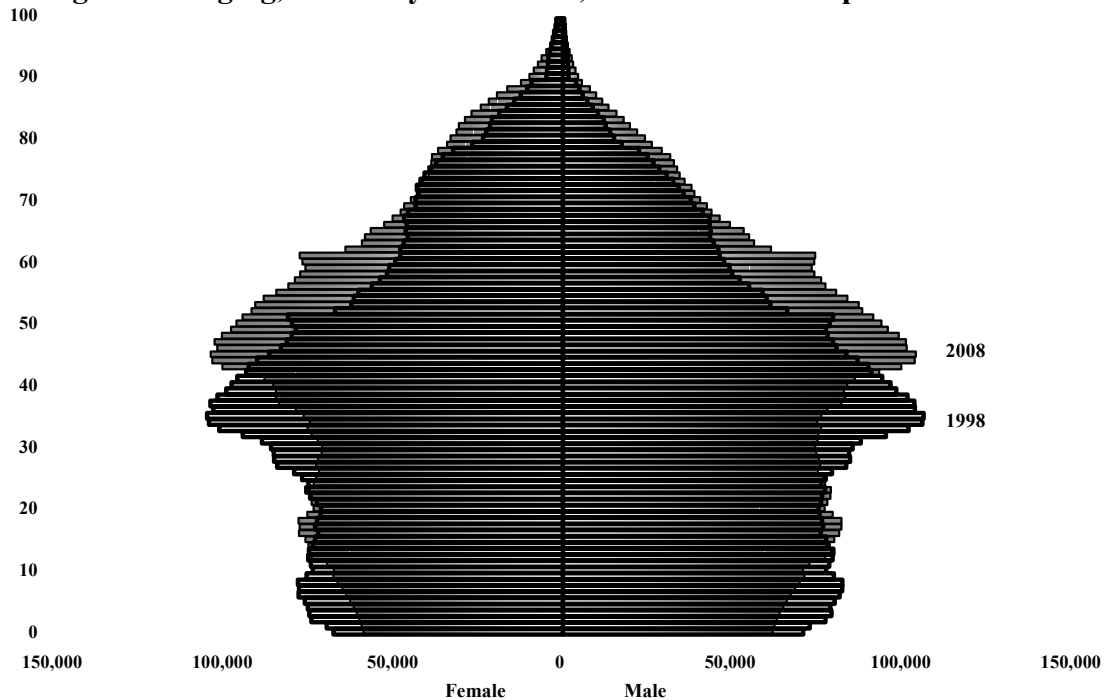
Figure 12: Ontario Age Specific Birth Rates, 1921 to 2040
(Number of Births Per Year Per 100 Women in Age Groups)



There is one other factor about births that must be considered in population projection: the proportion of the births in a particular year that are male and female, as this will have an impact on the gender composition of the population. In 1996, of a total of 143,100 births, 48.72%, (69,700) were females and 51.28% (73,400) were males: this rate is has remained essentially constant over the past quarter century, and is assumed to be constant during the projection period.

Aging, survivorship and the trended birth and death rates can be applied to the 1998 population profile to show how these processes would affect the size and composition of the province's future population (Figure 13). Over the 1998 to 2008 period, in the absence of migration⁸, there would be 1,287,900 births (660,400 males and 627,500 females) over the 10-year period. These new additions to the population would be between 0 and 9 years of age in 2008. However, in the absence of migration, there would only be 1,279,500 people under the age of 10 in 2008. The difference of 8,400 people is explained by the mortality rates of children under the age of 10.

Figure 13: Aging, Mortality and Births, Ontario's 1998 Population to 2008



VII. Natural Increase

Traditionally, consideration of the processes of aging, births and deaths without migration has been used to show the change in a population due to "natural processes" (as was done in the previous section). The resultant change was referred to as "natural increase", and (unless the movie *Men In Black* was a documentary) would capture all of the forces that shape the population of the world. At any smaller geographic level, migration of people between regions (which, given the nomadic nature of people is as natural as births and deaths) must also be accounted for.

Starting with the age and sex characteristics of Ontario's 1998 population, and the assumption of trended age and sex specific birth and death rates, natural increase alone (no inter-provincial or international migration) would result in a slowing in the growth of, and ultimately a decline in, the province's population over the next 20 years (Figure 14). With the province's current young age profile, natural increase alone would result in population growth from its current 11,404,800 persons to a peak of 11,910,300 in 2019. From that year on, the population of the province would decline every year, to reach 11,196,500 in 2040.

The reason for the decline is the aging of the province's 1998 population, as is shown in the dependency ratio (Figure 15). In 1998, there were 184 people 65 and older, and 297 people under 15, for every 1000 people of working age in Ontario. Natural increase alone would result in the number of elderly people increasing to 487 per 1000 of working age (a 164% increase), and the number of young people per 1000 of working age declining to 237 (a 20% decline), by 2040. The

total dependency ratio would drop from 481 per 1000 in 1998 to 455 in 2010, then climb to 725 per 1000 by 2036, and remain at that level until 2040. Beyond 2040, no migration would mean that the elderly dependency ratio would continue to increase: the youth dependency ratio, however, would stabilize as the below replacement level of births would become the sole determinant of the relationship between the under 15 and the working age populations.

Figure 14: Ontario Population, 1971 to 1998, Projected 1998 to 2040 Assuming No Migration

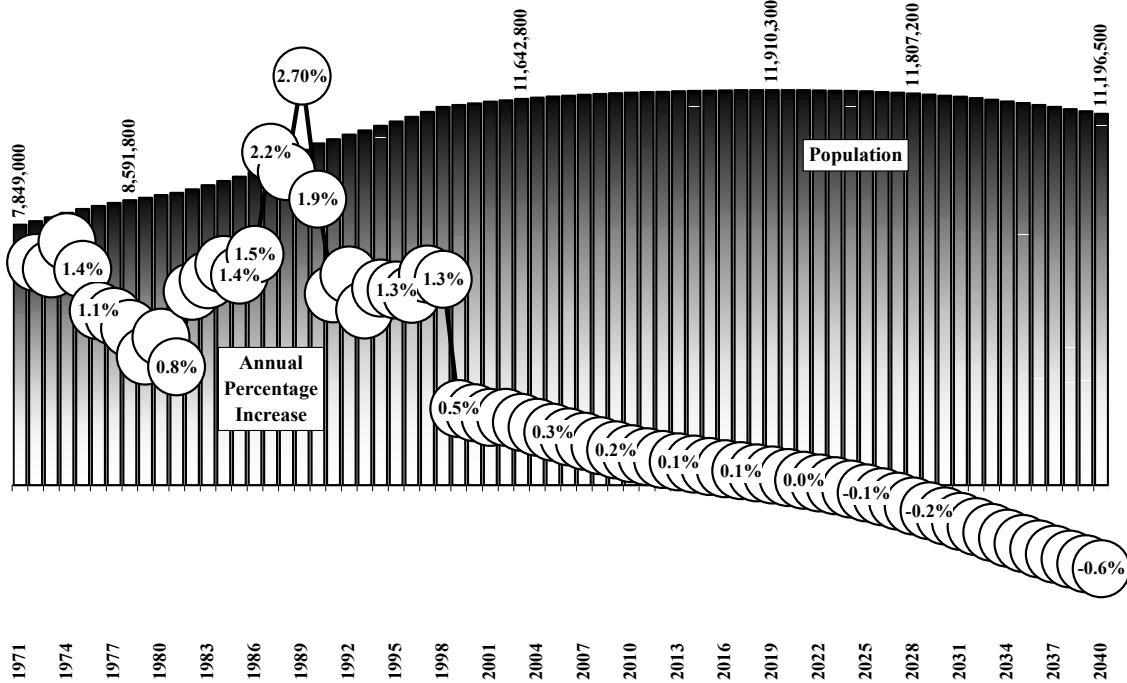
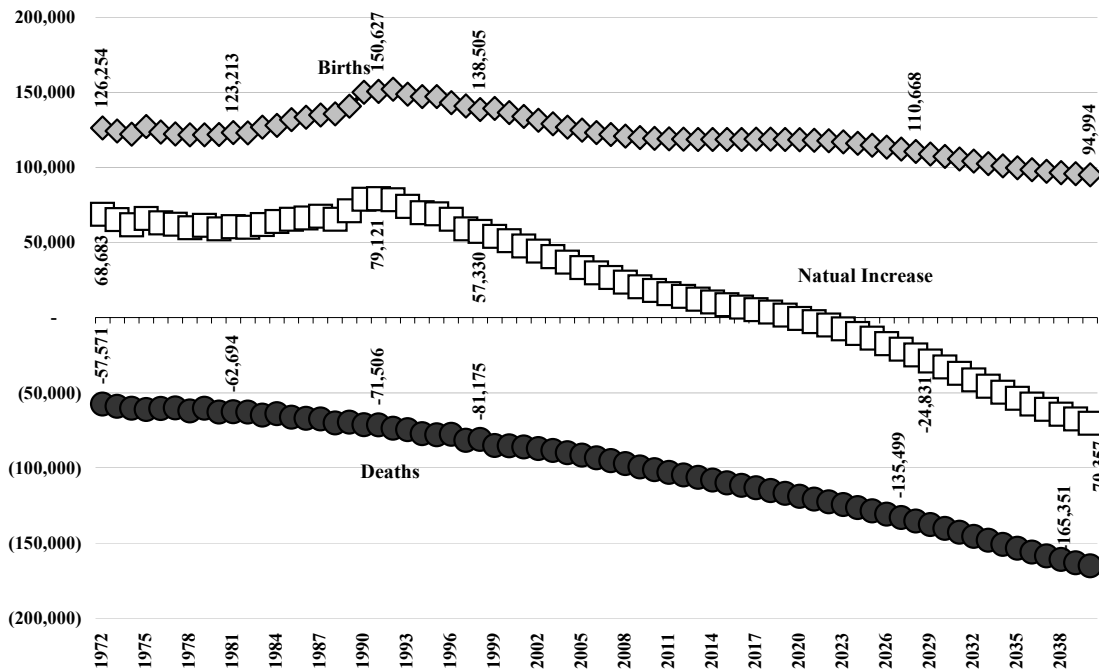


Figure 15: Projected Dependency Ratios, No Migration, Ontario, 1998 to 2040



With 66% of the province's current population under the age of 45, there will still be lots of births in the future, but aging will carry most of the women in the boomer portion of the population out of the childbearing stage of the lifecycle over the next decade. As a result, the annual number of births would decline (from 138,500 in 1998 to 95,000 in 2040, Figure 16). Aging of the boomers, and a below the replacement level birth rate, will ensure that, without migration, the proportion of the population in the older, high mortality age groups will increase each year. As a result, the number of deaths would increase, from 81,200 in 1998 to 165,400 in 2040. This 104% increase in the number of deaths, compared to a 31% decline in the number of births, means that net natural increase would decline from 57,300 in 1998 to -70,400 (deaths exceeding births) in 2040.

Figure 16: Natural Increase, Ontario, 1972 to 1998, Assuming No Migration, 1998 to 2040



The annual number of deaths would continue to increase, and the number of births would decrease, until after 2050 (when most of the baby boomers have died). After this date, the annual number of deaths would start to decline while the annual number of births would continue to decline, resulting in a slowing of the rate of population decline. It would not, however, stop the overall decline, as birth rates in Ontario are below the replacement level.

Without migration Ontario's population would age rapidly (the increasing elderly dependency ratio). The number of people in the province would increase very little (and at a declining rate) until 2019, at which point the annual number of deaths would exceed the annual number of births and the province's population would start to decline.

VIII. Inter-Provincial Migration

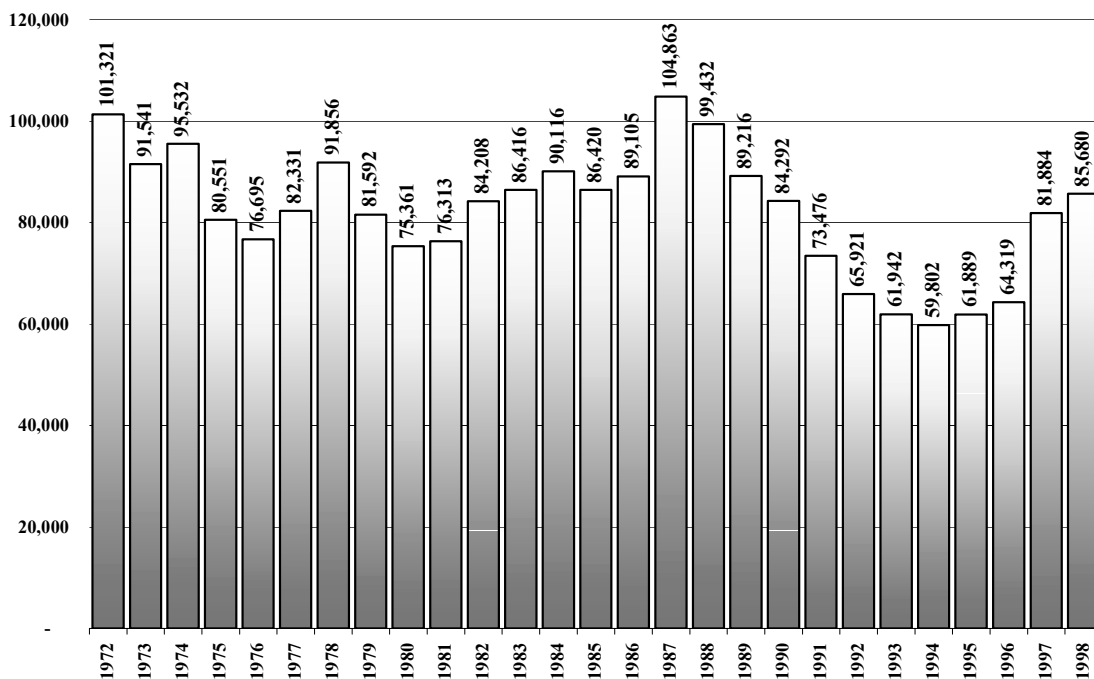
While it is important to understand the relative role of natural increase in population change, particularly as it is the only factor affecting the growth of the world's population, in the open economy of Ontario and Canada, this understanding does not provide the basis of a population projection. Migration into and out of Ontario is significant: 7.8 million have moved into and/or out of the province in the past 25 years.

Internal or domestic migration involves people changing regions of residence within a country. This migration, which includes people moving within provinces (intra-provincial) and between provinces (inter-provincial), is not generally subject to direct government regulation. This is in contrast to international migration (immigration, emigration, temporary residency of foreign citizens as non-permanent residents, and the return of Canadian citizens who have been residing abroad) which is, to one degree or another, subject to governments' direct regulation. At the provincial level, intra-provincial migration has no direct impact on the demographics of the province: it is inter-provincial and international migration that are of consequence.

Inter-provincial migration has two components, in-migration (people moving to Ontario from other provinces), and out-migration (people moving from Ontario to other provinces), with the difference being net inter-provincial migration. Inter-provincial migration is caused by a wide range of factors, including economics (labour force migration), life styles, changes in the stage in the life cycle (for example retirement), and personal relationships.

There has been considerable variance in the annual inter-provincial migration flow into Ontario, ranging from a record high of 104,900 in 1987, to lows in the 60,000 range during the recession of the early 1990s, and back up to 85,700 in 1998 (Figure 17). Since 1972, an average of 82,300 people have moved to Ontario from other provinces every year. The 85,700 people who moved to the province in 1998 was the largest number since 1989, when 89,200 people took up residency.

Figure 17: In-Migration, Ontario, 1972 to 1998

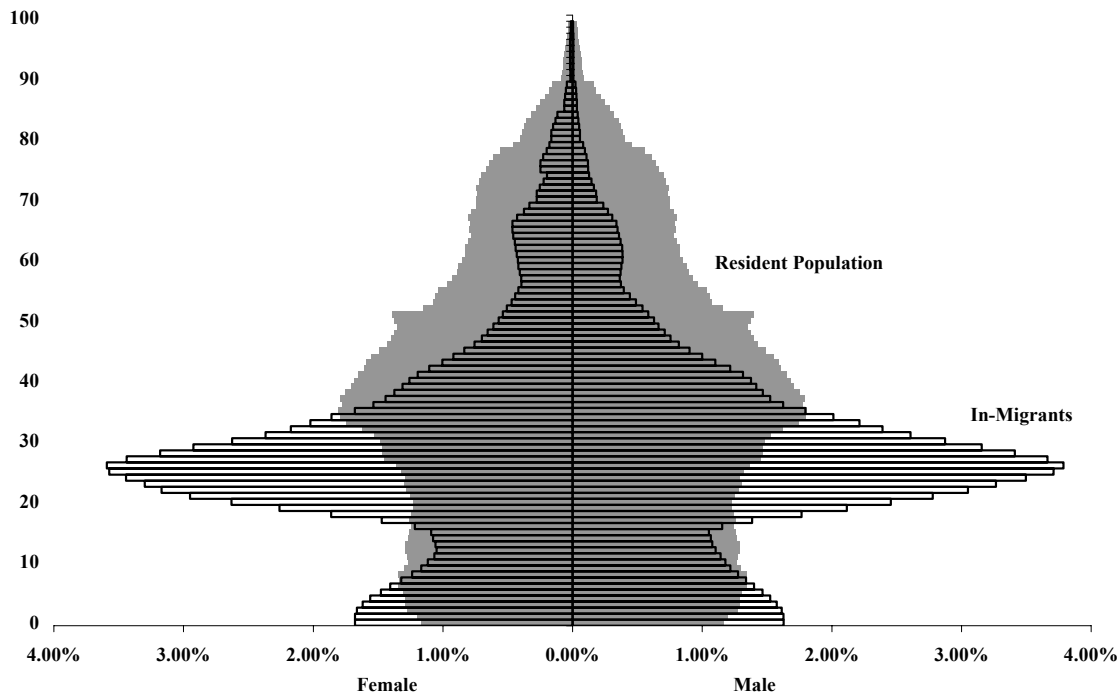


Two things are important to note about this pattern. First, regardless of economic conditions, a people move to Ontario each year: even in the 1991-1996 period, an average of 64,600 people a year did so. These were people moving for reasons other than simple labour force economics: they had recession proof skills, were moving for family reasons, they chose the Ontario life style, things were better for them in Ontario, and a host of other reasons apart from relative unemployment rates. The second thing to note is that economics have a major impact on

migration - most migrants are labour force migrants. The boom of the late 1970s, the recession of the early 1980's, the recovery of the late 1980s, the recession of the early 1990s, and the recovery of the 1996/1998 period are all mirrored in inter-provincial migration to the province.

