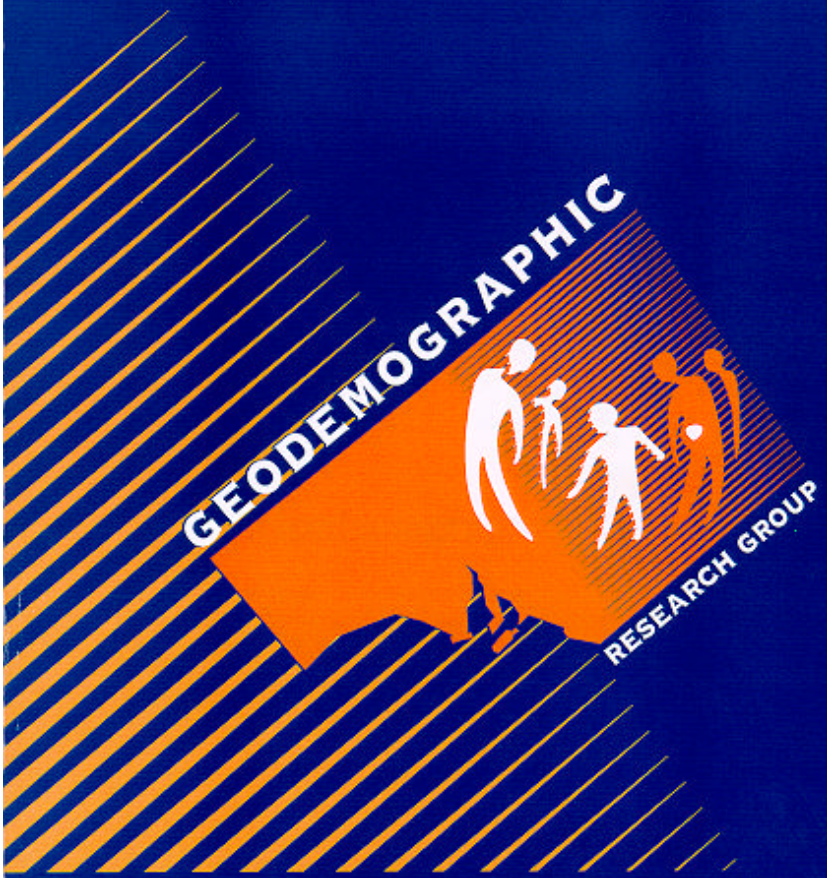
Population Trends in Adelaide's Peri-Urban Region



DEPARTMENT FOR TRANSPORT, URBAN PLANNING AND THE ARTS
Planning SA

THE UNIVERSITY OF ADELAIDE

Population Trends in Adelaide's Peri-Urban Region

by

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Prepared under the Research Program of the

Geodemographic Research Group

August 1997

The views expressed in this report are those of the author and do not necessarily represent those of the Geodemographic Research Group or its constituent organisations, the Department for Transport, Urban Planning and the Arts and the University of Adelaide.

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FOREWORD

The Geodemographic Research Group (GRG) was established in 1995 as a joint initiative of the former Department of Housing and Urban Development and the University of Adelaide. Responsibility for this initiative was transferred to the new Department for Transport, Urban Planning and the Arts in October, 1997. Its objective is to undertake collaborative, applied research on demographic issues relevant to the responsibilities of the Department and of interest to the University.

The Memorandum of Understanding between the Department and the University identifies two priority areas for research:

- the analysis of emerging trends in migration, family formation, mortality and ageing, and their implications; and
- providing support for the Department for Transport, Urban Planning and the Arts in its work on population monitoring and forecasting.

Since its inception the GRG has initiated a number of projects including development of a Population Wallchart and a series of reports on various aspects of population change in South Australia. Details of the Research Program are set out in the 1996 Annual Report of the GRG, available on request from the Information and Data Analysis Branch of the Department for Transport, Urban Planning and the Arts.

This report focuses on the topic of population trends in Adelaide's peri-urban region - defined here to encompass those areas within about 100 km of the Adelaide Central Business District (CBD) but which lie outside the boundary of the Adelaide Statistical Division. Since the 1970s the peri-urban area has been the fastest growing region in South Australia, mirroring a similar pattern elsewhere in Australia and in many overseas countries. An understanding of the causes and consequences of this growth is vital to informed planning both for Government and for private business. This report aims to contribute to this understanding by examining the patterns and dynamics of this growth.

The five yearly Census of Population and Housing provides the fundamental source of information on population trends and much of this report is based on analysis of Census data. Initial data from the 1996 Census have recently been released and these provide an up-to-date picture of the magnitude and spatial distribution of growth in the region. To set these observations in context, the report also examines trends over the longer term drawing on data from successive Censuses since 1961. These data provide a clear picture of the changing pattern of population growth and the role that the peri-urban region plays in the State's settlement pattern. However, they provide little information on the motives and attitudes of people moving to the region. To supplement the picture this report draws on data from field surveys in three contrasting locations within the region.

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1. INTRODUCTION

1.1 Background

Population growth in the peri-urban regions of Australia's metropolitan centres has been rapid since the population turnaround of the 1970s, and has continued to the 1990s, with a distinctive pattern of growth of which in-migration is the principal component. Although not at the scale occurring in the United States, where it is argued that nearly 60 million people are currently residing in peri-urban areas (Davis, Nelson & Deuker, 1994, p.45), the peri-urban fringe is nonetheless a growing component of the Australian landscape. Renewed interest is being shown in response to the scale and spatial concentration of population growth in these regions. Growth is largely being driven by in-migration from the metropolitan area, but also from within the region itself, from other rural locations, and from interstate and overseas. As a result, a range of problems associated with population growth pressures are beginning to occur.

1.2 Adelaide's peri-urban region

Adelaide's peri-urban region displays a unique combination of topography, climate, rainfall and soils making it one of the State's few areas of well-watered, productive agricultural land. As a result, it has attracted significant population settlement quite independently of its location adjacent to metropolitan Adelaide. Indeed, development controls have tended to limit residential incursion into the peri-urban region to a greater extent than in other Australian cities and Adelaide has therefore developed into a linear city with growth channelled to the north and the south. However, as residential choice has diminished and travel times from the outer suburbs have risen, development pressures on the peri-urban fringe have inevitably increased. These pressures have been compounded by changing lifestyles and the resulting demand for lower density living in the form of hobby farms and rural retreats.

For some time there has been no part of South Australia in which population change has been more significant than the peri-urban region (Figure 1). The State's non-metropolitan population growth has become spatially concentrated in a belt surrounding the Adelaide Statistical Division (ASD) and extending beyond the commuting shed of the metropolitan area. At the 1991 Census, the peri-urban region accounted for 34.4 per cent of South Australia's non-metropolitan population and 9.3 per cent of the total State population. It had an annual growth rate twice that of the metropolitan area and the State as a whole (2.3 per cent in 1986-91, compared with 0.8 per cent for the ASD and SA).

1.3 Objectives

A number of studies have examined the population growth occurring in the peri-urban regions of Australian cities and considered the consequences and implications of this growth (see, for example, Burnley & Murphy 1995, Hugo 1996, Hugo & Smailes 1985, 1992, Jackson & O'Connor 1993, McKenzie 1996, McQuin 1986, Murphy & Burnley 1993, 1996, Sant & Simons 1993a). These studies vary widely in their spatial focus. In the case of Adelaide,

however, research on the peri-urban region has generally been confined to the Outer Adelaide Statistical Division (OASD), the arc of non-metropolitan SLAs surrounding the Adelaide Statistical Division (ASD) (see, for example, Menzies & Bell 1981, Wright 1990). Defining the region in this way facilitates access to data and extends the depth of analysis which is possible with secondary information, such as that from the Census. However, many of the processes involved in peri-urban growth extend beyond the boundaries of the OASD and limiting the spatial domain of analysis in this way conceals some of the underlying dynamics involved in this development. In an endeavour to better identify these processes, the present study adopts a wider spatial boundary for consideration (Figure 1).

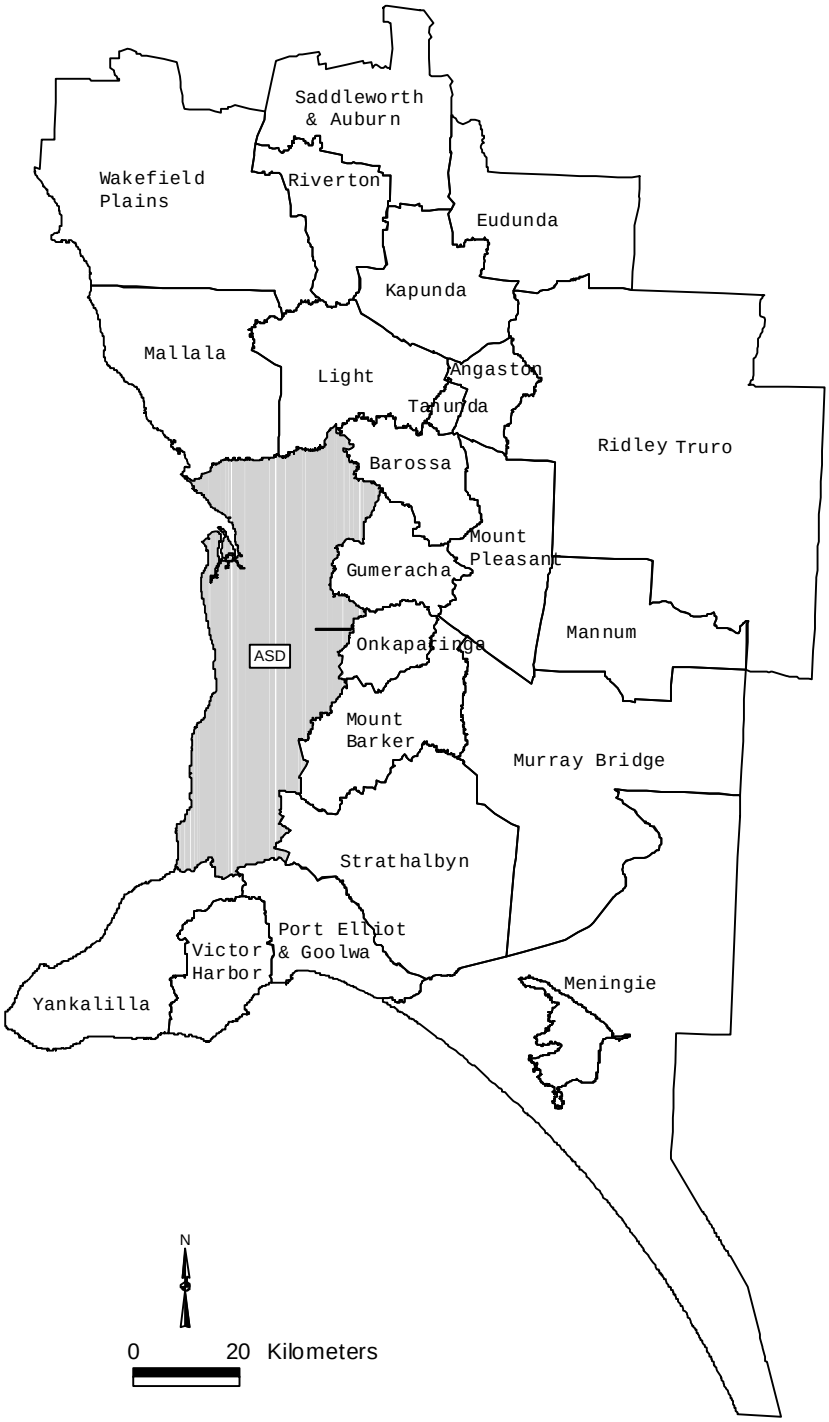
Population growth in the peri-urban region has far-reaching consequences for planning and policy formulation. Failure to distinguish between the peri-urban region and the more remote parts of the non-metropolitan area (Hugo 1997) ignores the distinctive characteristics of this growth zone and its unique set of problems and issues. In order to adequately respond to the challenges of peri-urban growth, a clear understanding of contemporary population dynamics is essential. This report aims to contribute to this understanding by tracing the population growth history of Adelaide's peri-urban region. In addition, the projected growth in the region to the year 2011 is reviewed to establish the likely pattern of change over the longer term.

1.4 Data Sources

The report draws on a number of data sources:

- Data from the Australian Census of Population and Housing are used to establish patterns of population change within the region, and the role of the region itself in the broader population history of South Australia. In order to analyse changes over time, data from the 1961 to 1991 Censuses are employed. The inclusion of 1996 Census data provides an up-to-date picture of peri-urban growth, although the extent of the analysis possible is limited by the availability of data at the time of writing.
- The projections of future growth discussed in the report were made by the former Department of Housing and Urban Development.
- Secondary data sources provide a sound basis for the analysis of growth trends at the SLA level but offer little insight into the characteristics or motives of people moving to the peri-urban region. To complement the regional analysis this report presents data from household surveys undertaken in three peri-urban SLAs – Mount Barker, Mallala and Strathalbyn (Ford & Rudd 1996). The Mount Barker Township Survey (1995) was undertaken by second year geography students from the University of Adelaide, with support from the former Department of Housing and Urban Development (DHUD). The Mallala (1995) and Strathalbyn District Council (1996) surveys were undertaken by the author as part of a larger study focusing on Adelaide's peri-urban region (Ford forthcoming).

Figure 1: Adelaide's peri-urban region



1.5 Structure of the Report

To place the analysis in context, the following section provides an overview of population growth in South Australia since 1961. Section 3 turns specifically to the spatial distribution of population change in Adelaide's peri-urban region, analysing Census data at the SLA level over the seven intercensal periods between 1961 and 1996. This focus is pursued further in section 4 which examines the demographic components of population change in the peri-urban region with particular attention to the role of migration.

South Australia's non-metropolitan growth has become spatially concentrated in the peri-urban region. Within the region, however, urban centres and rural localities of different sizes have experienced quite wide variations in growth. Section 5 examines the changing pattern of settlement within the peri-urban region through analysis of the size categories of urban centres.

Analysis of peri-urban growth at the aggregate SLA level and urban centre level provides an overall picture of population trends. Understanding of the consequences of this growth requires a more detailed appreciation of the characteristics and motivations of the population moving to the region. Section 6 provides this analysis based on survey data collected in three case study SLAs.

Section 7 examines the future prospects of the region, as indicated by the current series of official population projections for SLAs in the peri-urban region from 1991 to 2011.

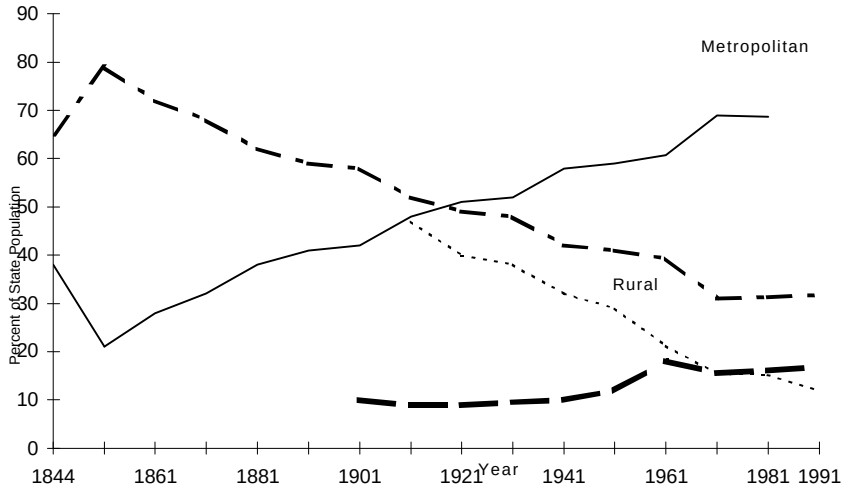
The final section of the report (Section 8) draws together key findings and identifies some likely implications for the future of Adelaide's peri-urban region.

2. POPULATION GROWTH IN SOUTH AUSTRALIA

Australia's level of urbanisation is high by world standards and South Australia has one of the most concentrated settlement patterns in Australia. In 1996, 73.2 per cent of the State's population of 1,045,854 were located in the metropolitan area (the Adelaide Statistical Division - ASD). This reflects a high degree of primacy in the State's urban hierarchy. Figure 2 indicates that from the 1950s to the early 1970s there was a consistent trend towards urbanisation, with an increasing proportion of the South Australian population living in urban areas, and especially in metropolitan Adelaide. In the early 1970s, however, the proportion of the population residing in the State capital began to decline slowly and the non-metropolitan share of the state's population began to rise.

The trends depicted in Figure 2 are indicative of the national pattern of population change experienced during the 'population turnaround' of the 1970s when there was a reversal of the longstanding trend of increasing concentration of the national population in large urban areas. This trend was maintained at a slower pace during the 1980s and with a greater degree of spatial concentration of non-metropolitan growth. Population gains have been focused particularly on the 'well-watered and attractive areas of the south-east and east coast and the areas at the margins of the commuting zones of large cities' (Hugo 1993a, p5).

Figure 2: Population distribution between metropolitan, other urban and rural areas, 1844-1991



Source: Hugo & Smailes (1992 p.38), ABS 1991 Census.

