

# POPULATION and TOURISM STUDIES RESEARCH BRIEF

ISSUE Number 2010056

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Population and Tourism Studies  
School for Social and Policy Research  
Charles Darwin University  
Northern Territory 0909  
dean.carson@cdu.edu.au

## Sources of Skilled Labour Migrants to the NT from Elsewhere in Australia, 2001-6

### KEY FINDINGS

- Between 2001 and 2006, nearly 9000 'skilled workers' (i.e. those with occupations on the NT Occupation Shortage List) moved to the NT from somewhere else in Australia.
- The NT sourced migrants from far more regions than would be expected given the various theories and models of labour migration.
- The most common source regions for skilled migrants were the capital cities of mainland states, the Hunter valley in New South Wales, and the northern regions of Queensland. In most cases, however, the NT attracted proportionally few of the total number of migrants these regions produced.
- The regions most likely to generate skilled migrants to the NT were those adjacent to the NT and in South Australia. Many of these regions, however, have small populations and so generate relatively few migrants.
- The 'top ten' most valuable source regions are therefore a combination of capital cities and 'outback' regions. Targeting these requires a mix of strategies and establishes different 'competitor sets' for the limited pool of skilled labour migrating around Australia.

**RESEARCH AIM**  
To identify the most common sources (by region) of skilled labour migrants to the Northern Territory from other parts of Australia as recorded in the 2006 Census.

This research brief arises in part from research conducted with the Northern Territory Department of Business and Employment (DBE) and their Workforce Growth NT unit.

Prepared by **Dean Carson**

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### **Introduction**

The recruitment and retention of skilled labour in rural and remote areas has long been a topic of interest for economists, particularly those interested in the provision of health, education and other essential services. In Australia, the resources sector, which operates extensively in the more remote parts of the nation, has needed to implement fly-in/ fly-out and other 'work at a distance' strategies to manage local skills shortages. While these strategies can be successful from an enterprise perspective, they contribute to the leakage of assets from the region (through wages paid to outsiders) and retard prospects for long term economic development by denying the region access to human capital. 'Outsourcing' regions' skilled labour needs is also likely to limit the potential for internal labour development as external systems (education, training, recruitment, career progression) increase in importance at the expense of internal ones. For these reasons and notwithstanding that many jobs are difficult to do from a distance, regional governments must continue to promote labour in-migration as well as the development of internal labour pools.

Recruitment of labour from outside of the country is an important component of any strategy, however attention must also be paid to recruitment from within national borders. In the case of Australia's Northern Territory (population 220 000 people or 1% of the national population), for example, international immigration amounted to about 6000 people between 2001 and 2006, while the number of new arrivals from other parts of Australia was in excess of 30 000 people. While not all interstate migrants were labour migrants, and not all labour migrants were 'skilled migrants' as determined by the Northern Territory Government, these top line figures illustrate the significance of the national labour pool for the Northern Territory.

Despite the relatively large inflow of population from other parts of Australia between 2001 and 2006, the Northern Territory continues to experience labour shortages. This is because of recent high rates of economic growth and expansion in the construction and public service sectors in particular, and continuing high rates of out-migration. The net national migration position of the Northern Territory has been on average a loss of around 750 people each year since 1990. As a consequence, the Northern Territory Government continues to pursue strategies to encourage in-migration from other parts of Australia, with the centrepiece being the Skilled Worker Campaign which has been in place since 2005. The campaign works with Northern Territory based employers to identify skills shortages and to target job shows and other events and media around Australia as vehicles through which to recruit to those shortages. Recruitment campaigns are largely location based (job shows are in particular cities or regional centres, media outlets have particular geographic coverage) and so the selection of locations which have more 'market potential' is an important consideration. This research examines the spatial patterns (flows) of skilled labour migration within Australia between 2001 and 2006 to provide insights into where the Northern Territory 'fits' in prevailing patterns and what value might be had from location based recruitment efforts.

