LONG-TERM POPULATION GROWTH IN REGIONAL QUEENSLAND

March 2015

1.0 INTRODUCTION

Over a period of time, major changes have been taking place in the distribution of population in regional Queensland outside of the south-east corner of the State.

This paper sets out:

- This changing pattern and the leading role of Cairns and the Cairns region in this changing pattern;
- Why this consistent pattern of change has been happening over a period of time; and
- On a continuation of these long-term trends, what regional population in Queensland would look like by 2050.

This paper has been prepared by Cummings Economics for the Cairns Regional Council.

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2.0 THE QUEENSLAND REGIONS

Queensland outside of the south-east corner of the State covers a large area. Realities of distances lead to the area being served by a series of regional capitals with distinct commercial servicing regions.

Map 1 shows these regional capitals and the commercial regions they serve.

In the case of Cairns, Townsville, Mackay and Toowoomba, the regional capitals and their commercial servicing areas are fairly clear.

Although Rockhampton is the regional capital of the Fitzroy and Central West region, unlike Cairns, Townsville and Mackay, the region's port is not located at the city, but 100km away at Gladstone. Regional city growth in this region can only be understood by combining the two.

Wide Bay Burnett region is effectively two regions based on the two regional urban areas Bundaberg (Burnett) and Hervey Bay/Maryborough (Wide Bay). In this analysis, Bundaberg, Hervey Bay / Maryborough are treated as the equivalent of one city.

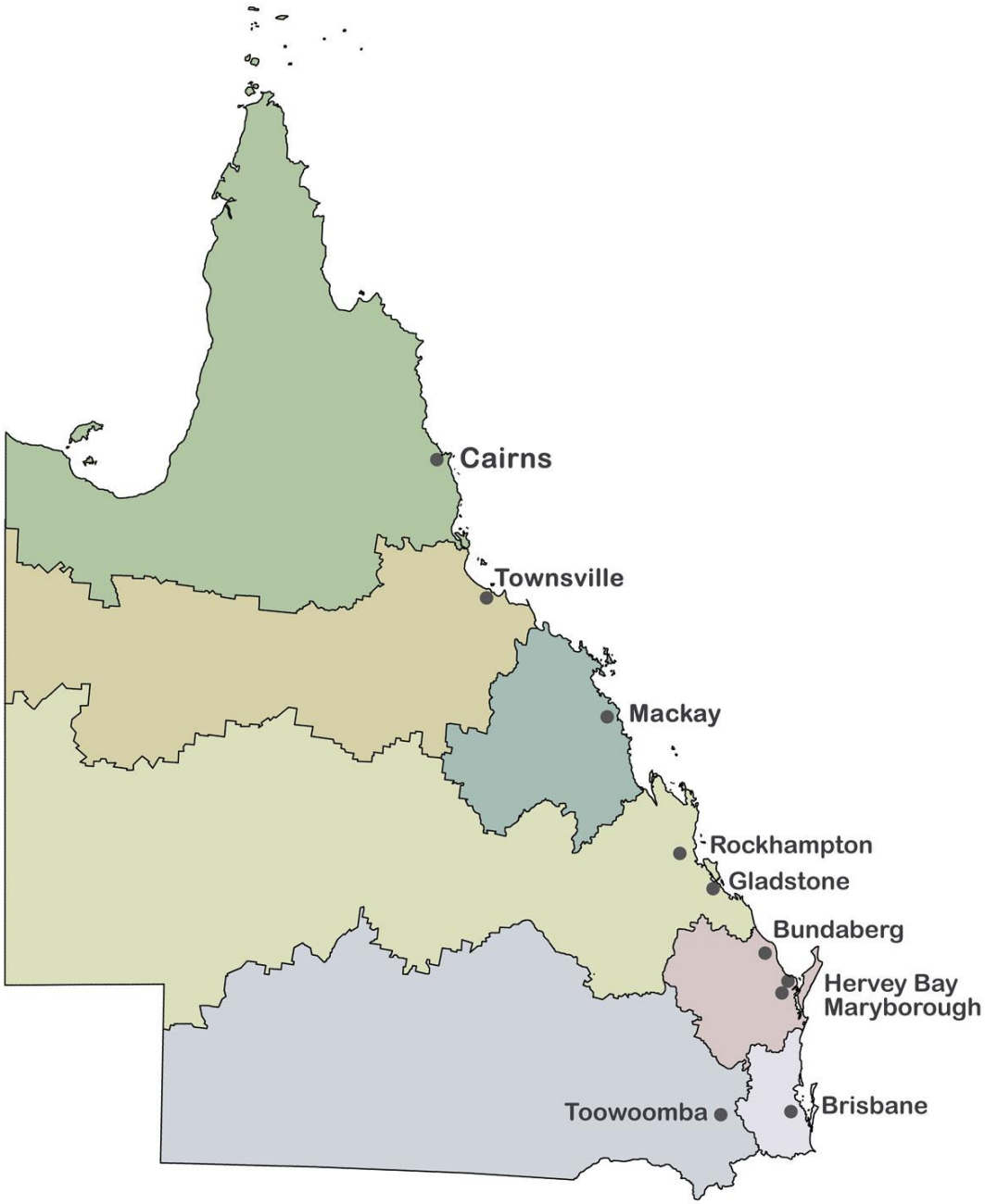
City population boundaries can be complicated to define. Up until 2011, fairly clear city Statistical Districts were being defined by Australian Bureau of Statistics that were reasonably comparable. For this paper, these Statistical District boundaries are used. While the boundaries used can be argued at the fringe, the relatively small figures involved are not likely to change the overall picture presented in the following analysis.

Similarly, there can be argument about fringe regional areas where commercial spheres of influence can overlap to some degree. Again the relatively small figures involved are not likely to change greatly the overall picture.

For this paper, analysis of long-term trends commences in 1976 when the Australian Bureau of Statistics commenced publishing Estimated Residential Populations. Before then, only census count figures were available, that included visitors and did not include residents away.

Appendix 1 sets out statistical notes on the boundaries used.

Map 1 – Queensland Regional Cities and Commercial Servicing Regions



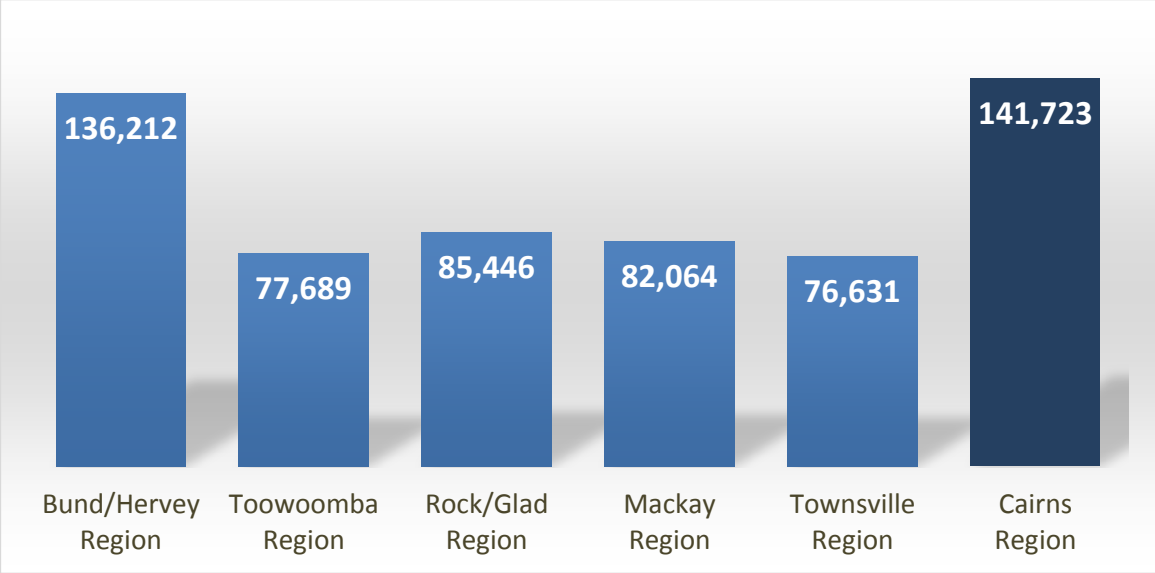
Source: See Statistical Notes Appendix 1 for boundary definitions.

3.0 LONG-TERM POPULATION GROWTH PATTERNS

3.1 Regional population growth patterns

Since estimated residential population statistics began being published by the Australian Bureau of Statistics in 1976, the Cairns' commercial servicing region has led regional Queensland's population growth along with the Bundaberg/Hervey (Wide Bay Burnett) region by a substantial margin.

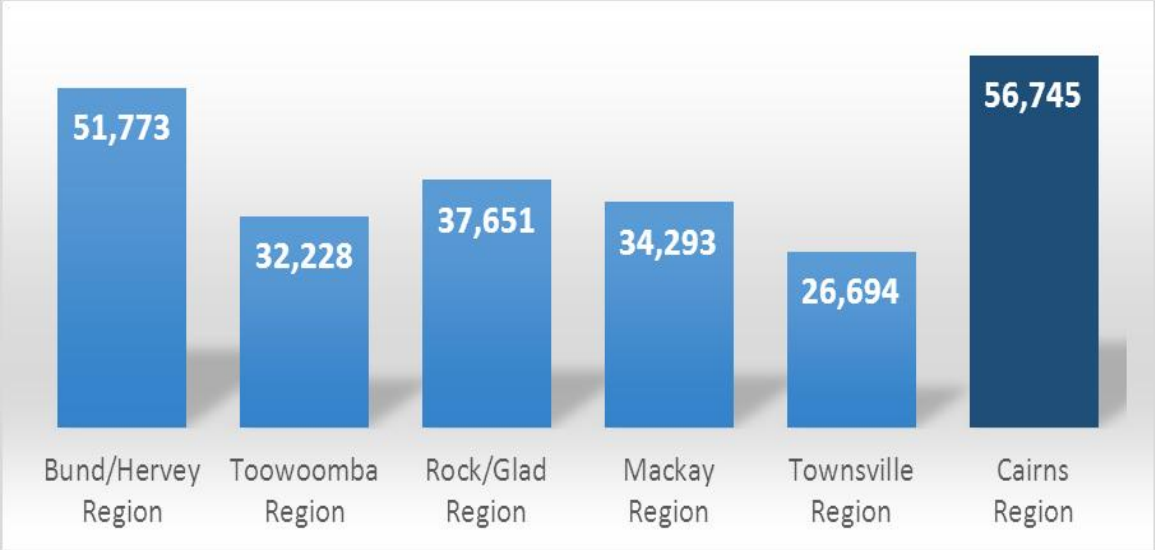
Chart #1: Long-term 35-year Increase in Regional Residential Population, Commercial Servicing Regions of Queensland Regional Cities, 1976-2011



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

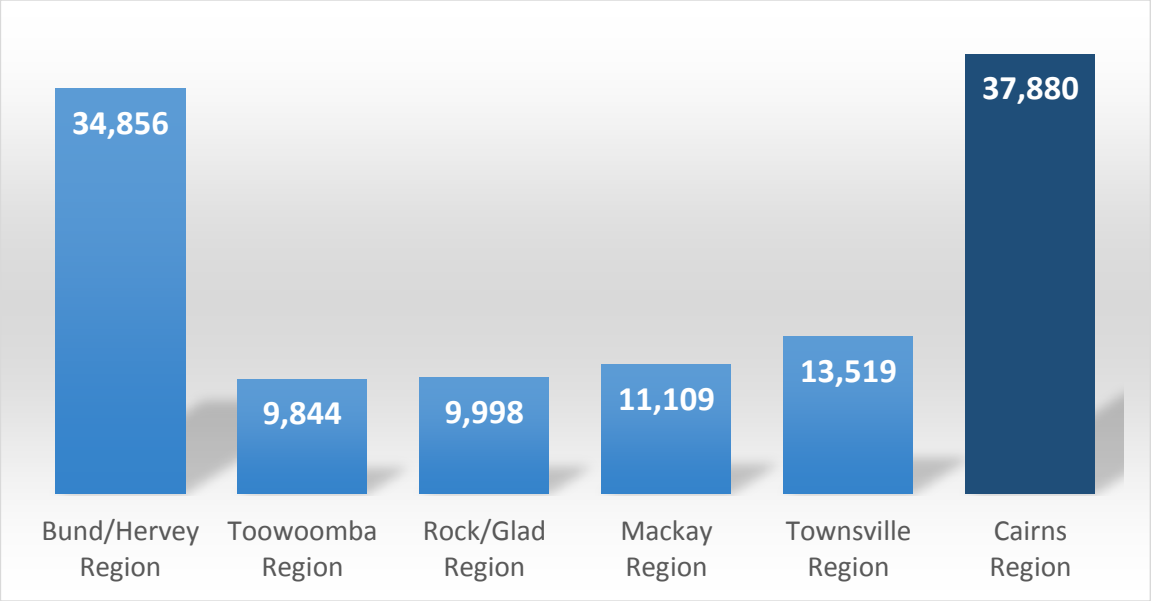
There can be short-term fluctuations. However examination of the figures by shorter periods indicates the basic pattern of the Cairns and Wide Bay Burnett regions leading growth continuing over time.

Chart #2: Long-term 15-year Increase in Residential Population, Queensland Regions, 1976-1991



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

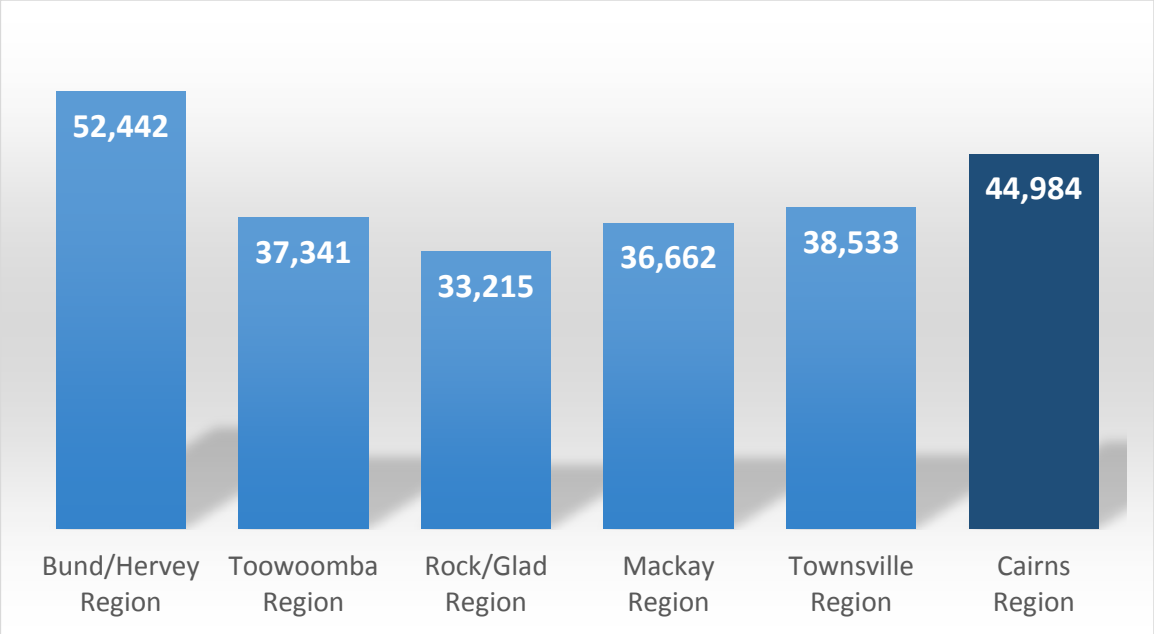
Chart #3: Long-term 10-year Increase in Residential Population, Queensland Regions, 1991-2001



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

Mainly under the influence of accelerated mining activity in the 2001 to 2011 period, growth in the Rockhampton, Gladstone Mackay and Townsville regions advanced but still remained behind the Cairns and Wide Bay Burnett regions.

