



# Youth and the environment survey

A report on the environmental attitudes, knowledge and practices of 12 to 24 year old Queenslanders

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## Executive summary

The youth and the environment survey is a key initiative of the Queensland Youth Environment Council (QYEC) program. It was conducted by the former Environmental Protection Agency (EPA), now the Department of Environment and Resource Management (DERM), and the former Department of Education, Training and the Arts (DETA), now the Department of Education and Training (DET), in collaboration with researchers from the Institute of Social Science at the University of Queensland.

The QYEC is a broad-based advisory committee of Queensland youths, formed in May 2007 to provide advice to the Queensland Government through the Minister for Sustainability, Climate Change and Innovation, and the Minister for Education, Training and the Arts on key environmental and sustainability issues (including climate change, water use, renewable energy and biodiversity conservation). The Ministers also asked Council members to act as youth leaders to enhance awareness and inspire other youth to take action to achieve a more environmentally sustainable future for Queensland.

This survey was developed to address gaps in available information on youth and environmental issues in general, and to improve the evidence base to support the policies and programs of the government and the QYEC.

An online survey was developed and administered in late 2008 to young people aged 12 to 17 and 18 to 24 in Queensland. The focus of the survey was to assess the environmental attitudes, knowledge, and behaviours of young people. The 12 to 17 year cohort was recruited through invitations to state and non-state schools, and the survey was generally administered in class time in the last two weeks of second semester. The 18 to 24 year cohort was recruited via email lists and through community and tertiary education networks. For both cohorts, an incentive was offered to encourage participation: a chance to win an environmental products package for the school for the younger age group, and a chance to win an iPhone for the older age group. Overall, the sample was predominantly comprised of respondents residing in relatively advantaged urban areas of Queensland.

However, demographic comparisons suggested few differences in responses across different geographic areas and socio-economic groups.

Following are some of the key findings of the survey.

## Environmental concern

The majority of 12 to 17 and 18 to 24 year old respondents were highly concerned about the environment.

- 57% of the 12 to 17 year old respondents were quite a bit or very concerned about protecting the environment and 46% were quite a bit or very concerned about climate change
- 72% of 18 to 24 year old respondents were quite a bit or very concerned about protecting the environment and 56% were quite a bit or very concerned about climate change

On average, relative to a range of social issues (eg. family break-ups, international conflict), poverty and starvation was the issue that young people were most concerned about and protecting the environment was the second most concerning issue. In order of nomination, both age groups judged the availability of water, climate change and land clearing as the three most important environmental issues facing Queensland and Australia.

## Environmental behaviour

Despite the relatively high levels of environmental concern, less than 10% of both age groups were very committed to acting in a pro-environmental way, and on average, reported commitment levels were moderate.

Young people reported engaging most frequently in pro-environmental actions such as recycling, conserving energy in their homes and conserving water, with a majority of 18 to 24 year olds often or always engaging in these actions. In contrast, only a minority of young people from either age group reported often or always planting trees, signing petitions, eating less meat and buying things with less throw-away packaging.

## Environmental behaviour: facilitators & barriers

Respondents nominated a range of factors that can make it easier to protect the environment. For both age groups, believing that you can make a difference and being part of a pro-environmental family were the most highly rated facilitators. For both age groups, lack of time and the belief that there are no alternatives were the two most nominated barriers to pro-environmental actions. Lack of motivation was also highly cited for the younger age group, and concern for saving money for the older age group.

## Environmental knowledge

Overall, respondents reported moderate levels of knowledge about a selection of environmental issues. The lowest reported knowledge was about carbon capture and storage and geothermal energy, and the highest reported knowledge was about climate change (causes, effects, mitigation). Accuracy of responses to objective questions about environmental issues was relatively high, except for an item asking whether climate change is caused by the hole in the ozone layer: less than 50% of respondents correctly answered this question.

## Responsibility for protecting the environment

The majority of the 12 to 17 year old respondents thought that government, especially the Australian government, should be very responsible for protecting the environment, whereas only a minority thought that business, community and they themselves should be responsible. The 18 to 24 year old respondents also thought that the Australian government should be very responsible, however, a majority also perceived that state and local government, business, community, and they themselves should be very responsible.

## Government actions to protect the environment

Both the 12 to 17 and 18 to 24 year old respondents nominated increasing the supply of renewable energy and creating laws that prevent actions that damage the environment as the most important actions that governments can take to help the environment. Signing agreements with other countries to help stop climate change

was also cited by many younger respondents and giving more funding for actions that help protect the environment was nominated by many of the older respondents.

## Environmental information sources

Schools and teachers the internet, national and international environmental groups (for the younger age group), and the internet, national and international environment groups and newspapers (for the older group) were most frequently nominated as reliable sources of environmental information. Television and newspapers were the most nominated preferred sources of information about environmental issues for both groups.

## Determinants of environmental behaviour

Respondents who engage in higher levels of environmental behaviour are more likely to be females with higher levels of environmental concern and knowledge, and those with a greater belief that their actions can make a difference to the environment, greater belief that it is the responsibility of the community to protect the environment, and lower belief that it is the government's responsibility to protect the environment.

## Where to from here?

The present research represents a first step in understanding the environmental knowledge, attitudes and practices of young people in Queensland. It is hoped that the findings will form the basis for further discussion and policy and program development, with a view to encouraging greater pro-environmental actions amongst Queensland's young people.

## Introduction

Promotion of pro-environmental behaviour is a major challenge currently facing societies. Change is required at the institutional, household and individual levels, and strategies are needed to facilitate more efficient use of resources and support the development of environmentally sustainable practices (Stern, 2000). Of critical importance is an understanding of the environmental knowledge, attitudes and actions of young people. The ways in which our future leaders act and influence decision-making and policy will be important determinants of Queensland's environmental future. Positive environmental values and behaviours developed at an early age are also likely to contribute to more sustainable lifestyles in the longer term.

A recent review of young Australians' environmental views and actions (Partridge, 2008), highlights a number of key findings. Although survey results have shown that environmental issues are viewed as important to young people in Australia, relative to other age groups, young people often report lower levels of environmental concern and actions. Australian Bureau of Statistics (ABS, 2004) data show that young people were second lowest in their level of environmental concern after those aged over 65. Similarly, a NSW Department of Environment and Conservation (DEC) (2006) survey found that relative to other age groups, people aged under 25 reported the lowest level of environmental concern with only 18% reporting a great deal of concern. In addition, the survey revealed that this age group engaged in less environmental behaviours than older age groups.

In relative terms, some surveys have also shown that young people are more concerned about other issues than the environment. Partridge (2008) argues that this finding may emerge because in past surveys the environment is being compared to more personal issues rather than social issues of the same scale as environmental protection. Consistent with this argument, in the most recent National Survey of Young Australians by Mission Australia (2008), concern for the environment was included in a list of other issues, many of which are at a different scale (eg. body image, personal safety, school or study problems) and was ranked 11<sup>th</sup> out of 15 issues.

A central argument made by Partridge (2008) in her review of young people's environmental views and behaviour is that young people are not a homogenous group, and that variability exists in their views and actions. Environmental concern and behaviour are likely to be shaped by the social context in which young people exist and thus may be influenced by gender, socio-economic status, cultural background and geography. Past research supports this view, with evidence that environmental attitudes and behaviour are influenced by respondent characteristics (e.g., Tarrant & Cordell, 1997; Zelezny, Chua & Aldridge, 2000). Research by Zelezny et al. (2000), for example, showed that females report more environmental concern and behaviours than males. Their explanation for this gender difference centres on the socialisation of females to be other-oriented and socially responsible.

In terms of understanding what motivates pro-environmental behaviour in the wider community, the environmental literature has identified factors such as environmental awareness and concern, sense of individual responsibility, supportive social norms, and positive attitudes as key psycho-social determinants of environmental actions (e.g., Bamberg & Moser, 2007; Olli, Grendstad, & Wollebaek, 2001). In the main, however, past research has not explored whether these factors are important drivers of *young* people's environmental behaviour in Australia or in other developed countries. Therefore, there is a need to investigate whether the determinants identified in previous research also apply to young people in the Australian context.

The aim of the present research is to gain an understanding of the environmental knowledge, attitudes and actions of young people aged 12 to 24 in Queensland. The research addresses key questions including:

- How concerned are young people about the environment and how does this concern compare to concern for other important social issues?
- What is their current knowledge about environmental issues?
- What steps do young people currently take to protect the environment?
- What facilitates or prevents them from engaging in pro-environmental actions?
- What do they think government and others should be doing to protect the environment?
- What are the key drivers of pro-environmental actions?

The findings of this study can provide insight into how young people in Queensland currently relate to the environment and what policies may help to promote more environmentally sustainable attitudes and practices amongst this age group.

## Methodology

An online survey was conducted between 16 October and 5 December 2008 with two cohorts of young people aged 12 to 17 and 18 to 24. The survey for both cohorts was identical, with the exception of some demographic questions that were tailored to suit the different the age groups. For the 12-17 year old survey, state and non-state schools across Queensland were contacted to ask if they were willing to take part in the research project. In general, the survey was administered as an in-class activity in the final weeks of Semester 2, 2008. As an incentive to encourage school involvement, each participating school sector went into a draw for one of two environmental packages.

For the 18 to 24 year old survey, participants were recruited via emails from a purchased list of names (with sample characteristics matched to ABS data), youth and community networks, and the tertiary sector (eg. TAFE and Universities). An incentive was provided to increase the response rate: respondents who completed the survey could enter themselves into a draw for an Apple iPhone. To enter the draw, respondents provided their email address but they were assured that this information would be kept confidential and separate from their responses.

For both cohorts, the survey was presented as research being conducted by the University of Queensland on behalf of the former Environmental Protection Agency, now the Department of Environment and Resource Management (DERM), and the Department of Education, Training the Arts, now the Department of Education and Training (DET) about the environmental knowledge, attitudes and behaviour of young people in Queensland. To emphasise the importance of the research, respondents were told that the results would hopefully provide useful information to the Queensland Youth Environment Council and the Queensland Government to help build a sustainable future for Queensland. Respondents were assured of the anonymity of their responses—in the case of the 12 to 17 year old cohort, they were assured that their responses would not be graded or seen by their teachers. Respondents to the 18 to 24 year cohort were assured that their personal details would remain confidential.

The survey instrument was developed cooperatively by research officers at DERM, DET, the University of Queensland and the Queensland Youth Environment Council (QYEC) members. A pilot of the survey instrument was carried out at three schools and with older members of the QYEC.

Prior to the survey questions, respondents were also given the following information to clarify terminology:

In the survey, we use the words '*climate change*' which is the same as the term '*global warming*'. Both refer to the problem of the trapping of heat in the Earth's atmosphere due to increasing levels of greenhouse gases. Humans have been putting more and more greenhouse gases, particularly carbon dioxide into the atmosphere, by burning fossil fuels and clearing the Earth's forests. Climate changes, such as warmer temperatures, rising sea levels and changes in rainfall patterns, impact on our communities and natural environment.

The DET online survey tool allowed for question order to be randomised within tables, assisting in reducing biased responses.

In addition to demographic information, the main constructs assessed in the survey were:

- environmental and climate change concern
- relative importance of environmental issues
- commitment to acting in an environmentally friendly way
- environmental knowledge
- perceived responsibility for environmental protection
- preferred government actions to protect the environment
- individual efficacy in relation to environmental protection
- current and intended environmental actions
- facilitators of and barriers to pro-environmental actions
- reliability and preference for obtaining environmental information

The survey questions are provided in Appendix 1.

# Profile of respondents

## 12-17 year old survey

The demographics for the 12-17 year old survey sample are presented in Table 1 to Table 3 and Figure 1 below. In total 1848 people entered the survey with 1529 completing all sections. Thus, the number of responses to survey questions will differ due to incomplete surveys or missing data on specific items (eg. 1506 respondents provided their gender). Respondents came from schools all over Queensland, including Mount Morgan State High School, Trinity Anglican School Cairns and Helensvale State High School. Just over 50% of respondents were male and the mean age for the sample was 14.63 (SD = 1.43). As Table 2 shows, the majority of respondents were 13 to 15 years of age in Years 8 to 10. Six percent (n = 92) of respondents identified as Aboriginal or Torres Strait Islander. Respondents' postcodes were used to assess the socio-economic status of respondents and also the geographic areas that respondents came from. The index for relative socio-economic advantage and disadvantage taken from the Socio-economic Indexes for Areas (SEIFA; ABS, 2006) was used to code each of the postcodes. Higher deciles indicate greater advantage. It must be acknowledged that assignment of socio-economic status to individuals on the basis of their postcode has many limitations. It was, however, the only information available in the survey that could provide insight into socio-economic standing and therefore was used to give a general sense of the socio-economic background of respondents. It is clear from Table 3 that the majority of respondents were from relatively advantaged backgrounds with 70% in the 8<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> decile. Drawing on ABS classifications, postcodes were coded as metropolitan, regional and remote. As Figure 1 shows, the majority (82%) of respondents were located in metropolitan areas.

Table 1. Gender breakdown

Gender	(N = 1506)	%
Female	689	45.8
Male	817	54.2

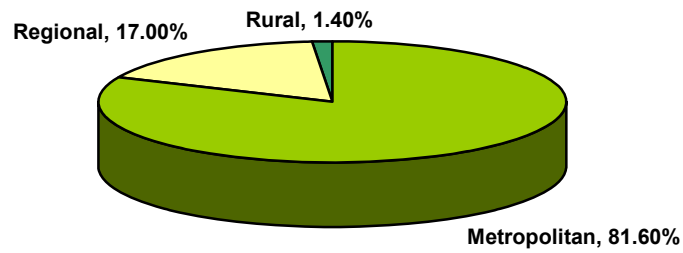


Figure 1. Breakdown of respondents' geographic location: 12 to 17 year old survey

Table 2. Age distribution and year level of respondents

Age	(N = 1508)	%	Yr level	(N = 1532)	%
12	50	3.3	7	26	1.7
13	356	23.6	8	382	24.9
14	335	22.2	9	320	20.9
15	349	23.1	10	384	25.1
16	198	13.1	11	187	12.2
17	220	14.6	12	199	13.0

Table 3. Relative socio-economic advantage-disadvantage of respondents

Decile	N (N = 1405)	%
1	41	2.9
2	71	5.1
3	52	3.7
4	51	3.6
5	37	2.6
6	90	6.4
7	86	6.1
8	172	12.2
9	258	18.4
10	547	38.9

Note. Higher deciles indicate greater advantage

## 18-24 year old survey

In the 18-24 year old survey, a total of 2692 people entered the survey with 2129 completed surveys. As outlined above, responses to survey items will vary due to non-completed surveys or missing data on specific questions. Sixty-four percent of respondents were female and the mean age for the sample was 20.12 (SD = 4.20). As Table 6 shows, respondents were relatively evenly spread across the age group although there were somewhat less 22 and 23 year old respondents. The number of respondents that identified as Aboriginal or Torres Strait Islander corresponded to 1.8% of the sample (n = 39). Consistent with the 12 to 17 year old respondents, coding of respondents' postcodes according to the index of relative socio-economic advantage and disadvantage indicated that respondents were situated in relatively advantaged areas: 67% were in the top three deciles (ie. 8-10). Some caution should be used in the use of this postcode data to indicate socio-economic status, however, as the overwhelming majority of respondents in this age group, particularly in the younger ages, were students, and it is possible that their place of residence (which may not be their family of origin home) is not a good or reliable indicator of their socio-economic status.