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### **What the Literature Says**

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The most common models of labour migration in the academic literature are derived from core-periphery (CP) models. These suggest a strong relationship between urban cores and the surrounding, less densely populated, regions. Those peripheral regions struggle to retain excess labour because they have less alternative employment opportunities and fewer education and (re) training facilities. Excess labour therefore moves into the core. The core then sends labour out to the peripheries when there are labour shortages 'out there'. Cores can have many peripheries, but peripheries tend to owe allegiance to a single core. CP analysis has been used very successfully to predict the flow of skilled labour between regions around the World.

More recently, new models have been proposed which acknowledge that labour migration is occurring over larger distances as transport and communications technologies facilitate the sustaining of social networks. The models include the idea of agglomeration - that people with similar skills or demographic or socio-economic status tend to move to similar places. Over time then, regions become more and more attractive to particular types of people. This is quite different from what was previously observed - which was people from more disadvantaged regions moving to more advantaged regions. Now, most labour in 'rich' regions is sourced from other rich regions.

The other new models are about amenity migration. These include the 'sea change' and 'tree change' phenomena in which people trade-off economic returns for aspects of lifestyle amenity. The importance of the growing popularity of amenity migration is that offering more economic remuneration for work (beyond a certain minimum expectation) does little to make the region more attractive in the long term.

A further model of labour migration is known as 'escalator regions'. These are where people move for short periods of time to rapidly progress their careers or fulfil social/work ambitions (working in an area of need, working with disadvantaged people etc.).

The dominant patterns of labour migration which have been observed over time in Australia tend to conform to CP models - labour has moved from inland Australia (which is sparsely populated) to the larger urban centres on the east coast, and it has moved relatively short distances (usually within the same State). But there has been more and more commentary around amenity migration (particularly to southern Queensland's 'sun belt'), and some discussion of the agglomeration of particular skills (mining related skills in Western Australia, for example). In virtually all of the analyses conducted so far, the Northern Territory has been described as a marginal player in the national system, and so we have very little information about how it fits into the broader migration patterns. Where it has been assessed, the Northern Territory has been identified as an escalator region more so than a lifestyle amenity region, because it attracts large numbers of early career workers, and these people tend to stay for very short periods of time.

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**Methods**

The 2006 Census of Population and Housing included questions about current 'usual residence' (address where the respondent anticipated residing for more than six months of 2006) and usual residence on the same date in 2001. For the purposes of this research, a 'migrant' was a person who cited different usual residences in Australia for 2006 and 2001. Analysis was specifically conducted on migration between Statistical Divisions (SDs). There were 61 Statistical Divisions at the 2006 Census, covering all of Australia. Statistical Divisions were selected because there were a manageable number for national analysis (there were, for example, nearly 1400 Statistical Local Areas), and because movement between Statistical Divisions was more likely to be associated with a change of employment than movement between smaller areas. There were only two Statistical Divisions in the Northern Territory (Darwin and Northern Territory Balance). Intra-Territory migration analysis (see point 2 below) was therefore conducted at the Statistical Sub-division (nine in the Northern Territory) level. While the Northern Territory Skilled Worker Campaign does not specifically prioritise locations within the Northern Territory as destinations for migrants, there is recognition that factors stimulating migration to the relatively urbanised Darwin region may be different to those stimulating migration to the more remote parts of the jurisdiction. Where possible, then, Darwin has been distinguished from other parts of the Northern Territory in the analysis described below.

Migration events were examined for people who were employed in one of the occupations identified in the 2010 Northern Territory Occupation Shortage List ([http://www.nt.gov.au/db/e/employment/workforce\\_nt/docs/nt\\_occupation\\_shortage\\_list\\_2010.pdf](http://www.nt.gov.au/db/e/employment/workforce_nt/docs/nt_occupation_shortage_list_2010.pdf)).

There were approximately 120 occupations on the list, and these were drawn primarily from the 2006 Australian and New Zealand Standard Classification of Occupations (ANZSCO). Occupations Shortage List occupations were usually (but not always) specified from the four digit level of ANZSCO (the most detailed level) which contained about 600 occupations in all. A limitation of the analysis is that the occupation of the person was only known for 2006. People may have changed occupations between 2001 and 2006.

