

bitre

Chapter 4

Workforce



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This chapter discusses the workforce of Northern Australia. It does so by considering growth and decline in the NTI by region over time; labour force participation rates; employment and unemployment in 2006; labour force size; employment and unemployment over time; and work qualifications and education levels in 2006.

With respect to the number of taxpayers per region from 1991 onward, growth rates were generally lower in the Northern Australian regions of each state than the whole of each respective state. However, from year-to-year they followed similar growth patterns to the rest of Australia.

Labour force participation rates across the north of Western Australia, Northern Territory and Queensland were all higher than their respective state participation rates in 2006, and higher than the Australia labour force participation rate. However, there is a great deal of variability at the regional, SLA and UCL levels, and between genders. Labour force numbers saw a similar pattern of growth in Northern Australia as in the whole of Australia between 1998 and 2007. However, the north of the Northern Territory and the north of Western Australia saw brief periods of decline in 1999–2000 and 2000–2001 respectively.

Employment grew more in Northern Australia between the 2001 and 2006 census than it did across Australia. ‘Fly-in, fly-out’ and ‘drive-in, drive-out’ work were significant features of employment growth in many Northern Australian mining regions.

In 2006, the majority of Northern Australian regions had unemployment rates below that of Australia. However, there is considerable variation in unemployment levels across the region at the SLA level. Much of Northern Australia saw a decline in unemployment rates between 1998 and 2007 like the rest of Australia.

In terms of education, the proportion of people who have completed Year 12 or equivalent in Northern Australia was well below the Australian figures. Furthermore, within the northern regions of Western Australia and the Northern Territory, there were a higher proportion of people who did not go to school compared to Australia.

Higher proportions of Certificate-level qualifications were seen across Northern Australia, compared to the rest of Australia. On the other hand, the Northern Australia subregions had lower numbers of Postgraduate and Bachelor degree-level qualifications, as well as lower levels of Graduate Diploma and Graduate Certificates, compared with the rest of Australia.

4.1 Number of Taxable Individuals (NTI)

The number of taxable individuals (NTI) represents the number of people who had a taxable income above the taxfree threshold. NTI shows us the number of people who are actively participating in an economy.

Changes in NTI for a region can occur for three reasons: people migrating to or from a region to take advantage of economic benefits; people moving in or out of the workforce in the region; or from income earners who earned income without requiring any tax payments who have an increase in income so that they must start paying tax.

Figure 4.1.1 shows that NTI growth rates for Northern Australia mimic the Australian growth patterns between 1990–91 and 2005–06. Northern Australia experienced lower growth compared to all Australia during the late 1990s but over the whole time period its average annual NTI growth was greater (1.9 per cent compared to 1.3 per cent). After 2000–01, NTI growth was higher in Northern Australia than in Australia (3.2 per cent against 2.4 per cent).

Figure 4.1.1 Northern Australia year—number of taxable individuals, growth 1990–91 to 2005–06



Note: This table shows percentage growth and decline in the number of taxable individuals between 1990–91 and 2005–06, comparing northern Australia with the whole of Australia.

Source: BITRE (2009a).

Table 4.1.1 shows that NTI growth rates between 1995–96 and 2005–06 are generally lower in the Northern Australian regions of the states, than the whole state in which they are located. Two regions had a shrinking NTI over this period: these were Barkly-Central NT in the Northern Territory (–0.4 per cent) and the North West Region (–0.4 per cent) in Queensland. The region with the largest average annual NTI growth was Mackay (Queensland) at 2.4 per cent per annum. Five of the regions (Mackay, Far North Queensland, Northern Queensland, the Kimberley and Darwin-East Arnhem) exhibited NTI growth above the Australian annual average (1.4 per cent).

Table 4.1.1 Northern Australia—NTI average annual growth by region, 1995–96 to 2005–06

<i>Region</i>	<i>Average annual growth</i>
Northern Australia (WA)	1.2
Pilbara Region	0.9
Kimberley Region	1.9
Western Australia state total	1.8
Northern Australia (NT)	1.2
Darwin-East Arnhem Region	1.7
Katherine-Lower Top End Region	0.1
Barkly-Central NT Region	-0.4
Northern Territory total	1.2
Northern Australia (QLD)	1.7
Mackay Region	2.4
Northern Region	1.7
Far North Region	1.5
North West Region	-0.4
Longreach Region	0.7
Queensland state total	2.5
Northern Australia subtotal	1.6
Australia total	1.4

Notes: This table shows annual average percentage growth or decline in the number of taxable individuals between 1995–96 and 2005–06, by region.

Source: BITRE (2009a).

In 2005–06, 4.5 per cent of Australia’s taxable population lived in Northern Australia. The northern regions of Queensland contributed 3.3 per cent of Australia’s taxable population, 17 per cent of Queensland’s taxable individuals, and 73 per cent of Northern Australia’s taxable individuals. Three per cent of Western Australia’s taxable individuals resided in northern Western Australia. Ninety-eight per cent of the Northern Territory’s taxable individuals lived in the northern regions of the Territory.⁹

Though NTI is a useful measure of employment and economic activity it does have one constraint: it is based on the address recorded on the submitted tax return. It is not based on the location of employment. Thus it will record some ‘fly-in, fly-out’ workers in their SLA of residence, not their SLA of work. This may mean that SLAs that are heavily reliant on this type of work (most likely those that have a high percentage of mining employment) may be distorted.

9. This number includes taxable individuals in Alice Springs. In 2005–06, there were 10 956 taxable individuals in Alice Springs, who represented 13.1 per cent of the total number of taxable individuals in the Northern Territory.

4.2 Census-based labour force participation rates and unemployment rates in 2006

Labour force participation

In 2006, the labour force participation rates of northern Western Australia, northern Queensland and the north of the Northern Territory were all higher than their respective states' participation rates. They were all also higher than the Australia labour force participation rate, regardless of gender. Relevant data is presented in Table 4.2.1 and Table 4.2.2. High labour force participation rates are commensurate with relatively young adult populations (compared with the rest of Australia) living in much of Northern Australia, as discussed in Chapter Two.

However, there is considerable variation between regions with respect to labour force participation rates. The Pilbara and North West Queensland, both with strong mining sector employment, have the highest adult labour force participation rates, well above state and national rates. The mining community of Weipa in Far North Queensland has the highest adult participation rates of the Northern Australian Urban Centre/Locations (UCLs) investigated in this study. On the other hand, the Barkly-Central NT and Katherine-Lower Top End regions of the Northern Territory have adult labour force participation rates below that of the Northern Territory and Australia (even though Alice Springs, within the Barkly-Central NT Region, had a very high participation rate).

Adult labour force participation rates are also highly variable between SLAs in Northern Australia. In 2006, seven SLAs had labour force participation rates of less than 30 per cent. Six of these were Indigenous communities in the Northern Territory.

Amongst those SLAs with labour force participation rates of more than 70 per cent in 2006, and well above the Australia rate of 60.4 per cent, were the mining dominated SLAs of Weipa (80.5 per cent) and Belyando (74.5 per cent) in Queensland and Ashburton (74.6 per cent) in Western Australia. Darwin SLAs also feature strongly in this group, along with parts of Townsville and Alice Springs. The inland Queensland regions of Croydon (70.5 per cent), Cloncurry (71.0 per cent), McKinlay (78.6 per cent) and Longreach (70.7 per cent) also feature in this group. A number of Indigenous communities also featured in the group of SLAs with the highest labour force participation rates in Northern Australia. It is likely that CDEP featured in these calculations, as the ABS includes participants in the 'employed' category (ABS 2008e). This matter is discussed further in the unemployment section below.

Across Northern Australia, male labour force participation rates are considerably higher than those for females, in keeping with respective participation rates for the states and the nation. Female labour force participation rates are not typically higher in mining regions (with the exception of Weipa in Far North Queensland).

Table 4.2.1 Northern Australia—employment, unemployment, unemployment rates and labour force participation by region (persons), 2006

Region	Number of people employed 2006	Number of people unemployed 2006	Number of people aged 15 and over	Unemployment rate 2006 (per cent)	Labour force participation rate 2006 (per cent)
Northern Australia (WA)	33 449	1 206	53 770	3.5	64.5
Pilbara Region	20 621	699	32 144	3.3	66.3
Exmouth	979	36	1 471	3.5	69.1
Port Hedland	4 951	209	8 733	4.1	59.1
Kimberley Region	12 828	507	21 626	3.8	61.7
Western Australia state total	936 132	36 659	1 562 653	3.8	62.3
Northern Australia (NT)	85 163	3 841	140 625	4.3	63.3
Darwin-East Arnhem Region	63 225	2 667	101 396	4.0	65.0
Darwin	35 107	1 278	52 942	3.5	68.7
Katherine-Lower Top End Region	6 231	384	11 567	5.8	57.2
Katherine	2 416	153	4 229	6.0	60.8
Barkly-Central NT Region	15 707	790	27 662	4.8	59.6
Alice Springs	11 519	282	16 529	2.4	71.4
Tennant Creek	1 096	81	2 175	6.9	54.1
Northern Territory total	87 179	4 004	145 295	4.4	62.8
Northern Australia (QLD)	302 811	13 163	497 231	4.2	63.5
Mackay Region	83 250	3 188	137 087	3.7	63.1
Mackay town	32 128	1 313	52 326	3.9	63.9
Northern Region	94 375	4 366	153 706	4.4	64.2
Townsville	63 905	2 988	101 097	4.5	66.2
Charters Towers	3 195	201	6 104	5.9	55.6
Far North Region	107 486	4 971	178 850	4.4	62.9
Weipa	1 620	19	2 037	1.2	80.5
Cairns	48 037	2 225	76 517	4.4	65.7
North West Region	15 842	586	24 887	3.6	66.0
Mount Isa	8 796	363	13 839	4.0	66.2
Longreach Region	1 858	52	2 701	2.7	70.7
Longreach	1 554	50	2 296	3.1	69.9
Queensland state total	1 824 997	90 951	3 097 998	4.7	61.8
Northern Australia subtotal	421 423	18 210	691 626	4.1	63.6
Australia total	9 104 183	503 804	15 918 076	5.2	60.4

Notes: Based on data captured by the ABS in the 2006 Census, this table shows the number of employed persons, the number of unemployed persons, the unemployment rate, the number of persons over the age of 15 (who answered the relevant question on labour force participation in the 2006 Census) and labour force participation rates by region. In preparing the table above, BITRE used ABS-published labour force participation rates and unemployment rates for SLAs, the states and Australia. BITRE has calculated participation rates for the above subregions by adding the total number of employed and unemployed persons, then dividing by the number of persons aged 15 and over, and multiplying by 100. Unemployment rates were calculated by dividing the number of unemployed persons by the sum of employed and unemployed persons, and multiplying by 100.