Like other Australian States, South Australia experienced a slowdown in the population turnaround during the 1980s. After declining steadily since the early 1960s, Adelaide's average annual growth rate rose from 0.69 per cent between 1976 and 1981 to 0.96 per cent between 1981 and 1986 and stabilised at 0.92 per cent over the following five year period (Table 1). Conversely, the non-metropolitan growth rate increased from 0.51 per cent to 0.84 per cent but then declined again to 0.47 per cent over the same three intervals. Hence, during

the late 1970s to mid 1980s metropolitan and non-metropolitan growth rates tended to converge. Although the ASD continued to account for a progressively larger share of the State's population, this increase occurred at a diminishing rate.

Table 1: Average annual population growth, the State and selected regions of South Australia, 1961 to 1996

Region	1961-66	1966-71	1971-76	1976-81	1981-86	1986-91	1991-96
ASD	4.36	2.97	1.33	0.69	0.96	0.79	0.43
Non-metro	-0.93	-0.36	0.79	0.51	0.84	0.47	0.27
Peri-urban	0.36	0.25	2.08	1.72	3.50	2.28	1.58
Total State	2.41	1.46	1.18	0.64	0.93	0.79	0.39

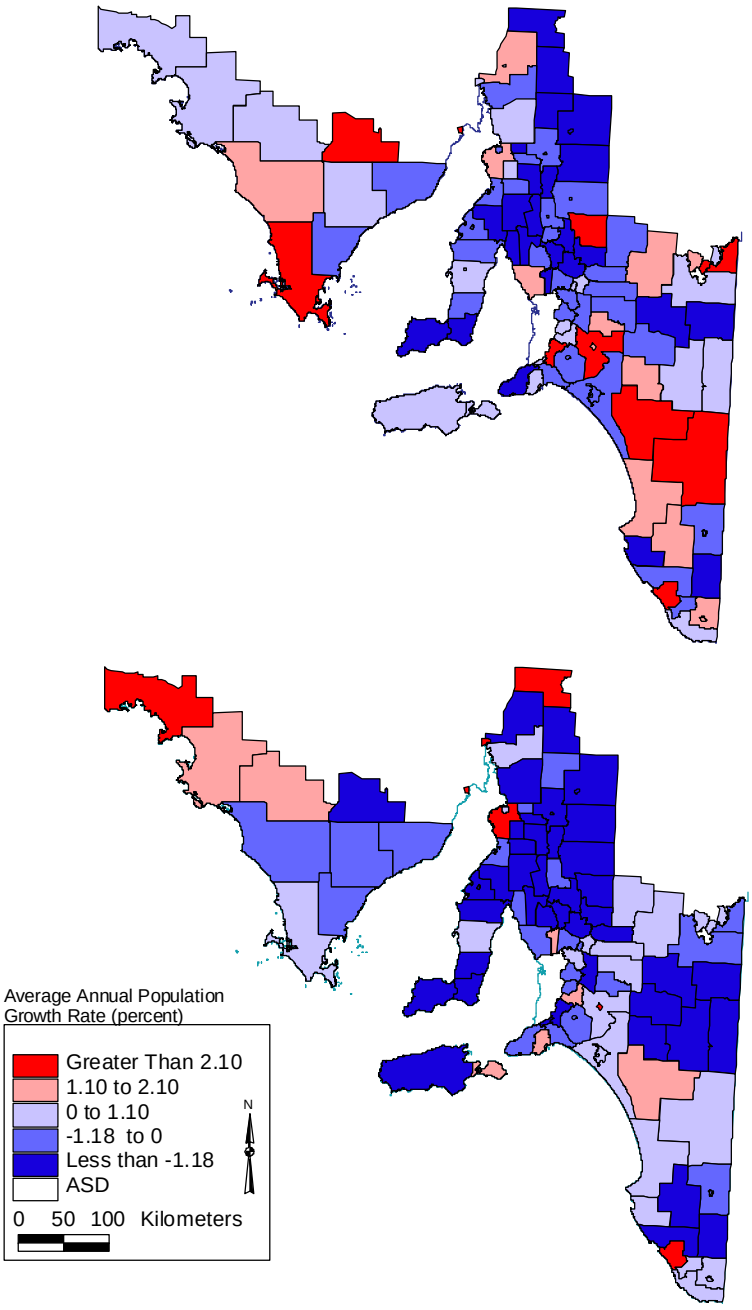
Source: ABS Censuses.

In their study of non-metropolitan population change between 1981 and 1986, Hugo and Smailes (1992) found distinct spatial patterns in the areas recording net migration gains. One of the most distinctive types of zone took the form of arcs around the major capital cities, often extending beyond the boundaries of regular commuting (Hugo 1993b, pp. 13-14). These zones represent the peri-urban region of Australian cities. Figures 3 to 6 indicate the annual population growth rates of non-metropolitan SLAs in South Australia from 1961 to 1996 and it is clear that non-metropolitan population growth in South Australia has become progressively concentrated in those SLAs surrounding the metropolitan region. Some growth is also evident in the Riverland and in other outlying locations such as Northern Yorke Peninsula, Port Broughton and Port MacDonnell.

During the 1961-66 intercensal period (Figure 3) population growth was scattered throughout non-metropolitan South Australia, with the main pockets in the Murray Mallee and South Eastern regions. Between 1966 and 1971 non-metropolitan growth contracted and fewer non-metropolitan SLAs registered growth. In the 1971-76 intercensal period, however, a new pattern of non-metropolitan growth emerged in which the peri-urban region became one area of significant population increase (Figure 4). This growth intensified and expanded during the 1976-81 period (Figure 4) as the number of non-metropolitan SLAs experiencing population growth increased. Since 1981, however, non-metropolitan growth has been increasingly clustered into the peri-urban region and by 1986-91 (Figure 5) there were only a few outliers of population growth elsewhere: principally in the upper Murray and some coastal regions. Most dry farming areas have experienced severe population loss, almost certainly due in large measure to the rural crisis, drought and declining world markets (see Smailes 1997). This pattern of non-metropolitan growth has continued during the 1991-96 intercensal period, indicating continued concentration in the peri-urban region (Figure 6).

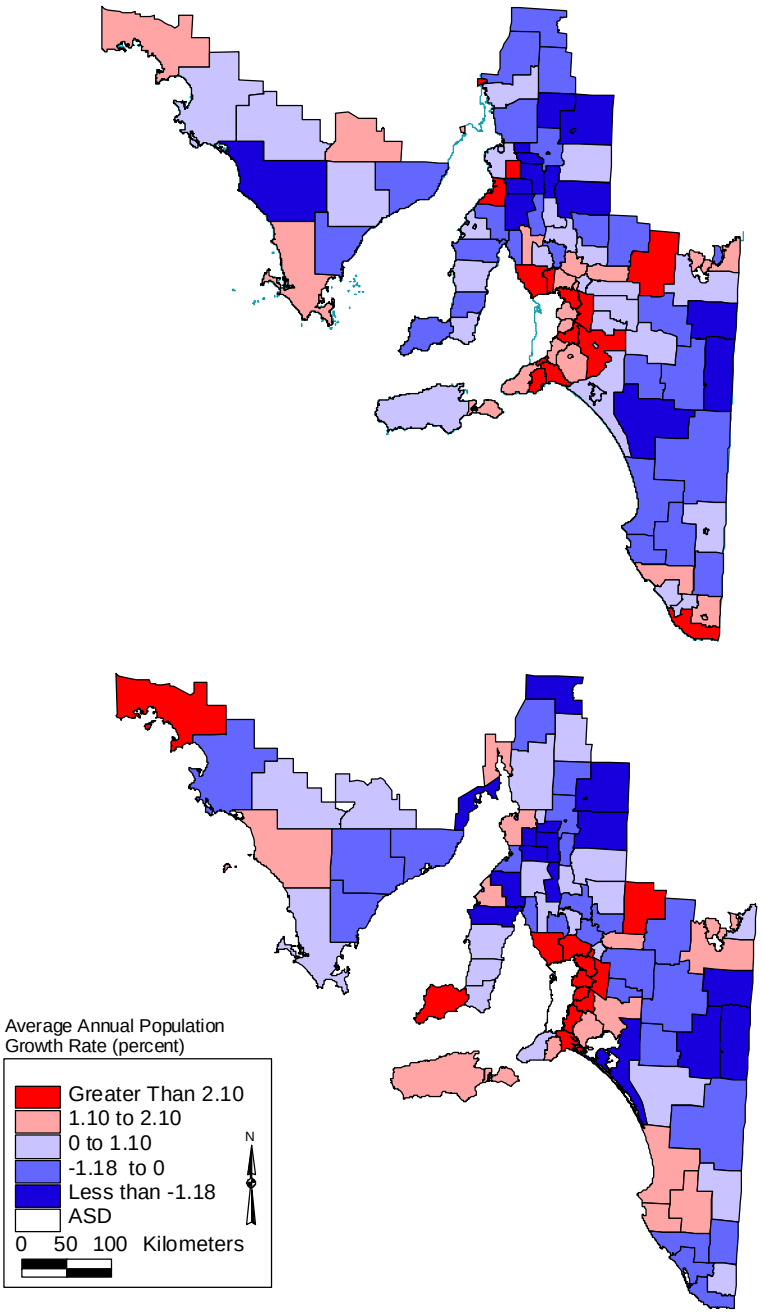
Since 1971, the peri-urban region has steadily increased its share of the State's population and, as can be seen in Table 1 has consistently displayed higher annual average population growth than the ASD or the State as a whole. At the 1996 Census, the peri-urban region accounted for 9.1 per cent of the State's population and had a population growth rate around four times that of the ASD and the State as a whole. This underlines the continued concentration of population growth in the peri-urban region during the first half of the 1990s.

Figure 3: Population growth by SLA, non-metropolitan South Australia, 1961-66 and 1966-71



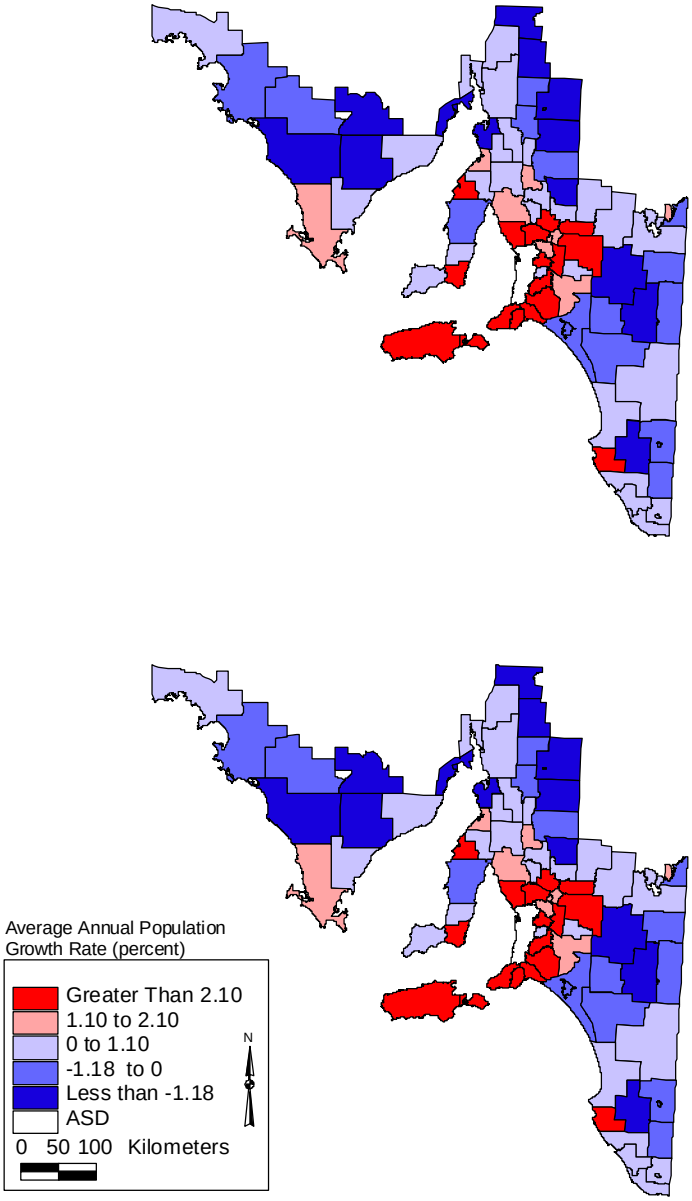
Source: ABS 1961, 1966 and 1971 Censuses.

Figure 4: Population growth by SLA, non-metropolitan South Australia, 1971-76 and 1976-81



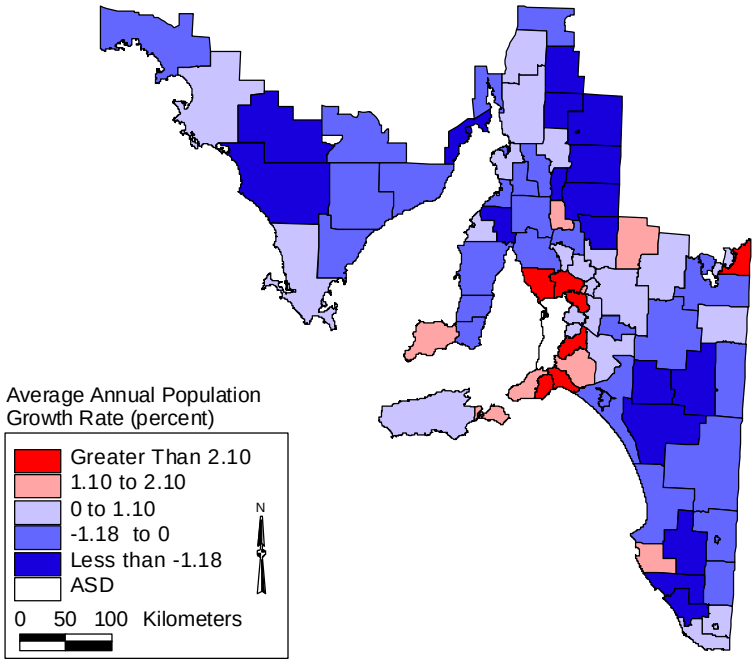
Source: ABS 1971, 1976 and 1981 Censuses.

Figure 5: Population growth by SLA, non-metropolitan South Australia, 1981-86 and 1986-91



Source: ABS 1981, 1986 and 1991 Censuses.

Figure 6: Population growth by SLA, non-metropolitan South Australia, 1991-96



Source: ABS 1991 and 1996 Censuses.

3. POPULATION CHANGE IN THE PERI-URBAN REGION, 1961-96

The peri-urban regions surrounding Australian cities are among the fastest growing regions in the nation (Maher & Stimson 1994, McKenzie 1996, Murphy & Burnley 1996). However, the pattern of growth over the past thirty five years has been sporadic and patchy. Between 1961 and 1966, for example, Adelaide's peri-urban region experienced a growth rate of 0.36 per cent per annum. However, the only SLAs to experience positive population growth were Angaston (0.8 per cent), Mt.Barker (0.02), Mallala (1.4), Onkaparinga (0.4), Mannum (1.7), Murray Bridge (2.1), Kapunda (15.3) and Victor Harbor (1.1) (Figure 7). Figure 8 shows a similar pattern for the period 1966-71: Barossa (0.5 per cent) and Meningie (0.2) joined the list of growth SLAs but five others Onkaparinga (-1.1 per cent), Mannum (-0.3), Mallala (-0.2), Kapunda (-1.3) and Tanunda (-0.1) reverted from growth to decline.