Data were accessed using the Australian Bureau of Statistics Table Builder application. Spatial analysis was conducted using Quantum GIS open source software.

Five sets of analyses were conducted -

1. *Analysis of national skilled migration flows.* A concentration index was calculated for each SD in Australia. This was the percentage of all skilled worker migrants to an SD between 2001 and 2006 who came from the five largest source regions (by volume). A higher percentage represented a greater concentration (C5) of sources of migrants. Lower C5 scores indicated a greater diversity of sources of migrants. The concentration index analysis provides a high level view of the spatial structure of the national migration system. On average, the top five sources of skilled migrants accounted for two thirds of all skilled migrants to a region. While this research did not specifically examine out-migration flows (excepted as implied in points 4 and 5 below), it should be noted that out-migration concentration was similar on average (top five destinations for out-migrants accounted for two thirds of all out-migration events) and correlated very strongly at the regional level ( $r = 0.86$ ).
2. *Source regions (by volume) for the Northern Territory.* Analysis was then conducted to identify the largest (by volume) SD sources of skilled migrants to each of the two SDs in the Northern Territory and the Northern Territory as a whole. This analysis provides a view of the spatial pattern of migration to the Northern Territory based on the number of skilled migrants sourced from each region. The limitation of the volume measure is

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- that it does not account for the differences in size of SDs or their different propensities to produce out-migrants.
3. *Source regions (by likelihood) for the Northern Territory.* To account for this, analysis was also conducted according to the likelihood that a skilled out-migrant from an SD outside the Northern Territory would move to a Northern Territory SD.
  4. *Out-migration rank analysis.* The ranking of the Northern Territory (considered as a single region) as a destination for out-migrants from each SD was calculated. The aim was to identify those regions for which the Northern Territory would be included in a concentration index (C5) of outmigration. This analysis did not consider the two Northern Territory SDs separately because of the relatively small population of the Balance SD in particular.
  5. *Analysis by industry sector.* Finally, we examined the migration patterns for various industry sectors (including agriculture, mining, hospitality, health, education, construction, transport, and public administration) to see what differences might exist between different skills sets.

Each of the five analyses provided different views of the positioning of the Northern Territory within the national skilled migration system. The discussion focuses on the similarities and differences between the views.

### Results

#### 1. The National Skilled Labour Migration System

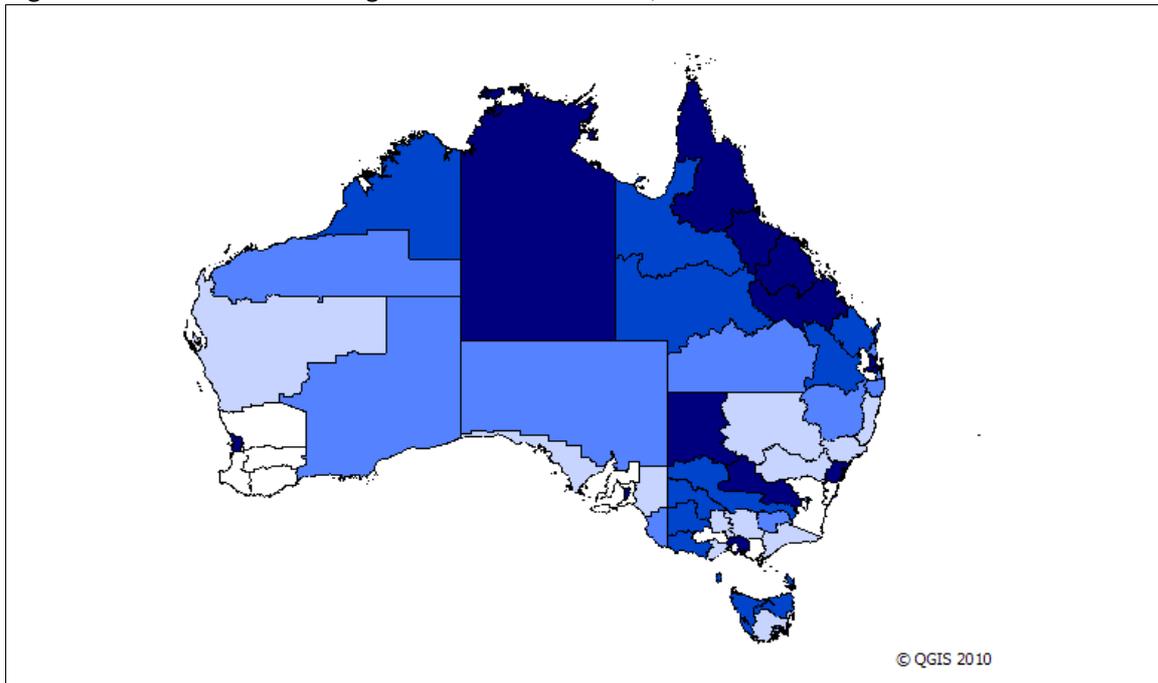
Figure 1 shows the percentage of all skilled labour migrants sourced from the top five source regions for each destination region in Australia. Lighter coloured regions get more of their skilled migrants from just the top five sources. Nationally, about two thirds of all skilled migrants come from just the top five source regions. In the Northern Territory, however, less than half of all migrants come from our top five regions.

