

Progress 3: Environment

The environment, both natural and built, is fundamental to the quality of life and sense of well-being of Australians, as well as providing key inputs to the economy. Australian's have always valued the benefits provided by our environment, such as clean air, water and natural attractions such as the Great Barrier Reef, and most people would like to be able to pass on a healthy environment to future generations. Over recent times, people have become even more interested in monitoring the state of the environment in light of the growing threats posed by population growth, economic growth and the use of resources.⁴⁶

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⁴⁶ Adapted from ABS, Measures of Australia's Progress, 2013.

P 3.1 Healthy Natural Environment

P 3.1.1 Air pollution

The average air quality index summarises the average level of several pollutants across major city 'airsheds' relative to their recommended levels. Using averages across many regions tends to mask trends in the data that might illuminate important stories in more specific areas, or for particular pollutants.

Poor air quality has a range of negative impacts. It can cause health problems, damage infrastructure, reduce crop yields and harm flora and fauna. Air pollution occurs both naturally and as a result of human activities.⁴⁷

The specific pollutants measured across each airshed vary. As a result, care should be taken when comparing the air quality index values across different airsheds.

Air pollution across major airsheds

- Average pollution has increased in two of the nine reported airsheds between 2006 and 2012. For Adelaide, the index increased by five points, while in Townsville the index increased by one point.
- The remaining seven airsheds had improvements in air pollution over the same period, with the largest decreases in Melbourne and Canberra, both down by five index points.

	2006	2009	2012	2006-2012	
A 1	air quality	air quality	air quality	change	Trond
Airsneu	index	index	index	air quality	menu
				index	
Sydney	25	24	23	-2	
Melbourne	27	24	22	-5	
South-East Queensland	21	24	18	-3	\frown
Adelaide	17	17	22	5	
Perth	26	24	25	-1	\searrow
Hobart	n.p.	n.p.	n.p.	•	
Darwin	n.p.	n.p.	n.p.		
Canberra	33	29	28	-5	
Lower Hunter	24	26	23	-1	\frown
Illawarra	23	23	19	-4	
Townsville	15	15	16	1	

Table P 3.1.1.a Air pollution

Source: National Sustainability Council, Sustainable Australia Report 2013, Conversations with the future, 2013, Canberra; and analysis of state and territory reports (averages and indexing) under the National Environment Protection (Ambient Air Quality) Measure.

Based on state and territory reporting for selected airsheds.

The figures presented in this table are the averaged Air Quality Indices of median concentrations for all measured pollutants.

The Air Quality Index is calculated by dividing pollutant concentrations by standards for maximum allowable concentrations set in the National Environment Protection (Ambient Air Quality) Measure (NEPM) and multiplying by 100. The NEPM values are available at: http://www.comlaw.gov.au/Details/C2004H03935.

n.p. Not published.

Air Quality Index scores for Hobart and Darwin have not been reported as only a small number of pollutants are measured in these airsheds.

⁴⁷ Adapted from ABS, Measures of Australia's Progress, 2013.

P 3.2 Appreciating the Environment

P 3.2.1 Domestic trips involving nature activities

The number of domestic trips involving nature activities indicates how often Australians are taking up opportunities to appreciate the environment. However, this indicator does have some limitations. For example, it is only looking at trips (both overnight and day trips), so nature activities enjoyed closer to home are excluded.

Australia's national landscapes include places of great cultural, natural and spiritual significance and many include World Heritage-listed sites. These natural assets provide unique opportunities for enjoyment, reflection and inspiration.⁴⁸

• The rate at which Australians engaged in domestic nature trips was the same in 2014 as it was in 2006, averaging 2.9 trips per person per year.

Domestic trips involving nature activities across remoteness classes

- Residents of both inner regional and remote Australia took more nature trips in 2014 compared with 2006.
- Between 2006 and 2014, most remoteness classes saw little change in the rate at which Australians took nature trips.
- Very remote areas of Australia were the only class to see a noticeable fall in the rate of nature trips, down by 0.8 trips per resident between 2006 and 2014. As a result, very remote Australia now has the lowest overall rate of domestic trips involving nature activities.

Remoteness Class ^{a b}	2006 visits per resident	2010 visits per resident	2014 visits per resident	2006–2014 change visits per resident	Trend
Major Cities	2.9	2.5	2.9	0.0	\checkmark
Inner Regional	3.0	3.0	3.1	0.1	
Outer Regional	2.7	2.6	2.7	0.0	\checkmark
Remote	2.6	2.5	2.8	0.2	
Very Remote	2.6	1.6	1.8	-0.8	
AUSTRALIA	2.9	2.6	2.9	0.0	\checkmark

Table P 3.2.1.a Domestic visits involving nature activities by remoteness class

Source: BITRE estimates based on Tourism Research Australia, National Visitor Survey, Unit record file data, 2014; ABS, Regional Population Growth, Australia, 2013–14 (cat. no. 3218.0)

a) Both day and overnight visits have been allocated to the SA2 which contains the respondent's usual residence. This geographic allocation is not related to the destination of the visits. A small proportion of visits originate from households that could not be coded to a specific SA2. These visits have been allocated to SA2s using a weighted correspondence based on the distribution of other visits originating from the region.

b) Estimates have been calculated using a population weighted correspondence from SA2s to Remoteness Classes. Visits for which no SA2 could be identified have been excluded.

⁴⁸ Adapted from ABS, Measures of Australia's Progress, 2013.

Domestic trips involving nature activities across major urban areas

- Of the top 20 largest major urban areas, eleven saw a decline in the number of trips taken by residents, and nine saw an increase.
- The largest increase in the number of trips involving nature activities by residents were in Wollongong (up 1.0 trips per resident), followed by Gold Coast Tweed Heads (up 0.8 trips per resident) and Geelong (up 0.7 trips per resident).
- The largest declines were in Newcastle Maitland and Greater Hobart (both down by 0.9 trips).