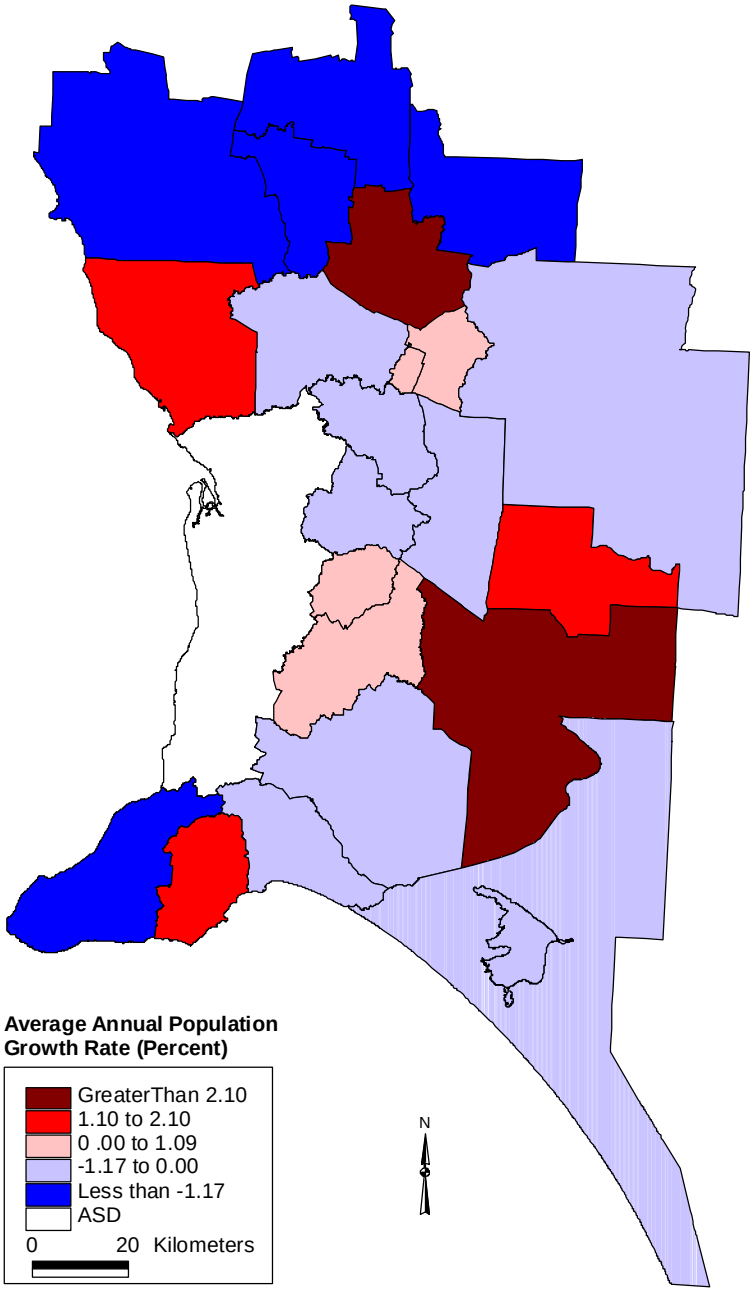
South Australia shared in a general trend of improved non-metropolitan growth that occurred throughout Australia over the 1971-76 intercensal period and this trend was nowhere more evident than in the peri-urban region: population growth suddenly became virtually universal throughout the region (Figure 9). This revival saw the peri-urban region increase its population by 8144 persons, accounting for 61.2 per cent of the total non-metropolitan gain. Perhaps the most significant change during the 1971-76 period was that many SLAs that experienced population losses in the 1966-71 period reversed this trend (Table 2). All SLAs in the region except Ridley/Truro (-0.3 per cent) and Riverton (-0.1 per cent) experienced gains.

Table 2: SLAs changing from population losses in 1966-71 to gains in 1971-76

SLA	1966-71		1971-76	
	Population change	Average annual growth rate (%)	Population change	Average annual growth rate (%)
Gumeracha*	-78	-0.59	247	1.85
Light*	-155	-0.89	433	2.51
Mallala	-18	-0.15	514	3.97
Mt. Pleasant*	-109	-1.57	164	2.36
Kapunda	-151	-1.31	188	1.64
Onkaparinga	-306	-1.11	355	1.29
Strathalbyn*	-68	-0.41	358	2.09
Pt. Elliot and Goolwa*	-63	-0.55	819	6.35
Wakefield Plains*	-329	-1.57	102	0.51
Yankalilla*	-98	-0.83	190	1.59
Tanunda	-14	-0.11	203	1.52
Mannum	-40	-0.26	38	0.25

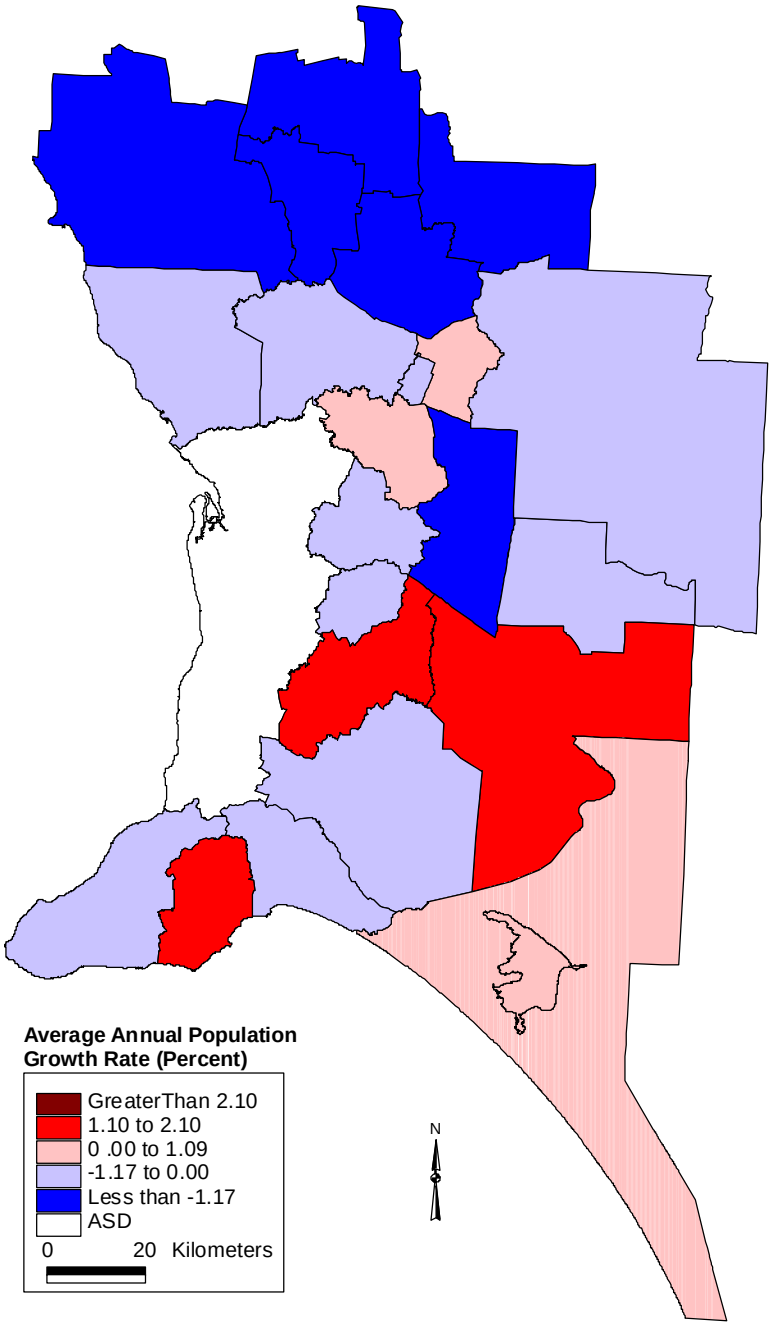
Source: ABS 1966,1971 and 1976 Censuses.
Note *: SLAs which also experienced population losses in the 1961-66 period.

Figure 7: Population growth by SLA, peri-urban region of South Australia, 1961-66



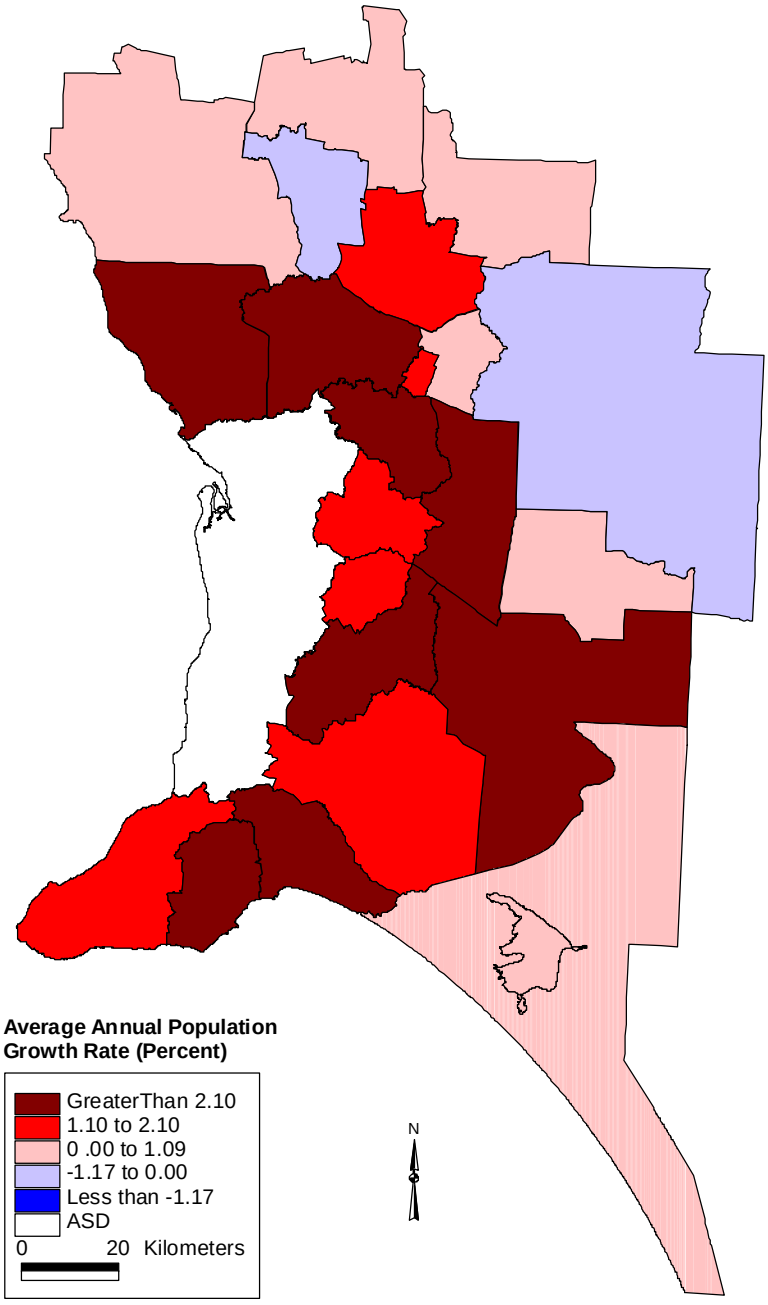
Source: ABS 1961 and 1966 Censuses.

Figure 8: Population growth by SLA, peri-urban region of South Australia, 1966-71



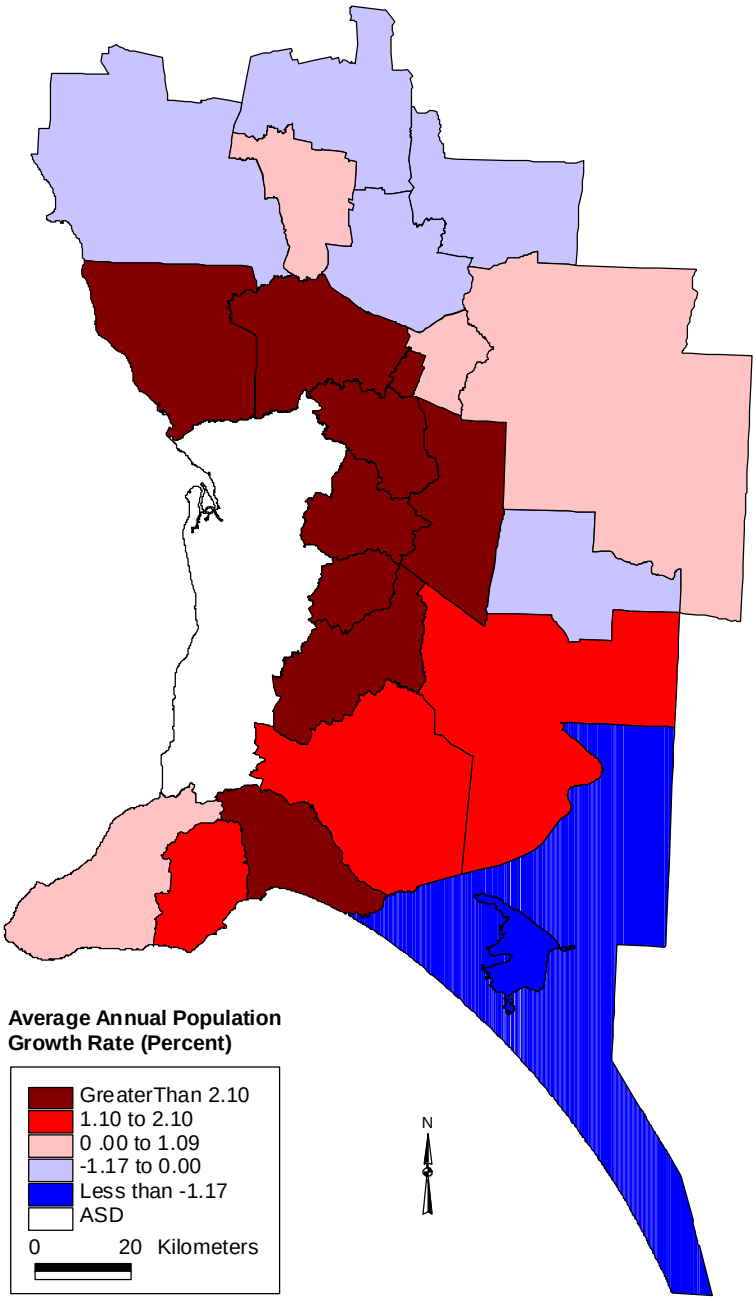
Source: ABS 1966 and 1971 Censuses.

Figure 9: Population growth by SLA, peri-urban region of South Australia, 1971-76



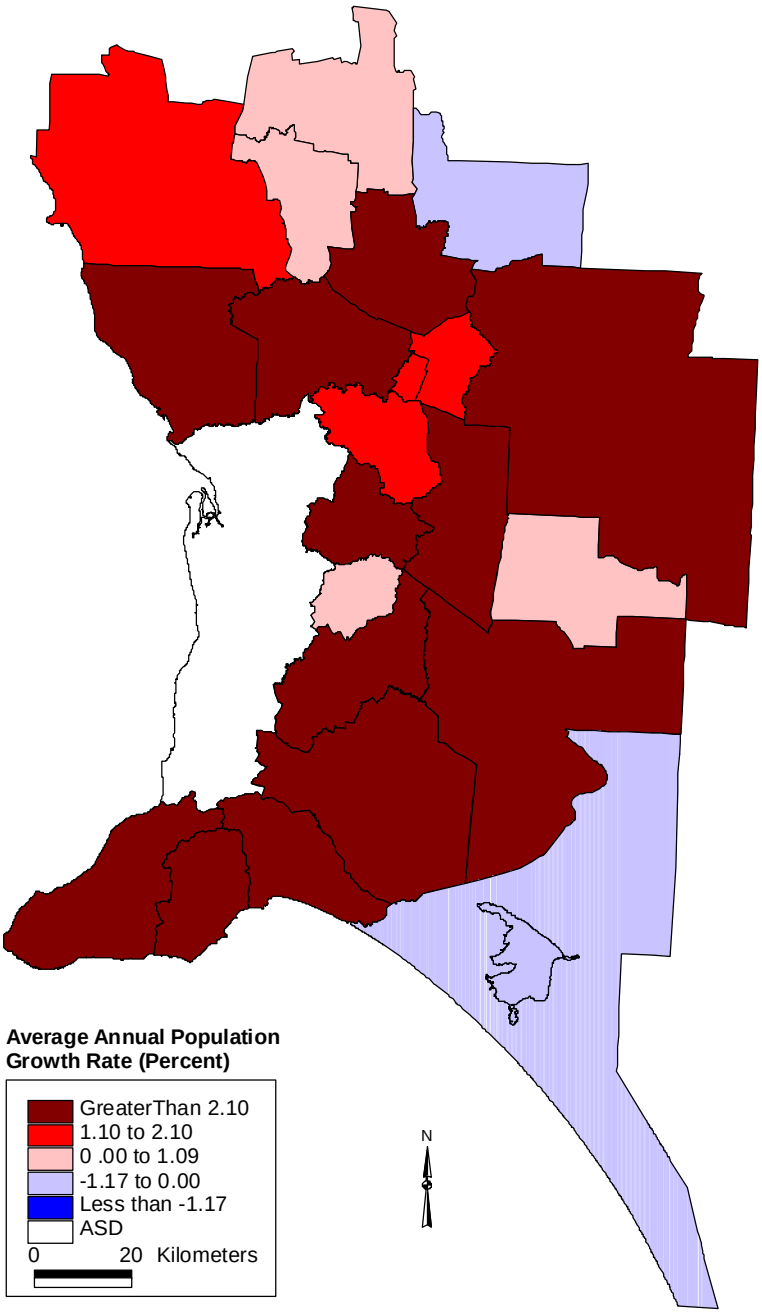
Source: ABS 1971 and 1976 Censuses.