Table 5. Gender breakdown

Gender	(N = 2129)	%
Female	1370	64.3
Male	759	35.7

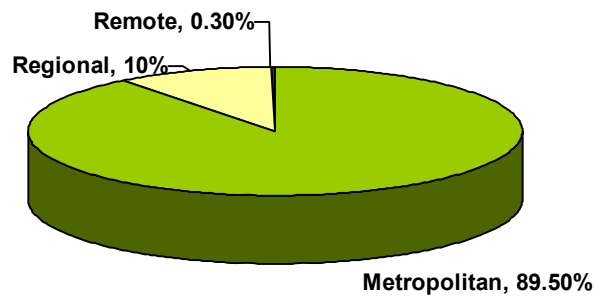


Figure 2. Breakdown of respondents' geographic location: 18 to 24 year old survey

Table 6. Age distribution

Age	(N = 2051)	%
18	318	15.5
19	305	14.9
20	321	15.7
21	298	14.5
22	232	11.3
23	191	9.3
24	386	18.8

Table 7. Main day-to-day activity by age

Main day-to-day activity	Percentage selected by age						
	18	19	20	21	22	23	24
Study	85.0	87.6	87.7	79.5	74.4	64.6	62.4
Work	12.8	10.1	10.1	17.8	22.2	31.8	32.5
Home duties	.3	.3	.3	.3	.9	1.6	1.8
Others	1.9	2.0	1.9	2.3	2.6	2.1	3.4

Table 8. Relative socio-economic advantage-disadvantage of respondents

Decile	N (N = 2096)	%
1	21	1.0
2	25	1.2
3	53	2.5
4	42	2.0
5	62	3.0
6	231	11.0
7	255	12.2
8	451	21.5
9	717	34.2
10	239	11.4

Note. Higher deciles indicate greater advantage

## Summary of results

### *How concerned are young people about the environment?*

Environmental concern was assessed with items asking respondents how concerned they are about climate change and how concerned they are about protecting the environment. As Table 9 and Figure 3 show:

- The majority (57%) of 12 to 17 year old respondents were quite a bit or very concerned about protecting the environment; and, on average, moderately concerned about climate change.
- In the 18-24 year old sample, on average, respondents were quite a bit concerned with protecting the environment and the majority of respondents were quite a bit or very concerned with climate change (55.5%) and protecting the environment (72.3%).

Table 9. Level of concern for climate change and environmental protection

Questions	Age group	N	1 Not at all %	2 A little %	3 Moderately %	4 Quite a bit %	5 Very %	Mean
How concerned are you about climate change?	12-17	1618	7.5	16.4	30.2	27.7	18.2	3.33
	18-24	2224	3.8	12.4	28.3	31.2	24.3	3.60
How concerned are you about protecting the environment?	12-17	1640	5.1	12.0	25.5	28.0	29.4	3.65
	18-24	2263	1.4	6.3	19.6	32.5	39.8	4.04

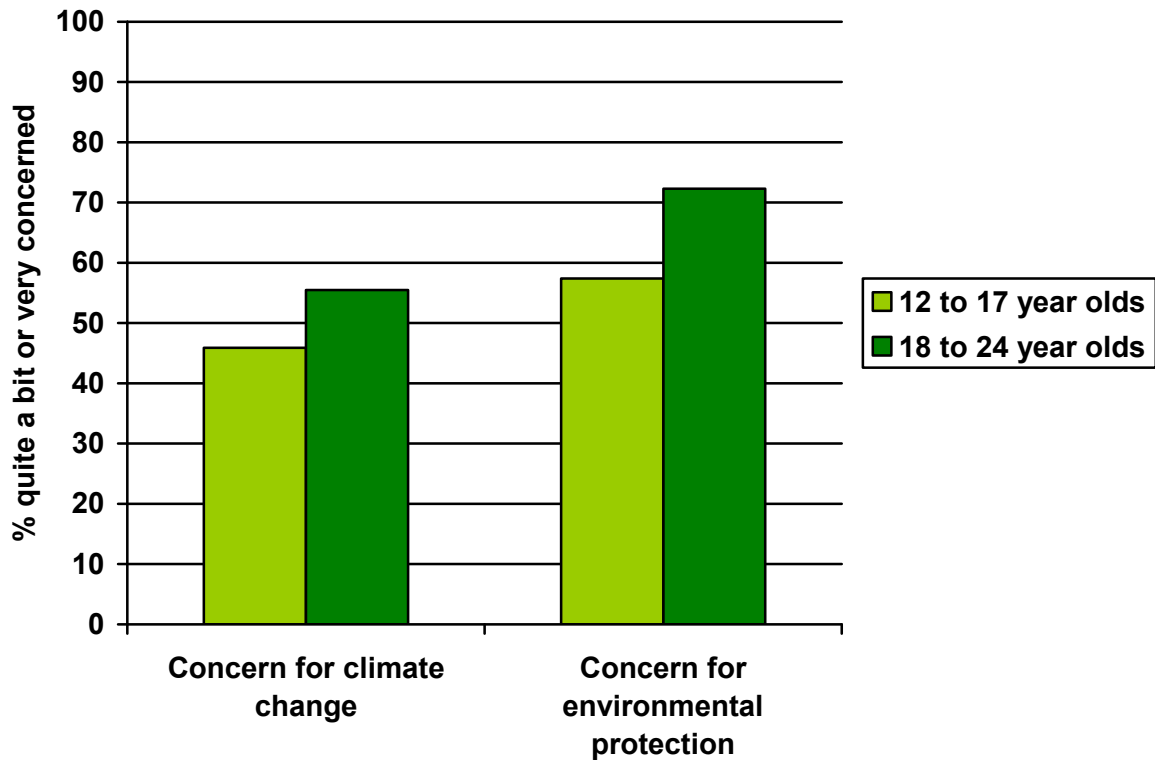


Figure 3. Percentage of respondents quite a bit or very concerned about climate change and environmental protection

*How does environmental concern compare to concern for other social issues?*

Figures 4 and 5 (next page), also indicate that relative to other social issues, environmental protection is the second most concerning social issue for the 12 to 17 and 18 to 24 year olds. Overall, average levels of concern are at least moderate for all social issues (with the exception of traffic congestion for 12 to 17 year old respondents).

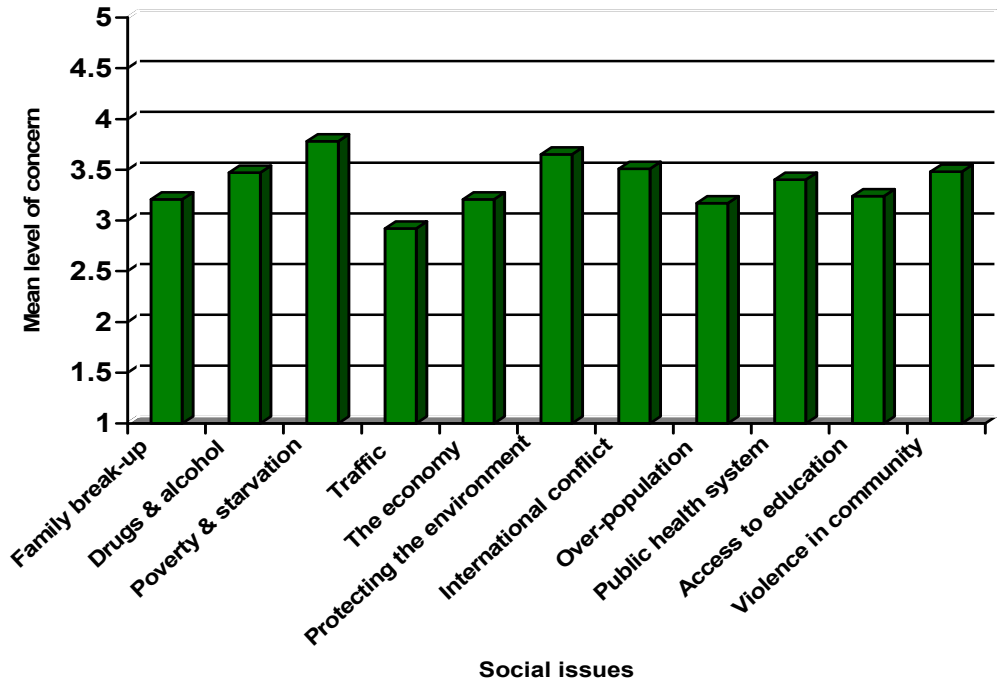


Figure 4. 12 to 17 year old survey: Mean concern for a range of social issues

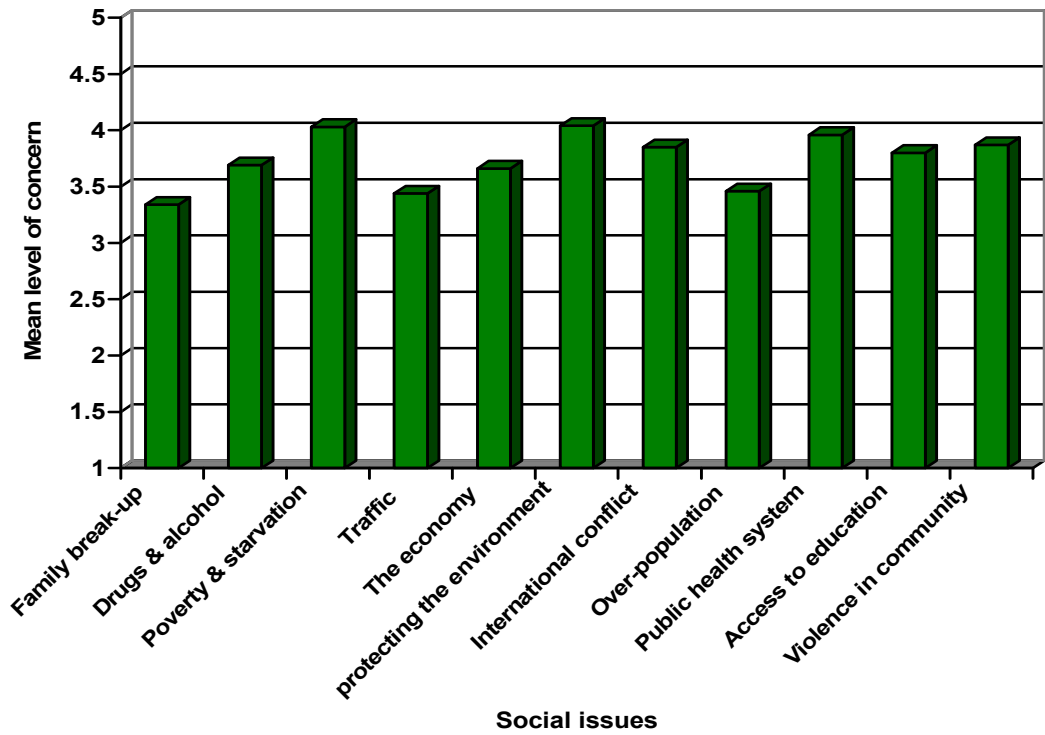


Figure 5. 18 to 24 year old survey: Mean concern for a range of social issues

## *What do young people think are the most important environmental issues?*

From the list of environmental issues displayed in Table 10, respondents selected the three most important issues for Queensland and Australia and then ranked them in order of importance. For both age cohorts, water availability and climate change emerged as the two most important issues. For the 12 to 17 year old respondents, land clearing, extinction of animal and plant species, and destruction of the ozone layer were the next most nominated issues. In terms of ranking, destruction of the ozone layer was third most important issue for this age group. For the 18 to 24 year old respondents, the third most important issue was extinction of animal and plant species.

Table 10. Nominations of the most important environmental issues facing Queensland and Australia

<b>Issue</b>	<b>% 12-17</b>	<b>% 18-24</b>
Availability of water	<b>38.2</b>	<b>49.1</b>
Climate change	<b>35.5</b>	<b>43.4</b>
Land clearing	<b>28.5</b>	<b>37.7</b>
Extinction of animal and plant species	28.2	30.2
Destruction of the ozone layer	28.0	21.8
Air pollution	19.4	19.0
Toxic chemicals in the environment	15.8	16.3
Water pollution	13.7	14.8
Over population	13.4	14.2
Crowded cities and suburbs	9.3	11.1
Littering	7.2	5.7
Household rubbish	4.1	8.1

Table 11. Ranking of the most important environmental issues facing Queensland and Australia

Environmental issue	12-17			18-24		
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Availability of water	24.7	15.8	12.5	31.2	19.1	9.9
Climate change	24.4	15.7	9.9	24.7	14.9	8.8
Destruction of the ozone layer	16.6	13.1	9.9	6.2	7.9	8.1
Extinction of animal and plant species	10.8	14.0	15.0	9.5	11.7	15.8
Land clearing	8.5	16.1	15.3	8.1	14.7	14.7
Over population	6.1	5.0	7.8	6.0	4.7	6.7
Water pollution	5.4	7.6	6.8	3.5	7.2	6.9
Air pollution	5.2	9.7	12.0	4.7	7.7	10.4
Toxic chemicals in the environment	4.1	8.2	9.3	3.7	6.9	6.0
Crowded cities and suburbs	2.9	4.0	5.7	4.2	4.7	8.4
Household rubbish	1.4	1.1	3.1	2.0	3.3	4.3
Littering	1.3	2.6	5.9	1.3	3.0	3.5

### *What are young people currently doing to protect the environment?*

Table 12 shows that the pro-environmental actions that respondents most often engage in are:

- recycling
- saving energy in their home
- using public transport
- conserving water.

For the 12 to 17 year old respondents, the most commonly reported pro-environmental action is recycling, with a majority of respondents (55%) often or always engaging in this behaviour. For the 18 to 24 year old respondents, a majority reported often or always recycling (75%), saving energy (69%), and conserving water (51%). In contrast, writing a letter or signing a petition to protect the environment, planting trees and eating less meat are the actions that respondents reported

engaging in least. It was also evident that engagement in collective action (i.e., signing petitions, writing letters) was higher in the older age group with 39% of respondents sometimes, often or always engaging in this type of action, compared to 23% in the younger age group.