The fact that much of the in-migration stream to Ontario is made up of labour force migrants is shown in its age composition (Figure 18). 42% of the in-migrants in 1998 were between the ages of 18 and 31, compared to only 19% of the province's residents being in this age group. Accompanying some young adult migrants were their young children: 8% of the in-migrant stream are children under the age of 5, compared to only 6.5% of the resident population. Older children and people over the age of 31 are under-represented in the in-migration flow compared to the province's resident population: 57% of the resident population was over the age of 31, compared to 36.5% of the in-migrants. Having said this, the age profile of the in-migrant stream also shows that it is not only labour force migrants who move to Ontario. Almost 6% of the in-migrants were over 60 years of age, certainly a smaller percentage than the 16% of people of this age group in the resident population, but still a positive contribution to population growth.

Figure 18: Age Distribution of Resident and In-Migrant Populations, Ontario, 1998



Just as people have always migrated from other provinces to Ontario regardless of economic conditions, people have also always left to live in other provinces (Figure 19). And, just as in-migration is highly influenced by economic conditions, so too is out-migration: as a result, the out-migration pattern is roughly the inverse of that for in-migration. Since 1972, out-migration has averaged 86,300 people per year. During the mid 1980's when Ontario had the country's best performing economy, and high in-migration, it still lost an average of 54,000 people per year to other provinces. During the early 1990s, when Ontario and Quebec had the country's poorest economic health, 87,000 people per year left for other provinces. As the province's economy has improved over the past years, inter-provincial migration out of the province has slowed, reaching 79,000 out migrants in 1998.

Figure 19: Out-Migration, Ontario, 1972 to 1998

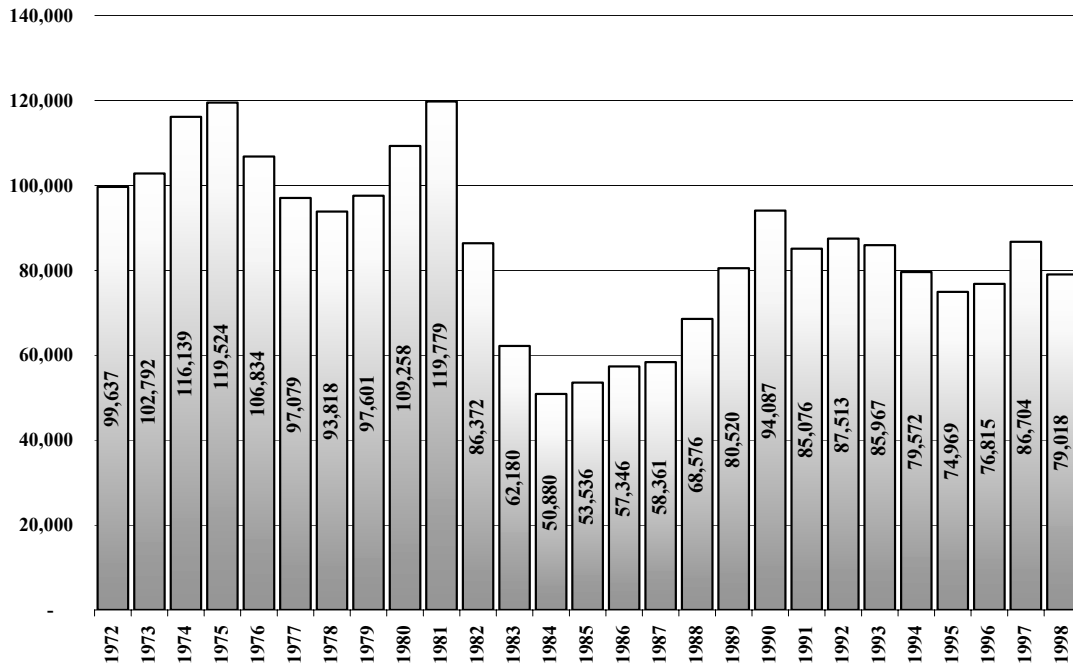
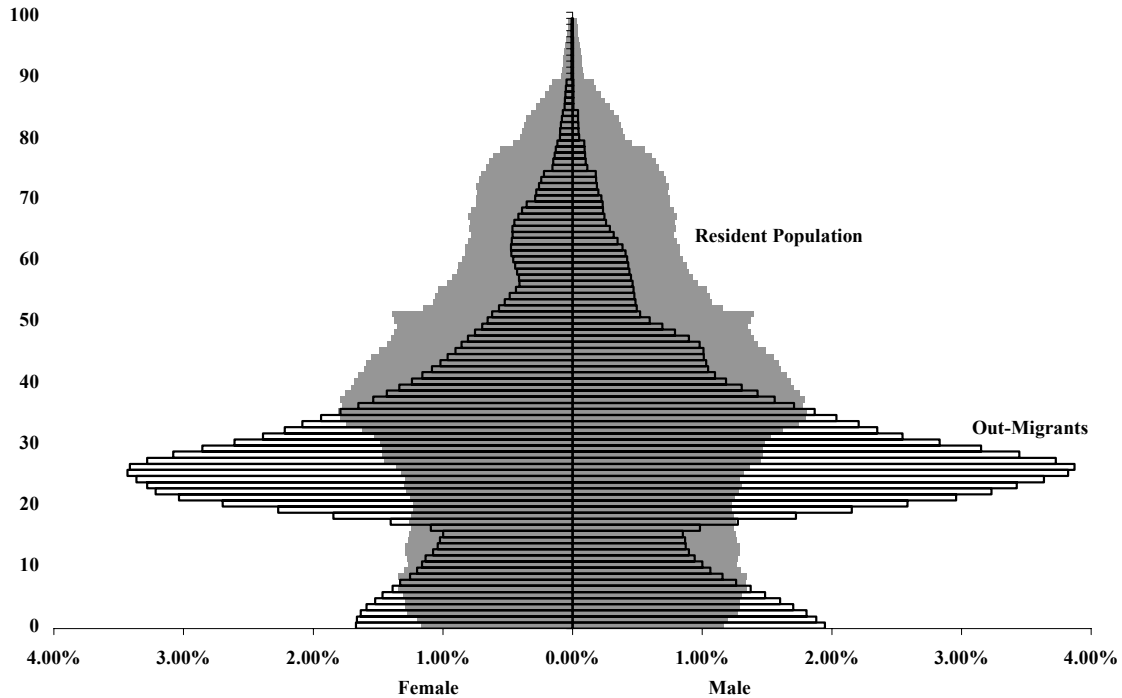


Figure 20: Age Distribution of Out-Migrant and Resident Population, Ontario, 1998



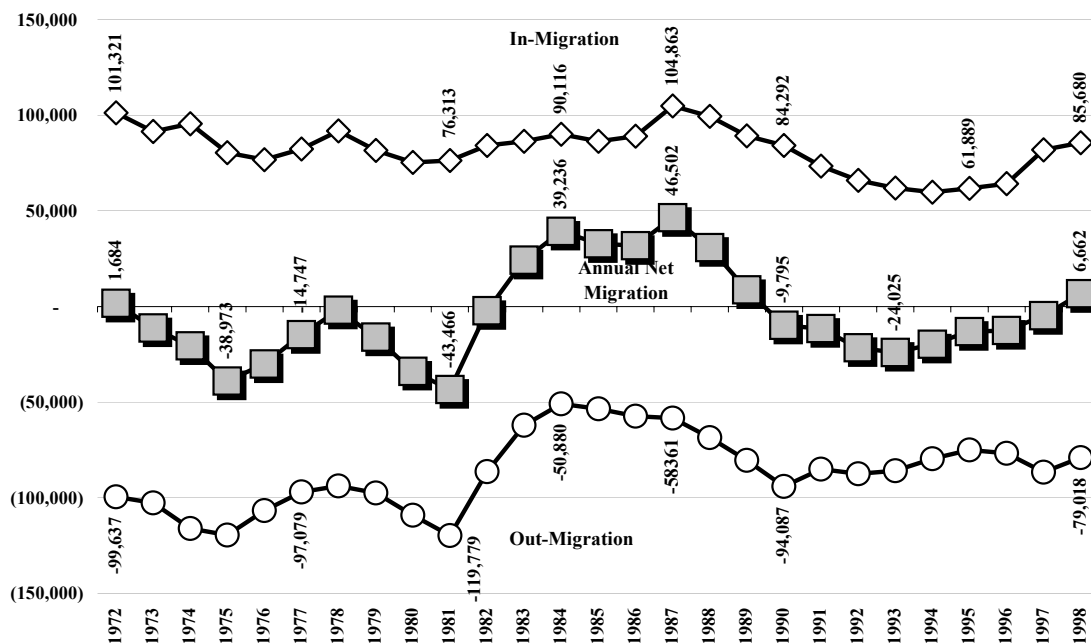
The age profile of out-migrants is remarkably similar to that of in-migrants (Figure 20), again reflecting the high degree of mobility enjoyed by, and required of, young adults. Over 42% of the out-migrants in 1998 were between the ages of 18 and 31, while this age group accounted for 19% of the resident population. Children moving with their (young) parents mean that the under five age group accounts for 9% of the out-migrant stream, and only 6.5% of residents. Older

children, and adults over the age of 31, are under-represented in the out-migrant population (as they are in the in-migrant stream), with out-migrants over the age of 31 accounting for 34% of all out-migrants, compared to 57% of residents.

It is the general inverse labour force migration relationship between in- and out-migration that gives the volatility to net inter-provincial migration (Figure 21). The relatively poor economic conditions of the mid and late 1970s and the early and mid 1990s were reflected in high levels of net out migration, approaching a net loss of 50,000 people per year in 1975 and 1981 and 25,000 in 1993. The relatively strong economy of Ontario in the 1980s is shown in the high net in-migration of this period, with up to 46,500 people coming to the province in 1987.

Every year since 1993, net migration has improved as a result of increasing in-migration and steady to slowly declining out-migration: the 6,700 net gain of people from the province from the rest of Canada in 1998 marked the return of positive economic conditions such as prevailed in the 1980s. A combination of an economic downturn in British Columbia increasing the flow of people out of that province and economic prosperity in Ontario reducing its outflow has meant that for the first time in more than a decade, net inter-provincial migration added to, rather than reduced, Ontario's population.

Figure 21: In-, Out-, and Net Migration, Ontario, 1972 to 1998

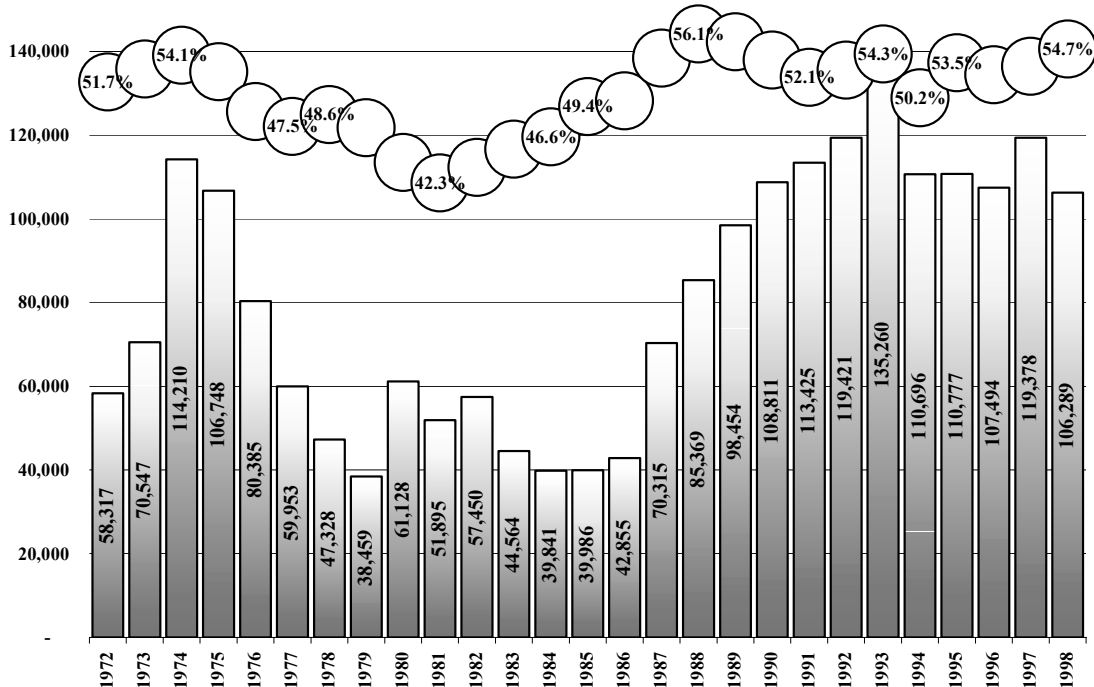


IX. International Migration

The definitional difference between inter-provincial and international migration is the nature of the boundaries crossed and the degree of government involvement. In addition to all other factors that affect people changing their region of residence, international migrants are also subject to the entry and exit regulations of sovereign nations. International migration in Ontario is comprised of people from other countries taking up residency in the province (immigrants, non-permanent residents, and returning Canadians), and of Ontarians moving to take up residency in other countries (emigration, which in turn affects the number of Canadians who may return to the province after having been residents of other countries).

The first, and largest, of the four components of international migration is immigration⁹, people moving to Ontario as newly arrived Canadians. As Figure 22 shows, immigration to Ontario follows a slightly cyclical pattern, part of which is determined by economic conditions (witness its relatively low level during the national recession of the 1980s) and part of which determined by policy and external conditions. Over the past 25 years, immigration to Ontario has ranged from lows of 38,500 to 40,000 per year to a high of 135,300 per year, averaging 81,500 per year from 1972 to 1998. In 1997/1998, immigration brought 106,300 people to Ontario, below the record of 135,260 of 1993, and the lowest number since 1989.

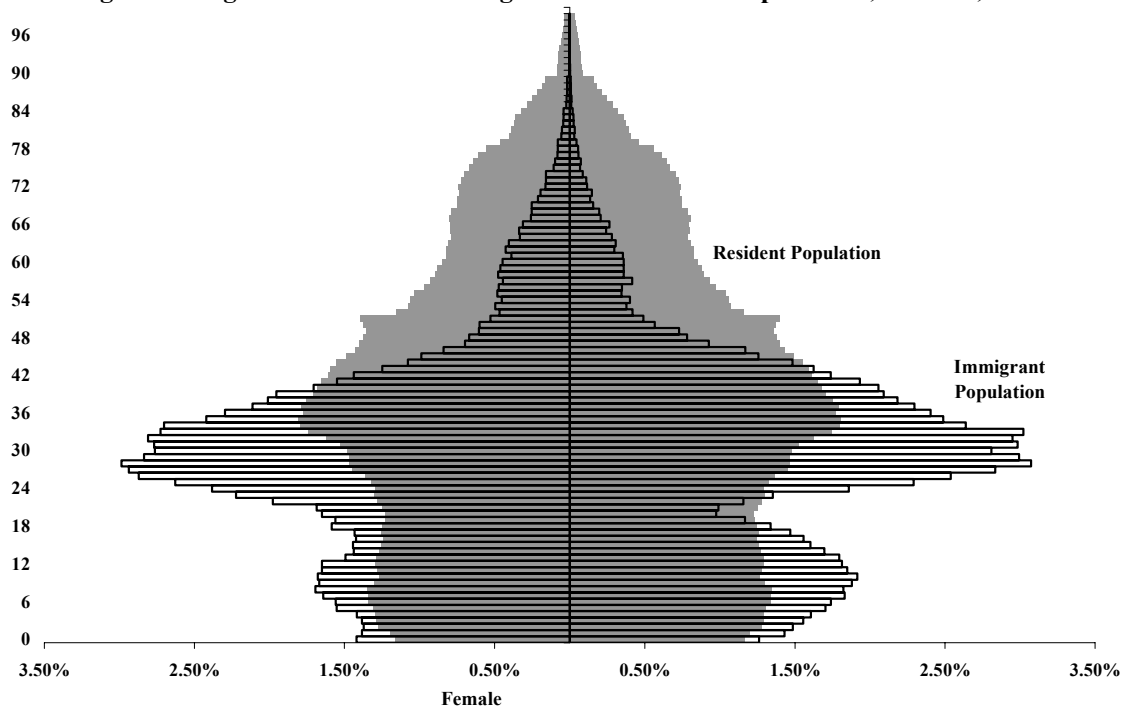
Figure 22: Immigration To Ontario, 1972 to 1998



As immigration policy, and maximum immigration levels, are established at the federal level, it is necessary to place Ontario in the national context. Over the 1972 to 1993 period, Ontario was the destination for roughly 50% of Canada's immigration. In 1993, when Canada received 249,300 immigrants, Ontario received 135,300, or 54.3% of them. Since then, the province's share of Canada's immigration has held relatively constant in the 54% range, but the total number of immigrants coming to Canada, and hence to the province, has declined.

As with the other migrant groups, the age profile of the immigrant population is younger than that of the resident population (Figure 23). 31% of the immigrants to Ontario in 1998 were between the ages of 18 and 31 (compared to 42% of the in-migrant, and 19% of the resident, populations). The under 5 age group accounts for 7% of the immigrant, and 6.5% of the resident, population. 22% of immigrants are in the 5 to 17 age group, whereas 18% of the residents are. The 32 and older population is under represented in the immigrant population (40%) compared to the resident population (57%), with people 60 and older accounting for a much smaller share of the immigrant (4%) than the resident population (16%). The fact that the immigrant age profile, as with the in-migrant, out-migrant, emigrant, and returning Canadian populations, is significantly younger than that of the resident population emphasizes the fact that changing regions of residence, whether within a province, between provinces, or between countries, is a challenging and difficult process. As a result, it is most often entered into by young adults, who are generally more adventurous and are often required to be if they are going to find work and establish careers.

Figure 23: Age Distribution of Immigrant and Resident Populations, Ontario, 1998



The age profiles of the immigrant, and to a lesser degree emigrant, populations are slightly older than those of the in-migrant and out-migrant populations are: international migration is much more serious and arduous, requires more resources, and has entry requirements that require skills and education. These combine to make the immigrant and emigrant populations, while younger than the resident population, older than the inter-provincial migrant population.

