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. Despite this, there has been a tendency until recently to take clean water, clean air and natural attractions, such as the Great Barrier Reef, for granted. As Australians seek to preserve the environment for future generations while fostering growing populations and thriving economies, people have become increasingly concerned about the state of the environment and its long-term health, both in Australia and globally.[46]

[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, with both Adelaide and Townsville increasing by three index points between 2005 and 2011.
- The remaining seven airsheds had improvements in air pollution over the same period, with the largest decreases in Canberra and the Illawarra, both down five index points.

Table P 3.1.1.a Air pollution

Airshed	*2005 air quality index*	*2008 air quality index*	*2011 air quality index*	*2005–2011 change air quality index*	*Trend*
Sydney	25	22	21	-4	
Melbourne	25	25	23	-2	
South-East Queensland	21	20	21	0	
Adelaide	18	17	21	3	
Perth	28	23	24	-4	
Hobart	n.p.	n.p.	n.p.		
Darwin	n.p.	n.p.	n.p.		
Canberra	32	33	27	-5	
Lower Hunter	25	22	21	-4	
Illawarra	23	20	18	-5	
Townsville	14	15	17	3	

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. Through activities focusing on appreciating the environment people have access to the opportunities it provides for enjoyment, reflection and inspiration.[48]

- Australians have taken the same number of domestic trips involving nature activities in 2012 compared with 2006, averaging 2.9 trips per person per year.

Domestic trips involving nature activities across remoteness classes

- The number of domestic trips involving nature activities increased in both Inner Regional (0.4 more trips) and Outer Regional Australia (0.3 more trips), and these remoteness classes had the highest per capita trip rates in 2012.
- People living in Very Remote Australia took the fewest number of trips per person in 2012 (1.3 trips), which was half the number of trips that they took in 2006 (2.6 trips).

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

Remoteness Class [a b]	*2006 visits per resident*	*2009 visits per resident*	*2012 visits per resident*	*2006–2012 change visits per resident*	*Trend*
Major Cities	2.9	2.6	2.8	-0.1	
Inner Regional	3.0	3.0	3.4	0.4	
Outer Regional	2.7	2.6	2.9	0.3	
Remote	2.6	2.3	2.0	-0.6	
Very Remote	2.6	1.3	1.3	-1.3	
AUSTRALIA	2.9	2.6	2.9	-0.0	

Source: BITRE estimates based on Tourism Research Australia, National Visitor Survey, Unit record file data, 2013; ABS, Regional Population Growth, Australia, 2012–13 (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. 2.0 per cent 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

- Six of the 20 major urban areas had an increase in the number of domestic trips per person that involved nature activities between 2006 and 2012.
- The highest increase in the number of trips involving nature activities by residents were in Toowoomba (up 1.5 trips) followed by Wollongong (0.7 trips) and the Sunshine Coast (0.5 trips).
- Of the people living in capital city urban areas, those living in Brisbane took the greatest number of trips involving nature activities per person (4.0 trips), despite a fall of 0.2 trips per year since 2006.

Table P 3.2.1.b Domestic visits involving nature activities by major urban area

Major Urban Area [a]	*2006 visits per resident*	*2009 visits per resident*	*2012 visits per resident*	*2006–2012 change visits per resident*	*Trend*
Greater Sydney	2.7	2.4	2.2	-0.4	
Greater Melbourne	2.7	2.6	2.8	0.1	
Greater Brisbane	4.2	3.8	4.0	-0.2	
Greater Perth	2.7	1.9	2.1	-0.6	
Greater Adelaide	2.8	2.5	2.5	-0.3	
Gold Coast - Tweed Heads	2.2	2.0	1.9	-0.3	
Newcastle - Maitland	3.6	2.7	2.6	-1.0	
Canberra - Queanbeyan	2.5	2.3	2.5	0.0	
Sunshine Coast	3.1	2.6	3.6	0.5	
Wollongong	2.3	2.5	3.0	0.7	
Greater Hobart	4.2	3.8	3.7	-0.5	
Geelong	2.7	2.7	2.3	-0.4	
Townsville	3.6	2.4	2.5	-1.1	
Cairns	3.1	3.6	3.8	0.7	
Greater Darwin	3.5	3.8	3.5	0.0	
Toowoomba	3.5	3.4	5.0	1.5	
Ballarat	3.9	3.3	2.8	-1.1	
Bendigo	3.0	2.0	3.3	0.3	
Albury - Wodonga	2.9	3.0	2.8	-0.1	
Launceston	3.9	3.8	4.0	0.0	