Figure 10: Population growth by SLA, peri-urban region of South Australia, 1976-81



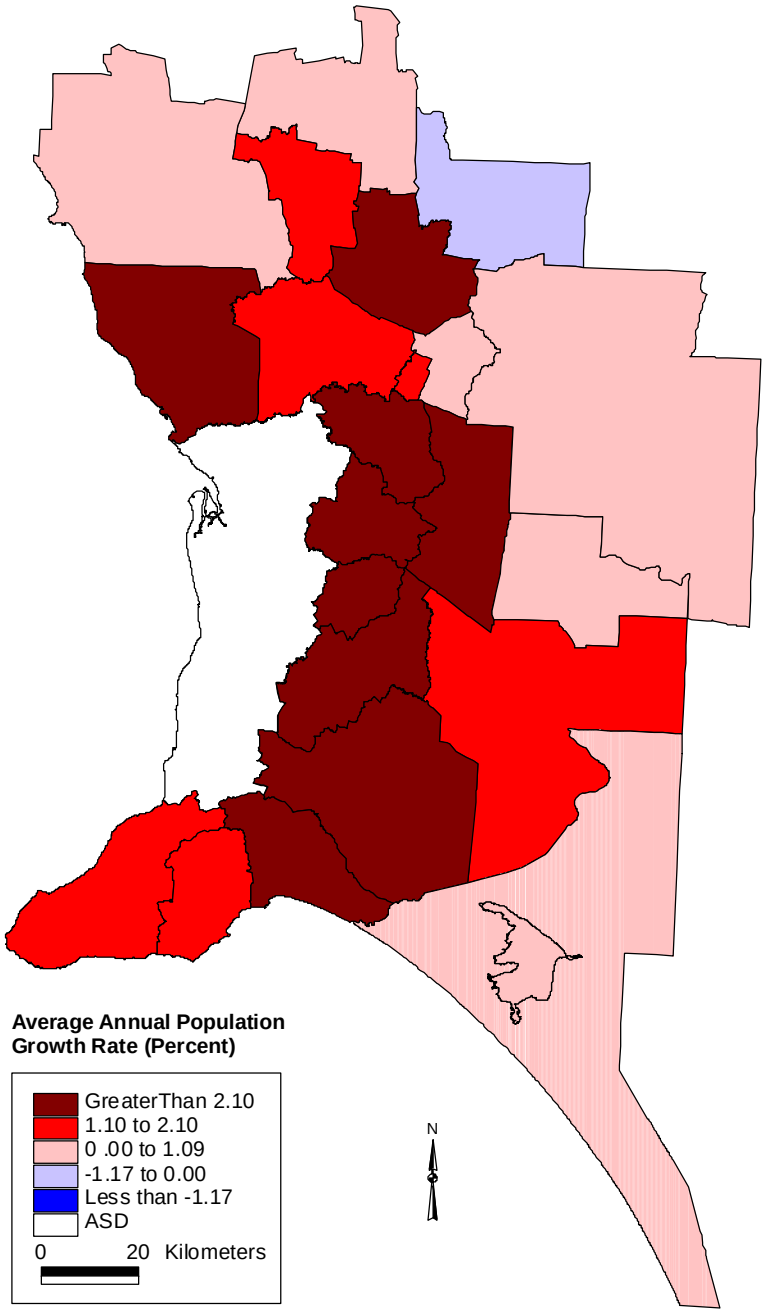
Source: ABS 1976 and 1981 Censuses.

Figure 11: Population growth by SLA, peri-urban region of South Australia, 1981-86



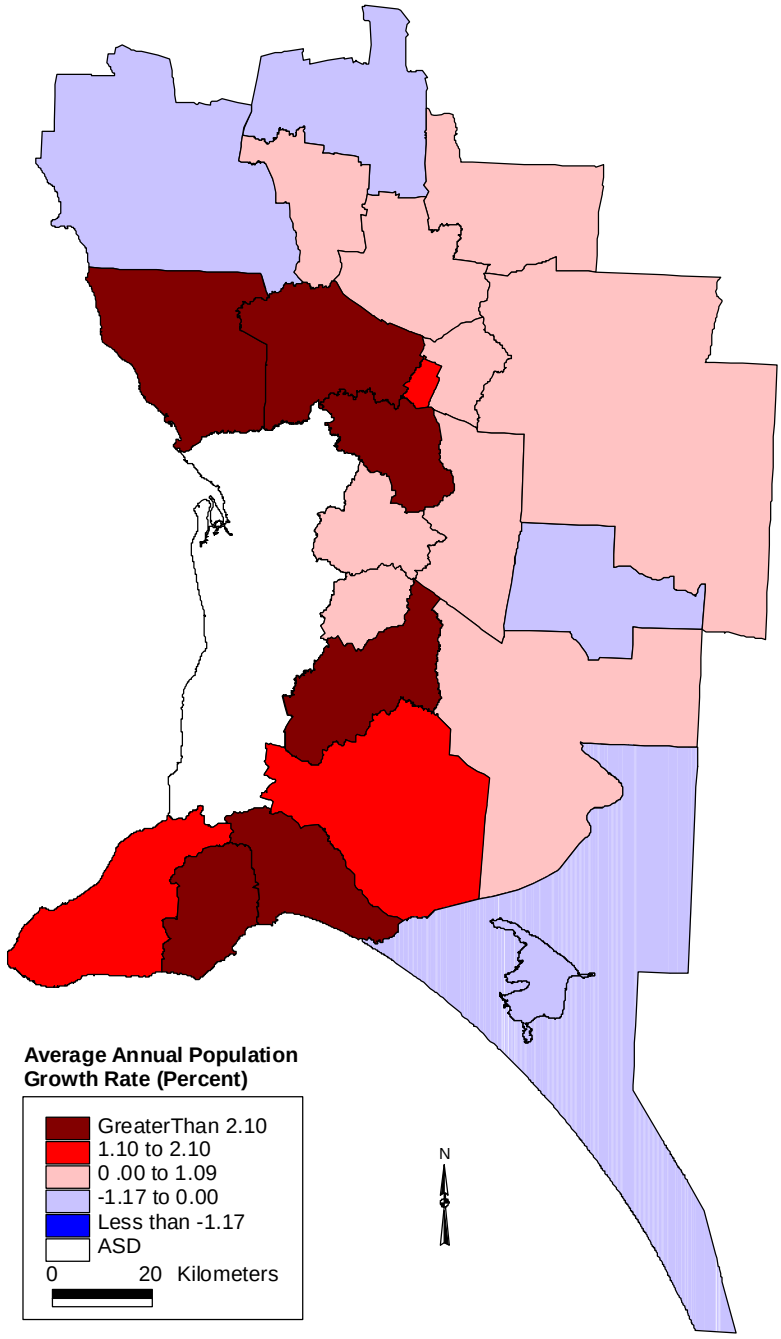
Source: ABS 1981 and 1986 Censuses.

Figure 12: Population growth by SLA, peri-urban region of South Australia, 1986-91



Source: ABS 1986 and 1991 Censuses.

Figure 13: Population growth by SLA, peri-urban region of South Australia, 1991-96



Source: ABS 1991 and 1996 Censuses.

The 1976-81 intercensal period again saw declines in the populations of a number of peri-urban SLAs. As can be seen from Figure 10, the SLAs reverting to population decline were generally those located at the outer edges of the peri-urban region. Many inner peri-urban SLAs, however, especially those adjacent to the ASD, consolidated their position and recorded growth rates far greater than that experienced by metropolitan Adelaide or the State as a whole.

By the 1981-86 intercensal period population growth had become universal throughout the peri-urban region except in Meningie (-0.6 per cent) and Eudunda (-0.05 per cent) (Figure 11). These are primarily agriculturally based regions serving no significant resort-retirement-tourism function. In addition, their location at the edge of the peri-urban region reduces their attractiveness to commuters.

By 1986-91 (Figure 12) even Meningie was gaining and the peri-urban region experienced a population increase of 12,833 persons, accounting for 23.5 per cent of the State's population growth. The peri-urban region as a whole had an average annual growth rate of 2.3 per cent per annum. However, a number of SLAs recorded growth rates well above the average.

Table 3: SLAs recording growth rates above the ASD and State average, 1986-91 and 1991-96

SLA	Average annual growth rate (per cent)	
	1986-91	1991-96
Mallala #	5.52	3.41
Barossa #	5.06	2.49
Port Elliot and Goolwa #	4.15	3.36
Strathalbyn #	3.73	1.87
Kapunda	3.17	0.78
Mount Barker #	3.12	3.00
Mount Pleasant #	2.71	0.66
Gumeracha #	2.25	1.05
Onkaparinga #	2.11	0.41
Victor Harbor	2.03	3.67
Light #	1.87	2.33
Tanunda	1.69	1.91
Yankalilla #	1.61	1.86
Adelaide Statistical Division	0.92	0.43
Peri-urban region	2.28	1.58
Total State	0.79	0.39

Source:ABS 1986, 1991 and 1996 Censuses.
Note: # Adjacent to ASD.

Population growth in the State declined between 1986-91 and 1991-96 and this was reflected in a drop in growth within the peri-urban region, from 2.3 to 1.6 per cent per annum. Nevertheless, the region continued to experience growth well above that recorded elsewhere in the State, adding a further 9824 people to its population over the five year period, an overall rise of 8.2 per cent. Growth continued to be spatially concentrated. SLAs adjacent to the ASD registered the highest growth rates suggesting that accessibility for commuters may be a major influence. However, retirement and tourism-related movements also continued apace with both Port Elliot and Goolwa, and Victor Harbor recording annual growth rates twice that of the peri-urban average (Table 3). On the other hand, declines continued in some predominantly agricultural SLAs on the outer periphery of the region (Figure 13).

The timing and patterning of population growth in Adelaide's peri-urban region over the past three and a half decades closely matches the experience of other Australian states (Burnley 1988, Hugo 1996, Hugo & Smailes 1985, Sant 1993) and other western countries (Champion 1989, 1993, Champion & Illeris 1990, Cross 1990, Frey 1988).

Many theories have been put forward to explain the emergence of this counterurban growth or population turnaround, but there has been no completely satisfactory explanation as to why some locations, such as the peri-urban region have experienced greater population growth than others (Sant & Simons 1993b). Some have argued that peri-urban growth can be accounted for by continued suburbanisation, or urban overspill beyond the existing metropolitan boundary (Maher & Stimson 1994, Joseph *et al* 1988). Others have attributed this growth to changing lifestyle preferences (Dahms 1995, Long & DeAre 1982) and shifts in economic production and employment opportunities (Fielding 1989, 1990, Johnson 1993).

These arguments cannot be resolved here. However, a clear appreciation of the causes of peri-urban growth can only be obtained from a detailed understanding of the underlying demographic processes that affect population growth. In the case of the peri-urban region it is suggested that four key processes can be identified. These are: suburbanisation, counterurbanisation, population retention and centripetal migration. The roles and interactions between these four processes are the subject of a more detailed study currently in progress (Ford). However, it is clear that migration has been the principal factor behind the growth of Adelaide's peri-urban region and the following section examines the role of this movement in the pattern of population change.

4. THE COMPONENTS OF POPULATION CHANGE

4.1 Peri-urban growth 1966-91

During the 1966-71 intercensal period population growth in the peri-urban region was attributable entirely to natural increase (Table 4). Indeed, the region recorded a net migration loss of 2834 persons during this period. Similarly, population growth in South Australia as a whole was primarily attributable to natural increase, although there was a small net population gain from interstate and overseas.

Table 4: Components of population growth in the State and peri-urban region, South Australia, 1966-71 to 1986-91

Period	Peri-urban region					State	
	Natural increase	Net migration	Total increase	% from NI	% from NM	% from NI	% from NM
1966-71	2951	-2834	117	100.0	-	87.6	12.4
1971-76	2781	5828	8609	32.3	67.7	89.7	10.3
1976-81	2931	4464	7395	39.6	60.4	71.5	28.5
1981-86	3577	13435	17012	21.0	79.0	85.8	14.2
1986-91	3977	8854	12831	31.0	69.0	79.0	21.0

Source: ABS Vital Statistics and SA Year Books, Various Issues.

During the 1971-76 period, this net migration loss from the peri-urban region reversed and a net migration gain of 5828 persons was recorded. Net migration had become the dominant component of population change and natural increase contributed less than one third of the region's increase. This contrasts with the picture for the State where natural increase accounted for almost 90 per cent of population growth.

The peri-urban region has recorded sustained population growth since 1971 and Table 4 shows that this has been due predominantly to net migration. Net migration gains accounted for 68 per cent of population growth between 1971 and 1976, 60 per cent between 1976 and 1981, 79 per cent from 1981 to 1986 and 69 per cent between 1986 and 1991. By comparison natural increase has been consistently more significant in the growth of the State: only one fifth of the State's population growth between 1986 and 1991 was due to migration.

4.2 Migration at the SLA level

Table 5 shows the components of population growth in each peri-urban SLA over the 1986-91 period and reveals some important patterns. It can be seen that all SLAs (except Eudunda) experienced population increase. However, the relative shares contributed by natural increase and net migration differed widely. Population increase in Riverton, Mannum and Victor Harbor was due entirely to migration, whereas natural increase was the principal component

of growth in Meningie, Ridley/Truro and Saddleworth and Auburn. Other SLAs with high net migration components include Port Elliot and Goolwa (90 per cent), Tanunda (86 per cent), Mallala (85 per cent), Strathalbyn (81 per cent) and Kapunda (79 per cent). On the other hand, natural increase was largely responsible for the population increase in Angaston (72 per cent) and Wakefield Plains (68 per cent).

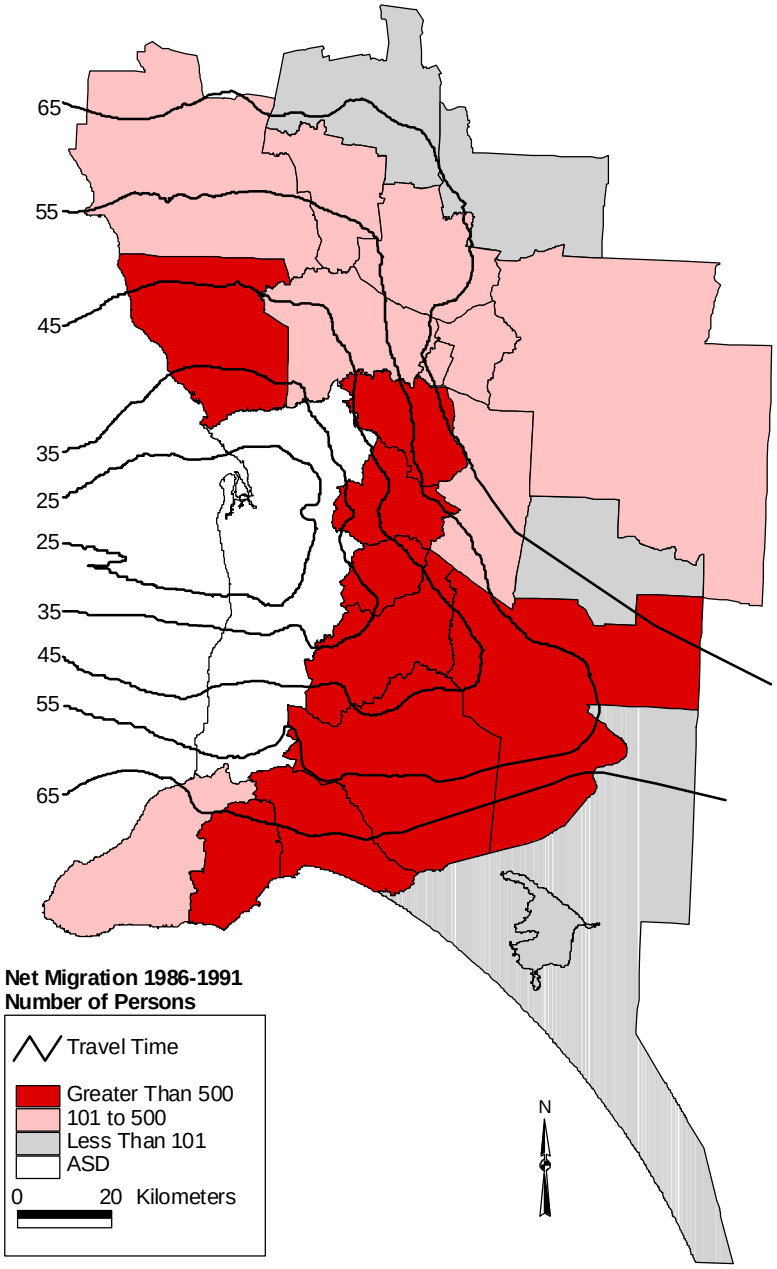
Table 5: Components of Population Growth, peri-urban SLAs, 1986-91

SLA	Natural increase	Net migration	Total increase	Per cent from natural increase	Per cent from net migration
Angaston	141	55	196	71.9*	28.1
Barossa	235	730	965	24.4	75.6*
Eudunda	23	-40	-17	-	-
Gumeracha	260	343	603	43.1*	56.9
Kapunda	95	367	462	20.6	79.4*
Light	215	250	465	46.2*	53.8
Mallala	196	1150	1346	14.6	85.4*
Meningie	214	-133	81	100.0*	-
Mannum	-4	67	63	-	100.0*
Mt.Barker	972	1524	2496	38.9*	61.1
Mt.Pleasant	68	204	272	25.0	75.0*
Murray Bridge	620	630	1250	49.6*	50.4
Onkaparinga	260	477	737	35.3*	64.7
Pt.Elliot and Goolwa	126	1112	1238	10.2	89.8*
Strathalbyn	200	846	1046	19.1	80.9*
Ridley/Truro	109	0	109	100.0*	-
Riverton	0	105	105	-	100.0*
Saddleworth and Auburn	85	-45	40	100.0*	-
Tanunda	43	258	301	14.3	85.7*
Victor Harbor	-87	777	690	-	100.0*
Yankalilla	114	134	248	46.0*	54.0
Wakefield Plains	92	43	135	68.1*	31.9
Total peri-urban region	3977	8854	12831	31.0	69.0

Source: ABS Vital Statistics.
Note:* denotes proportion greater than peri-urban average.