Figure 1 shows clear 'core-periphery' (CP) flows around the State capital cities, with the partial exception of Brisbane. In Victoria, for example, about half of all skilled migrants to the ring of lighter coloured regions around Melbourne come from Melbourne. The proportion gets lower as you move further away from Melbourne, but the popular source regions for those more distant regions include Melbourne and the regions in between.

This pattern is very different for the Northern Territory (see point 2 below) and for the north east coast of Queensland. Both of these areas attract migrants from a very diverse range of sources, with much less dependence on sources within the jurisdiction (Darwin only provides 26% of skilled labour migrants to the rest of the NT, for example).

Sources of (Australian) Skilled Migrants to the NT, 2001-2006.

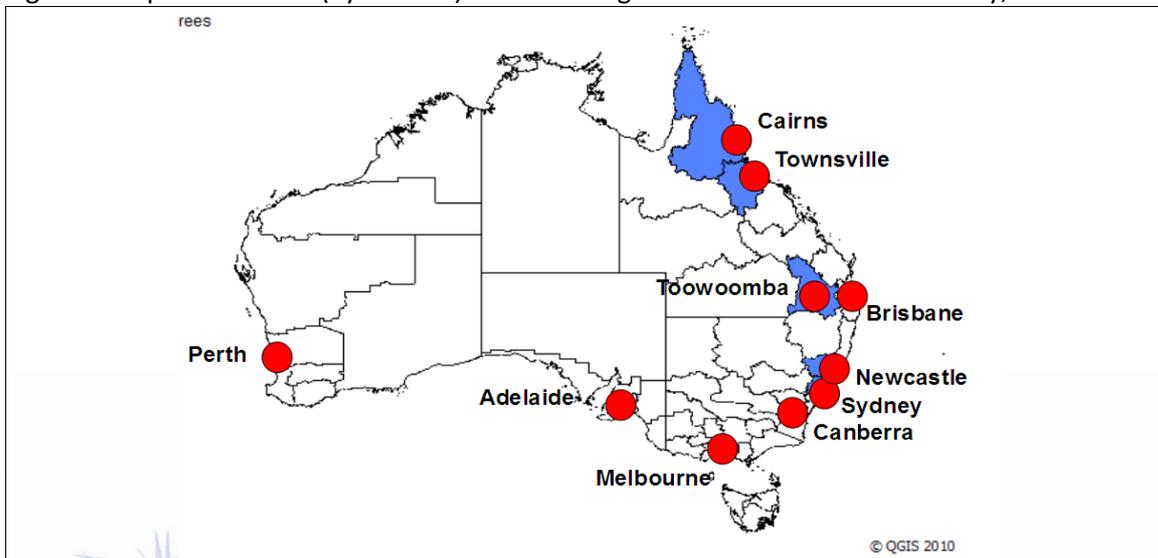
Figure 1: Sources of Skilled Migrants to Australian SDs, 2001-2006