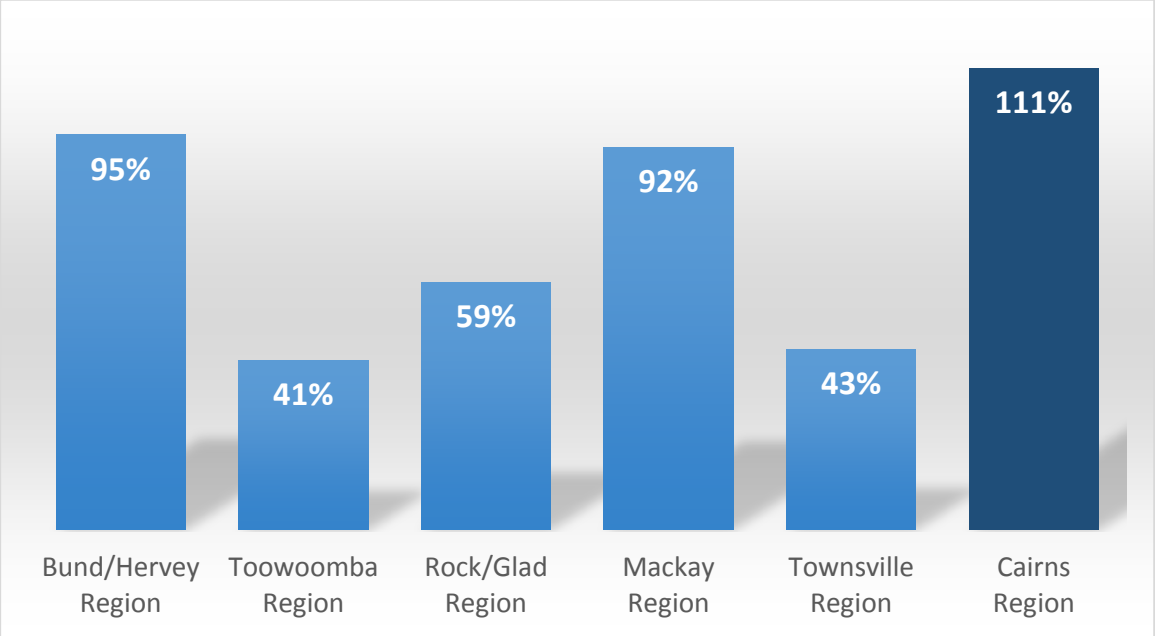
Chart #4: Long-term 10-year Increase in Residential Population, Queensland Regions, 2001-2011



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

In percentage growth rate terms, the increases translate into the following pattern, with the Cairns commercial servicing region leading by a substantial margin, Wide Bay Burnett and the Mackay regions next, and the Toowoomba and Townsville commercial regions lowest.

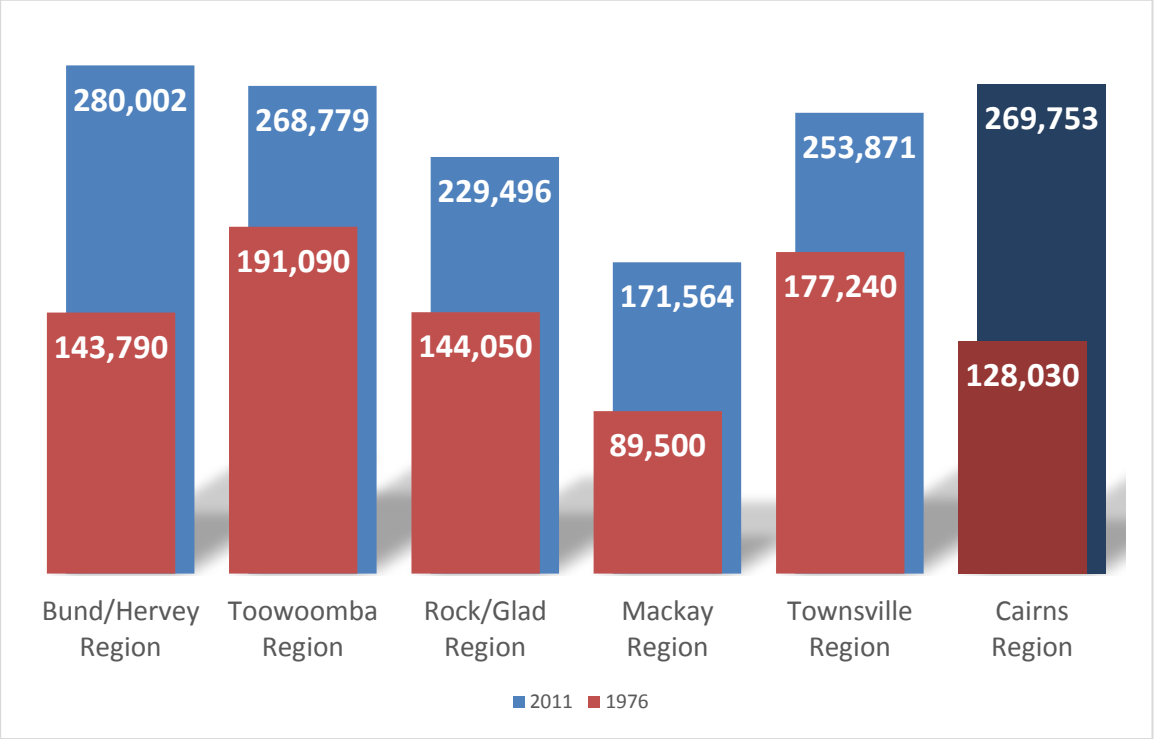
Chart #5: Percent Growth - Residential Population, Queensland Regions, 1976-2011



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

This has meant that the Cairns region, the second smallest in population in 1976, is now close to the Wide Bay Burnett region and up with the formerly larger Toowoomba region and ahead of the formerly larger Rockhampton/Gladstone and Townsville regions.

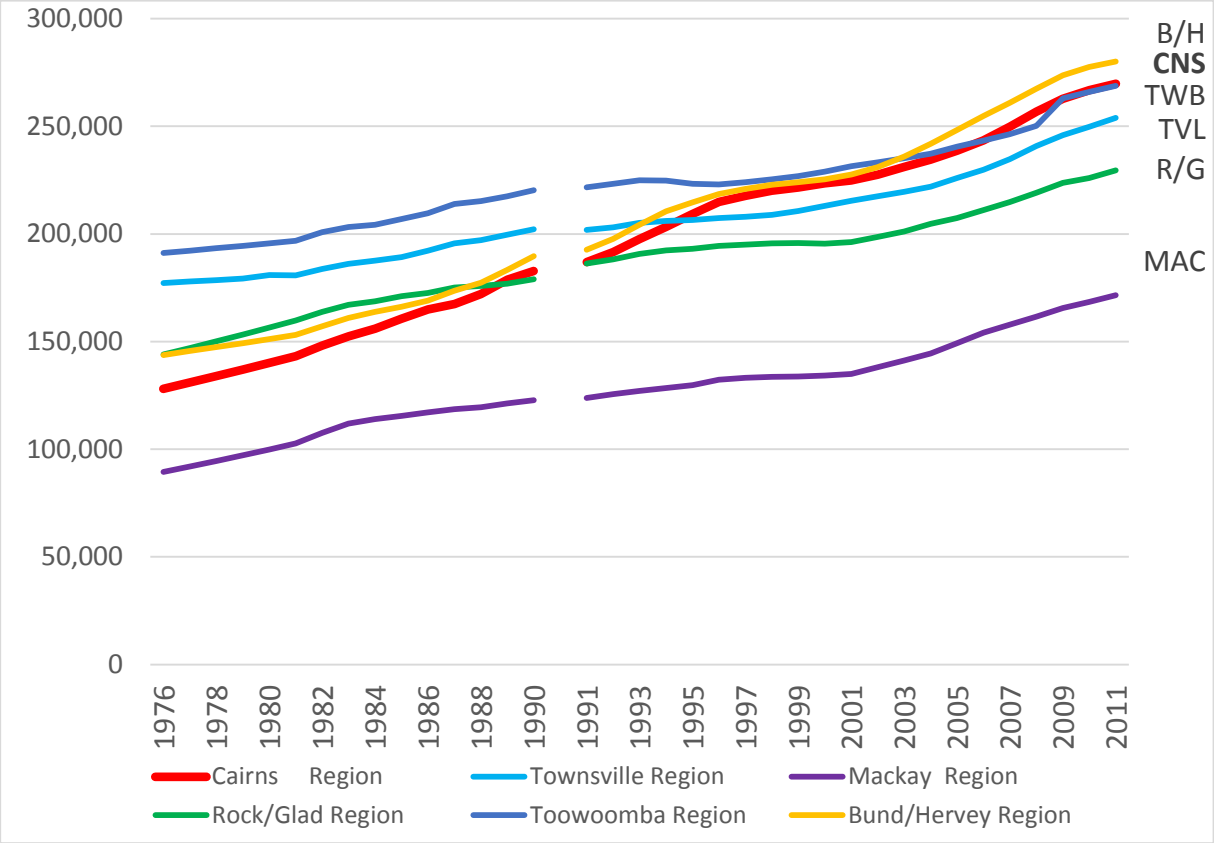
Chart #6: Residential Population, Queensland Regions, 1976 and 2011



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

Chart #7 illustrates how the Cairns region and the Bundaberg / Hervey regions have been tracking up to now lead in total residential population.

Chart #7: Residential Population, Queensland Commercial Servicing Regions of Queensland Cities, 1976-2011



Note: The break 1990-1991 indicates a break in series, in some cases involving minor changes in definitions of areas (see Statistical Notes, Appendix 1).

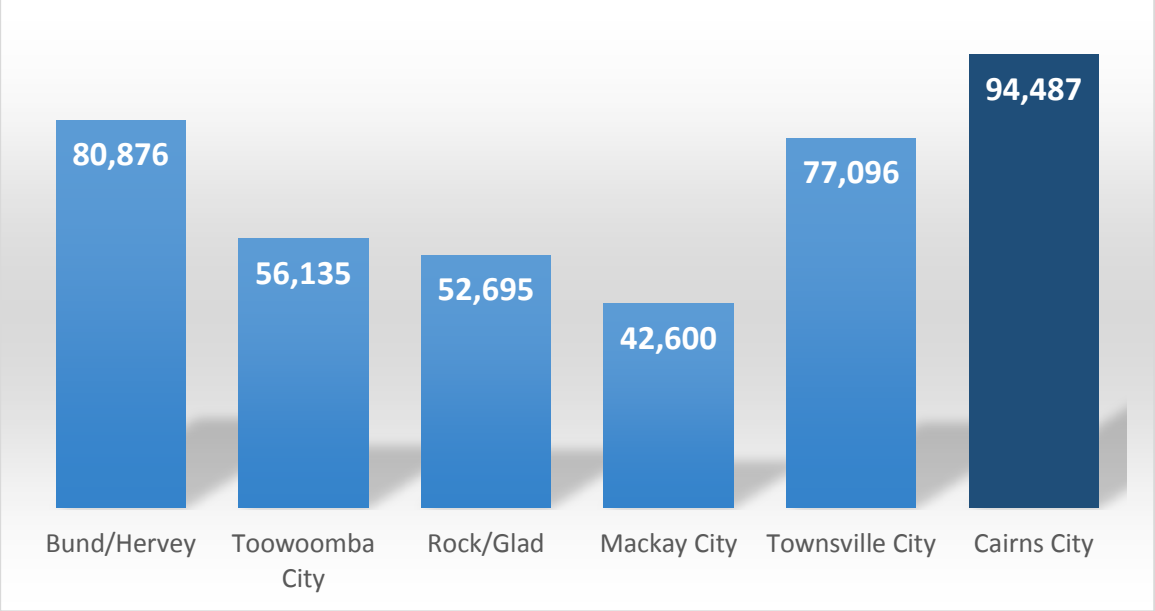
Source: Cummings Economics from ABS Cat No. 3218.0 et al.

While the later estimates for 2012 and 2013 put the Rockhampton, Gladstone, Mackay and Townsville regions' population growth marginally ahead of the Cairns and Wide Bay Burnett regions, this has been under the influence of the mining boom, major construction of LNG plants at Gladstone and the stationing of an extra army battalion and other units in Townsville. With the collapse in mineral and energy prices that has occurred recently, the recent stronger growth in these regions is now receding. Current indications are that a new accelerated rate of growth is underway in the Cairns region, especially under the influence of a lower Australian dollar.

3.2 Regional city population growth

Against the foregoing background, it is not surprising that Cairns as a regional servicing city has recorded the largest growth in population followed by Bundaberg/Hervey Bay and Townsville next.

