Queensland Small Area Populations (ABS)

This report outlines the method used for producing population and enrolment projections for all Census Collection Districts (CDs) in Queensland, spanning from 2001 to mid-2007.

Projection Method

The technique employed for the projections was the cohort-component method, widely accepted as the best way of producing age/sex population projections. It involved applying fertility, mortality and interstate migration rates and overseas migration levels by age and sex to the base population to produce a projected population, which then became the base for projecting the next year. This cycle was repeated until the projection horizon was reached.

A three-tiered approach was taken in projecting resident population aged 18 years and over for all Statistical Local Areas (SLAs) and CDs in Queensland.

1. The Queensland population was projected by age and sex.
2. The population of all Queensland SLAs was projected by age and sex (constrained to 1).
3. The SLA projections were split into CDs.

Finally, the projections were grouped into persons aged 18 years and over, and aligned with enrolment data to produce projected enrolments.

1. State Projections

The base population for the Queensland cohort-component projections was preliminary age/sex Estimated Resident Population (ERP) as at 30 June 2002, incorporating final results from the 2001 Census. Assumptions for the projections were based on both short and long-term trends for each component of population change. The fertility (low : Aust 2008-51 TFR=1.60) and overseas migration (high : Aust Net=110,000) and mortality assumptions were from the latest *Population Projections of Australia, States and Territories 1999-2101* (ABS Cat. 3222.0). The fertility and mortality assumptions were adjusted to reflect the latest years' birth and death registration data. Interstate migration assumptions for Qld declined from 32,000 in 2002-03 to 25,000 in 2004-05 and remained constant thereafter.

2. SLA Projections

The base population for the SLA cohort-component projections was final 30 June 2001 SLA age/sex ERP, converted to the latest SLA boundaries (ASGC2002). The fertility, mortality and migration assumptions were based on mean SLA-specific levels observed over the last five years, constrained to the assumed State levels and trends. The net migration assumptions were adjusted if necessary to prevent any SLAs declining too rapidly. SLA age/sex migration profiles were derived from 1996 and 2001 Census data on usual residence one year ago. Preliminary 30 June 2002 SLA ERP totals were used in the calculation of 2001/02 migration assumptions.

The ABS regularly collects demographic information down to the SLA level, which means that SLA projections (in contrast to smaller areas) are firmly based on a series of known data. At each yearly cycle in this process, the SLA projections were constrained to sum to the State projection, helping to produce more reliable SLA results. SLAs with ERP under 500 persons were held constant for the projection duration as assumptions for the accompanying tiny age/sex cells are too unreliable.

3. CD Projections

The basis for calculating CD projections was an SLA to CD (of best fit) concordance, updated from the 2001 Census version to reflect any SLA boundary changes in ASGC2002. Differing growth rates of CDs within SLAs were incorporated using available ABS CD building approval data from 2001-02, resulting in SLA to CD concordance split factors extrapolated through to the year 2008. These were applied to the SLA projections to give CD projections, then adjusted to reflect projected enrolments as at 31 July each year.

The lack of demographic data collected regularly at CD level makes it necessary to use such a conversion method as outlined above. While the process is quite complex, it should be reiterated that the basic concept of splitting SLAs to CD level cannot be expected to give projections as reliable as those for SLAs. However, as the end product will be aggregates of large numbers of CDs there is a high likelihood that any random errors or inconsistencies will be statistically offset in the aggregation process.

Boundaries

CD boundaries are from the *Australian Standard Geographical Classification (ASGC), 2001 Edition* (ABS Cat. 1216.0), corresponding to those used for the 2001 Census. SLA boundaries are from the subsequent ASGC version, the *2002 Edition*.

Disclaimer

It is important to recognise that the projection results given in this report essentially reflect the assumptions made about future fertility, mortality and migration trends. While these assumptions are formulated on the basis of an objective assessment of demographic trends over the past decade and their likely future dynamics, there can be no certainty that they will be realised.

ABS takes responsibility for the method employed, however in accordance with ABS policy regarding small area population projections, the assumptions used are the final responsibility of the client, and the projections are not official ABS population statistics.
The projections may be referred to as "...projections prepared by the ABS according to assumptions reflecting prevailing trends agreed to by the Australian Electoral Commission...".

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