

Water resources in northern Australia

A seasonal climate

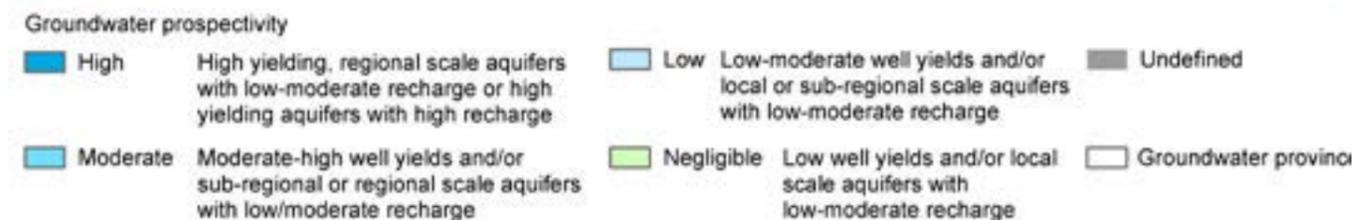
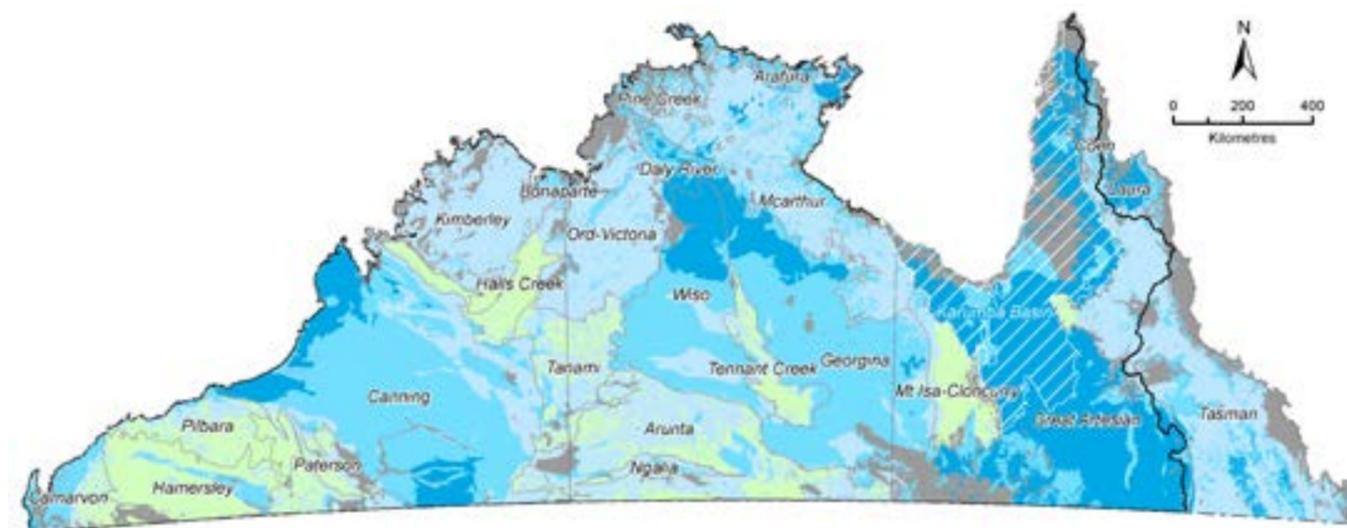
Northern Australia has a highly seasonal climate with most of the rain falling between November and April. It is difficult to crop during the wet season so water storage or access to groundwater is necessary to grow crops during the dry season. Despite 60% of Australia's surface runoff being generated in northern Australia, the area has only about 45% of Australia's potentially divertible water yield. Rainfall is highly variable in these environments and this variability is magnified when converted to streamflow.

Soil and water

There is enough arable soil in northern Australia to match whatever sustainable water can be obtained. The challenge is to match the location of the good soils with the cheapest water. Transmission losses due to evaporation are high in the north so proximity between soil and water is crucial.