Source: ABS (2006b).

Table 4.2.2 Northern Australia—employment, unemployment, unemployment rates and labour force participation by region (males and females), 2006

Region	Number of males employed 2006	Number of males unemployed 2006	Males aged 15 and over	Males unemployment rate 2006 (per cent)	Males labour force participation rate 2006 (per cent)	Number of females employed 2006	Number of females unemployed 2006	Females aged 15 and over	Females unemployment rate 2006 (per cent)	Females labour force participation rate 2006 (per cent)
Northern Australia (WA)	19 498	638	29 122	3.2	69.1	13 951	568	24 648	3.9	58.9
Pilbara Region	12 449	365	17 901	2.8	71.6	8 172	334	14 243	3.9	59.7
Exmouth	541	20	787	3.6	71.4	438	16	684	3.5	66.6
Port Hedland	2 943	124	4 748	4.0	64.6	2 008	85	3 985	4.1	52.4
Kimberley Region	7 049	273	11 221	3.7	65.3	5 779	234	10 405	3.9	57.8
Western Australia state total	513 498	18 968	772 510	3.6	68.9	422 634	17 691	790 143	4.0	55.7
Northern Australia (NT)	46 259	2 067	72 446	4.3	66.7	38 904	1 774	68 179	4.4	59.7
Darwin-East Arnhem Region	34 636	1 453	52 797	4.0	68.4	28 589	1 214	48 599	4.1	61.3
Darwin	18 786	747	27 386	3.8	71.3	16 321	531	25 556	3.2	65.9
Katherine-Lower Top End Region	3 410	221	5 908	6.1	61.5	2 821	163	5 659	5.5	52.7
Katherine	1 224	98	2 076	7.4	63.8	1 192	55	2 153	4.4	57.9
Barkly-Central NT Region	8 213	393	13 741	4.6	62.6	7 494	397	13 921	5.0	56.7
Alice Springs	5 853	138	8 048	2.3	74.5	5 666	144	8 481	2.5	68.5
Tennant Creek	569	42	1 093	6.9	56.1	527	39	1 082	6.9	52.2
Northern Territory total	47 400	2 149	74 855	4.3	66.2	39 779	1 855	70 440	4.5	59.1
Northern Australia (QLD)	167 572	6 572	252 120	3.8	69.1	135 239	6 591	245 111	4.6	57.9
Mackay Region	47 607	1 535	70 934	3.1	69.3	35 643	1 653	66 153	4.4	56.4
Mackay town	17 999	599	26 208	3.2	71.0	14 129	714	26 118	4.8	56.8
Northern Region	51 814	2 092	76 810	3.9	70.2	42 561	2 274	76 896	5.1	58.3
Townsville	34 676	1 421	50 008	3.9	72.2	29 229	1 567	51 089	5.1	60.3

(continued)

Table 4.2.2 Northern Australia—employment, unemployment, unemployment rates and labour force participation by region (males and females), 2006 (continued)

Region	Number of males employed 2006	Number of males unemployed 2006	Males aged 15 and over	Males unemployment rate 2006 (per cent)	Males labour force participation rate 2006 (per cent)	Number of females employed 2006	Number of females unemployed 2006	Females aged 15 and over	Females unemployment rate 2006 (per cent)	Females labour force participation rate 2006 (per cent)
Northern Australia (QLD) (continued)										
Charters Towers	1 698	97	2 930	5.4	61.3	1 497	104	3 174	6.5	50.4
Far North Region	57 952	2 586	89 796	4.3	67.4	49 534	2 385	89 054	4.6	58.3
Weipa	974	15	1 156	1.5	85.6	646	4	881	0.6	74.0
Cairns	25 394	1 158	37 800	4.4	70.2	22 643	1 067	38 717	4.5	61.2
North West Region	9 260	331	13 276	3.5	72.2	6 582	255	11 611	3.7	58.9
Mount Isa	5 082	203	7 278	3.8	72.6	3 714	160	6 561	4.1	59.0
Longreach Region	939	28	1 304	2.9	74.2	919	24	1 397	2.5	67.5
Longreach	776	28	1 095	3.5	73.4	778	22	1 201	2.8	66.7
Queensland state total	984 570	45 636	1 521 497	4.4	67.7	840 427	45 315	1 576 501	5.1	56.2
Northern Australia subtotal	46 259	2 067	72 446	4.3	66.7	38 904	1 774	68 179	4.4	59.7
Australia total	4 911 133	269 686	7 777 911	5.2	66.6	4 193 050	234 118	8 140 165	5.3	54.4

Notes: Based on data captured by the ABS in the 2006 Census, this table shows the number of employed males and females, the number of unemployed males and females, the unemployment rate, the number of males and females over the age of 15 (who answered the relevant question on labour force participation in the 2006 Census) and respective labour force participation rates by region. In preparing the table above, BITRE used ABS-published labour force participation rates and unemployment rates for SLAs, the states and Australia. BITRE has calculated participation rates for the above subregions by adding the total number of employed and unemployed males/females, then dividing by the number of males/females aged 15 and over, and multiplying by 100. Unemployment rates were calculated by dividing the number of unemployed males/females by the sum of employed and unemployed males/females, and multiplying by 100.

Source: ABS (2006b).

Unemployment

In 2006, the adult unemployment rates across the aggregated total northern areas of Queensland, Northern Territory and Western Australia were all lower than the respective state unemployment rates, and the Australian unemployment rate (see Table 4.2.1). Similarly, most individual Northern Australia regions also had adult unemployment rates below that of Australia. Unemployment rates in 2006 were at their lowest (below 4 per cent) in the north of Western Australia and in the Longreach, North West and Mackay regions of Queensland.

However, there was some regional variation. The Katherine-Lower Top End Region along with the townships of Katherine, Tennant Creek and Charters Towers had unemployment rates higher than the national rate, and their respective state rates. Barkly-Central NT also had an unemployment rate higher than the Northern Territory rate.

Amongst the 207 Northern Australia SLAs, 65 had unemployment rates at or above that for Australia. Six northern Australia SLAs recorded unemployment rates at more than three times the national unemployment rate. These were Lee Point-Leanyer Swamp (16.9 per cent), Cox-Finiss (21.4 per cent) and East Arnhem Balance (18.8 per cent) of the Darwin-East Arnhem subregion; Umagico (17.2 per cent) of Far North Queensland; Palm Island (15.4 per cent) of Northern Queensland; Sandover (32.8 per cent) of Barkly-Central NT; and Jilkminggan (57.4 per cent) of the Katherine-Lower Top End Region of the Northern Territory.

In 2006, unemployment rates amongst females were higher than amongst males across most Northern Australian regions, with the exception of Katherine-Lower Top End in the Northern Territory and Longreach in Queensland (see Table 4.2.2). However, in the regional towns and cities presented at UCL level in Table 4.2.2, female employment was relatively high compared to male employment. Six of these townships had lower unemployment rates for women (Exmouth, Darwin, Katherine, Tennant Creek, Weipa and Longreach), and seven had lower unemployment rates for men.

Depending on the way in which 'unemployment' is defined, it is likely that much higher unemployment rates could be detected in a range of remote Indigenous Northern Australian SLAs. Because the ABS counts CDEP participants as 'employed', the ABS-calculated unemployment rates in communities with high CDEP participation can be very low, although all of these people were in receipt of *community participant supplement*. Some SLAs show unemployment rates of zero in the ABS census data. However, in 2005–06, there were 1942 participants in CDEP schemes covering 19 communities in the Torres Strait, including on the islands of Mabuiag, Poruma, St Pauls, Warraber and Dauan (Australian Government Torres Strait Regional Authority 2007). All of these SLAs show unemployment rates of zero in the ABS census data.

In Table 4.2.3, it can be seen that the majority of all Australian CDEP participants counted in the 2006 Census were located in Northern Australian regions, with the largest number in Far North Queensland. It also shows that unemployment rates are different depending upon whether CDEP is counted as 'employed' or 'unemployed', and what proportion of the labour force is involved in this scheme. The largest differences are in the Kimberley Region of Western Australia, and the Katherine-Lower Top End and Barkly-Central NT regions of the Northern Territory.

