DemoGraphic

Urban, suburban and rural household density trends

AUSTRALIAN POPULATION STUDIES
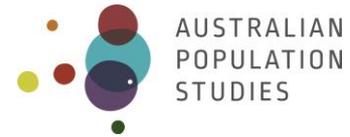
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Census data may be used to illuminate changing patterns in urban and regional Australia, to inform policy development and to help us to better understand our surroundings. When visualised, census data can provide a straightforward means for planners and decision-makers both to identify spatial and temporal patterns and to consider the implications of those patterns for the future (Coffee, Lange and Baker 2016). The visual presentation of census data can also allow citizens to better interpret their lived experience in Australia's capital cities and suburbs.

This DemoGraphic examines change over time in numbers of households and household density for the entirety of Australia. Dwelling density is used rather than population density as the former shows not just *where* we are growing, but *how* we are growing. An investigation into household locations reveals trends in the preferred built forms of Australian life.

The methods used in this analysis for understanding changes in household density are based on Kolko (2015a, 2015b and 2016), who presents a method for analysing the share of households that live in census geographies with different densities. Kolko's density classifications were developed via an online survey in the United States that asked people to describe where they lived within the constructs of 'rural', 'suburban' or 'urban'. Analysis of the survey results found the best predictor of how people describe where they live is household density. Kolko (2016) used these survey results to collapse households in the United States (US) into eight density categories. Converted from households per square mile to households per square kilometre (km), these eight categories are: 0–40; 41–193; 194–386; 387–578; 579–854; 855–1,930; 1,931–3,861; and 3,862+ households per square km.

The low end of these density categories are largely congruent with the rural living and rural fringe rural residential development densities found in Australia. In *Planning Australia: An Overview of Urban and Regional Planning*, Sinclair and Bunker (2007) characterise household densities in the range of 100 to 250 households per square km, the lower two suburban categories presented here, as rural fringe development. They characterise household densities in the range of 1 to 100 households per square km as rural living, a notion congruent with the rural and low-density suburban household densities presented in this study.

Extending Kolko's approach to the Australian context, using data from the Australian Bureau of Statistics (ABS) Census of Population and Housing for 2001, 2006, 2011 and 2016, household counts by Australian Statistical Geography Standard Statistical Area 2 (SA2) are presented in Figure 1.
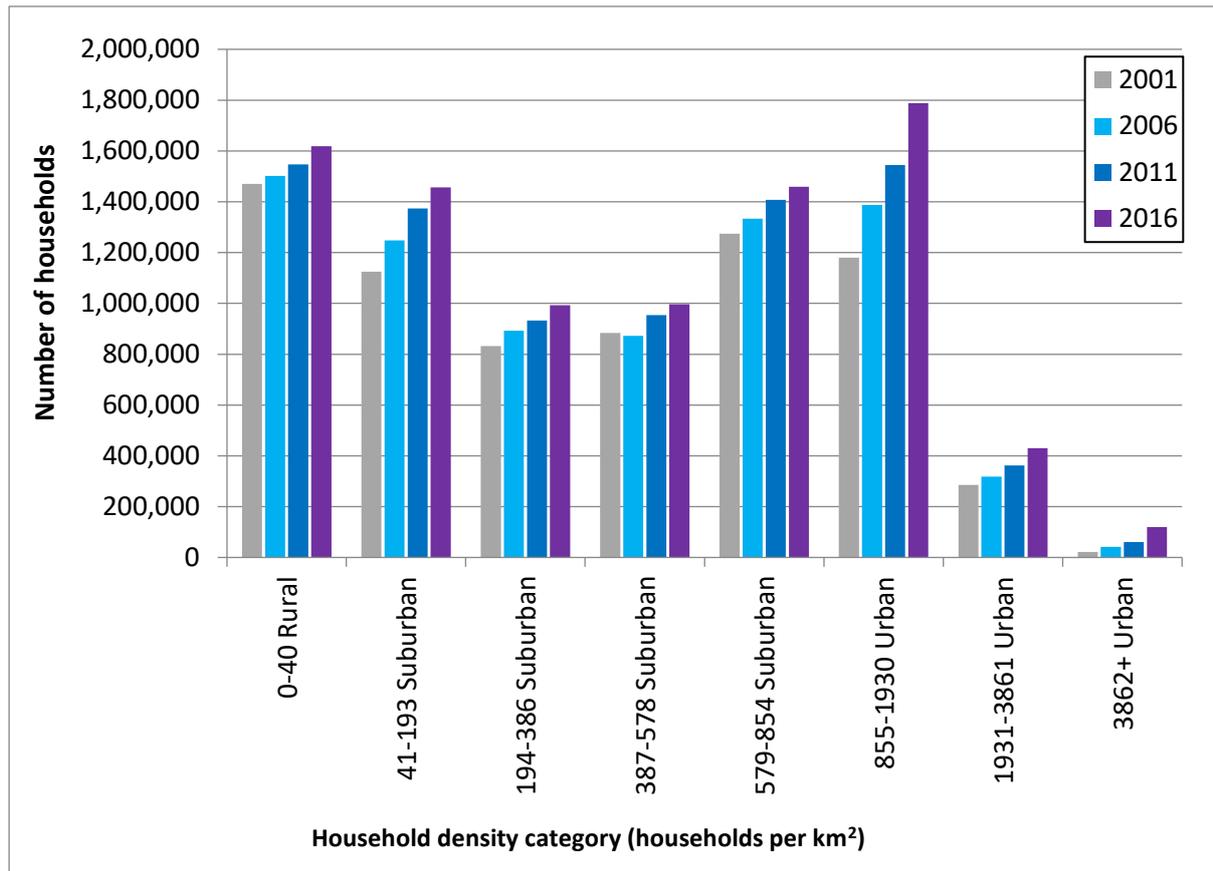
Figure 1: Density of Australian households by SA2 area, 2001–2016
Source: Calculated from ABS 2001, 2006, 2011 and 2016 Census data.