There is a clear, inverse association between net migration and distance from the metropolitan region: SLAs in close proximity to Adelaide recorded high rates of net migration gain, whereas in those more distant from the metropolis, growth was lower and natural increase assumed a more important role. Figure 14 shows that it was those SLAs within commuting range of Adelaide that experienced the greatest increases in population through in-migration. This reflects the desire of many peri-urban migrants to maintain functional linkages with the urban centre both in terms of employment locations and in their social and cultural connections.

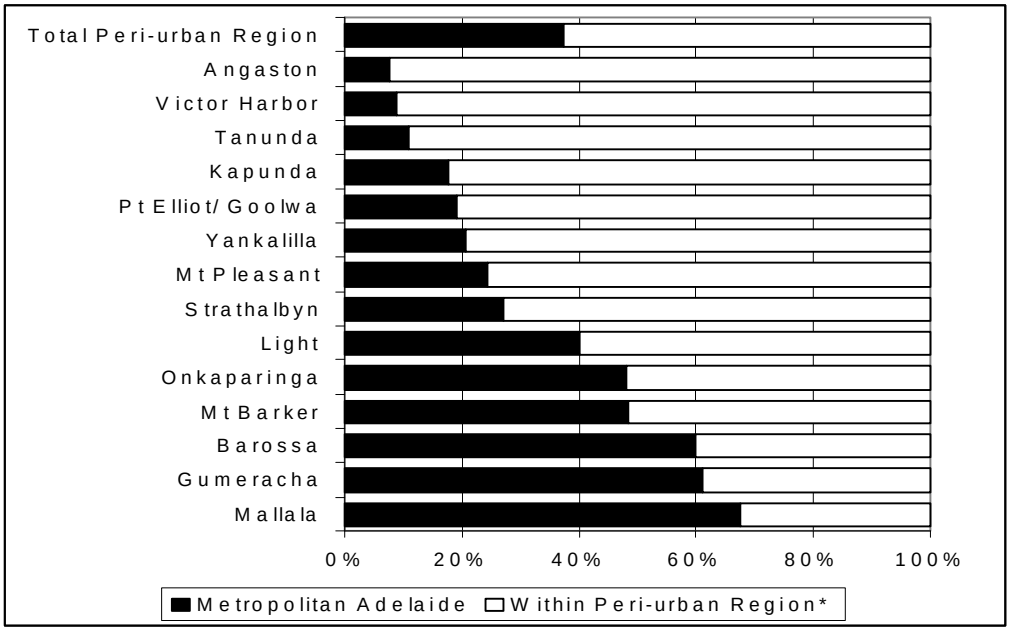
Figure 14: Net migration and distance from metropolitan Adelaide, South Australia's peri-urban region



Source: ABS 1986 and 1991 Censuses.

Commuting to the metropolitan region for employment is often seen to be an identifying feature of peri-urban growth (Frey 1991, Fuguitt 1991c) and this trend is certainly evident in Adelaide's peri-urban region. Figure 15 shows the journey to work destinations of residents from selected peri-urban SLAs and it is readily apparent that the SLAs from which the highest proportions commuted to metropolitan Adelaide were also those which experienced the highest levels of net in-migration.

Figure 15: The journey to work from Adelaide's peri-urban SLAs, 1991



Source: ABS 1991 Census (unpublished data).

4.3 Migration and population retention

Although in-migration has been the dominant factor generating growth in the peri-urban region since 1971, the emphasis placed on this component has been to the neglect of other important elements such as population retention and ageing in place (Hugo 1983). As Maher and Stimson (1994 p.54) suggest, a significant factor contributing to peri-urban growth is 'the ability of an area to attract residents who already live in the area and thus minimise the impact of out-migration'.

Population retention in the peri-urban region has certainly been an important component of population growth. At the 1991 Census, 67.3 per cent of the peri-urban population lived in the same SLA as 5 years previously, whereas this was the case for just 58.8 per cent of the ASD population and 58.6 per cent of the total South Australian population. Table 6 reveals some variation in this proportion between peri-urban SLAs, but in 1991 the majority had retained between 60 and 70 per cent of their 1986 populations.

Table 6 also differentiates in-migrants according to their place of previous residence. As might be expected there was some movement between SLAs within the peri-urban region, although this was generally quite small. Metropolitan Adelaide contributed the largest single share of people moving to the region - 15.6 per cent of the 1991 peri-urban population aged 5 years and over were living in the ASD five years previously. However, the significance of migration from the ASD varied widely across the region: Mallala and Mannum gained some 30 per cent of their 1991 populations from the ASD, whereas in Angaston, Tanunda and Murray Bridge the figure was around 7 per cent. In general, metropolitan Adelaide was more important as a source in SLAs adjacent to the metropolitan boundary and less significant in those further out.

Table 6: Usual residence of 1991 peri-urban population in 1986 by SLA

SLA of residence in 1991	Usual residence 1986				
	Same SLA	ASD	Other peri-urban	Rest of SA	Interstate or overseas
Angaston	74.5	7.3	7.6	6.4	4.2
Barossa	60.8	26.4	6.1	1.8	4.9
Eudunda	73.5	15.6	3.8	4.6	2.5
Gumeracha	63.2	25.5	3.7	2.2	5.4
Light	62.5	17.9	8.3	5.7	5.6
Kapunda	64.5	15.3	6.8	8.0	5.4
Mallala	55.8	30.6	2.6	6.2	4.8
Mannum	55.8	30.6	2.6	6.2	4.8
Mt.Barker	66.9	18.3	3.6	4.5	6.7
Mt.Pleasant	63.8	15.2	10.6	5.3	5.1
Meningie	73.9	8.1	6.8	7.7	3.5
Murray Bridge	73.1	7.8	5.5	8.7	4.9
Onkaparinga	66.5	14.3	5.3	4.6	9.3
Pt. Elliot & Goolwa	59.2	20.3	6.3	9.0	5.2
Ridley/Truro	67.4	16.8	7.5	4.1	4.2
Riverton	67.0	15.5	7.9	6.3	3.3
Saddleworth and	77.7	10.9	3.1	3.5	4.8
Strathalbyn	66.2	13.8	7.1	7.3	5.6
Tanunda	71.1	7.7	10.9	5.2	5.1
Victor Harbor	67.6	15.5	7.4	4.2	5.3
Yankalilla	66.3	20.0	4.0	4.4	5.3
Wakefield Plains	71.1	12.6	3.9	7.0	5.4
Total	67.3	15.6	5.8	5.9	5.4

Source: ABS 1991 Census.

Conversely, it is apparent from Table 6 that many outer SLAs gained significant proportions of their inflows from other parts of non-metropolitan South Australia. In the case of Meningie and Murray Bridge, for example, locations elsewhere in non-metropolitan South Australia were equal in significance to metropolitan Adelaide as sources of in-migration.

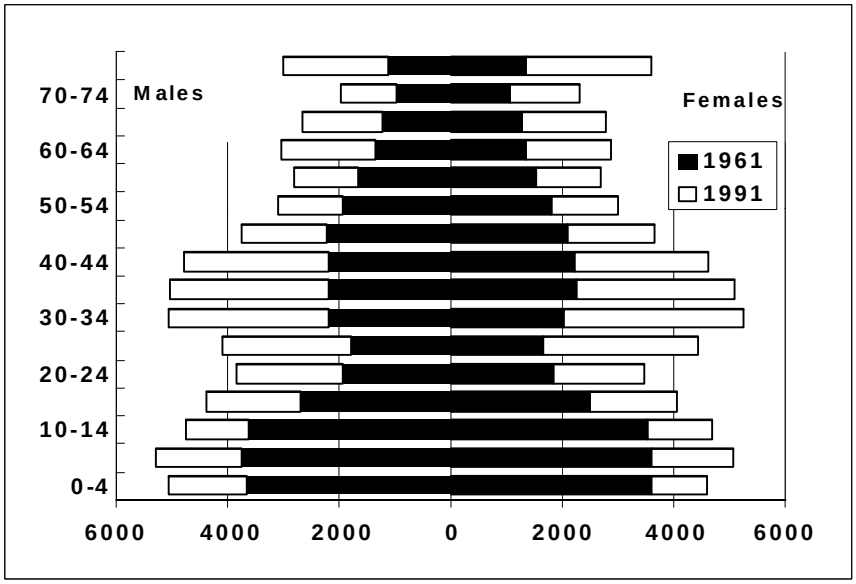
Interstate and overseas locations also contributed a significant component of the inwards movement to peri-urban SLAs – equivalent to the numbers moving from other non-metropolitan locations, or to the total migration between SLAs within the peri-urban region itself. Except in the case of Onkaparinga, however, which attracted an above average share, incoming migrants from interstate and overseas were distributed quite evenly across the region.

Although Table 6 indicates that less than one in six peri-urban residents had moved from the ASD, these data almost certainly under-estimate the numerical impact of this migration. Table 6 refers to the population aged 5 years and over in 1991, and excludes young children. As will be shown below, a major component of the migration flow from Adelaide to the peri-urban region comprises young adults in the early phases of family formation.

4.4 The age profile of migration

The age structure of a population is an important factor influencing its population growth. As can be seen from Figure 16, the age-sex profile of the peri-urban region has changed over the 30 year period 1961 to 1991. This partly reflects changes in fertility and mortality, but it is also a product of the age-selective nature of migration.

Figure 16: Age-sex profile of Adelaide's peri-urban population, 1961 and 1991



Source: ABS 1961 and 1991 Censuses.

One method of calculating the age-sex composition of migration at the local level is to use the Life Table Survival Ratio (LTSR) method. The LTSR method uses survival rates derived from

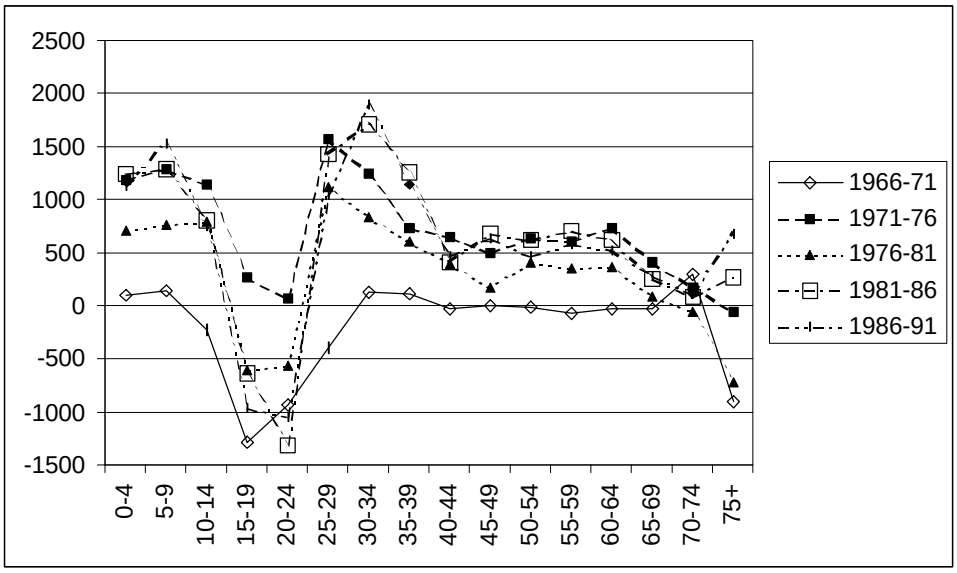
a set of life tables to estimate the mortality of a population in a given age group (x) in a region over a specific time period (t). The estimated number of survivors is then compared to the population in the next highest age group (x+5) as enumerated at the following census (t+5). The difference between the two figures is taken to represent net intercensal migration (UN 1970). For example, the age distribution of the peri-urban region in 1986 is taken as a base population and using survival ratios derived from the 1991 Australian life table, each age cohort is survived to 1991. This estimate of the number of survivors is then compared with the actual numbers enumerated at the 1991 Census in each age group and the difference is assumed to represent net in- or out-migration (Hugo 1993a, p.13).

The accuracy of estimates produced by the LTSR method depends on a number of factors including the extent of spatial variations in mortality rates and the completeness of the base data sets employed. Accuracy is also prejudiced by the size of the population in the area under consideration (Hugo 1971, p.96). Many SLAs do not have large enough populations to produce accurate and informative age-sex net migration profiles. Hence, the majority of analysis here will focus on the peri-urban region as a whole.

Figure 17 reveals that while the absolute level of migration gains has varied, the age-sex composition of net in the peri-urban region has remained remarkably stable throughout the period under review (1966-1991). Peaks in the 0-9 and 25-34 age cohorts are evident in each intercensal period as is the pattern of net migration gains at ages 40-69. It is only in the later periods (1981-1991) that net migration gains have become evident at ages 70 and over, although the numbers are small and subject to considerable error in estimation. On the other hand, the net out-migration of people aged 10-24 years seems to have increased in the later period, with the 1981-86 and 1986-91 patterns resembling that for 1966-71. This reflects the out-migration of school leavers and young adults from non-metropolitan regions (Hugo 1993b, Lichter, Heaton & Fuguitt 1979, Serow 1991). This occurs for a variety of reasons including the lack of tertiary education opportunities in non-metropolitan areas, the search for work and the establishment of an independent household, all of which exert a pull towards urban areas (Hugo 1993b, Serow 1991).

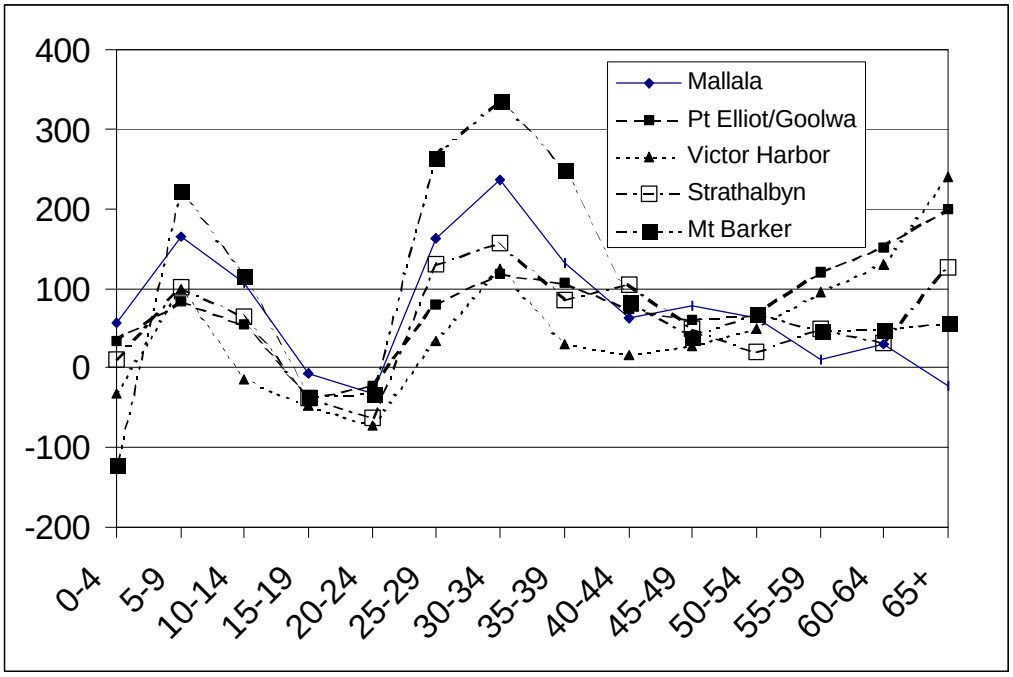
Despite the consistency in the age profile of migration over time for the region as a whole, there is considerable variation in the profiles for individual SLAs. Figure 18 compares the profiles for 5 peri-urban SLAs – Mallala, Victor Harbor, Meningie, Mount Barker and Port Elliot and Goolwa. Although the aged make up a comparatively small proportion of in-migration to the peri-urban region, it is clear that they play a significant role in the two southern resort-retirement SLAs of Victor Harbour and Port Elliot and Goolwa. Both profiles show substantial gains of people aged 55 and over, suggesting a significant incidence of early retirement. In contrast, the net migration profile for Mallala and Mount Barker are dominated by a net migration gain in the 0-10 and 25-39 age cohorts and much smaller gains in the older age cohorts. On the other hand, despite small net gains in the 5-9, 30-34 and 50+ age cohorts, the profile for the outlying SLA of Meningie shows greater net out-migration in the school leaver and young adult cohorts.

Figure 17: Age-specific net migration profile, Adelaide peri-urban region, 1966-71 to 1986-91



Source: Calculated from Census Data and Australian Life Tables.

Figure 18: Age-specific net migration profiles, Mount Barker, Meningie, Port Elliot and Goolwa, Victor Harbor and Mallala, 1986-91.