Table 12. Pro-environmental actions by age

How often do you do any of the following to help protect the environment?	Age group	N	1	2	3	4	5	Mean	
			Never	Hardly ever	Sometimes	Often	Always		
		%		%		%			
Save energy in my home	12-17	1557	6.4	10.4	35.5	32.8	14.8	3.39	
	18-24	2189	.8	4.8	25.9	45.3	23.2	3.85	
Plant trees	12-17	1558	33.6	34.0	20.9	8.0	3.7	2.14	
	18-24	2186	36.2	34.5	19.7	7.3	2.3	2.05	
Eat less meat	12-17	1558	34.8	29.2	20.9	8.8	6.3	2.23	
	18-24	2183	21.9	25.9	26.6	15.0	10.6	2.66	
Recycle	12-17	1556	6.6	10.7	27.4	31.4	23.8	3.55	
	18-24	2184	1.3	4.9	19.2	41.8	32.9	4.00	
Conserve water	12-17	1559	8.5	15.9	36.7	25.7	13.3	3.19	
	18-24	2184	1.8	9.6	37.2	33.8	16.9	3.55	
Use public transport	12-17	1556	12.1	16.4	22.9	30.7	18.0	3.26	
	18-24	2188	10.9	19.6	22.6	22.6	24.3	3.30	
Write a letter or sign a petition that is about protecting the environment	12-17	1559	56.3	21.1	14.1	5.3	3.1	1.78	
	18-24	2189	35.8	25.5	24.2	10.0	4.6	2.22	
Buy things that have less throw away packaging	12-17	1557	19.1	28.2	36.7	12.5	3.5	2.53	
	18-24	2182	6.6	23.7	41.7	22.6	5.5	2.97	

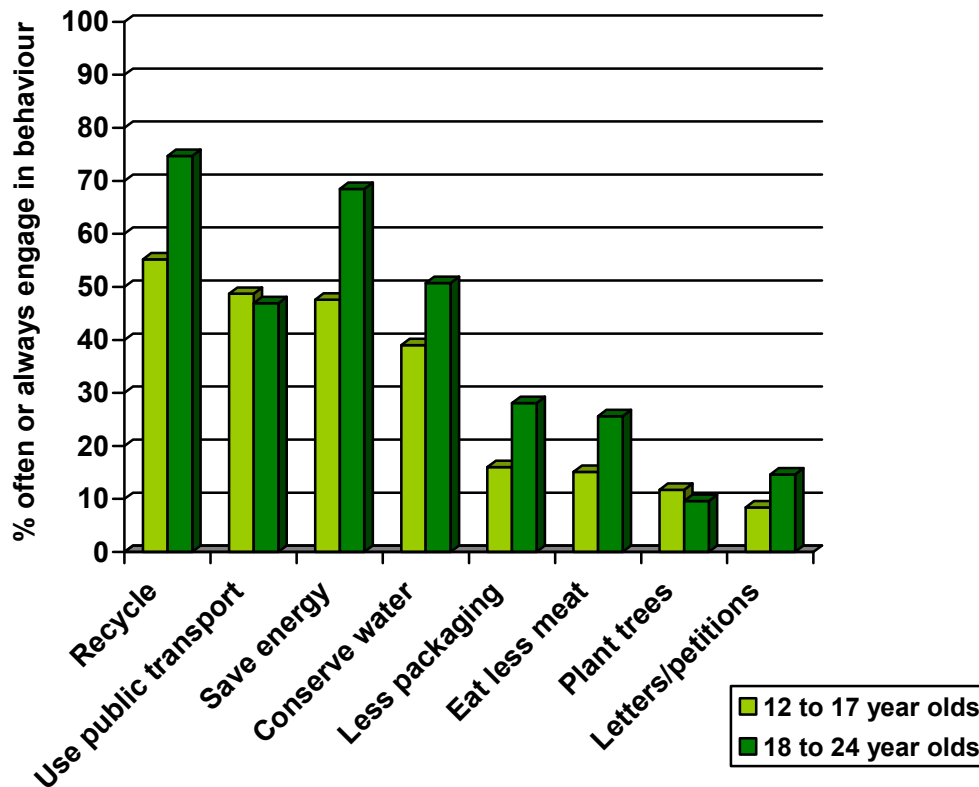


Figure 6. Percentage of respondents who often or always engage in pro-environmental behaviours

### *What are young people currently doing that may harm the environment?*

In general, the 12 to 17 year old respondents reported sometimes engaging in actions that may harm the environment. The majority (69%) report never or hardly ever littering, but for all other behaviours, a minority of respondents report never or hardly ever engaging in these environmentally harmful actions. A similar pattern emerged for the 18 to 24 year old respondents; however, the proportion of respondents who never or hardly ever engage in the environmentally harmful actions is somewhat higher.

Table 13. Environmentally harmful actions by age

How often do you do any of the following?	Age group	N	1	2	3	4	5	Mean	
			Never	Hardly ever	Sometimes	Often	Always		
			%	%	%	%	%		
Throw things away rather than recycling them	12-17	1591	12.8	28.3	31.2	17.2	10.4	2.84	
	18-24	2212	10.2	38.6	35.4	12.2	3.6	2.60	
Use too much paper	12-17	1589	10.2	28.9	37.6	17.2	6.0	2.80	
	18-24	2209	7.5	30.8	40.6	18.2	2.9	2.78	
Litter	12-17	1587	30.6	38.7	21.6	5.0	4.1	2.13	
	18-24	2211	56.6	32.6	8.9	1.4	.5	1.57	
Use more water than I should	12-17	1586	8.4	22.5	38.1	21.7	9.3	3.01	
	18-24	2211	6.3	26.7	45.8	18.2	3.0	2.85	
Use more power than I need	12-17	1590	6.7	21.0	40.5	23.8	8.0	3.05	
	18-24	2212	5.4	25.3	47.1	19.7	2.5	2.89	
Buy things I don't need	12-17	1584	9.8	20.2	34.5	23.7	11.7	3.07	
	18-24	2211	5.6	23	42.9	23.9	4.7	2.99	

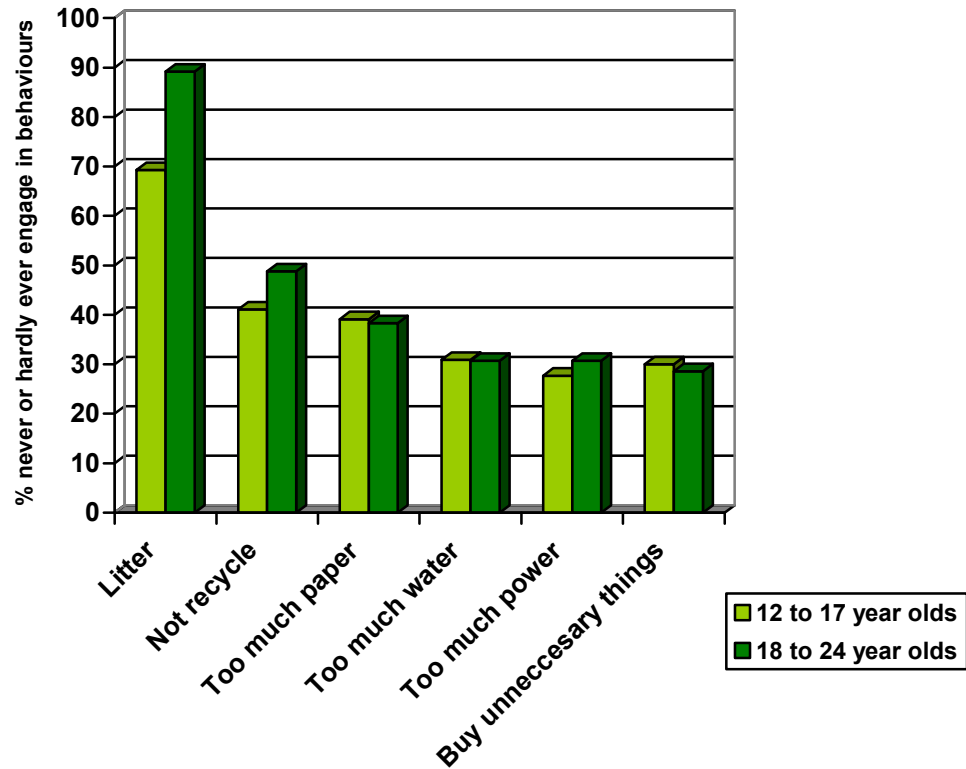


Figure 7. Percentage of respondents who never or hardly ever engage in behaviours that may harm the environment

### *What are young people willing to do to protect the environment?*

Respondents were also asked how likely they are to engage in a range of pro-environmental actions. On average, recycling was the action they reported being most likely to engage in, with a majority (71% of 12 to 17 year olds and 90% of 18 to 24 year olds) reporting that it is likely or very likely they will recycle things rather than throw them away.

In contrast, the majority of 12 to 17 year old respondents (58%) indicated that it was unlikely or very unlikely that they would eat fewer meals with meat in them. On average, 12 to 17 year old respondents did not report that it was likely that they would engage in the other actions; however, a majority of 18 to 24 year old respondents indicated that it was likely or very likely that they would buy less non-essential stuff (eg. plastic gadgets, lollies) (61%) and that they would buy organic local food (53%).

Table 14. Willingness to engage in pro-environmental actions

How likely are you to do the following things to help protect the environment?	Age group	N	1	2	3	4	5	Mean
			Very unlikely	Unlikely	Neither likely or unlikely	Likely	Very likely	
			%	%	%	%	%	
Buy fewer new things	12-17	1523	18.1	24.4	30.1	21.2	6.3	2.73
	18-24	2165	4.7	20.5	30.7	33.1	10.9	3.25
Eat fewer meals with meat in them	12-17	1522	33.8	23.7	21.5	12.5	8.4	2.38
	18-24	2164	19.5	23.7	20.1	22.0	14.6	2.89
Buy organic local food	12-17	1524	13.6	17.5	26.9	28.3	13.7	3.11
	18-24	2168	6.7	17.4	22.9	34.5	18.5	3.41
Recycle things rather than throw them away	12-17	1522	6.4	6.8	16.1	39.2	31.5	3.83
	18-24	2169	0.6	1.7	7.3	40.0	50.4	4.38
Buy less non-essential stuff	12-17	1522	13.0	20.9	29.0	26.4	10.7	3.01
	18-24	2161	2.7	10.6	25.4	45.2	16.1	3.61

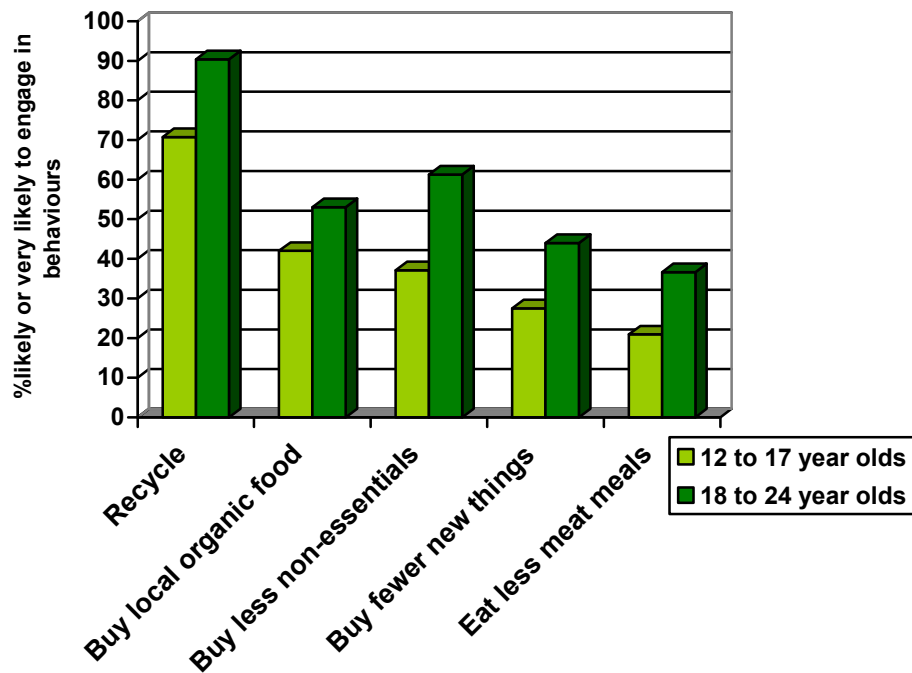


Figure 8. Percentage of respondents likely or very likely to engage in pro-environmental behaviours

*How committed are young people to acting in pro-environmental ways?*

When asked how committed they are to acting in an environmentally friendly way, the majority of 12 to 17 year old respondents (66%) and 18 to 24 year old respondents (83%) were moderately to very committed; although in both cohorts, less than 10% of respondents were very committed.

Table 15. Commitment to acting in an environmentally friendly way

Age (N)	1	2	3	4	5	Mean
	Not at all committed %	A little committed %	Moderately committed %	Quite a bit committed %	Very committed %	
12- 17	8.4	25.6	39.8	19.8	6.4	2.90
18 – 24	1.5	15.5	44.1	29.1	9.7	3.30

*What makes it easier for young people to engage in actions that protect the environment?*

Respondents were asked how much each of the factors listed in Table 16 below would make it easier for them to protect the environment. For both age cohorts, the majority of respondents agreed or strongly agreed that these factors would make it easier for them to protect the environment. The exception is belonging to an environmental group—this factor had the lowest mean for both age cohorts and less than 50% of respondents agreed that it would facilitate pro-environmental actions.

For the 12 to 17 year old age group, the greatest endorsement was for the factors:

- believing you can make a difference
- being part of a family that does things to protect the environment.

For the 18 to 24 year old respondents, the highest agreement was for the factors:

- having more information about environmentally friendly products and practices
- believing you can make a difference
- being part of a family that do things to protect the environment.

Table 16. Means and frequencies for items assessing factors that may facilitate environmentally protective behaviour

How much do these things make it easier for you to protect the environment?	Age group	N	1	2	3	4	5	Mean
			Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	
			%	%	%	%	%	
Friends who protect the environment	12-17	1551	6.2	7.6	27.8	44.2	14.2	3.53
	18-24	2182	1.1	3.4	19.6	56.0	19.9	3.90
Belonging to an environmental group	12-17	1552	6.7	10.7	33.2	37.9	11.5	3.37
	18-24	2187	3.4	10.9	36.9	37.2	11.6	3.43
Believing you can make a difference	12-17	1553	5.0	6.5	22.0	45.3	21.2	3.71
	18-24	2179	.9	1.8	11.6	54.7	31.0	4.13
Laws that require environmental protection	12-17	1550	5.9	8.3	22.5	39.2	24.2	3.67
	18-24	2182	1.7	4.3	13.5	46.6	33.8	4.06
More information about environmentally friendly products and practices	12-17	1549	5.0	6.6	25.8	43.3	19.4	3.65
	18-24	2183	.7	2.2	10.6	55.2	31.3	4.14
Financial rewards for environmental protection	12-17	1552	7.2	10.8	24.7	30.6	26.7	3.59
	18-24	2186	3.3	9.1	23.0	38.5	26.1	3.75
Being part of a family who protect the environment	12-17	1554	5.3	5.7	23.0	45.7	20.3	3.70
	18-24	2185	1.0	2.6	11.3	56.8	28.4	4.09

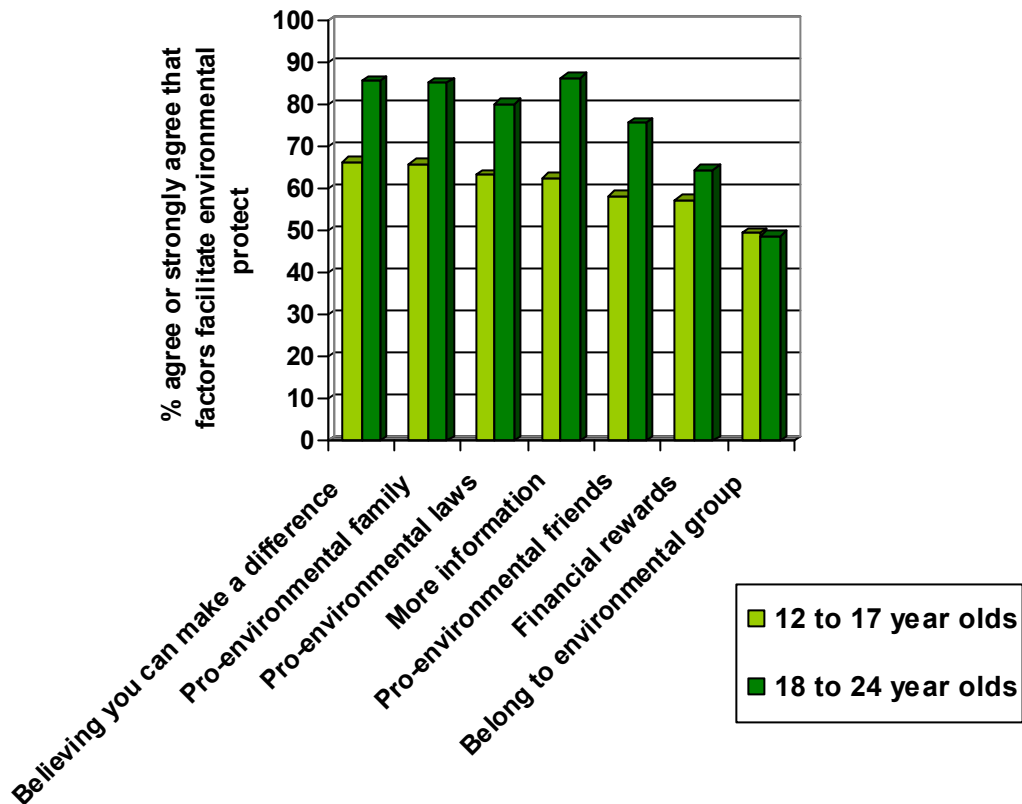


Figure 9. Percentage of respondents who agree or strongly agree that the range of factors make it easier to protect the environment

### *Why do young people sometimes do things that harm the environment?*

Respondents nominated from a list the three most common reasons that they sometimes do things that are bad for the environment. Across both age cohorts, lack of alternatives, time constraints, financial considerations and laziness were mentioned by approximately one-third of the sample. The most commonly mentioned reason for the younger age group was laziness and for the older age group, lack of alternatives, with over 50% of latter respondents citing this reason. For the younger age group, approximately one-third of respondents also nominated lack of belief that their actions will make a difference, and not understanding what is harmful and what is not.