These results show a broad pattern of growth across all rural, suburban and urban density categories in Australia. The only exception is the second highest suburban density category, which shows a decrease in households from 2001–2006. These results suggest the variety of residential choices from rural to high density urban each hold appeal to various segments of Australia's growing population.

Insight may also be gained by considering the spatial pattern of these results. McGuirk and Argent (2011) noted that urban expansion, peri-urban growth and population increases above the national average were occurring in Australia's four mega-metropolitan areas: Geelong–Melbourne–Mornington Peninsula in Victoria; Sunshine Coast–Brisbane–Gold Coast in south-east Queensland; Newcastle–Sydney–Wollongong in New South Wales; and Wanneroo–Perth–Mandurah in Western Australia. Taking advantage of the consistent spatial units for the 2006, 2011 and 2016 censuses available in the ABS 2016 Time Series Profile (ABS 2017), we can illustrate how the changes described by McGuirk and Argent (2011) can occur over a relatively short period of time.

Figure 2 presents the household densities shown in Figure 1 for two time periods, 2006 and 2016, combined into just three categories: rural (0–40 households per square km); suburban (41–854 households per square km); and urban (855+ households per square km). Results are presented for two of Australia's mega-metropolitan areas: Geelong–Melbourne–Mornington Peninsula in Victoria; and Sunshine Coast–Brisbane–Gold Coast in south-east Queensland.
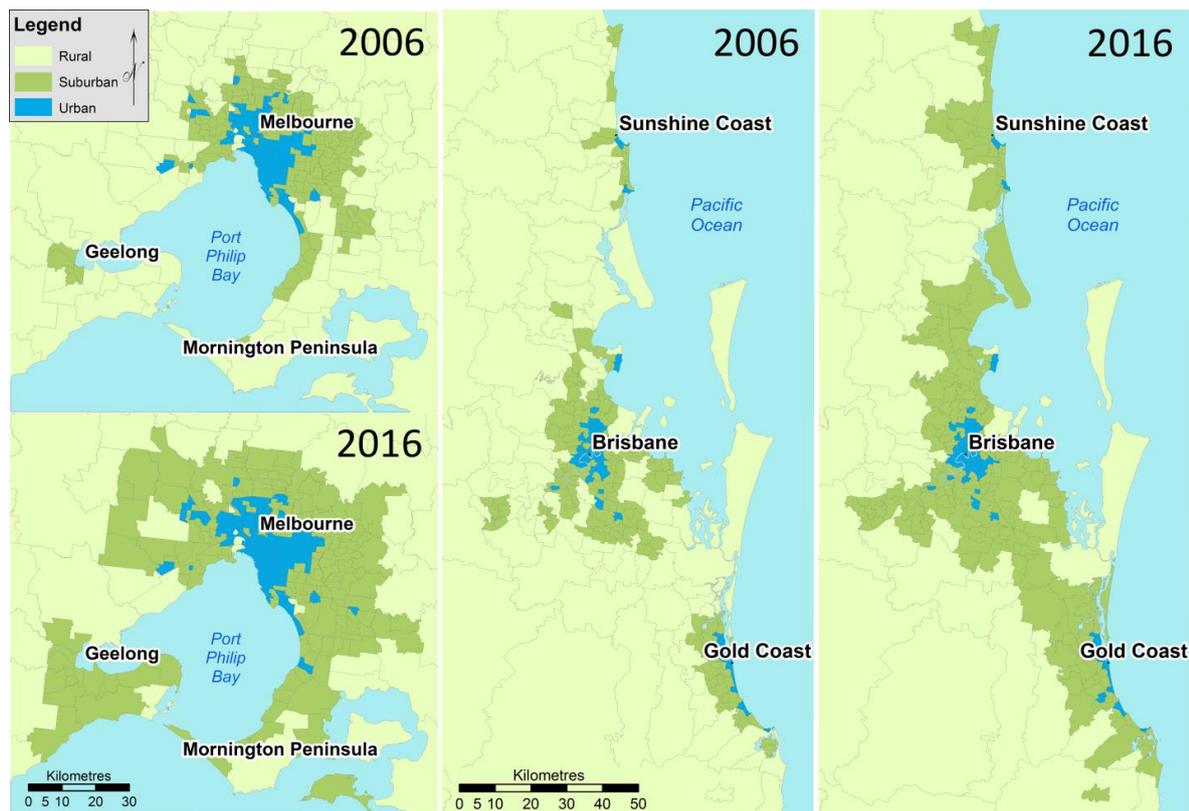
Figure 2: Neighbourhood density categories of Australian households 2006 and 2016 in the mega-metro regions of Geelong–Melbourne–Mornington Peninsula and Sunshine Coast–Brisbane–Gold Coast