Source: Calculated from Census data and Australian Life Tables.

5. THE SETTLEMENT PATTERN

Prior to the population turnaround of the 1970s, non-metropolitan population growth was concentrated mainly in the largest non-metropolitan centres. In general, growth was positively associated with settlement size (Beale 1975, Hugo & Smailes 1992, Fuguitt 1991b). However, with the onset of the population turnaround this pattern changed and an inverse relationship between the size of urban centres and rates of population growth emerged. Growth was no longer associated with the largest urban centres. Instead, non-metropolitan areas with medium sized centres and small rural towns began to experience positive growth rates, in many cases greater than the largest non-metropolitan centres (Tucker 1976, Dahms 1984).

In the United States, Fuguitt (1991a p.2) found that 'not only were non-metropolitan areas growing more rapidly than metropolitan areas, but villages and small towns were outpacing larger cities'. A similar pattern is evident in South Australia. Although the State displays a high degree of metropolitan primacy, with almost three-quarters (73.5 per cent) of the population residing in metropolitan Adelaide in 1996, Table 7 shows that non-metropolitan settlements in several size categories increased their populations at a faster rate than metropolitan Adelaide over the 1971-91 period.

Table 7: Population change by settlement category, South Australia, 1971 to 1991

Size category	Population			Average annual growth (per cent)	
	1971	1981	1991	1971-81	1981-91
Metropolitan Adelaide	809482	882520	957480	0.87	0.82
Other urban centres					
25 000-49 999	32109	29962	25526	-0.69	-1.59
10 000-24 999	45614	60504	99650	2.87	5.12
2 500-9 999	60484	70364	60486	1.52	-1.50
1 000-2 499	42660	44650	49426	0.46	1.02
Rural localities 200-999	40947	40415	43950	-0.13	0.84
Rural balance	142411	156618	164248	0.96	0.48
Total State	1173707	1285033	1400766	0.91	0.87

Source: ABS 1971, 1981 and 1991 Censuses

Between 1971 and 1981, the most rapid growth occurred in the 'middle order' settlement categories, that is in towns with populations between 2500 and 24,999. Growth in the larger towns accelerated during the 1980s with the 10-24,999 settlement category registering a growth rate more than six times that of metropolitan Adelaide. This was partly due to the fact that three towns (Gawler, Murray Bridge and Crafers-Bridgewater) passed the 10,000 population threshold and, as can be seen from Table 7, there was a compensating fall in the growth rate of the 2500-9999 settlement category, even though this category in turn gained 5 centres from the 1000-2499 class. More striking, however, is that in this later period the lower order centres and bounded rural localities also registered sustained growth, raising their level of annual increase to above that of metropolitan Adelaide. Hence, by the 1980s, growth was occurring at progressively lower levels of the urban hierarchy.

Table 8: Change in number of centres by settlement category, peri-urban region, 1976-91

Size category	1976	1981	1986	1991	1996
>= 2500	4	5	5	7	7
1000-2499	9	9	10	10	13
500-999	9	10	13	15	16
250-499	16	14	13	11	10
<=250	2	4	5	5	2
Total	40	42	46	48	48

Source: ABS 1976, 1981, 1986 and 1991 Censuses.

Table 9: Growth of the peri-urban population by settlement size, 1976-96

Size category	1976	1981	1986	1991	1996	Difference 1976-1996
			Number			
>= 2500	19031	22848	28646	36943	41752	22721
1000-2499	14994	14236	16939	15580	20933	5939
500-999	6086	6617	8959	10253	10753	4667
251-499	5694	5367	4781	4065	3484	-2210
<=250	418	843	1093	1163	467	-49
Rural balance	43271	47820	50984	56376	52794	9523
Total	89494	97731	111402	124380	130183	40689
			Per cent			
>= 2500	21.3	23.4	25.7	29.7	32.1	10.8
1000-2499	16.7	14.6	15.2	12.5	16.0	-0.7
500-999	6.8	6.8	8.0	8.3	8.3	1.5
251-499	6.4	5.5	4.3	3.3	2.7	-3.7
<=250	0.5	0.9	1.0	0.9	0.4	0.1
Rural balance	48.3	48.8	45.8	45.3	40.5	-7.8
Total	100.0	100.0	100.0	100.0	100.0	0.0

Source: ABS 1976, 1981, 1986 and 1991 Censuses.

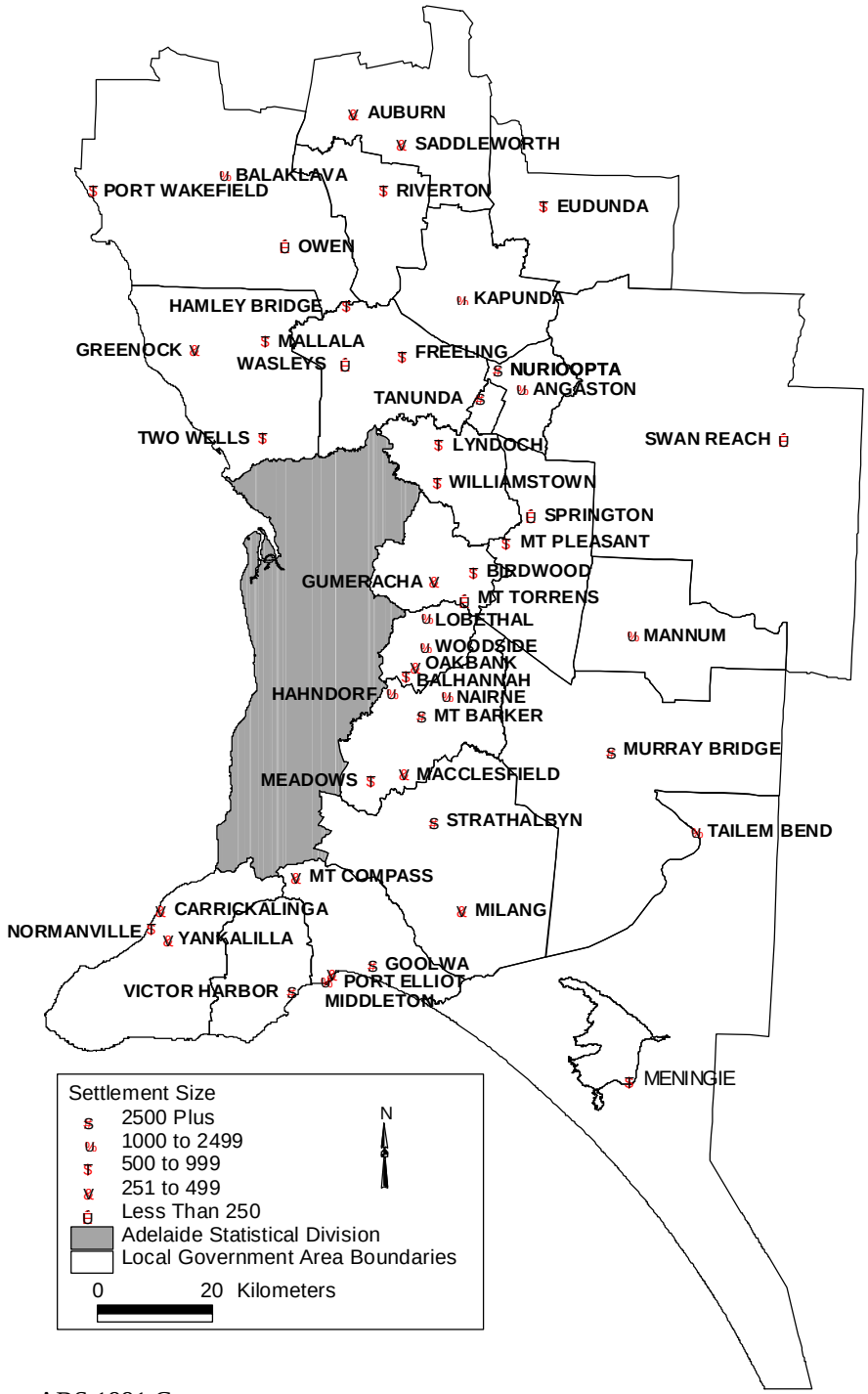
Turning to the peri-urban region, a different pattern of population growth emerges. The number of centres in all settlement categories increased over the 1976-91 period: the sole exception was the 250-499 category, in which the number has declined progressively since 1976 (Table 8). The increase in the largest settlement category (>=2500) can be traced to Tanunda passing the 2500 population threshold between 1976 and 1981 followed by the addition of Goolwa and Strathalbyn between 1986 and 1991. Offsetting the loss of these three centres, the 1000-2499 settlement class gained Hahndorf in 1981, Port Elliot in 1986 and Nairne and Woodside in 1991, resulting in a continuing rise in the number of towns in that size category.

Table 10: Urban centres / rural localities ranked by settlement size, 1996

Urban centre/ locality	Total population			Difference 1986-96	
	1986	1991	1996	Number	Per cent
Murray Bridge	11893	12725	12831	938	7.9
Mount Barker	5370	6239	7908	2538	47.3
Victor Harbor	5318	5930	7343	2025	38.1
Goolwa	2359	3018	3723	1364	57.8
Tanunda	2856	3087	3499	643	22.5
Nuriootpa	3209	3321	3486	277	8.6
Strathalbyn	1924	2623	2962	1038	54.0
Nairne	889	1346	2450	1561	175.6
Kapunda	1622	1979	2195	573	35.3
Mannum	2056	2025	1966	-90	-4.4
Angaston	1823	1819	1862	39	2.1
Hahndorf	1618	1661	1727	109	6.7
Lobethal	1580	1521	1558	-22	-1.4
Tailem Bend	1542	1502	1488	-54	-3.5
Balaklava	1365	1439	1441	76	5.6
Port Elliot	1050	1203	1427	377	35.9
Woodside	853	1085	1384	531	62.3
Williamstown	626	855	1154	528	84.3
Freeling	827	888	1144	317	38.3
Lyndoch	706	957	1137	431	61.0
Balhannah (L)	734	889	947	213	29.0
Meningie (L)	803	818	918	115	14.3
Middleton (L)	295	395	730	435	147.5
Riverton (L)	707	757	694	-13	-1.8
Macclesfield (L)	253	318	692	439	173.5
Meadows (L)	479	528	686	207	43.2
Birdwood (L)	520	582	668	148	28.5
Mallala (L)	536	588	652	116	21.6
Greenock (L)	369	451	644	275	74.5
Eudunda (L)	657	647	642	-15	-2.3
Two Wells (L)	487	519	624	137	28.1
Hamley Bridge (L)	584	654	617	33	5.7
Normanville (L)	369	513	590	221	60.0
Gumeracha (L)	384	448	590	206	53.6
Port Wakefield (L)	517	512	543	26	4.8
Mount Pleasant (L)	466	546	516	50	10.7
Oakbank (L)	230	340	439	209	90.9
Yankalilla (L)	384	408	434	50	13.0
Saddleworth (L)	403	421	409	6	1.5
Mount Compass (L)	na	310	367	-	-
Milang (L)	300	352	347	47	15.7
Carrickalinga (L)	267	291	333	66	24.7
Wasleys (L)	182	233	319	137	75.3
Auburn (L)	325	331	303	-22	-6.8
Mount Torrens (L)	221	243	278	57	25.8
Swan Reach (L)	226	230	255	29	12.8
Springton (L)	na	220	238	-	-
Owen (L)	234	237	229	-5	-2.1

Source: ABS 1986, 1991 and 1996 Censuses.

Figure 19: Peri-urban centres and rural localities, 1991



Source: ABS 1991 Census.

The most rapid growth occurred in the 500-999 class which consistently gained centres throughout the 1976-91 period. On the other hand, the smaller settlement category (250-499) actually declined in number, despite gaining 3 centres between 1981 and 1986 (Middleton, Carrickalinga and Macclesfield) and 2 centres between 1986 and 1991 (Oakbank and Mount Compass). This resulted from a number of these centres passing the 500 population threshold over the 1976-81 period, without a compensating gain from the smallest class (<=250). The number of centres in the smallest settlement category (<=250) continued to rise up to 1986 as new towns were added.

Turning to the distribution of population between settlement categories, Table 9 reveals that the largest settlement category steadily increased its share of the peri-urban population between 1976 and 1991. Of course, this is partly due to the reclassification of centres, described above. Nevertheless, the net result was that a larger proportion of the peri-urban population were living in the largest centres in 1991 than in 1976. Similarly, the 'middle order' settlement category (500-999) continued to gain population both in absolute terms and as a proportion of the total region. Although the rural balance increased in population number, in relative terms it has declined, as did the population living in the 1000-2499 category. In contrast, the population in small centres (250-499) was lower in 1991 than 15 years earlier, both in absolute and relative terms.

Clearly, the settlement pattern in the peri-urban region does not reflect that of South Australia, as growth is occurring predominantly in the largest centres while the lower order categories are declining in significance. Hence, the inverse relationship between settlement size and population growth evident in South Australia is not reflected in the peri-urban region. Instead, there is a positive association between growth and settlement size.

Despite the general pattern of growth observed in the peri-urban region few centres or localities experienced population decline (Table 10). Those that did tended to be 'middle order' urban centres located at the outer edges of the peri-urban region, for example, Eudunda, Tailem Bend, Mannum and Riverton (Figure 19). The majority of the smaller centres experienced population increases and many recorded high annual growth rates. Nevertheless this growth was outpaced by the largest centres and in absolute terms the small towns did not contribute significantly to aggregate peri-urban growth.

Recently released data from the 1996 Census indicate that the broad patterns which were evident in the peri-urban region between 1986 and 1991 have intensified in the early 1990s. While the number of centres in the largest size category (>=2500) has remained the same (Table 8), the 1000-2499 class gained 3 centres (Willamstown, Freeling and Lyndoch). Compensating for the loss of these 3 centres, the 500-999 category gained Middleton, Macclesfield, Greenock and Gumeracha, resulting in the continued gain in the number of towns in that size class. On the other hand, the smaller size categories continued to decline, with the number of centres in the smallest settlement class (>=250) decreasing for the first time since 1976 since no new towns reached the 200 population threshold between 1991 and 1996. Thus, the tendency in the early 1990s has been towards continued urbanisation of the peri-urban population with the majority of growth occurring in the larger centres and a fall in the population living in smaller towns and rural areas (Table 9).

6. THE PERI-URBAN POPULATION

The foregoing analysis provides a clear picture of overall trends in population growth within the peri-urban region and shows the patterns of growth that are occurring. However, secondary data provide no real insights into the reasons people are choosing to move to the peri-urban region. An understanding of these motives is essential for planning and policy formulation (Walmsley, Epps & Duncan 1995 p.26). This section endeavours to contribute to this understanding of migrant motives and behaviour by drawing on results from surveys of migration to three selected peri-urban SLAs.

The three SLAs – Mallala, Mount Barker and Strathalbyn - are all located on the boundary of the Adelaide metropolitan area but represent quite different physical environments and fulfil somewhat different economic functions. These variations are in turn reflected in differing migrant profiles, motives and behaviour. Mallala is on the northern boundary of the ASD and although it is a flat, dry, featureless region, which possesses none of the attractive physical characteristics usually associated with rural living, it was the fastest growing non-metropolitan SLA in South Australia between 1986 and 1991 (5.2 per cent per annum). Mt Barker on the southeastern metropolitan boundary is located within the scenic Adelaide Hills. As Adelaide has grown, Mt Barker has attracted more and more residential development and has become a major commuter settlement. Strathalbyn is located within the Fleurieu Peninsula, an attractive and naturally diverse region. Although it is a traditional rural centre for agricultural industries, it also grew rapidly between 1986 and 1991 (3.7 per cent per annum).

6.1 Socio-demographic characteristics

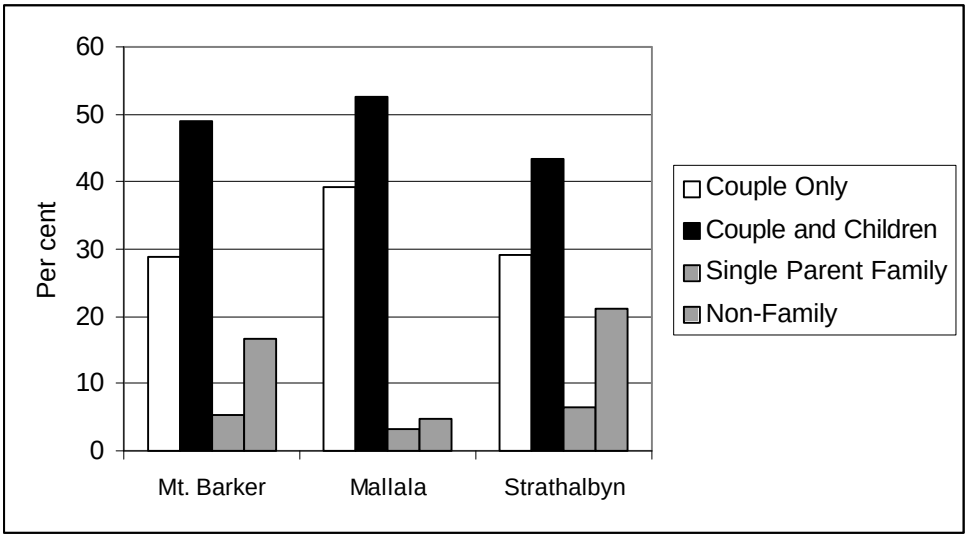
At the 1991 Census, the age profiles of the three peri-urban SLAs were very similar, each housing a relatively young population. The concentration in the age cohorts 0-19 years and 30-49 years suggests a predominance of young families. The major family type in each of the three areas was the 'nuclear family' consisting of couples with children. This family type accounted for almost half of all families in Mallala (49.3 per cent), and Mount Barker (44.9 per cent) and two-fifths of those in Strathalbyn. This compares with 37 per cent in the Adelaide metropolitan area.