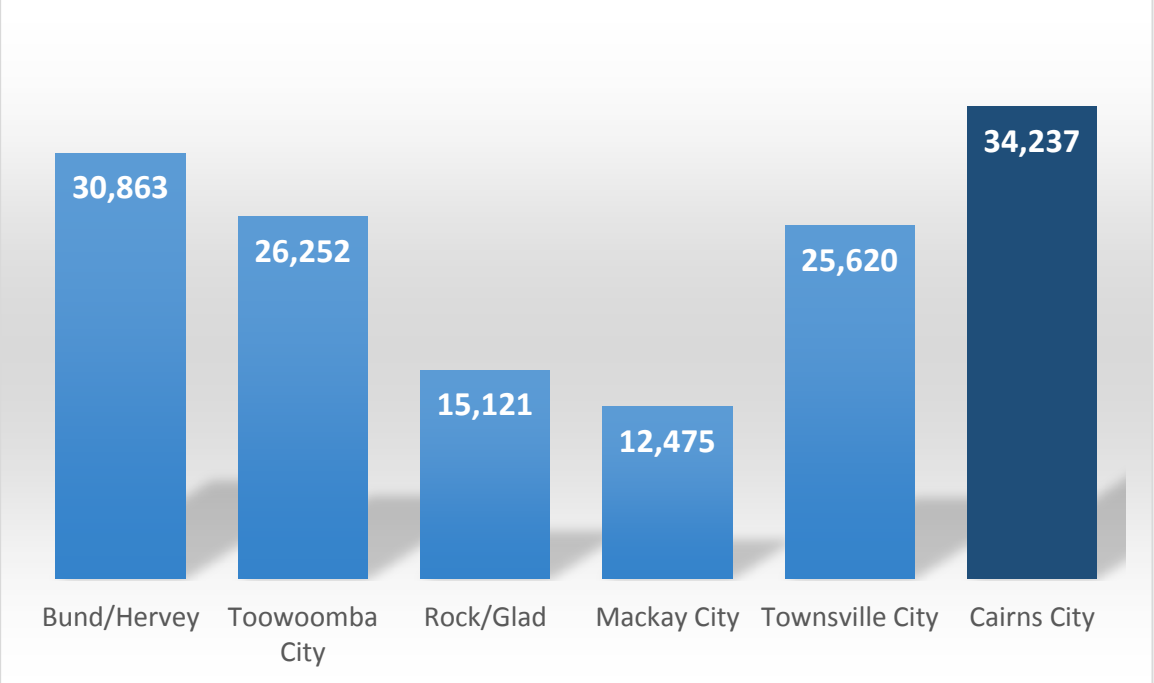
Chart #8: Long-term 35-year Increase in Residential Population, Queensland Regional Cities, 1976-2011



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

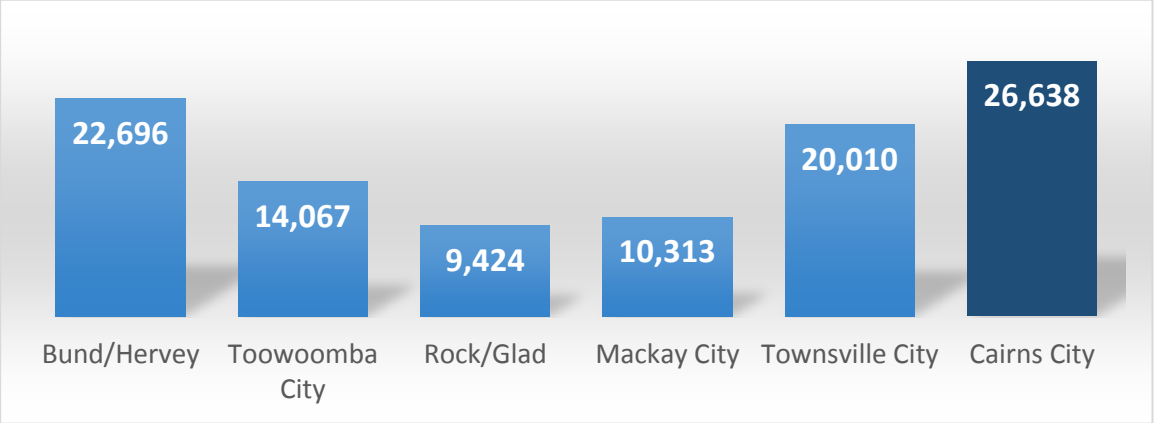
This pattern has been fairly consistent over time.

Chart #9: Long-term 15-year Increase in Residential Population, Qld Regional Cities, 1976-1991



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

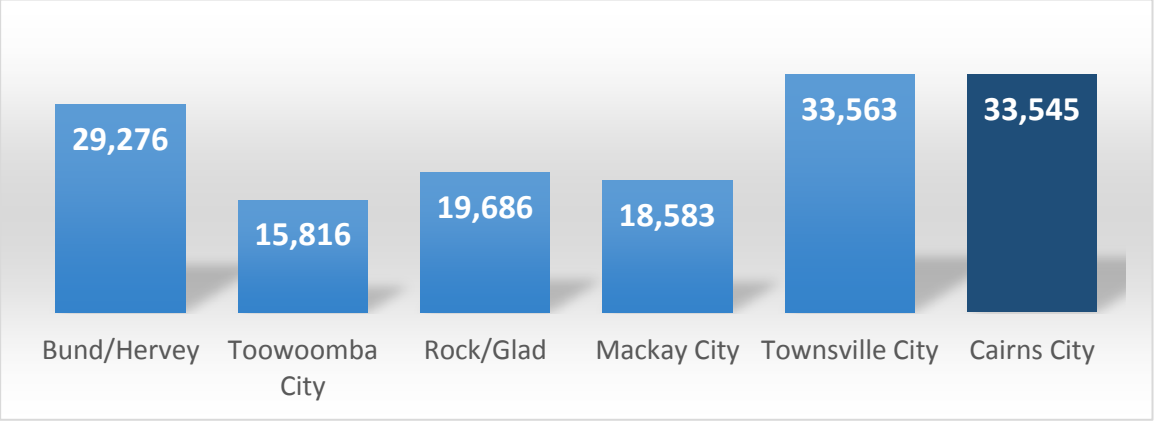
Chart #10: Increase in Residential Population, Qld Regional Cities, 1991-2001



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

However over the period 2001-2011, Townsville came up to equal Cairns when Cairns' growth was heavily affected by the Global Financial Crisis and high dollar, and Townsville was benefiting heavily by increased defence personnel being stationed in the city and high mineral prices. This pattern continued in 2012 and 2013, but there is evidence it is currently reversing as mineral prices recede while Cains reaccelerates.

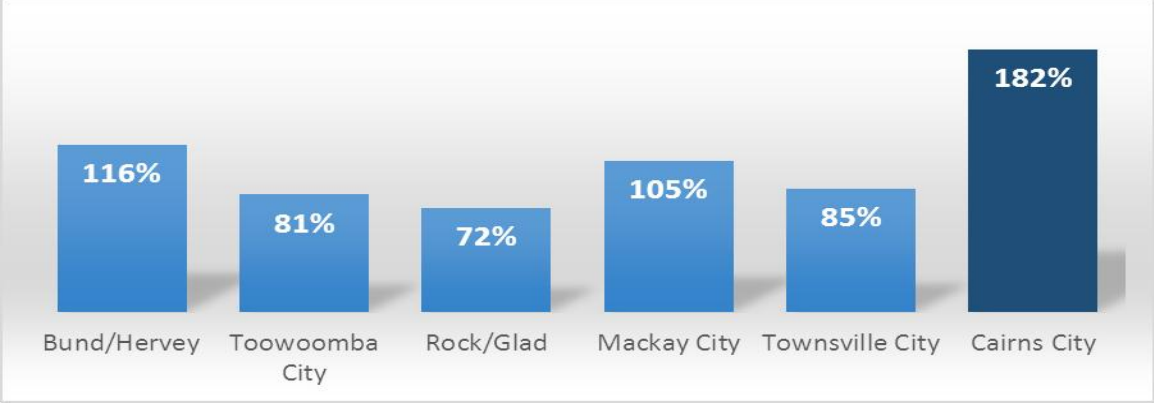
Chart #11: Increase in Residential Population, Qld Regional Cities, 2001-2011



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

In percentage terms, city growth has been led by Cairns by a large margin, followed by Bundaberg/Hervey Bay and Mackay.

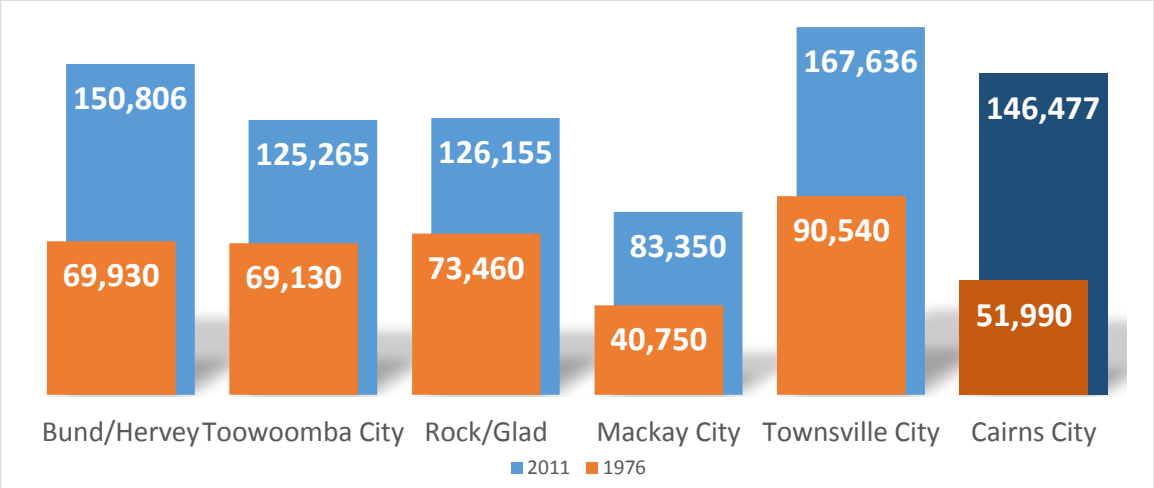
Chart #12: Percent Growth – Residential Population, Queensland Regional Cities, 1976-2011



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

This has led to substantial changes in the ranking of regional city sizes with Cairns moving from being about half the size of Townsville and second smallest in 1976 to overtaking Toowoomba and Rockhampton/Gladstone to being up with combined Bundaberg/Hervey Bay and close to Townsville in size in 2011.

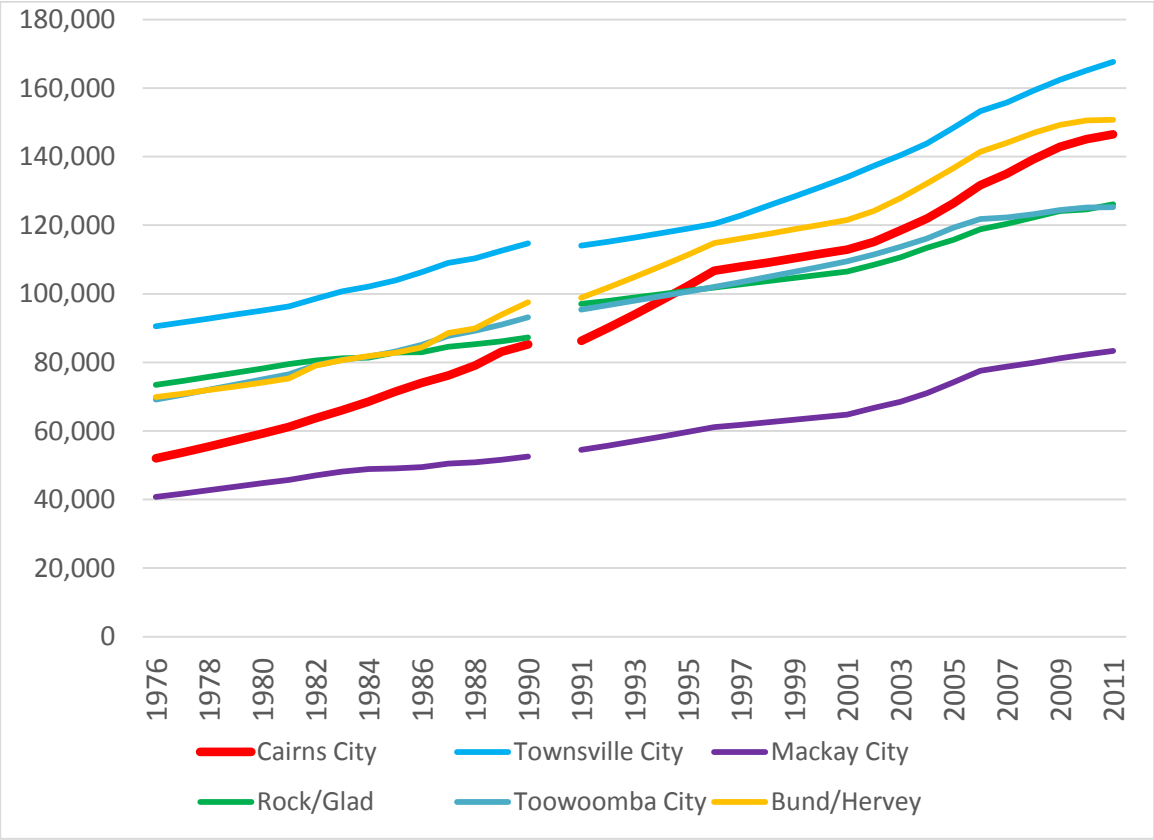
Chart #13: Residential Population Sizes, Queensland Regional Cities, 1976 and 2011



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

Chart #14 illustrates the movements by years, again illustrating the strong growth trajectory of Cairns and Bundaberg/Hervey Bay.

Chart #14: Residential Population, Queensland Regional Cities, 1976-2011



Note: The break 1990-1991 indicates a break in series, in some cases involving minor changes in definitions of areas (see Statistical Notes, Appendix 1).

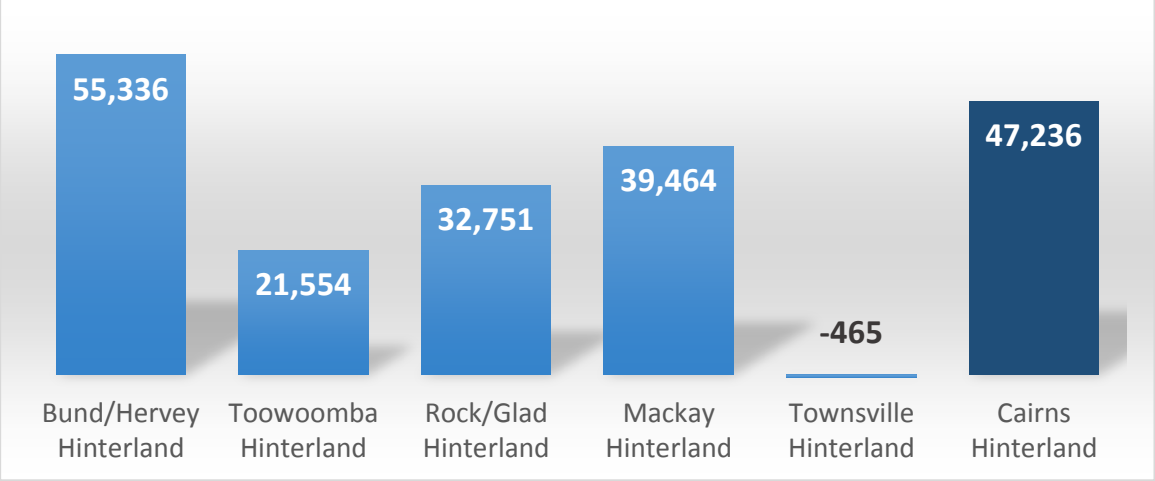
Source: Cummings Economics from ABS Cat No. 3218.0 et al.

3.3 Hinterland growth patterns

Standing behind the city and regional growth patterns are differences in growth in hinterland population serviced by the regional cities. Strongest growth has been in the Wide Bay Burnett and Cairns regions followed by Mackay which includes the Whitsundays area.

Toowoomba, Rockhampton/Gladstone and Townsville hinterlands have been particularly affected by declining populations in the south-west, central-west and north-west areas. The Townsville hinterland population recorded a small overall decline.