2. Source Regions (by volume) to the Northern Territory

Outside the Northern Territory, the largest sources (by volume) of skilled migrants to the Northern Territory were the mainland capital cities of Melbourne (11% of migrants), Adelaide (9%), Brisbane (8%), Sydney (8%) and Perth (7%). These were followed by migrants from Hunter, Far North Queensland, Northern Queensland, the Darling Downs, and Canberra (see Figure 3). Each of these provided 3% or less of the total migrant arrivals. Figure 2 labels the major population centre in the region. Two additional Queensland regions (Fitzroy (Rockhampton) and Wide Bay-Burnett (Bundaberg)) were among the top ten sources of migrants to Northern Territory Balance, but not to Darwin. In contrast, Canberra and Darling Downs (Toowoomba) were in the top ten for Darwin but not for Northern Territory Balance. However, the percentage of migrants provided by these regions (even to the Northern Territory as a whole) was very small.

Figure 2: Top Ten Sources (by volume) of Skilled Migrants to the Northern Territory, 2001-2006

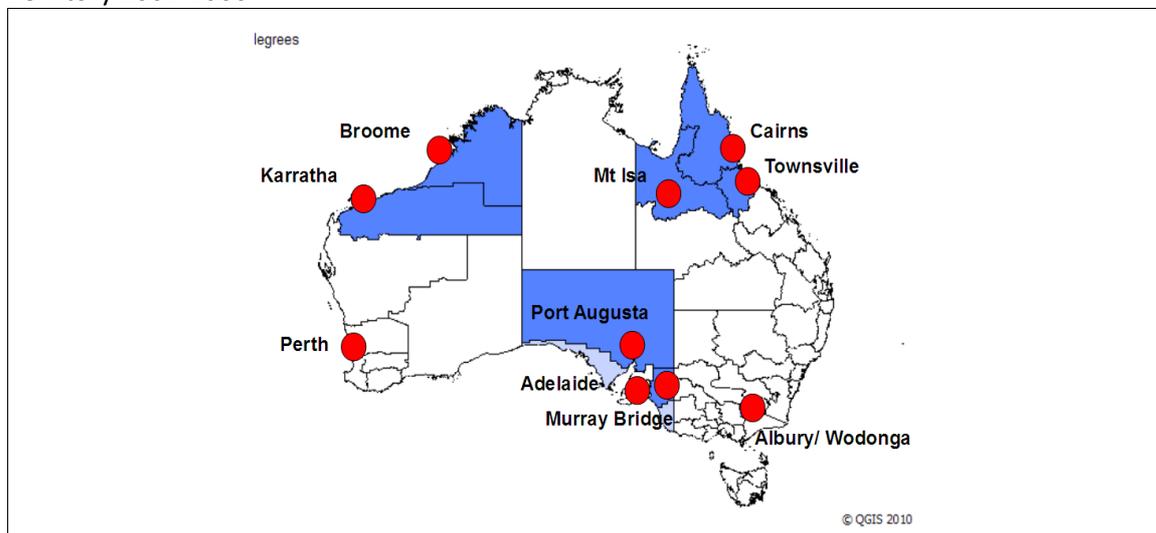


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3. Likelihood of Migration to the Northern Territory

On average, each SD outside of the Northern Territory sent 2.6% of its out-migrating skilled workers to the Northern Territory (1.3% to Darwin and 1% to Balance) between 2001 and 2006. The strongest likelihood of an out-migrant moving to the Northern Territory was from the Kimberley region in the far north of Western Australia, from where 8% of migrants moved to the Northern Territory (5% to Darwin and 3% to Balance). There were ten other relatively high producing regions (greater than 3% of out-migrants moving to the Northern Territory) identified in Figure 3. In addition, two regions stood out as having a relatively high propensity to send migrants to Northern Territory Balance (greater than 1.5% of out-migrants) but not to Darwin. In the case of Hunter (Newcastle in New South Wales), less than 1% of out-migrants moved to Darwin (but 1.5% to Balance) and in the case of Central West Queensland, less than 0.5% of out-migrants moved to Darwin (but nearly 2% to Balance).