Table 17. Reasons why young people sometimes do things that harm the environment

Reason	% 12-17	% 18-24
I'm too lazy	<b>43.0</b>	33.0
Sometimes I do things that are bad for the environment but I feel there is no alternative	<b>37.0</b>	<b>51.5</b>
I don't have time	<b>35.6</b>	<b>42.3</b>
I don't think my actions will make much difference	34.3	20.8
I don't understand what is harmful and what is not	33.6	26.0
I'm more concerned with saving money	31.1	<b>47.8</b>
I don't care	17.9	4.1
I don't believe everything that people say about damage to the environment	15.8	10.4
I don't want to do things that are different from what my friends are doing	9.5	3.7

### *How much do young people know about environmental issues?*

Environmental knowledge was assessed in two ways: self-reported and objective. Objective environmental knowledge was assessed by asking respondents to indicate whether a range of statements about environmentally-related topics were true or false. Overall, in both cohorts, levels of objective knowledge were relatively high. The lowest levels of knowledge was about whether there is a link between the hole in the ozone layer and climate change and whether the beginning of the Murray-Darling Basin is located in Queensland. Less than 50% of respondents in both cohorts correctly identified that climate change is not caused by the hole in the ozone layer.

Table 18. Frequency of correct answers to environmental knowledge questions

12-17	18-24	Question
Correct answer	Correct answer	
92.8%	97.6%	A compost system at home is a way of recycling some food scraps
91.9%	97.1%	Climate change may cause major decreases in the number of plant and animal species
87.2%	95.3%	How much each person consume (ie. buys) affects society and nature
71.5%	72.2%	Queensland's electricity production causes about half of the State's carbon dioxide emissions.
65.1%	77.6%	Climate change is likely to make more rain fall in the south and west areas of Queensland
64.2%	77.7%	There are more native plant and animal species living in Queensland than any other State in Australia
58.4%	63.8%	The beginning of the Murray-Darling Basin is located in Queensland
42.4%	46.9%	Climate change is caused by the hole in the ozone layer around the earth
5.59 (70%)	5.59 (70%)	Mean correct answers

In terms of self-reported knowledge, on average, the 12 to 17 year old respondents reported knowing most about the effects of climate change, the causes of climate change, and how climate change can be minimised.

On average, the lowest levels of reported knowledge were about carbon capture and storage, wind power and geothermal energy.

These findings may reflect the recent media focus on climate change. Hence, participants' responses reflect recognition, without any real detail about specific issues like alternative energy sources. It must also be acknowledged that the higher levels of reported knowledge about climate change may be an inadvertent outcome of clarifying the terms, "global warming" and "climate change", at the beginning of the survey. It is possible that the presentation of the clarifying information primed respondents such that they felt they knew more about this issue.

Table 19. Self-reported environmental knowledge

How much do you think you know about the following issues?	Age group	N	1	2	3	4	5	Mean
			No knowledge	A little	Moderate	Quite a bit	A lot	
			%	%	%	%	%	
The cause of climate change	12-17	1688	3.9	11.7	27.8	34.5	22.0	3.59
	18-24	2329	1.0	11.9	32.6	38.3	16.2	3.57
Where household water comes from	12-17	1688	7.5	20.0	27.8	25.2	19.5	3.29
	18-24	2330	5.7	22.6	31.1	25.4	15.2	3.22
What happens to waste (rubbish, recycling) in Queensland	12-17	1687	9.1	28.2	31.2	22.3	9.1	2.94
	18-24	2330	11.5	33.4	31.4	17.9	5.9	2.73
Carbon capture & storage	12-17	1674	35.1	33.8	18.9	7.4	4.8	2.13
	18-24	2325	29.9	33.4	21.8	10.8	4.1	2.26
How water is made safe to drink	12-17	1683	9.2	26.1	32.6	20.4	11.8	2.99
	18-24	2327	9.2	30.6	30.0	20.8	9.5	2.91
The effects of climate change	12-17	1682	3.2	13.5	26.4	33.7	23.2	3.60
	18-24	2330	1.2	12.7	31.4	38.4	16.4	3.56
Wind power	12-17	1686	10.3	26.7	32.8	20.6	9.5	2.21
	18-24	2329	8.9	31.8	32.9	19.3	7.1	2.84
Geothermal energy	12-17	1681	35.0	30.2	19.0	9.9	5.8	2.21
	18-24	2329	37.4	29.2	18.3	11.6	3.6	2.15
How climate change can be minimised	12-17	1684	7.0	15.1	27.2	30.7	20.0	3.41
	18-24	2329	1.9	15.2	36.9	33.7	12.1	3.39

*Who should be responsible for protecting the environment?*

Respondents were asked how responsible government, companies, community and they themselves should be for protecting the environment. For the 12 to 17 year old respondents, the Australian and Queensland governments were rated as most responsible, with the majority judging them to be very responsible.

As Table 18 shows, the means show a gradual drop in mean responsibility ratings from government to companies to the community and self. For this age group of respondents, approximately one-third thought that business, community and they themselves should be very responsible for protecting the environment.

Table 20. Responsibility for environmental protection

When protecting the environment how responsible should each of the following be?	Age group	N	1	2	3	4	5	Mean
			Not at all responsible				Very responsible	
			%	%	%	%	%	
Australian government	12-17	1603	3.0	2.9	8.7	17.6	67.8	4.44
	18-24	2227	.4	.8	4.3	13.8	80.8	4.75
Queensland government	12-17	1599	2.7	3.6	10.6	26.8	56.3	4.30
	18-24	2231	.4	.8	4.3	19.5	75.0	4.69
Local government	12-17	1602	3.2	5.4	17.9	27.7	45.8	4.07
	18-24	2224	.4	1.4	7.0	24.1	67.0	4.57
Companies & business	12-17	1600	4.5	8.9	23.6	27.9	35.2	3.80
	18-24	2232	.7	1.7	8.0	25.2	64.4	4.52
Community	12-17	1609	4.5	8.3	24.2	29.4	33.6	3.79
	18-24	2224	.5	2.7	12.5	31.3	53.0	4.34
Me	12-17	1589	7.6	10.4	24.1	24.3	33.6	3.66
	18-24	2226	.8	2.7	12.4	28.6	55.6	4.35

The 18 to 24 year old respondents showed a somewhat different pattern of responses. The Australian and Queensland governments were again rated as most responsible for protecting the environment, as demonstrated by the higher means and the very high proportion of respondents who rated them as very responsible. The drop in responsibility ratings was only slight though for this cohort, and the majority of respondents rated business, community and the self as very responsible for protecting the environment.

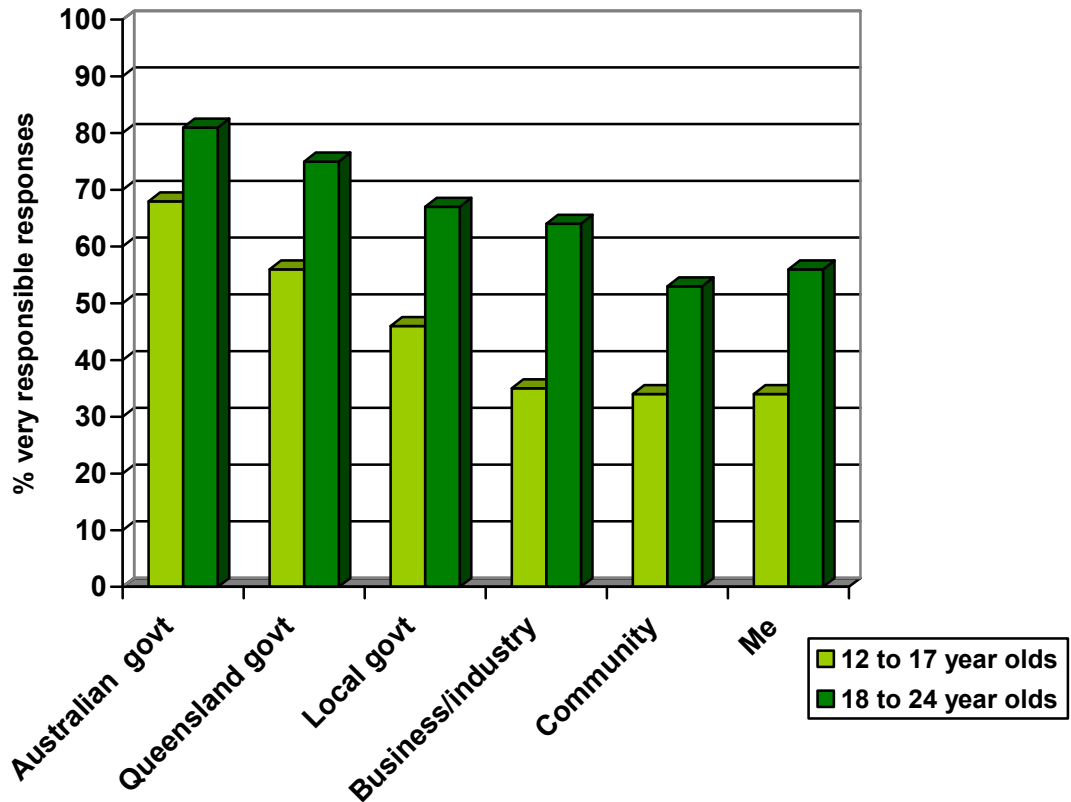


Figure 10. Percentage of respondents who indicated that each target should be very responsible for protecting the environment

### *What should government be doing to protect the environment?*

Respondents were asked to nominate the three most important actions government could do to help the environment. For both age cohorts, increasing the supply of renewable energy and creating laws that prevent actions that damage the environment were the most highly nominated actions.

For the 12 to 17 year old respondents, signing agreements with other countries to help stop climate change was the third most important action, and for the 18 to 24 year old respondents, giving more funding for actions that help to protect the environment was the third most important action.

Table 21. Nominated actions that governments can do to help protect the environment.

Action	% 12-17	% 18-24
Increase the supply of renewable energy (wind, solar, etc)	<b>71.7</b>	<b>69.6</b>
Create laws that prevent actions that damage the environment	<b>58.0</b>	<b>53.2</b>
Sign agreements with other countries to help stop climate change	<b>50.0</b>	28.8
Give more funding for actions that help protect the environment	44.7	<b>39.8</b>
Buy more land for conservation purposes	23.9	16.9
Lead by example in their activities	23.7	27.6
Provide better education campaigns about the environment	23.3	29.2

*Do young people perceive that their actions can make a difference to the environment?*

Respondents were asked questions to assess the extent to which their actions can make a difference to the environment; in other words, their sense of individual efficacy in relation to environmental protection. In both cohorts, there was a relatively high sense of individual efficacy. For example, 70% of the 12 to 17 year old respondents and 86% of the 18 to 24 year old respondents agreed that their individual actions can make a difference to the environment.

Table 22. Individual efficacy in relation to environmental protection

Question	Age group	N	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	Mean
			%	%	%	%	%	
My individual actions can make a difference to the environment	12-17	1564	5.6	5.0	19.2	48.6	21.6	3.76
	18-24	2192	1.3	3.2	9.4	57.3	28.8	4.09
I can influence decisions now that will help protect the environment in the future.	12-17	1559	5.1	8.7	27.1	44.1	15.0	3.55
	18-24	2182	1.8	6.1	17.8	53.7	20.6	3.85
I am only one person, I can't make a difference to the environment	12-17	1567	28.2	36.6	20.5	9.6	5.0	2.27
	18-24	2190	29.5	44.6	16.0	8.0	1.9	2.08

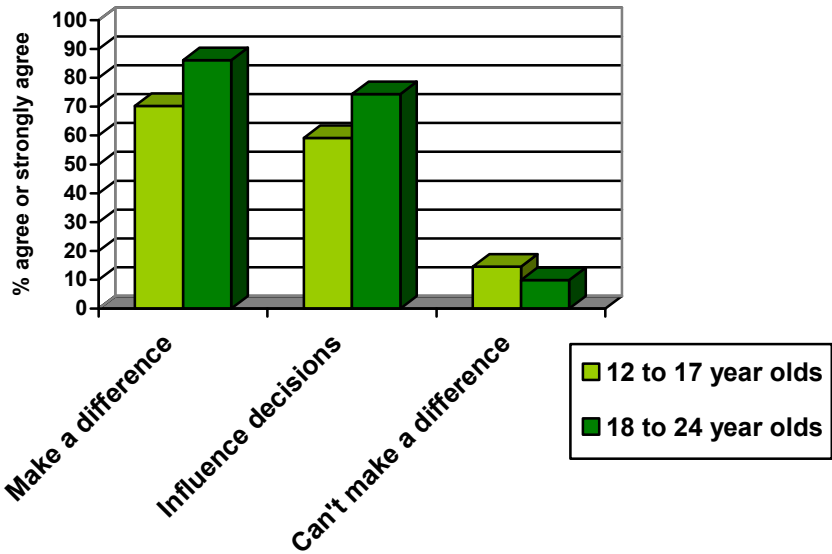


Figure 11. Percentage of respondents who agree or strongly agree that they can make a difference to the environment

*Which sources of environmental information do young people think are most reliable?*

Respondents were asked to nominate from a list, the three most reliable sources of information about environmental issues. Not surprisingly, in the 12 to 17 year old cohort, school and teachers was the most nominated reliable source, with approximately one-third of respondents also nominating the internet, and national and international environmental groups.

For the 18 to 24 year old respondents, national and international environmental groups were the most nominated reliable source, followed by the internet and newspapers.

For both cohorts, the least nominated sources were family, local government, friends and industry leaders.