Table 4.2.3 Northern Australia—number of CDEP participants as a proportion of the labour force, and their potential impact on unemployment figures, by region

Region	Number of CDEP participants	Percentage of total labour force participants	Unemployment rate—CDEP defined as employed	Unemployment rate—CDEP defined as unemployed
Northern Australia (WA)	1 537	4.4	3.5	7.9
Pilbara Region	211	1.0	3.3	4.3
Kimberley Region	1 326	9.9	3.8	13.7
Western Australia state total	1 924	0.2	3.8	4.0
Northern Australia (NT)	3 063	3.4	4.3	7.8
Darwin-East Arnhem Region	1 656	2.5	4.0	6.6
Katherine-Lower Top End Region	766	11.6	5.8	17.4
Barkly-Central NT Region	641	3.9	4.8	8.7
Northern Territory total	3 247	3.6	4.4	8.0
Northern Australia (QLD)	2 662	1.3	4.0	5.3
Mackay Region		0.0	3.7	3.7
Northern Region	154	0.2	4.4	4.6
Far North Region	2 238	2.0	4.4	6.4
North West Region	270	1.6	3.6	5.2
Longreach Region		0.0	2.7	2.7
Queensland state total	2 662	1.3	4.0	5.3
Northern Australia subtotal	7 262	1.4	4.0	6.3
Australia total	8 767	0.1	5.2	5.3

Note: The 'number of CDEP participants' shown is a count of people were enumerated on Interviewer Household Forms (IHF) during the 2006 Census. This data is only applicable to those persons who were enumerated on IHFs and who answered 'Yes' to the question on whether they had a job last week (Question 41 in the IHF). IHFs were primarily used in remote communities across Australia. The proportion of Indigenous persons enumerated on IHFs in the states and territories where IHFs were used are: Queensland (16.6 per cent); Western Australia (19.6 per cent); and the Northern Territory (66.0 per cent). Some non-Indigenous persons were also enumerated on an IHF and a number of these were recorded as being a 'Participant worker in CDEP', making up 2.1 per cent of persons in this category (ABS 2006 Census Dictionary). It is likely that there were CDEP workers who were not enumerated using IHFs, and therefore this data is likely to be an undercount of actual CDEP participants. Therefore these numbers can be treated as a minimum only. It is likely that this is an undercount of the actual numbers of people participating in the program. BITRE has used labour force figures from the 2006 Census to calculate indicative unemployment rates provided above.

Sources: ABS (2006b); ABS (2006c).

4.3 Employment between censuses—2001 to 2006

According to census data, employment grew more in Northern Australia than it did in Australia as a whole between 2001 and 2006 (Table 4.3.1). However, employment growth in the northern regions of Western Australia and the northern regions of Queensland was not as pronounced as it was in their respective states of Western Australia and Queensland.

Table 4.3.1 Northern Australia — employment growth by region, 2001–06

Region	2001 employed persons (usually resident)	2006 employed persons (usually resident)	Growth (per cent)	Total number of people employed by industry 2001 (usually resident)	Total number of people employed by industry 2006 (usually resident)	Growth (per cent)	Employed persons 2001 (counted on Census night)	Employed persons 2006 (counted on Census night)	Growth (per cent)
Northern Australia (WA)	32 970	33 449	1.5	32 980	32 716	-0.8	39 570	43 511	10.0
Pilbara Region	19 794	20 621	4.2	19 825	20 246	2.1	22 671	26 195	15.5
Kimberley Region	13 176	12 828	-2.6	13 155	12 470	-5.2	16 899	17 316	2.5
Western Australia state total	829 051	936 132	12.9	829 063	922 317	11.2	828 781	937 884	13.2
Northern Australia (NT)	81 046	85 163	5.1	80 957	84 154	3.9	86 602	91 941	6.2
Darwin-East Arnhem Region	58 434	63 225	8.2	58 352	62 449	7.0	61 678	67 616	9.6
Katherine-Lower Top End Region	6 463	6 231	-3.6	6 479	6 167	-4.8	7 536	7 453	-1.1
Barkly-Central NT Region	16 149	15 707	-2.7	16 126	15 538	-3.6	17 388	16 872	-3.0
Northern Territory total	83 783	87 179	4.1	83 731	86 106	2.8	90 434	94 195	4.2
Northern Australia (QLD)	268 096	302 811	12.9	268 112	298 548	11.4	278 804	315 546	13.2
Mackay Region	68 417	83 250	21.7	68 410	82 045	19.9	70 836	87 122	23.0
Northern Region	83 727	94 375	12.7	83 743	93 226	11.3	84 787	94 736	11.7
Far North Region	96 820	107 486	11.0	96 816	105 843	9.3	101 641	113 357	11.5
North West Region	17 154	15 842	-7.7	17 171	15 603	-9.1	19 388	18 302	-5.6
Longreach Region	1 978	1 858	-6.1	1 972	1 831	-7.2	2 152	2 029	-5.7
Queensland state total	1 554 209	1 824 997	17.4	1 554 286	1 799 364	15.8	1 568 864	1 840 880	17.3
Northern Australia subtotal	382 112	421 423	10.3	382 049	415 418	8.7	404 976	450 998	11.4
Australia total	8 298 598	9 104 183	9.7	8 281 732	8 990 738	8.6	8 298 606	9 104 183	9.7

Notes: This table illustrates numbers of employed people by region in 2001 and 2006. The 'usually resident' counts include people who usually lived in the region (no matter where they were on census night), and who answered the census question on their employment status. The 'census night' counts include both residents and visitors who were in the region on census night and who answered the census question on their employment status. The employed persons by industry section includes usually resident people who answered the census question on which industry they were employed in.

Sources: ABS (2001); ABS (2006b); ABS (2006c); ABS (2006d); ABS (2006e).

In Northern Australia, employment growth amongst the usually resident population was highest in Mackay (21.7 per cent) and Northern Queensland (12.7 per cent). In the Mackay Region, much of the growth can be attributed to the mining industry, whilst in Northern Queensland, there was significant growth in the construction industry, along with health and community services; finance, property and business services; and mining (see Table 3.2.3 in Chapter 3).

Between 2001 and 2006, the employment phenomena referred to as 'fly-in, fly-out' work and 'drive-in, drive-out' work attained new level of prominence in Northern Australia, in association with mining industry growth. As can be seen in Table 4.3.1, employment amongst people who were present in the Pilbara on census night grew by 15.5 per cent between 2001 and 2006 but grew much less amongst the usually resident population. In other words, mining companies brought in additional personnel from outside the region to meet employment needs. In 2006, approximately 29 per cent of all people working in the Pilbara Region reported that they did not live there. Forty-two per cent of Pilbara mining workers and 21 per cent of non-mining workers (a third of whom were construction workers) usually lived elsewhere (ABS 2009). The SLA level table included in the *Northern Australia Statistical Compendium* (Internet publication) shows very high employment growth amongst people who reported that they did not live in the mining dominated SLAs of Nebo, Broadsound and Belyando (although it is likely that many still lived within the Mackay Region, in the city of Mackay).

Proportionately, the largest reductions in employment amongst usual residents were in the North West (-7.7 per cent) and Longreach regions (-6.1 per cent) of Queensland. Whilst mining employment increased in the North West, declining employment in almost all other industry categories (particularly construction, retail and government administration) meant that the region's overall employment numbers declined. In Longreach, reduced employment is largely associated with a decline in wool industry employment, linked with industry restructuring, reduced wool prices and drought at that time (Queensland Department of Primary Industries 2009).

4.4 Labour force size over time

Data in this section has been taken from the Department of Education, Employment and Workplace Relations' (DEEWR) small area labour markets estimates, and provides an illustration of growth in the size of the labour force between 1998 and 2007, year by year.¹⁰ During this period, across Northern Australia, there was a similar growth pattern in the size of the labour force as that for the whole of Australia (see Table 4.4.1 and Figures 4.4.1 and 4.4.2). However, the growth trend in Northern Australia was steady over the whole period, whereas in Australia there was more pronounced growth between 2002 and 2003 than in other years.

10. Northern Australian SLA and regional labour force numbers presented by DEEWR for 2001 and 2006 are generally larger than ABS census-based labour force numbers for the same periods. In calculating labour force size (and unemployment rates), DEEWR uses concepts based on the ABS monthly Labour Force Survey, which samples only part of the population (DEEWR 2008a p.54). DEEWR qualifies its own calculations of unemployment rates and labour force sizes by pointing out that its original larger region calculations are based on survey estimates initially, and then allocated down to a smaller area scale. In doing this, DEEWR draws on data from Centrelink (people in receipt of Newstart and Youth Allowance), from the ABS Labour Force Survey, and from the 2001 census. To calculate its official annual unemployment rates, DEEWR then averages data over four quarters per year to dampen variability in the small area numbers produced (DEEWR 2008b). By comparison, the census is collected from one point in time only during 2006 (August), and is an attempt to collect data from the entire Australian population. However, not all people answer census questions, and not all people answer them in a way that can be meaningfully counted.

Table 4.4.1 Northern Australia—labour force (number) over time by region

Region	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Northern Australia (WA)	40 481	40 471	40 918	37 743	40 017	42 544	42 597	42 974	44 250	44 895
Pilbara Region	25 572	25 565	25 848	24 710	25 631	25 558	25 590	25 817	26 582	26 970
Kimberley Region	14 909	14 905	15 070	13 033	14 386	16 986	17 007	17 158	17 667	17 925
Western Australia state total	882 181	899 224	918 236	914 021	918 599	1 025 077	1 039 687	1 091 504	1 109 264	1 143 826
Northern Australia (NT)	87 208	90 043	88 285	97 947	98 991	100 542	99 826	99 152	103 528	108 902
Darwin-East Arnhem Region	61 162	63 151	61 917	70 601	71 360	72 631	72 114	71 626	74 787	78 670
Katherine-Lower Top End Region	8 772	9 057	8 881	8 684	8 726	8 126	8 068	8 013	8 367	8 802
Barkly-Central NT Region	17 274	17 835	17 487	18 662	18 904	19 785	19 645	19 512	20 373	21 430
Northern Territory total	89 548	92 459	90 654	99 790	100 892	102 461	101 732	101 044	105 504	110 981
Northern Australia (QLD)	286 043	292 717	297 227	305 851	309 215	332 032	347 425	358 990	368 047	370 802
Mackay Region	85 282	84 258	86 893	83 702	86 149	85 261	89 670	93 067	95 147	96 277
Northern Region	77 948	80 915	78 065	80 365	85 402	102 416	107 976	114 591	117 512	114 072
Far North Region	100 244	104 343	109 588	120 472	115 588	121 385	125 572	125 746	129 165	134 803
North West Region	20 196	20 866	20 261	19 090	19 759	20 594	21 709	22 992	23 572	22 968
Longreach Region	2 372	2 334	2 421	2 223	2 316	2 376	2 499	2 593	2 651	2 683
Queensland state total	1 641 174	1 668 370	1 705 187	1 729 208	1 769 039	1 947 763	2 002 970	2 087 206	2 145 507	2 217 605
Northern Australia subtotal	413 732	423 231	426 431	441 542	448 222	475 117	489 849	501 116	515 824	524 599
Australia total	8 174 458	8 284 560	8 484 094	8 562 579	8 667 883	10 092 197	10 244 016	10 523 978	10 713 940	10 948 563

