

# **Koala awareness campaign: community intercept survey insights and evaluation**



# Executive Summary

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This report for Redland City Council summarises the findings from community surveys collected in person. The overall aim of this survey was to evaluate a koala awareness campaign, using a pre-post research design.

A face to face community intercept survey was administered in June 2018 in the Redlands region prior to the commencement of the campaign, to inform baseline levels of awareness and attitudes. A follow up survey was conducted in December 2018 to assess campaign effectiveness. The follow up questionnaire included repeated measures of awareness and attitudes to examine whether the community changed their attitudes towards koalas. Survey participants were asked if they could recall the campaign.

Data was collected across the community. Surveys were conducted in public parks, markets, train stations, bus interchange and ferry terminals, and one triathlon event in the Redland City Council area. A total of 18 questions capturing community awareness of and attitudes towards koalas and respondent demographics were included in the surveys. A total of 502 Redlands residents completed the baseline intercept survey and a total of 596 Redlands residents completed the follow up intercept survey.

The results indicate that the koala awareness campaign was well received. 42.8% of the sample reported seeing one or more messages, and the most recalled channels are Billboards, Social Media, and Print Media. The most recalled advertisements include general koala conservation messages, threats to koalas, and koalas' breeding season. All four key awareness indicators were significantly increased including attitudes towards koala conservation and means to help protect koala. Questions regarding recalling seeing and thinking of koalas showed statistically significant differences, indicating an increase in recall of koala sights/thoughts. The following recommendations are made:

- The re-occurrence of the koala awareness program is recommended to sustain long term impact on local residents' positive attitudes towards koala conservation.
- Communication channels such as cinemas and online ads should be improved by increasing the frequency and exposure.
- Initiatives that are in place to counteract the effects of urban development on koala habitats need to be clearly communicated and ideally outcomes achieved to date by Redland City Council should be communicated.
- Moving forward an evaluation methodology that includes using matched samples for baseline and follow up assessment is recommended.

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# Introduction

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Koalas are more mobile during the koala breeding season, and therefore more susceptible to increased road-vehicle interactions and dog attacks causing injury or mortality during this period. Hence, it is important to develop strategies, such as community engagement campaigns, to increase public awareness during these months (July to December). Understanding the target audience's attitudes toward koalas, as well as their level of awareness is crucial to deliver engaging and effective communication campaigns.

Redland City Council implemented a Koala Awareness Campaign, in which a series of koala-focussed advertisements were promoted to increase local residents' awareness and attitudes toward koalas in the community during the 2018 breeding season. A survey was conducted in June 2018, prior to the commencement of the campaign, to measure baseline level of awareness. Then, a follow up survey was conducted on December 2018 to measure level of awareness, and attitudes toward koalas in the community post campaign. This report presents the main findings from the intercept surveys, including campaign recall and pre-post comparison of koala awareness and attitudes.

## **Study Aim**

The aim of this study was to evaluate a koala awareness campaign, using a cross-sectional pre-post research design.

## **Research Objectives**

The objectives of this community survey were to evaluate the effectiveness of the koala awareness campaign, by understanding:

1. Community's level of koala awareness pre and post campaign
2. Community's attitudes toward koalas pre and post campaign

# Method

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## Data collection

Pre and a post campaign surveys were administered to participants to collect data in person. A community intercept survey was conducted in June 2018, following survey approval by the Redland City Council working group. A follow up survey was conducted in December 2018 to assess effectiveness of the campaign. Face to face intercept surveys involved going into community and intercepting people to gather information about behaviour, characteristics, or general views of Redland City Council residents. An important benefit of the intercept survey methodology is that it allows access to members of the target audience who are less likely to engage in online surveys.

Prior to going into field, locations to conduct the intercept survey were selected. The locations included public spaces such as Capalaba Regional Park, Raby Bay Foreshore Park, Cleveland Markets, train stations (Cleveland station, Ormiston station, Wellington Point station, Birkdale station, Thorneside station), Redland Bay Marina bus interchange, and Redland Bay Marina Ferry Wharf. These locations were chosen to capture a broad representation of the Redland City Council community, as well as optimise data collection. Griffith University ethical clearance, Queensland Rail and TransLink approvals were sought prior to field research.

The baseline and follow up questionnaires consisted of the exact same questions, including two sections: "About you and your dog(s)" and "Koala awareness", with a total of 36 questions. To measure the effectiveness of the campaign, some recall questions were also added (see Appendix A for questionnaire). The questionnaire included some message testing questions for the Leave It program, however for the purpose of this project, the report and data analysis is limited to the koala awareness section only (questions 18 to 35).

## Sample

A total of 596 respondents residing in Redland City Council area completed the follow up intercept paper surveys. The research team recorded rejections. For every four people invited to take the intercept survey, one said yes, which is a 75% rejection rate.

## Data analysis procedures

Data from paper surveys was entered into SPSS and data was cleaned prior to analysis. Coding was undertaken to identify themes for open ended questions. Additionally, data analysis was performed using descriptive statistics. Chi-squares, t-tests and ANOVAs were also executed to identify any possible group differences regarding gender, age, property type and postcode. Campaign effectiveness was evaluated using independent samples t-tests and descriptive statistics.