Table 23. The most reliable sources of information about environmental issues

Information source	% 12-17	% 18-24
School and teachers	<b>40.7</b>	18.0
Internet	<b>32.6</b>	<b>38.5</b>
National and international environmental groups	<b>30.5</b>	<b>39.5</b>
Australian government	28.8	26.8
Local environmental groups	25.8	16.8
Newspapers	24.1	<b>30.5</b>
Scientists	23.3	28.6
State government	22.4	22.3
Family	21.3	10.8
Local government	17.8	11.4
Friends	16.4	9.8
Industry leaders (eg. Chief Executive Officers)	6.8	3.7

## What are young people's preferred sources of information about environmental issues?

When asked to indicate their preferred source of information about the environment, the pattern was similar across the two age cohorts, with television and newspapers the top two preferred sources. For the 12 to 17 year old respondents, movies/documentaries and radio were the next most cited sources. For the 18 to 24 year old respondents, University/TAFE, movies/documentaries, and environmental organisation websites were the next most preferred sites.

Table 24. Preferred sources of information about the environment

Information source	% 12-17	% 18-24
Television	<b>70.5</b>	<b>52.1</b>
Newspapers	<b>41.4</b>	<b>43.1</b>
Movies/documentaries	<b>37.3</b>	36.7
Radio	31.0	25.2
Magazines	29.4	25.1
Family	28.9	16.0
Friends	26.9	18.8
Environmental organisations websites (eg. Greenpeace)	26.4	30.3
You Tube	22.1	9.4
Government websites	20.6	26.1
Brochures	19.0	20.0
Environment newsletters (eg. Earth Hour newsletter)	15.2	20.7
University/TAFE	12.3	<b>38.8</b>
Blogs	9.8	7.0

## Scale construction

Principle components analysis and reliability analyses were conducted to construct scales for further analysis. Table 25 lists each scale and the questions that are

included in the scale. The Cronbach's alpha, which represents the reliability of each scale, is listed in the right hand column. Higher alphas represent higher reliability. All scales had acceptable reliability.

Table 25. Scale names, scale items and Cronbach's alphas for each scale

Scale name	Items	Cronbach's alpha
<b><i>Climate change knowledge</i></b>	Causes of climate change Effects of climate change How to minimise climate change	.83 (12-17) .86 (18-24)
<b><i>Environmental knowledge</i></b>	Where household water comes from What happens to waste Carbon capture & storage How water is made safe Wind power Geothermal energy	.84 (12-17) .86 (18-24)
<b><i>Individual efficacy</i></b>	My individual actions can make a difference to the environment I can influence decisions now, that will help protect the environment	.76 (12-17) .70 (18-24)
<b><i>Anti-environmental behaviour</i></b>	Throw things away rather than recycle Use too much paper Litter Use more water than I should Use more power than I need Buy things I don't need	.78 (12-17) .70 (18-24)
<b><i>Environmental behaviour</i></b>	Save energy in the home Recycle Conserve water Use public transport Plant trees Eat less meat Write a letter/sign a petition Buy things with less throw away packaging	.76 (12-17) .71 (18-24)
<b><i>Pro-environmental intentions</i></b>	Buy fewer new things Eat fewer meals with meat in them Buy organic local food Recycle rather than throw away Buy less non-essential stuff	.79 (12-17) .74 (18-24)
<b><i>Objective environmental knowledge index</i></b>	Ranging from 0 to 8, respondents got one point for each correct answer	N/A

## Socio-demographic comparisons

Analyses were conducted to assess whether there are any socio-demographic differences in responses to the survey items.

### Age

For both surveys, correlational analyses were conducted between respondents' age and the scales measured on Likert scales (ie. questions with responses on 1 to 5 point scales). Across both the 12 to 17 and the 18 to 24 year old surveys there were no statistically significant relationships between age and the survey scales.

### Gender

A series of independent groups t-tests were conducted comparing male and female responses to the survey questions that were measured on Likert scales. As Table 24 shows, for the 12 to 17 year old respondents, on almost all measures, females display significantly higher mean responses than males. An exception is that females report significantly less environmental knowledge than males, although it should also be noted that males and females do not differ on the measure of objective knowledge. There were no significant differences between males and females on climate change knowledge or objective environmental knowledge, and no difference in the extent to which males and females think the Australian and Queensland government should be responsible for protecting the environment. In addition, male and females did not differ in their level of belief about financial rewards for environmental protection helping to make pro-environmental behaviour easier.

Table 26. Gender comparisons for each of the survey scales: 12 to 17 year old survey

Measure	Male	Female	t value
<b>Environmental concern</b>			
Environmental concern	3.46	3.89	7.20***
Climate change concern	3.19	3.48	4.73***
<b>Environmental actions</b>			
Environmental behaviour	2.69	2.83	3.93***
Environmentally harmful behaviour	2.76	2.91	3.83***
Pro-environmental intentions	2.89	3.16	6.05***
Commitment to being pro-environmental	2.78	3.05	5.16***
<b>Environmental knowledge</b>			
Climate change knowledge	3.57	3.51	-1.21
Environmental knowledge	2.90	2.53	-8.93***
Objective environmental knowledge	5.64	5.47	-1.12
<b>Responsibility for environmental protection</b>			
Australian government	4.44	4.49	.99
Queensland government	4.29	4.36	1.47
Local government	4.01	4.19	3.22***
Companies and businesses	3.74	3.93	3.31***
People working together in the community	3.66	4.00	6.08***
Self	3.45	3.91	7.18***
Individual efficacy	3.53	3.83	6.52***
<b>Facilitators of pro-environmental actions</b>			
Friends who protect the environment	3.39	3.71	6.14***
Belonging to an environmental group	3.23	3.55	6.00***
Believing you can make a difference	3.55	3.93	7.34***
Laws that require environmental protection	3.51	3.90	6.90***
More information about environmentally friendly products and practices	3.53	3.83	5.80***
Financial rewards for environmental protection	3.66	3.53	-2.04
Being part of a family who protect the environment	3.56	3.88	6.16***

Note\*\*\*p<.001

A similar pattern emerged for the 18 to 24 year old respondents. In general, females had significantly higher mean responses than males with the exception of self-reported environmental knowledge, where males reported higher knowledge than females. There were no differences between males and females in terms of their engagement in normative environmental behaviours, anti-environmental behaviours, and objective environmental knowledge. Similar to the younger respondents, male and females did not differ in their level of belief about financial rewards for environmental protection helping to make pro-environmental behaviour easier.

Table 27. Gender comparisons for each of the survey scales: 18 to 24 year old survey

Measure	Male	Female	t value
<b>Environmental concern</b>			
Environmental concern	3.87	4.15	6.26***
Climate change concern	3.47	3.68	4.15***
<b>Environmental actions</b>			
Environmental behaviour	2.97	3.12	5.60***
Anti-environmental behaviour	2.60	2.61	4.83
Pro-environmental intentions	3.33	3.60	8.22***
Commitment to being pro-environmental	3.19	3.35	3.92***
<b>Environmental knowledge</b>			
Climate change knowledge	3.59	3.47	-3.26**
Environmental knowledge	2.94	2.52	-11.13***
Objective environmental knowledge	6.29	6.24	-.45
<b>Responsibility for environmental protection</b>			
Australian government	4.66	4.80	5.11***
Queensland government	4.58	4.74	5.77***
Local government	4.46	4.63	5.57***
Companies and businesses	4.44	3.57	3.60***
People working together in the community	4.17	4.44	7.22***
Self	4.22	4.44	5.93***
Individual efficacy	3.53	3.83	6.52***
<b>Facilitators of pro-environmental actions</b>			
Friends who protect the environment	3.83	3.93	2.85**
Belonging to an environmental group	3.34	3.47	3.09**
Believing you can make a difference	4.00	4.20	5.85***
Laws that require environmental protection	3.94	4.13	4.53***
More information about environmentally friendly products and practices	4.00	4.22	6.52***
Financial rewards for environmental protection	3.83	3.71	-2.53

Note\*\* p<.01; \*\*\*p<.001

Gender differences were also explored for the questions measured at the categorical level, that is, those asking respondents to select from a list of responses (eg. importance of environmental issues, etc). For both the 12 to 17 and 18 to 24 year old survey respondents, males and females did not differ in the issues that they selected as the three most important environmental issues facing Australia and Queensland or the most important actions governments could do to protect the environment.

On the question asking respondents about the reasons they sometimes do things that are bad for the environment, 18 to 24 year old respondents did not differ in their responses; however, 12 to 17 year old respondents responded in somewhat different ways depending on their gender. For female respondents of this age group, lack of

alternatives, laziness, and lack of understanding about what is harmful were the three most nominated reasons (in order of nomination). For males of this age group, laziness, lack of time, and not believing that their actions will make a difference were the three most nominated reasons (in order of nomination).

In terms of the reliability of sources of environmental information, males and females were somewhat different in their responses. For 12 to 17 year old respondents, both males and females nominated schools and teachers as the most reliable source. Females nominated the internet and national and international environmental groups as the second and third most reliable sources. For males, the Australian government and the internet were the second and third most cited reliable sources. For the 18 to 24 year old respondents, females nominated national and international environmental groups, the internet and newspapers as the three most reliable sources, whereas males nominated the internet, national and international environmental groups, and scientists as the three most reliable sources of information. Males and females did not differ in their preferred sources of information for either age group: television; newspapers; and movies /documentaries were the three most preferred information sources.

### **Summary of gender differences**

Overall, females reported more pro-environmental attitudes and actions. There were some differences in the most nominated reasons why the 12 to 17 year old male and female respondents sometimes engage in environmentally harmful behaviour and in their nomination of the most reliable sources of information. Overall, however, any gender differences that emerged were relatively small.

### **Socio-economic status**

We used the index for relative socio-economic advantage and disadvantage from the Socio-economic Indexes for Areas (SEIFA; ABS, 2006) as a way of categorising respondents' postcode into a socio-economic status ranking. The index assigns a SEIFA score and a decile ranking to each postcode in Australia. Decile rankings range from 1, the lowest decile indicating relative disadvantage to 10, the highest

decile indicating higher relative advantage. To explore whether socio-economic status impacted on responses, two sets of analyses were conducted. First, Pearson's correlations were conducted between the decile rankings and the survey variables measured by Likert scales. Second, t-tests were conducted comparing those respondents with postcodes one standard deviation below the mean (low SES) to those one standard deviation above the mean (high SES). Third, the low and high SES groups were also compared on the questions that had categorical responses (eg. the most important environmental issues).

### **12 to 17 year old respondents**

For the 12 to 17 year old respondents, the only significant correlations to emerge between the relative advantage and disadvantage index and the survey scales were for environmental knowledge ( $r(1399) = .11, p < .001$ ), climate change knowledge ( $r(1399) = .19, p < .001$ ), environmental behaviour ( $r(1398) = .07, p = .01$ ) and environmentally harmful behaviour ( $r(1397) = -.09, p < .001$ ). These correlations suggest that respondents from higher SES areas reported higher environmental and climate change knowledge, higher levels of environmental behaviour and lower levels of environmentally harmful behaviour. In addition, respondents with higher socio-economic status agreed more that belonging to an environmental group would make protecting the environment easier ( $r(1390) = .07, p = .01$ ). It should be noted that although significant, the correlations are weak.

The t-tests comparing low and high SES respondents revealed some significant differences similar to the correlations reported above. As Table 25 shows, high SES respondents reported significantly higher levels of environmental and climate change knowledge, higher levels of pro-environmental behaviour and lower levels of environmentally harmful behaviour.

Table 28. Socio-economic status comparisons: 12 to 17 year old respondents

Measure	Low SES	High SES	t value
<b>Environmental concern</b>			
Concern for environmental protection	3.56	3.74	-2.36
Climate change concern	3.23	3.43	-2.26
<b>Environmental actions</b>			
Environmental behaviour	2.69	2.83	-2.96**
Environmentally harmful behaviour	2.95	2.78	3.14**
Pro-environmental intentions	2.97	3.04	-1.05
Commitment to being pro-environmental	2.80	2.97	-2.18
<b>Environmental knowledge</b>			
Climate change knowledge	3.19	3.67	-6.89***
Environmental knowledge	2.57	2.80	-3.75***
Objective environmental knowledge	5.63	5.75	-.55
<b>Responsibility for environmental protection</b>			
Australian government	4.41	4.47	-.88
Queensland government	4.31	4.31	-.07
Local government	.03	.03	.18
Companies and businesses	3.74	3.83	-1.08
People working together in the community	.04	.02	1.61
Self	3.67	3.72	-.57
Individual efficacy	3.69	3.69	-.06
<b>Facilitators of pro-environmental actions</b>			
Friends who protect the environment	3.58	3.54	.53
Belonging to an environmental group	3.31	3.45	-1.88
Believing you can make a difference	3.75	3.77	-.21
Laws that require environmental protection	3.71	3.75	-.50
More information about environmentally friendly products and practices	3.64	3.70	-.81
Financial rewards for environmental protection	3.55	3.67	-1.33
Being part of a family who protect the environment	3.68	3.78	-1.39

Note \*\*p<.01; \*\*\*p<.001

A comparison of the low and high SES respondents in terms of the most important environmental issues facing Queensland and Australia showed some difference in their pattern of responding. For the low SES respondents, the three most nominated issues were: availability of water (41% nominated), land clearing (28%), and destruction of the ozone layer (27%). For the high SES respondents, the top three issues were climate change (33%), availability of water (32%), and destruction of the ozone layer (23%). Climate change was the fourth most nominated issue for the low SES respondents (26%).

There were also some differences in the pattern of responses for the question asking about the reasons for doing things that are bad for the environment. For the low SES respondents, the top three reasons were: believing that they have no alternative (42% nominated), laziness (42%), and not understanding what is harmful and what is not (38%). For the high SES respondents, the top three reasons were: laziness (42%), believing they have no alternative (38%), and not believing that their actions will make much difference (38%).

In terms of the most reliable information sources about environmental issues, the most nominated source for low and high SES respondents was school and teachers (43% and 38%, respectively). For the low SES respondents, the next most nominated reliable source was the internet (35%) followed by national and international environmental groups (31%). For the high SES respondents, the second most nominated source was national and international environmental groups (34%) and the third was the Australian government (34%).

There were no other differences between the low and high SES 12 to 17 year old respondents in their pattern of responses to the survey questions.

### **18 to 24 year old respondents**

There were no differences between high and low SES respondents in terms of their responses to the Likert scales or the questions measured categorically. As discussed earlier, this may be because the majority of respondents in this age group are students potentially living away from home and, thus, postcode may not be a good indicator of their socio-economic status.

Table 29. Socio-economic status comparisons: 18 to 24 year old respondents

Measure	Low SES	High SES	t value
<b>Environmental concern</b>			
Concern for environmental protection	3.06	3.13	-.18
Climate change concern	3.60	3.66	-.56
<b>Environmental actions</b>			
Pro-environmental behaviour	3.06	3.13	-1.12
Environmentally harmful behaviour	2.60	2.60	-.04
Pro-environmental intentions	3.42	3.53	-1.43
Commitment to being pro-environmental	3.31	3.35	-.50
<b>Environmental knowledge</b>			
Climate change knowledge	3.50	3.53	-.40
Environmental knowledge	2.66	2.67	-.31
Objective environmental knowledge	6.18	6.25	-.27
<b>Responsibility for environmental protection</b>			
Australian government	4.70	4.73	-.55
Queensland government	4.68	4.69	-.14
Local government	4.59	4.57	.30
Companies and businesses	4.46	4.53	-.84
People working together in the community	4.31	4.29	.20
Self	4.29	4.33	-.58
Individual efficacy	3.99	3.98	.09
<b>Facilitators of pro-environmental actions</b>			
Friends who protect the environment	3.81	3.88	-.97
Belonging to an environmental group	3.36	3.4	-.48
Believing you can make a difference	4.02	4.13	-1.45
Laws that require environmental protection	3.98	4.15	-1.85
More information about environmentally friendly products and practices	4.09	4.12	-.39
Financial rewards for environmental protection	3.65	3.72	-.62
Being part of a family who protect the environment	4.03	4.09	-.78

### Summary of socio-economic status comparisons

Overall, the 12 to 17 year olds respondents from higher SES areas expressed more environmental concern, higher frequency of environmental behaviour and lower frequency of environmentally harmful behaviour and higher levels of environmental knowledge. There were also some minor differences between low and high SES respondents in their nominations of the most important environmental issue, the reasons they most commonly nominated for doing things that harm the environment and their nominations of the most reliable information sources. There were no

differences between high and low SES respondents in the 18 to 24 year old survey. Overall, the socio-economic differences that emerged amongst the 12 to 17 year olds were small. It must be acknowledged that the use of postcode to assign socio-economic status has limitations and therefore the findings that relate to SES must be treated with caution.