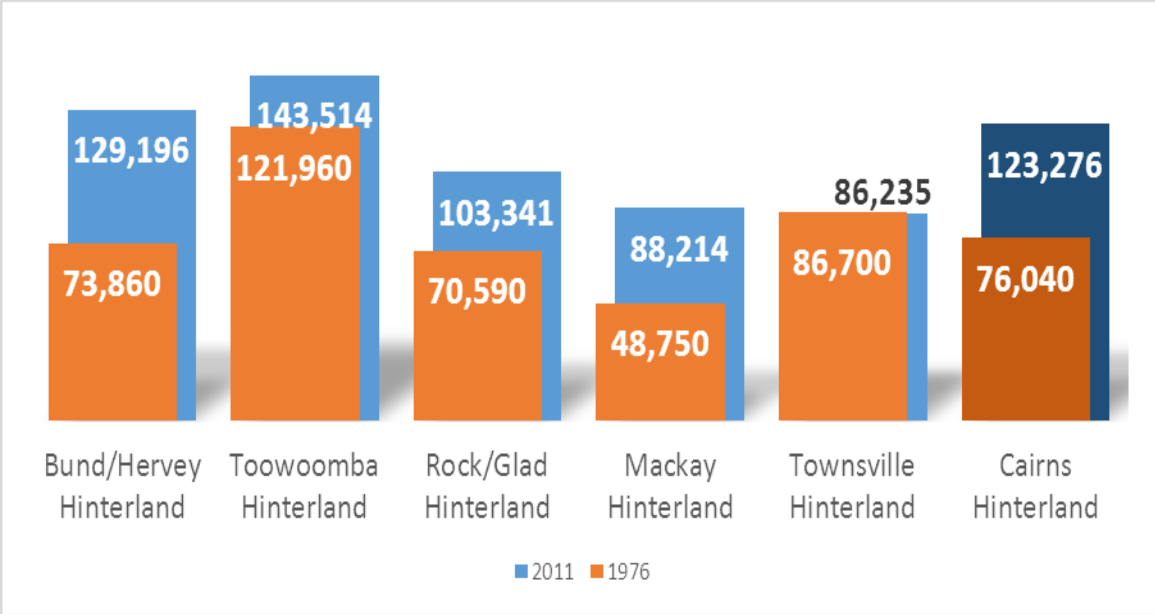
Table #15: Long-term 35-year Increase in Hinterland Residential Population, Queensland Regional Cities, 1976-2011



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

Chart #16 illustrates how Cairns has passed the Townsville and Rockhampton / Gladstone hinterlands and is close to Bundaberg / Hervey and Toowoomba hinterlands.

Chart #16: Hinterland Residential Population, Queensland Regional Cities, 1976 and 2011

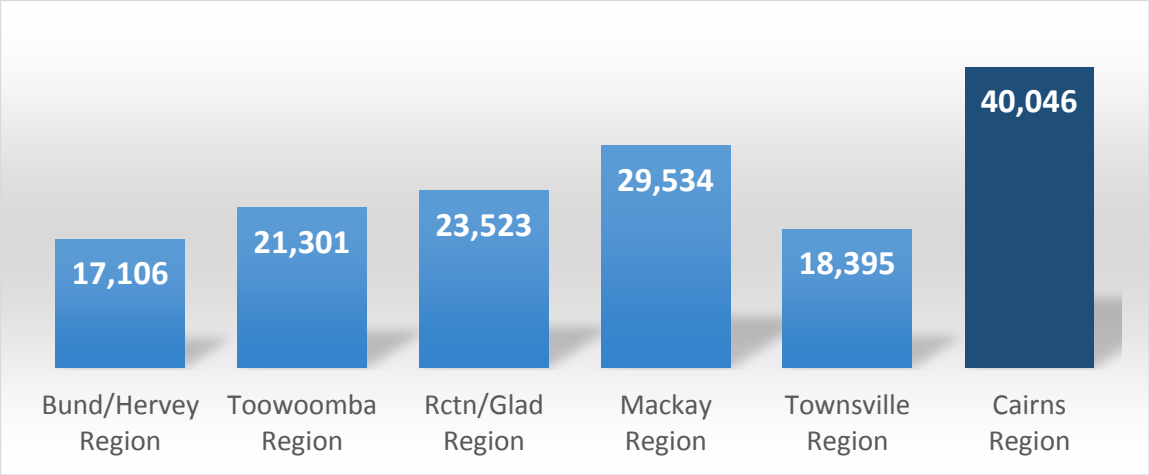


Source: Cummings Economics from ABS Cat No. 3218.0 et al.

3.4 Visitor populations

Apart from its strong position in residential population, the Cairns region also leads with largest on-the-ground visitor populations with the Mackay Whitsunday region next.

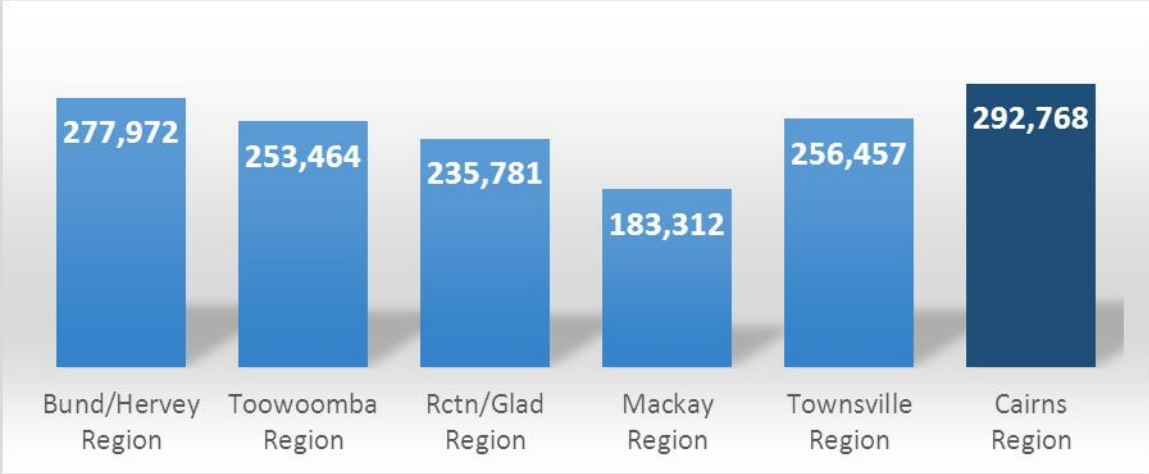
Chart #17: Visitor Numbers, Intrastate, Interstate and International, 2011 Census



Source: Cummings Economics from ABS Census 2011.

In census count population that includes visitors and excludes residents away, the Cairns region now leads Queensland's regions.

Chart #18: Census Count – Population Place of Enumeration, Census 2011



Source: Cummings Economics from ABS Census 2011.

4.0 WHY?

4.1 General

It is easy to explain the strong growth of the Bundaberg / Hervey (Wide Bay Burnett) region as population in South East Queensland spreads northward along the coast.

The following explores why there has been a long-term trend for the Cairns region to be a leader in regional growth.

The following identifies five major underlying factors:

1) The large area covered by the Cairns region;

2) The region's tropical location and historical lag in development;

3) The strength of the region's natural resources;

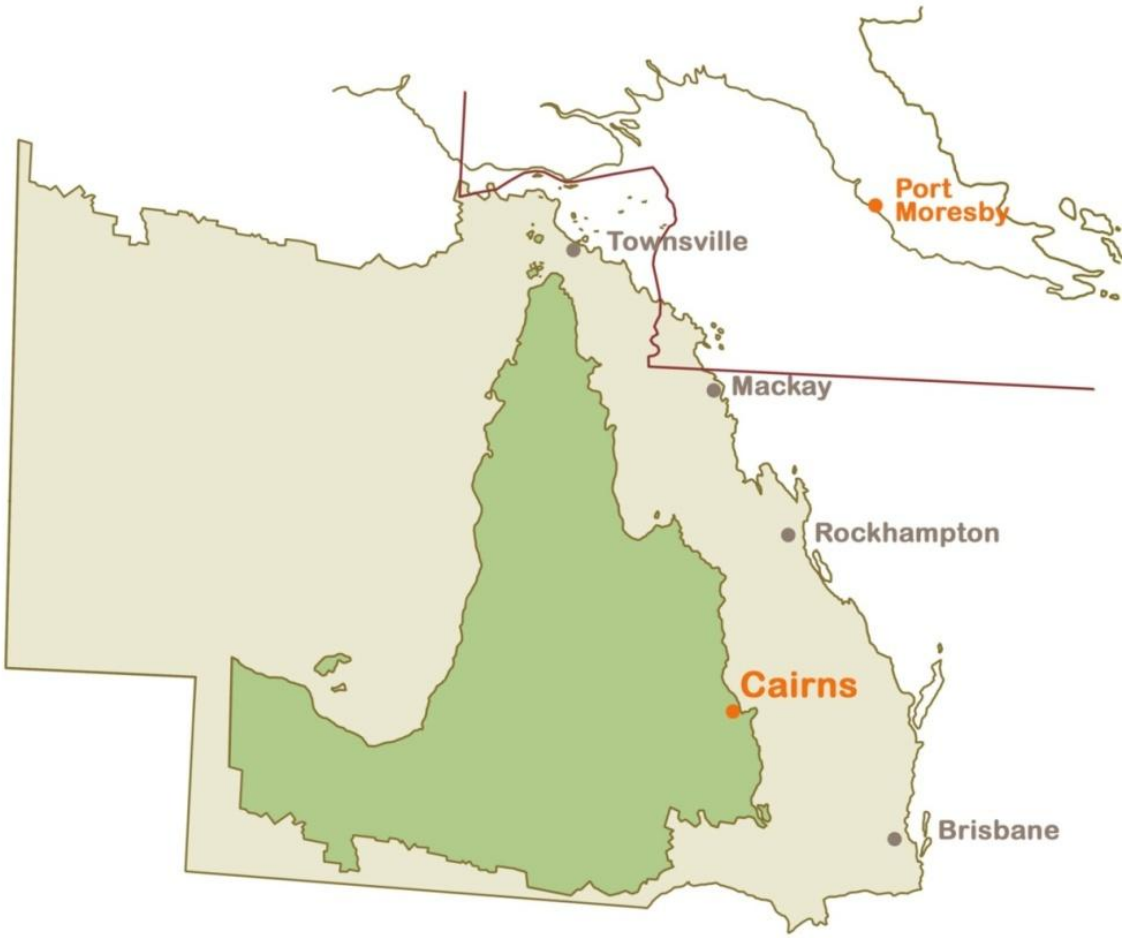
4) The region's strategic location;

5) The region's diversified industry composition.

4.2 Queensland's largest region

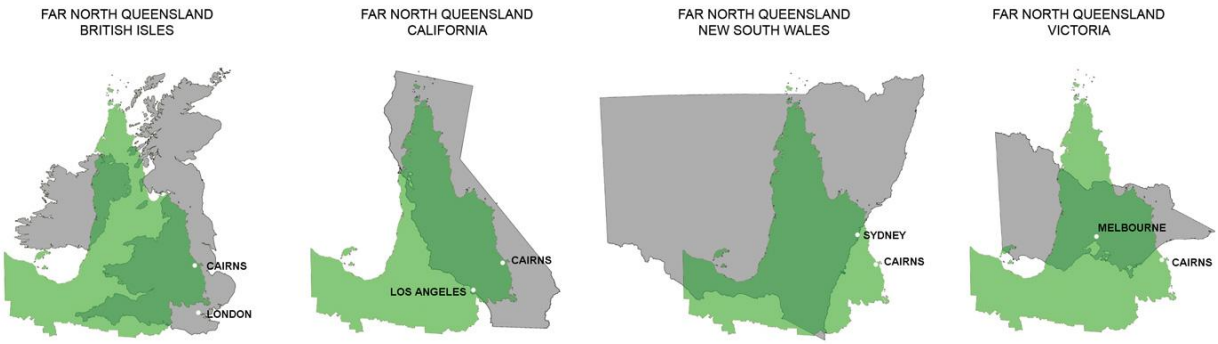
Queensland is a large state. Within Queensland, the Cairns region covers the largest area. It covers half Queensland's latitudes and is as deep from north to south as New South Wales. In area, it is 1½ times the size of Victoria and covers an area equivalent to the British Isles.

Map 2 – Area and distances compared with rest of Queensland



Cairns Region..... 9° south to 19° south
Rest of Queensland .....19° south to 29° south

Map 3 – Comparative areas and distances



4.3 Overcoming the tropical lag

Queensland stretches deep into the tropics and historically, presented a much greater challenge to an Australian society with technology and most of its population derived from north western Europe – the further north the greater the challenge. Historically the Cairns region being the furthest north, was late being settled and initial progress was slow and hard won.

But Queensland's tropical regions are not poor in underlying resources and long-term underlying factors have been underpinning accelerated growth from a small base.

- Technology suited to tropical areas has been developed across a broad spectrum affecting industries and everyday living.
- A growing global economy has been reaching out for previously underdeveloped mining, agricultural, marine product and tourism resources.
- Transport and communication developments have been breaking down old cost barriers of remoteness from national and world markets.
- Success breeds success factors have been kicking in.

Queensland's transition from being the "Cinderella State" of the 1960s to being a "Front Runner" has in large part been due to the progress made in its tropical areas.

Being the furthest north and previously least developed in relation to its potential, the Cairns region has benefited most from these underlying trends.

4.4 The strength of the region's natural resources

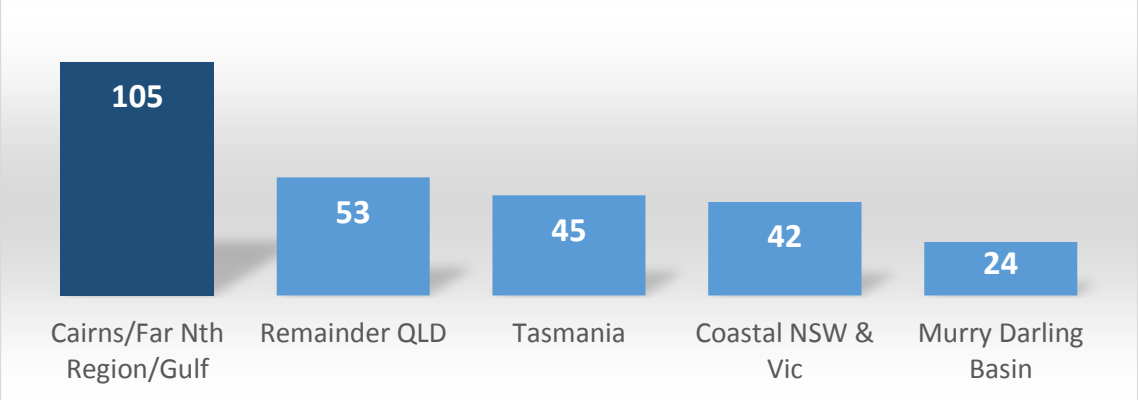
While a great deal of attention has been paid in recent decades to the mineral resources of central and northern Queensland, what is often not recognised is how the Cairns region leads the state in natural (biological) resources. This natural resource base has underpinned:

- Expanding primary industries;
- Expanding tourism;
- Superior lifestyle opportunities.

Leading in natural biological resources

The Cairns region accounts for over 60 percent of Queensland's water runoff and some 26 percent of the national total.

Chart #19: Mean Annual Water Runoff - Australian Regions Compared, million mega litres



Source: Australian Land and Water Resources Atlas.