# Post campaign intercept survey results

The post intercept survey results (n= 596) are presented here in two sections, namely 1) respondent characteristics and 2) awareness and attitudes towards koalas. Each section includes the results of the analysis of the follow up survey data, illustrated in charts or tables, and a short description, including a comparison with the results from baseline findings. Results of the baseline survey are fully reported in Appendix J.

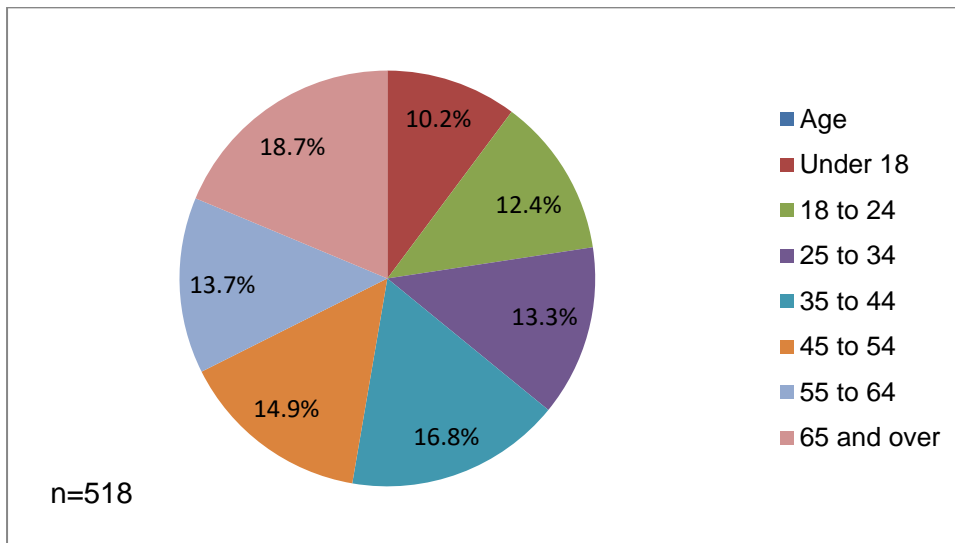
## Respondents' characteristics at follow up survey

Respondents were asked a series of questions to provide a profile of the sample obtained in the survey. This section of the report presents the respondents' characteristics.

Respondents were asked to indicate their gender (N=588). The sample was evenly distributed, with 42.2% being male respondents and 56.4% female.

Data analysis of age demonstrated that participants (N=518) belonged to different age groups, indicating the largest group (18.7%) belonged to the 65 and over age group. More details of the distribution by age groups are included in Figure 1 below.