Table P 3.2.1.b	Domestic	visits	involving	nature	activities	by ma	jor urban	area
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	2006	2010	2014	2006-2014	
Major Urban Area ^a	visits per resident	visits per resident	visits per resident	change visits per resident	Trend
Greater Sydney	2.7	2.4	2.5	-0.2	$\overline{}$
Greater Melbourne	2.7	2.5	3.0	0.3	\checkmark
Greater Brisbane	4.1	3.4	4.0	-0.2	\searrow
Greater Perth	2.7	1.7	2.3	-0.4	\searrow
Greater Adelaide	2.8	2.4	2.5	-0.3	
Gold Coast - Tweed Heads	2.2	2.1	3.0	0.8	
Newcastle - Maitland	3.6	2.7	2.8	-0.9	
Canberra - Queanbeyan	2.5	2.5	2.9	0.5	
Sunshine Coast	3.1	2.4	2.9	-0.2	\checkmark
Wollongong	2.3	1.8	3.3	1.0	
Greater Hobart	4.2	3.6	3.3	-0.9	
Geelong	2.7	2.1	3.5	0.7	\checkmark
Townsville	3.6	3.2	2.9	-0.6	
Cairns	3.1	3.3	3.4	0.3	
Greater Darwin	3.5	3.2	3.6	0.1	\checkmark
Toowoomba	3.5	3.8	3.1	-0.4	\frown
Ballarat	3.9	3.4	3.3	-0.6	
Bendigo	3.0	4.4	2.8	-0.2	\frown
Albury - Wodonga	2.9	2.7	3.2	0.2	\checkmark
Launceston	3.9	3.0	4.6	0.7	\checkmark

Source: BITRE estimates based on Tourism Research Australia, National Visitor Survey, Unit record file data, 2014; ABS, Regional Population Growth, Australia, 2013–14 (cat. no. 3218.0)

The major urban areas of Sydney, Melbourne, Brisbane, Perth, Adelaide, Hobart and Darwin are based on Greater Capital City Statistical Areas. All other major urban areas are based on Significant Urban Areas.

a) Both day and overnight visits have been allocated to the SA2 which contains the respondent's usual residence. This geographic allocation is not related to the destination of the visits. A small proportion of visits originate from households that could not be coded to a specific SA2. These visits have been allocated to SA2s using a weighted correspondence based on the distribution of other visits originating from the region.

Domestic trips involving nature activities across sub-state regions

- Trends across sub-state regions were also mixed, with roughly half of the 87 sub-state regions seeing a decline in the number of domestic nature trips taken by residents.
- The largest two decreases were both in Queensland, with Queensland Outback⁴⁹ seeing a decline of 2.5 trips per year and Moreton Bay - South seeing a decline of 1.7 trips per year.
- The largest two increases on the other hand occurred in regional Victoria, with residents of Warrnambool and South West taking 1.9 additional trips per year in 2014 compared to 2006, and residents of Hume taking an additional 1.3 trips.

⁴⁹ Estimate has a relative standard error of 25 per cent to 50 per cent and should be used with caution.

	2006	2010	2014	2006-2014	
	visits per	visits per	visits per	change	
Sub-State Region ^a	resident	resident	resident	visits per	Trend
				resident	
New South Wales					
Greater Sydney	2.7	2.4	2.5	-0.2	
Central Coast	2.7	2.2	2.1	-0.6	
Sydney - Baulkham Hills and Hawkesbury	3.3	3.7	3.3	0.0	\frown
Sydney - Blacktown	2.3	2.5	2.4	0.1	
Sydney - City and Inner South	2.7	1.6	2.8	0.1	\checkmark
Sydney - Eastern Suburbs	2.3	1.9	2.1	-0.2	
Sydney - Inner South West	2.2	1.8	1.7	-0.6	
Sydney - Inner West	3.1	2.5	2.9	-0.2	
Sydney - North Sydney and Hornsby	3.6	3.0	3.1	-0.5	
Sydney - Northern Beaches	2.8	2.4	2.5	-0.3	
Sydney - Outer South West	2.4	3.1	2.9	0.5	
Sydney - Outer West and Blue Mountains	3.4	3.4	3.0	-0.4	
Sydney - Parramatta	2.2	1.9	2.3	0.0	\checkmark
Sydney - Ryde	3.2	3.4	3.0	-0.2	\frown
Sydney - South West	1.6	1.9	2.0	0.3	
Sydney - Sutherland	3.0	3.0	3.1	0.0	\checkmark
Rest of New South Wales	3.0	2.6	2.9	-0.1	
Capital Region	2.9	2.5	2.6	-0.3	
Central West	2.4	2.0	3.4	1.0	
Coffs Harbour - Grafton	3.5	3.8	2.5	-1.0	
Far West and Orana	2.1	2.2	2.7	0.6	
Hunter Valley exc Newcastle	3.1	3.0	2.7	-0.4	
Illawarra	2.3	1.8	3.5	1.2	
Mid North Coast	3.8	3.2	2.4	-1.4	
Murray	3.0	2.4	3.1	0.1	\checkmark
New England and North West	2.8	2.6	2.5	-0.3	
Newcastle and Lake Macquarie	3.7	2.6	2.7	-1.0	
Richmond - Tweed	3.2	3.5	3.7	0.5	
Riverina	2.1	1.9	2.7	0.6	
Southern Highlands and Shoalhaven	3.4	2.6	2.4	-0.9	
Victoria				•	
Greater Melbourne	2.7	2.5	3.0	0.3	
Melbourne - Inner	2.9	2.1	3.9	1.0	
Melbourne - Inner East	3.3	3.2	3.6	0.3	
Melbourne - Inner South	2.8	3.0	2.8	0.0	\sim
Melbourne - North East	2.6	2.7	3.2	0.6	
Melbourne - North West	2.3	2.0	2.4	0.0	\checkmark
Melbourne - Outer East	3.2	3.1	3.6	0.4	\checkmark
Melbourne - South East	2.2	2.4	2.6	0.4	
Melbourne - West	2.3	2.1	2.5	0.2	\checkmark
Mornington Peninsula	2.6	2.3	2.6	0.0	\checkmark