Satellite technology and CSIRO modelling is now giving a picture of how this translates into underlying plant growth potential – the rate at which carbon is absorbed from the atmosphere. (Maps, Appendix 2, illustrate.)

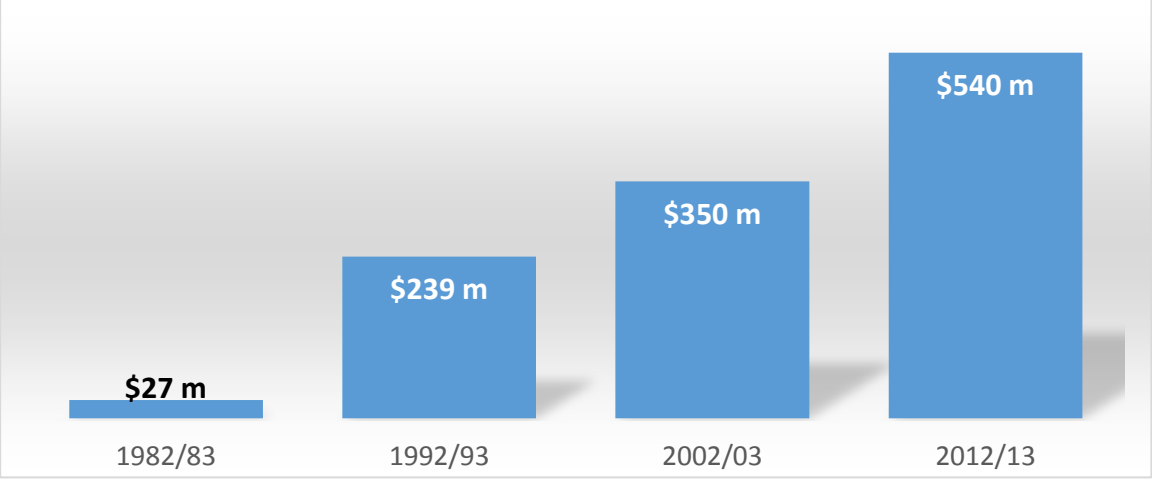
Modelling CSIRO data indicates that average plant growth per square metre in the Cairns region, as measured by absorption of carbon from the atmosphere, is almost double the remainder of the State.

Primary industries, a growth sector

Agriculture is regarded as a stagnant sector in most parts of Australia. In the Cairns region, it has been a growth sector over recent decades. Major breakthroughs have included:

- Mechanisation of sugar harvesting and bulk transport. A major new growing area and new mill have been established in the Mareeba district.
- The introduction of tropical adapted Brahman breeds into cattle herds and development of live cattle exports to Asia has resulted in increases in cattle herds and turnoff.
- Sealing of roads linking the Cairns region to southern markets and more efficient road transport vehicles has seen a major new sector added to the Cairns regional economy in the production of tropical fruits, offseason produce and ornamentals.

Chart #20: Gross Value of Fruit Production, Cairns Region [(1)]

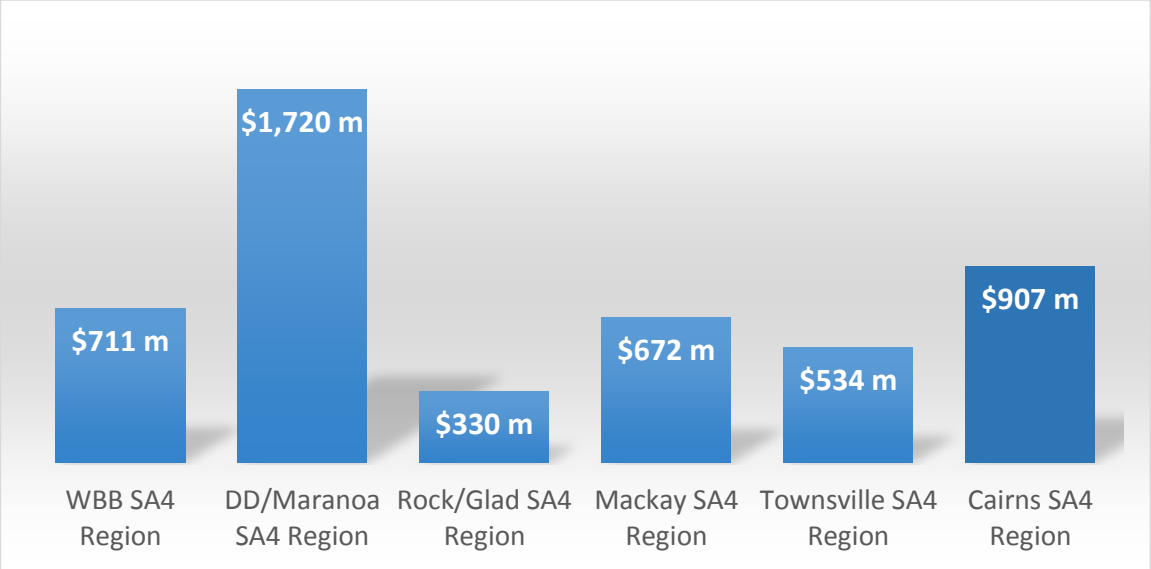


(1) Note: Cairns region defined as Far North Statistical Division 1982-83 to 2002-03 and Cairns SA Level 4 in 2012-13 $542m plus estimate of production Queensland Outback Far North $16m.

Source: Cummings Economics from ABS data.

The Cairns region now leads in crop production outside the Darling Downs / Maranoa region. However it is still underdeveloped compared with resource potential and new agricultural districts are currently opening up in the Gulf and Cooktown areas.

Chart #21: Gross Value of Crops, Queensland Regional Areas, 2012-13 $m



Source: Cummings Economics from ABS Cat No. 7503.0 et al.

Marine resources

The Cairns region with the northern half of the Great Barrier Reef, the Torres Strait and Gulf, dominates Queensland's marine biological resources.

The Cairns region accounts for over 60 percent of Queensland's coastline and leads in fisheries production. Cairns has developed as one of the largest commercial fishing industry ports in Australia.

Diversified mining resources

While value of mining production in the Cairns region is lower than the Townsville, Mackay and Rockhampton / Gladstone hinterland regions, it is diversified and being further north has no 'fly-in' from Brisbane. Value of production is moving back up again, with the South of Embley bauxite project likely to proceed in the near future and the Aurukun bauxite to follow.

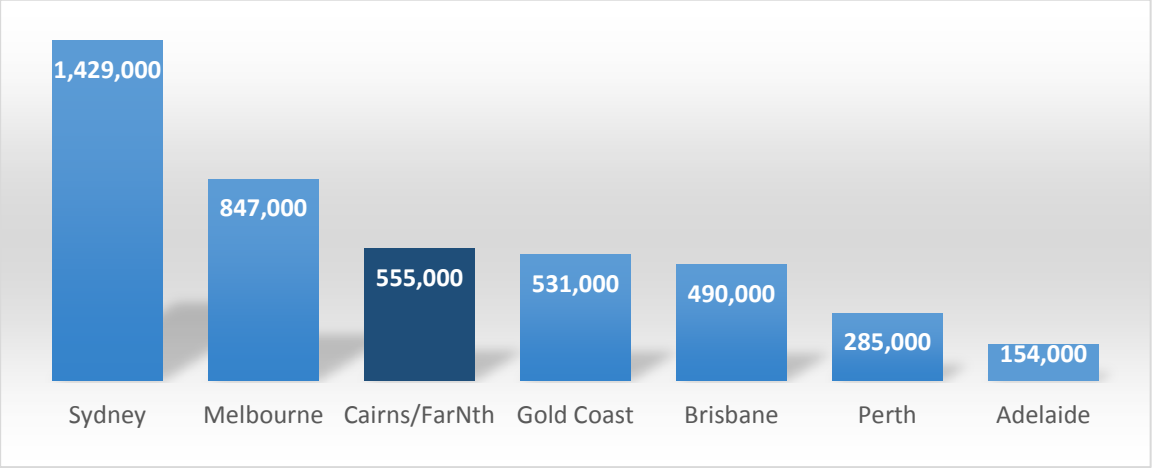
A foundation for leading tourism growth

The Cairns region's outstanding natural (biological) resources have also provided a foundation for rapid tourism development.

The Great Barrier Reef (close offshore and easily accessible), coastal beach scenery, mountains, the Tablelands and World Heritage rainforests, provide a world class quality and combination of tourism resources that attracts domestic visitors and plays a major role in attracting international visitors to Australia.

The region's tourism resources are so powerful that in tourism visitation, the Cairns region leads regional Queensland. In international holiday visitors, it leads the State and sits next to Sydney and Melbourne.

Chart #22: International Holiday Visitors to Australia – Leading Regions, 2012-13

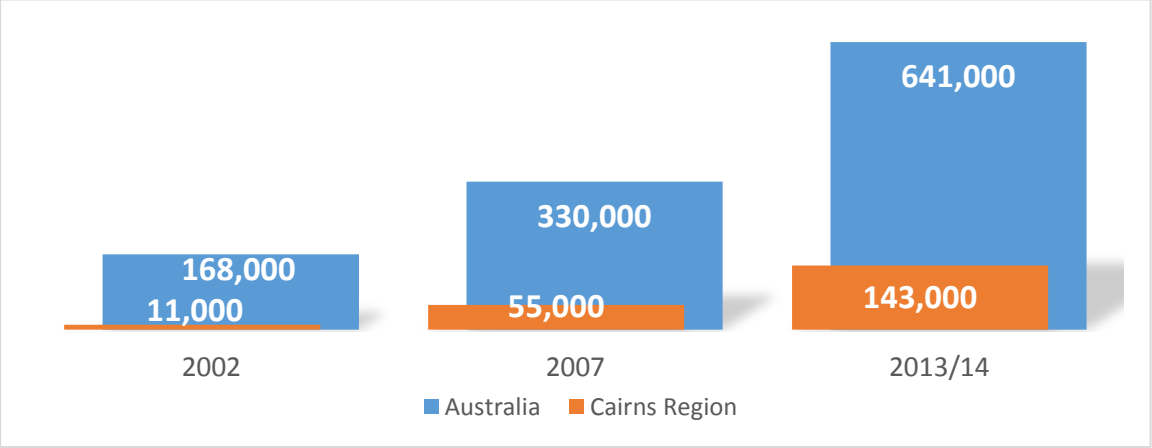


Source: Tourism Research Australia.

Cairns is currently playing a leading role in tapping into the new wave of tourism coming out of China. Growth 2002 to 2013-14 of Chinese visitors represents a 13-fold increase compared with Australia overall of four times.

The multi-billion dollar Aquis Integrated Resort project aims to tap into and further expand the burgeoning Chinese and other international markets.

Chart #23: Chinese Visitors to Australia and Cairns Region



Source: Tourism Research Australia.

The basis for an outstanding lifestyle

The Cairns region's natural beauty provides the basis for an outstanding, new, first world tropical lifestyle. Technological improvements have been overcoming old negatives including widespread introduction of air-conditioning and advances in health services and housing. Build-up of population is resulting in improved education and cultural facilities. Tourism brings with it superior recreation, shopping and dining.

Cairns, the Tropical Coast and Tablelands have become a desired place in which to live making it easier to attract and hold population.

4.5 A strategic location

The world does not stop at Queensland's northern border or its western border. Cairns is Queensland's closest city to the massive growing economies of the Asia / Pacific region.

Cairns along with Darwin interact with the Asia / Pacific region much more than other Australian regional cities.

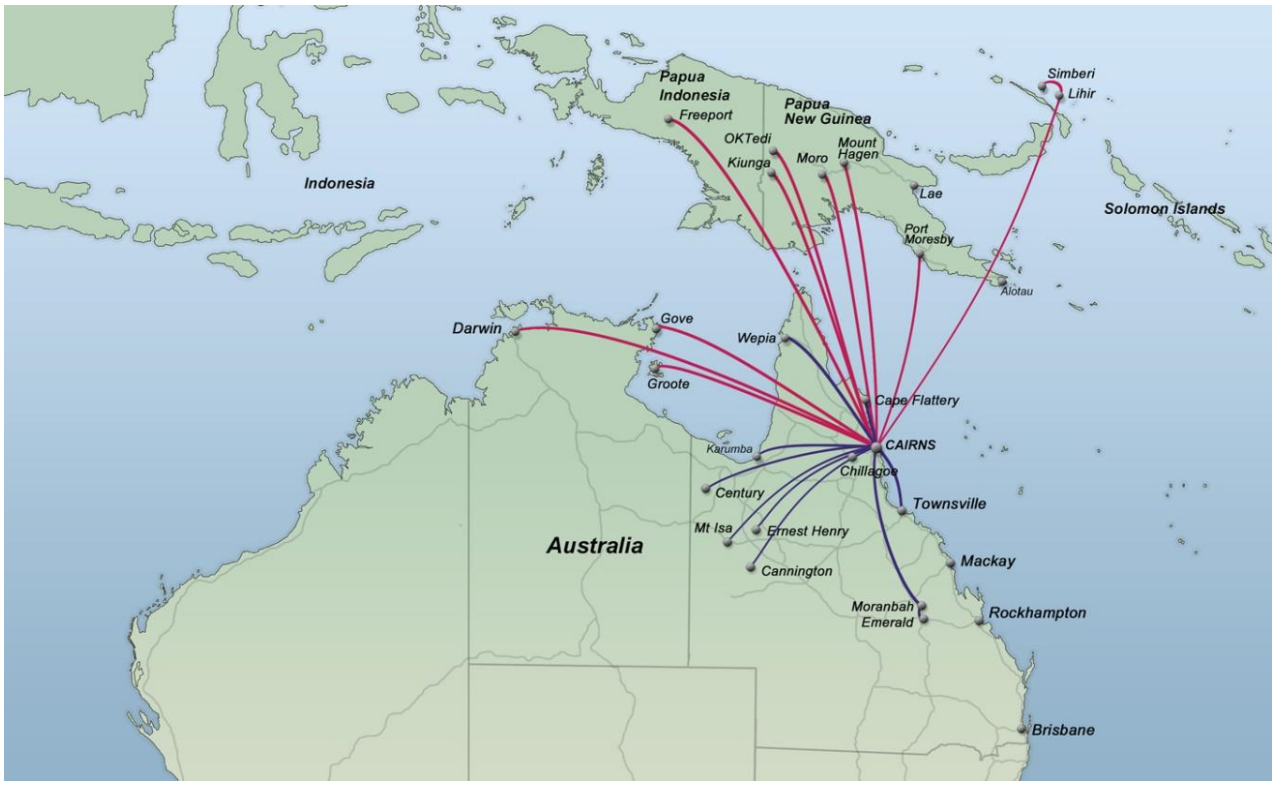
Cairns has substantial flying distance/time advantages over the major metropolitan centres of southern Australia. This not only helps its tourism development but also trade and business links and in fields like seafood exports and international education.

Cairns is the northern terminus of Australia's relatively efficient east coast road, rail and air network and a natural supply point for shipping and air services further north.

It has strong trade, business and social links with Papua New Guinea and its six million population. Cairns is the Australian buying base for the giant Freeport-McMoRan mine in Papua Indonesia with direct shipping and air services with a value of the order of $200m a year.