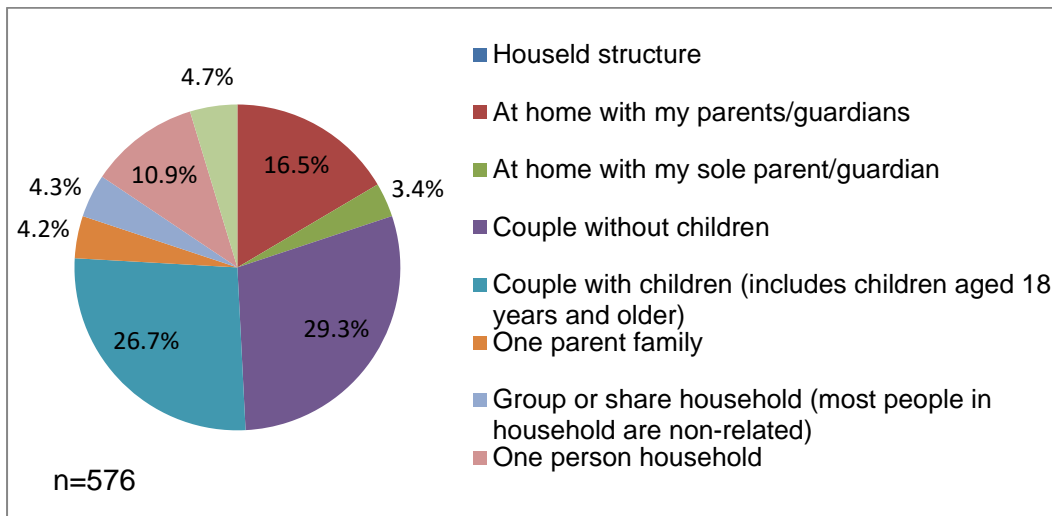
Figure 1. Age





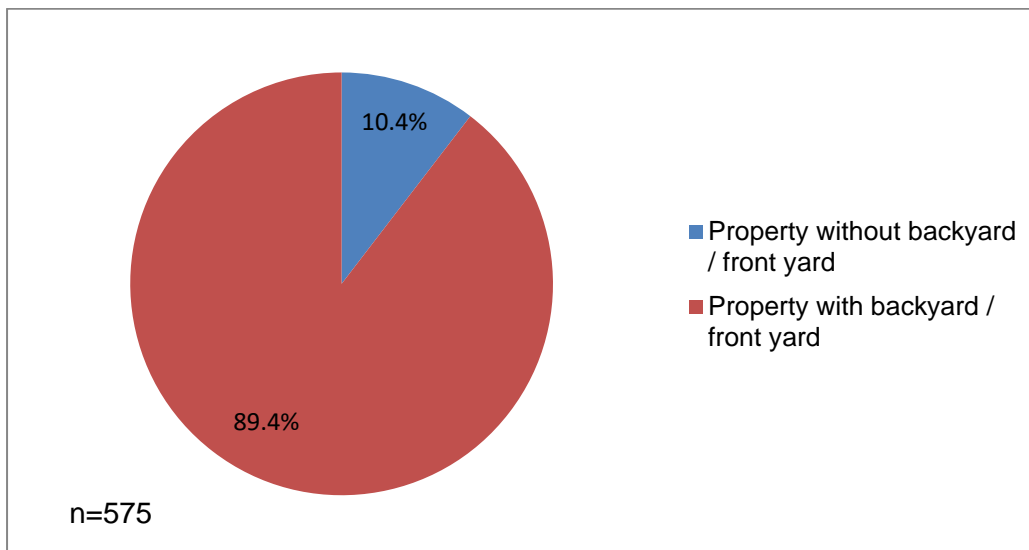
Results show that approximately 56% of the respondents (N=576) identified their households' structure as couples (29.3% without children and 26.7% with children).

**Figure 2. Household**



To gain insight into the respondents' property type, respondents were asked to indicate whether they had a property with a backyard and/or front yard. The large majority (89.4%) indicated living in a property with a backyard and/or a front yard (see Figure 3).

**Figure 3. Property type**



Respondents were also asked to report their postcode. Table 1 below shows the frequency of postcodes reported by survey respondents.

**Table 1. Respondents' postcodes (intercept)**

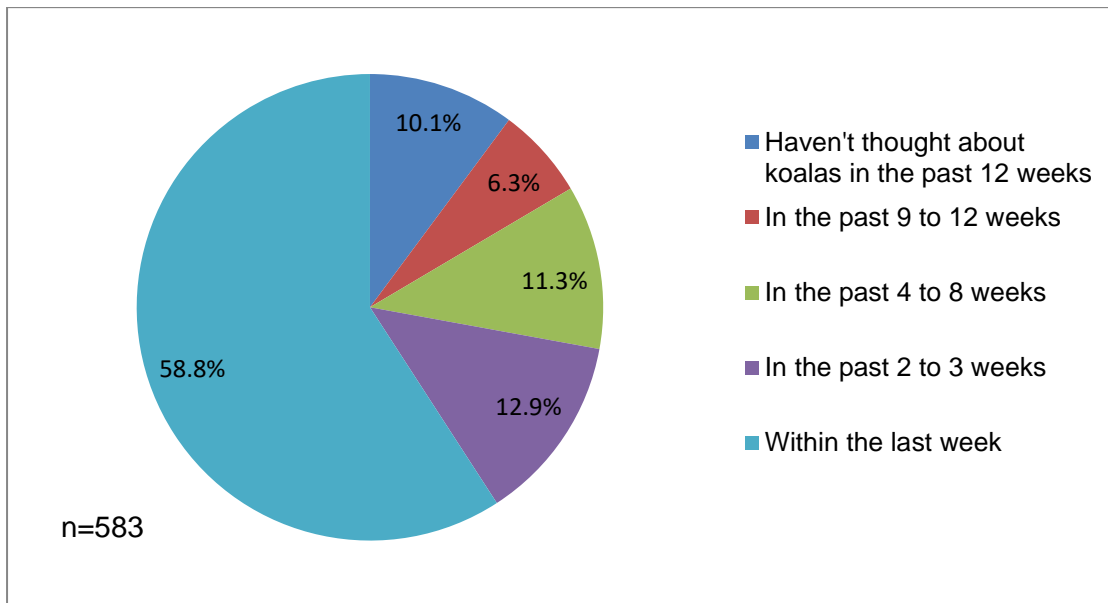
Postcodes	Suburb(s)	N=596
4157	Capalaba, Sheldon	24
4158	Thorneside	9
4159	Birkdale	35
4160	Ormiston, Wellington Point	99
4161	Alexandra Hills	29
4163	Cleveland	150
4164	Raby Bay	89
4165	Thornlands	113
4183	Mount Cotton, Point Talburpin, Redland Bay, Victoria Point	5
4184	Bay Islands (Karragarra Island Lamb, Island Peel Island Perulpa, Island, Macleay Island, Russell Island, Coochiemudlo Island)	40

## Awareness and attitudes toward koalas

Similar to the pre-survey respondents in the post campaign survey were asked a series of questions which would provide insight into the views of Redland Residents towards koalas and koala protection. This section of the report presents the awareness and attitudes toward koalas.

Respondents were asked to indicate when they last thought about koalas. Figure 4 indicates that over half of the respondents (58.8%) reported that they had thought about koalas within the last week. When comparing to the baseline results for this question, less than half of the respondents had reported thinking about a koala within the last week (47.9%), which demonstrates an increase from baseline to follow up.