### Geographic region comparisons

Respondents' postcodes were coded consistent with ABS classifications to reflect their geographic location as metropolitan, regional, and remote. Due to the small number of respondents from remote areas, the regional and remote categories were combined to form a non-metropolitan category that can be compared to respondents from metropolitan areas. In total, there were 1145 (82%) metropolitan respondents and 257 (18%) non-metropolitan respondents in the 12 to 17 year old survey and 1875 (90%) metropolitan respondents and 214 (10%) non-metropolitan respondents in the 18 to 24 year old survey.

#### **12 to 17 year old survey respondents**

As Table 30 shows, metropolitan and non-metropolitan respondents significantly differed on only two of the measures: metropolitan respondents engage in more environmental behaviour and they report higher environmental knowledge than non-metropolitan respondents.

In terms of the categorical data, non-metropolitan respondents nominated the extinction of plant and animal species as the most important environmental issue facing Queensland and Australia followed by water availability and land clearing. Metropolitan respondents, consistent with the overall pattern of responses rated water availability, climate change and land clearing as the three most important issues. There were no other substantive differences in the pattern of responses between metropolitan and non-metropolitan respondents in this age group.

Table 30. Geographic region comparisons: 12 to 17 year old respondents

Measure	Metropolitan	Non-metropolitan	t value
<b>Environmental concern</b>			
Concern for environmental protection	3.70	3.73	-.33
Climate change concern	3.37	3.26	1.43
<b>Environmental actions</b>			
Pro-environmental behaviour	2.81	2.65	3.62***
Environmentally harmful behaviour	2.81	2.88	-1.57
Pro-environmental intentions	3.05	3.05	-.14
Commitment to being pro-environmental	2.95	2.79	2.37
<b>Environmental knowledge</b>			
Climate change knowledge	3.57	3.45	1.88
Environmental knowledge	2.76	2.60	2.92**
Objective environmental knowledge	5.72	5.57	.82
<b>Responsibility for environmental protection</b>			
Australian government	4.48	4.50	-.35
Queensland government	4.33	4.36	-.47
Local government	4.11	4.21	-1.49
Companies and businesses	3.84	3.89	-.71
People working together in the community	3.83	3.92	-1.32
Self	3.68	3.74	-.61
Individual efficacy	3.69	3.74	-.76
<b>Facilitators of pro-environmental actions</b>			
Friends who protect the environment	3.57	3.63	-.94
Belonging to an environmental group	3.42	3.40	.32
Believing you can make a difference	3.78	3.76	.37
Laws that require environmental protection	3.74	3.71	.39
More information about environmentally friendly products and practices	3.70	3.71	-.24
Financial rewards for environmental protection	3.65	3.56	1.07
Being part of a family who protect the environment	3.76	3.79	-.42

Note\*\*p<.01; \*\*\*p<.001

### 18 to 24 year old survey respondents

As Table 27 shows, there are no significant differences between metropolitan and non-metropolitan respondents on any of the Likert scales or items. The only geographic regional difference to emerge on any of the survey measures was on the preferred sources of environmental information: consistent with the overall pattern, metropolitan respondents' top three preferences were television, newspapers and university/TAFE, whereas, non-metropolitan respondents' preferences were television, newspapers and movies/documentaries with university/TAFE as a fourth option.

Table 31. Geographic region comparisons: 18 to 24 year old respondents

Measure	Metropolitan	Non-metropolitan	t value
<b>Environmental concern</b>			
Concern for environmental protection	4.05	4.09	-.57
Climate change concern	3.61	3.55	.71
<b>Environmental actions</b>			
Pro-environmental behaviour	3.07	3.03	.99
Environmentally harmful behaviour	2.61	2.62	-.21
Pro-environmental intentions	3.51	3.44	1.37
Commitment to being pro-environmental	3.28	3.36	-1.13
<b>Environmental knowledge</b>			
Climate change knowledge	3.52	3.53	-.22
Environmental knowledge	2.67	2.73	-1.10
Objective environmental knowledge	6.22	6.46	-1.44
<b>Responsibility for environmental protection</b>			
Australian government	4.75	4.73	.40
Queensland government	4.68	4.73	-1.51
Local government	4.58	4.58	-.09
Companies and businesses	4.52	4.54	-.39
People working together in the community	4.35	4.34	.10
Self	4.36	4.43	-1.19
Individual efficacy	3.98	3.97	.15
<b>Facilitators of pro-environmental actions</b>			
Friends who protect the environment	3.90	3.87	.51
Belonging to an environmental group	3.43	3.37	.88
Believing you can make a difference	4.14	4.08	.93
Laws that require environmental protection	4.06	4.06	.07
More information about environmentally friendly products and practices	4.14	4.12	.37
Financial rewards for environmental protection	3.76	3.77	-.08
Being part of a family who protect the environment	4.09	4.12	-.47

### Summary of geographic region comparisons

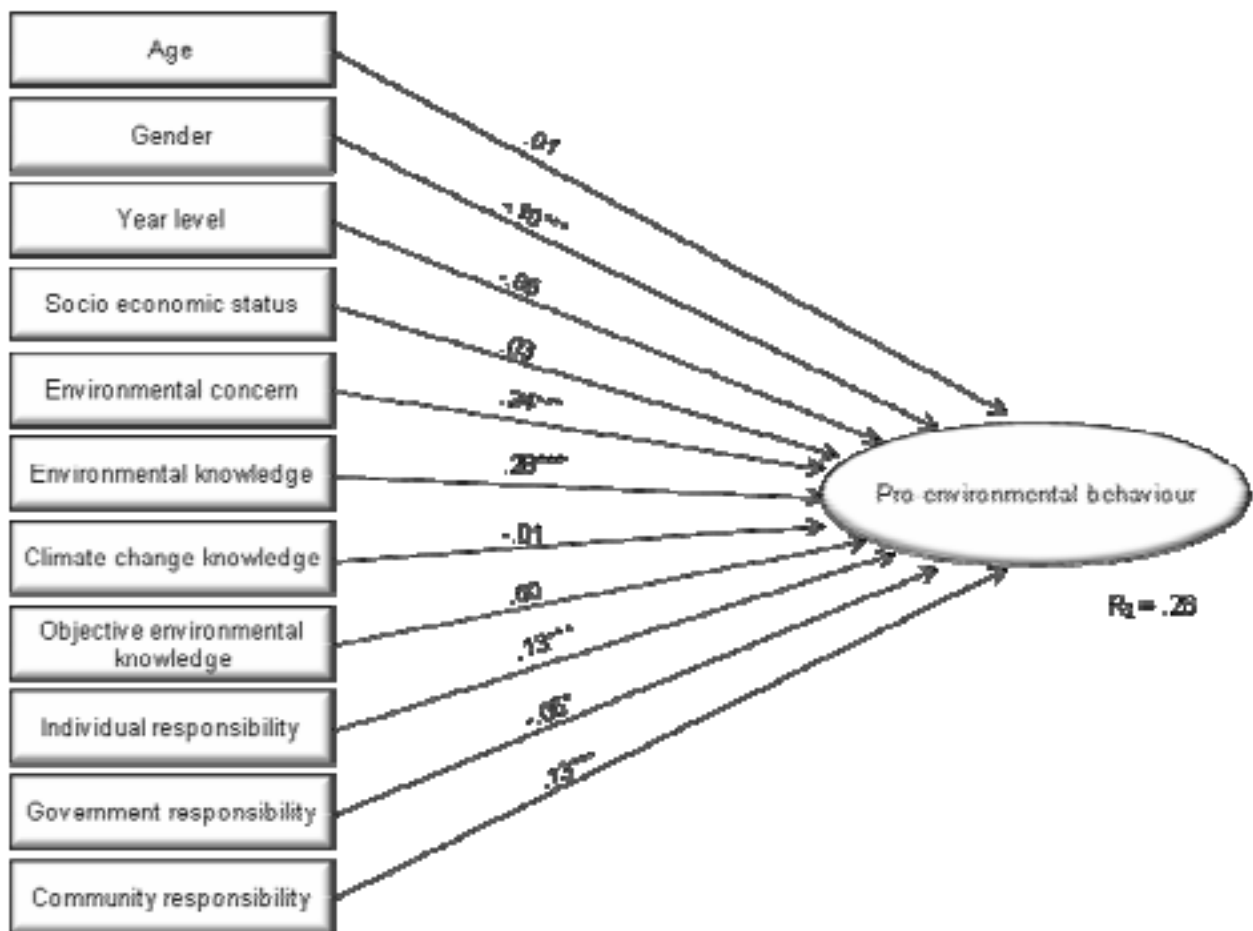
Twelve to 17 year old respondents from metropolitan areas reported more environmental knowledge and behaviour than non-metropolitan respondents. There were also small differences in their ranking of the most important environmental issues. The only difference to emerge between metropolitan and non-metropolitan 18 to 24 year olds was in terms of their preferences for gaining information about the environmental issues: non-metropolitan respondents ranked movies/documentaries above university/TAFE.

## What are the drivers of environmental behaviour and intentions?

A series of hierarchical regression analyses were conducted to investigate the most important drivers of respondents' pro-environmental behaviour and intentions. For the analyses predicting pro-environmental behaviour, the demographic variables of age, gender, year level (or main occupation for 18 to 24 year olds), and socio-economic status were entered at the first step and environmental concern, environmental and climate change knowledge, individual efficacy, and government and community responsibility for protecting the environment were entered at the second step. For the analyses predicting pro-environmental intentions, demographic variables were again entered at the first step, environmental behaviour was entered at the second step, and the remaining variables were entered at the third step. Where variables had missing data greater than 5%, missing values were replaced with the mean for each of the variables.

### **12 to 17 year old survey respondents**

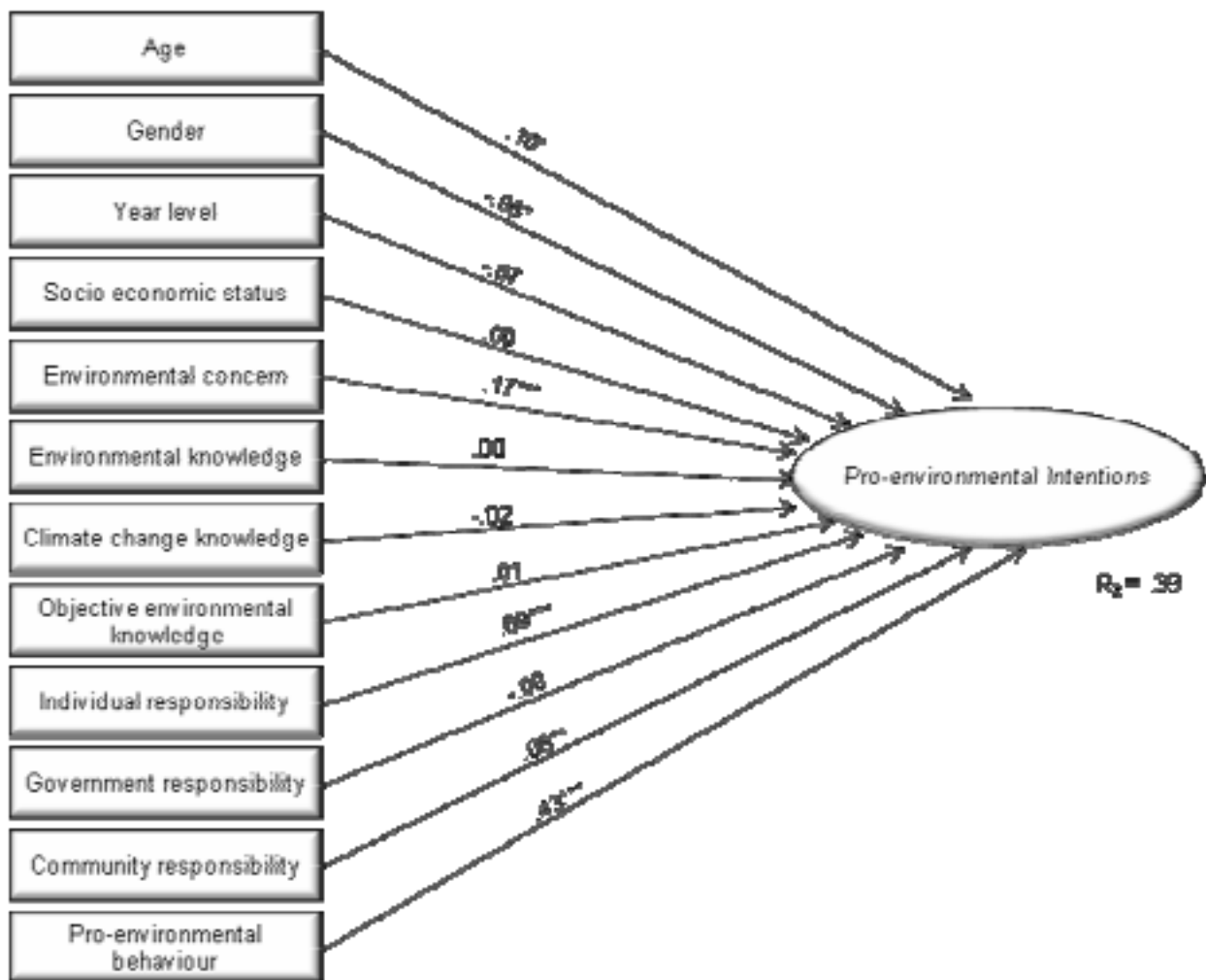
The first set of analyses predicting the reported environmental behaviour of the 12 to 17 year old respondents showed that the variables in the model explained 28% of the variance in environmental behaviour. Figure 3 below shows that gender, environmental concern, reported environmental knowledge, individual efficacy, government responsibility and community responsibility all significantly predicted environmental behaviour. These results indicate that respondents who reported higher levels of environmental behaviour were females with higher levels of environmental concern and knowledge, a greater sense that their actions can make a difference to the environment, greater belief that it is the community's responsibility to protect the environment and lower beliefs that it is the government's responsibility to protect the environment.



Note Significance levels: \*  $p < .05$ , \*\*  $p < .001$  and \*\*\*  $p < .0001$

Figure 12. Determinants of pro-environmental behaviour for 12 to 17 year olds (Note. The asterisk denotes a significant relationship between the predictor variable and pro-environmental behaviour)

The hierarchical regression analysis predicting pro-environmental intentions accounted for 39% of the variance in intentions. Age, gender, current environmental behaviour, environmental concern, individual efficacy and community responsibility were all significant predictors of intentions. As Figure 4 shows, respondents with higher pro-environmental intentions were older and female, had higher levels of current environmental behaviour and concern, had a greater sense that their individual actions can make a difference to the environment and a greater belief that it is the community's responsibility to protect the environment. Inspection of the beta weights in the model below shows that current environmental behaviour is the strongest predictor of future intentions.