Figure 3: Regions from Which Greater than 3% of Skilled Out-migrants Moved to the Northern Territory 2001-2006



4. Out-migration Rank Analysis

There were five regions for which the Northern Territory served as one of the top five sources of out-migrants. Those regions were Kimberley (Broome, WA) (for which the Northern Territory was the third most popular destination for out-migrants), Northern South Australia (Port Augusta) (fifth), Eyre Peninsula (Ceduna, Whyalla, Port Lincoln) (fifth), Ovens-Murray (Albury-Wodonga) (fifth) and Pilbara (Karratha) (fifth).

5. Analysis by Industry Sector

Two dominant patterns emerged when the data were analysed by industry sector. The first resembled the overall pattern, with migrants coming from a diverse range of regions with no clear geographic pattern. These sorts of industries are represented in Figure 4 by transport industry migrants. Other sectors with this sort of pattern included: retail, public administration, and hospitality. In Figure 4 (and 5) red regions are those unlikely to produce migrants to the NT, and blue regions are those which are likely.

The second dominant pattern (represented in Figure 5 by manufacturing) was a definite bias towards northern and inland sources of migrants. Other sectors with this sort of pattern

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included: health, education, agriculture, mining (although Queensland regions were notably absent), and construction.

Figure 4: Likely and Unlikely Sources of Transport Industry Workers to the NT, 2001-2006

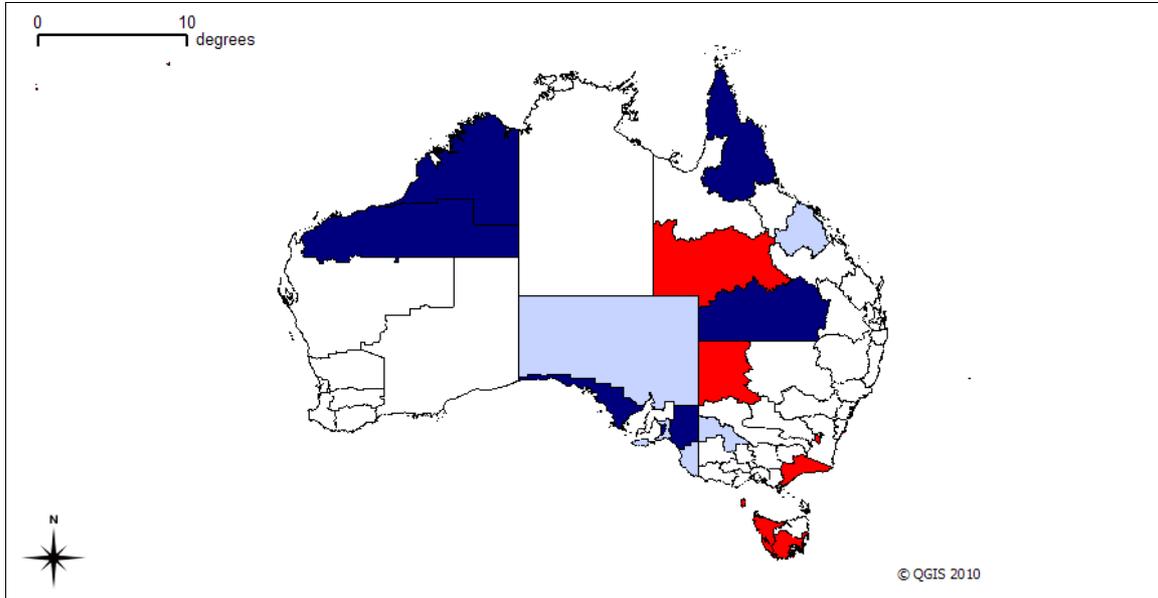
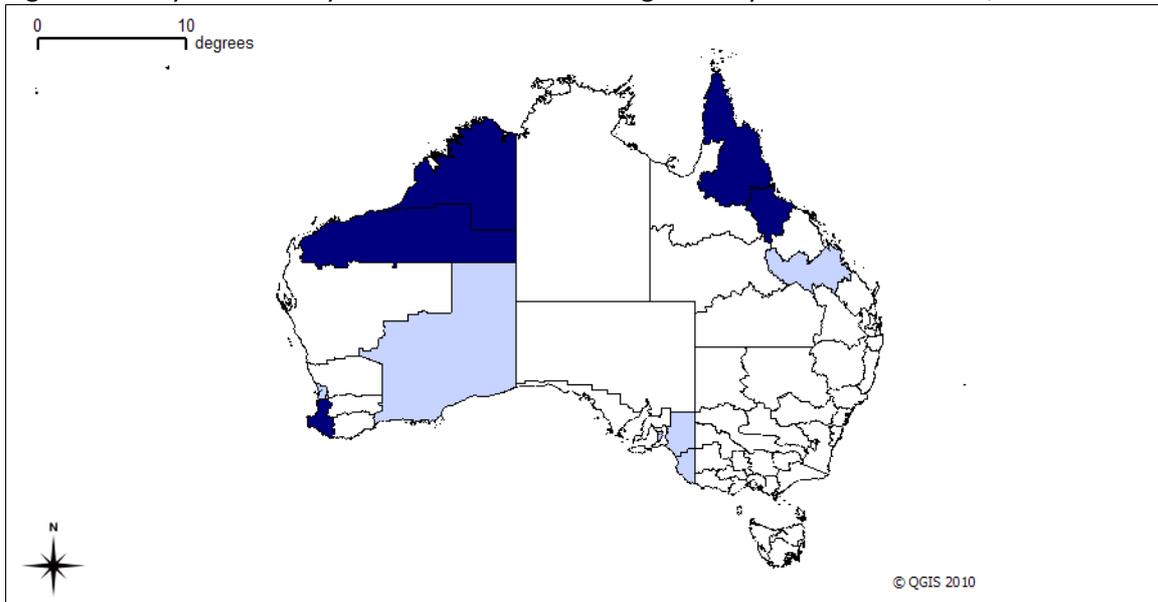