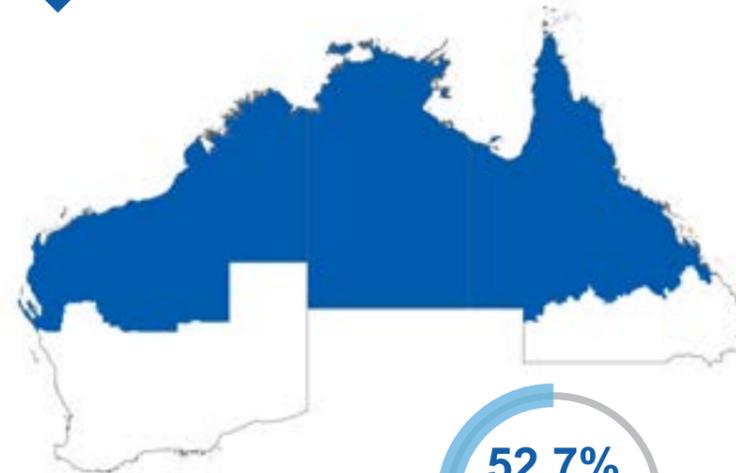
Water availability

While much of the recent focus in northern Australia has been on those areas west of the Great Divide, substantial increases in water availability can be obtained from the catchments that flow east. Estimates based on limited data suggest there might be 600 GL/yr of extractable groundwater from intermediate to regional scale systems in northern Australia. This could potentially support 100,000 to 150,000 of irrigated land. Most of northern Australia's soil and water resources west of the Great Divide have not been mapped in sufficient detail to support reliable resource allocation or investment decisions and more data are required at finer scale.



Source: Northern Rivers and Dams: A Preliminary Assessment of Surface Water Storage Potential for Northern Australia. (2014). Petheram et al. CSIRO.

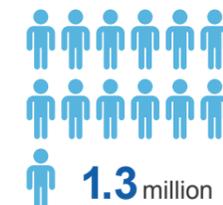
An economic overview of northern Australia



Northern Australia encompasses over 50 per cent of Australia's land mass and contributes 11.7 per cent of Australia's GDP, despite only accounting for 5.5 per cent of the Australian population



Population



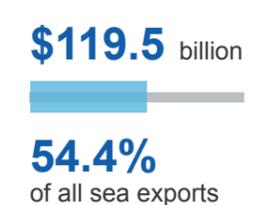
Employment



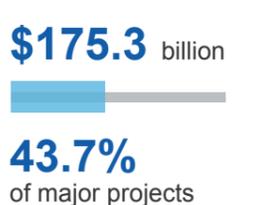
Business



Sea exports

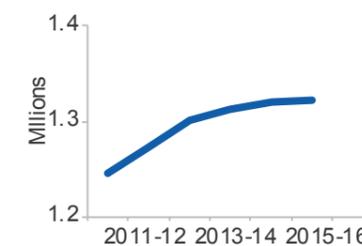


Investment



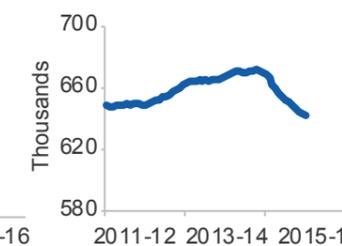
Population growth

On average, over the past five years, the population of northern Australia has been increasing on average 1.2% per year