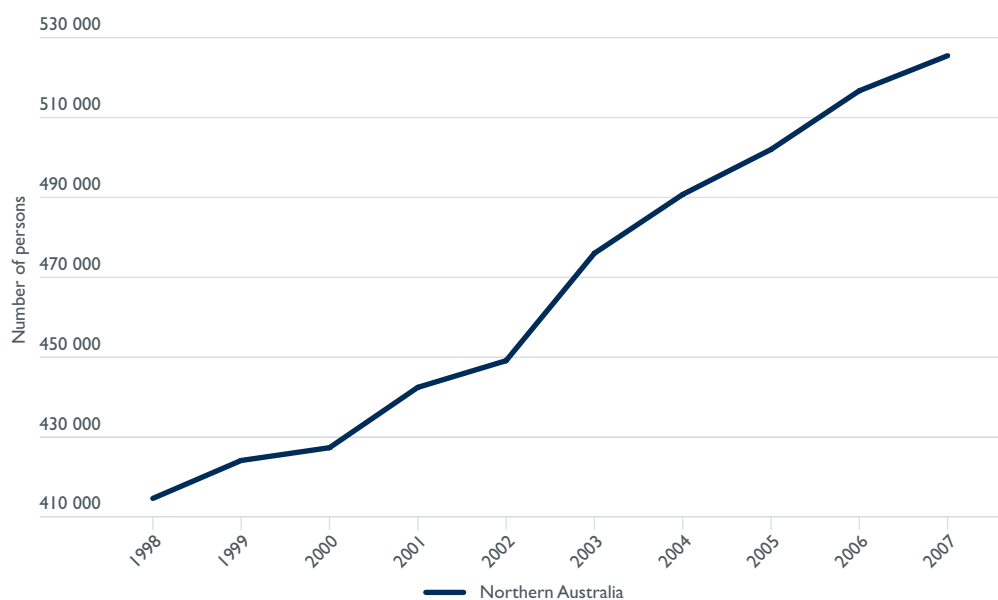
Note: This table shows growth in the size of the labour force (number of persons) by region over time.

Source: DEEWR (2008a).

At the state level, Figures 4.4.3 to 4.4.5 show that the northern regions of Western Australia, Queensland and the Northern Territory also saw sustained growth periods between 1998 and 2007. However, the northern part of the Northern Territory (in line with the whole of the Northern Territory), saw a *decline* in the size of its labour force between 1999 and 2000. In the following year, the north of Western Australia also saw shrinkage in the size of its labour force.

In Table 4.4.1, it can also be seen that there was a great deal of variation at the regional level in labour force growth and decline patterns over the period, although the size of the labour force grew between 1998 and 2007 in all regions except Katherine-Lower Top End. In this region it grew after 1998, declined, and had only just returned to roughly its original size by 2007.

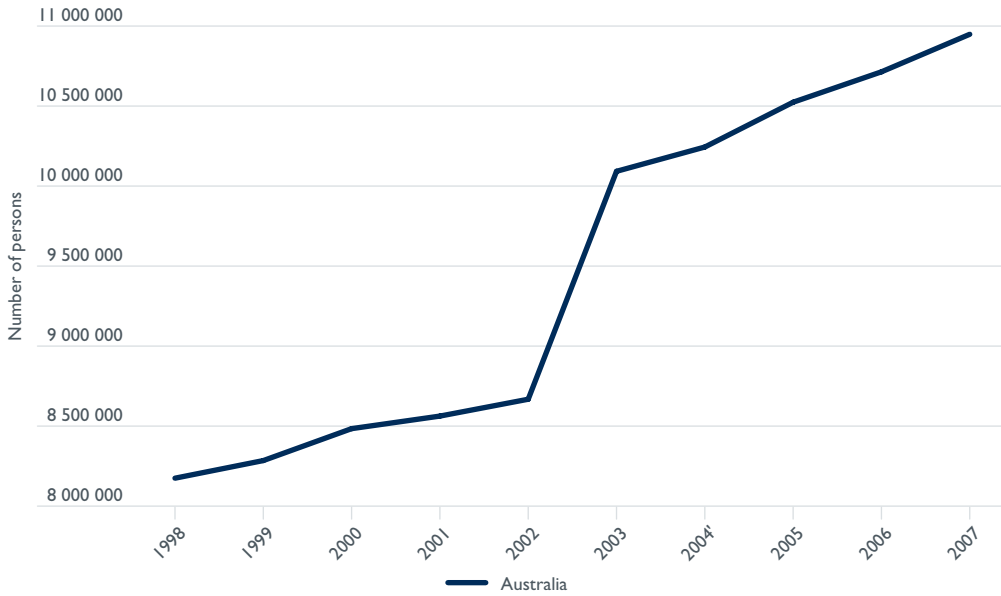
Figure 4.4.1 Northern Australia—labour force (persons) by year



Note: This figure shows growth in the size of the labour force (number of persons) across the whole of Northern Australia between 1998 and 2007.

Source: DEEWR (2008a).

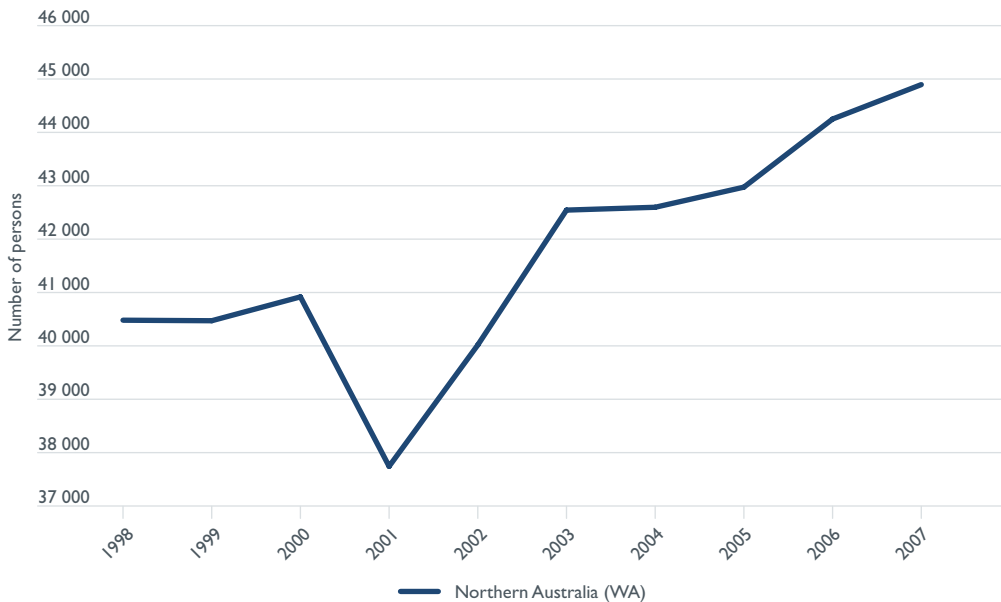
Figure 4.4.2 Australia—labour force (persons) by year



Note: This figure shows growth in the size of the labour force (number of persons) across Australia between 1998 and 2007.

Source: DEEWR (2008a).

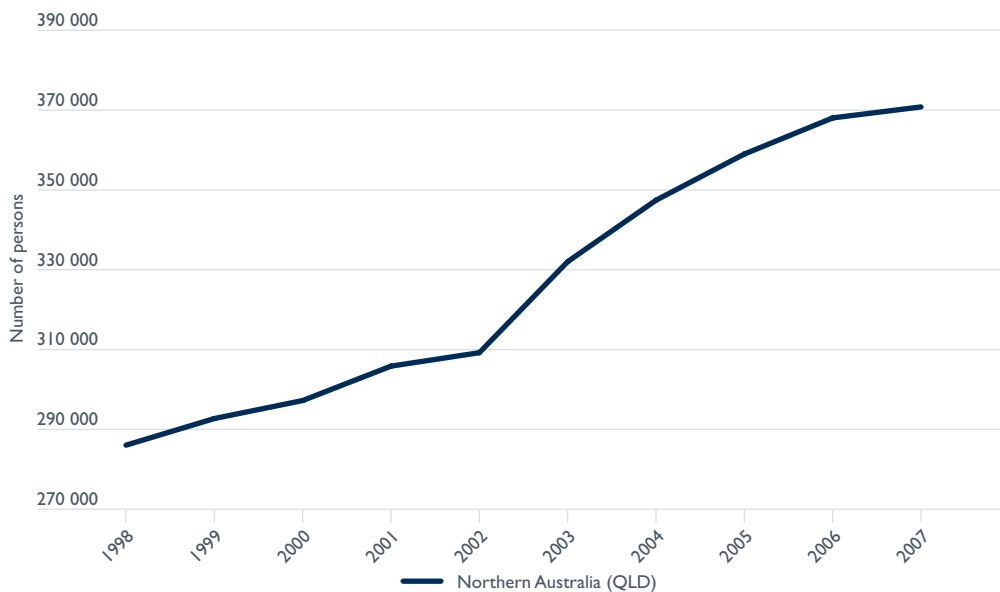
Figure 4.4.3 Northern Australia (Western Australia)—labour force (persons) by year



Note: This figure shows growth in the size of the labour force (number of persons) across the north of Western Australia between 1998 and 2007.

Source: DEEWR (2008a).