Evidence from the field surveys confirmed that the nuclear family was the most common family type among recent migrant households – those who had arrived in the five years prior to the survey (Figure 20). The traditional 'nuclear family' accounted for half of all families who had moved recently to Mallala and Mt Barker and 44 per cent of those who had migrated to Strathalbyn.

Although the nuclear family was significant in all three SLAs, there was some variation in the ages of dependent children within these families. Couples with children of school age (under 15 yrs) predominated (Figure 21) but very young children (under 5 yrs) were most significant in Mt Barker and Mallala, while couples with older children (5-15 yrs) were more numerous

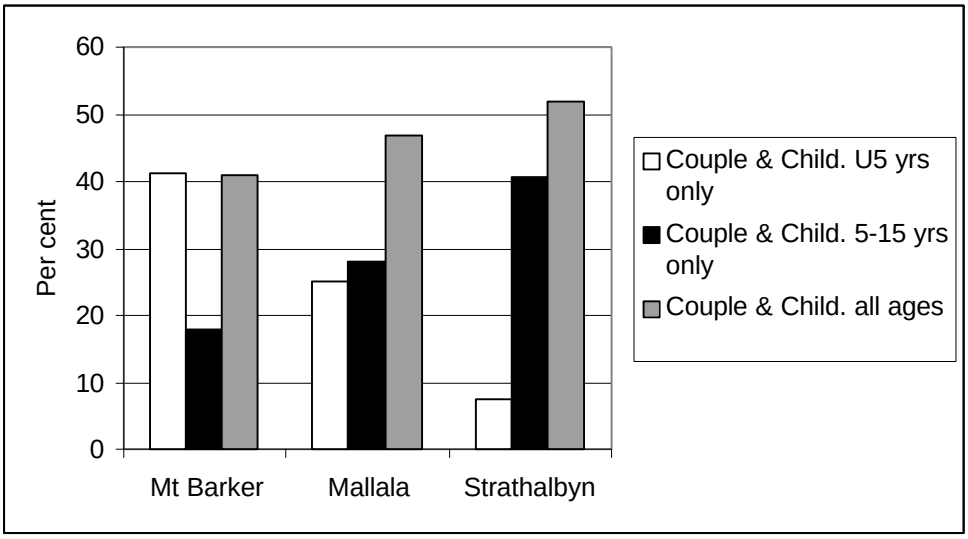
among migrants to Strathalbyn.

Figure 20: Recent migrants by family and household type



Source: Mount Barker Township Survey (1995); Mallala District Council Survey (1995); Strathalbyn District Council Survey (1996).

Figure 21: Recent migrants by age of children



Source: Mount Barker Township Survey (1995); Mallala District Council Survey (1995); Strathalbyn District Council Survey (1996).

Couple only families also made up a significant proportion of recent migrants to the three survey locations. In Mallala and Mt Barker, this family type consists mainly of young adults aged 25-34 years. Young couple families without children are important in the context of population growth in the peri-urban region, as they are a potential group of young nuclear families. Housing in this region is predominantly detached dwellings with surrounding land, at the lower to middle end of the market. Housing of this type is almost certainly attractive to young families. Many of the young nuclear families in the peri-urban region may also have moved there without children as 'couple only' families.

As can be seen from Figure 20, single parent families made up less than 7 per cent of recent migrants to the three survey regions. Despite the availability of public housing and support services in the larger towns, it appears that metropolitan Adelaide is more attractive as a residential environment for single parents families.

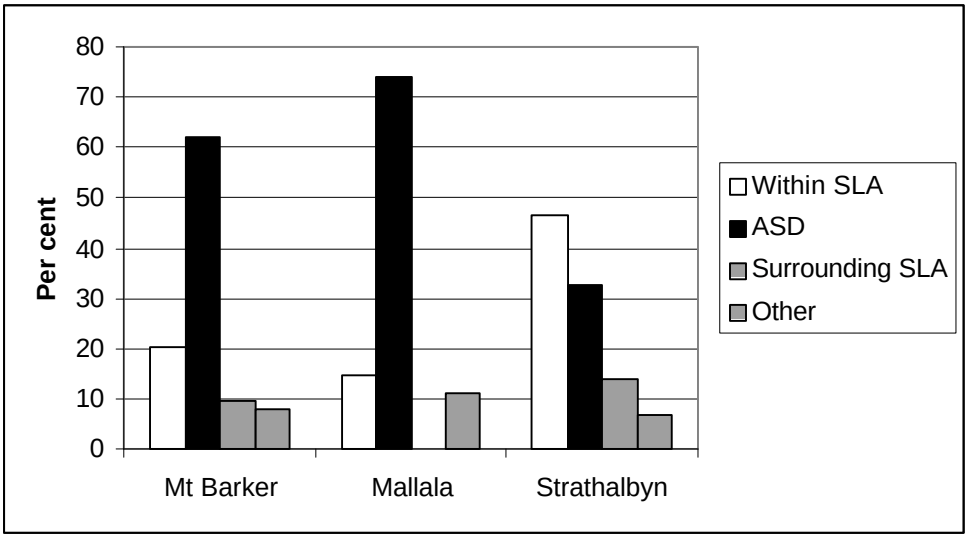
The significance of non-family households (group households and lone persons) varied markedly between the three destinations, making up one fifth (21 per cent) of in-migrants to Strathalbyn and one sixth (16.7 per cent) of those moving to Mount Barker, but accounting for less than 5 per cent of migrants to Mallala. Underpinning these variations there are also differences in the composition of the migration streams. The major component of non-family households migrating to Strathalbyn are older people moving to be closer to family. Mount Barker, on the other hand, tends to be attractive to young singles who share accommodation in group households. By contrast, Mallala appears to be unattractive to either of these groups and is overwhelmingly dominated by family households.

6.2 Functional linkages to Adelaide

It is often suggested (Burnley & Murphy 1995, Hugo 1996, McKenzie 1996, Murphy & Burnley 1996) that many peri-urban migrants maintain functional links to the city, commuting to jobs in the CBD or outer suburbs. At the 1991 Census, some 30 per cent of the employed population residing in the adjoining peri-urban SLAs commuted to the Adelaide Statistical Division. Although not all of these commuters are necessarily recent migrants, this does suggest that strong links exist between the metropolitan and peri-urban regions.

Evidence from the surveys supports the view that linkages are especially strong among recent migrants. Most employed family heads who had moved to Mallala or Mount Barker within the previous five years commuted to work in the ASD (Figure 22). In the case of Mallala, 75 per cent of household heads commuted daily to the ASD, and more than half (52 per cent) worked in the northern part of the metropolitan area (Gawler, Elizabeth and Salisbury). Strathalbyn shows a quite different pattern. While about one third commuted to Adelaide, almost half worked within Strathalbyn itself. Linkages from Strathalbyn, then, are much more attenuated, and this perhaps reflects its more distant location and longer travel times from Adelaide.

Figure 22: Workplace location of recent nuclear families (household heads only)



Source: Mount Barker Township Survey (1995); Mallala District Council Survey (1995); Strathalbyn District Council Survey (1996).

6.3 Origin of migrants

It was shown earlier that most peri-urban migrants are from the metropolitan region and this is also reflected in the survey data (Table 11). Some 87 per cent of nuclear families who had moved to Mallala within the previous five years came from the ASD and 65 per cent of these had moved from the northern metropolitan area. Similarly, in Mt Barker 48.3 per cent had moved from the ASD. However, Strathalbyn again presents a different picture with a much higher percentage originating in other parts of the State and interstate (37 per cent). Hence, while recently arrived nuclear families in Mount Barker and Mallala resemble their metropolitan counterparts in that most moved from the metropolitan area and the majority continue to work there, the data for Strathalbyn reveal that this pattern is by no means universal.

Notwithstanding these variations, evidence from the surveys provides the basis for some broad generalisations in regard to the socio-demographic characteristics of nuclear families moving to peri-urban fringe:

- couples aged 30-39 years with school age children (5-15 yrs) or infants under 5
- employed with at least the male head working full-time, often dual income
- blue-collar occupation
- commute to metropolitan region for employment
- moved from the metropolitan region

Table 11: Previous residence of nuclear families who moved within the last five years

Location	Strathalbyn	Mallala	Mt Barker
Within SLA	18.5	12.9	18.4
ASD	25.9	87.1	48.3
Surrounding peri-urban	18.5	-	31.0
Other (includes interstate)	37.0	-	2.3
Total (n)	100.0(27)	100.0(32)	100.0(55)

Source: Mount Barker Township Survey (1995); Mallala District Council Survey (1995); Strathalbyn District Council Survey (1996).

6.4 Motives for migration

The survey data show that, for couples with children, the main reason for moving to a peri-urban location was the cheaper cost of land and housing, although employment and locational factors were also important (Table 12). The cost of land and housing was also important among 'couple only' families, although less all-consuming than among couples with children. In Mallala employment and lifestyle reasons were more important than housing costs while in Mt Barker locational and family reasons were rated as equally significant. Similarly, locational and lifestyle factors were equally important motives for 'couple only' families migrating to Strathalbyn (Table 13).

It is often assumed that young families move to the peri-urban region specifically to achieve home-ownership, moving either from rented accommodation or the homes of extended family members after saving a sufficient deposit for a home (Burnley & Murphy 1995, p.134). The survey data provide qualified support for this assumption. Four-fifths of those who cited land and housing costs as their primary reason for moving were young adults aged 25-39 years, presumably in the early stages of family and household formation where housing costs are a primary consideration. The proportions were remarkably similar in the three survey areas (83.3 per cent in Strathalbyn, 77.8 per cent in Mallala, and 85.7 per cent in Mt Barker).

Table 12: Main reason for moving to current residence, families with children

Reason	Strathalbyn	Mallala	Mt Barker
Employment/Economic.	18.2	22.5	14.5
Lifestyle	15.2	15.0	-
Family Related	15.2	5.0	9.1
Price land/housing	30.3	35.0	40.0
Locational Factors	15.2	20.0	32.7
Other	5.9	2.5	3.7
Total (n)	100.0(25)	100.0(30)	100.0(55)

Source: Mount Barker Township Survey (1995); Mallala District Council Survey (1995); Strathalbyn District Council Survey (1996).

Table 13: Main reason for moving to current residence, couple only families

Reason	Strathalbyn	Mallala	Mt Barker
Employment/Econ.	11.1	25.0	12.5
Lifestyle	22.2	20.8	-
Family Related	11.1	16.7	25.0
Price land/housing	22.2	16.7	25.0
Locational Factors	22.2	12.5	25.0
Other	11.1	8.3	12.5
Total (n)	100.0(18)	100.0(24)	100.0(30)

Source: Mount Barker Township Survey (1995); Mallala District Council Survey (1995), Strathalbyn District Council Survey (1996).

In the case of Mt Barker, however, more detailed analysis reveals that only 37 per cent of families with children and 27 per cent of young couples moving to the region were first homebuyers. It may be the opportunity to build, rather than simply to own, a home that is important. In Mt Barker 75 per cent of recent migrants who were new home purchasers had built their own home, although this was not always the first home they had owned. This suggests that migration may be linked to a trade-up in housing quality, particularly among the more established families with older children.

It has also been suggested that non-metropolitan population growth is partly a reaction to rising housing costs within the metropolitan region (Hugo & Bell forthcoming). Within the Mt Barker sample, only 20 per cent of nuclear families and 12 per cent of young couples who had recently moved had seriously considered other housing estates within the Adelaide metropolitan region before moving. The alternatives considered included Seaford Rise in the south and Golden Grove in the north. On the other hand, 33 per cent of nuclear families and 40 per cent of young couples had considered other locations within the Adelaide Hills. This suggests that families are deliberately choosing peri-urban locations in preference to metropolitan housing estates rather than being forced out of the metropolitan locations. However it is difficult to ascertain to what extent this is a function of the lack of real choice within metropolitan Adelaide in respect to the price of housing.

For some families another factor may be that peri-urban regions have less restrictions on land use than is the case in urban and suburban areas. For example, in Mallala 20 per cent of recent in-migrant families stated that the reason for leaving their former residence was to keep animals such as dogs and horses. Mallala is one of the few SLAs in the state which provides rural living zones that allow households to keep animals intensively. Similarly, 14 per cent and 25 per cent of nuclear families in Strathalbyn and Mallala respectively stated that they left their former residence primarily to escape city life.

Hence it may be that aside from the pursuit of homeownership, peri-urban families want a rural lifestyle, but with all the advantages of access to urban opportunities. They may not feel the need for direct access to the social services offered in urban areas, but do not wish to be too far away from them.

6.5 Satisfaction with peri-urban location

An important aspect of migrant behaviour is satisfaction with the peri-urban location. The three field surveys were undertaken utilising different collection instruments, resulting in slightly different variables. In addition, the detailed information collected in the Mallala and Strathalbyn field surveys is not available in the Mount Barker survey. Nonetheless, the data are broadly comparable and interpretation can be made as to the relative level of satisfaction in the three locations.

The majority of recent migrants to Mallala (90.2 per cent) and Strathalbyn (90.4 per cent) were very satisfied with their current residential location. Similarly, 78.3 per cent of all migrants to Mount Barker stated that the area had met their expectations, indicating a high degree of satisfaction among migrant households.

The high degree of satisfaction expressed by migrants in Mallala and Strathalbyn appears to be related to improvements in the quality of life associated with their peri-urban location. Table 14 shows that the main advantages of these two locations were perceived to be the quiet and country lifestyle. Privacy, security, clean air and open space were also seen as important, which suggests that it is the rural atmosphere and lifestyle which underpin the high satisfaction rating. Employment and access appear to be more important to households in Strathalbyn than Mallala. Perhaps this reflects the predominant origin of Strathalbyn migrants, many of whom originated in the rural periphery or came from within the region itself. Similarly, the accessibility of Mallala to the northern metropolitan labour market may account for the lower importance placed on these factors.

Table 14: Main advantages of current location, all migrant households

Advantage	Strathalbyn	Mallala
Quiet	24.2	24.6
Country lifestyle	12.9	9.8
Employment	11.3	1.6
Clean air	9.7	-
Distance to Adelaide	8.2	1.6
Open space	-	16.4
Privacy	-	9.8
Security	4.8	8.2
Other	28.9	28.0
Total (n)	100.0(62)	100.0(61)

Source: Mallala District Council Survey (1995), Strathalbyn District Council Survey (1996).

Migrants to Mount Barker were not asked to state the advantages of their residential location. Instead, a series of questions directed at identifying satisfaction with service provision in the town were asked. On the whole, households appeared to be satisfied with the complement of health, educational and shopping facilities provided by the town, with most only travelling to Adelaide for specialist services.

6.6 Summary

The results presented in this section highlight the heterogeneity of the peri-urban region. Evidence from three very different SLAs shows the variation in migrant characteristics, motives and behaviour across the region. The majority of households in Mallala are young couples and families with young children who moved from the metropolitan region but continue to work there. Similarly, couples and nuclear families dominated the migrant flow to Mount Barker. Many had moved from the metropolitan region but Mount Barker also attracted people from surrounding peri-urban locations. Compared with Mallala migrants they were more strongly motivated by homeownership, housing costs and locational factors. Strathalbyn, on the other hand, reveals quite a different migrant profile. Families with older children and older couples are over-represented and a large proportion moved from other parts of the State and interstate. Lifestyle, location and family connections appear to be particularly significant. One thing that migrants to all three localities share in common is a high degree of satisfaction with their choice of destination.

7. PROJECTED POPULATION CHANGE

Population projections for SLAs in Adelaide's peri-urban region have been prepared by the Information and Data Analysis Branch of the former Department of Housing and Urban Development as part of its regular program of population forecasting activities. The latest series of projections (DHUD 1996) are based on the 1991 estimated resident population and cover the period 1996 to 2011. With the release of preliminary estimates based on the 1996 Census, some discrepancies will inevitably become apparent in the projections. However, census results indicate that the broad trends anticipated in the projections were accurate and this suggests that reasonable confidence can be attached to the forecasts for the longer term.

For the state as a whole, the key assumptions in the Series B population projections may be summarised as follows:

- a continuing decline in mortality at a relatively rapid rate for the first few years of the projection with a slower rate of decline thereafter
- a constant Total Fertility Rate of 1.714 throughout the projection period
- a national overseas migration gain of 40,000 in 1993/94 rising to 70,000 persons per annum by 2001 and constant thereafter
- interstate migration losses falling to zero by 2001 and constant thereafter
- an increase in the net outflow from Adelaide and corresponding gains in Outer Adelaide, minor gains in the Yorke and Lower North and losses in the other Statistical Divisions.