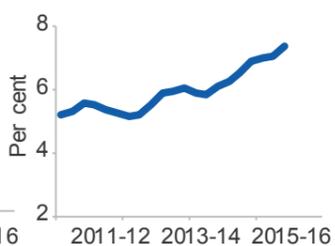
Employment trends

Employment has decreased 1.1% over the last 5 years, an average -0.2% per year



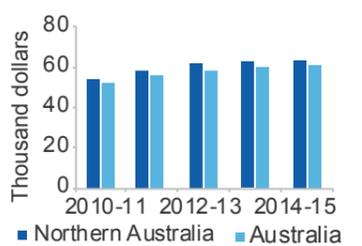
Unemployment

The current unemployment rate for northern Australia is 6.8%



Average income

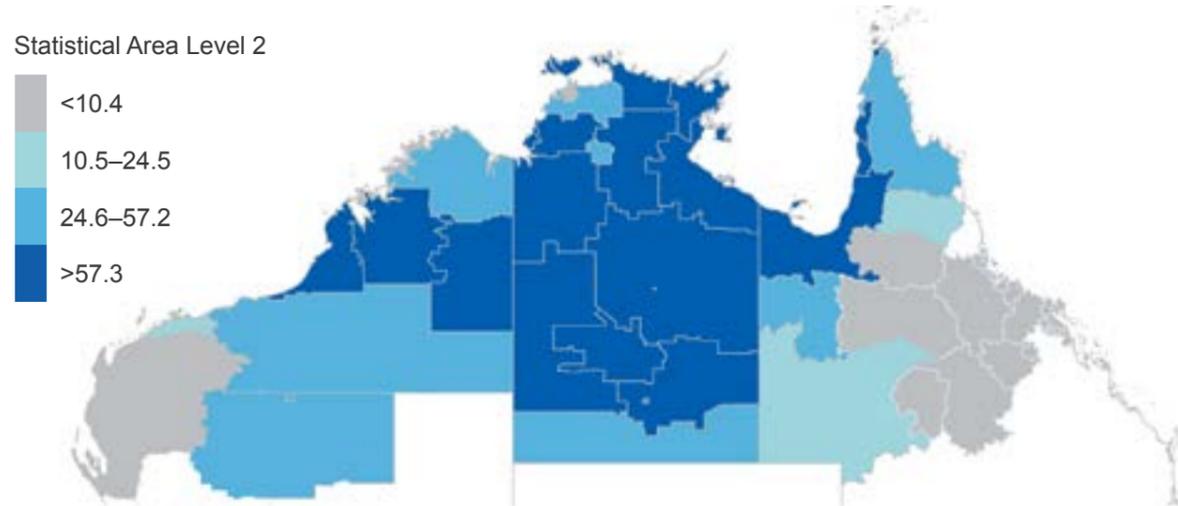
The average income in northern Australia has been increasing over the last 5 years and was \$63,597 in 2014-15



Notes: Exports figures are for goods exported from sea ports only, by value. Investment refers to non-residential investment in projects valued at \$20 million or more, that are committed or under construction. Source: ABS, Regional Population Growth, Australia, 2015-16, cat. no. 3218.0; ABS, Labour Force, Australia, Detailed - Electronic Delivery, May 2017, cat. no. 6291.0.55.001, RM1; ABS, 2011 Census of Population and Housing (TableBuilder extract); ABS, Counts of Australian Businesses, Jun 2012 to Jun 2016, cat. no. 8165.0; BITRE estimates based on ABS 2016, Customised report based on International Merchandise Trade data; Deloitte Access Economics, Investment Monitor, March quarter 2017; Department of Employment, Data tables, Small Area Labour Markets, March 2017 (Table 1 - SA2); ABS, Estimates of Personal Income for Small Areas, 2011-15, cat. no. 6524.0.55.002.

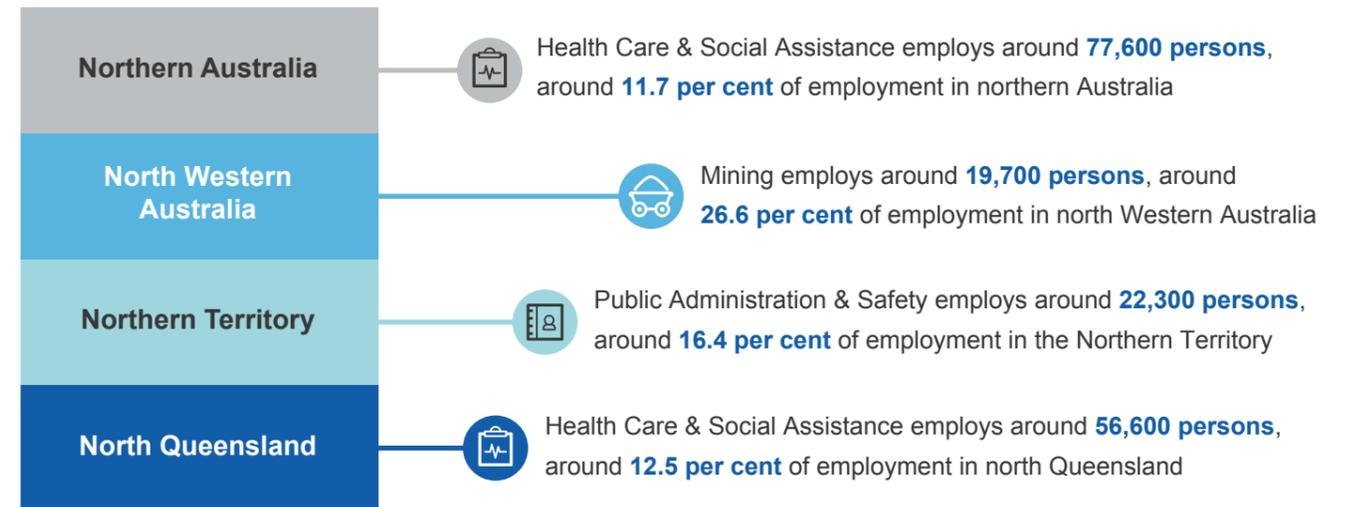
Northern Australia's Indigenous population, 2016