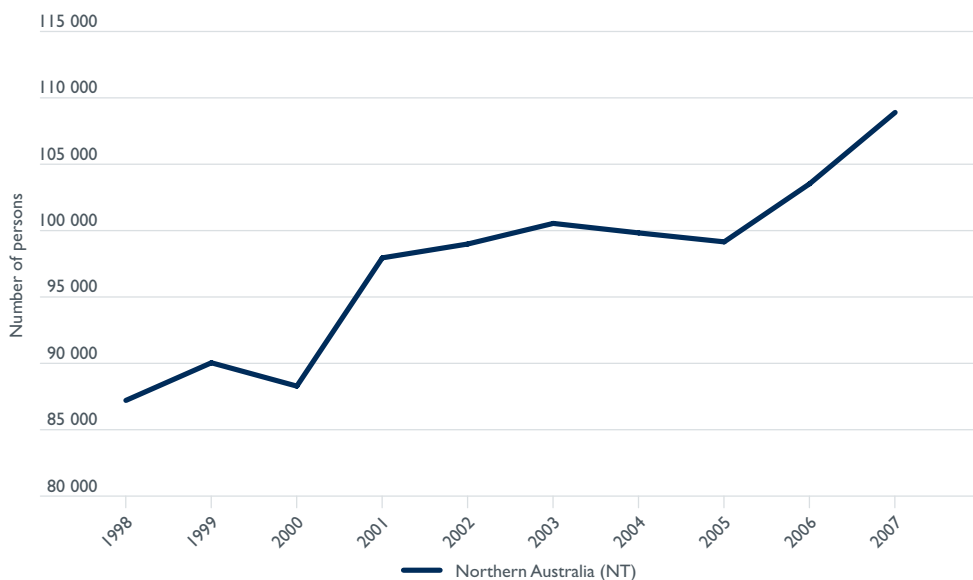
Figure 4.4.4 Northern Australia (Queensland)—labour force (persons) by year



Note: This figure shows growth in the size of the labour force (number of persons) across the northern regions of Queensland between 1998 and 2007.

Source: DEEWR (2008a).

Figure 4.4.5 Northern Australia (Northern Territory)—labour force (persons) by year



Note: This figure shows growth in the size of the labour force (number of persons) across the northern regions of the Northern Territory between 1998 and 2007.

Source: DEEWR (2008a).

4.5 Unemployment rates over time

This section shows changing unemployment rates by region over time, based on the data from DEEWR, adding to the census-related information presented earlier about unemployment rates in 2006. It should be noted that DEEWR-related unemployment rates calculated for 2006 are somewhat different to those recorded by the ABS on census night in the same year.¹¹

Like the rest of Australia, much of Northern Australia saw a decline in unemployment rates between 1998 and 2007 (see Table 4.5.1). However, this was not the case in the Katherine-Lower Top End and Barkly-Central NT regions of the Northern Territory, where unemployment levels increased over the same period.

In the north of Western Australia, unemployment rates in the Kimberley Region remained steadily higher than those of the state and the nation (see Table 4.5.1 and Figure 4.5.1). Unemployment rates in the Pilbara, on the other hand, remained consistently lower. Higher unemployment rates between 2000 and 2002 are commensurate with a drop in employment and labour force size in the region at around the same time (as discussed in Section 4.4). This corresponds to the Asian financial crisis and the subsequent reduction in mineral exportation by Australia to the countries affected (see Chapter 3 Section 3.1).

Table 4.5.1 Northern Australia—unemployment rates over time by region

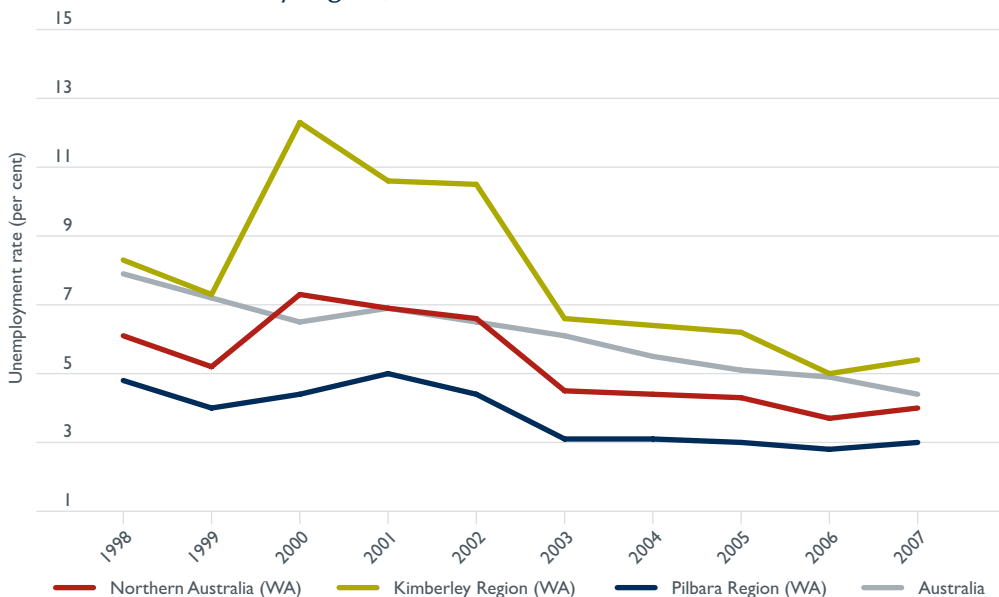
Region	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Northern Australia (WA)	6.1	5.2	7.3	6.9	6.6	4.5	4.4	4.3	3.7	4.0
Pilbara Region	4.8	4.0	4.4	5.0	4.4	3.1	3.1	3.0	2.8	3.0
Kimberley Region	8.3	7.3	12.3	10.6	10.5	6.6	6.4	6.2	5.0	5.4
Western Australia state total	7.1	6.9	6.4	7.0	6.3	6.0	5.0	4.5	3.6	3.2
Northern Australia (NT)	4.7	4.0	4.9	6.6	5.3	5.7	5.7	5.2	4.4	4.1
Darwin-East Arnhem Region	4.5	3.6	4.4	5.9	4.6	4.9	4.9	4.3	3.6	3.3
Katherine-Lower Top End Region	5.8	5.1	6.0	8.7	7.1	8.0	7.9	7.6	7.2	7.3
Barkly-Central NT Region	4.7	4.6	6.0	8.3	6.9	7.6	7.9	7.5	6.3	5.9
Northern Territory total	4.7	4.1	5.1	6.9	5.6	6.0	6.0	5.4	4.7	4.3
Northern Australia (QLD)	7.5	7.1	7.2	7.3	6.7	6.5	5.1	5.1	4.8	3.6
Mackay Region	8.7	8.8	8.5	8.7	6.9	7.3	6.3	4.8	3.4	2.8
Northern Region	9.1	7.5	8.0	8.1	7.6	7.6	5.5	4.8	5.4	3.8
Far North Region	7.2	7.2	7.1	7.3	7.2	6.0	4.5	6.4	5.8	4.2
North West Region	7.2	6.1	7.1	6.8	6.7	7.7	5.6	5.1	5.4	4.2
Longreach Region	4.2	5.2	4.1	3.7	3.6	3.4	2.5	1.8	1.9	1.6
Queensland state total	8.7	8.1	7.9	8.5	7.5	6.7	5.6	4.8	4.7	3.7
Northern Australia subtotal	6.7	6.2	6.6	7.0	6.3	6.0	5.1	5.0	4.6	3.7
Australia total	7.9	7.2	6.5	6.9	6.5	6.1	5.5	5.1	4.9	4.4

Note: This table shows estimated annual unemployment rates by region over time.

Source: DEEWR (2008a).

11. Differences in DEEWR and ABS labour force and unemployment figures have been discussed in Section 4.4.

Figure 4.5.1 Northern Australia (Western Australia)—unemployment over time by region, 1998–2007

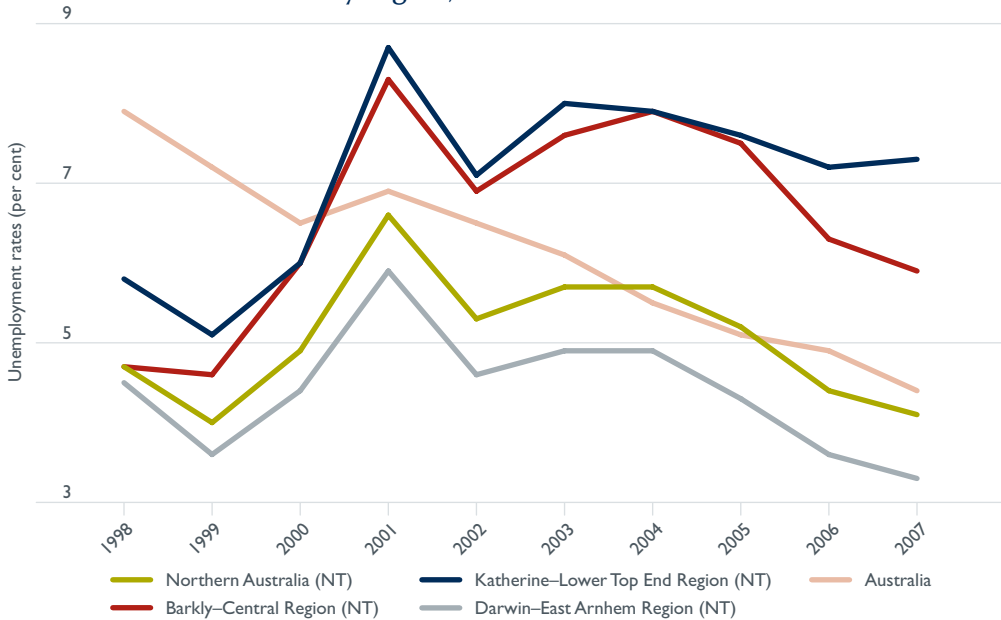


Note: This graph shows estimated annual unemployment rates by region over time. In order to calculate annual unemployment rates over time for its Northern Australian regions, BITRE has aggregated DEEVR figures at the SLA level to produce regional totals, then divided the estimated number of unemployed people for each year by the total estimated number of employed and unemployed people in each region.