Table P 3.2.1.c Domestic visits involving nature activities by sub-state region

(continued)

Domestic visits involving nature activities by sub-state region (continued)

	2006	2010	2014	2006-2014	
	visits per	visits per	visits per	change	Transf
Sub-State Region "	resident	resident	resident	visits per	Trena
				resident	
Rest of Victoria	2.5	2.6	2.9	0.4	
Ballarat	3.2	3.1	3.1	-0.2	
Bendigo	2.3	3.6	2.6	0.3	\frown
Geelong	2.9	2.2	3.3	0.4	\checkmark
Hume	2.2	2.1	3.5	1.3	
Latrobe - Gippsland	2.9	3.4	2.8	-0.1	\frown
North West	2.1	1.7	1.8	-0.3	
Shepparton	2.1	1.9	2.2	0.1	\checkmark
Warrnambool and South West	2.0	2.7	3.9	1.9	
Queensland				•	
Greater Brisbane	4.1	3.4	4.0	-0.2	\searrow
Brisbane - East	3.4	4.9	3.5	0.1	\sim
Brisbane - North	3.2	3.7	3.8	0.6	
Brisbane - South	4.1	3.3	4.4	0.3	\checkmark
Brisbane - West	4.4	3.2	5.0	0.6	\checkmark
Brisbane Inner City	7.0	3.8	6.3	-0.7	\searrow
lpswich	3.6	3.0	3.1	-0.6	
Logan - Beaudesert	3.5	3.0	3.2	-0.3	\searrow
Moreton Bay - North	3.0	3.3	3.0	-0.1	\frown
Moreton Bay - South	5.5	3.0	3.8	-1.7	
Rest of Queensland	2.9	2.8	2.8	-0.1	
Cairns	2.7	3.1	3.0	0.3	
Darling Downs - Maranoa	2.3	3.5	1.8	-0.6	\frown
Fitzroy	2.4	3.2	3.0	0.6	
Gold Coast	2.5	2.3	3.0	0.5	
Mackay	3.4	2.2	2.9	-0.5	\searrow
Queensland - Outback	4.1	*1.7	*1.7	-2.5	
Sunshine Coast	3.3	2.6	2.8	-0.5	
Toowoomba	3.3	4.3	2.6	-0.7	\frown
Townsville	3.1	3.2	2.7	-0.4	
Wide Bay	2.6	2.8	3.1	0.5	
South Australia				•	
Greater Adelaide	2.8	2.4	2.5	-0.3	
Adelaide - Central and Hills	3.9	2.8	3.0	-0.9	
Adelaide - North	2.5	2.2	2.1	-0.4	
Adelaide - South	2.7	2.6	3.0	0.3	
Adelaide - West	2.1	2.0	1.7	-0.5	
Rest of South Australia	2.7	2.5	3.0	0.4	
Barossa - Yorke - Mid North	2.0	1.9	2.5	0.4	
South Australia - Outback	3.1	3.0	2.5	-0.6	
South Australia - South East	2.8	2.6	3.7	0.8	

(continued)

	2006	2010	2014	2006-2014	
Sub-State Region ^a	visits per	visits per	visits per	change	Turned
	resident	resident	resident	visits per	Trend
				resident	
Western Australia					
Greater Perth	2.7	1.7	2.3	-0.4	\searrow
Mandurah	3.0	2.3	2.0	-0.9	
Perth - Inner	4.6	1.9	3.4	-1.1	\searrow
Perth - North East	2.4	1.8	2.7	0.3	\checkmark
Perth - North West	2.4	1.6	2.0	-0.4	\searrow
Perth - South East	2.4	1.5	2.1	-0.3	\searrow
Perth - South West	2.6	1.8	2.3	-0.3	\searrow
Rest of Western Australia	2.8	2.3	3.6	0.8	
Bunbury	3.5	2.9	4.1	0.6	\checkmark
Western Australia - Outback	2.4	1.9	3.3	0.9	
Western Australia - Wheat Belt	2.4	2.1	3.4	0.9	
Tasmania				I	
Greater Hobart	4.2	3.6	3.3	-0.9	
Rest of Tasmania	2.8	2.6	3.1	0.4	
Launceston and North East	3.3	2.7	3.7	0.5	\checkmark
South East	*1.8	*2.2	*2.3	0.5	
West and North West	2.5	2.5	2.6	0.2	
Northern Territory				•	
Greater Darwin	3.5	3.2	3.6	0.1	\checkmark
Northern Territory - Outback	*1.8	2.8	1.9	0.1	\frown
Australian Capital Territory	2.7	2.6	3.0	0.4	

Domestic visits involving nature activities by sub-state region (continued)

Source: BITRE estimates based on Tourism Research Australia, National Visitor Survey, Unit record file data, 2014; ABS, Regional Population Growth, Australia, 2013–14 (cat. no. 3218.0)

a) Both day and overnight visits have been allocated to the SA2 which contains the respondent's usual residence. This geographic allocation is not related to the destination of the visits. A small proportion of visits originate from households that could not be coded to a specific SA2. These visits have been allocated to SA2s using a weighted correspondence based on the distribution of other visits originating from the region.

* The estimate of visits from this SA4 has a relative standard error of between 25 per cent and 50 per cent and should be used with caution.