**Figure 4. Respondents' thoughts about koalas in the past weeks (at follow up survey)**

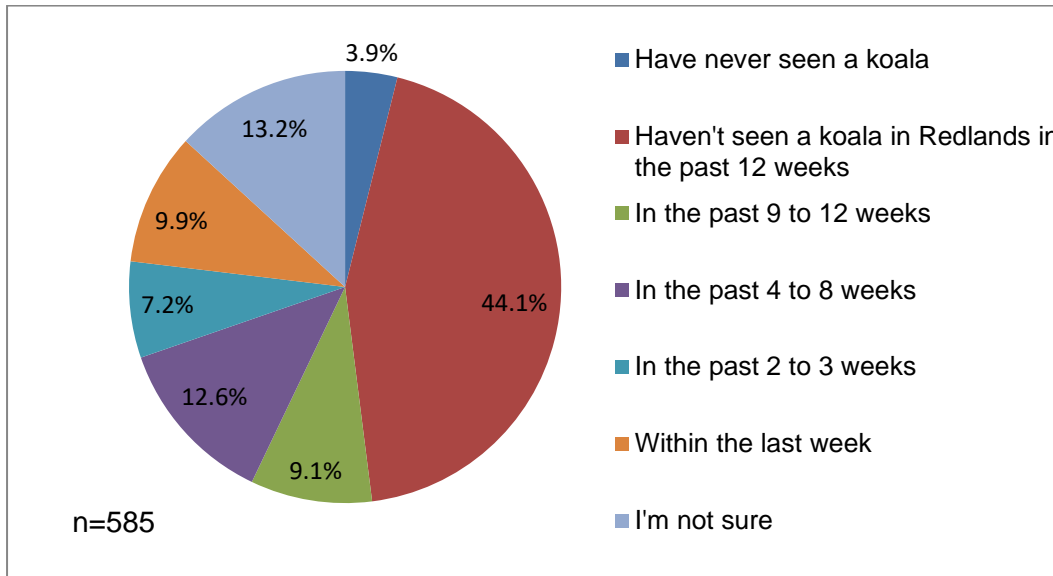


Analysis of group differences at follow-up survey:

Analysis of the follow up survey results indicates no significant differences between people according to gender and postcode in terms of when was the last time they thought about koalas. Differences ( $p < 0.05$ ) between respondents' thoughts about koalas in the past were observed across the seven age groups. Among respondents, those aged 45 to 54 thought about koalas the most ( $M=4.4$ ;  $SD=1$ ), while respondents aged under 18 reported the lowest frequency of thinking about koalas ( $M=3.6$ ;  $SD=1.5$ ). Please refer to Appendix B for more details.

Participants were asked to indicate when the last time that they saw a koala was. More than one-third (44.1%) responded they had not seen a koala in the past 12 weeks. These results are aligned with baseline survey results, where 42.8% of the respondents reported they hadn't seen a koala in the past 12 weeks.

**Figure 5. Koala sightings in the past weeks (at follow up survey)**

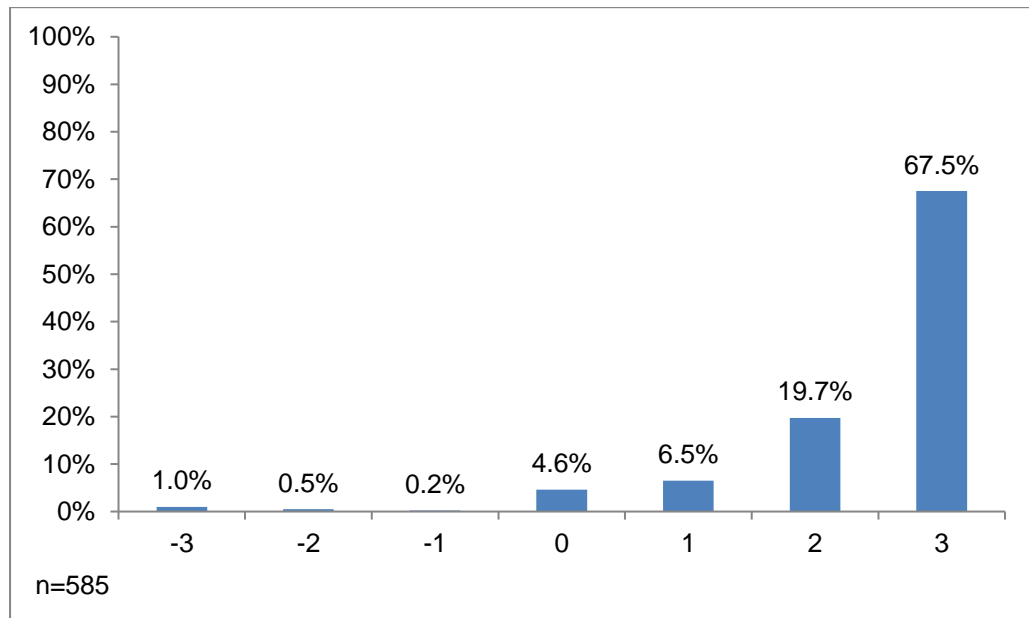


Analysis of group differences at follow-up survey:

Analysis indicates no significant differences between people according to gender or age in terms of the last time that they saw a koala. However, people from different postcodes were significantly different ( $p < 0.000$ ). Among the people who reported "having never seen a koala" 43.5% are from the postcode 4184 (Bay Islands), whereas among the people who reported "within the last week", 27.6% were from the postcode 4163 (Cleveland). Please refer to Appendix C for more details.