Source: DEEWR (2008a).

In the Northern Territory, unemployment rates rose particularly sharply in 2001 by comparison with Australia as a whole (see Figure 4.5.2). Again, this is consistent with a decline in employment and labour force size at the same time (discussed in section 4.4). Since then, annual average unemployment rates in Darwin-East Arnhem have remained consistently lower than the national and state rates, whilst Barkly-Central NT and the Katherine-Lower Top End regions have stayed consistently higher (see Figure 4.5.2 and Table 4.5.1).

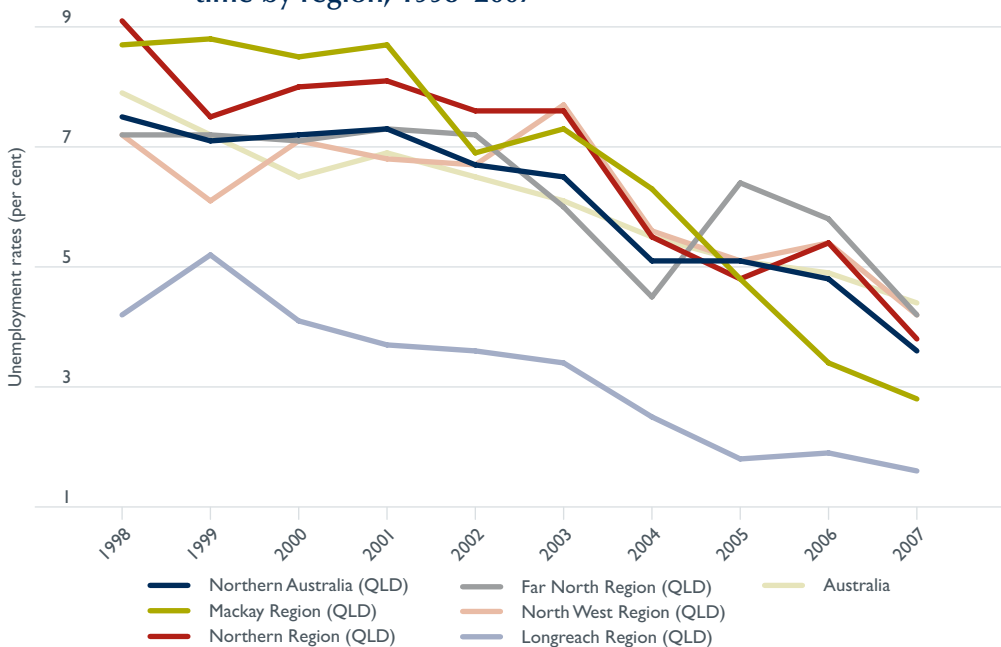
Figure 4.5.2 Northern Australia (Northern Territory) – unemployment rates over time by region, 1998–2007



Note: This graph shows estimated annual unemployment rates by region over time.

Source: DEEWR (2008a). Apart from Longreach, all regions of northern Queensland had unemployment rates higher than that of Australia for at least one year between 1998 and 2007 (see Figure 4.5.3 and Table 4.5.1). However, by 2007, all northern Queensland regions had unemployment rates lower than Australia's.

Figure 4.5.3 Northern Australia (Queensland) – unemployment rates over time by region, 1998–2007



Note: This graph shows estimated annual unemployment rates by region over time.

Source: DEEWR (2008a).

4.6 Highest year of school completed

As can be seen in Figure 4.6.1, the proportion of people to have completed Year 12 in Northern Australia is well below the national total. Within Northern Australia, regions with higher levels of school achievement are Longreach, Darwin-East Arnhem, and Northern (Queensland). The highest percentage of students finishing Year 12 was observed in Darwin (35.5 per cent). Regions with lower levels of school achievement are Katherine-Lower Top End, Barkly-Central NT and the Kimberley. The highest percentage of people who did not go to school was seen in Tennant Creek (2.5 per cent).

Compared with Australia, there are a greater percentage of people in Northern Australia whose highest year of school completed is Year 10, especially within northern Queensland (22.6 per cent). This suggests a greater number of students are leaving school at this level and are not going on to complete Year 11 or 12. These people may have chosen to leave school in order to pursue work in industries such as mining, construction or infrastructure. For example, regions in which such industries are dominant (such as Mackay, Exmouth and Northern Queensland) have high levels of students whose highest year of school completed is Year 10 or equivalent (see Figure 4.6.2). In terms of the percentage of people in Northern Australia who did not go to school, higher proportions are seen in the northern Western Australia and Northern Territory in comparison to the rest of Australia.

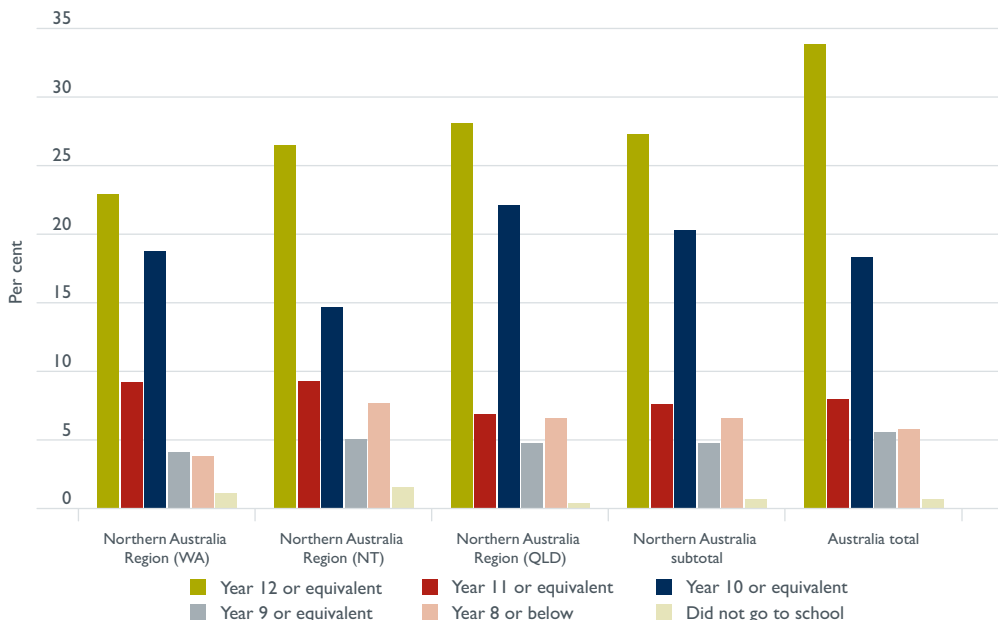
Table 4.6.1 Northern Australia — highest year of school completed, by region, 2006

Region	Year 12 or equivalent (per cent)	Year 11 or equivalent (per cent)	Year 10 or equivalent (per cent)	Year 9 or equivalent (per cent)	Year 8 or below (per cent)	Did not go to school (per cent)	Not stated (per cent)	Not applicable (per cent)	Total (number of people)
Northern Australia (WA)	22.9	9.2	18.8	4.1	3.8	1.1	14.5	25.7	72 366
Pilbara Region	23.7	9.8	19.1	3.6	2.7	0.6	15.3	25.4	43 069
Exmouth	29.1	9.9	24.3	5.0	3.1	0.3	8.0	20.3	1 845
Port Hedland	21.4	8.8	17.0	3.1	2.5	0.6	22.4	24.4	11 557
Kimberley Region	21.8	8.3	18.4	4.8	5.4	1.8	13.3	26.2	29 297
Western Australia state total	33.9	8.8	19.9	4.4	3.9	0.5	8.4	20.2	1 959 087
Northern Australia (NT)	26.5	9.3	14.7	5.1	7.7	1.6	11.2	24.0	193 026
Darwin-East Arnhem Region	29.1	9.5	15.1	4.5	6.4	1.2	11.1	23.1	139 591
Darwin	35.5	10.7	14.7	4.0	3.8	0.8	10.3	20.1	66 289
Katherine-Lower Top End Region	16.0	7.3	14.4	7.7	9.7	2.8	12.3	29.7	16 469
Katherine	21.2	8.5	15.0	6.0	4.8	0.7	16.0	27.7	5 849
Barkly-Central NT Region	14.3	7.6	14.6	8.5	12.1	2.5	14.8	25.6	2 923
Alice Springs	21.6	9.0	13.1	6.1	11.4	2.6	11.0	25.2	36 966
Tennant Creek	30.2	11.7	15.4	4.8	4.0	0.9	9.4	23.5	21 619
Northern Territory total	25.2	9.5	14.9	5.2	7.9	1.6	11.0	24.7	192 900
Northern Australia (QLD)	28.1	6.9	22.1	4.8	6.6	0.4	8.9	22.2	642 400
Mackay Region	25.1	6.9	24.4	5.2	6.9	0.2	9.6	21.7	175 144
Mackay town	26.7	6.9	23.7	4.9	6.5	0.2	9.3	21.8	66 876
Northern Region	30.8	6.9	21.7	4.6	6.5	0.4	7.5	21.7	199 222
Townsville	34.1	7.0	20.3	4.1	5.0	0.3	7.6	21.5	128 807
Charters Towers	21.9	7.3	21.9	6.9	10.7	0.5	7.2	23.5	7 978
Far North Region	28.6	7.2	20.9	4.6	6.3	0.5	9.3	22.6	231 049
Weipa	27.4	8.2	22.6	3.1	2.4	0.1	8.2	28.1	2 832
Cairns	33.3	7.4	19.2	3.9	3.9	0.4	9.9	22.0	113 840
North West Region	23.1	5.9	21.7	5.0	7.1	0.6	10.9	25.6	33 461
Mount Isa	25.0	6.1	20.6	4.1	4.9	0.5	12.1	26.6	18 857
Longreach Region	30.3	5.4	21.3	4.5	6.2	0.6	8.2	23.3	3 524
Longreach	29.7	5.5	21.2	4.5	6.8	0.6	8.8	22.9	2 977
Queensland state total	32.8	6.5	21.3	4.6	5.9	0.4	7.8	20.7	3 904 529
Northern Australia subtotal	27.3	7.6	20.3	4.8	6.6	0.7	9.8	22.9	907 792
Australia total	33.9	8.0	18.3	5.6	5.8	0.7	7.9	19.8	19 855 287

Note: This table shows the highest year of school completed for each region, as a percentage, in 2006. The data indicates the highest level of primary or secondary school a person has completed, including those people who are still at school. Due to a large number of responses in the not stated and not applicable categories, the data should be treated with caution.