The mapped results in Figure 2 support Coffee, Lange and Baker (2016), who found that populations were increasing beyond the middle-ring suburbs of cities and towards the outlying suburban fringe. The results are congruent also with Spencer, Gill and Schmahmann (2015, p. 1), who observed that a 'significant proportion' of the population of Australia's three largest cities live at low suburban densities. They further observed: 'Australia's reputation as … highly urbanised perhaps belies the predominance of low density development across Australia's metropolitan areas. Australian cities … feature pockets of high density among a background of low density' (Spencer, Gill and Schmahmann 2015, p. 1). ABS 2016 Census data show that while urban areas are expanding rapidly in terms of population and households, suburban areas are expanding rapidly in terms of space. It appears Australia is rapidly becoming a suburban nation.

There is a continuing need to develop and refine our understanding of the processes, drivers and consequences of urban growth and expansion. Suburbanisation in Australia and other changes in household density can be linked with population growth and other demographic trends such as movement of particular age cohorts, patterns of socioeconomic advantage and disadvantage, the location of housing and employment and lags in middle and outer ring infrastructure provision (O'Neill 2010; McGuirk and Argent 2011). They are associated also with impacts on environmental quality, agricultural production, climate change vulnerability and resilience.

The results presented in this paper also raise the issue of mega-city governance put forward by Steele et al. (2011). Further, the considerable expansion of suburban development between 2006 and 2016 combined with decreasing housing affordability over the same time period suggests that the issue of housing affordability will not be solved by supply alone.

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