Respondents were asked to indicate to what degree that they agree that Redland is home to a significant koala population (strongly disagree is -3, and strongly agree is 3). Figure 6 below shows that about two thirds (67.5%) of the respondents strongly agree and only 1% strongly disagree. Although attitudes were already mainly positive at baseline (64.4% strongly agree), analysis of the data indicate an increase on the results from baseline to follow up.

**Figure 6. Redland is home to a significant koala population (at follow up survey)**

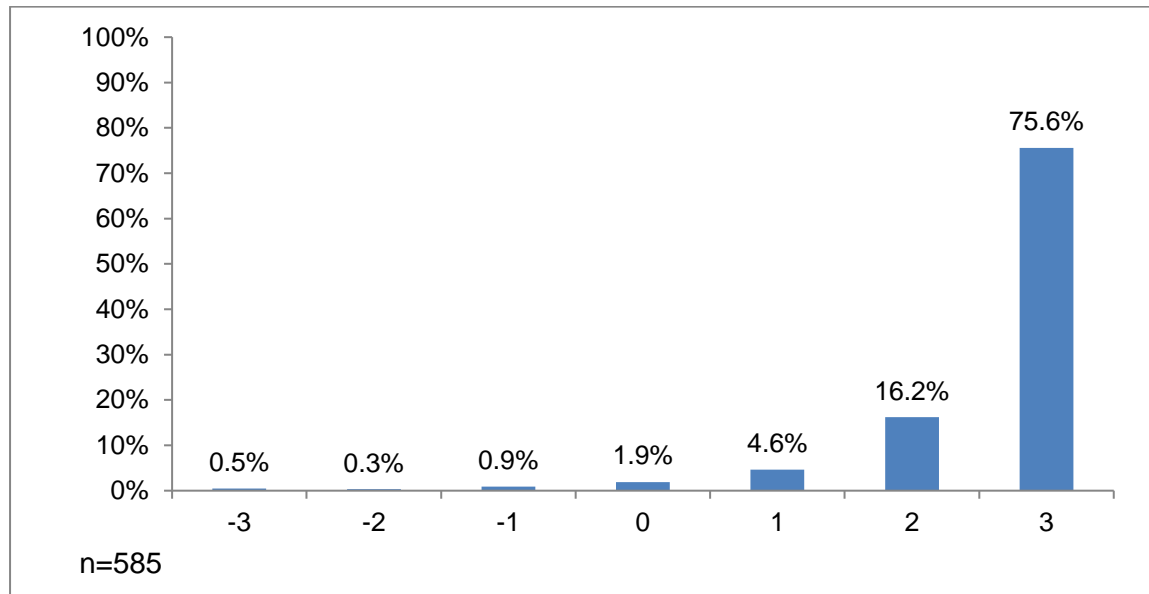


Analysis of group differences at follow-up survey:

Analysis indicated no significant differences ( $p = > 0.05$ ) between people from different gender groups and postcodes. However, respondents' attitudes to the importance of Redlands being home to a significant koala population was different across the seven age groups. Respondents aged under 18 has significantly fewer positive attitudes than all other age groups (see Appendix D).

Respondents were asked to indicate what their attitude towards koala conservation is (a waste of time and effort is -3, and worth the time and effort is 3). Figure 7 below shows that about three quarters of the respondents think koala conservation is worth the time and effort (75.6%), and the majority of the respondents reported positive attitudes (96.4%) towards koala conservation. These results are once again aligned with the baseline results, although a slight, but significant increase is evident in the overall attitudes from the respondents when comparing baseline (74.3% respondent koala conservation is worth time and effort) and follow up results.