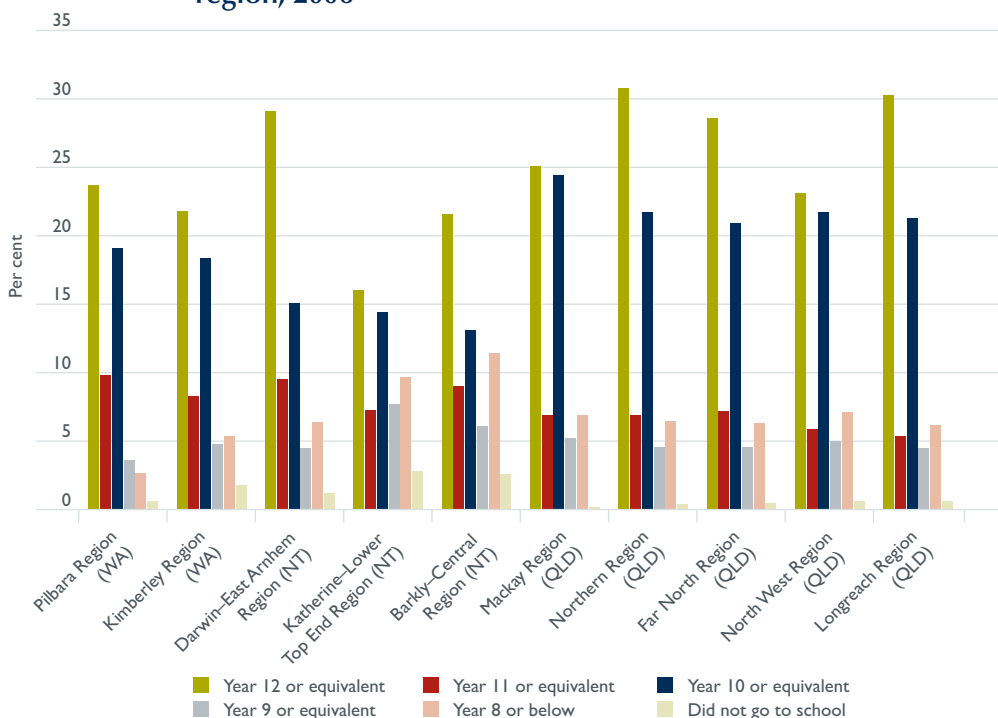
Source: ABS (2006f).

Figure 4.6.1 Northern Australia—highest year of school completed, 2006



Source: ABS (2006f).

Figure 4.6.2 Northern Australia—highest year of school completed, by region, 2006



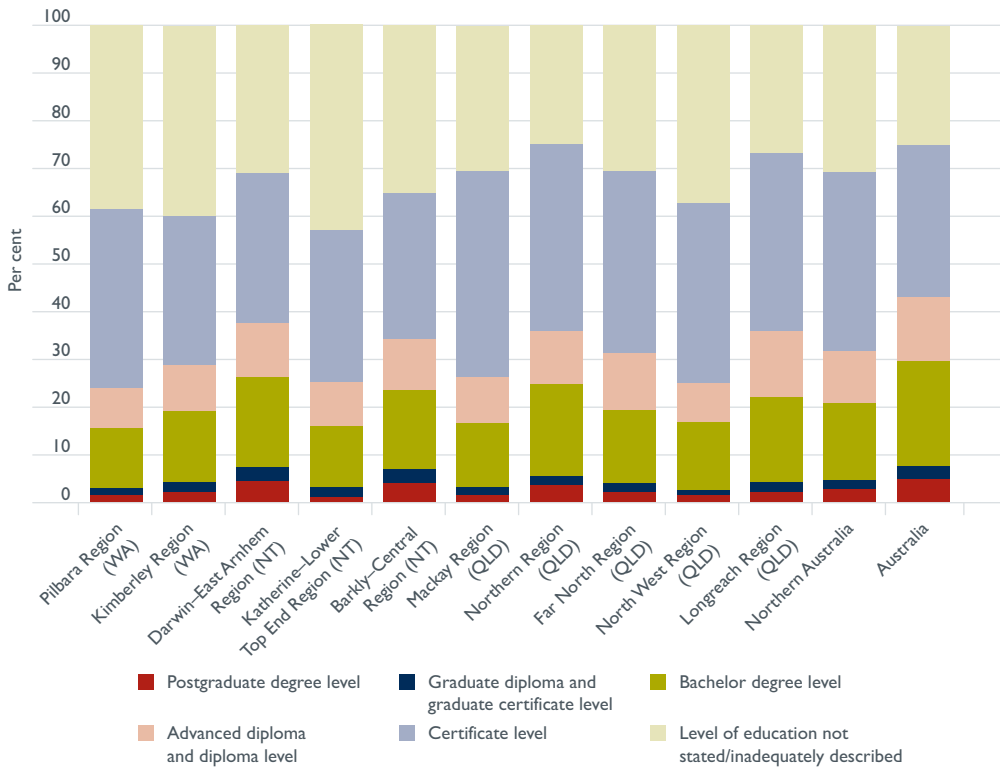
Notes: These figures show the highest year of school completed for regions within Northern Australia. The data indicates the highest level of primary or secondary school a person has completed, including those people who are still at school. Due to a large number of responses in the not stated and not applicable categories, the data should be treated with caution.

Source: ABS (2006f).

4.7 Post secondary qualifications

In all subregions across Northern Australia, the Certificate level is the most common qualification. There are proportionately more Certificate level qualifications in Northern Australia compared with Australia. This is likely to be related to strong presence of industries such as construction, manufacturing, and mining, which may require qualifications such as Certificates rather than Postgraduate or Bachelor degrees. On the other hand, the Northern Australia subregions have lower percentages of Postgraduate and Bachelor degree level qualifications, as well as lower levels of Graduate Diploma and Graduate Certificates, compared to the rest of Australia (see Figure 4.7.1). This is to be expected given that the major cities across Australia have higher percentages of people with Bachelor and Postgraduate qualifications than regional and remote areas (BITRE 2008a).

Figure 4.7.1 Northern Australia—highest level of qualification, by region, 2006



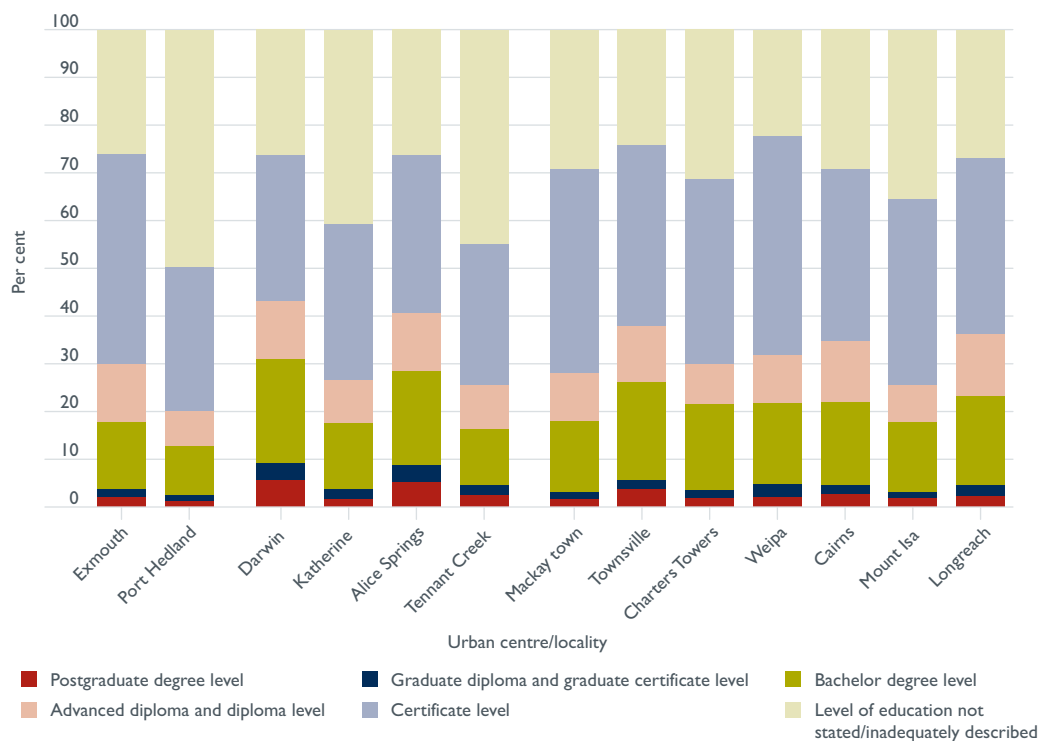
Notes: This graphs show the highest level of qualification for each region within Northern Australia. The data in this section is drawn from the Australian Bureau of Statistics’ 2006 Census of Population and Housing. The data should be treated with a degree of caution, as there were a large number of people who either did not state or inadequately described their level of education.

Source: ABS (2006b).