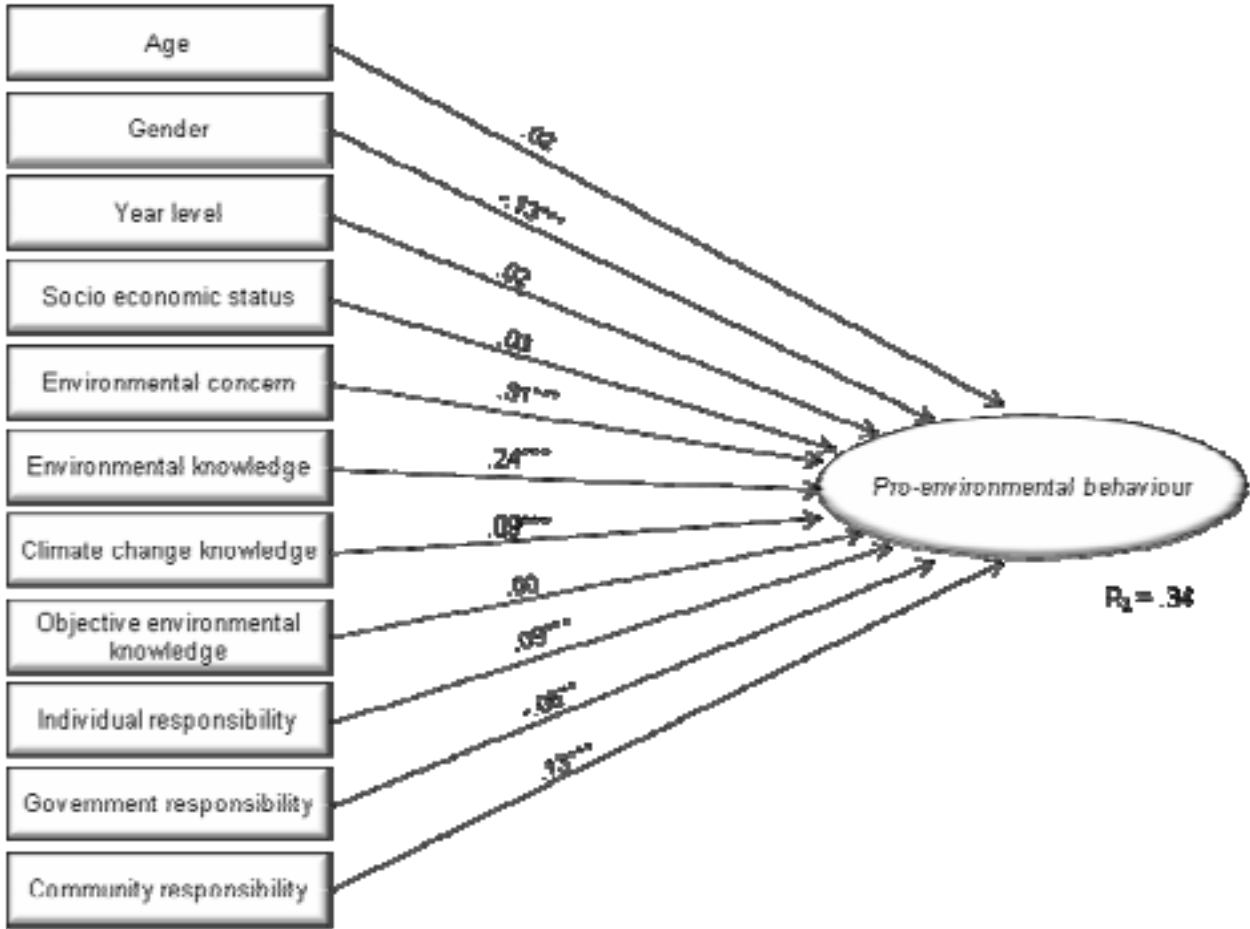
Significance levels: \*  $p < .05$ , \*\*  $p < .001$  and \*\*\*  $p < .0001$

Figure 13. Determinants of pro-environmental intentions for 12 to 17 year olds

### 18 to 24 year old survey respondents

The same analyses were conducted for the 18 to 24 year old survey respondents. In total, the predictors accounted for 34% of the variance in reported pro-environmental behaviour. Gender, environmental concern, environmental and climate change knowledge, individual efficacy, government and community responsibility were significant predictors of pro-environmental behaviour. It is evident from Figure 5 below that respondents who reported higher levels of pro-environmental behaviour were females with higher levels of environmental concern and high levels of environmental and climate change knowledge, greater belief that their actions can make a difference to the environment and that it is the responsibility of the

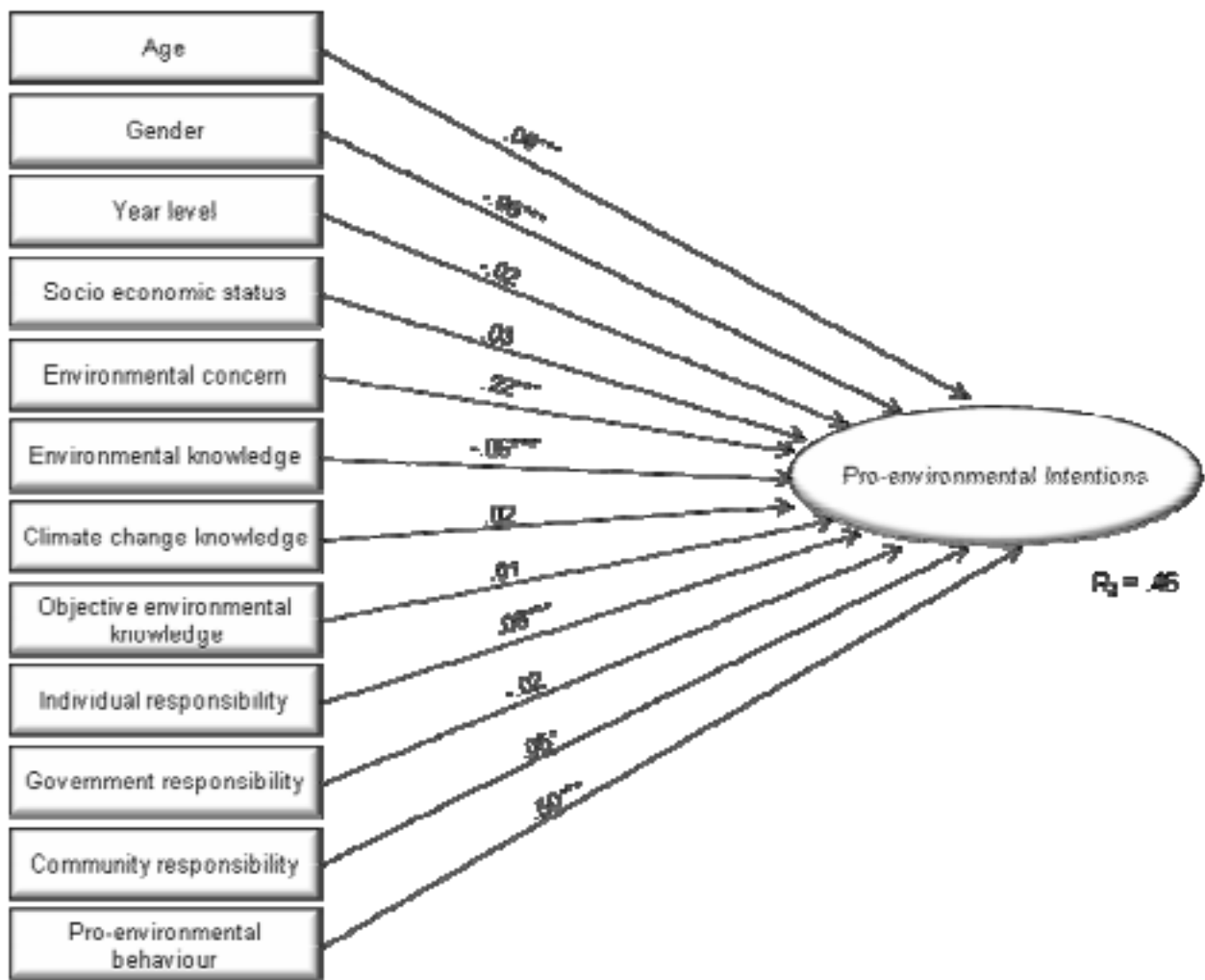
community to the protect the environment and less belief that it is the responsibility of the government to protect the environment.



Note Significance levels: \*  $p < .05$ , \*\*  $p < .001$  and \*\*\*  $p < .0001$

Figure14. Determinants of pro-environmental behaviour for 18 to 24 year olds

The hierarchical regression analysis predicting pro-environmental intentions for the 18 to 24 year olds accounted for 46% of the variance. Age, gender, pro-environmental behaviour, environmental concern, environmental knowledge, individual efficacy and community responsibility were significant predictors of pro-environmental intentions. As Figure 6 shows, respondents who reported higher levels of pro-environmental intentions were older females with higher levels of environmental concern and current environmental behaviour and reported environmental knowledge, who have a greater belief that their actions can make a difference to the environment and a greater belief that it is the responsibility of the community to protect the environment.



Note Significance levels: \*  $p < .05$ , \*\*  $p < .001$  and \*\*\*  $p < .0001$

Figure 15. Determinants of pro-environmental behaviour for 18 to 24 year olds

## Discussion

Across the two surveys, the majority of respondents expressed high levels of environmental concern, with greater concern for protecting the environment in general than for climate change more specifically. In comparison, findings from the former EPA's Wave 4 ClimateSmart Living campaign research in April 2008 indicated that 85% of adults 18+ were somewhat more or much more concerned about climate change and its impacts than they were the previous year suggesting that amongst an adult population, climate change concerns are increasing. Future research should also assess whether this increasing concern is also evident in a younger population.

Contrary to previous research (eg. Mission Australia, 2008), in the current survey, environmental concern rated highly relative to concern for other social issues. On average, concern for the environment was second only to poverty and starvation for both age cohorts. This difference between the current results and previous results may have emerged because environmental protection was compared to other general social issues rather than issues that are more personally relevant (Partridge, 2008).

Despite the relatively high levels of environmental concern, less than 10% of both age groups were very committed to acting in a pro-environmental way and on average, commitment levels were moderate. Respondents reported low levels of some behaviours that can harm the environment such as throwing things away rather than recycling and littering, but approximately one-third of the younger age group often or always use more water and power than they should and buy things that they don't need. It was also clear that some pro-environmental actions might be considered 'normative', with a majority of the 18 to 24 year olds often or always conserving energy in their home, recycling, and conserving water. Similarly, results from the former EPA's 2006 Queensland Environment Survey (QES) show that the general population has made a number of lifestyle/behaviour changes to address environmental concerns including water conservation (37%), recycling (29%) and replacing plastic bags (9%).

On the other hand, actions such as planting trees, signing petitions, eating less meat and buying things with less throw-away packaging were clearly non-normative, with only a minority of respondents from both age groups engaging in these actions frequently. Moreover, apart from recycling, on average, respondents did not report that they were likely to engage in pro-environmental actions such as buying fewer new things or eating fewer meat meals. The gap between concern and action is one that has been identified frequently in previous research (Kraus, 1995).

Respondents agreed that a range of factors can make it easier to protect the environment. For both age groups, believing that you can make a difference and being part of a pro-environmental family were the most highly rated facilitators. By comparison, only one-third of Queensland adults, of those surveyed by the former EPA claim that seeing their family/community undertake environmentally-friendly actions assists their own environmentally-friendly behaviour (former EPA ClimateSmart Living Campaign Evaluation Wave 4 April 2008). These results highlight the paradoxical findings in relation to normative support and behaviour. On the one hand, theory and research suggests that social support is an important motivator of our actions (eg. Ajzen, 1991). On the other hand, recent research has shown very clearly that people are often unaware of or deny the impact that social support has on their own behaviour (Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008).

Interestingly, the current research suggests that although 12 to 17 year olds rank believing they can make a difference as their first enabling factor for undertaking pro-environmental actions, the actual percentage of youth who believe their actions can make a difference appears comparatively less than for the general population. In the current survey, 70% of 12 to 17 year olds and 86% of 18 to 24 year olds think that their actions can make a difference to the environment compared to 89% of Queensland adults who responded to the former EPA's ClimateSmart Living Campaign Evaluation Program (2008). The difference in results may reflect developmental changes in actual or perceived agency. That is, adults can vote and make life decisions that have wide-ranging impacts and thus have a greater sense that their actions can have an impact.

In terms of the barriers to engaging in pro-environmental actions, a belief that there is no alternative was an important reason mentioned by both age cohorts. In some cases, this may reflect reality, for example, it may be difficult to catch public transport if there is no good public transport in your area. A lack of time was also mentioned by many respondents in both age cohorts. This concurs with the United Nations Youth Association's (UNYA) Youthspeak (2008) findings that cite schoolwork as a reason for lack of action, as it takes up much of young people's time. For the older age group, being more concerned with saving money was a reason mentioned by many. The reasons behind these choices were not explored in this research project and could be the focus of further study (eg. whether the responses were related to respondents' life stage or the global economic crisis emerging at the time the survey was conducted). However, given that many environmental actions do not take up more time and may help to save money, these responses suggest that respondents may be focusing on a limited range of perceived time-intensive actions (e.g. organic gardening, buying organic or green products, or taking public transport) when they think about pro-environmental behaviour.

These findings are somewhat different from those found in the former EPA's ClimateSmart Living Campaign Evaluation Wave 4 (2008). Whereas a substantial proportion (36% of 12 to 17 year olds and 42% of 18 to 24 year olds) nominated lack of time as a reason for doing things that might harm the environment, only 8% of adults nominated this as a main reason for not undertaking pro-environmental actions. Moreover, although a substantial proportion of the respondents in the current survey (43% of 12 to 17 year olds and 33% of 18 to 24 year olds) mentioned "laziness" as a reason, only 6% of adults in the 2008 study mentioned that they "couldn't be bothered".

Both age groups nominated water availability, climate change and land clearing as the three most important environmental issues facing Queensland and Australia. By general comparison, the 2007 Australian Survey of Social Attitudes (AuSSA) conducted by the Australian National University, through a randomised electoral roll sample of the Australian population, reported that for individuals, the most worrying environmental issues were climate change (22%), drought (18.7%) and renewable energy (17.3%). It is probably not surprising that water availability and climate

change were considered important in light of the attention they have received in the media recently. The nomination of land clearing as the third most important issue is interesting as it was not high on the media agenda at the time the survey was conducted. One explanation for this finding is that respondents may be making links between the carbon storing abilities of forests and mature trees and climate change, or the loss of habitat and decline of species.

All respondents reported higher levels of knowledge about climate change related issues than other environmental issues. This finding may reflect the focus on climate change in the media recently. There is also the possibility that the finding may have emerged, at least in part, as a result of the brief information provided to respondents at the beginning of the survey to clarify the terms global warming and climate change terminology. Overall, objective knowledge was relatively high for all respondents. It is worth noting that despite a majority of respondents reporting that they had high levels of knowledge about the causes of climate change, less than 50% of respondents correctly identified that climate change is not caused by the hole in the ozone layer.