Indeed, Cairns' interaction with mining extends well beyond its regional borders, in a way that is not equalled by Queensland's other regional cities. Because of its population, lifestyle advantages and strategic position, Cairns has air links to supply workforce and other services into mining operations over a large area including Central and North West Queensland, Northern Territory, Papua Indonesia and Papua New Guinea.

Map 3 – Northern Australia Fly-in/Fly-out / Mining Services Hub



4.6 Diversified industry composition

Queensland's regional economies are heavily dependent on those industries earning income from outside their regions, especially agricultural and pastoral industries, marine industries, mining and tourism.

Historically the pattern of Queensland's regional development was heavily affected by pastoral development, especially sheep in the South and Central West, leading to the early development of Toowoomba, Rockhampton and Townsville. More recent development has been dominated by expansion of cropping, fisheries, tourism and mining.

Cairns' economy has relatively high earnings from the agricultural, marine and tourism sectors as opposed to mining. This has been an advantage.

For every dollar of value of production, mining generally has a much lower impact on regional employment and population than the agricultural, fishing and tourism sectors. Mining projects will often involve large initial investment in construction with lower on-going operational employment. Out of the large values of output recorded, a very high proportion goes outside the region to head offices and shareholders. There are often large inputs imported from outside the region and more recently large 'fly-in' workforce especially into the Rockhampton / Gladstone, Mackay and Townsville regions from Brisbane.

By contrast, the strong development of agricultural, marine and tourism resources in the Cairns region has resulted in strong, more self-contained local development with greater flow-on to local jobs and population.

While these sectors have fluctuations in markets, they are generally not as strong as world mineral price fluctuations.

While tourism is an important sector in the region, it is wrong to believe that the Cains region is over dependent on tourism. In fact the Cairns region's markets are highly diversified. Its tourism markets are highly diversified with substantial overseas components along with a large domestic sector.

Its agriculture is highly diversified, again with a substantial domestic market for its horticultural products.

Minerals and fisheries are diversified.

While not nearly as high as Townville in government spending, the Cairns region, because of the navy base and northern surveillance activity, is not low in government spending compared with the Queensland regions other than Townsville.

Thus while tourism and construction experienced sharp slow-downs over the period 2008 to 2011, the region's population continued to grow, albeit at a slower pace.

Being the furthest city from Brisbane, the development of business services and local manufacturing is less supressed than the southern regional cities by competition from Brisbane based services and factories.

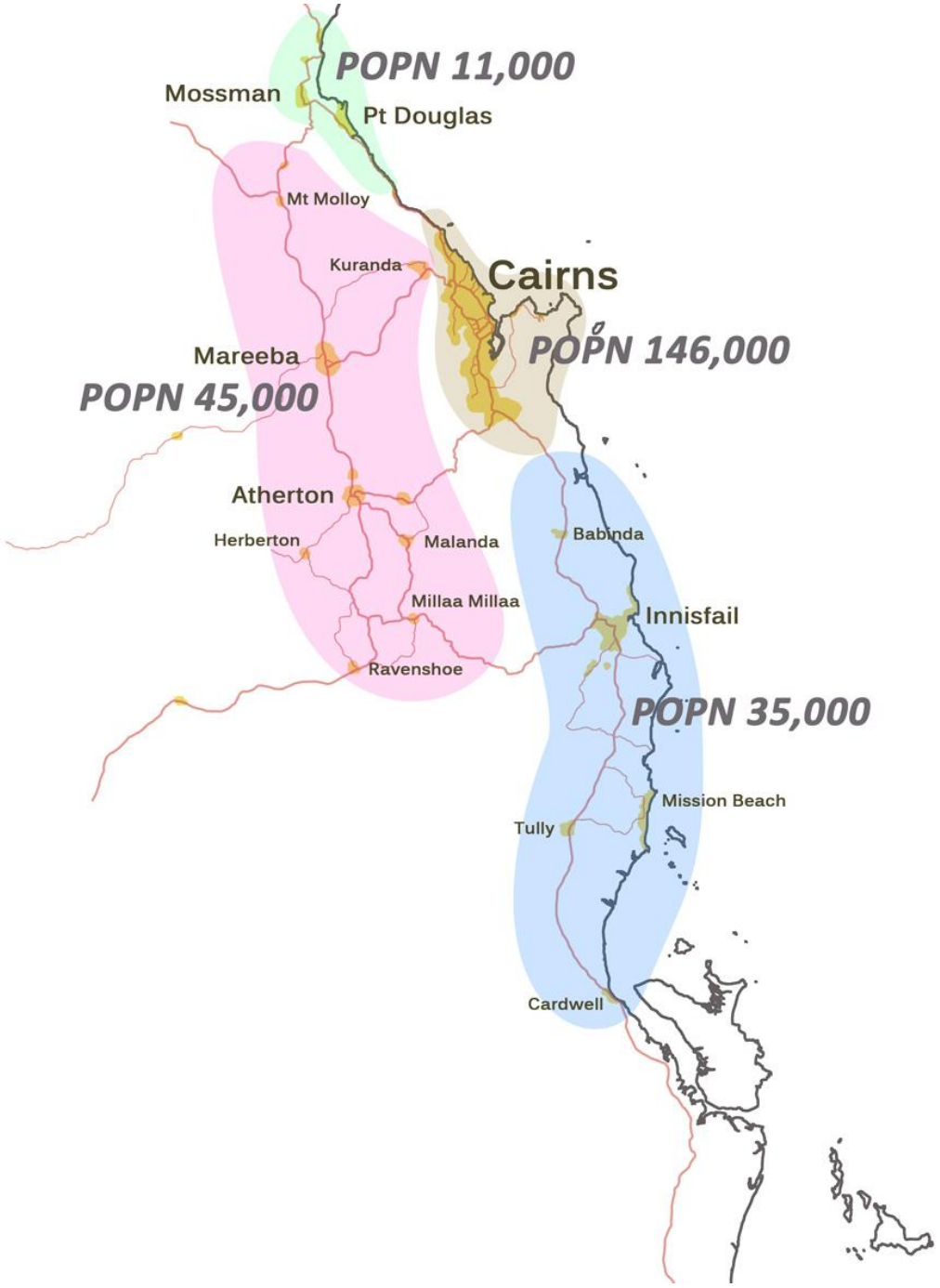
4.7 A core regional population and business concentration in the north

Immediate regional population

As a result of the foregoing influences, the Cains region has been developing as the core business region in the north of Queensland.

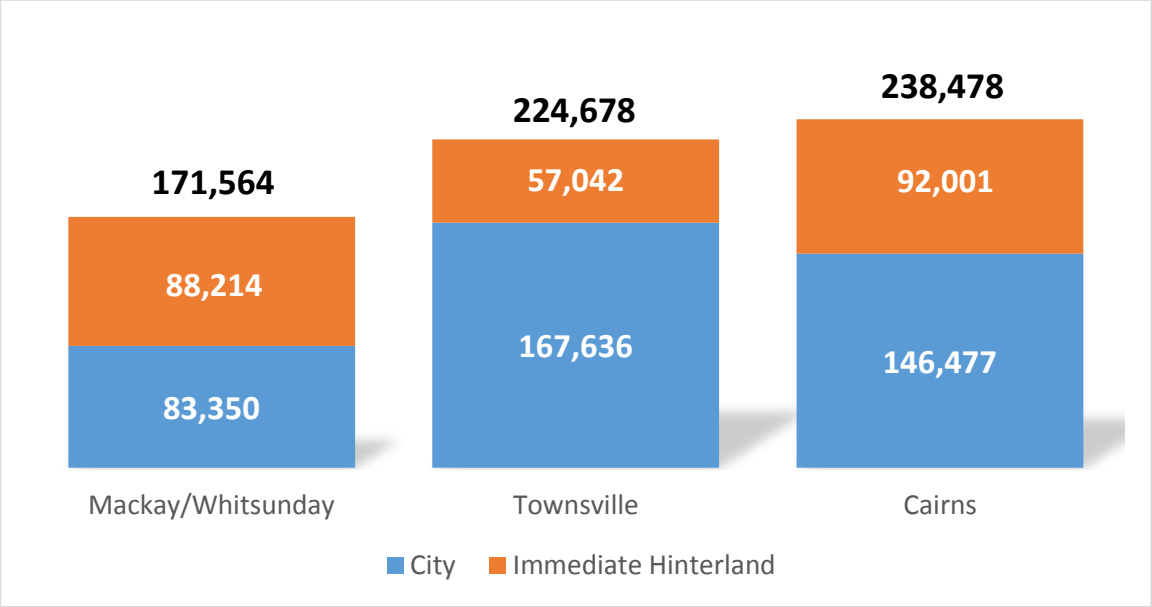
As **Map 4** illustrates, surrounding Cairns is a network of towns within a short drive (based especially on agricultural, marine industries and tourism), resulting in a concentration of population not found to the same extent around the other northern cities.

Map 4 – Cairns and Immediate Hinterland Townships and Districts and Estimated Residential Populations, 2011



Thus, Cairns and its immediate hinterland area leads the northern cities and near hinterland areas in population.

Chart #24: City and Immediate Regional Populations, 2011



Source: Cummings Economics from ABS Cat No. 3218.0 et al.

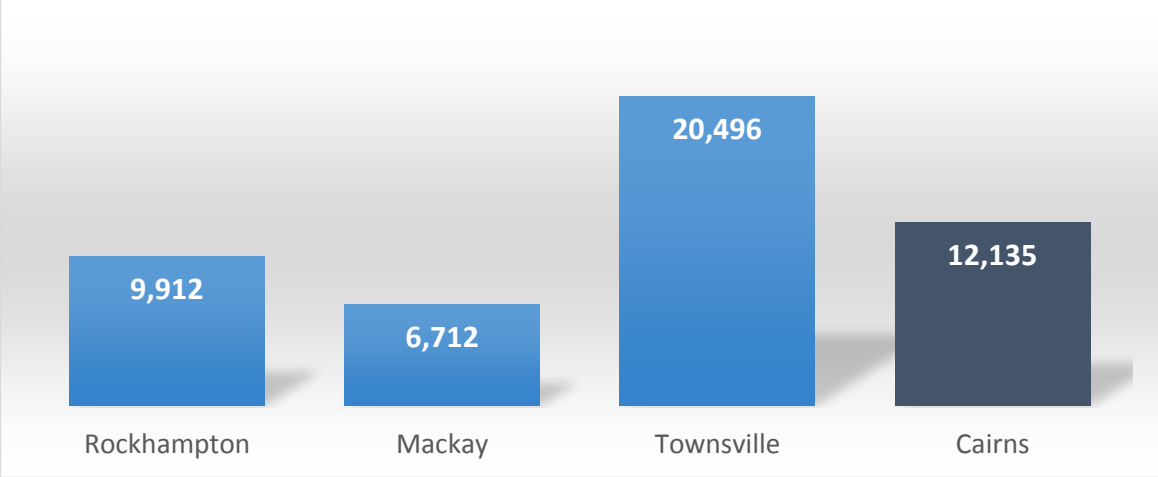
This large immediate hinterland population and the activity it generates can increase the market for Cairns based businesses and services.

The substantial hinterland centres can also provide suitable locations for regional facilities outside of Cairns itself that are not available to the same extent around the other northern regional cities. For instance, in the Cairns region, the major corrective services centre, Lotus Glen and the major DAFF office are on the Tablelands. The region's foundry is at Innisfail.

Influence of government employment

Townsville's city population in relation to the other regional cities is especially boosted by government employment.

Chart #25: Government Employment, Queensland Northern Cities, 2011

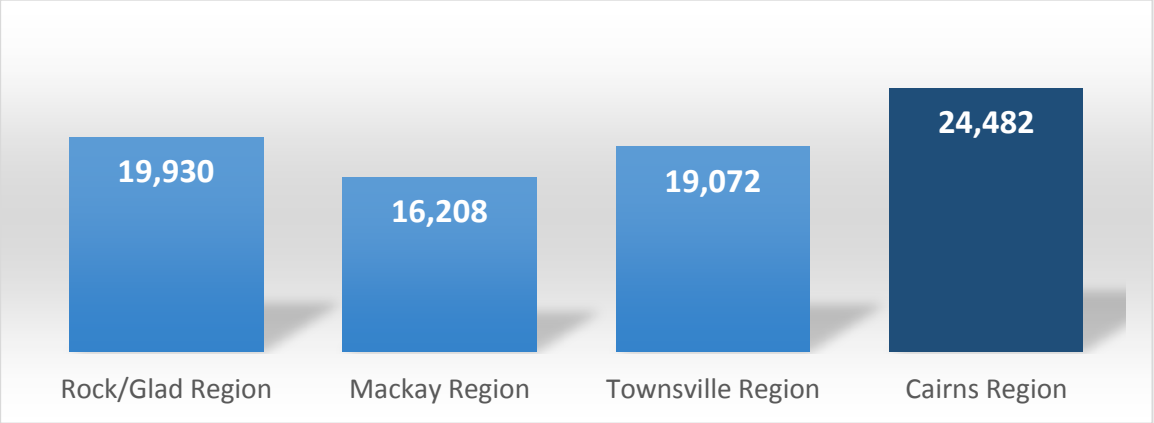


Source: Cummings Economics from ABS Census 2011.

Leadership in business

The leading role of Cairns as a core / leading business region in the north is reflected in business activity. Above all, the Cairns region is private enterprise driven and leads the northern regions by a long way in number of businesses.

Chart #26: Number of Businesses – Queensland Northern Regions, 2012



Source: Cummings Economics from ABS Regional Data.

As might be expected, the Cairns region leads in a whole range of business activity.

The following information on fields like manufacturing, aviation, marine activities, education, health and arts and entertainment gives an indication of the strength and depth of the Cairns region's leading business and services role in Queensland's northern regions.

Manufacturing

The Cairns region's core business role in the north is reflected in the fact that it leads the northern regions in number of manufacturing establishments and latest statistics available indicate that it is close up behind Rockhampton/Fitzroy and Townsville regions with their larger mineral and primary processing units, in employment and turnover.

Table #27: Manufacturing in Northern Australia, 2006/07[(1)]

Regions [(2)]	Number of locations	Employment	Sales of goods & services
Cairns/Far North	**962**	6382	$3286 m
Townsville/North	653	7137	**$4260 m**
Mackay	585	4836	$1648 m
Rockhampton/Fitzroy	586	**8110**	$3600 m
Total	**3489**	**30824**	**$17294 m**
			(plus NT, Kimberley & Pilbara)

☐ *Denotes highest recorded.*
(1) Note: Latest available. *(2) Note: Statistical Division boundaries.*
Source: Cummings Economics from Australian Bureau of Statistics Cat. 82210DO010.