The percentages of qualifications in each region tie in with the nature of the work which is available. For example, regions such as Darwin or Alice Springs have a high percentage of people with Postgraduate and Bachelor degrees compared to other regions, and to the total percentages across Australia (see Figure 4.7.1 and 4.7.2). This

situation in Darwin and Alice Springs is likely to be related to demand for employees in the government, education, health, and services industries (see Chapter 3 for further discussion on employment by industry). The Katherine-Lower Top End Region has the lowest number of Bachelor degree level and higher qualifications of all Northern Australia regions, indicating that this is not an area in which there are many employment opportunities for people with such qualifications.

Figure 4.7.2 Northern Australia—highest level of qualification, by urban centre/locality, 2006



Notes: This graph shows the highest level of qualification for key Urban Centres/Localities (UCL) within Northern Australia. The data in this section is drawn from the Australian Bureau of Statistics' 2006 Census of Population and Housing. The data should be treated with a degree of caution, as there were a large number of people who either did not state or inadequately described their level of education.

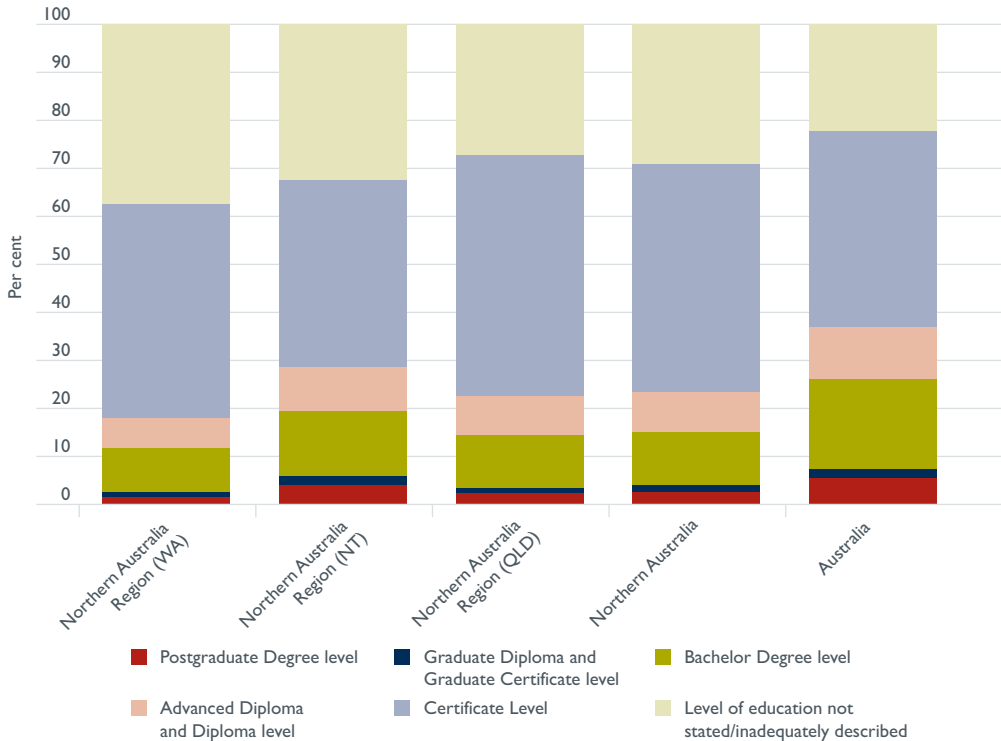
Source: ABS (2006b).

Areas such as the Pilbara Region (Western Australia) are dominated by Certificate level qualifications, particularly amongst males, which is likely to be related to the large number of people employed by the mining and construction industries in this area (see Chapter 3 for further discussion). Similarly, in the MacKay Region, Certificates are the dominant qualification, which reflects the large coal operations, manufacturing and construction industries which are present in this area.

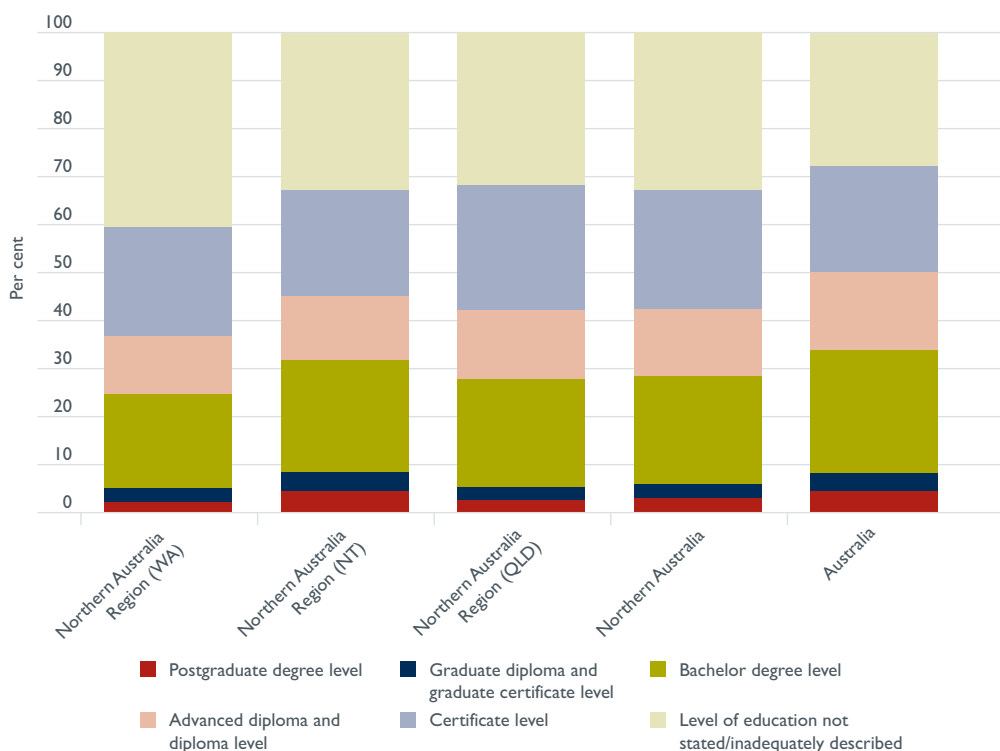
With the exception of Certificates, females within Northern Australia have lower qualifications in percentage terms, compared to Australia (see Figure 4.7.3 and 4.7.4). Females in Northern Australia are however far more likely than their male counterparts to have a Bachelor degree, Graduate Diploma and Graduate Certificate. Males in Northern Australia also have lower levels of qualifications compared to Australia,

particularly in terms of Postgraduate or Bachelor degrees. The exception however is at the Certificate level, where they have far higher proportions compared with females and the national average. As previously noted, the levels of qualifications within Northern Australia are typical of the nation-wide trends which see higher levels of Postgraduate and Bachelor degrees within major cities, and lower levels within remote and regional areas. On the other hand, higher percentages of Certificates are observed within regional and remote areas, compared to the major Australian cities (BITRE 2008a).

Figure 4.7.3 Northern Australia—highest level of qualification, males, 2006



Source: ABS (2006b).

Figure 4.7.4 Northern Australia—highest level of qualification, females, 2006

Notes: These graphs show the highest level of qualification, by gender, within Northern Australia. The data in this section is drawn from the Australian Bureau of Statistics' (ABS) 2006 Census of Population and Housing. The data should be treated with a degree of caution, as there were a large number of people who either did not state or inadequately described their level of education.

Source: ABS (2006b).

Data relating to workforce available in the online compendium

4.1 Number of taxable individuals (NTI)

- Northern Australia—NTI, by region, 1990–91 to 2005–06
- Northern Australia—NTI, by SLA, 1990–91 to 2005–06
- Northern Australia—NTI growth rates, by region, 1990–91 to 2005–06
- Northern Australia—NTI growth rates, by SLA, 1990–91 to 2005–06.

4.2 Census-based labour force participation rates and unemployment rates in 2006

- Northern Australia—employment, unemployment, unemployment rates and labour force participation by SLA (persons), 2006
- Northern Australia—employment, unemployment, unemployment rates and labour force participation by SLA (males and females), 2006

- Northern Australia—employment, unemployment, unemployment rates and labour force participation by UCL (persons), 2006
 - Northern Australia—employment, unemployment, unemployment rates and labour force participation by UCL (males and females), 2006.
- 4.3 Employment between censuses—2001 to 2006
- Northern Australia— employment growth by SLA, 2001–06.
- 4.4 Labour force size over time
- Northern Australia—labour force (number) over time by SLA.
- 4.5 Unemployment rates over time
- Northern Australia—unemployed persons (number) over time by SLA
 - Northern Australia—annual unemployment rates over time by SLA.
- 4.6 Highest year of school completed
- Northern Australia—highest year of school completed, number of people, by region, 2006
 - Northern Australia—highest year of school completed, by SLA, 2006
 - Northern Australia—highest year of school completed, by UCL, 2006.
- 4.7 Post secondary qualifications
- Northern Australia—highest level of qualification, by SLA, 2006
 - Northern Australia—highest level of qualification, by UCL, 2006
 - Northern Australia—highest level of qualification, number of people, by region, 2006
 - Northern Australia—highest level of qualification, percentage of person, by region, 2006.

Figures

- 4.4 Labour force size over time
- Labour force (persons) by year—Pilbara Region
 - Labour force (persons) by year—Kimberley Region
 - Labour force (persons) by year—Western Australia
 - Labour force (persons) by year—Darwin-East Arnhem Region
 - Labour force (persons) by year—Katherine-Lower Top End Region
 - Labour force (persons) by year—Barkly-Central NT Region
 - Labour force (persons) by year—Northern Territory

- Labour force (persons) by year—Northern Queensland region
- Labour force (persons) by year—Far North Queensland region
- Labour force (persons) by year—MacKay Region
- Labour force (persons) by year—Longreach region
- Labour force (persons) by year—North West Queensland region
- Labour force (persons) by year—Queensland.