Source: BITRE estimates based on Tourism Research Australia, National Visitor Survey, Unit record file data, 2013; ABS, Regional Population Growth, Australia, 2012–13 (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. 2.0 per cent 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

- Of the 87 sub-state regions, 37 had an increase in the number of trips involving nature activities by residents.
- The largest decrease in the number of trips involving nature activities was in the Inner City of Brisbane (3.4 fewer trips), compared to increases in the other four regions in Brisbane, including the largest increase in the nation in North Brisbane (1.8 more trips).
- Other large decreases in the number of trips involving nature activities were in Outback Queensland (3.0 fewer trips) and Inner Perth (2.1 fewer trips).

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

Sub-State Region [a]	*2006 visits per resident*	*2009 visits per resident*	*2012 visits per resident*	*2006–2012 change visits per resident*	*Trend*
New South Wales					
Greater Sydney	**2.7**	**2.4**	**2.2**	**-0.4**	
Central Coast	2.7	2.2	2.1	-0.6	
Sydney - Baulkham Hills and Hawkesbury	3.3	3.5	3.6	0.3	
Sydney - Blacktown	2.3	2.4	2.4	0.1	
Sydney - City and Inner South	2.7	2.6	1.4	-1.3	
Sydney - Eastern Suburbs	2.3	1.9	1.6	-0.7	
Sydney - Inner South West	2.2	2.0	1.6	-0.6	
Sydney - Inner West	3.1	2.0	2.2	-0.9	
Sydney - North Sydney and Hornsby	3.6	3.0	2.7	-0.8	
Sydney - Northern Beaches	2.8	2.2	2.0	-0.8	
Sydney - Outer South West	2.4	3.0	3.0	0.6	
Sydney - Outer West and Blue Mountains	3.4	3.0	3.3	-0.2	
Sydney - Parramatta	2.2	2.2	2.2	-0.1	
Sydney - Ryde	3.2	3.1	2.3	-0.9	
Sydney - South West	1.6	1.5	1.5	-0.1	
Sydney - Sutherland	3.0	2.8	2.7	-0.3	
Rest of New South Wales	**3.0**	**2.6**	**2.7**	**-0.2**	
Capital Region	2.9	2.6	3.0	0.1	
Central West	2.4	2.0	2.0	-0.4	
Coffs Harbour - Grafton	3.5	3.3	4.0	0.5	
Far West and Orana	2.1	1.6	1.7	-0.4	
Hunter Valley exc Newcastle	3.2	3.3	3.4	0.2	
Illawarra	2.3	2.7	2.9	0.7	
Mid North Coast	3.8	3.3	3.2	-0.6	
Murray	3.0	2.1	1.9	-1.1	
New England and North West	2.8	2.4	1.9	-0.9	
Newcastle and Lake Macquarie	3.6	2.3	2.4	-1.2	
Richmond - Tweed	3.2	3.1	3.7	0.5	
Riverina	2.1	1.8	2.0	-0.1	
Southern Highlands and Shoalhaven	3.4	2.9	2.7	-0.6	
Victoria					
Greater Melbourne	**2.7**	**2.6**	**2.8**	**0.1**	
Melbourne - Inner	2.9	2.4	2.2	-0.7	
Melbourne - Inner East	3.3	3.3	3.9	0.6	
Melbourne - Inner South	2.8	2.9	2.8	0.0	
Melbourne - North East	2.6	2.6	2.8	0.2	
Melbourne - North West	2.3	1.5	3.0	0.7	
Melbourne - Outer East	3.2	3.8	3.7	0.4	
Melbourne - South East	2.2	2.5	2.6	0.4	
Melbourne - West	2.3	2.3	2.0	-0.2	
Mornington Peninsula	2.6	2.4	2.8	0.2	

(continued)