The counter flow to immigration is emigration, people leaving Ontario to take up residence in other countries. This second most significant component of Ontario's international migration flow has in some years taken away 8 people for every 10 who have come as immigrants. The emigrant population includes a wide diversity of people, including, as examples, those leaving Ontario to be students in foreign universities, to work overseas or to play for the New York Rangers. It includes people leaving with the intention of returning (and hence may show up as returning Canadians, unless they decide not to come back) as well as those with the intention of permanently emigrating (who may change their minds and become returning Canadians).

In 1998, 21,100 people emigrated from Ontario: an average of 25,360 people have done so each year since 1972 (Figure 24). Emigration has also followed a somewhat cyclical pattern, ranging from a high of 42,100 in 1974 to a low of 16,700 in 1990. The patterns indicate that there is some relationship between local economic conditions and emigration (witness the relatively low level of emigration during the late 1980s and the relatively high level during the 1970s and early 1980s). It also demonstrates that much more than the provincial economy affects emigration, as regardless of provincial economic conditions at least 16,700 people have emigrated from Ontario every year since 1972.

Ontario's share of the emigration from Canada has generally dropped in the last 25 years. During the 1970s Ontario averaged 49% of the country's emigrants, while in the last 10 years, it has averaged just under 43% of the national total, reaching 42.5% in 1998. During the 1990s, emigration from the province remained steady in both absolute terms and as a share of Canada's total.

Figure 24: Emigration from Ontario, 1972 to 1998

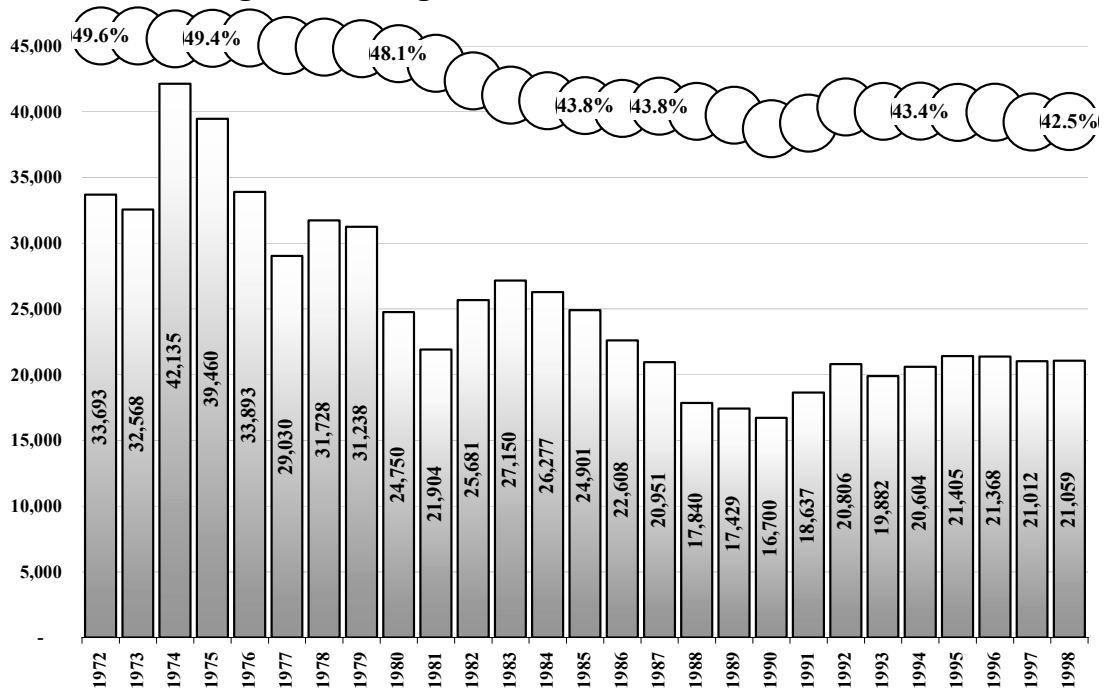
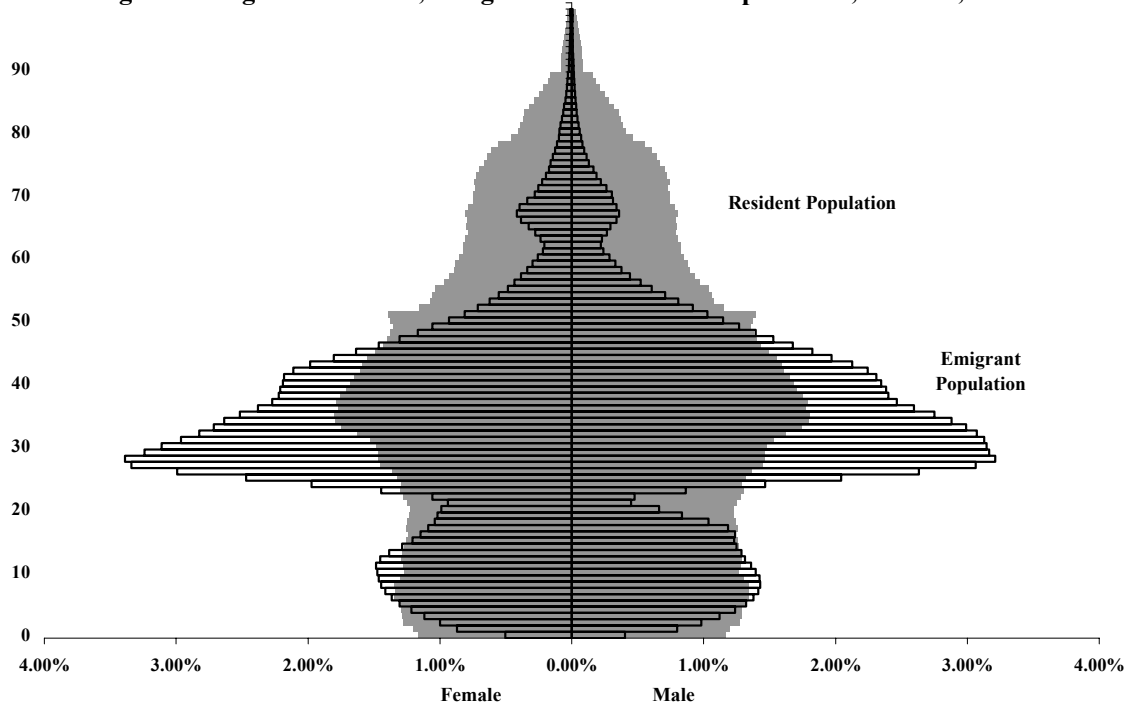


Figure 25: Age Distribution, Emigrant and Resident Populations, Ontario, 1998



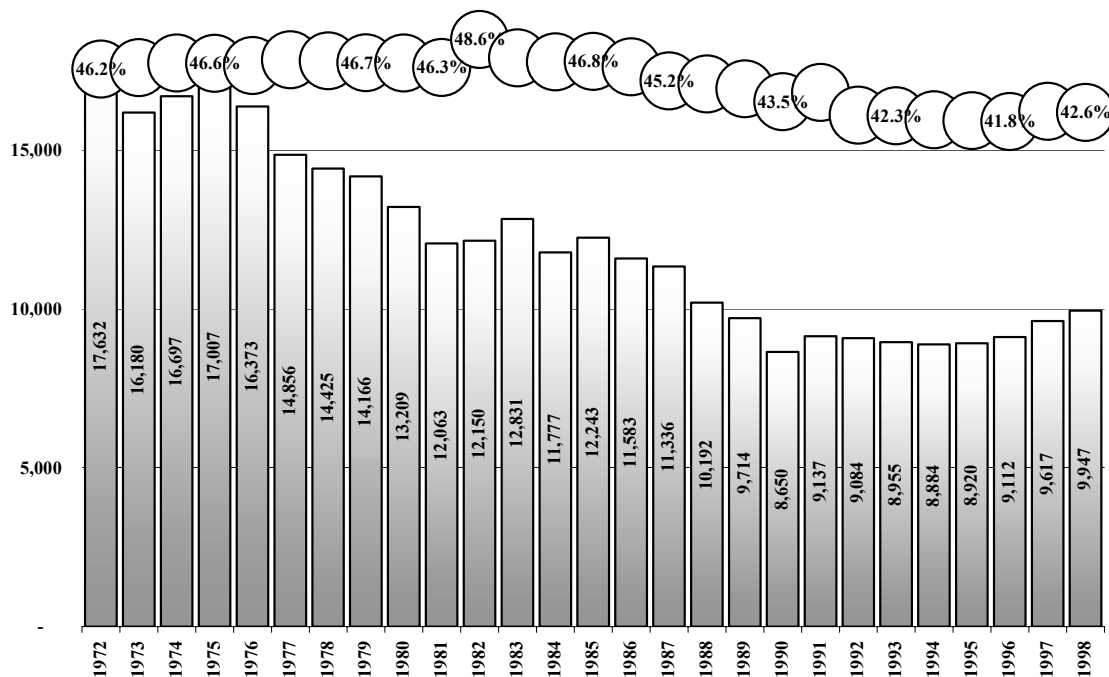
The age composition of the emigrant population, while younger than the resident population, is older than the immigrant population. 28% of the emigrant population is between 18 and 31, compared to the 19% for the resident, and 31% for the immigrant, populations (Figure 25). The younger and older populations are under-represented in the emigration stream with only 22% of the emigrants under the age of 18 (24% of the resident and 29% of the immigrant populations),

and only 50% of the emigrants are 32 and older (57% of the resident population). The share of every age 48 and older in the resident population exceeds that of the emigrant population.

Much of the emigration from Canada is, intentionally or unintentionally, not permanent. The flow of Canadian citizens returning from places of residence in other countries to become Ontario residents added, over the 1972 to 1998 period, an average of 12,100 people per year to the province's population (Figure 26). The number of returning Canadians moving to Ontario has dropped steadily over the last 25 years, from 17,600 in 1972 to the 9,000 to 10,000 range throughout the 1990s. This 44% drop has been primarily caused by 2 factors: first, the number of returning Canadians to the country as a whole has dropped from 34,600 in 1972 to the 20,000 range in the late 1990s; and second, Ontario's share of the national total has dropped.

In 1972 Ontario's 17,600 returning Canadians represented 46.2% of the national total. This share remained fairly constant until 1983, when a steady decline began. By 1996, it had dropped to 41.8% of the national total, with recovery over the past two years bringing it an increased share (42.6%) and number (9,947) by 1998.

Figure 26: Returning Canadians Moving to Ontario, 1972 to 1998



Young adults (18 to 31) account for a much greater share of the returning Canadian population (40%) than they do of the emigrant (28%) and resident populations (19%, Figure 27). 44% of the returning Canadian population is over the age of 31, compared to 50% of the emigrant, and 57% of the resident, population. The youngest age groups are also under-represented in the returning Canadian population compared to the resident population: only 19% of the returning Canadians are under the age of 17, compared to 24% of the resident population. Children under age 5 account for the same share of both the returning Canadian and emigrant populations (4.5%).

The final and numerically least significant component of the international migration flow is the change in the number of people who are not citizens of Canada who reside in, but are not permanent residents of, the province. Such residents are primarily foreign students at Universities, colleges and schools, and temporary permit workers such as nannies and domestic assistants. Separate data are not published on the number and characteristics of non-permanent

residents arriving and leaving the province: the only data is on the net change in the population of non-permanent residents. As with inter-provincial migration, this net change demonstrates a significant level of variance, particularly over the last 15 years (Figure 28).

Figure 27: Age Distribution, Returning Canadian and Resident Populations, Ontario, 1998

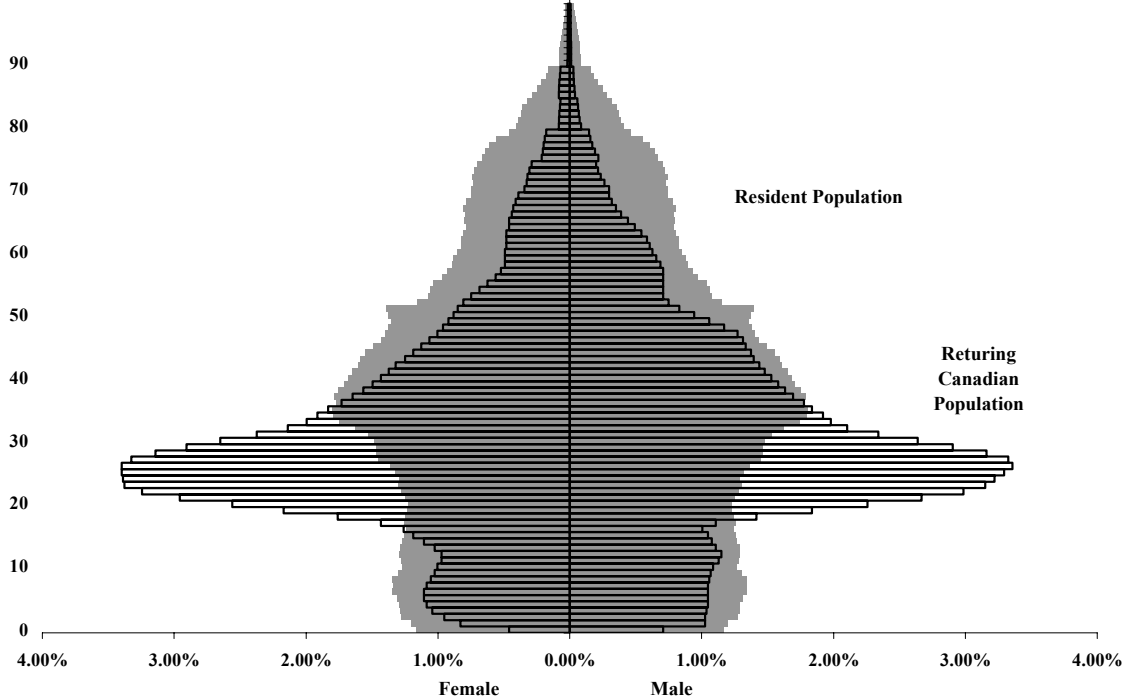
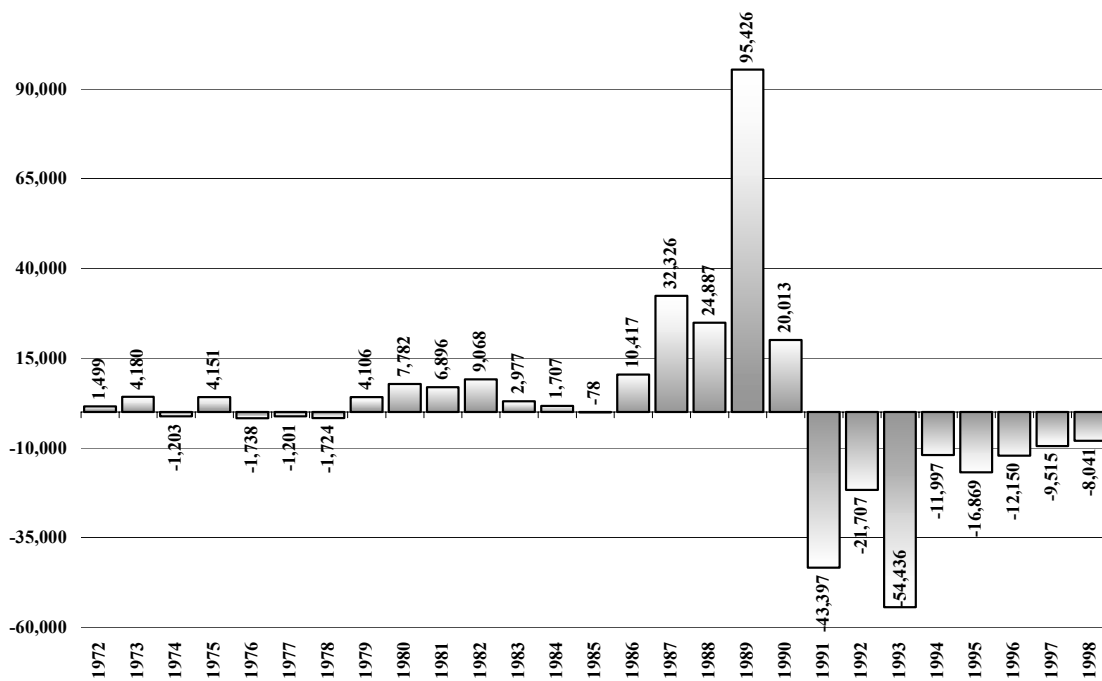
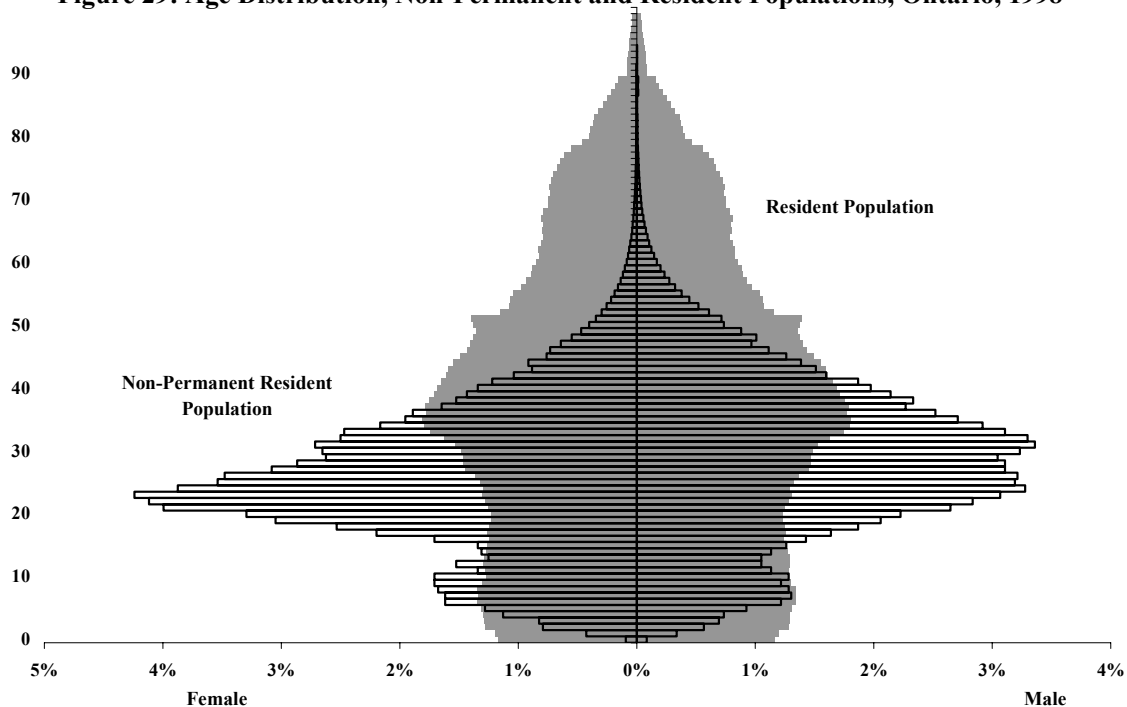


Figure 28: Annual Change in Number of Non Permanent Residents in Ontario, 1972 to 1998



Since 1972, the number of non-permanent residents living in Ontario has increased by an average of 1,500 people per year. The largest increase occurred between 1986 and 1990, when 183,100 more non-permanent residents came to Ontario than left it. By 1991, the reverse situation prevailed, with 4,140 more non-permanent residents leaving the province that year than came to it. Since 1991, the annual change in non permanent residents living in Ontario has been negative every year, with a record loss of 54,400 in 1993. From 1991 to 1998 the number of non-permanent residents living in Ontario has dropped by an average of 22,300 per year. The age profile of this net change was decidedly young adults (Figure 29): 43% were in the 18 to 31 age group, compared to 19% of the resident population. 20% were under the age of 18, compared to 24% of the resident population, and only 37% were over the age of 31, compared to 57% of the resident population.