P 3.3 Protecting the Environment

P 3.3.1 Protected areas of land

The amount of land that is classed as protected area—for example national parks or reserves—provides a measure of the direct protection of the natural environment. While this indicator is able to show changes in the area protected, what it is unable to show is how well these protected areas are managed in order to achieve their conservation or protection objectives.

Protecting the natural environment through the creation of protected areas is an important part of efforts to protect native flora, fauna and wilderness areas, and support the management and restoration of natural habitat.⁵⁰

 As of 2014, 17.8 per cent of land in Australia was protected, reflecting an increase of 7.3 percentage points since 2006.

Protected areas of land across remoteness class

- The proportion of land area that is protected is larger in the more remote areas of Australia. For example, 19.6 per cent of the land in very remote Australia is currently protected.
- The very remote areas of Australia also had the largest increase in the proportion of protected land area between 2006 and 2014, up by 9.2 percentage points.

	2006	2010	2014	2006-2014	
Remoteness Class	per cent	per cent	per cent	change percentage points	Trend
Major Cities	4.8	5.3	5.6	0.8	
Inner Regional	10.1	10.6	10.9	0.9	
Outer Regional	11.4	12.4	12.9	1.5	
Remote	11.2	12.1	13.0	1.8	
Very Remote	10.4	12.6	19.6	9.2	
AUSTRALIA	10.6	12.4	17.8	7.3	

Table P 3.3.1.a Protected areas of land by remoteness class

Source: Department of the Environment, Collaborative Australian Protected Area Databases, 2006, 2010, and 2014. Overlapping areas have been filtered from the original data source.

⁵⁰ Adapted from ABS, Measures of Australia's Progress, 2013.

Protected areas of land across major urban areas

- The largest increase in the proportion of protected land area across the major urban areas was in Newcastle Maitland, which had an increase of 5.1 percentage points between 2006 and 2014. Other large increases occurred in Cairns (2.6 percentage points) and the Sunshine Coast (2.0 percentage points).
- Compared to other urban areas, Greater Sydney has a very high proportion of protected land, at 49.8 per cent as of 2014. To put this in perspective, the next closest is the Sunshine Coast at 17.5 per cent.

	2006	2010	2014	2006-2014	
Major Urban Area	per cent	per cent	per cent	change percentage points	Trend
Greater Sydney	48.6	49.6	49.8	1.2	
Greater Melbourne	9.0	9.0	9.2	0.2	
Greater Brisbane	8.4	10.0	10.5	2.2	
Greater Perth	8.3	8.5	8.7	0.3	
Greater Adelaide	4.6	4.7	4.7	0.1	
Gold Coast - Tweed Heads	5.8	6.1	6.3	0.6	
Newcastle - Maitland	3.4	7.0	8.6	5.1	
Canberra - Queanbeyan	9.5	10.3	10.4	0.9	
Sunshine Coast	15.5	16.2	17.5	2.0	
Wollongong	12.7	12.8	13.1	0.4	
Greater Hobart	10.8	11.5	12.6	1.8	
Geelong	3.1	3.2	4.4	1.3	
Townsville	4.7	4.8	4.8	0.0	
Cairns	12.4	15.1	15.1	2.6	
Greater Darwin	11.0	11.0	11.0	0.0	\sim
Toowoomba	0.0	0.0	0.0	0.0	
Ballarat	0.4	0.6	0.6	0.2	
Bendigo	10.5	10.6	10.6	0.1	
Albury - Wodonga	1.1	1.2	1.2	0.1	
Launceston	2.7	2.7	3.1	0.4	

Table P 3.3.1.b Protected areas of land by major urban area

Source: Department of the Environment, Collaborative Australian Protected Area Databases, 2006, 2010, and 2014. The major urban areas of Sydney, Melbourne, Brisbane, Perth, Adelaide, Hobart and Darwin are based on Greater Capital City Statistical Areas. All other major urban areas are based on Significant Urban Areas.

Overlapping areas have been filtered from the original data source.

Protected areas of land across sub-state regions

- Looking across sub-state regions, it is clear that the majority of the national increase in protected areas of land occurred in a relatively small number of areas. That is, there are a relatively small number of sub-state regions that saw a substantial increase in the area of land protected, while the remaining regions had little to no change.
- As an example, in New South Wales 25 of the 28 sub-state regions had an increase of 5 per cent or less. The remaining three regions had increases ranging between 7.0 and 14.6 percentage points.
- This pattern was repeated in all of the larger states (excluding Tasmania, the Northern Territory and the Australian Capital Territory).

	2006	2010	2014	2006-2014	
Sub-State Region	per cent	per cent	per cent	change percentage points	Trend
New South Wales					
Greater Sydney	48.6	49.6	49.8	1.2	
Central Coast	27.1	30.8	31.6	4.5	/
Sydney - Baulkham Hills and Hawkesbury	61.8	62.9	62.9	1.1	/
Sydney - Blacktown	0.2	1.8	1.8	1.6	/
Sydney - City and Inner South	0.1	0.1	0.1	0.0	\sim
Sydney - Eastern Suburbs	2.5	2.5	2.8	0.3	
Sydney - Inner South West	1.4	1.4	1.5	0.1	_
Sydney - Inner West	0.0	0.0	0.0	0.0	
Sydney - North Sydney and Hornsby	38.3	38.3	38.3	0.0	
Sydney - Northern Beaches	44.7	44.7	44.7	0.0	\sim
Sydney - Outer South West	15.3	15.7	15.7	0.3	
Sydney - Outer West and Blue Mountains	74.1	74.7	74.9	0.8	/
Sydney - Parramatta	0.3	0.3	0.3	0.0	
Sydney - Ryde	7.2	7.7	8.3	1.1	
Sydney - South West	1.8	0.8	0.9	-0.9	
Sydney - Sutherland	56.7	57.8	57.8	1.0	
Rest of New South Wales	6.9	8.1	8.9	1.9	
Capital Region	18.6	19.4	19.7	1.1	/
Central West	6.6	7.2	7.5	0.9	
Coffs Harbour - Grafton	21.6	25.1	28.8	7.2	
Far West and Orana	3.4	4.2	4.8	1.4	/
Hunter Valley exc Newcastle	19.3	21.2	21.9	2.6	/
Illawarra	9.3	23.5	23.9	14.6	/
Mid North Coast	21.0	23.9	25.7	4.7	
				i_	