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

Sub-State Region [a]	2006 visits per resident	2009 visits per resident	2012 visits per resident	2006–2012 change visits per resident	Trend
Rest of Victoria	**2.5**	**2.5**	**2.9**	**0.3**	
Ballarat	3.2	3.3	2.6	-0.6	
Bendigo	2.3	1.9	3.2	1.0	
Geelong	2.9	2.8	2.3	-0.5	
Hume	2.2	2.1	3.3	1.1	
Latrobe - Gippsland	2.9	2.5	3.8	0.9	
North West	2.1	2.1	2.3	0.2	
Shepparton	2.1	2.5	2.0	-0.2	
Warrnambool and South West	2.0	2.7	3.1	1.2	
Queensland					
Greater Brisbane	**4.2**	**3.8**	**4.0**	**-0.2**	
Brisbane - East	3.4	4.7	4.3	0.9	
Brisbane - North	3.2	3.4	5.0	1.8	
Brisbane - South	4.1	3.4	4.9	0.8	
Brisbane - West	4.4	5.5	5.0	0.6	
Brisbane Inner City	7.0	5.3	3.5	-3.4	
Ipswich	3.6	3.7	3.5	-0.2	
Logan - Beaudesert	3.8	2.7	2.7	-1.1	
Moreton Bay - North	3.0	2.4	3.6	0.6	
Moreton Bay - South	5.5	4.1	4.2	-1.2	
Rest of Queensland	**2.8**	**2.8**	**3.0**	**0.2**	
Cairns	2.7	3.7	3.9	1.2	
Darling Downs - Maranoa	2.3	2.3	2.5	0.2	
Fitzroy	2.4	3.4	3.4	1.0	
Gold Coast	2.3	1.9	1.9	-0.4	
Mackay	3.4	3.5	3.3	-0.1	
Queensland - Outback	4.1	*1.6	*1.1	-3.0	
Sunshine Coast	3.3	2.6	3.6	0.2	
Toowoomba	3.3	3.2	4.3	1.0	
Townsville	3.1	2.5	2.5	-0.6	
Wide Bay	2.6	3.4	3.9	1.2	
South Australia					
Greater Adelaide	**2.8**	**2.5**	**2.5**	**-0.3**	
Adelaide - Central and Hills	3.9	3.0	3.3	-0.6	
Adelaide - North	2.5	2.3	2.0	-0.4	
Adelaide - South	2.7	2.6	3.0	0.3	
Adelaide - West	2.1	2.1	1.5	-0.7	
Rest of South Australia	**2.7**	**2.5**	**2.9**	**0.3**	
Barossa - Yorke - Mid North	2.0	1.9	2.9	0.9	
South Australia - Outback	3.1	2.4	3.2	0.1	
South Australia - South East	2.8	2.8	2.9	0.0	

(continued)

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

Sub-State Region [a]	*2006 visits per resident*	*2009 visits per resident*	*2012 visits per resident*	*2006–2012 change visits per resident*	*Trend*
Western Australia					
Greater Perth	**2.7**	**1.9**	**2.1**	**-0.6**	
Mandurah	3.0	2.5	2.0	-0.9	
Perth - Inner	4.6	2.3	2.5	-2.1	
Perth - North East	2.4	1.9	2.2	-0.2	
Perth - North West	2.4	1.7	1.9	-0.5	
Perth - South East	2.4	1.9	2.0	-0.4	
Perth - South West	2.6	1.7	2.1	-0.5	
Rest of Western Australia	**2.8**	**2.3**	**2.6**	**-0.2**	
Bunbury	3.5	2.8	3.0	-0.6	
Western Australia - Outback	2.4	2.1	2.1	-0.3	
Western Australia - Wheat Belt	2.4	2.1	3.0	0.6	
Tasmania					
Greater Hobart	**4.2**	**3.8**	**3.7**	**-0.5**	
Rest of Tasmania	**2.8**	**3.0**	**2.9**	**0.1**	
Launceston and North East	3.3	3.3	3.5	0.2	
South East	*1.8	*2.3	*3.0	1.2	
West and North West	2.5	2.8	2.2	-0.3	
Northern Territory					
Greater Darwin	**3.5**	**3.8**	**3.5**	**0.0**	
Northern Territory - Outback	*1.8	2.2	1.9	0.1	
Australian Capital Territory	**2.7**	**2.4**	**2.6**	**-0.1**	

Source: BITRE estimates based on Tourism Research Australia, National Visitor Survey, Unit record file data, 2013; ABS, Regional Population Growth, Australia, 2012–13 (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. 2.0 per cent 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/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.[49]

- The area of land protected in Australia was 15.4 per cent in 2012, which was an increase of 5.2 percentage points on 2004.