Figure 29: Age Distribution, Non-Permanent and Resident Populations, Ontario, 1998



In summary, the relative importance of the sources of population growth recently have differed from the 1972 to 1998 pattern. In 1997/1998, the major source of growth was net international migration: of a total population increase of 151,100 people, net international migration added 87,100 people (106,300 immigrants plus 9,900 returning Canadians minus 8,000 non-permanent residents and 21,000 emigrants). Natural increase added a further 57,300 people (138,500 births minus 81,200 deaths). Net in-migration from other provinces increased the population by 6,700 people (85,700 in-migrants minus 79,000 out-migrants)

This is in contrast to the 1972 to 1998 pattern: over this period, the province's population increased by an average of 131,700 people per year. The major source of growth was net international migration, which contributed an average of 69,700 persons per year to the province. The second most important source of growth was natural increase, which added 65,600 people per year. In some years, inter-provincial migration accounted for as much as 30% of the province's population growth: in others it has taken away more than net immigration has brought. On average, since 1972, 4,000 more people have left Ontario every year for other provinces than have come from them.

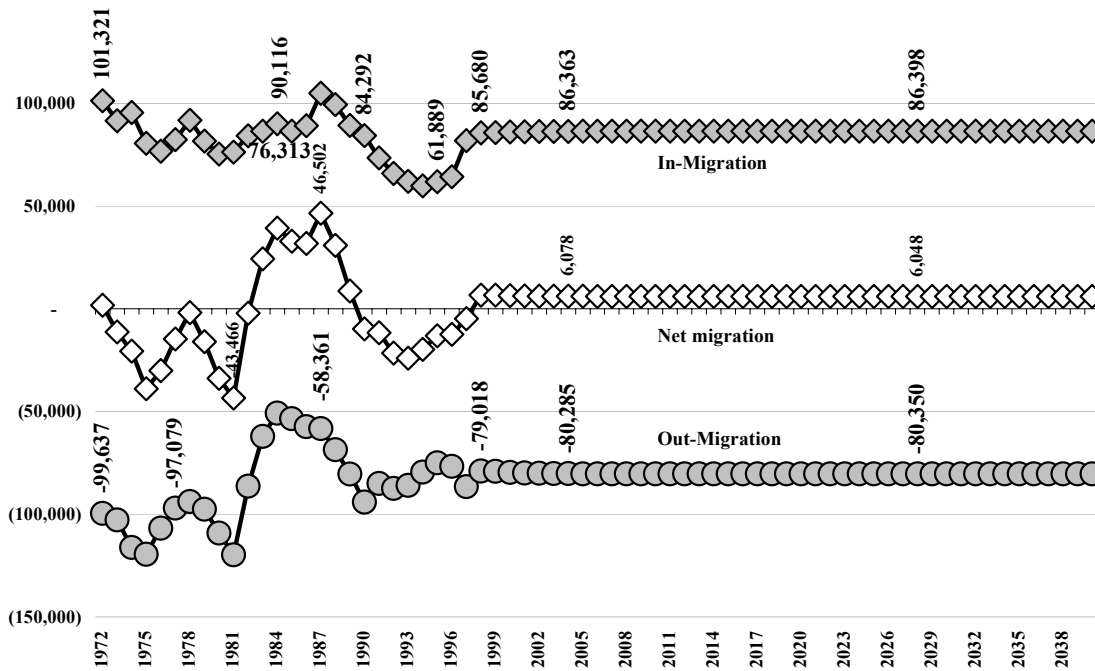
X. Future Long Run Levels of Migratory Flows

Given the wide and diverse range of factors that affect each of the components of migratory population flows into and out of the province, and the fact that many of these factors are strongly influenced by conditions both within and outside the province, it is not realistic to attempt to forecast all of the factors that will affect the movement of people into and out of the province. Rather, given the objective of producing a long run trend population projection, it is appropriate to use past levels as the base for assumptions of what future levels may be.

In terms of age profiles and gender composition, it is appropriate to assume they remain as they were in 1998: given the mobility and risks that migration involves, it will continue to be dominated by young adults. While there will certainly be shifts in the age profile of migrant populations from year to year, the profiles used here will generally represent the age and gender composition of future migrant flows.

The past also provides guidance for estimating the level of future migration. While future cycles of growth will undoubtedly occur, their timing cannot be predicted. Given the current awareness of the need for continuing to increase the diversity and competitiveness of the province's economy, it is highly unlikely that future cycles will exceed those that the province has experienced over the past quarter century. Thus, it can be assumed that the average levels of population flows into and out of the province that prevailed in the past long run are an appropriate base for estimation of the future long run.

Figure 30: In-, Out-, and Net Interprovincial Migration, Ontario, 1972 to 2040



In the case of in-migration, it is necessary to acknowledge that much of the high level of out-migration and low level of in-migration during the 1990 to 1996 period was the result of very unusual economic circumstances in the province. With the recession ending and the restructuring of Ontario's economy essentially complete, the future will involve less than the past decade's average out migration and more than its average in-migration.

Over the past 25 years, in-migration to Ontario from other provinces averaged 82,300 people per year. This average is pulled down by the low in-migration of the past decade: adjusting for the recent recovery produces an estimate future long run in migration to Ontario from other provinces of 85,150. Similarly, out migration from the province to other provinces has averaged 86,300 people per year: this is biased downwards by the out-migration of the last decade. Again adjusting for the recent recovery, a long run estimate of 80,350 annual out migrants to other provinces each year was produced. Combined, these produce an estimated long run net in-migration of 6,048 people per year, compared to the 25 year average net out-migration of 4,000. The 6,048 net in-migration is comparable to the average over the last full cycle, from 1983 to 1997, when net inter-provincial migration averaged 6,466 additional people per year.

Having established the long run level of in- and out-migration, it is necessary to then determine when they will be achieved. The province has clearly been recovering from its 1991 downturn since 1994, with 1998 marking the first year of positive net inter-provincial migration in a decade. Employment in the province has recovered to its pre-recession levels: with the continued growth of the US economy, it should continue to expand. For purposes of this projection, it is assumed that the continuing growth of the province's economy will pull in-migration up slowly, from its 1998 level of 85,680 to reach its long run level of 86,398 by 2006, and will increase out-migration very slightly from its 1998 level of 79,018 to its long run 80,350 by the same year. The combination of these means that net in-migration will achieve its long run level of 6,048 people per year by 2006. Note that, as in-migration and out-migration have different age profiles, the projection is for each of these population flows, rather than for net migration.

Projection of the levels of international migration require consideration of both the national levels and the province's shares of those levels. The largest component of the international flow is immigration. Over the past decade immigration has ranged between 0.64% and 0.81% of Canada's population, with 1997's level at 0.75% and 1998's at 0.65%. The 1999 immigration target range has been set at 200,000 to 225,000 persons, a range of 0.65% to 0.73% of Canada's 1998 population. For purposes of this projection, it is assumed that immigration to Canada over the next four decades will average 0.75% of the country's population, increasing from the current 0.65% to reach 0.75% by 2010. This rate is based on the level that prevailed this decade prior to the "Asian flu" economic reversal in South East Asia and on the assumption that there will be increasing acknowledgement of the importance of immigration in reducing dependency ratios¹⁰.

The result of this assumption about national immigration is a projection of immigration to Canada increasing from 1998's 194,351 persons to reach the top of 1999's target range of 225,000 by 2003, the 250,000 level of the mid-1990s by 2010, and 310,000 by 2040. The projected number of immigrants to Canada for 1999 is 200,000.

Ontario's share of national immigration is projected to decline slightly from 54.7% in 1998 to 54.3% in 1999, 53.7% in 2000, and 53.3% in 2001: 53.1% is the average share of national immigration that Ontario has received over the past decade, and is here assumed to be the long run future share as well. The result of this assumption (Figure 31) is immigration to Ontario increasing slowly over the next three years (from 1998's 106,289 to 2000's 121,124), and then increasing steadily to reach its previous (1993) record of 135,260 by 2027 and 164,535 by 2040.

Ontario's share of emigration is also projected to return to its past decade's average by 2001 and then remain at this long run average: in this case, it will involve an increase in share, from 42.5% in 1998 to 43% by 2001. Nationally, emigration is projected to maintain its past decade's average rate of 0.168% of the Canadian population emigrating each year: this will result in an increase of emigration from 49,696 in 1998 to 56,699 in 2010 and 69,700 in 2040. Ontario's emigration will increase from 1998's 21,059 persons to 24,372 in 2010 and 29,870 in 2040 (Figure 32).

Figure 31: Projected Annual Immigration to Ontario, 1972 to 2040

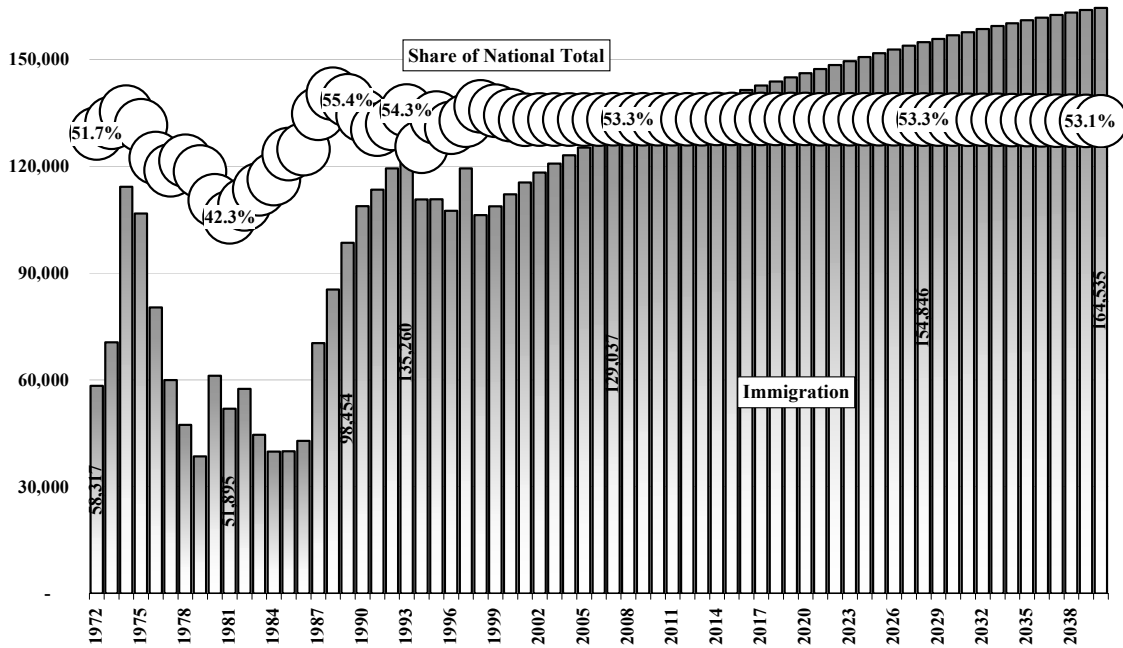
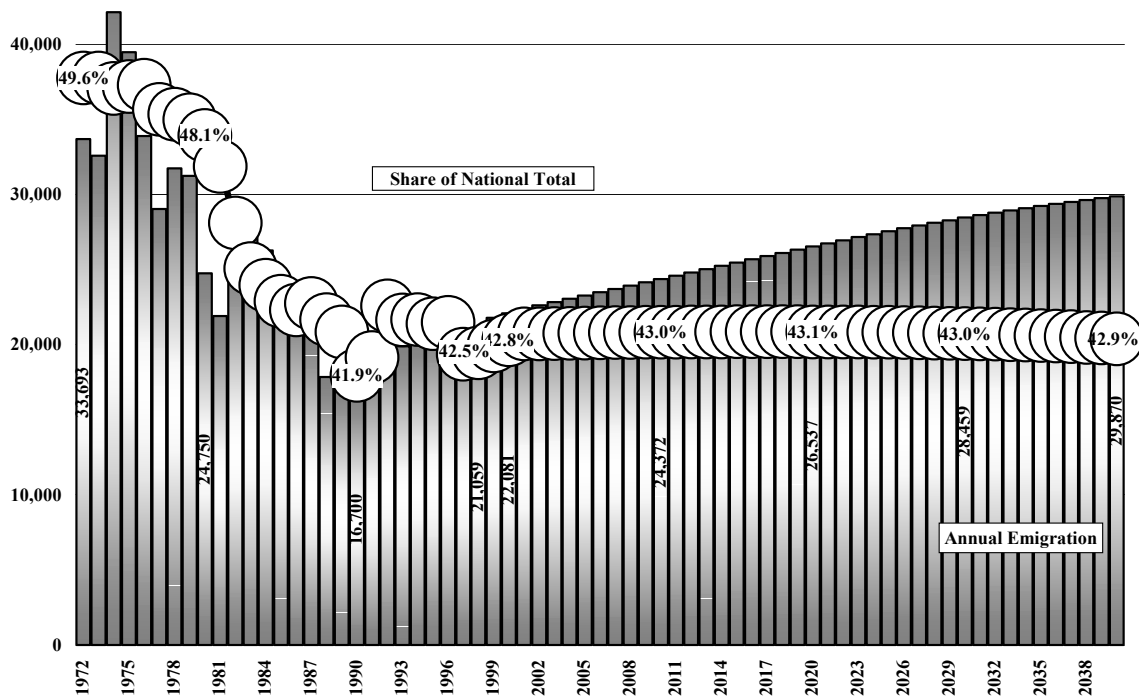


Figure 32: Annual Emigration from Ontario, 1972 to 2040



Over the past quarter decade, the number of returning Canadians (who must have been emigrants at some earlier point) averaged 42.5% of the annual number of emigrants. Assuming that this ratio continues in the future, the number of Canadians returning to Canada each year will increase from 1998's 23,430 to 29,500 in 2040. Ontario has been the destination for an average of 42.3% of these returning Canadians: for this projection, it is assumed that it will return to this average

by 2001, an insignificant reduction from 1998's 42.5%, and then gradually see its share decline to 42.1% by 2040. This will result in an increase in the number of returning Canadians settling in Ontario from 1998's 9,947 to 10,086 in 2010, and to 12,424 in 2040 (Figure 33).

Figure 33: Returning Canadians Moving to Ontario, 1972 to 2040

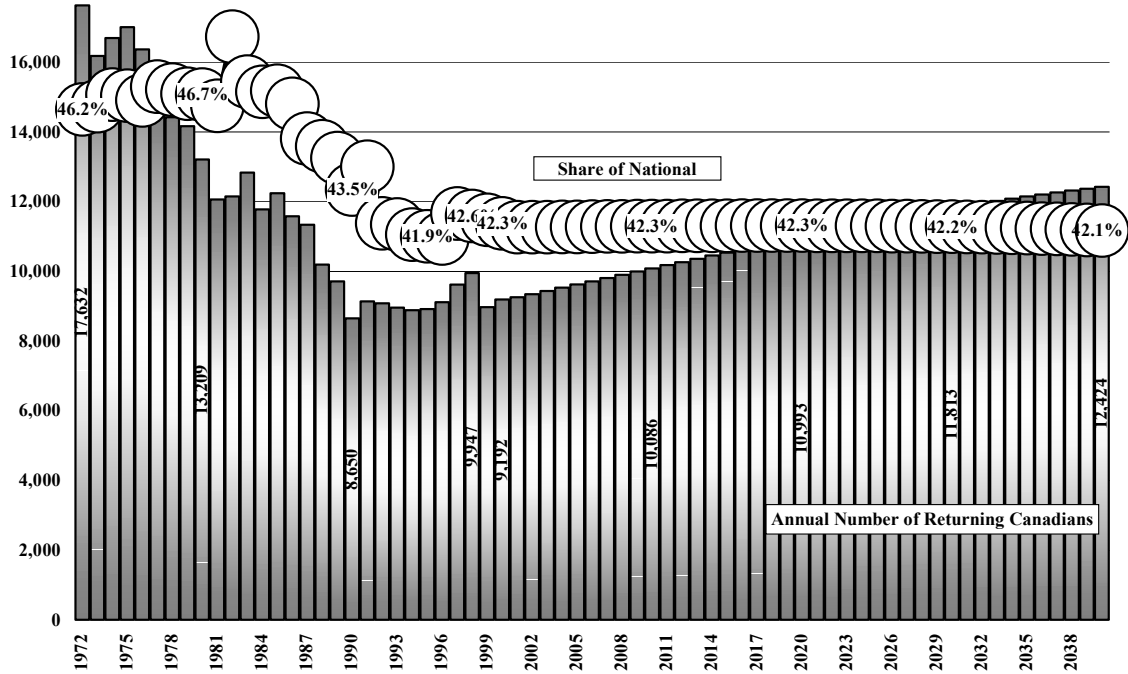
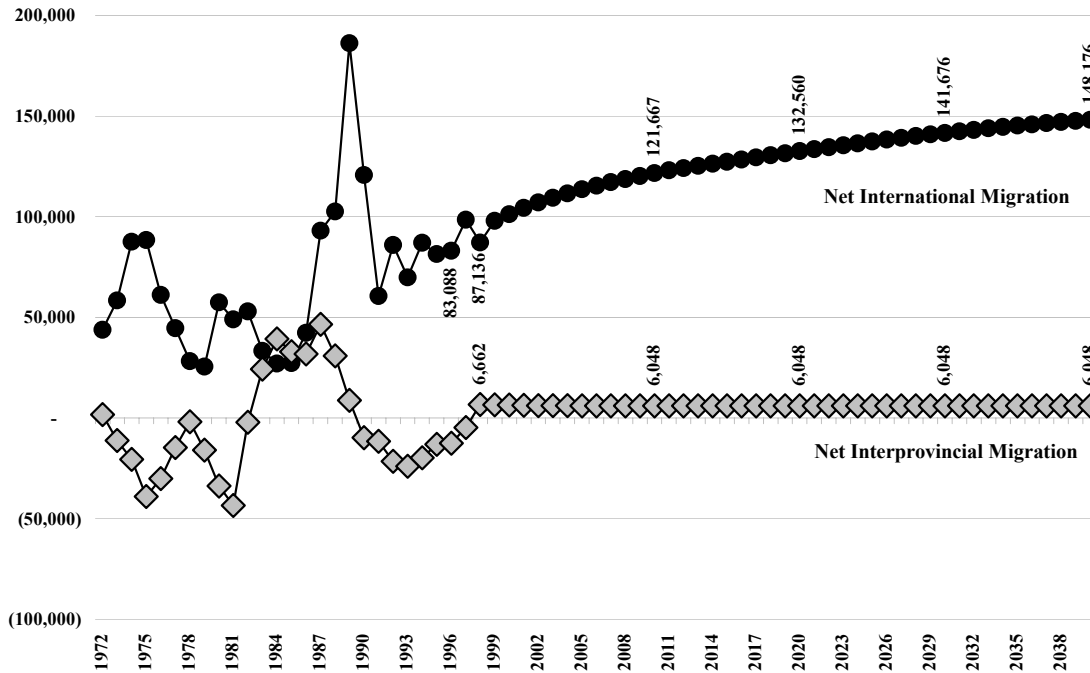


Figure 34: Net-Migration, Interprovincial and International, Ontario, 1972 to 2040



Finally, over the past quarter century for every 1,000 additional people in Canada, there were 15 additional non-permanent residents. Ontario has been the place of residence for 41.6% of these

additional persons. Assuming that this relationship continues, the number of non-permanent residents in the province will increase by an average of 2,000 per year until 2012, and then decline to about 1,100 per year as Canada's population growth slows.