2.5

6.1

7.9

14.0

8.9

39.8

9.0

0.0

0.0

0.0

12.9

2.9

19.6

8.1

3.0

5.0

3.5

8.7

12.6

15.0

9.3

41.7

9.0

0.0

0.0

0.0

12.9

2.9

8.3

3.1

5.2

19.7

4.7 ł

9.3

14.9

16.1

10.4

41.7

9.2

0.0

0.0

0.0

12.9

2.9

19.7

8.3

3.1

6.5

2.2

3.1

7.0

2.1

1.5

1.9

0.2

0.0

0.0 0.0

0.1

0.0

0.1

0.2

0.1

1.4

Table P 3.3.1.c Protected areas of land by sub-state region

(continued)

Murray

Riverina

New England and North West

Richmond - Tweed

Greater Melbourne

Melbourne - Inner East

Melbourne - Inner South

Melbourne - North East

Melbourne - North West

Melbourne - Outer East

Melbourne - South East

Mornington Peninsula

Melbourne - West

Melbourne - Inner

Newcastle and Lake Macquarie

Southern Highlands and Shoalhaven

	2006	2010	2014	2006-2014	
	per cent	per cent	per cent	change	
Sub-State Region				percentage points	Trend
Rest of Victoria	16.8	17.2	17.5	0.7	
Ballarat	4.7	4.8	4.8	0.0	_
Bendigo	5.3	5.4	5.5	0.1	
Geelong	10.1	10.1	10.4	0.3	
Hume	16.6	16.7	16.7	0.1	
Latrobe - Gippsland	23.1	23.1	24.4	1.3	
North West	21.9	22.4	22.5	0.6	
Shepparton	3.4	5.9	5.8	2.4	/
Warrnambool and South West	8.7	9.5	9.5	0.8	_
Queensland				r	
Greater Brisbane	8.4	10.0	10.5	2.2	
Brisbane - East	22.5	28.9	38.8	16.3	
Brisbane - North	0.0	0.0	0.0	0.0	
Brisbane - South	0.1	0.1	1.0	0.8	
Brisbane - West	15.2	15.2	15.0	-0.2	-
Brisbane Inner City	0.0	0.0	0.0	0.0	
lpswich	7.0	8.4	8.8	1.8	
Logan - Beaudesert	4.8	5.0	5.0	0.2	_
Moreton Bay - North	9.6	11.6	10.8	1.2	-
Moreton Bay - South	13.8	16.8	17.7	3.9	
Rest of Queensland	5.0	6.4	7.9	2.9	
Cairns	32.2	39.4	41.3	9.1	
Darling Downs - Maranoa	1.3	1.5	1.7	0.4	
Fitzroy	5.8	7.6	7.2	1.4	-
Gold Coast	18.3	18.6	19.0	0.7	
Mackay	2.8	3.2	3.5	0.7	
Queensland - Outback	4.9	6.5	8.6	3.8	
Far North	10.0	13.9	19.6	9.6	
Outback - North	2.1	2.2	4.8	2.7	
Outback - South	4.2	5.7	6.1	2.0	-
Sunshine Coast	18.7	19.2	19.9	1.3	
Toowoomba	8.0	8.0	8.2	0.2	
Townsville	5.3	5.5	5.9	0.6	
Wide Bay	9.0	9.5	9.5	0.5	/
outh Australia				i	
Greater Adelaide	4.6	4.7	4.7	0.1	
Adelaide - Central and Hills	5.0	5.0	5.1	0.1	
Adelaide - North	2.6	2.7	2.7	0.1	
Adelaide - South	6.8	6.8	6.8	0.0	\sim
Adelaide - West	3.6	3.6	3.7	0.1	
Rest of South Australia	25.2	27.2	29.9	4.7	
Barossa - Yorke - Mid North	1.7	1.8	1.9	0.2	

Protected areas of land by sub-state region (continued)

(continued)

Protected areas of land by sub-state region (continued)

	2006	2010	2014	2006-2014	
	per cent	per cent	per cent	change	- .
Sub-State Region				percentage	Trend
				points	
South Australia - Outback	27.1	29.3	32.3	5.2	
Eyre Peninsula and South West	42.8	42.9	42.9	0.1	
Outback - North and East	21.4	24.4	28.4	7.0	
South Australia - South East	13.3	13.4	13.7	0.5	
Western Australia					
Greater Perth	8.3	8.5	8.7	0.3	
Mandurah	7.9	8.2	8.2	0.2	
Perth - Inner	0.2	0.3	0.3	0.0	
Perth - North East	9.5	9.7	10.2	0.7	
Perth - North West	6.9	6.9	6.9	0.0	
Perth - South East	10.0	10.1	10.1	0.1	
Perth - South West	3.4	4.3	4.3	0.9	
Rest of Western Australia	11.1	11.8	21.5	10.4	
Bunbury	26.0	25.7	26.1	0.1	\checkmark
Western Australia - Outback	11.0	11.8	22.4	11.4	
Esperance	23.0	23.0	23.0	0.1	
Gascoyne	5.4	5.9	17.9	12.5	
Goldfields	24.3	24.3	25.2	0.9	
Kimberley	6.0	8.8	27.3	21.3	
Mid West	1.6	1.6	21.9	20.3	
Pilbara	5.1	6.4	15.9	10.8	
Western Australia - Wheat Belt	10.2	10.3	10.3	0.1	
Tasmania					
Greater Hobart	10.8	11.5	12.6	1.8	
Rest of Tasmania	39.1	40.0	42.5	3.4	
Launceston and North East	19.8	21.7	22.4	2.5	
South East	42.1	42.8	47.9	5.7	
West and North West	53.0	53.3	54.8	1.8	
Northern Territory					
Greater Darwin	11.0	11.0	11.0	0.0	\sim
Northern Territory - Outback	5.4	10.4	18.7	13.3	
Alice Springs	1.2	9.1	25.4	24.1	
Barkly	0.6	0.9	5.0	4.4	
Daly - Tiwi - West Arnhem	19.0	34.4	37.9	18.9	
East Arnhem	25.5	24.5	25.9	0.4	~
Katherine	10.6	11.9	12.7	2.1	
Australian Capital Territory	54.7	54.9	55.2	0.5	