Table #28: Number of Businesses by Industry - Manufacturing, 30th June 2012

	Manufacturing
Cairns Region (SA4)	841
Townsville Region (SA4)	606
Mackay Region (SA4)	519
Fitzroy Region (SA4)	563

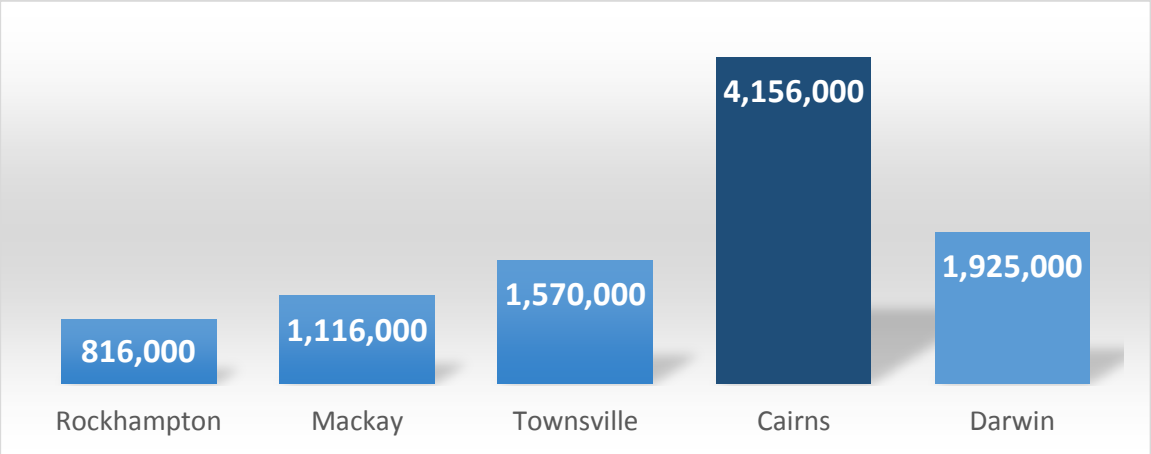
Source: Cummings Economics from Australian Bureau of Statistics Regional Statistics.

The Cairns region's leading position in number of manufacturing businesses reflects not only its population. It reflects the degree to which the city has developed 'skills' based manufacturing and services, especially in the marine and aviation sectors that find markets outside the region including in the wider Papua New Guinea / Asia / Pacific area.

Aviation development

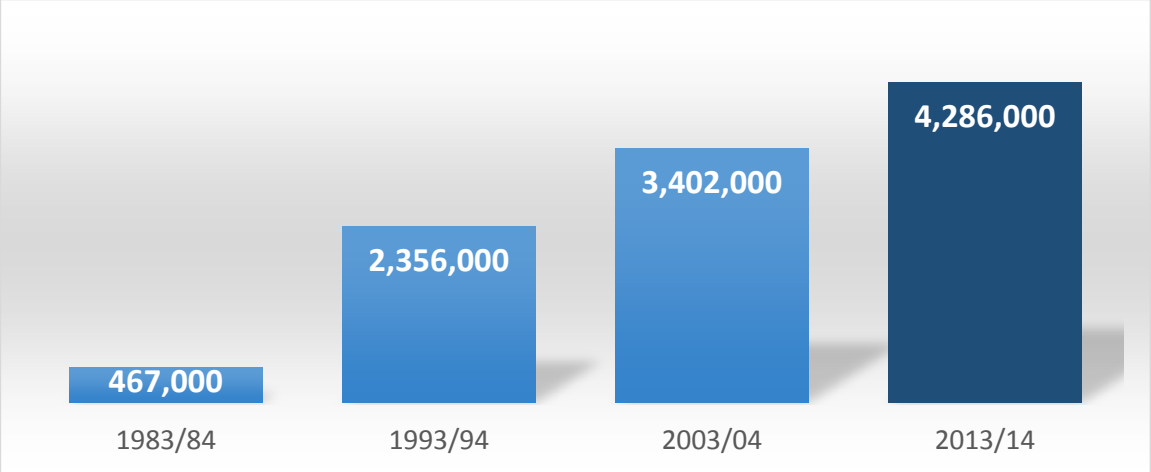
Population, tourism and strategic location, leads Cairns to being the major airport hub in the north with direct international links to 11 cities in the Asia / Pacific region.

Chart #29: Passenger Movements Airports – Tropical Australia, 2012-13



Source: Bureau of Industry Transport and Regional Economics.

Chart #30: Growth in Passenger Movements – Cairns International Airport



Source: Cummings Economics / North Queensland Airports.

Especially backing up this role, is the region's large fleet of small aircraft and proximity to Papua New Guinea. Cairns has developed as Queensland's major aircraft servicing centre outside South East Queensland, drawing business also from the wider Asia Pacific region and including the leading aviation training centre outside South East Queensland.

Table #31: Estimated Value of Airport Operations – Cairns Airport, 2010-11

Output Value	**$630 m**
Direct Employment	**2,400**

Source: Cairns Airport Pty Ltd / Cummings Economics.

Marine activity

The Cairns region's five export ports of Mourilyan, Cairns, Cape Flattery, Weipa and Karumba, handle tonnages greater than the Townsville region, Northern Territory, Tasmania and the state of South Australia.

Table #32: Tonnage Loaded and Unloaded - Seaports by Regions, 2012-13

	Million Tonnes
Mackay Region	**117**
Fitzroy Region	**86**
Brisbane/Bundaberg	**37**
Cairns/Far North	**34**
South Australia	**26**
Townsville/North	**18**
Northern Territory	**15**
Tasmania	**8**

Source: Cummings Economics from Bureau of Industry Transport & Regional Economics and Qld Transport.

Cairns seaport is also home to important coastal shipping operations to the near north as well as Australia's largest tourism fleet, one of Australia's largest fishing fleets and Australia's north eastern naval base. This large fleet in national terms is backed up by three slipway operations and the largest marine servicing activity sector in Queensland outside the south-east corner. It also draws business from the nearby Asia Pacific region and includes the major marine training centre outside the south-east corner.

Table #33: Estimated Value of Port Related Operations – Cairns Seaport, 2013-14

Output Value	**$830 m**
Direct Employment	**3,800**

Source: Ports North / Cummings Economics.

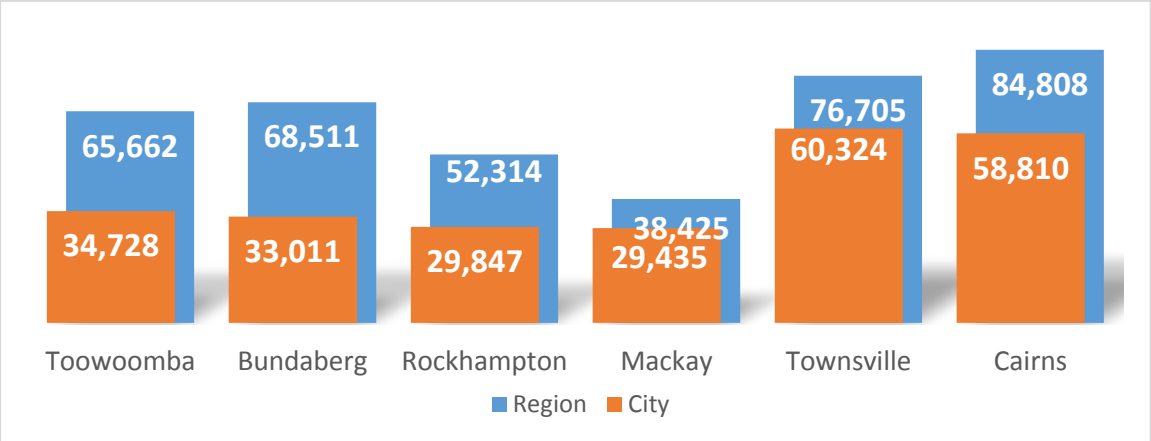
Education

With its overseas air service networks and lifestyle advantages, Cairns is the leading location in Queensland outside the south-east corner for international education establishments. Its previously under-developed university sector is now one of the fastest growing in Queensland with a second university campus now under development.

Health

The Cairns region is the largest outside the south-east corner for hospital admissions.

Chart #34: Admitted Episodes of Care – Queensland Main Regional Hospitals and Regions, 2013-14

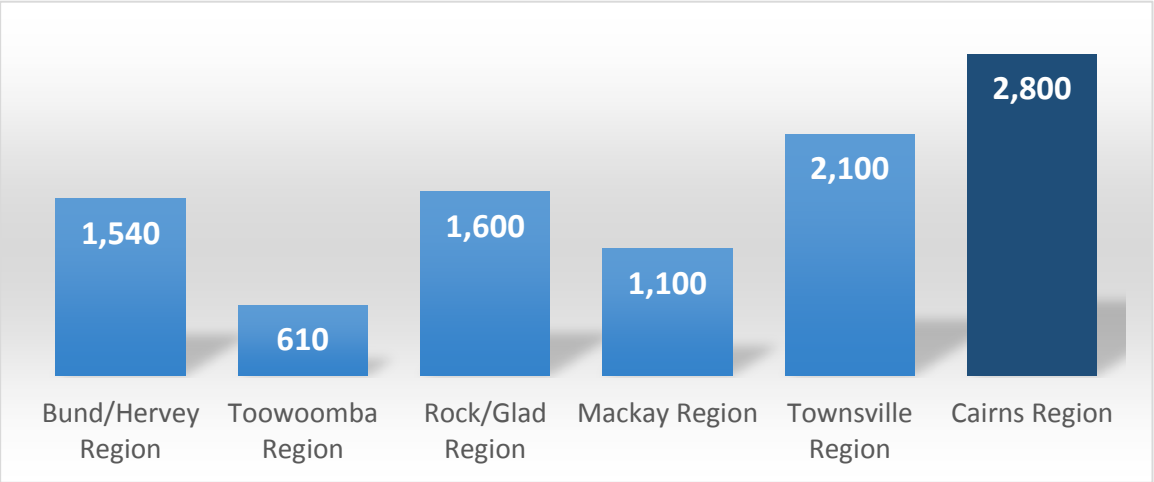


Source: Queensland Health.

Creative industries

Size of population, the Cairns region's growing attractiveness as a place to live, tourism, and a stimulating social and natural environment, are reflected in the Cairns region's growing role in cultural and creative activity outside Queensland's south-east corner. The Cairns region leads in employment in the arts, entertainment and creative industry classifications.

Chart #35: Employment in Cultural and Creative Industries, 2011



Source: Cummings Economics from Australian Bureau of Statistics, 2011 Census data.

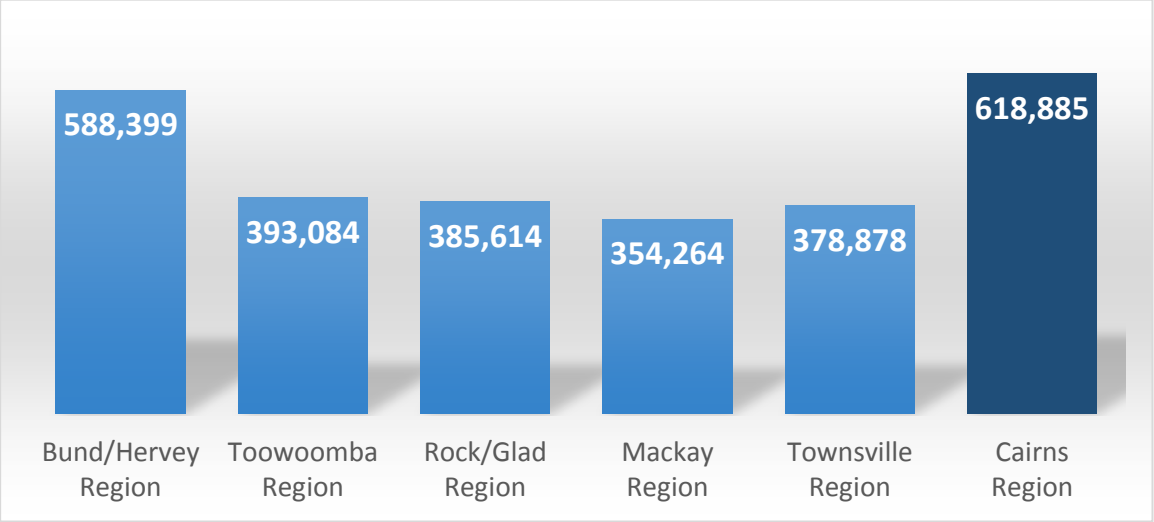
5.0 PROJECTING FORWARD

It can be expected that the type of underlying influences that have driven long-term regional growth in the past are likely to continue into the future.

Regional populations

On the long-term growth trajectory of the 35 years 1976 to 2011, it can be expected that the Cairns and Wide Bay Burnett regions would pull away and by 2050 be the largest by a substantial margin, each with a population larger than Tasmania's current population.

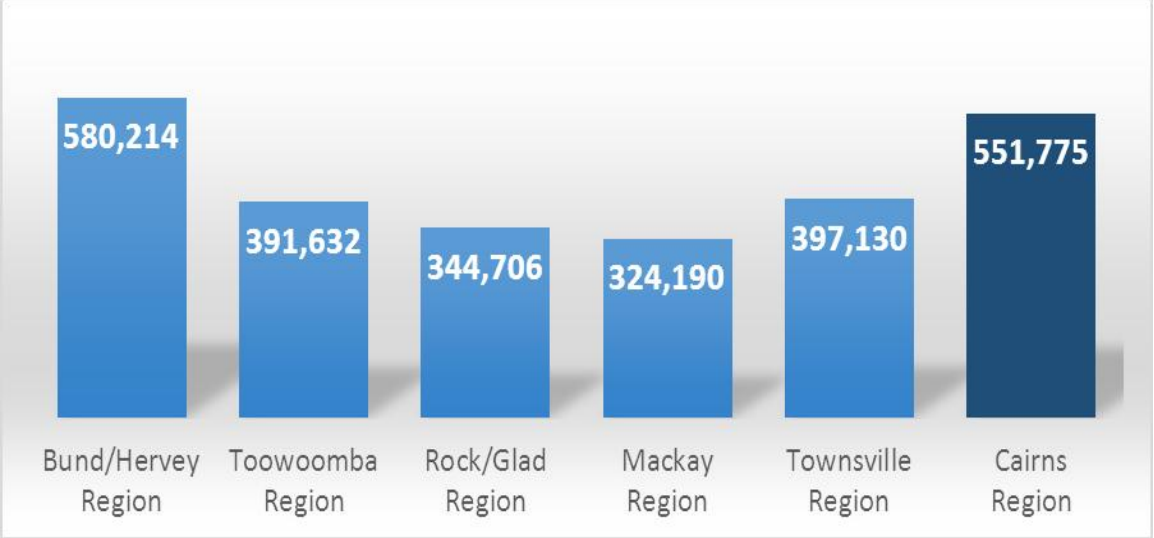
Chart #36: Projected Residential Population - 2050, Qld Regions (based on growth rate 1976-2011)



Source: Cummings Economics from ABS data.

On the growth trajectory of the 20 years, 1991-2011, a similar picture emerges.