**Figure 7. Respondents' attitudes toward koala conservation (at follow up survey)**

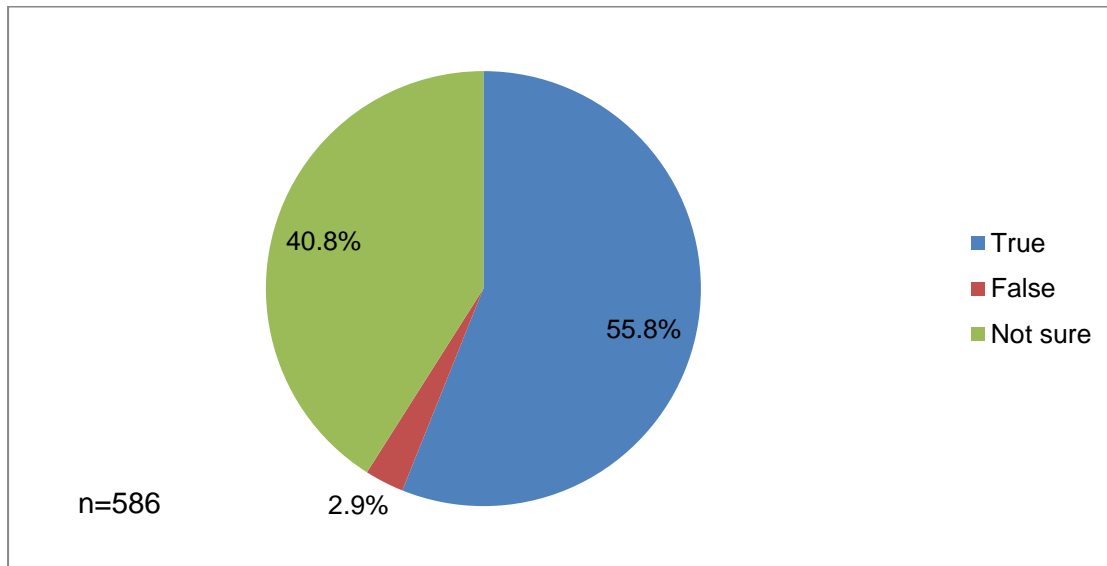


Analysis of group differences at follow-up survey:

Analysis indicated no significant differences between people from different postcodes in terms of their attitudes towards koala conservation. However, females were significantly more positive than males ( $M_{\text{female}}= 6.68$ ,  $M_{\text{male}}=6.51$ ,  $p = 0.015$ ). Specifically, females showed stronger agreements than males that koala conservation is worth the time and effort. In addition, analysis indicated significant differences ( $p < 0.000$ ) between participants attitudes towards koalas having a place in Redland City's urban landscape across the age groups. Respondents aged under 18 have significantly lower attitudes towards koalas having a place in Redland City's urban landscape than all other age groups (see Appendix D).

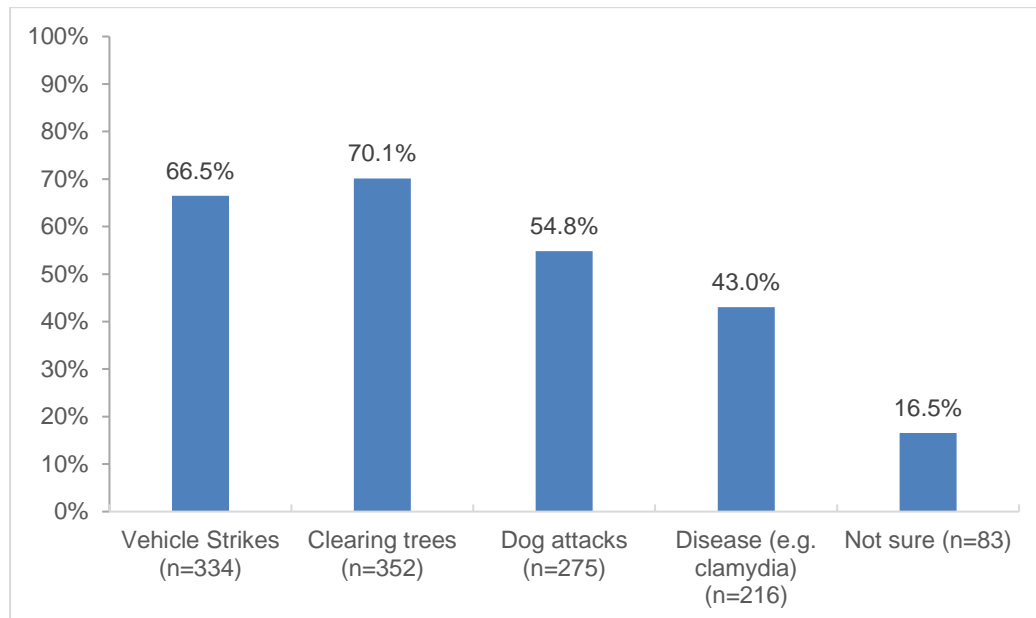
To understand the level of knowledge, a statement about koala movements during breeding season was included (*Koalas move around a lot more in their breeding season*), with respondents answering either “True”, “False” or “Not sure”. Results showed that 55.8% of respondents answered this was true, and 40.8% were not sure (see Figure 8). This result represents a significant increase from the baseline results, where 45% of the respondents had responded they thought it was “True”.

**Figure 8. Breeding season movement (at follow up survey)**



Another level of knowledge question that was asked in the intercept survey was a multiple-choice question to understand Redland City Council residents' understanding of the main causes of Koala deaths. Respondents could choose more than one answer. Results in Figure 9 Figure 24 shows the level of respondents' understanding about the main causes of koala's death.

**Figure 9. Koalas' main cause of deaths (at follow up survey)**



Awareness of the threats faced by koalas were highest for clearing trees, vehicle strikes and dog attacks respectively. Awareness that koalas face risk of disease was lower. There was an increase in respondents stating this were the main causes of deaths for all options in this question from baseline to follow up. Comparing these results with findings from the baseline survey, results indicate that people were overall more aware of the main causes of deaths.