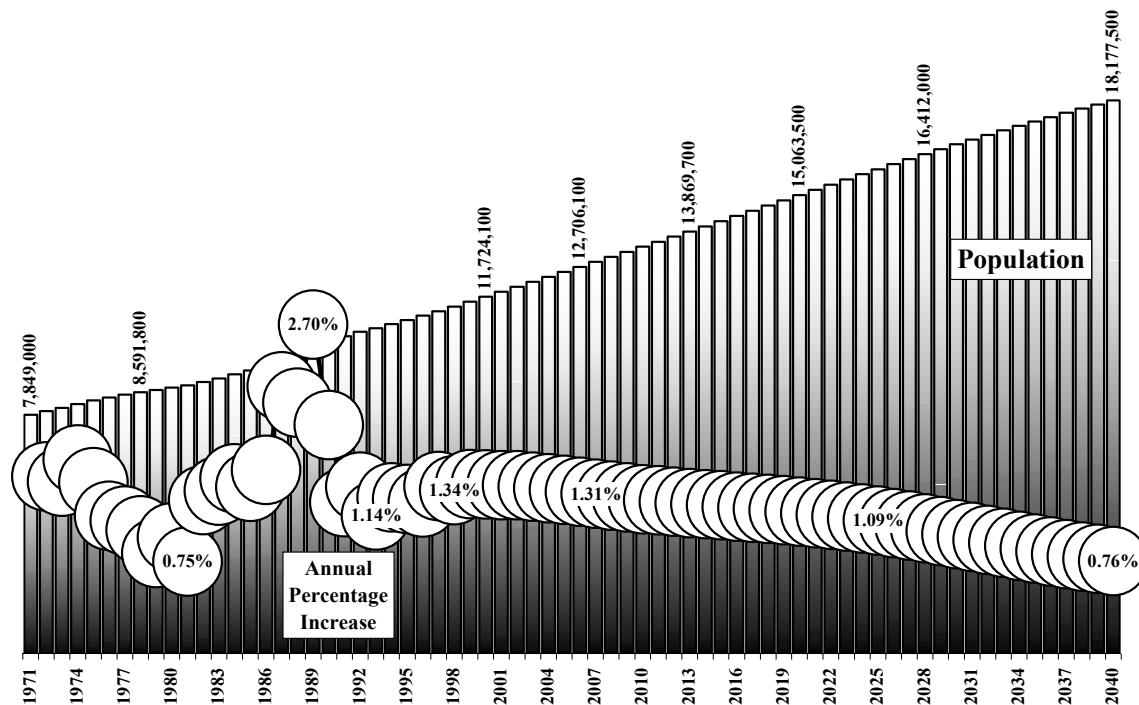
The net result of these assumptions about the migratory sources of population growth Ontario is a growing population. Once the long term conditions in the province are achieved, net inter-provincial migration would contribute an annual average of 6,048 persons per year (Figure 34). Net international migration will increase slowly, growing from 1998's 87,136 to 121,667 in 2011 and to 148,200 by 2040.

Of course, what is projected will not be what occurs on a year to year basis. Just as there were cycles in migration and immigration in the past, so there will be in the future: population projection does not attempt to model these cycles, but rather to indicate the average pattern over a cycle. Thus, as Figure 34 shows, the average level on net international migration to the province will be within the range that it has experienced over the past decade: while in any one year it may reach or pass the decade's record of 1996 or its low of 1991, it will average the projected level. Similarly, net inter-provincial migration, while continuing to show year to year fluctuations, will be, on average positive and in the range it was over the past full cycle.

XI. The Baseline Projection: Eighteen Million People

The result of the aging of the province's current population, combined with the demographic inputs and assumptions discussed in the preceding sections, is continuous but slowing population growth over the next forty years (Figure 35, see Appendix for Values).

Figure 35: Ontario's Population, 1971 to 1998 Projected to 2040

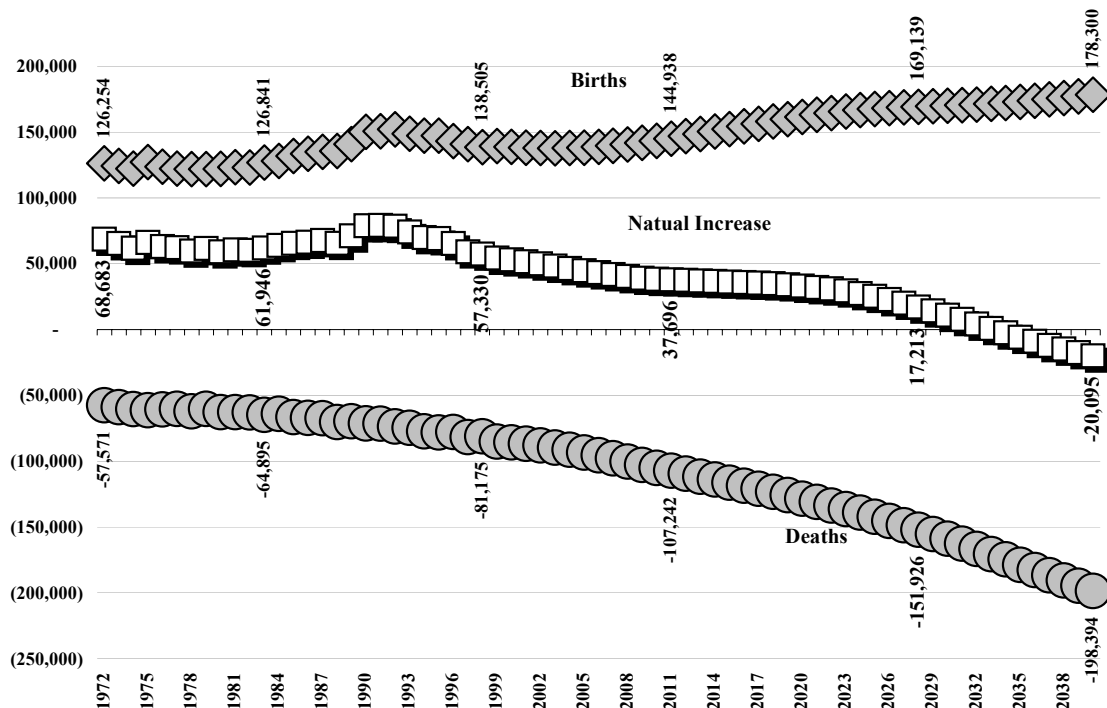


Ontario's population in 1998 was 11,404,800 people. By 2002 it will have passed the 12 million mark, and by 2020 the 15 million. The province's projected population in 2010 is 13,367,400; in 2020 is 15,063,500; in 2030 is 16,731,800; and in 2040 is 18,177,500 people. The addition of

6,772,700 people (a 59% increase) to the province's population over the 42 year period from 1998 to 2040 (an average of 161,300 people per year), is more than the 5,916,200 people added (a 108% increase) to its population in the 42 years from 1956 to 1998 (an average of 140,900 people per year).

The projection 1999 is for 1.39% growth, slightly more than the 1.34% that occurred in 1998, followed by a gradual decrease to 1.1% by 2025. From then on, even with assumption of increasing net migration, the annual population growth rate will continue to drop to below the 1% per year level, reaching 0.76% annual growth in 2040. This will be the result of the increase in the number of deaths reducing the contribution of natural increase to growth from 57,300 additional persons in 1998 to 38,300 in 2010, to under the 10,000 level by 2031, and to negative 20,100 (deaths exceeding births) by 2040 (Figure 36).

Figure 36: Natural Increase, Ontario, 1972 to 1998, Projected to 2040

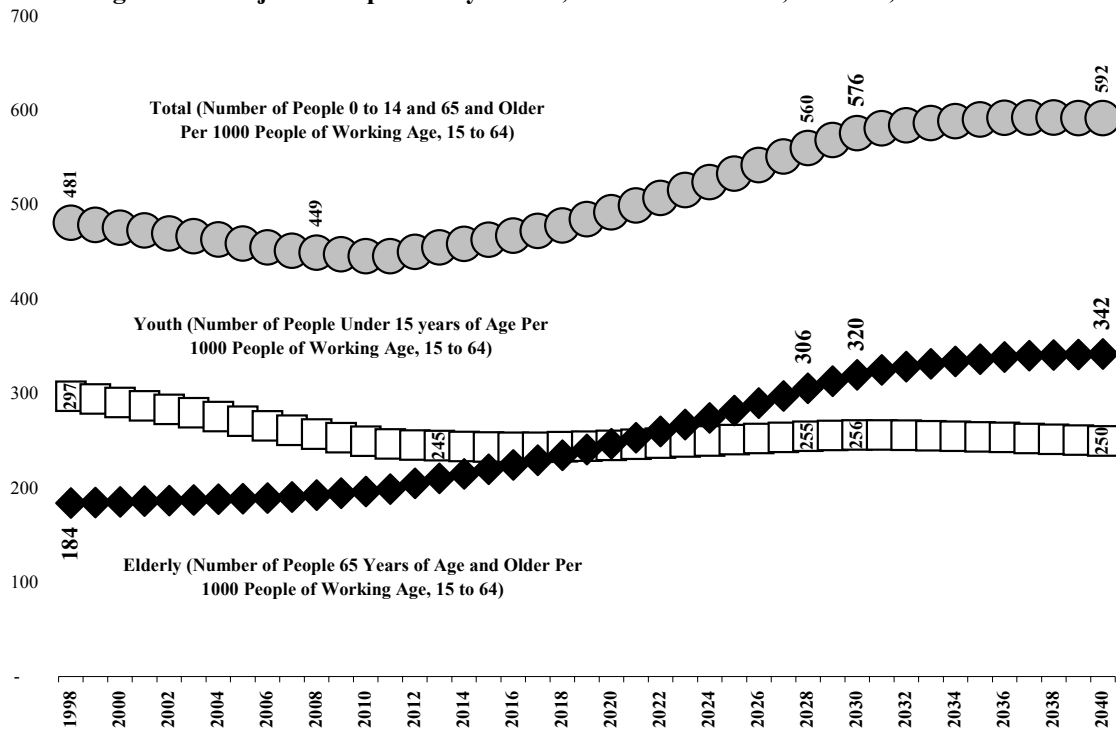


Given the current relatively youthful age profile of Ontario's population, and the definitely youthful profile of migration flows, the number of births in the province will increase from 1998's 138,500 births to 144,900 births in 2011, 169,100 in 2028 and 178,300 in 2040. In spite of this record setting annual number of births, increases in the number of deaths due to the aging of Ontario's population will slow the contribution of natural increase to population growth, particularly after 2011. The number of deaths will increase steadily every year in the future, from 1998's 81,175 deaths to 107,200 in 2011, 151,900 in 2028, and 198,400 in 2040.

Note that population growth, which in Ontario is overwhelmingly comprised of young migrants and the newly born, does not contribute much to the annual number of deaths in the province: without migration, the aging of the province's current population would result in 165,400 deaths in 2040 (Figure 16), accounting for 83% of the 198,400 that would occur with aging and migration. Migration has a much greater impact on the number of births in the province: without migration, the number of births in 2040 would be 95,000 (Figure 16), only 53% of the 178,300 births that would occur with migration.

The greater impact of migration on births, combined with the relatively young age profile of migrant populations, means that the dependency ratio will be much lower with migration than without it (compare Figure 37 to Figure 15). The trend projection results in a youth dependency ratio of 250 people under the age of 15 for every 1000 people of working age in Ontario in 2040, not significantly different from the 237 per 1000 that would occur without migration. The elderly dependency ratio without migration of 487 people 65 and older per 1000 people of working age in 2040, however, is 42% higher than the trend scenario ratio of 342 persons 65 and older per 1000 person of working age in 2040. The direct and indirect impact of inter-provincial and international migration on the age structure of Ontario's population is to significantly reduce the relative number of people supported, to one extent or another, by the working population: migration makes the province's population younger.

Figure 37: Projected Dependency Ratios, Baseline Scenario, Ontario, 1998 to 2040



While migration slows the aging of the province's population age profile, it does not stop it. The aging of the province's 1998 population is clearly shown in a comparison of the 1998, 2018 and 2040 age profiles (Figure 38). Twenty years from now, the typical Ontarian will be a 55 year old – today's typical Ontarian plus 20 years. Migration and immigration will be sufficient to maintain, and even slightly expand the trunk of the province's age tree while the aging of the baby boom generation will push its upper branches closer ever closer to the sky.

Aging will also ensure that, in 2040, the baby boom bulge will be replicated in the 74 to 93 population, albeit at a greatly reduced scale due to the ravages of mortality. The typical person of 1998 (a 35 year old) will be 77 in 2040, as is shown in the mini-bulge at age 77 (there will be 92,300 females aged 77 in 2040, compared to 104,500 females aged 35 in 1998). Natural increase, net inter-provincial migration and net immigration will expand the population profile, in the under 60 population, resulting in the typical person in Ontario in 2040 being a 45 year old, with 258,100 people of this age, more than of any other age.

Figure 38: Age Profile of Ontario Population, 1998, Projected 2018 and 2040

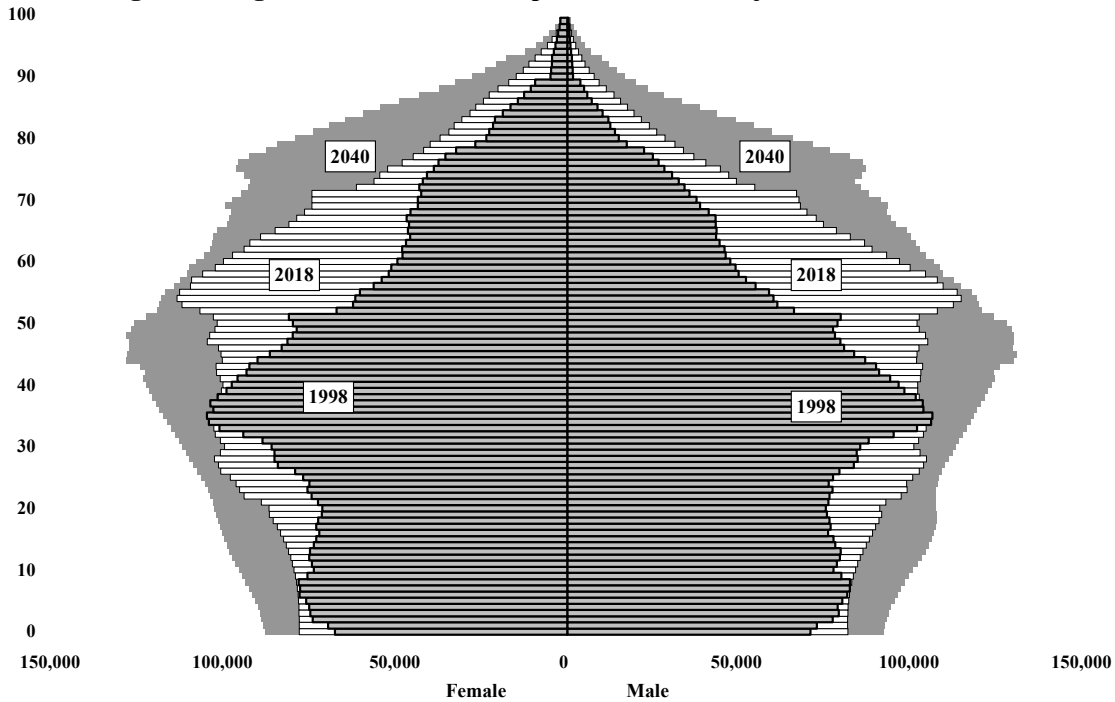
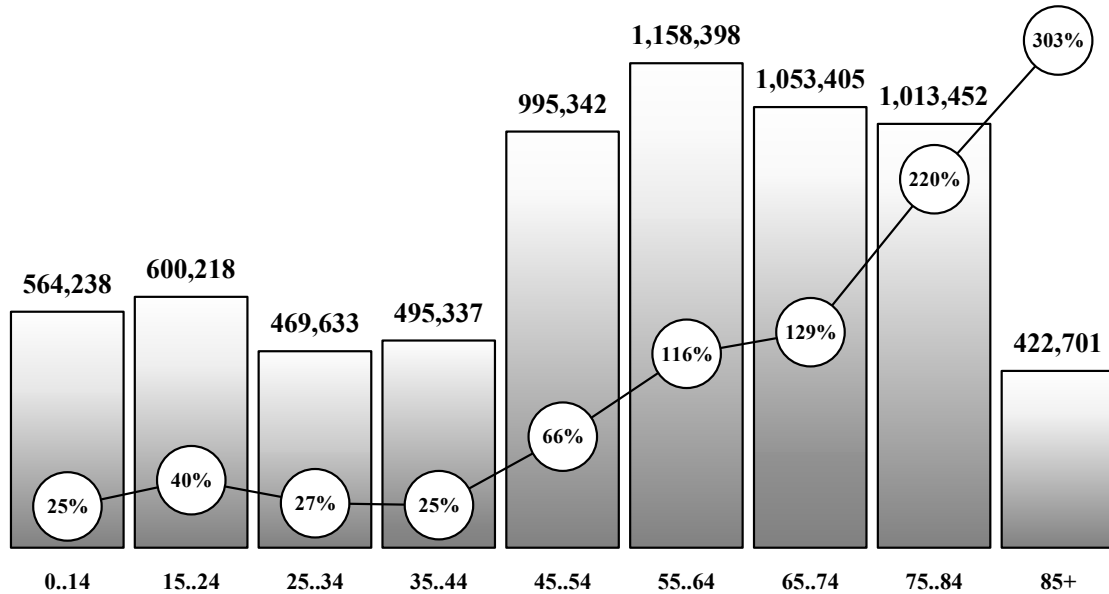