Protected areas of land across remoteness class

- The proportion of land area that is protected is larger in the more remote areas of Australia, with as much as 16.4 per cent of very remote Australia protected.
- The very remote areas of Australia also had the largest increase in proportion of protected land area, with 6.2 percentage points more land protected between 2004 and 2012 – almost three times as much as any other remoteness class.

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

Remoteness Class	*2004* *per cent*	*2008* *per cent*	*2012* *per cent*	*2004–2012* *change percentage points*	*Trend*
Major Cities	4.0	5.2	5.4	1.5	
Inner Regional	9.4	10.3	10.8	1.4	
Outer Regional	10.4	11.7	12.6	2.2	
Remote	10.7	11.5	12.9	2.2	
Very Remote	10.2	11.6	16.4	6.2	
AUSTRALIA	10.2	11.5	15.4	5.2	

Source: Department of the Environment, Collaborative Australian Protected Area Databases, 2004, 2008, and 2012

Overlapping areas have been filtered from the original data source.

[49] 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 2004 and 2012. Other large increases occurred in Greater Perth (3.2 percentage points) and Cairns (2.6 percentage points).
- Some major urban areas had little or no change in the amount of protected land, including Toowoomba and Greater Darwin that had no increase in protected land, and Bendigo and Ballarat which both had less than 0.2 percentage point increases between 2004 and 2012.

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

Major Urban Area	2004 per cent	2008 per cent	2012 per cent	2004–2012 change percentage points	Trend
Greater Sydney	48.2	48.9	49.7	1.5	
Greater Melbourne	8.2	9.0	9.0	0.9	
Greater Brisbane	8.2	9.4	10.4	2.2	
Greater Perth	5.4	8.5	8.6	3.2	
Greater Adelaide	4.0	4.2	4.7	0.6	
Gold Coast - Tweed Heads	5.6	6.0	6.3	0.8	
Newcastle - Maitland	3.4	7.0	8.6	5.1	
Canberra - Queanbeyan	9.1	10.3	10.4	1.2	
Sunshine Coast	14.8	15.8	17.5	2.6	
Wollongong	11.5	12.8	13.0	1.6	
Greater Hobart	10.3	11.1	12.2	1.9	
Geelong	2.9	3.1	4.1	1.2	
Townsville	4.7	4.8	4.8	0.1	
Cairns	12.4	12.4	15.1	2.6	
Greater Darwin	11.0	11.0	11.0	0.0	
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	1.0	1.2	1.2	0.2	
Launceston	2.1	2.7	2.9	0.7	

Source: Department of the Environment, Collaborative Australian Protected Area Databases, 2004, 2008, and 2012

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

- The largest increase in protected land across the sub-states regions was in the East of Brisbane, with a 16.6 percentage point increase.
- Many of the other larger increases in protected land were in sub-state regions outside of the capital cities, including a 15.0 percentage point increase in Illawarra, a 14.0 percentage point increase in the Outback of the Northern Territory and a 13.6 percentage point increase in Bunbury.
- Brisbane - West was the only sub-state region in which the area of protected land had decreased between 2004 and 2012 (down by 0.1 percentage points).