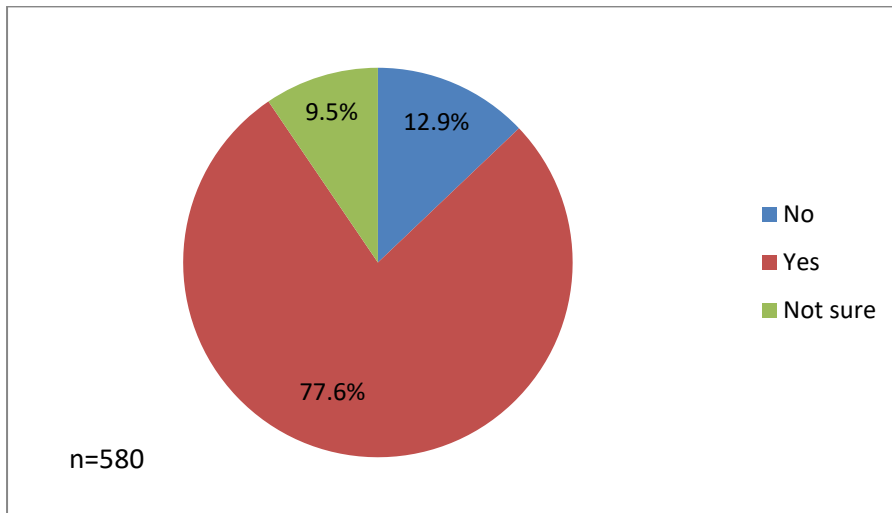
Analysis of group differences at follow-up survey:

Analysis indicated no significant differences between people from different genders and postcodes in terms of awareness of threats to koalas. However, people from different age groups were significantly different ( $p < 0.01$ ) in terms of their awareness of the threat of disease to koalas. Among those who said that disease was not a main cause of koala deaths, 16.5% were aged 25 to 34, whereas among those who agreed that disease was a threat, 20.7% were aged 35 to 44.



Respondents were asked if they had noticed koala road signs when driving in the last week (N=580). The majority of respondents reported that they had noticed the signs (77.6%), while 12.9% indicated they had not noticed any koala signs (see Figure 10). Notice of koala warning signs has not changed significantly from baseline to follow up.

**Figure 10. Koala warning signs notice (at follow up survey)**



*Analysis of group differences at follow-up survey:*

Analysis indicated no significant differences between people from genders, age groups or postcodes in terms of whether they reported noticing signs.

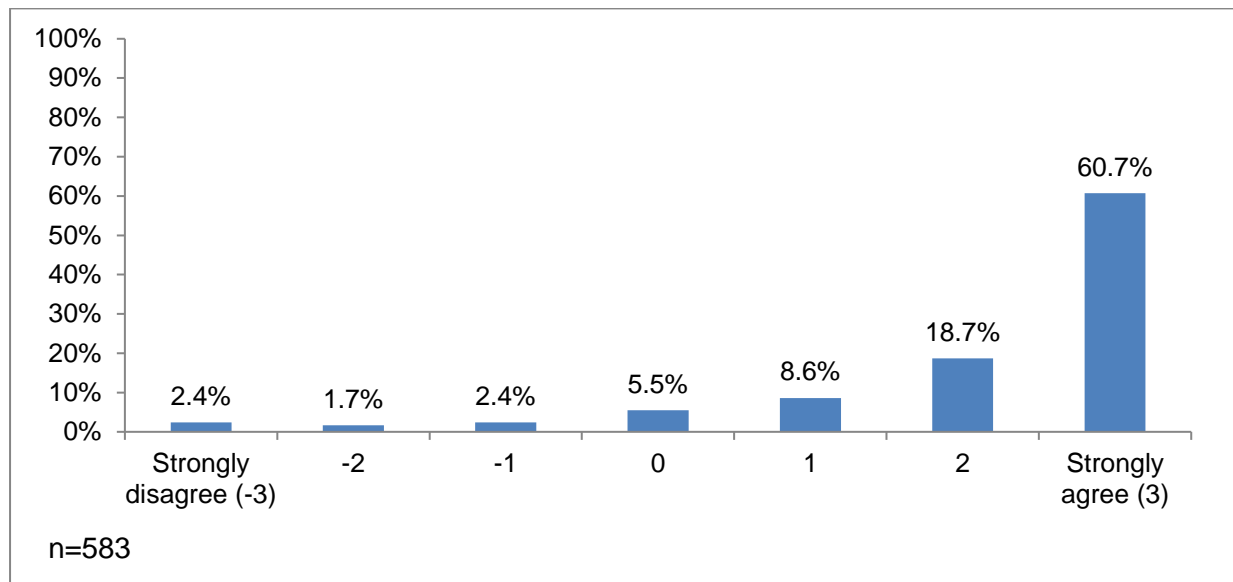
A follow up open ended question asked respondents that indicated “Yes” to the above question to report on which messages were more likely to make them slow down. A range were reported, with the most frequent themes being *speed / slow down sign*, *flashing lights / sign*, and *koala crossing* (see analysis in Table 2). Within each of these themes, messages were varied, and these are tabled all respondent comments in Appendix E. These results reinforce findings from the baseline survey, emphasising the need for more signage as demonstrated in the table below.