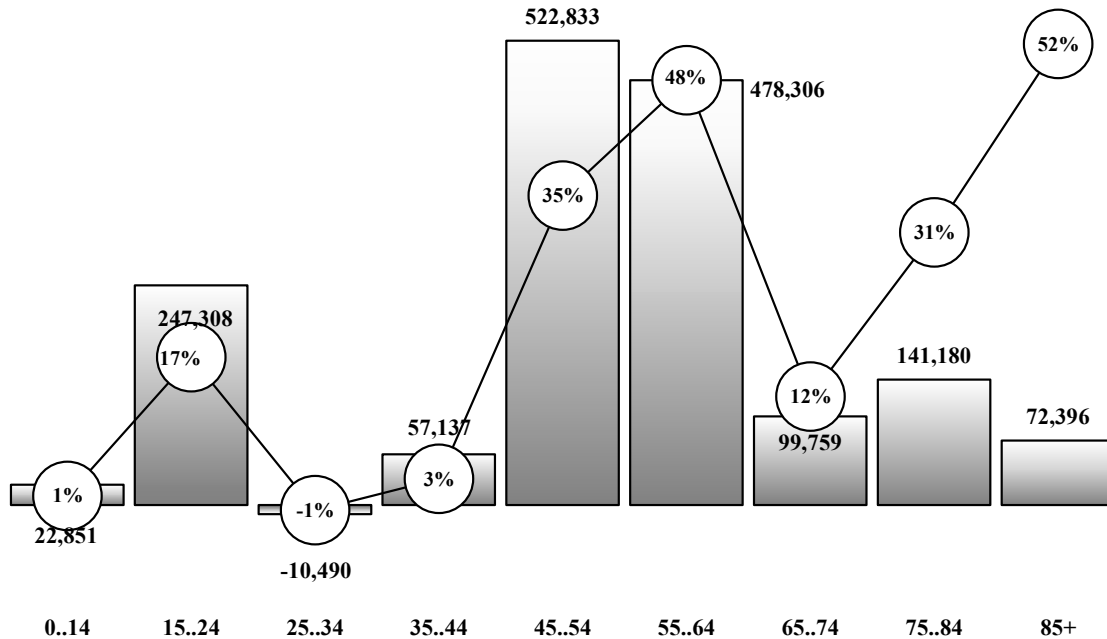
Figure 39: Projected Increase in Ontario's Population by Age Group, 1998 to 2040



The shifting up of the baby boom bulge into age groups where there are currently relatively few people will mean that while the number of people in all age groups will increase, the 45 and older age groups will experience above average increases over the 1998 to 2040 period (Figure 39). The biggest absolute increase, 1,158,400 more people, will be in the 55 to 64 age group, and the largest percentage increase will be the 303% increase of the 85 and older age group.

In 2040, there will be 995,300 more 45 to 54 year olds (66% more), 1,158,400 more 55 to 64 year olds (116% increase), 1,053,400 (129%) more 65 to 74 year olds, 1,013,500 (220%) more 75 to 84 year olds and 422,700 more people 85 and older (303% increase). The number of people in the under 45 age groups will increase as the result of births, net inter-provincial and net international migration, by between the 25 to 34 age group's 469,600 (27%) increase, and the 600,700 person (40%) increase of the 15 to 24 age group.

Figure 40: Projected Increase in Ontario's Population by Age Group, 1998 to 2008

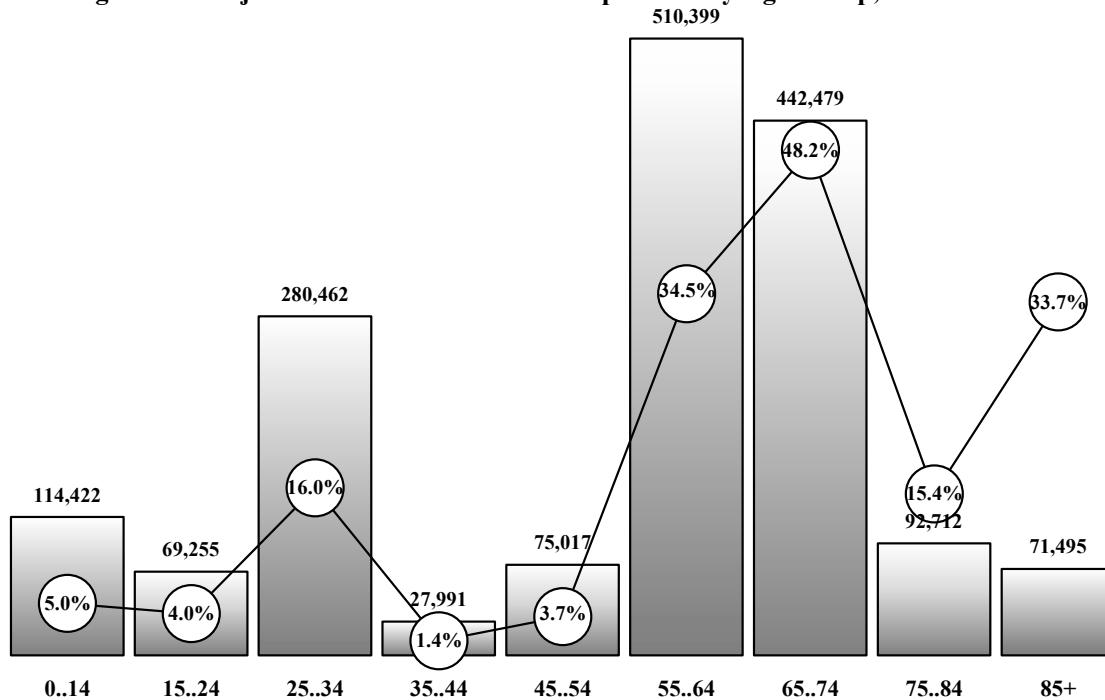


Between 1998 and 2008, the age group with the most rapid increase will be the 85 plus age group (a 52% increase, Figure 40). This high rate of increase will be the result both of the aging of the World War 1 boomers into it, and the small number of people in that age group in 1998.

Over the next decade, the front edge of the baby boom will age into the 55 to 64 age group, causing it to increase by 47.8% (478,366 people), with the aging of the bulge of the boom causing the 45 to 54 age group to increase by 34.8% (522,833 more people). Positive net inter-provincial and international migration will essentially maintain the size of the 25 to 34 and 35 to 44 age groups.

Over the following decade, from 2008 to 2018, the province's population will increase by 1.7 million people, a 12.9% increase (Figure 41). The aging of the baby boomers will shift the big growth age groups out by ten years, with the 65 to 74 age group increasing by 48.2% (442,479 more people) and the 55 to 64 age group by 34.5% (a 510,399 increase). While all younger age groups will increase in size, the 25 to 34 age will increase by the largest increment (280,462) and the greatest percentage (16.0%), the result of the age group's recovery from the loss of the bulge of the baby boom in the previous decade. With a larger base, and smaller increases in the 75 and older age groups, the rate of increase in the older population will be smaller than it was in the 1998 to 2008 decade.

Figure 41: Projected Increase in Ontario's Population by Age Group, 2008 to 2018

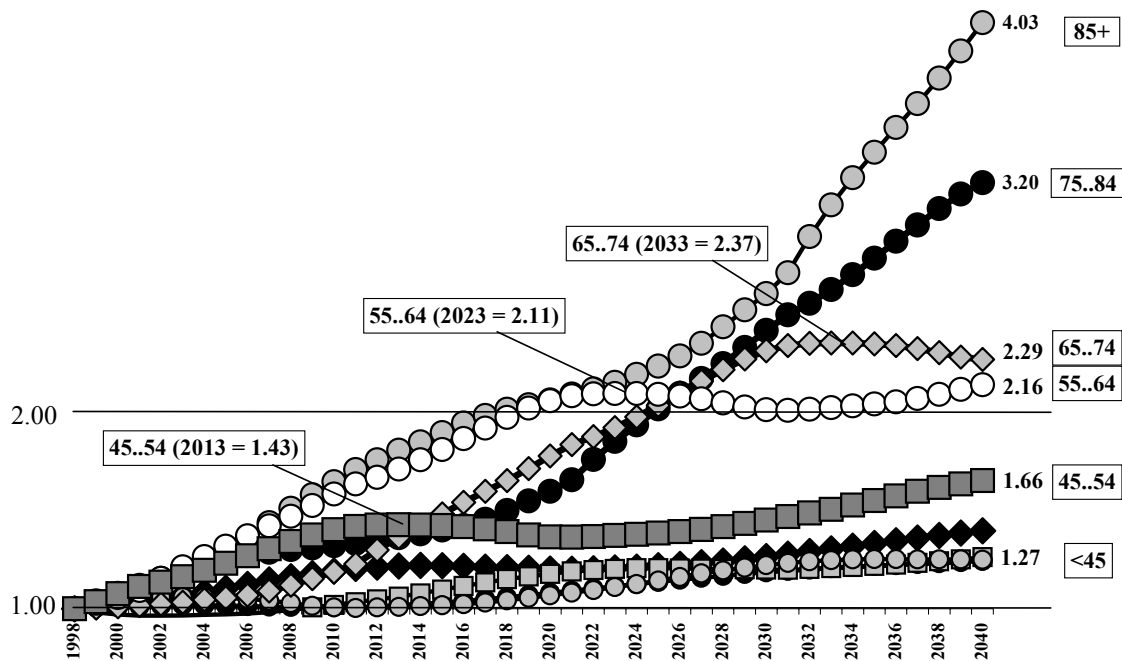


The aging of the baby boom, and the growth in the other age groups, can be shown on a comparative basis by using growth indices, where the number of people in an age group in any future year is divided by the number of people in the age group in 1998 (Figure 42). When a growth index has a value of 1.00 it means that there are the same number of people in the age group in the year under consideration as there were in 1998: when the value is 2.00, it means that there are twice as many, indicating a 100% increase in the number of people in the age group. The growth of the province's population from 11.4 million to 18.2 million from 1998 to 2040 is a 59% increase: there will be 1.59 people in Ontario in 2040 for every one there was in 1998.

As Figure 42 shows, during the 1998 to 2001 period, the 45 to 54 age group will be the third most rapidly growing age group (after the 85 plus and the 55 to 64 age groups). The number of people in this age group will continue to increase significantly until 2013, when it will have 1.43 times as many (43% more) people as it had in 1998: its rapid growth period will be from now until 2013. By 2010, today's 33 to 42 year olds (the big bulge of the baby boom) will have all aged into the 45 to 54 age group: after that, only migration will offset what otherwise would be a decline in the age group, as the number of boomers aging out of it will be larger than the number of post boomers aging into it. The number of people in the 45 to 54 age group will again increase after 2020, once all of the boomers have aged out of it, and migration continues: in 2040, there will be 1.66 times (66% more) the number of people in this age group as there were in 1998.

From 2003 to 2011 the 55 to 64 age group will experience the second most rapid increase, and from 1998 to 2024 the second greatest increase, of all age groups. This is the result of the first of the baby boomers aging into the age group by 2002, and all of them reaching it by 2024. In 2023, there will be 2.11 times the number of 55 to 64 year olds in Ontario as there were in 1998. After 2024, most of the boomers will have had their 65th birthday, and aged out of this age group. As a result, it will grow slowly during the remainder of the projection period, with its 2040 population being 2.16 times (116%) larger than it was in 1998. The period from 2002 to 2024 will be when markets driven by life cycle demand of the 55 to 64 age group will experience significant growth.

Figure 42: Population Growth By Age Group, Ontario, 1998 to 2040 (1998=1.00)



The aging of the baby boom will bring the first of the baby boomers to the 65 to 74 age group by 2012: the impact will be demonstrated by a significant increase in the growth rate of this age group from 2011 to 2033. However, the growth in the number of people aged 65 to 74 will start to accelerate earlier, in 2005. The reason for this “early start” is the fact that the baby boom – but not the post war part of it – actually began in 1940. The number of births in Canada remained relatively constant in the 240,000 to 265,000 births per year in the 1920s, and 237,000 to 250,000 per year in the 1930s. In 1940, there were 252,000 births in Canada, the largest number since 1923. In 1941, there 263,000 births, and in 1942, there were 282,000, the record number for Canada to that date. In 1943, 1944, and 1945, new records were established each year, with 1945’s 300,000 births being 25% greater than the 238,000 births of 1939. While the number of births each year continued to increase until 1959, the war babies were, in fact, the front edge of the baby boom. It is from these babies that rock and roll came, giving the world Eric Clapton, Mick Jagger, Tina Turner, Cher, Neil Young, Van Morrison, Ry Cooder and Joni Mitchell. The icons of the post war baby boomers were born before it.

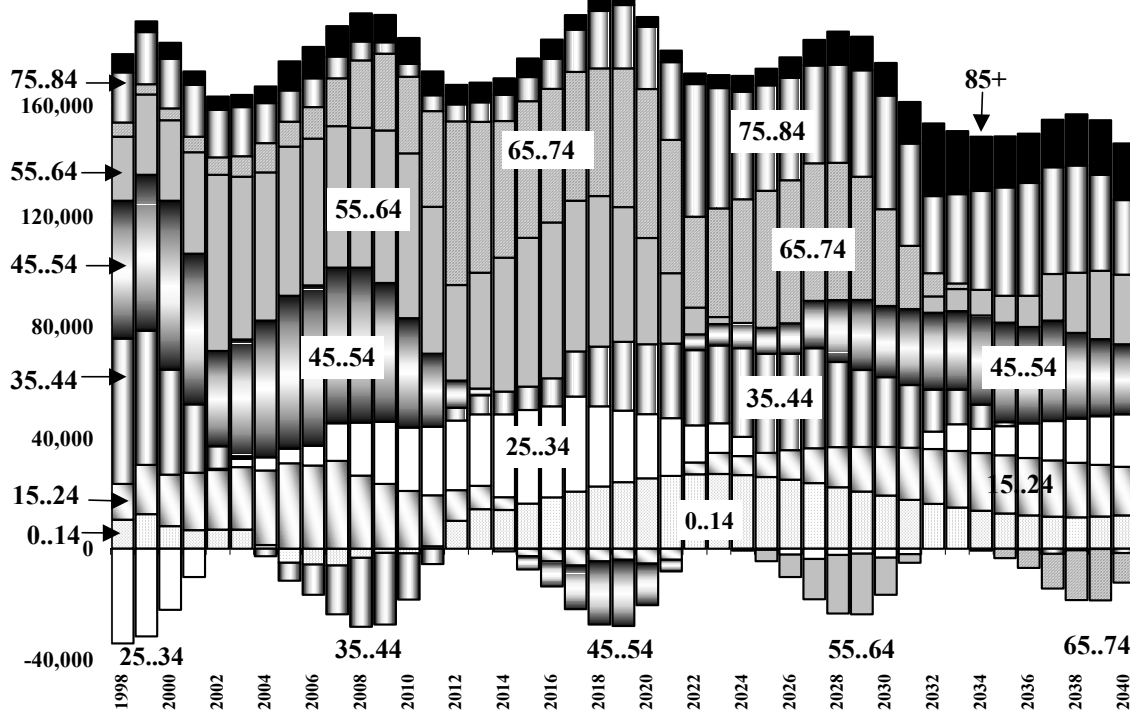
The 65 to 74 age group will have the second largest increase (after the 85 plus age group, and tied with the 75 to 84 age group) over the 1998 to 2030 period, with there being 2.45 people aged 65 to 74 in 2030 for every one that there was in 1998. The age group will grow strongly throughout the 2010 to 2030 period, as the last of the boomers (those born in 1966) will not have their 65th birthday until 2031: after this date the size of the age group will decline slightly as the boomers aging out of it will exceed the number of people aging into it. By 2040, there will be 2.29 people in this age group for every one there was in 1998.

In its turn, the 75 to 84 age group will experience its most rapid growth from 2016 on, with the first of the boomers reaching it by 2021, and hence speeding its rate of increase, to reach 3.2 times its size (a 220% increase) by 2040. This age group will continue to increase in size until 2043, when all of the boomers will have reached it, and then it too will decline, the result of the aging, and increasingly the mortality of the boomers.

And, as would be expected, the 85 plus age group experiences an acceleration in its growth in 2026, not as a result of the baby boomers reaching this age, but as a result of the war babies reaching age 85: the really big growth in the 85 plus population will start in 2031, when the first of today's 53 year olds has their 85th birthday. Note, however, that the population 85 and older grows both significantly and continuously throughout the projection period, surpassing the (percentage) growth of every other age group after 2007. This is the result of three factors. The first is the long life expectancy of today's population, which means that a large proportion of today's population can anticipate having an 85th birthday. The second factor is that there were many more births in the 1912 to 1939 period than there were in the preceding decades, so there are more people in every corresponding under 85 age group today than there were in the past: there are more people to benefit of long life expectancies. The third factor is that there are very few people in this age group today, so that even small increases in numbers means large percentage increases.