At 2016 Census, around 15 per cent (169,400) of northern Australia's population identified as Indigenous. This accounts for 26 per cent of Australia's Indigenous population. The map below displays the Indigenous population as a share of the total population for each Statistical Area Level 2 in northern Australia



Source: 2016 Census of Population and Housing (TableBuilder extract).

Top employing industries in northern Australia, May 2017



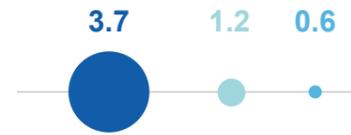
Notes: Northern Australia is a construction of Statistical Area Level 2s, however, labour force survey employment data is only published at the SA4 level. Employment by industry is estimated by applying SA2 to SA4 Census ratios to SA4 labour force survey data. Source: ABS, Labour Force, Australia, Detailed, Quarterly, May 2017, cat.no. 6291.0.55.003, RQ1; ABS, 2011 Census of Population and Housing (TableBuilder extract).

Key statistics for northern Australia states (share of Australia) (per cent)

Population



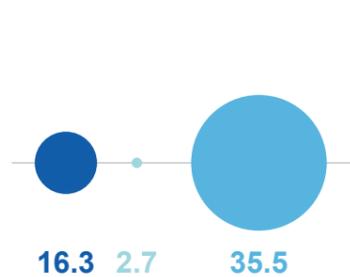
Employment



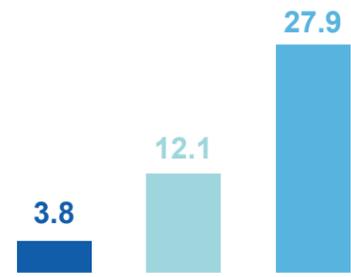
Business



Sea exports



Investment



Average income



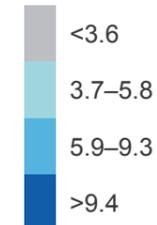
■ North Queensland ■ Northern Territory ■ North Western Australia

Notes: Exports figures are for goods exported from sea ports only, by value. Investment refers to non-residential investment in projects valued at \$20 million or more, that are committed or under construction. Source: ABS, Regional Population Growth, Australia, 2015-16, cat. no. 3218.0; ABS, Labour Force, Australia, Detailed - Electronic Delivery, May 2017, cat. no. 6291.0.55.001, RM1; ABS, 2011 Census of Population and Housing (TableBuilder extract); ABS, Counts of Australian Businesses, Jun 2012 to Jun 2016, cat. no. 8165.0; BITRE estimates based on ABS 2016 - Customised report based on International Merchandise Trade data; Deloitte Access Economics, Investment Monitor, March quarter 2017; ABS, Estimates of Personal Income for Small Areas, 2011-15, cat. no. 6524.0.55.002.

Northern Australia's economy and structural change

- During the mining boom, employment and population grew faster in northern Australia than elsewhere. However, this has now reversed with both rates below the national average.
- Employment was growing in line with population in northern Australia up until 2014. Since then, employment has fallen (mostly in north Queensland), but northern Australia's population has continued to grow, albeit at a slower pace.
- Northern Australia's unemployment rate is estimated at 6.8 per cent in the March quarter of 2017. This is higher than the national unemployment rate of 5.7 per cent. The map below shows the unemployment rates for northern Australia regions. Unemployment rates tend to be highest in non-urban areas in the north that have benefited least from the mining boom.
- Northern Australia is a region with significant potential for growth. As the economy undergoes structural change in the face of the end of the mining investment boom, the region will need to adapt to overcome its challenges and capitalise on its competitive advantages to drive growth into the future.

Statistical Area Level 2



Source: Department of Employment, Small Area Labour Markets, Smoothed unemployment rates, March quarter 2017 (Table 1 – SA2)