Source: Department of the Environment, Collaborative Australian Protected Area Databases, 2006, 2010, and 2014. Overlapping areas have been filtered from the original data source.

P 3.4 Sustaining the Environment

P 3.4.1 Greenhouse gas emissions from road transport

Changes in greenhouse gas emissions from road transport can be linked to changes in vehicle use or improvements in fuel efficiency. As some areas have relatively high through traffic or visitor traffic, this is not a direct indicator of greenhouse gas emissions attributable to residents of each region.

Reductions in greenhouse emissions are likely to reflect increased efforts to combat the human impact that Australia is contributing towards climate change. Greenhouse gas emissions from road transport are a significant component of total emissions and reducing them is an important part of managing the environment sustainably.⁵¹

This indicator has been derived by the Bureau of Infrastructure, Transport and Regional Economics, using modelling and coarse estimation techniques to distribute state level data. The resulting values are only approximate and should be used with caution. Revisions to the underlying state and territory fuel consumption data have resulted in differences in historical emissions estimates compared to last year's publication.

Greenhouse gas emissions from road transport across capital cities

- Between 2003–04 and 2013–14, greenhouse gas emissions from road transport increased notably in Sydney, Melbourne, Brisbane and Perth. Emissions were relatively stable in the other four capitals. The net result across all capitals was an increase of 4,200 gigagrams, representing a rise of roughly 10 per cent over a 10 year period.
- Across the capitals, the largest increase occurred in Melbourne followed by Sydney. Overall emissions in Melbourne have now almost reached the same level as those in Sydney.

Table P 3.4.1.a Greenhouse gas emissions (CO₂-e) from road transport by capital city

Capital Cities	2003-04 gigagrams	2008-09 gigagrams	2013-14 gigagrams	2003-04 to 2013-14 change	Trend
	equivalent	equivalent	equivalent	CO ₂ equivalent	
Sydney	12,977	13,081	13,947	970	
Melbourne	12,280	12,553	13,698	1,418	
Brisbane	6,788	7,253	7,754	966	
Adelaide	3,491	3,362	3,411	-80	
Perth	5,328	5,753	6,163	835	
Hobart	663	657	645	-19	
Darwin	328	361	376	48	
Canberra	1,137	1,153	1,200	63	

Source: Unpublished BITRE estimates.

Gigagrams of full fuel cycle CO_2 , CH_4 and $N2_0$ emitted by road vehicles operating within each capital city. Full fuel cycle (FFC) includes upstream emissions (e.g. petrol refining) as well as emissions from direct fuel combustion (in vehicle).

For the calculation of city-based emissions, basic source data (such as on-road fuel consumption) are rarely available at smaller geographic scales than State or Territory level. These estimates have been derived using modelling and/or rough estimation techniques. The resulting values are only approximate.

⁵¹ Adapted from ABS, Measures of Australia's Progress, 2013.

P 3.5 Healthy Built Environment

P 3.5.1 Perceptions of traffic congestion

The proportion of residents who feel that their city has a good road network and minimal traffic congestion is considered a measure of progress for the health of our built environment because as our cities grow, congestion threatens to have an impact upon the well-being and health of people in cities. Increasing levels of satisfaction with road networks and congestion are associated with other benefits for residents, such as reduced pollution, reduced time lost sitting in traffic and reduced feelings of stress.⁵²

Perceptions of traffic congestion across selected major urban areas

- An increasing proportion of people agreed that their city had a good road network and minimal traffic congestion in seven of the ten urban areas presented. The largest increases were in Greater Darwin and Greater Brisbane.
- A lower portion of people agreed that their city had a good road network and minimal traffic congestion between 2011 and 2013 in Greater Perth (down 8.0 percentage points) and Greater Adelaide (down 6.0 percentage points).

	2011	2012	2013	2011-2013	
Major Urban Area ^a	per cent	per cent	per cent	change percentage points	Trend
Greater Sydney	15.0	17.0	23.0	8.0	
Greater Melbourne	24.0	23.0	31.0	7.0	
Greater Brisbane	21.0	27.0	32.0	11.0	
Greater Perth	33.0	26.0	25.0	-8.0	<u> </u>
Greater Adelaide	43.0	37.0	37.0	-6.0	
Newcastle - Maitland	38.0	44.0	46.0	8.0	
Canberra - Queanbeyan	72.0	72.0	75.0	3.0	
Wollongong	49.0	48.0	48.0	-1.0	
Greater Hobart	48.0	55.0	55.0	7.0	
Greater Darwin	68.0	73.0	80.0	12.0	

Table P 3.5.1.a	Residents who agree that their city has a good road network and minimal traffic
	congestion by major urban area

Source: Property Council of Australia's 2010, 2011, 2012, and 2013 'My City' surveys, conducted by Auspoll

The major urban areas of Sydney, Melbourne, Brisbane, Perth, Adelaide, Hobart and Darwin are based on Greater Capital City Statistical Areas. All other major urban areas are based on Significant Urban Areas.

a) Selected Major Urban Areas

n.a. Not available.