This final point turns us to consideration of the absolute increment of change each year (Figure 43). In 1998, the three age groups which had the largest increase in size were the 35 to 44 age group (52,400 more people primarily the result of migration and the aging of the last of the boomers), and the 45 to 54 age group (49,800 more people primarily the result of the aging of the front edge of the boomers). The number of people in the 25 to 34 age group declined by 34,100 people as a result of the aging of the boomers out of this age group.

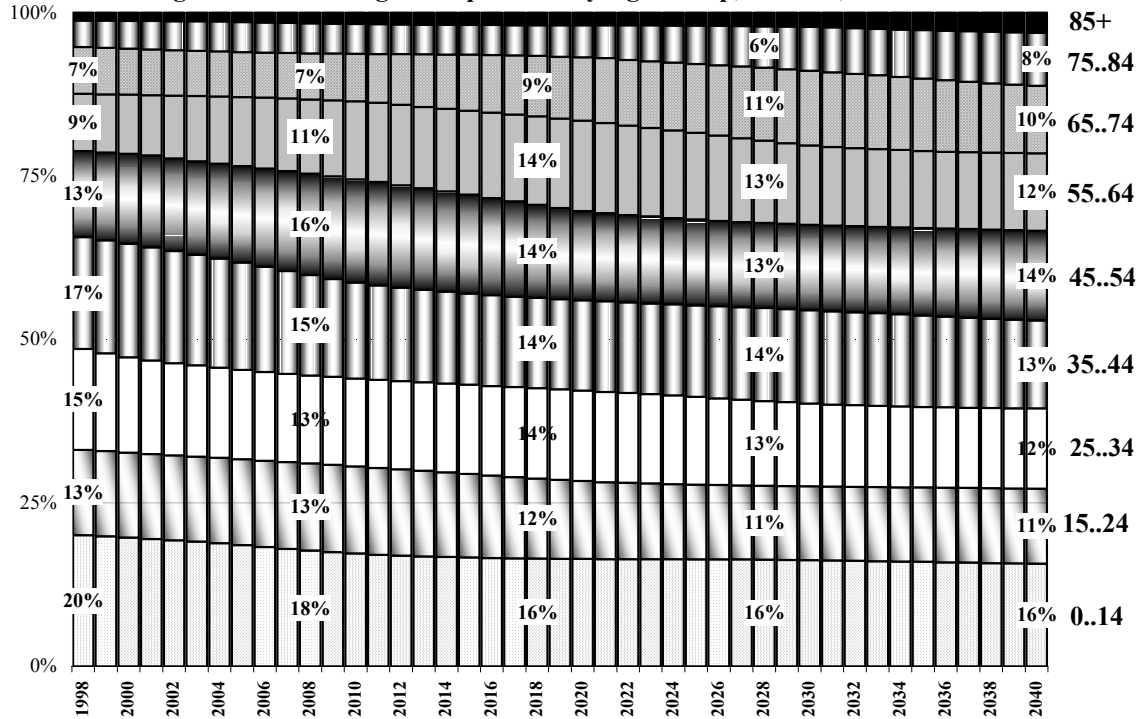
Figure 43: Projected Population Growth By Age Group, Ontario, 1998 to 2040



During the first decade of the next century, the age groups that will experience the largest absolute increases will be the 45 to 54 age group (adding an average of 51,700 people per year), the 55 to 64 age group (adding an average of 50,400 people per year), and the 15 to 24 age group (adding an average of 25,300 people per year). In the second decade, the three age groups with the largest absolute increases will be ten years older than in the first decade. The 55 to 64 age group will increase by an average of 50,400 per year, the 65 to 74 age group by 46,500 per year, and the 25 to 34 age group by 28,400 per year. In the third decade (from 2020 to 2029), the

growth will again shift up by ten years, with the 65 to 74 age group adding an average of 46,300 people per year, the 75 to 84 age group adding 36,500, and the 35 to 44 age group adding 30,400 per year. And finally, in the 2030 to 2039 decade, the largest average increase will be in the 75 to 84 age group (36,502 per year), followed by the 45 to 54 age group (30,717 people per year), and then the 15 to 24 age group (19,797 per year). The 85 plus age group will add an average of 18,679 people per year during this period: if life expectancies increase by more than is currently projected, this oldest age group could replace the 15 to 24 age group in terms of share of growth in the fourth decade of the projection period.

Figure 44: Percentage of Population By Age Group, Ontario, 1998 to 2040



The focus on significant rates of change in the number of people in specific age groups does not mean that there will be rapid change in the age composition of the province's population (Figure 44). While the 65 and older population will increase its share of the province's population by 9.1% over the next forty years, from 12.4% in 1998 to 21.5% in 2040, the percent of the population in the working age groups will decline by only 4.7%, from 67.5% of the population being between the ages of 15 and 64 in 1998 to 62.8% in 2040. The other 4.4% of the increase in the share of the older population comes from the decline in the younger population's share, from 20.1% in 1998 to 15.7% in 2040. Every age group under the age of 45 will decline as a share of the population during the next 40 years. Following the aging of the baby boom, the 45 to 54 age group's share will increase from 13% in 1998 to 16% in 2008, the 55 to 64 age group's share from 9% in 1998 to 14% in 2018, and the 65 to 74 age groups share from 7% to 11% in 2028. The 75 to 84 age group's share will double from 4% in 1998 to 8% in 2038.

XII. Conclusion

The picture that the population projection paints for the future of Ontario is one of a growing and aging population. Given its current relatively young age profile, and the youth of the migrants to Ontario, the aging will be a gradual process, with the issues associated with an aging population increasing steadily from 1998 on, but only becoming major after 2021.

The next quarter century in Ontario will be characterized by the growth first of the 45 to 54, then the 55 to 64, then the 65 to 74 age group, and finally the 75 to 84 age group, with the base of the demographic tree expanding, through net inter-provincial and international migration and the resulting natural increase, to help support its increasing growth in the upper branches.

The pattern of aging shown for Ontario's population will occur whether or not there is migration: adding 6.8 million people to the province's population over the next forty years will not halt the aging of the 11.4 million who already reside in the province. The future age structure of the province's population will be dominated by the aging of the 3.7 million Ontario residents currently in the 32 to 51 age group – the baby boom generation. The assumption of stabilizing mortality rates will likely cause an under-projection of the number of people in the older age groups, as mortality rates will likely continue to fall. However, as was noted earlier, the continued decline is likely to be marginal, and hence will have only a minor impact compared to that of the aging of the baby boom generation.

The relative magnitude of the issues of aging in the overall range of demographic issues will be determined by the extent of migration to the province. The lower the levels of net inter-provincial and net international migration to the province, the greater will be the impact of aging.

In closing, it must be repeated that this projection addresses long run trends in the province's population. It does not attempt to project cycles, and their turning points, in the province's economy in the future. Rather it looks at the average pattern that will prevail over longer periods of time. As such, the projections will not exactly match the size or composition of the province's population in any one year: on average, however, unless there are dramatic changes in the fundamental character of not only the province, but of the other provinces and countries where migrants originate, the projection will provide a valid basis for long range planning in Ontario.

Endnotes:

¹ Statistics Canada estimate of Ontario's 1998 population is 11,404,800 (Statistics Canada, The Daily, September 24, 1998). Historical data for Ontario's population are from Statistics Canada's Annual Demographic Statistics and Census of Canada publications for referenced years. Historical population estimates for previous years will be above the values reported in the Census of Canada, as population estimates are adjusted upwards to account for people missed in the census count, which is referred to as adjusting for the Census undercount.

² For a discussion of economic conditions in the regions of Canada over the past decades see A Decade of Jobs and Pay in Canada: A Perspective on Canada's National and Regional Economies (The Urban Futures Institute, March 1999).

³ The mode, or most frequently occurring age.

⁴ The mean age. There are two reasons why the average age of women was older than that for men: first, there are more male babies than female babies, pulling down the average age for males; second, women have longer life expectancies, pulling up the average age for females.

⁵ The median age.

⁶ For a discussion of changes in life expectancy in Canada, see What Can You Expect? Life Expectancy in Canada, 1921 to 2021 (The Urban Futures Institute, July 1998).

⁷ Age group and sex specific mortality rate projection prepared by The Urban Futures Institute.

⁸ Strictly speaking, migration is comprised of people moving between regions within a province, between provinces, and between countries. In this context, migration is limited to inter-provincial migration and international migration.

⁹ Immigration includes all persons entering Canada as permanent residents, including refugees.

¹⁰ For further discussion of the demographics of immigration, see Immigration to Canada: Youth Tonic for an Aging Population (The Urban Futures Institute, July 1997) and Just Numbers: Demographic Change and Immigration in Canada's Future (The Urban Futures Institute, March 1998).

Appendix to

**Ontario's Population in the Next Four Decades:
Eighteen Million Strong and Growing**

**The Urban Futures Institute
Baseline Population Projection For
The Province of Ontario
By Age Group and Sex**

**Ontario's Population in the Next Four Decades:
Eighteen Million Strong and Growing**

**August 1999
Appendix Page 40**

Male	1998		1999		2000		2001		2002	
0..4	377,000	6.7%	374,000	6.6%	368,000	6.4%	364,000	6.2%	363,000	6.1%
5..9	405,000	7.2%	408,000	7.2%	410,000	7.1%	410,000	7.0%	405,000	6.8%
10..14	392,000	7.0%	399,000	7.0%	406,000	7.0%	415,000	7.1%	423,000	7.1%
15..19	381,000	6.8%	387,000	6.8%	394,000	6.8%	402,000	6.8%	409,000	6.9%
20..24	380,000	6.8%	383,000	6.7%	385,000	6.7%	389,000	6.6%	393,000	6.6%
25..29	408,000	7.3%	406,000	7.1%	406,000	7.0%	405,000	6.9%	407,000	6.8%
30..34	474,000	8.4%	459,000	8.1%	449,000	7.8%	445,000	7.6%	444,000	7.5%
35..39	511,000	9.1%	524,000	9.2%	529,000	9.1%	526,000	9.0%	517,000	8.7%
40..44	457,000	8.1%	471,000	8.3%	486,000	8.4%	503,000	8.6%	517,000	8.7%
45..49	398,000	7.1%	408,000	7.2%	421,000	7.3%	434,000	7.4%	450,000	7.6%
50..54	344,000	6.1%	361,000	6.3%	378,000	6.5%	391,000	6.7%	392,000	6.6%
55..59	264,000	4.7%	274,000	4.8%	284,000	4.9%	297,000	5.1%	320,000	5.4%
60..64	226,000	4.0%	230,000	4.0%	234,000	4.1%	239,000	4.1%	246,000	4.1%
65..69	209,000	3.7%	210,000	3.7%	211,000	3.6%	211,000	3.6%	212,000	3.6%
70..74	170,000	3.0%	173,000	3.0%	177,000	3.1%	181,000	3.1%	185,000	3.1%
75..79	119,000	2.1%	126,000	2.2%	130,000	2.2%	133,000	2.3%	136,000	2.3%
80..84	64,000	1.1%	65,000	1.1%	69,000	1.2%	74,000	1.3%	79,000	1.3%
85..89	31,000	0.5%	32,000	0.6%	34,000	0.6%	35,000	0.6%	36,000	0.6%
90 plus	11,000	0.2%	11,000	0.2%	12,000	0.2%	13,000	0.2%	14,000	0.2%
Total Males	5,620,000	100.0%	5,702,000	100.0%	5,784,000	100.0%	5,866,000	100.0%	5,949,000	100.0%
Female	1998		1999		2000		2001		2002	
0..4	360,000	6.2%	356,000	6.1%	352,000	5.9%	348,000	5.8%	347,000	5.7%
5..9	384,000	6.6%	388,000	6.6%	389,000	6.5%	389,000	6.5%	385,000	6.3%
10..14	370,000	6.4%	376,000	6.4%	383,000	6.5%	390,000	6.5%	398,000	6.5%
15..19	361,000	6.2%	367,000	6.3%	373,000	6.3%	380,000	6.3%	386,000	6.3%
20..24	367,000	6.4%	370,000	6.3%	372,000	6.3%	375,000	6.2%	380,000	6.2%
25..29	409,000	7.1%	406,000	6.9%	404,000	6.8%	402,000	6.7%	403,000	6.6%
30..34	473,000	8.2%	460,000	7.9%	451,000	7.6%	448,000	7.4%	447,000	7.3%
35..39	511,000	8.8%	521,000	8.9%	525,000	8.8%	522,000	8.7%	514,000	8.4%
40..44	468,000	8.1%	480,000	8.2%	492,000	8.3%	506,000	8.4%	517,000	8.5%
45..49	408,000	7.1%	420,000	7.2%	434,000	7.3%	447,000	7.4%	462,000	7.6%
50..54	351,000	6.1%	368,000	6.3%	386,000	6.5%	400,000	6.6%	403,000	6.6%
55..59	273,000	4.7%	283,000	4.8%	293,000	4.9%	306,000	5.1%	331,000	5.4%
60..64	237,000	4.1%	242,000	4.1%	246,000	4.1%	252,000	4.2%	260,000	4.3%
65..69	227,000	3.9%	228,000	3.9%	227,000	3.8%	227,000	3.8%	228,000	3.7%
70..74	211,000	3.6%	210,000	3.6%	211,000	3.5%	212,000	3.5%	213,000	3.5%
75..79	170,000	2.9%	179,000	3.1%	183,000	3.1%	186,000	3.1%	187,000	3.1%
80..84	107,000	1.8%	109,000	1.9%	115,000	1.9%	122,000	2.0%	130,000	2.1%
85..89	63,000	1.1%	66,000	1.1%	69,000	1.2%	71,000	1.2%	72,000	1.2%
90 plus	35,000	0.6%	34,000	0.6%	34,000	0.6%	35,000	0.6%	37,000	0.6%
Total Females	5,785,000	100.0%	5,862,000	100.0%	5,940,000	100.0%	6,020,000	100.0%	6,100,000	100.0%
Both Sexes	1998		1999		2000		2001		2002	
0..4	737,000	6.5%	730,000	6.3%	720,000	6.1%	711,000	6.0%	710,000	5.9%
5..9	789,000	6.9%	796,000	6.9%	799,000	6.8%	799,000	6.7%	791,000	6.6%
10..14	762,000	6.7%	775,000	6.7%	790,000	6.7%	805,000	6.8%	822,000	6.8%
15..19	742,000	6.5%	754,000	6.5%	768,000	6.6%	781,000	6.6%	795,000	6.6%
20..24	747,000	6.6%	753,000	6.5%	757,000	6.5%	765,000	6.4%	773,000	6.4%
25..29	817,000	7.2%	813,000	7.0%	810,000	6.9%	807,000	6.8%	810,000	6.7%
30..34	947,000	8.3%	920,000	8.0%	900,000	7.7%	893,000	7.5%	891,000	7.4%
35..39	1,022,000	9.0%	1,044,000	9.0%	1,054,000	9.0%	1,048,000	8.8%	1,031,000	8.6%
40..44	924,000	8.1%	951,000	8.2%	978,000	8.3%	1,009,000	8.5%	1,035,000	8.6%
45..49	806,000	7.1%	828,000	7.2%	855,000	7.3%	882,000	7.4%	912,000	7.6%
50..54	695,000	6.1%	729,000	6.3%	763,000	6.5%	791,000	6.7%	795,000	6.6%
55..59	536,000	4.7%	557,000	4.8%	577,000	4.9%	603,000	5.1%	651,000	5.4%
60..64	463,000	4.1%	472,000	4.1%	481,000	4.1%	491,000	4.1%	507,000	4.2%
65..69	437,000	3.8%	438,000	3.8%	438,000	3.7%	438,000	3.7%	440,000	3.7%
70..74	381,000	3.3%	383,000	3.3%	387,000	3.3%	393,000	3.3%	397,000	3.3%
75..79	289,000	2.5%	305,000	2.6%	313,000	2.7%	319,000	2.7%	324,000	2.7%
80..84	171,000	1.5%	174,000	1.5%	184,000	1.6%	196,000	1.7%	209,000	1.7%
85..89	94,000	0.8%	98,000	0.8%	103,000	0.9%	106,000	0.9%	108,000	0.9%
90 plus	46,000	0.4%	46,000	0.4%	46,000	0.4%	48,000	0.4%	51,000	0.4%
Total Both Sexes	11,405,000	100.0%	11,564,000	100.0%	11,724,000	100.0%	11,886,000	100.0%	12,049,000	100.0%
Summary	1998		1999		2000		2001		2002	
0..14	2,288,000	20.1%	2,301,000	19.9%	2,309,000	19.7%	2,315,000	19.5%	2,323,000	19.3%
15..24	1,489,000	13.1%	1,507,000	13.0%	1,525,000	13.0%	1,546,000	13.0%	1,568,000	13.0%
25..44	3,710,000	32.5%	3,728,000	32.2%	3,742,000	31.9%	3,757,000	31.6%	3,767,000	31.3%
45..64	2,500,000	21.9%	2,586,000	22.4%	2,676,000	22.8%	2,767,000	23.3%	2,865,000	23.8%
65+	1,418,000	12.4%	1,444,000	12.5%	1,471,000	12.6%	1,500,000	12.6%	1,529,000	12.7%
Dependency Ratio	1998		1999		2000		2001		2002	
Youth per 1000 15 to 64	297		294		291		287		283	
Elderly Per 1000 15 to 64	184		185		185		186		186	