It is clear that respondents thought that the government, and especially the Australian government, should be most responsible for protecting the environment. This finding is consistent with the UNYA Youthspeak survey results on the Environment (Garcia de Heer, 2008:6) where Rose reported that, in general, “young people supported a strong role for governments at all levels to solve environmental problems”.

The finding may also reflect the federal government’s current focus on climate change policies. The younger respondents attributed less responsibility for environmental protection to the community and themselves than to the government, whereas the older age group distributed responsibility more evenly across government, the community and themselves. The increasing levels of responsibility attributed to the wider community for the older age cohort may reflect a growing sense of efficacy that young people develop as a result of their increased experience, opportunity and knowledge after they leave secondary school.

There was agreement across both age groups that increasing the supply of renewable energy and creating laws that prevent actions that damage the environment are the most important actions that government can take. In comparison, the former EPA's Queensland Environment Survey (2006) found that the general Queensland population surveyed supported the following government actions: subsidise more environmentally friendly behaviour (87% of respondents agreed or strongly agreed), ensure people make changes that need to be made (84% agreed or strongly agreed) and increase taxes on environmentally damaging products (64% agreed or strongly agreed).

Not surprisingly, for the 12 to 17 year old respondents, school and teachers was the most nominated reliable source of environmental information. In addition, both age groups nominated the internet and national and international environmental groups as reliable sources of information. Interestingly, only 23% (12 – 17 year olds) and 29% (18 to 24 year olds) nominated scientists as reliable sources of environmental information compared to 84% of Queensland adults in the former EPA's 2008 ClimateSmart Living Campaign Wave 4 research. Both age groups nominated television and newspapers as their most preferred sources of environmental information and for the younger age group, television was the overwhelming preference. By comparison, the former EPA's 2006 study found the 55+ year cohort (32%) were more likely to use newspapers as their main source of information compared to 18 to 34 year olds (23%). It is also evident, however, that one-quarter to one-third of respondents in the current survey nominated many of the other sources (eg. radio, family, friends, government websites) as preferred sources of information indicating that information is likely to be sourced through a variety of channels.

Of note is the finding that even though Queensland's youth respondents state that the Australian Government should take the most responsibility for protecting the environment, only 29% and 27% rate the Australian Government as a reliable source of environmental information. In contrast, 69% of Queensland adults surveyed in the former EPA's 2008 study rated the Australian government as a reliable source of environmental information.

The main socio-demographic differences to emerge in the data were for gender. In general, the means on most items were higher for females than males, suggesting that females have higher concern, commitment and environmental behaviour than males. An exception is for knowledge: males reported higher levels of environmental knowledge than females, although it should be noted that there was no difference between males and females on the objective measure of environmental knowledge. It was also evident that 12 to 17 year old respondents from high socio-economic areas were more pro-environmental in their attitudes, knowledge and behaviour than those from low socio-economic areas, and metropolitan respondents in the younger age group survey reported more environmental knowledge and behaviour than non-metropolitan respondents. As argued earlier in this report, the use of postcode to assign socio-economic status has limitations and therefore findings relating to socio-economic status must be treated with caution. Overall, it must be acknowledged that the absolute differences between the various socio-demographic groups were small. In general, the emergence of the small socio-demographic differences are consistent with the argument by Partridge (2008) that young people's views and behaviour will be shaped by their social context.

Regression analyses revealed that the following factors were significant drivers of pro-environmental behaviour for both the 12 to 17 year old respondents and the 18 to 24 year old respondents:

- **gender** – females report more environmental behaviour than males
- **environmental concern** – higher concern is related to more environmental behaviour
- **environmental knowledge** – higher reported knowledge is related to more environmental behaviour
- **individual efficacy** – greater belief that your individual actions can make a difference is related to more environmental behaviour
- **government responsibility** – greater belief that it is the responsibility of the government to protect the environment is related to *less* environmental behaviour
- **community responsibility** – greater belief that it is the responsibility of the community (business, community members, self) is related to more environmental behaviour

Regression analyses revealed that the following factors were significant drivers of pro-environmental intentions:

- **age** – older respondents report higher pro-environmental intentions
- **gender** – females report higher pro-environmental intentions than males
- **environmental behaviour** - higher current environmental behaviour is related to higher pro-environmental intentions
- **environmental concern** – higher concern is related to higher pro-environmental intentions
- **individual efficacy** – greater belief that your individual actions can make a difference related to higher intentions
- **community responsibility** – greater belief that it is the responsibility of the community (business, community members, self) related to higher intentions

The evidence for multiple motivators of pro-environmental intentions and actions amongst this youth sample is consistent with research conducted by Skamp, Stanisstreet and Boyes (2008). Their study of 500 NSW secondary students from three high schools, found that it is a combination of measures that support pro-environmental actions amongst youth: a belief in self-efficacy; the believed effectiveness of the action; education and incentives. Moreover, they concluded that education or knowledge of an issue or behaviour alone will not make youth adopt a pro-environmental behaviour; rather it is the strength of belief that a particular action makes a difference and is effective, that counts.

Finally, limitations of the Youth and the Environment Survey must be acknowledged. Although the recruitment strategy aimed for a representative sample of young people, it is evident that respondents residing in relatively advantaged urban areas were over-represented and there was an over-representation of females and students in the older age group. Socio-demographic comparisons revealed only small differences between demographic groups; nevertheless, generalisation of the results beyond the current sample must take into account the sample biases. The research also relied on self-report measures of behaviour, a common approach in the literature. The format of the survey (online and anonymous) and instructions to respondents were designed to mitigate socially desirable responding. Future research should aim to also gain objective measures of young people's

environmental behaviour. However, demographic comparisons suggested few differences in responses across different geographic areas and socio-economic groups.

## Conclusions

The results of the present research suggest that raising levels of environmental knowledge and concern, increasing awareness of the connection between individual behaviour and environmental outcomes, raising the level of personal responsibility for action and communicating information about the benefits of environmental practices and ways to overcome the barriers to these actions, are strategies that may help to encourage greater participation in pro-environmental practices amongst young people.

There was a high level of concern about the environment and a high level of support for increased government action, particularly in areas such as renewable energy and prevention of actions that damage the environment. There are some broad conclusions that can be drawn to inform and assist policy and program initiatives.

Achieving improved environmental behavioural outcomes in the long term is likely to be assisted by:

- developing community campaigns focused on more easily adopted individual actions and alternative choices-with incentives for pro-environmental actions based on a barriers and benefits analysis
- targeting strategies to encourage greater participation in pro-environmental practices towards young people as early adopters, and families or households-using preferred information sources (schools, teachers, the internet, television, newspapers, and non-government organisations)
- developing strategies to improve sustainability education in the formal education sector at all levels
- using strategies aimed at changing community-wide cultural norms, for example at household or institutional levels
- raising levels of environmental knowledge and concern generally.

Further research projects likely to be of benefit could focus on:

- exploring gaps identified between the stated level of concern by young people about environmental issues and their commitment to act in pro-environmental ways
- qualitative research using focus groups to analyse further the facilitators and barriers to young people acting in pro-environmental ways
- targeted comparisons between rural, regional, indigenous and urban youth knowledge, attitudes and behaviours
- further comparative research into knowledge, attitudes and behaviours across Queensland age cohorts.

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## Appendix 1

### Youth and the Environment Survey Questions



### To begin the survey

- If you are at school, you can complete the survey between 16 – 31 October 2008

## Youth and the environment survey

**What is the purpose of the survey?** The aim of the survey is to study the environmental attitudes, knowledge and behaviour of young people in Queensland. We hope that the information you provide can help the Queensland Youth Environment Council and the Queensland Government to build a sustainable future for our State. Your contribution is greatly valued!

**Who is conducting the survey?** The survey is conducted by the Environmental Protection Agency, and the Department of Education, Training and the Arts.

**What do I need to do?** Most questions require you to tick the response that best matches your opinion or to choose the options you think are most important. Your participation is completely voluntary. The more answers we get, however, the better we can understand the viewpoint of young people.

**Will anyone see my answers?** Your answers will **not be graded or seen by your teacher and will remain anonymous**. We do not ask for your name, but please take the survey seriously because we are trying to find out some important information about environmental attitudes and behaviours.

**How can I find out the results of the survey?** You will be able to read about the results of the survey on the Queensland Youth Environment Council website at [www.qyec.org.au](http://www.qyec.org.au) in early 2009.

## Youth and the environment survey

In the survey, we use the words '*climate change*' which is the same as the term '*global warming*'. Both refer to the problem of the trapping of heat in the Earth's atmosphere due to increasing levels of greenhouse gases. Humans have been putting more and more greenhouse gases, particularly carbon dioxide, into the atmosphere by burning fossil fuels and clearing the Earth's forests. Climate changes, such as warmer temperatures, rising sea levels and changes in rainfall patterns, impact on our communities and natural environment.

## How concerned are you about climate change?

(Please tick the response closest to your feelings)

Not at all concerned	A little concerned	Moderately concerned	Quite a bit concerned	Very concerned

## How much do you think you know about each of the following issues ? (Tick one response for each issue)

	No knowledge at all	A little knowledge	Moderate knowledge	Quite a bit of knowledge	A lot of knowledge
The causes of climate change					
Where your household water comes from					
What happens to waste (i.e., rubbish, recycling) in Queensland					
Carbon capture and storage					
How water is made safe to use					
The effects of climate change on the environment, plants, animals and humans					
Wind power					
Geothermal energy or 'hot rocks'					
How climate change can be minimised					

**How concerned are you about the following issues facing society?** (Please tick the response closest to your feelings. Only choose the 'not sure' option if you really can't decide.)

	Not at all concerned	A little concerned	Moderately concerned	Quite a bit concerned	Very concerned	Not sure
Family break-ups						
Drug and alcohol abuse						
Poverty and starvation						
Traffic congestion						
How well the economy is doing						
Protecting the environment						
International conflict and wars						
Over-population in the world						
Public health system						
Access to education						
Violence in the community						

Listed below are a range of environmental issues facing Queensland and Australia. Please select **three** that you think are the **most important** issues and number them from one to three (1 to 3). 1= most important, 2 = next most important, 3 = third most important.

Household rubbish and garbage	
Over-population	
Water pollution	
Cutting down forests and land clearing	
Toxic chemicals in the environment	
Climate change	
Extinction of animal and plant species	
Crowded cities and suburbs	
Destruction of the ozone layer	
Air pollution	
Littering	
Availability of water	

When protecting the environment, how responsible should each of the following be? (Tick one number for each)

	Not at all responsible				Very responsible	Not sure
The Australian Government	1	2	3	4	5	
The Queensland Government	1	2	3	4	5	
Local government	1	2	3	4	5	
Companies and businesses	1	2	3	4	5	
People working together in communities	1	2	3	4	5	
Me	1	2	3	4	5	

What are the **3 most important things governments** could do to help protect the environment?

Tick 3 options from the list below.

- Sign agreements with other countries to help stop climate change
- Create laws that prevent actions that damage the environment
- Increase the supply of renewable energy (eg. wind, solar, etc)
- Buy more land for conservation purposes
- Give funding for actions that help protect the environment
- Provide better education campaigns about the environment
- Lead by example in their activities

Is there anything else that governments could do to help protect the environment?

How much do you agree or disagree with each of the following? (Please tick the response that matches your opinion)

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
My individual actions can make a difference to the environment					
I can influence decisions now, that will help protect the environment in the future					
I am only one person, I can't make a difference to the environment					

Doing the right thing for the environment is ***not always easy***. How often do you do any of the following? (Tick the response that best describes your behaviour for each action)

	Never	Hardly ever	Sometimes	Often	Always
Throw things away that could be recycled					
Use too much paper					
Litter					
Use more water than I should					
Use more power than I need					
Buy things I don't need					

How often do you **currently** do any of the following actions to **help protect the environment?** (Tick the response that best describes your behaviour for each action)

	Never	Hardly ever	Sometimes	Often	Always
Save energy in my home (eg. turn off lights, use less electrical appliances)					
Plant trees					
Eat fewer meals with meat in them					
Recycle					
Conserve water (eg. take shorter showers)					
Use public transport (eg. buses and trains) whenever possible					
Write a letter, or sign a petition, etc that is about protecting the environment					
Buy things that have less throw-away packaging					

How much do you agree or disagree that these things make it **easier for you** to protect the environment? (Please tick the response that most closely matches your opinion)

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
Having friends who do things to protect the environment					
Belonging to an environmental group					
Believing that what I do can make a difference to the environment					
Having laws that require everyone to protect the environment					
Having more information about environmentally friendly products and practices					
Getting financial rewards (eg. money) for doing things to protect the environment					
Being part of a family that does things to protect the environment					

People sometimes do things that are **bad** for the environment. What might be the reasons that **you** sometimes do things that are **bad** for the environment? (Please tick up to **3** reasons that most commonly apply to you)

I don't understand what is harmful and what is not	
I'm more concerned with saving money	
I don't care	
I don't have time	
I'm too lazy	
I don't think my actions will make much difference	
I don't believe everything that people say about damage to the environment	
I don't want to do things that are different from what my friends are doing	
Sometimes I do things that are bad for the environment; but I feel there is no alternative	
Other reasons (please list here)	

In the **future**, how likely are you to do the following things to **help protect** the environment? (Tick the option that best matches how you feel)

	Very unlikely	Unlikely	Neither likely or unlikely	Likely	Very likely
Buy fewer new things					
Eat fewer meals with meat in them					
Buy organic local food, (ie. grown without pesticides and artificial fertilisers)					
Recycle things rather than throw them away					
Buy less non-essential stuff (eg. plastic gadgets, lollies)					

## Answer these questions to the best of your ability.

(Please do not choose 'not sure' unless you really can't make up your mind)

	True	False	Not sure
Queensland's electricity production causes about half the State's carbon dioxide (CO <sub>2</sub> ) emissions			
Climate change is caused by the hole in the ozone layer around the earth			
Climate change may cause major decreases in the number of plant and animal species			
Climate change is likely to make more rain fall in the south and west areas of Queensland			
A compost system at home is a way of recycling some food scraps			
There are more native plant and animal species living in Queensland than any other State in Australia			
The beginning of the Murray-Darling Basin is located in Queensland			
How much each person consumes (ie. buys) affects society and nature			

## Now we would like to ask you about how you get informed about environmental issues.

Here are some ways you can find out about environmental issues.

Please tick the **3** you think are the **most reliable**.

- environmental groups in my local area
- national and international environmental groups (eg. Greenpeace, Australian Conservation Foundation)
- scientists
- local government
- The Queensland Government
- The Australian Government
- family
- friends
- school and teachers
- industry leaders (e.g. Chief Executive Officers (CEO's) of businesses)
- internet
- newspapers
- other \_\_\_\_\_

**Where do you prefer to get your information about the environment?** (Tick as many as you like on the following list)

- television
- newspapers
- government websites
- radio
- friends
- family
- blogs
- YouTube
- environmental organisation's websites (eg. Greenpeace)
- magazines
- brochures
- movies/documentaries
- university/TAFE
- environment newsletters (eg. Earth Hour newsletter)
- other \_\_\_\_\_

How would you describe your level of commitment to acting in an environmentally friendly way?

Not at all committed	A little committed	Moderately committed	Quite a bit committed	Very committed

**These questions help us to describe who filled out the survey.** (Please record your response in each box)

How old are you?

What is your year level at school?

Are you female  or male ? (Tick appropriate box)

What is your postcode?

(If you live in two households write down the postcode of the house you spend most time in or if equal time is spent in households record both postcodes)

Do you identify as an Aboriginal or Torres Strait Islander?

Yes

No

**Thank you for participating!**