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

Sub-State Region	2004 per cent	2008 per cent	2012 per cent	2004–2012 change percentage points	Trend
New South Wales					
Greater Sydney	**48.2**	**48.9**	**49.7**	**1.5**	
Central Coast	27.1	27.5	30.8	3.7	
Sydney - Baulkham Hills and Hawkesbury	61.2	62.0	62.9	1.7	
Sydney - Blacktown	0.0	1.9	1.8	1.8	
Sydney - City and Inner South	0.1	0.1	0.1	0.0	
Sydney - Eastern Suburbs	2.5	2.5	2.8	0.3	
Sydney - Inner South West	1.3	1.4	1.5	0.1	
Sydney - Inner West	0.0	0.0	0.0	0.0	
Sydney - North Sydney and Hornsby	31.8	38.3	38.3	6.5	
Sydney - Northern Beaches	44.7	44.7	44.7	0.0	
Sydney - Outer South West	15.3	15.6	15.7	0.4	
Sydney - Outer West and Blue Mountains	73.9	74.3	74.9	0.9	
Sydney - Parramatta	0.3	0.3	0.3	0.0	
Sydney - Ryde	5.9	7.6	8.3	2.4	
Sydney - South West	0.7	1.8	0.9	0.2	
Sydney - Sutherland	56.8	57.8	57.8	1.0	
Rest of New South Wales	**6.8**	**7.8**	**8.7**	**1.8**	
Capital Region	18.4	18.9	19.6	1.2	
Central West	6.7	7.0	7.5	0.8	
Coffs Harbour - Grafton	20.9	22.1	25.2	4.3	
Far West and Orana	3.4	4.1	4.8	1.5	
Hunter Valley exc Newcastle	19.2	20.4	21.3	2.1	
Illawarra	8.8	23.1	23.9	15.0	
Mid North Coast	20.6	21.9	23.9	3.4	
Murray	2.3	3.4	4.7	2.4	
New England and North West	5.7	8.2	8.7	3.0	
Newcastle and Lake Macquarie	7.9	12.5	14.4	6.5	
Richmond - Tweed	14.0	14.1	15.2	1.2	
Riverina	8.9	9.2	10.4	1.5	
Southern Highlands and Shoalhaven	39.7	40.7	41.7	2.0	
Victoria					
Greater Melbourne	**8.2**	**9.0**	**9.0**	**0.9**	
Melbourne - Inner	0.0	0.0	0.0	0.0	
Melbourne - Inner East	0.0	0.0	0.0	0.0	
Melbourne - Inner South	0.0	0.0	0.0	0.0	
Melbourne - North East	12.7	12.9	12.9	0.2	
Melbourne - North West	0.9	2.9	2.9	2.0	
Melbourne - Outer East	18.8	19.7	19.7	0.9	
Melbourne - South East	8.0	8.1	8.3	0.2	
Melbourne - West	1.2	3.1	3.1	1.9	
Mornington Peninsula	4.6	5.1	5.2	0.6	

(continued)

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

Sub-State Region	*2004* *per cent*	*2008* *per cent*	*2012* *per cent*	*2004–2012* *change percentage points*	*Trend*
Rest of Victoria	**16.4**	**16.9**	**17.6**	**1.2**	
Ballarat	4.7	4.8	4.8	0.0	
Bendigo	5.3	5.3	5.5	0.1	
Geelong	8.1	10.1	10.3	2.3	
Hume	16.7	16.7	16.7	0.1	
Latrobe - Gippsland	22.6	23.1	24.1	1.6	
North West	21.8	21.9	22.9	1.0	
Shepparton	3.4	3.4	6.0	2.6	
Warrnambool and South West	6.8	9.4	9.5	2.8	
Queensland					
Greater Brisbane	**8.2**	**9.4**	**10.4**	**2.2**	
Brisbane - East	22.2	23.1	38.8	16.6	
Brisbane - North	0.0	0.0	0.0	0.0	
Brisbane - South	0.1	0.1	1.0	0.8	
Brisbane - West	15.1	15.2	15.0	-0.1	
Brisbane Inner City	0.0	0.0	0.0	0.0	
Ipswich	6.7	8.4	8.6	1.9	
Logan - Beaudesert	4.6	4.8	4.9	0.3	
Moreton Bay - North	9.5	10.7	10.7	1.2	
Moreton Bay - South	13.8	16.8	17.3	3.5	
Rest of Queensland	**4.7**	**5.4**	**7.5**	**2.7**	
Cairns	34.8	32.7	41.0	6.2	
Darling Downs - Maranoa	1.3	1.5	1.7	0.4	
Fitzroy	5.5	6.0	7.2	1.6	
Gold Coast	17.6	18.3	18.9	1.2	
Mackay	2.6	3.0	3.5	0.9	
Queensland - Outback	4.6	5.4	8.0	3.4	
Sunshine Coast	18.2	18.9	19.9	1.7	
Toowoomba	7.7	8.0	8.2	0.4	
Townsville	3.9	5.3	5.8	1.9	
Wide Bay	9.0	9.1	9.4	0.4	
South Australia					
Greater Adelaide	**4.0**	**4.2**	**4.7**	**0.6**	
Adelaide - Central and Hills	4.4	4.5	5.1	0.6	
Adelaide - North	2.6	2.6	2.7	0.1	
Adelaide - South	6.1	6.1	6.7	0.7	
Adelaide - West	0.4	3.6	3.6	3.2	
Rest of South Australia	**25.0**	**24.9**	**29.9**	**4.8**	
Barossa - Yorke - Mid North	1.1	1.1	1.9	0.8	
South Australia - Outback	27.2	27.0	32.3	5.1	
South Australia - South East	9.7	9.8	13.7	4.0	