Figure 5: Likely and Unlikely Sources of Manufacturing Industry Workers to the NT, 2001-2006



### Discussion

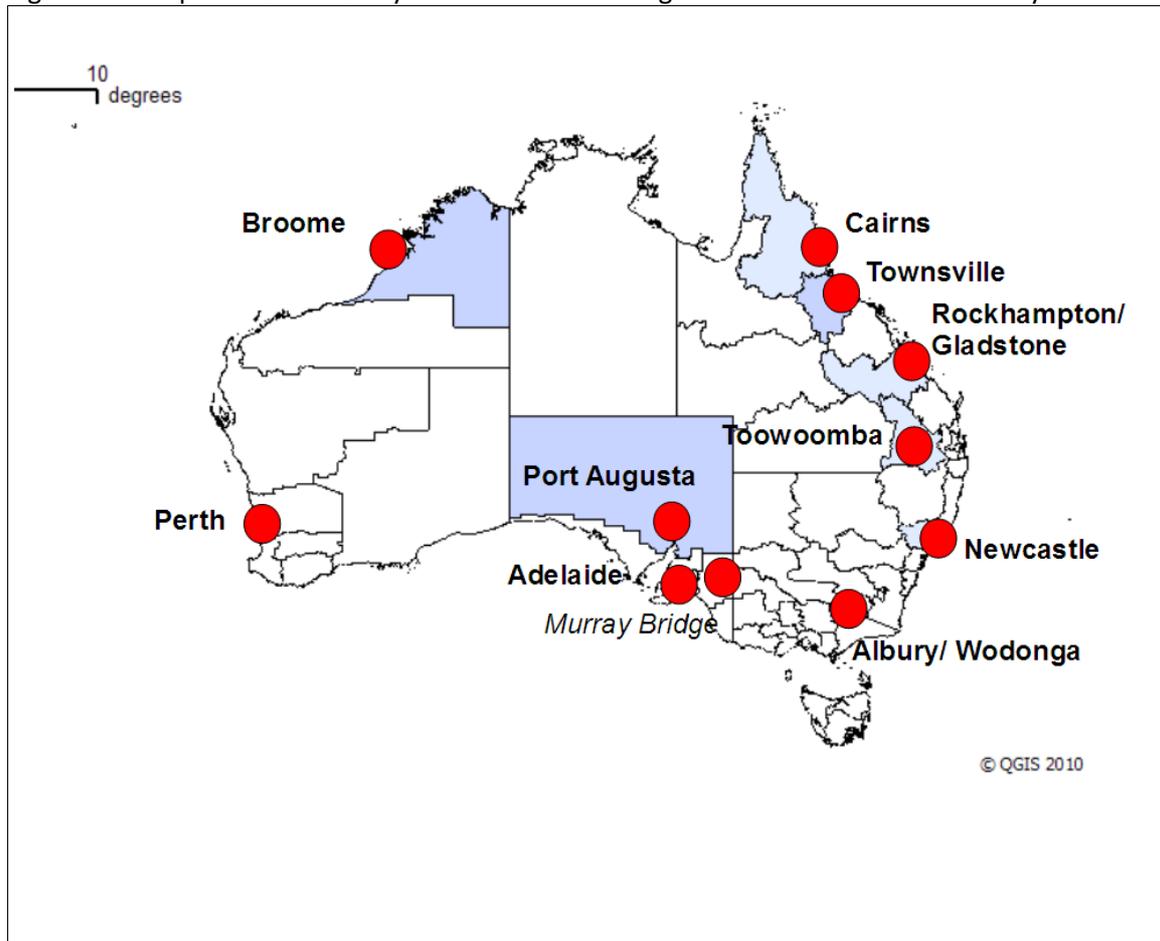
The selection of source regions to target for the recruitment of skilled labour migrants is a difficult task for a destination region like Australia's Northern Territory. The Northern Territory lacks an efficient internal labour migration system because relatively few people move from one part of the Territory to another, making the power of the jurisdictional boundaries far less apparent than in other parts of Australia. The Northern Territory therefore has to look outside the jurisdiction to meet its skilled labour needs. This immediately brings it into competition with the peripheries of other jurisdictions because the major source regions (by volume) are the jurisdictional cores there. Analysis by likelihood of migration reveals closer links to regions that

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border the NT, but the likelihood versus volume trade-off is generally unfavourable as these regions themselves are sparsely populated and often experience labour shortages.

A combined 'top ten' list of source regions would therefore include both some capital cities (those which have the highest likelihood of producing migrants as well as producing high volumes of migrants) and some regions adjacent or near adjacent to the NT which nonetheless have relatively large and mobile skilled worker populations. Figure 6 proposes such a list of ten regions (and identifies an eleventh in the south eastern corner of South Australia which is probably captured in the Adelaide region because of the strength of CP relationships in that State).

Figure 6: A 'Top Ten' List of Likely Sources of Skilled Migrants to the Northern Territory?