⁵² Adapted from ABS, Measures of Australia's Progress, 2013.

P 3.5.2 Average commuting time

Changes in average commuting times for a city or region can indicate how well a transport network is enabling residents to travel to their jobs. Changes in this commuting time indicator, together with changes in the subjective indicator of road network quality, provide a guide to whether the transport network is enabling people to more efficiently move around their city or region.

Travel times provide a guide to the impact of transport infrastructure on individuals. Projected travel time savings are a key basis for transport infrastructure funding decisions. More time spent commuting can also impact negatively on the health and well-being of people who live in cities as longer commutes are associated with higher stress levels, less time spent with family and reduced life satisfaction.⁵³

Average commuting time across capital cities and balance of state

- Within each state and territory, average commuting times were higher in capital cities compared with the areas outside the capital cities. The largest difference was between Sydney and the other areas of New South Wales, where average commuting times in the capital were 11.9 minutes longer in 2012.
- While travel times increased in all regions, both Tasmania and the areas of South Australia outside Greater Adelaide saw a relatively small increase of less than two minutes.
- The largest increase in average commuting times between 2002 and 2012 was in the Australian Capital Territory (up by 11.1 minutes) followed by the rest of Western Australia (up by 8.2 minutes).

	2002	2007	2012	2002-2012	
Capital City / Balance of State	minutes	minutes	minutes	change minutes	Trend
Greater Sydney	31.5	36.5	35.4	3.9	
Rest of New South Wales	21.5	23.8	23.5	2.1	
Greater Melbourne	29.2	31.7	33.3	4.1	
Rest of Victoria	20.5	23.7	22.9	2.4	
Greater Brisbane	24.2	31.8	29.8	5.6	
Rest of Queensland	19.3	21.2	23.1	3.8	
Greater Adelaide	23.1	27.6	25.9	2.8	
Rest of South Australia	16.9	17.0	18.7	1.9	
Greater Perth	26.2	26.0	29.1	2.9	
Rest of Western Australia	14.3	19.4	22.5	8.2	
Tasmania ^a	21.3	20.3	22.9	1.6	\checkmark
Northern Territory ^a	n.p.	n.p.	n.p.	n.p	
Australian Capital Territory ^a	16.4	21.7	27.5	11.1	

Table P 3.5.2.a Average commuting time by capital city/balance of state

Source: BITRE analysis of HILDA survey unit record data.

Full-time workers (one-way travel time).

Data are based on the 2006 Australian Standard Geographical Classification (ASGC) Statistical Division. The regions presented here are broadly comparable to the Greater Capital City Statistical Areas of the ASGS.

The HILDA survey was initiated, and is funded, by the Australian Government through the Department of Social Services (DSS). Responsibility for the design and management of the survey rests with the Melbourne Institute of Applied Economic and Social Research (University of Melbourne).

a) Data are only available at the State or Territory level

n.p. Not published

⁵³ Victoria Health Promotion Foundation, Commute time, Indicator Overview, VicHealth Indicators Survey, 2012.

P 3.5.3 Satisfaction with water quality

The satisfaction of households with water quality is a measure of the quality of their local water supply. The management of water resources is an integral part of environmental management and an essential requirement for the continuing viability of regions. Maintaining our potable water supply is essential to our ability to ensure we have sufficient drinking water to supply our needs.⁵⁴

• Across Australia, there was little change in people's satisfaction with water quality between 2007 and 2013, with 77.5 per cent of people satisfied with the quality of their water supply.

Satisfaction with water quality across capital cities and balance of state

- There were large increases in the satisfaction with water quality in the areas of New South Wales outside Greater Sydney (9.4 percentage points), the areas of Tasmania outside Greater Hobart (7.7 percentage points) and the Australian Capital Territory (6.9 percentage points).
- Both the capital cities and balance of the states of South Australia and Western Australia had lower levels of satisfaction with water quality in 2013 compared with 2007, with the largest falls being in Greater Adelaide (down 7.7 percentage points) and Greater Perth (down 6.7 percentage points).

	^b 2007	2010	2013	^b 2007-201	3
Capital City / Balance of State ^a	per cent	per cent	per cent	chan percenta poin	ge fe Trend ts
Greater Sydney	81.8	81.8	83.3	1	.5
Rest of New South Wales	70.8	79.0	80.2	9	.4
Greater Melbourne	87.6	86.2	88.4	0	.8
Rest of Victoria	68.5	72.9	72.5	4	.0
Greater Brisbane	77.3	74.8	77.2	-0	.1
Rest of Queensland	74.3	70.7	70.1	-4	.2
Greater Adelaide	67.9	66.8	60.2	-7	.7
Rest of South Australia	52.7	43.3	48.8	-3	.9
Greater Perth	72.7	74.9	66.0	-6	.7
Rest of Western Australia	65.6	70.1	63.6	-2	.0 0.
Greater Hobart	84.3	84.6	87.8	3	.5
Rest of Tasmania	73.2	79.2	80.9	7	.7
Greater Darwin	87.0	n.p.	n.p.	n.	р.
Rest of Northern Territory	n.p.	n.p.	n.p.	n.	р.
Australian Capital Territory	87.8	93.7	94.7	6	.9
AUSTRALIA	77.2	77.9	77.5	0	.3

Table P 3.5.3.a Satisfaction with water quality by capital city/balance of state

Source: ABS, Environmental Issues: People's Views and Practices, Mar 2007 (cat. no. 4602.0.5.001); Environmental Issues: Water use and Conservation, Mar 2010 and Mar 2013 (cat. no. 4602.0.55.003)

a) No regional split between capital city and balance of state/territory for NT and ACT as the sample does not support any breakdown beyond the whole territory.

b) Data from 2007 is based on the Australian Standard Geographical Classification (ASGC). This is broadly comparable to the Greater Capital City Statistical Areas of the ASGS.

n.p. Not published.