(continued)

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

Sub-State Region	2004 per cent	2008 per cent	2012 per cent	2004–2012 change percentage points	Trend
Western Australia					
Greater Perth	**5.4**	**8.5**	**8.6**	**3.2**	
Mandurah	7.9	8.1	8.2	0.2	
Perth - Inner	0.2	0.2	0.3	0.0	
Perth - North East	6.4	9.6	10.0	3.6	
Perth - North West	6.9	6.9	6.8	0.0	
Perth - South East	3.9	10.0	10.1	6.2	
Perth - South West	2.3	4.3	4.3	2.0	
Rest of Western Australia	**10.7**	**11.9**	**14.5**	**3.8**	
Bunbury	12.5	25.7	26.1	13.6	
Western Australia - Outback	10.9	11.9	14.7	3.8	
Western Australia - Wheat Belt	8.7	10.2	10.3	1.7	
Tasmania					
Greater Hobart	**10.3**	**11.1**	**12.2**	**1.9**	
Rest of Tasmania	**37.9**	**39.3**	**40.9**	**3.0**	
Launceston and North East	19.3	20.2	22.3	3.0	
South East	41.3	42.3	43.4	2.1	
West and North West	50.7	53.0	54.8	4.1	
Northern Territory					
Greater Darwin	**11.0**	**11.0**	**11.0**	**0.0**	
Northern Territory - Outback	4.9	8.5	18.9	14.0	
Australian Capital Territory	**54.3**	**54.9**	**55.0**	**0.7**	

Source: Department of the Environment, Collaborative Australian Protected Area Databases, 2004, 2008, and 2012

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.[50]

Due to limits in the availability of data at the small geographic scale, the information on greenhouse gas emissions from road transport has been derived using modelling and coarse estimation techniques. The resulting values are only approximate and should be used with caution.

Greenhouse gas emissions from road transport across capital cities

- Greenhouse gas emissions from road transport increased in Sydney, Melbourne, Brisbane and Perth, combining to a net increase of 5,138 gigagrams of CO_2 equivalent from a base of 40,682 gigagrams.
- Greenhouse gas emissions from road transport decreased slightly in Adelaide and remained relatively stable in Hobart, Darwin and Canberra, each with less than a 100 gigagram increase between 2002–03 and 2012–13.

Table P 3.4.1.a Greenhouse gas emissions (CO_2-e) from road transport by capital city

Capital Cities	*2002–03 gigagrams CO_2 equivalent*	*2007–08 gigagrams CO_2 equivalent*	*2012–13 gigagrams CO_2 equivalent*	*2002–03 to 2012–13 change gigagrams CO_2 equivalent*	*Trend*
Sydney	12,394	13,053	13,665	1,271	
Melbourne	11,841	12,676	13,393	1,552	
Brisbane	6,242	7,135	7,562	1,320	
Adelaide	3,404	3,363	3,396	-9	
Perth	5,066	5,607	6,062	995	
Hobart	638	666	647	9	
Darwin	313	349	369	57	
Canberra	1,102	1,153	1,193	91	

Source: Unpublished BITRE estimates

Gigagrams of full fuel cycle CO_2, CH_4 and N_2O 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.

[50] 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 many city dwellers. 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.[51]

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 six of the eight major urban areas presented, with the largest increases in Greater Hobart, Canberra-Queanbeyan and Greater Brisbane.
- A lower portion of people agreed that their city had a good road network and minimal traffic congestion between 2010 to 2012 in Greater Adelaide (down 7.0 percentage points) and Greater Perth (down 4.0 percentage points).

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

Major Urban Area [a]	*2010* *per cent*	*2011* *per cent*	*2012* *per cent*	*2010–2012* *change percentage points*	*Trend*
Greater Sydney	13.0	15.0	17.0	4.0	
Greater Melbourne	22.0	24.0	23.0	1.0	
Greater Brisbane	21.0	21.0	27.0	6.0	
Greater Perth	30.0	33.0	26.0	-4.0	
Greater Adelaide	44.0	43.0	37.0	-7.0	
Newcastle - Maitland	n.a.	38.0	44.0	n.a.	
Canberra - Queanbeyan	64.0	72.0	72.0	8.0	
Wollongong	n.a.	49.0	48.0	n.a.	
Greater Hobart	44.0	48.0	55.0	11.0	
Geelong	n.a.	n.a.	46.0	n.a.	
Greater Darwin	72.0	68.0	73.0	1.0	

Source: Property Council of Australia's 2010, 2011 and 2012 '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.