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Male	2003		2004		2005		2010		2015	
0..4	364,000	6.0%	363,000	5.9%	363,000	5.9%	372,000	5.6%	392,000	5.6%
5..9	401,000	6.6%	397,000	6.5%	393,000	6.3%	390,000	5.9%	399,000	5.7%
10..14	431,000	7.1%	435,000	7.1%	437,000	7.1%	422,000	6.4%	421,000	6.0%
15..19	414,000	6.9%	422,000	6.9%	430,000	6.9%	463,000	7.0%	449,000	6.4%
20..24	399,000	6.6%	405,000	6.6%	413,000	6.7%	450,000	6.8%	484,000	6.9%
25..29	410,000	6.8%	414,000	6.8%	417,000	6.7%	447,000	6.8%	485,000	6.9%
30..34	444,000	7.4%	444,000	7.3%	444,000	7.2%	458,000	6.9%	490,000	7.0%
35..39	503,000	8.3%	489,000	8.0%	479,000	7.7%	477,000	7.2%	493,000	7.0%
40..44	532,000	8.8%	545,000	8.9%	550,000	8.9%	504,000	7.6%	503,000	7.1%
45..49	466,000	7.7%	481,000	7.9%	496,000	8.0%	561,000	8.5%	516,000	7.3%
50..54	398,000	6.6%	408,000	6.7%	421,000	6.8%	496,000	7.5%	560,000	8.0%
55..59	339,000	5.6%	356,000	5.8%	372,000	6.0%	415,000	6.3%	489,000	6.9%
60..64	256,000	4.2%	266,000	4.3%	276,000	4.4%	361,000	5.5%	404,000	5.7%
65..69	214,000	3.5%	218,000	3.6%	222,000	3.6%	262,000	4.0%	343,000	4.9%
70..74	187,000	3.1%	188,000	3.1%	189,000	3.0%	200,000	3.0%	237,000	3.4%
75..79	140,000	2.3%	143,000	2.3%	146,000	2.4%	158,000	2.4%	169,000	2.4%
80..84	84,000	1.4%	89,000	1.5%	92,000	1.5%	105,000	1.6%	115,000	1.6%
85..89	36,000	0.6%	37,000	0.6%	40,000	0.6%	54,000	0.8%	62,000	0.9%
90 plus	15,000	0.3%	16,000	0.3%	18,000	0.3%	22,000	0.3%	30,000	0.4%
Total Males	6,032,000	100.0%	6,115,000	100.0%	6,198,000	100.0%	6,616,000	100.0%	7,040,000	100.0%
Female	2003		2004		2005		2010		2015	
0..4	347,000	5.6%	347,000	5.5%	347,000	5.5%	355,000	5.3%	375,000	5.2%
5..9	381,000	6.2%	378,000	6.0%	374,000	5.9%	371,000	5.5%	380,000	5.3%
10..14	405,000	6.6%	410,000	6.5%	411,000	6.5%	399,000	5.9%	397,000	5.5%
15..19	391,000	6.3%	397,000	6.3%	405,000	6.4%	434,000	6.4%	423,000	5.9%
20..24	386,000	6.2%	393,000	6.3%	400,000	6.3%	433,000	6.4%	465,000	6.5%
25..29	404,000	6.5%	407,000	6.5%	410,000	6.5%	441,000	6.5%	477,000	6.7%
30..34	445,000	7.2%	444,000	7.1%	443,000	7.0%	452,000	6.7%	485,000	6.8%
35..39	502,000	8.1%	490,000	7.8%	482,000	7.6%	476,000	7.1%	488,000	6.8%
40..44	529,000	8.6%	540,000	8.6%	545,000	8.6%	504,000	7.5%	500,000	7.0%
45..49	476,000	7.7%	488,000	7.8%	500,000	7.9%	554,000	8.2%	514,000	7.2%
50..54	410,000	6.6%	422,000	6.7%	436,000	6.9%	502,000	7.4%	556,000	7.8%
55..59	350,000	5.7%	367,000	5.9%	385,000	6.1%	435,000	6.4%	501,000	7.0%
60..64	271,000	4.4%	281,000	4.5%	292,000	4.6%	381,000	5.6%	431,000	6.0%
65..69	231,000	3.7%	236,000	3.8%	240,000	3.8%	284,000	4.2%	371,000	5.2%
70..74	214,000	3.5%	214,000	3.4%	214,000	3.4%	227,000	3.4%	269,000	3.7%
75..79	188,000	3.0%	188,000	3.0%	189,000	3.0%	193,000	2.9%	205,000	2.9%
80..84	138,000	2.2%	145,000	2.3%	149,000	2.3%	154,000	2.3%	159,000	2.2%
85..89	73,000	1.2%	75,000	1.2%	79,000	1.2%	103,000	1.5%	107,000	1.5%
90 plus	39,000	0.6%	41,000	0.7%	43,000	0.7%	52,000	0.8%	67,000	0.9%
Total Females	6,181,000	100.0%	6,262,000	100.0%	6,343,000	100.0%	6,752,000	100.0%	7,168,000	100.0%
Both Sexes	2003		2004		2005		2010		2015	
0..4	711,000	5.8%	710,000	5.7%	710,000	5.7%	726,000	5.4%	767,000	5.4%
5..9	782,000	6.4%	775,000	6.3%	767,000	6.1%	760,000	5.7%	779,000	5.5%
10..14	836,000	6.8%	845,000	6.8%	849,000	6.8%	821,000	6.1%	817,000	5.8%
15..19	805,000	6.6%	819,000	6.6%	835,000	6.7%	897,000	6.7%	872,000	6.1%
20..24	785,000	6.4%	798,000	6.5%	813,000	6.5%	883,000	6.6%	948,000	6.7%
25..29	814,000	6.7%	821,000	6.6%	827,000	6.6%	888,000	6.6%	962,000	6.8%
30..34	889,000	7.3%	887,000	7.2%	886,000	7.1%	910,000	6.8%	976,000	6.9%
35..39	1,005,000	8.2%	979,000	7.9%	961,000	7.7%	953,000	7.1%	981,000	6.9%
40..44	1,061,000	8.7%	1,084,000	8.8%	1,095,000	8.7%	1,008,000	7.5%	1,003,000	7.1%
45..49	941,000	7.7%	968,000	7.8%	996,000	7.9%	1,115,000	8.3%	1,030,000	7.2%
50..54	808,000	6.6%	830,000	6.7%	857,000	6.8%	998,000	7.5%	1,116,000	7.9%
55..59	689,000	5.6%	723,000	5.8%	757,000	6.0%	850,000	6.4%	989,000	7.0%
60..64	527,000	4.3%	547,000	4.4%	567,000	4.5%	742,000	5.6%	834,000	5.9%
65..69	445,000	3.6%	453,000	3.7%	462,000	3.7%	546,000	4.1%	713,000	5.0%
70..74	400,000	3.3%	402,000	3.2%	403,000	3.2%	427,000	3.2%	506,000	3.6%
75..79	328,000	2.7%	331,000	2.7%	335,000	2.7%	350,000	2.6%	374,000	2.6%
80..84	222,000	1.8%	234,000	1.9%	241,000	1.9%	260,000	1.9%	274,000	1.9%
85..89	109,000	0.9%	112,000	0.9%	119,000	0.9%	157,000	1.2%	170,000	1.2%
90 plus	54,000	0.4%	57,000	0.5%	61,000	0.5%	74,000	0.6%	97,000	0.7%
Total Both Sexes	12,213,000	100.0%	12,377,000	100.0%	12,541,000	100.0%	13,367,000	100.0%	14,208,000	100.0%
Summary	2003		2004		2005		2010		2015	
0..14	2,329,000	19.1%	2,330,000	18.8%	2,326,000	18.5%	2,307,000	17.3%	2,363,000	16.6%
15..24	1,590,000	13.0%	1,617,000	13.1%	1,648,000	13.1%	1,780,000	13.3%	1,820,000	12.8%
25..44	3,769,000	30.9%	3,771,000	30.5%	3,769,000	30.1%	3,759,000	28.1%	3,922,000	27.6%
45..64	2,965,000	24.3%	3,068,000	24.8%	3,177,000	25.3%	3,705,000	27.7%	3,969,000	27.9%
65+	1,558,000	12.8%	1,589,000	12.8%	1,621,000	12.9%	1,814,000	13.6%	2,134,000	15.0%
Dependency Ratio	2003		2004		2005		2010		2015	
Youth per 1000 15 to 64	280		276		271		250		243	
Elderly Per 1000 15 to 64	187		188		189		196		220	

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Male	2020		2025		2030		2035		2040	
0..4	417,000	5.6%	436,000	5.5%	446,000	5.4%	453,000	5.2%	464,000	5.2%
5..9	421,000	5.6%	446,000	5.7%	467,000	5.6%	477,000	5.5%	485,000	5.4%
10..14	432,000	5.8%	454,000	5.8%	481,000	5.8%	502,000	5.8%	514,000	5.7%
15..19	449,000	6.0%	460,000	5.8%	484,000	5.8%	511,000	5.9%	533,000	5.9%
20..24	471,000	6.3%	471,000	6.0%	483,000	5.8%	508,000	5.9%	535,000	5.9%
25..29	520,000	7.0%	509,000	6.4%	510,000	6.2%	524,000	6.0%	549,000	6.1%
30..34	530,000	7.1%	567,000	7.2%	557,000	6.7%	560,000	6.5%	574,000	6.4%
35..39	526,000	7.0%	567,000	7.2%	605,000	7.3%	596,000	6.9%	600,000	6.7%
40..44	520,000	7.0%	554,000	7.0%	596,000	7.2%	634,000	7.3%	626,000	6.9%
45..49	516,000	6.9%	534,000	6.8%	568,000	6.8%	610,000	7.0%	648,000	7.2%
50..54	516,000	6.9%	517,000	6.5%	535,000	6.4%	569,000	6.6%	610,000	6.8%
55..59	551,000	7.4%	509,000	6.4%	510,000	6.1%	528,000	6.1%	561,000	6.2%
60..64	475,000	6.4%	536,000	6.8%	495,000	6.0%	496,000	5.7%	514,000	5.7%
65..69	384,000	5.1%	451,000	5.7%	509,000	6.1%	472,000	5.4%	474,000	5.3%
70..74	311,000	4.2%	350,000	4.4%	412,000	5.0%	466,000	5.4%	433,000	4.8%
75..79	202,000	2.7%	266,000	3.4%	300,000	3.6%	355,000	4.1%	402,000	4.5%
80..84	125,000	1.7%	151,000	1.9%	200,000	2.4%	228,000	2.6%	271,000	3.0%
85..89	69,000	0.9%	76,000	1.0%	93,000	1.1%	124,000	1.4%	143,000	1.6%
90 plus	36,000	0.5%	41,000	0.5%	46,000	0.6%	56,000	0.6%	75,000	0.8%
Total Males	7,470,000	100.0%	7,896,000	100.0%	8,298,000	100.0%	8,669,000	100.0%	9,010,000	100.0%
Female	2020		2025		2030		2035		2040	
0..4	398,000	5.2%	416,000	5.2%	426,000	5.0%	432,000	4.9%	443,000	4.8%
5..9	401,000	5.3%	425,000	5.3%	444,000	5.3%	455,000	5.2%	461,000	5.0%
10..14	407,000	5.4%	429,000	5.3%	454,000	5.4%	474,000	5.4%	485,000	5.3%
15..19	422,000	5.6%	433,000	5.4%	456,000	5.4%	482,000	5.5%	503,000	5.5%
20..24	455,000	6.0%	455,000	5.7%	467,000	5.5%	491,000	5.6%	518,000	5.6%
25..29	510,000	6.7%	502,000	6.3%	504,000	6.0%	517,000	5.9%	542,000	5.9%
30..34	523,000	6.9%	557,000	6.9%	551,000	6.5%	554,000	6.3%	569,000	6.2%
35..39	523,000	6.9%	561,000	7.0%	597,000	7.1%	592,000	6.7%	596,000	6.5%
40..44	512,000	6.7%	548,000	6.8%	587,000	7.0%	624,000	7.1%	619,000	6.8%
45..49	511,000	6.7%	523,000	6.5%	560,000	6.6%	599,000	6.8%	636,000	6.9%
50..54	517,000	6.8%	514,000	6.4%	527,000	6.2%	563,000	6.4%	603,000	6.6%
55..59	554,000	7.3%	516,000	6.4%	513,000	6.1%	526,000	6.0%	562,000	6.1%
60..64	495,000	6.5%	548,000	6.8%	511,000	6.1%	509,000	5.8%	522,000	5.7%
65..69	419,000	5.5%	481,000	6.0%	531,000	6.3%	497,000	5.6%	495,000	5.4%
70..74	350,000	4.6%	395,000	4.9%	454,000	5.4%	502,000	5.7%	470,000	5.1%
75..79	243,000	3.2%	317,000	3.9%	358,000	4.2%	412,000	4.7%	455,000	5.0%
80..84	170,000	2.2%	202,000	2.5%	264,000	3.1%	300,000	3.4%	345,000	3.8%
85..89	111,000	1.5%	120,000	1.5%	144,000	1.7%	189,000	2.1%	215,000	2.3%
90 plus	74,000	1.0%	77,000	1.0%	84,000	1.0%	99,000	1.1%	129,000	1.4%
Total Females	7,593,000	100.0%	8,021,000	100.0%	8,433,000	100.0%	8,817,000	100.0%	9,168,000	100.0%
Both Sexes	2020		2025		2030		2035		2040	
0..4	814,000	5.4%	853,000	5.4%	872,000	5.2%	885,000	5.1%	907,000	5.0%
5..9	822,000	5.5%	871,000	5.5%	911,000	5.4%	932,000	5.3%	946,000	5.2%
10..14	839,000	5.6%	883,000	5.5%	935,000	5.6%	977,000	5.6%	999,000	5.5%
15..19	871,000	5.8%	894,000	5.6%	940,000	5.6%	993,000	5.7%	1,036,000	5.7%
20..24	925,000	6.1%	926,000	5.8%	951,000	5.7%	999,000	5.7%	1,053,000	5.8%
25..29	1,030,000	6.8%	1,011,000	6.3%	1,014,000	6.1%	1,041,000	6.0%	1,091,000	6.0%
30..34	1,053,000	7.0%	1,124,000	7.1%	1,107,000	6.6%	1,114,000	6.4%	1,143,000	6.3%
35..39	1,049,000	7.0%	1,129,000	7.1%	1,202,000	7.2%	1,188,000	6.8%	1,196,000	6.6%
40..44	1,032,000	6.9%	1,102,000	6.9%	1,183,000	7.1%	1,258,000	7.2%	1,245,000	6.9%
45..49	1,027,000	6.8%	1,057,000	6.6%	1,128,000	6.7%	1,209,000	6.9%	1,284,000	7.1%
50..54	1,033,000	6.9%	1,031,000	6.5%	1,062,000	6.3%	1,132,000	6.5%	1,213,000	6.7%
55..59	1,106,000	7.3%	1,025,000	6.4%	1,023,000	6.1%	1,054,000	6.0%	1,123,000	6.2%
60..64	970,000	6.4%	1,083,000	6.8%	1,006,000	6.0%	1,005,000	5.7%	1,035,000	5.7%
65..69	802,000	5.3%	932,000	5.9%	1,041,000	6.2%	969,000	5.5%	968,000	5.3%
70..74	661,000	4.4%	745,000	4.7%	867,000	5.2%	968,000	5.5%	903,000	5.0%
75..79	445,000	3.0%	583,000	3.7%	658,000	3.9%	767,000	4.4%	857,000	4.7%
80..84	295,000	2.0%	353,000	2.2%	464,000	2.8%	527,000	3.0%	616,000	3.4%
85..89	180,000	1.2%	196,000	1.2%	237,000	1.4%	313,000	1.8%	358,000	2.0%
90 plus	110,000	0.7%	119,000	0.7%	130,000	0.8%	156,000	0.9%	204,000	1.1%
Total Both Sexes	15,063,000	100.0%	15,916,000	100.0%	16,732,000	100.0%	17,486,000	100.0%	18,178,000	100.0%
Summary	2020		2025		2030		2035		2040	
0..14	2,475,000	16.4%	2,607,000	16.4%	2,718,000	16.2%	2,794,000	16.0%	2,852,000	15.7%
15..24	1,796,000	11.9%	1,820,000	11.4%	1,891,000	11.3%	1,992,000	11.4%	2,089,000	11.5%
25..44	4,164,000	27.6%	4,366,000	27.4%	4,506,000	26.9%	4,601,000	26.3%	4,675,000	25.7%
45..64	4,136,000	27.5%	4,196,000	26.4%	4,219,000	25.2%	4,400,000	25.2%	4,655,000	25.6%
65+	2,493,000	16.5%	2,928,000	18.4%	3,397,000	20.3%	3,700,000	21.2%	3,906,000	21.5%
Dependency Ratio	2020		2025		2030		2035		2040	
Youth per 1000 15 to 64	245		251		256		254		250	
Elderly Per 1000 15 to 64	247		282		320		337		342	

The Urban Futures Institute and The Land Centre Publication Series on Housing Demand in British Columbia

This joint publication series of The Urban Futures Institute and The Land Centre focus on the 25 non-metropolitan regions of British Columbia (listed below). The reports were prepared to provide two sources of information about housing demand in these regions. First, they present demographically based projections of housing demand in each region for the period 1996 to 2021. Second, they provide background information on the housing stock and housing occupancy patterns in these regions, and how these changed over the 1991 to 1996 period. The preparation of these reports was funded in part by The Real Estate Foundation of British Columbia, whose assistance and support is gratefully acknowledged.

Report Number:

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| 1. Alberni-Clayoquot Regional District | 14. Kootenay Boundary Regional District |
| 2. Bulkley-Nechako Regional District | 15. Mount Waddington Regional District |
| 3. Cariboo Regional District | 16. Nanaimo Regional District |
| 4. Central Coast Regional District | 17. North Okanagan Regional District |
| 5. Central Kootenay Regional District | 18. Okanagan-Similkameen Regional District |
| 6. Central Okanagan Regional District | 19. Peace River Regional District |
| 7. Columbia-Shuswap Regional District | 20. Powell River Regional District |
| 8. Comox-Strathcona Regional District | 21. Skeena-Queen Charlotte Regional District |
| 9. Cowichan Valley Regional District | 22. Squamish-Lillooet Regional District |
| 10. East Kootenay Regional District | 23. Stikine Regional District |
| 11. Fort Nelson-Liard Regional District | 24. Sunshine Coast Regional District |
| 12. Fraser-Fort George Regional District | 25. Thompson-Nicola Regional District |
| 13. Kitimat-Stikine Regional District | |

The Urban Futures Institute and The Land Centre Publication Series on Population and Land Use Change in British Columbia

Research is currently under way on a number of topics related to population and land use in British Columbia. These joint publications of The Urban Futures Institute and The Land Centre explore the implications of population and land use change in the regions of BC.



Reports currently available at www.landcentre.ubc.ca:

- British Columbia's Empty Bedrooms: Occupancy of British Columbia's Housing Stock
- The Comparative Age Structure of BC's Regions
- The Labour Force in BC's Regions: From Dependency to Diversity
- Population Projections for the Central Okanagan Regional District and the Okanagan Basin, 1998 to 2040

Other reports coming soon:

- Exploding Myths: Migration in British Columbia by Regional District, 1991 to 1996
- Changing Age Structure and Aging of British Columbia's Regions, 1991 to 1996

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