⁵⁴ Department of Environment, National Water Quality Management Strategy: Policies and principles – A reference document, 1994.

P 3.5.4 Active travel

Increasing rates of active travel have health benefits for individuals and positive impacts for the environment and communities. People using active travel for short trips increase their levels of physical activity, while also helping reduce road congestion and transport-related greenhouse gas emissions. The planning and design of built environments affects the rates of walking and cycling for transport. Specific features of neighbourhoods, towns and cities—such as road networks, footpaths, cycleways, quality open space, density and land use mix that offers good accessibility to a range of goods and services—are associated with an increased rate of walking and cycling for transport.⁵⁵

While active travel includes both walking and travel by bicycle, the commentary below focuses only on walking. Walking has been selected as a more useful indicator of active travel for two reasons. Firstly, far more people choose to walk rather than cycle, suggesting it is the preferred mode of active travel for a greater number of people. Secondly, this indicator is based on survey data which gives relatively high levels of sampling error for small categories, like cycling.

• Australians are using active travel by walking (for non-work transport) less in 2012 compared to 2009, with the proportion of people walking at 2.5 percentage points lower.

Active travel across remoteness classes

- Although the proportion of people actively travelling by walking in major cities fell between 2009 and 2012 (1.4 percentage points lower), people who live in cities still walk much more frequently than people who live in regional and remote Australia.
- Between 2009 and 2012, the proportion of people who actively travel by walking also fell more in inner regional Australia (3.4 percentage points lower) and outer regional, remote and very remote Australia (8.9 percentage points) than in the major cities.

Table P 3.5.4.a Active travel by bicycle or walking by remoteness class

	2009	2012	а	2009-2012
Remoteness Class	per cent	per cent	per cent chan	
			perce	entage points
		Bicycle		
Major Cities	5.0	4.9		-0.1
Inner Regional	6.1	4.4		-1.7
Outer Regional, Remote and Very Remote	5.3	4.4		-1.0
AUSTRALIA	5.3	4.8		-0.5
		Walk		
Major Cities	43.7	42.3		-1.4
Inner Regional	34.0	30.6		-3.4
Outer Regional, Remote and Very Remote	33.6	24.7		-8.9
AUSTRALIA	40.7	38.2		-2.5

Source: ABS, Waste Management, Transport and Motor Vehicle Usage Survey, 2009 and 2012, custom data request

Active travel includes travel to places other than work or full-time study by bicycle or walking.

Persons aged 18 years and over.

a) Changes were made to the survey between 2009 and 2012 which may impact on the comparability between surveys.

⁵⁵ Giles-Corti B., Ryan K., Foster S., 2012, Increasing density in Australia: maximising the health benefits and minimising the harm, report to the National Heart Foundation of Australia, Melbourne, http://www.heartfoundation.org.au/density.

Active travel across capital cities and the balance of state

- The rate of active travel by walking was higher in most capital cities than in other areas. In 2012, the largest difference between capital city and the rest of state was in New South Wales, with a gap of 18.4 percentage points.
- Greater Sydney also had an increase in active travel by walking between 2009 and 2012, up by 3.1 percentage points. In contrast, the areas of New South Wales outside Greater Sydney had a decrease of 3.3 percentage points over the same period.
- The largest falls in active travel by walking were in the areas outside the capital in Western Australia (down 15.3 percentage points) and Victoria (10.7 percentage points).

Table P 3.5.4.b Active travel by bicycle or walking by capital city/balance of state

	2009	2012	^a 2009–2012
Capital City / Balance of State	per cent	per cent	change
			percentage points
Greater Sydney	2.8	2.4	-0.4
Rest of New South Wales	4.3	4.4	0.1
Greater Melbourne	4.7	6.3	1.6
Rest of Victoria	8.0	6.4	-1.6
Greater Brisbane	3.3	3.6	0.3
Rest of Queensland	6.9	4.4	-2.5
Greater Adelaide	7.1	5.3	-1.8
Rest of South Australia	*6.5	*3.7	-2.8
Greater Perth	8.1	7.1	-1.0
Rest of Western Australia	*11.5	*4.7	-6.8
Greater Hobart	*4.8	5.4	0.6
Rest of Tasmania	*3.8	4.8	1.0
Greater Darwin	n.p.	n.p.	n.p.
Rest of Northern Territory	10.4	n.p.	n.p.
Australian Capital Territory	10.9	n.p.	n.p.
		Walk	
Greater Sydney	43.9	47.0	3.1
Rest of New South Wales	31.9	28.6	-3.3
Greater Melbourne	49.2	48.1	-1.1
Rest of Victoria	45.0	34.3	-10.7
Greater Brisbane	31.1	34.3	3.2
Rest of Queensland	31.0	23.4	-7.6
Greater Adelaide	44.1	38.8	-5.3
Rest of South Australia	36.8	31.3	-5.5
Greater Perth	44.6	41.3	-3.3
Rest of Western Australia	43.3	28.0	-15.3
Greater Hobart	44.3	47.5	3.2
Rest of Tasmania	41.3	33.5	-7.8
Greater Darwin	n.p.	n.p.	n.p.
Rest of Northern Territory	41.5	n.p.	n.p.
Australian Capital Territory	38.4	n.p.	n.p.

Source: ABS, Waste Management, Transport and Motor Vehicle Usage Survey, 2009 and 2012, custom data request

Active travel includes travel to places other than work or full-time study by bicycle or walking.

Persons aged 18 years and over.

* Estimates used to calculate this value have a relative standard error of 25 per cent to 50 per cent and should be used with caution

a) Changes were made to the survey between 2009 and 2012 which may impact on the comparability between surveys.

n.p. not published.