[51] 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 many city dwellers—longer commutes are associated with higher stress levels, less time spent with family, and reduced life satisfaction.[52]

Average commuting time across capital cities and balance of state

- Across Australia, average commuting times were higher in capital cities compared with the areas outside the capital cities in the same state or territory. The largest difference was between Sydney and the other areas of New South Wales, where average commuting times in the capital were 12.9 minutes longer in 2010.
- While travel times increased in all regions across Australia, the areas of Western Australia outside the capital city, Greater Melbourne and the Northern Territory all had relatively small increases in average commuting times (all less than a three minute increase).
- The largest increase in average commuting times between 2002 to 2010 was in the Australian Capital Territory, up by 7.9 minutes, followed by Greater Brisbane, up by 7.3 minutes. There was also a large increase in the non-capital city areas of South Australia, up by seven minutes.

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

Capital City / Balance of State	*2002 minutes*	*2006 minutes*	*2010 minutes*	*2002–2010 change minutes*	*Trend*
Greater Sydney	34.7	37.0	38.5	3.8	
Rest of New South Wales	21.8	22.9	25.6	3.8	
Greater Melbourne	31.4	32.5	34.1	2.7	
Rest of Victoria	21.5	23.1	25.9	4.4	
Greater Brisbane	26.6	32.6	33.9	7.3	
Rest of Queensland	19.6	20.1	23.0	3.5	
Greater Adelaide	24.1	26.2	28.9	4.8	
Rest of South Australia	14.9	17.4	22.0	7.0	
Greater Perth	26.9	28.5	32.7	5.8	
Rest of Western Australia	20.0	21.7	22.3	2.3	
Tasmania [a]	22.8	22.3	26.8	4.0	
Northern Territory [a]	15.1	18.6	17.9	2.8	
Australian Capital Territory [a]	15.4	21.5	23.2	7.9	

Source: HILDA customised data, provided by the National Centre for Social and Economic Modelling (NATSEM)

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 Household, Income and Labour Dynamics in Australia (HILDA) project was initiated and is funded by the Australian Government through the Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (MIAESR). The findings and views reported here, however, are those of the authors and should not be attributed to either DSS or the MIAESR.

More recent data from later waves of the HILDA Survey are available but have not been included in this version of the Yearbook.

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

52 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.[53]

- 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 the capital city (9.4 percentage points), the areas of Tasmania outside the capital city (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).

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

Capital City / Balance of State [a]	[b] *2007 per cent*	*2010 per cent*	*2013 per cent*	[b] *2007–2013 change percentage points*	*Trend*
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	
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.p.	
Rest of Northern Territory	n.p.	n.p.	n.p.	n.p.	
Australian Capital Territory	87.8	93.7	94.7	6.9	
AUSTRALIA	77.2	77.9	77.5	0.3	

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.

[53] 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. More people using active travel for short trips increases their levels of physical activity and can help 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.[54]

While active travel includes both walking and travel by bicycle, only the data on walking has been addressed below, as walking forms the majority of such trips and data for bicycling is subject to higher rates of sampling error.

- Australians are using active travel by walking (for non-work transport) less in 2012 compared to 2009 (down 2.5 percentage points).

Active travel across remoteness classes

- Although the proportion of people actively travelling by walking in the major cities fell between 2009 and 2012 (1.4 percentage points lower), there is still a much larger proportion of people actively travelling in the cities than 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

Remoteness Class	2009 per cent	2012 per cent	[a] 2009–2012 change percentage 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. The proportions for these modes of transport are not additive because more than one form of transport may be specified by a single person.

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.

Active travel across capital cities and balance of state

- Across many of the capital city regions the rate of active travel by walking was higher than in areas outside the capital cities; with the largest difference, in 2012, being the proportion for Greater Sydney compared with the rest of New South Wales (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 the capital city had a decrease of 3.3 percentage points over the same period.

[54] 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