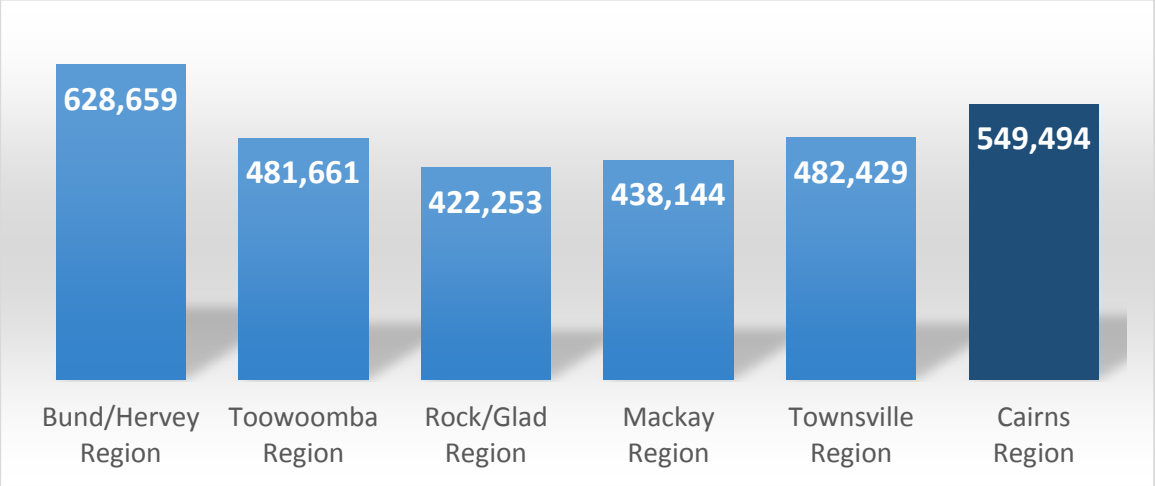
Chart #36: Projected Residential Population - 2050, Qld Regions (based on growth rate 1991-2011)



Source: Cummings Economics from ABS data.

On the growth trajectory of the 10 years, 2001-2011, Cairns region and Wide Bay Burnett would be the largest but the other regions closer up towards them.

Chart #37: Projected Residential Population - 2050, Qld Regions (based on growth rate 2001-2011)



Source: Cummings Economics from ABS data.

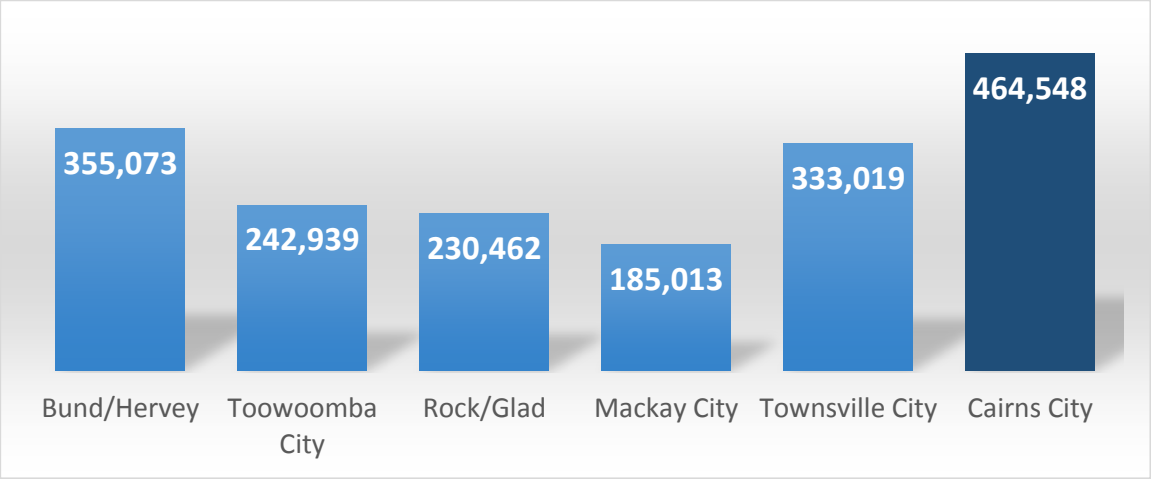
The projections indicate that on past growth trajectories, by 2050, the regions could be expected to have the following range of populations.

Bundaberg / Hervey Region	580 – 630,000
Cairns Region	550 – 620,000
Toowoomba Region	390 – 480,000
Townsville Region	380 – 480,000
Mackay Region	320 – 440,000
Rockhampton Gladstone Region	320 – 420,000

City populations

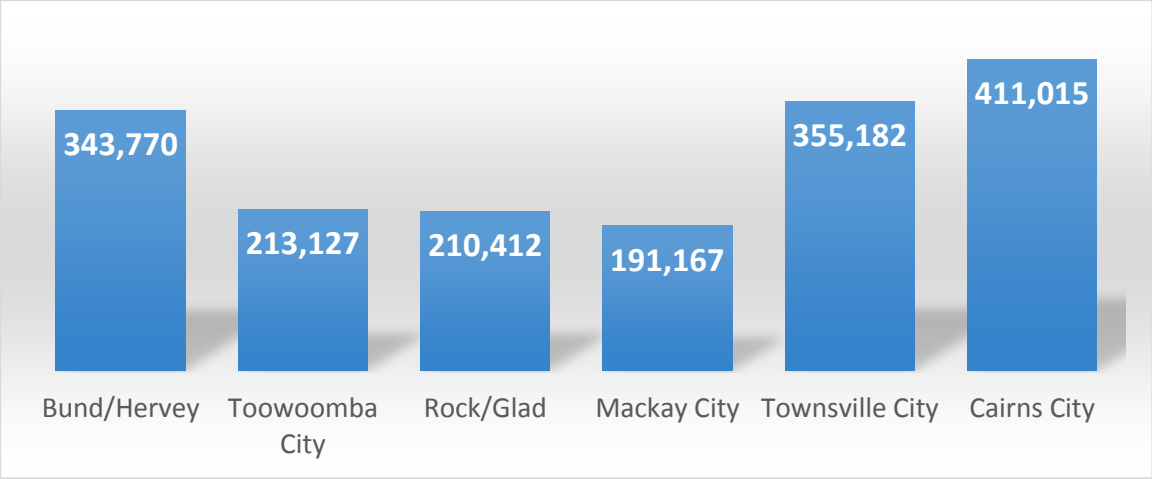
The following charts show projected city populations by 2050 based on past 35 years', 20 years' and 10 years' growth rates.

Chart #38: Projected Residential Population - 2050, Qld Regional Cities (based on growth rate 1976-2011)



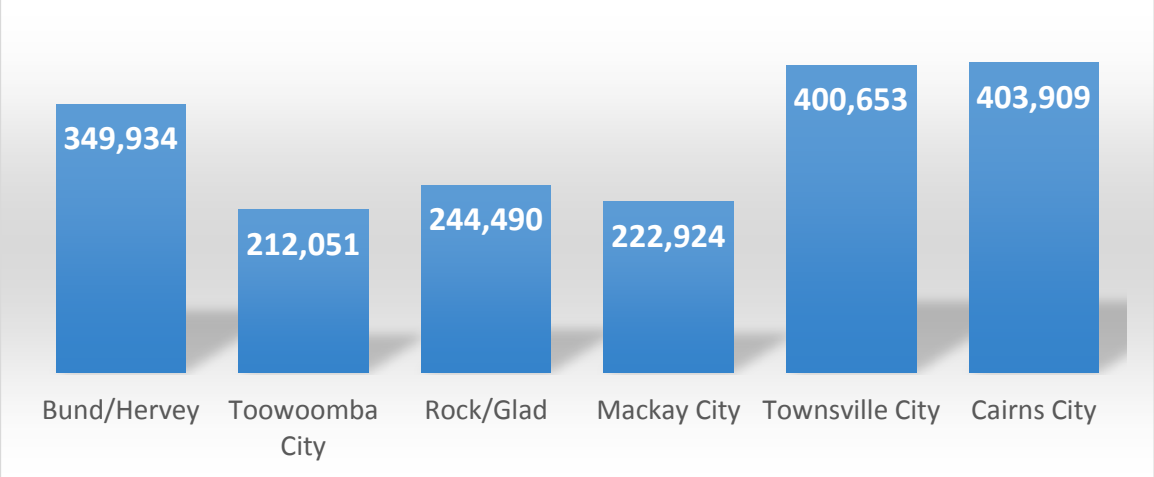
Source: Cummings Economics from ABS data.

Chart #39: Projected Residential Population - 2050, Qld Regional Cities (based on growth rate 1991-2011)



Source: Cummings Economics from ABS data.

Chart #40: Projected Residential Population - 2050, Qld Regional Cities (based on growth rate 2001-2011)



Source: Cummings Economics from ABS data.

The charts indicate that on past growth trajectories, by 2050, the Queensland regional cities would be in the following ranges:

Cairns	400 – 460,000
Townsville	330 – 400,000
Bundaberg / Hervey	330 – 350,000
Toowoomba	210 – 240,000
Rockhampton / Gladstone	210 – 240,000
Mackay	180 – 220,000

The figures indicate that on a continuation of past trends, Cairns as a city will pass Townsville in size but Townsville remain ahead of the combined Bundaberg / Hervey Bay / Maryborough populations.

APPENDIX 1

Statistical Notes

Commercial servicing regions - equate with the following AGSC areas as defined by Australian Bureau of Statistics up to 2011:

Cairns region – Far North Statistical Division plus Gulf shires of Carpentaria, Burke, Mornington and Doomadgee.

Townsville Region – North and North West Statistical Divisions less Shires of Carpentaria, Burke, Mornington and Doomadgee.

Mackay Region – Mackay Statistical Division including Bowen Shire.

Rockhampton Region – Fitzroy and Central West Statistical Division.

Bundaberg Region – Wide Bay Burnett Statistical Division.

Toowoomba Region – Darling Downs and South West Statistical Division.

Cities - City populations are defined as follows:

Cairns – Cairns Statistical District. Because of a boundary change 1976 to 1991, it is taken as Cairns Statistical District as defined in 1976 plus an estimated additional population to take account of a boundary change ranging from 2,500 in 1976 to 3,844 in 1991.

Townsville – Townsville Statistical District.

Mackay – Mackay Statistical District.

Rockhampton / Gladstone – 1976 – 1990 – Rockhampton Statistical District plus Gladstone City. 1991 – 2011 – Rockhampton and Gladstone Statistical Districts.

Toowoomba –.1976 to 1991 Toowoomba City plus a sliding factor to bring up to Toowoomba Statistical District population in 1991. 1991 to 2011 Toowoomba Statistical District.

Bundaberg, Hervey Bay, Maryborough – 1976 to 1990 Bundaberg, Hervey Bay and Maryborough SLAs. 1991 to 2011 Bundaberg, Hervey Bay and Maryborough SA Level 3s.

Immediate regions - are defined as Australian Bureau of Statistics at 2011 as:

Cairns – Cairns SA4 plus Queensland Outback – Tablelands SA3

Townsville – Townsville SA4 (equivalent pre 2011 North SD)

Mackay – Mackay SA4 (equivalent pre 2011 Mackay SD)

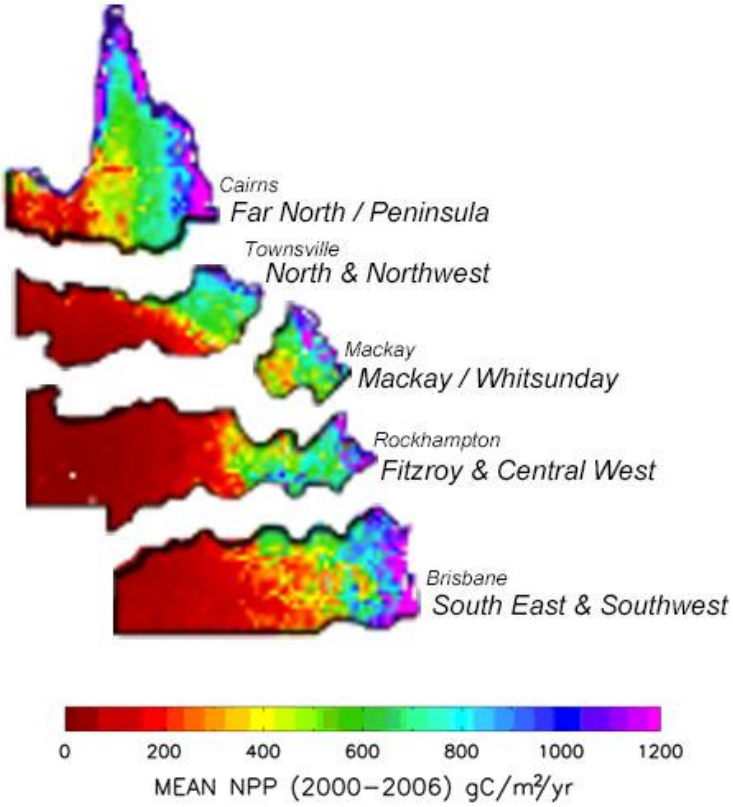
Rockhampton – Fitzroy SA4 (equivalent pre 2011 Fitzroy SD)

Bundaberg – Wide Bay Burnett SA4 (equivalent pre 2011 Wide Bay Burnett SD)

Toowoomba – Darling Downs SD

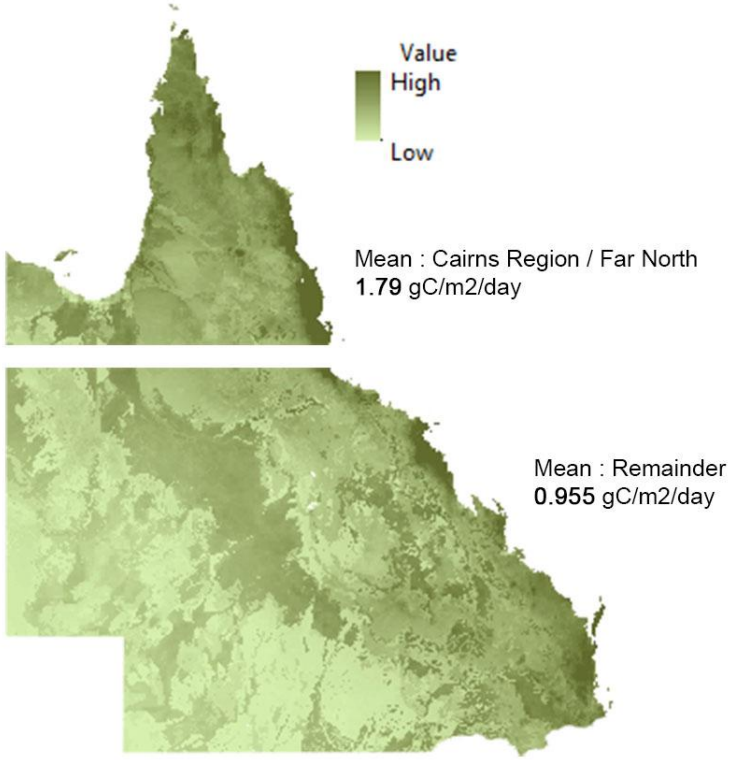
APPENDIX 2

Queensland Regions – Indicator of Plant Growth
Net Primary Productivity – Rate of Carbon Absorption by Plant Growth)



Source: University of Montana, Numerical Terradynamic Simulation Group from Modis Satellite Data.

Queensland - Estimates of NPP–Net Primary Productivity
(Absorption of Carbon by Plant Growth)



Source: CSIRO.