The Northern Territory has a number of options available in terms of developing a more spatially efficient labour system. The option likely to produce the highest pay off is to strengthen the position of Darwin as a core within the jurisdiction. This would require strategies to increase the production of local labour (through better provision of education and training for unskilled residents of the Northern Territory) and surplus labour (through better assistance for unemployed but well trained people). The small size of Darwin means that these strategies are difficult to implement. The past practice has been to recruit to vacancies, rather than recruit/develop skills even when vacancies do not exist. Whether this could be changed in the future is questionable given the persistent high out-migration rates of the very people that the Territory attempts to recruit. The recruitment challenge therefore cannot be addressed internally unless the retention challenge is addressed at the same time.

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A second option is to further exploit the status of the Northern Territory as an 'escalator' region, by improving understanding of what the dynamics of escalator regions are, and who is attracted to them. There are some hints in recent research, for example, that it is not only young early career people who look for escalator opportunities, but that escalator regions might also be attractive to older workers looking for a change of career, or attempting to build their resources in anticipation of retirement.

A potentially related strategy is to consciously develop links to specific source markets perhaps through labour exchange programs, preferential recognition of skills qualifications obtained from specific institutions, or by exploitation of the Northern Territory's 'alumni' by identifying regions favoured by NT out-migrants and using them as ambassadors for future generations of in-migrants.