The projections for Adelaide, the peri-urban region, the non-metropolitan parts of the State, and South Australia are set out in Table 15. The results indicate that the State population will grow at a little over 0.6 per cent per annum between 1996 and 2006, declining to 0.54 per cent per annum between 2006 and 2011. Adelaide and non-metropolitan South Australia are expected to grow at similar rates, suggesting that the proportion of the population resident in Adelaide is likely to remain relatively constant in the future. Within the non-metropolitan area, however, the peri-urban region is expected to continue to grow rapidly.

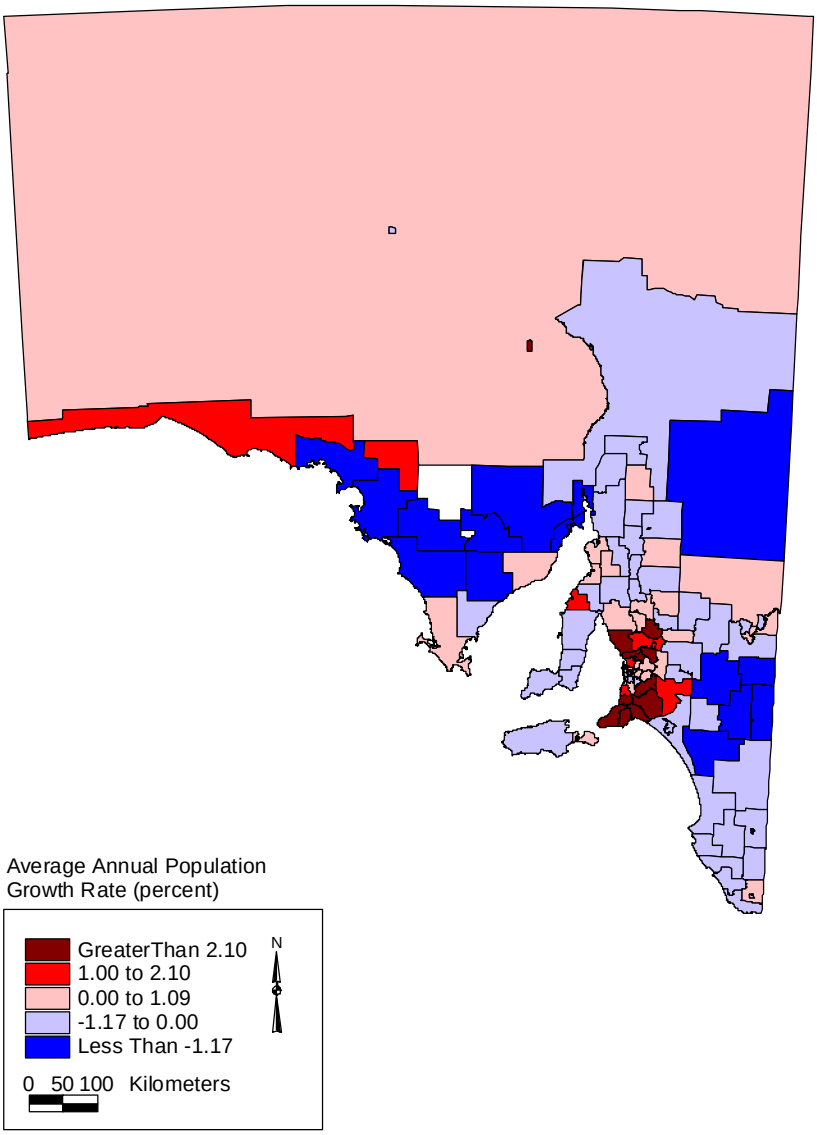
Table 15: Projected population growth of Adelaide, the peri-urban region, non-metropolitan South Australia and the total State, 1991-2011

Region	1991-96	1996-2001	2001-2006	2006-2011
Adelaide Statistical Division	0.57	0.64	0.63	0.53
Peri-urban region	2.19	1.89	1.78	1.64
Non-metropolitan South Australia.	0.36	0.60	0.60	0.54
Total State.	0.52	0.63	0.62	0.54

Source: DHUD 1996 (Series B).

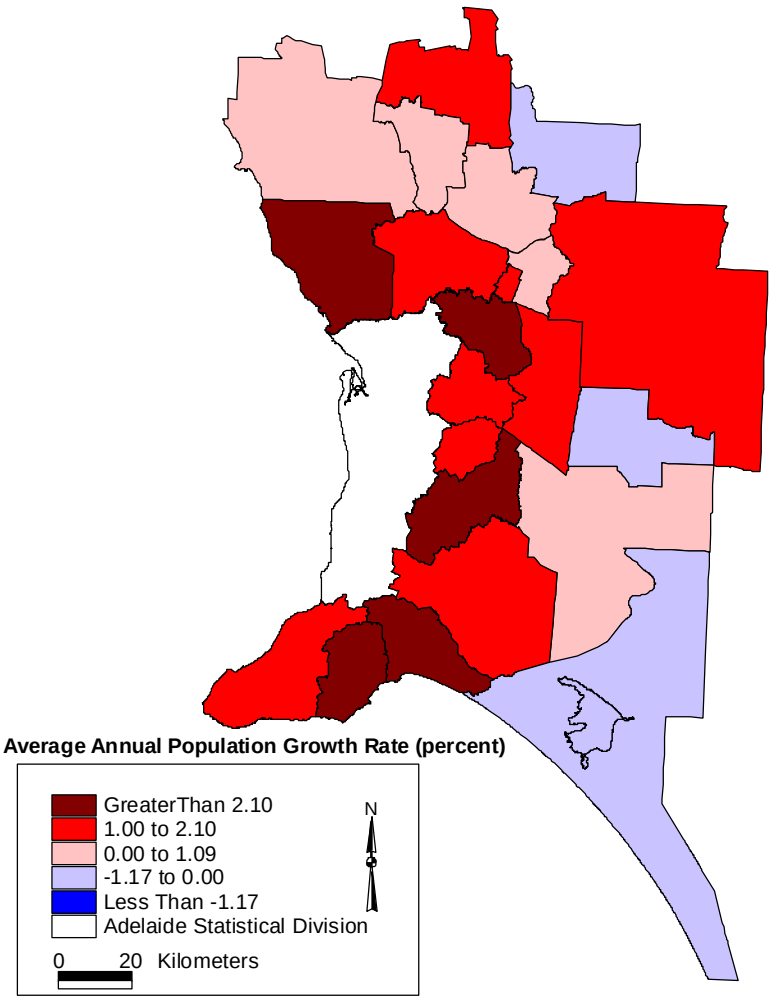
Indeed, according to these projections, the peri-urban region will grow at approximately three times the State average between 1996 and 2011. This points to a increasing concentration of population within the peri-urban region and reflects the assumption of an increased net outflow from Adelaide to the Outer Adelaide, and Yorke and Lower North Statistical Divisions.

Figure 23: Projected population growth, SLAs in non-metropolitan South Australia, 1991-2011



Source: DHUD 1996 (Series B).

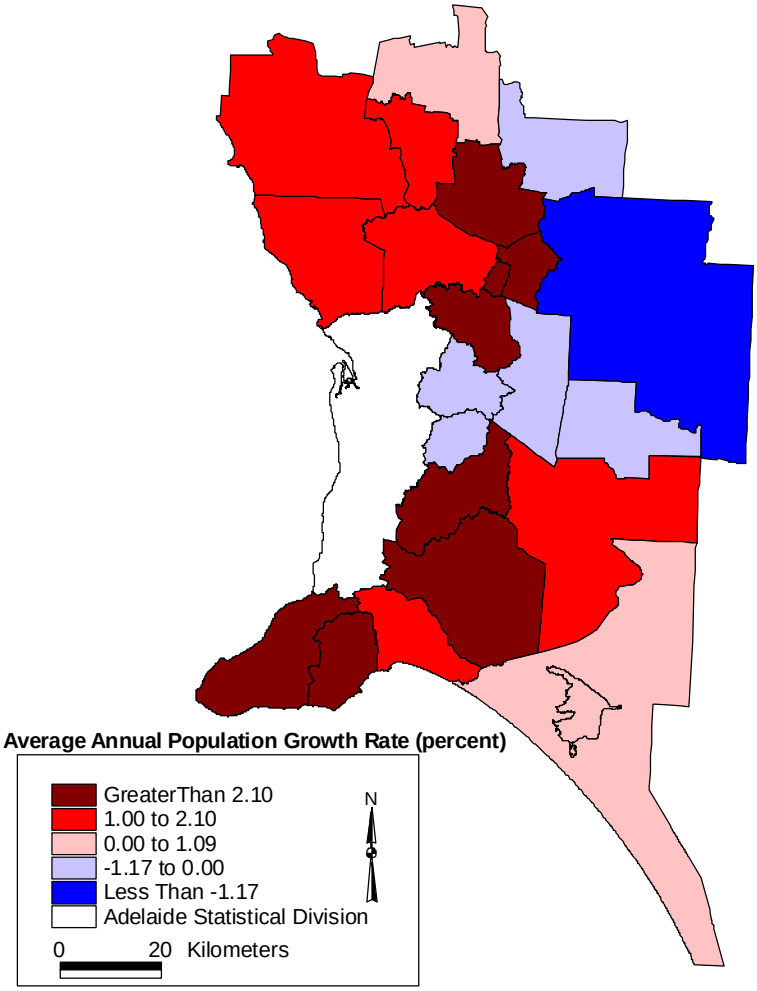
Figure 24: Projected population growth, SLAs in Adelaide's peri-urban region, 1991-1996



Source: DHUD 1996 (Series B).

Figure 23 illustrates the projected pattern of growth within non-metropolitan South Australia and indicates a continuing concentration in the peri-urban region. Within the peri-urban region, Figure 24 shows that high annual growth rates are projected to continue between 1991 and 1996 with only Mannum and Meningie, which are primarily agricultural regions, undergoing decline.

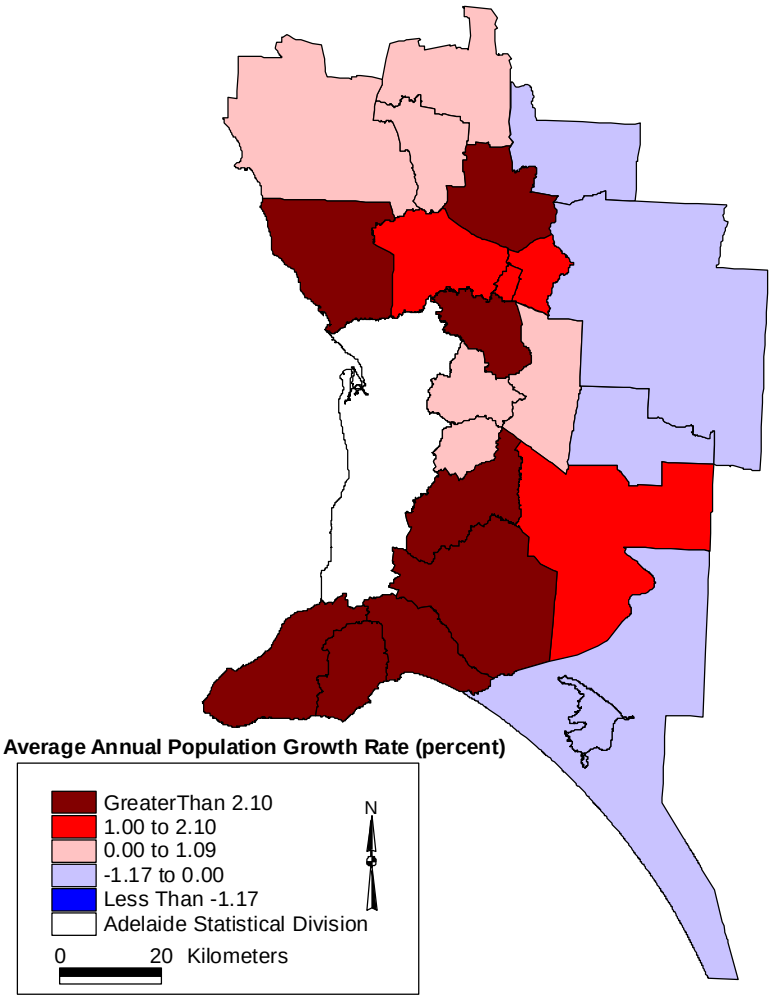
Figure 25: Projected population growth, SLAs in Adelaide's peri-urban region, 1991-2001



Source: DHUD 1996 (Series B).

The map of projected growth for 1991-2001 (Figure 25) shows a number of changes with the highest annual growth rates concentrated in the Fleurieu and Barossa Valley regions. These contain some of the most environmentally attractive and habitable areas of South Australia including the Barossa wine-growing region and the resort-retirement centres of Victor Harbor, Port Elliot and Goolwa and Yankalilla. The corridor of eastern SLAs experiencing small negative growth rates is also significant and reflects the limitations to growth imposed by planning regulations imposed to protect the Mount Lofty Ranges water catchments.

Figure 26: Projected population growth, SLAs in Adelaide's peri-urban region, 1991-2011



Source: DHUD 1996 (Series B).

Figure 26 indicates that growth is expected to continue throughout the 1991-2011 period. Although some SLAs are projected to register decline, the broad picture for the region is overwhelmingly one of high annual population growth. As existing residential sites within metropolitan Adelaide are progressively consumed the peri-urban region will come under increasing pressure to accommodate new housing and at least part of the growth projected for the region will represent the response to this residential land pressure. However, as has been demonstrated above, the peri-urban region fulfils a variety of functions and demand arising from other factors such as retirement migration, hobby farms, and so on, is also likely to continue unabated.

8. CONCLUSION

Rapid population growth in Adelaide's peri-urban region dates from the 1970s and has continued to the 1990s with in-migration performing the dominant role in population growth. There are significant differences in growth between SLAs and the evidence suggests that the peri-urban region fulfils a variety of roles and economic functions. This report has endeavoured to analyse the dynamics and causes of population growth within the region. To summarise the key findings:

- Since the 1970s the population growth rates of the metropolitan and non-metropolitan parts of South Australia have tended to converge. Non-metropolitan areas experiencing growth have become spatially concentrated in the peri-urban region which recorded a growth rate almost three times that of the ASD and the state as a whole between 1986 and 1991.
- Although population growth accelerated in the 1971-76 intercensal period, growth did not become widespread across the region until the early 1980s.
- The dominant factor contributing to population growth has been in-migration. In comparison, in the State as a whole, natural increase continued to account for the majority of population growth.
- The age profile of migration to the region has been fairly consistent throughout the 1966-91 period, with gains peaking in the 0-9 and 25-34 age groups and smaller inflows at older ages. Net out-migration of people aged 10-24 years increased during the 1980s. However, individual peri-urban SLAs exhibit quite distinct patterns of net migration.
- Population growth has occurred throughout the settlement hierarchy from the large non-metropolitan centres to the smaller towns and their surrounding rural hinterlands.
- There is significant in-migration of young families with school aged children to peri-urban SLAs adjacent to metropolitan Adelaide. These families have mainly moved from metropolitan Adelaide and tend to maintain strong linkages with Adelaide for employment.
- The major reason for choosing a peri-urban location is the affordability of land and housing. Some are seeking home-ownership, often unattainable in the metropolitan region, while others appear to be 'trading up', possibly in response to their children's need for space. However, lifestyle factors also appear to be important including, for example, the greater freedom to keep animals in rural residential areas.
- Population growth is projected to continue throughout the peri-urban region over the 1991-2011 period, although at a slower rate than was experienced in the 1970s and 1980s.

The consequences and implications of the continued growth of the peri-urban region are enormous and cannot be dealt with in detail here. This report has shown that young families comprise a significant proportion of in-migrants in many peri-urban SLAs. Substantial pressure will be placed on social services within the peri-urban region, particularly on schools and childcare facilities. Although the majority of household heads commute to Adelaide for employment, their children are likely to attend school within the peri-urban region. In addition, the lack of adequate support services will place pressure on women who often remain isolated at home with young children. However, not all in-migration consists of young family groups. In SLAs such as Victor Harbor and Port Elliot and Goolwa retirement migration is of considerable significance, generating demands for quite different types of services and facilities.

While there may be similarities in growth rates between peri-urban locations, the sources of growth vary and can be expected to change further in the future. Peri-urban growth is not dependent solely on the existing metropolitan population. Significant growth is also generated from within the region itself and from the outlying rural periphery. Population retention and centripetal migration are important growth processes throughout the peri-urban region, particularly in the outer part of the region. This confluence of forces contributes to the inherent heterogeneity of the peri-urban region.

Examination of the local conditions and population characteristics within specific peri-urban locations is essential if the impacts of growth and development are to be understood and planned for appropriately. Policy makers need to understand the dynamics and long term impacts of peri-urban development and to recognise that it is by no means a homogeneous region. As a result the challenges for planning will vary widely across the peri-urban region and require carefully targeted policies that are sensitive to local conditions.

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