**Table 2. Message to slow down themes (at follow up survey)**

<b>Messages themes</b>	<b>n</b>	<b>%</b>
Speed / slow down	45	25%
Flashing light sign	31	17%
Koala crossing	18	10%
Koala picture	14	8%
All / any signs	9	5%
General koala signs	9	5%
Koala active times	8	4%
Warning / caution	4	2%
Current sign	3	2%
Yellow sign	3	2%
Wildlife sign	2	1%
Koala area	2	1%
Other	20	11%
None	9	5%
Not sure	3	2%
<b>Total number of comments</b>	<b>180</b>	<b>100.0%</b>

Respondents were asked to what degree they agree that koalas have a place in our urban landscape. Again, most of the respondents (89.8%) agree that koalas have a place in our urban landscape, and once again results are aligned with the baseline survey, showing a statistically significant increase from baseline to follow up. See Figure 11 for follow up results.

**Figure 11. Koalas have a place in our urban landscape (at follow up survey)**

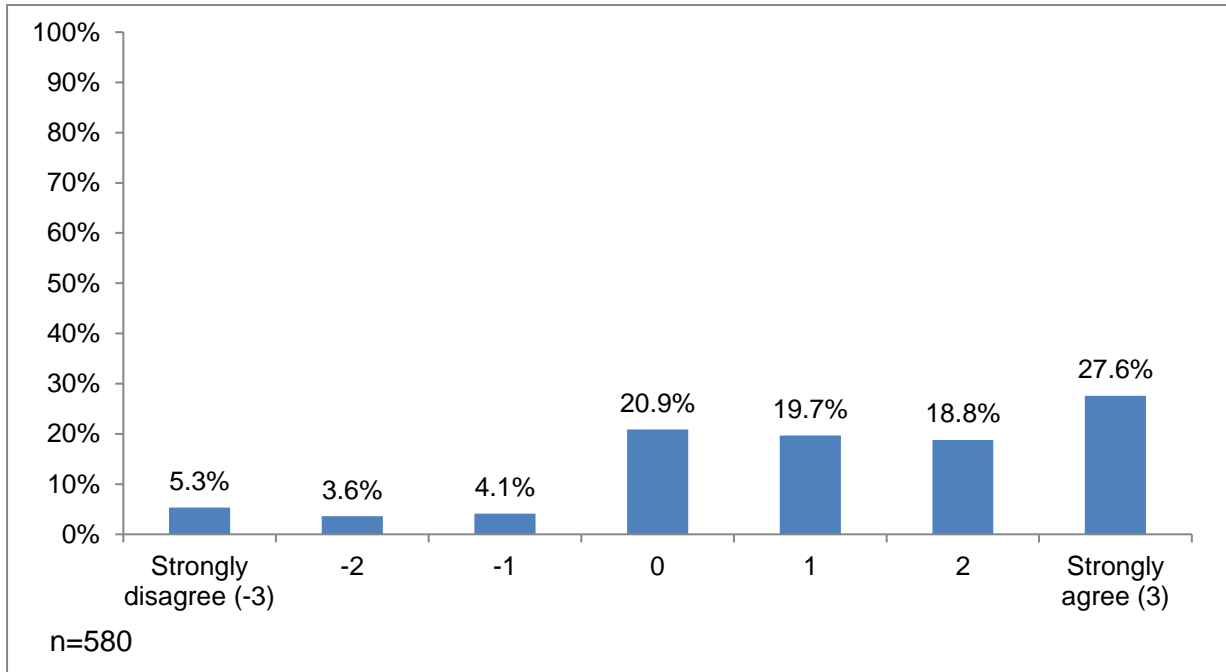


*Analysis of group differences at follow-up survey:*

Analysis indicated no significant differences between people from different genders in terms of their attitudes towards koala conservation. However, analysis indicated significant differences between participants' attitudes towards koalas having a place in Redland City's urban landscape across age groups ( $p < 0.01$ ) and postcodes ( $p < 0.01$ ). Among respondents, attitudes towards koalas having a place in the urban landscape was the highest for postcode 4160 (Ormiston, Wellington Point) ( $M=6.4$ ;  $SD=1$ ), while respondents from postcode 4184 (Bay Islands) had the lowest level of agreement that koalas belong in our urban landscape ( $M=5.3$ ;  $SD=2.3$ ) (see Appendix F). Furthermore, respondents under 18 had the lowest level of attitudes towards koalas having a place in the urban landscape ( $M=5.7$ ;  $SD=1.5$ ), while respondents aged over 65 had the most positive attitudes ( $M=6.5$ ;  $SD=1.3$ ) (see Appendix E).

Participants were asked to rate whether they believed that they knew how to help protect koalas on a scale from -3 (Strongly Disagree) to 3 (Strongly Agree). Approximately 66.1% of respondents expressed positive views, whilst 5.3% strongly disagreed with this statement, and under one quarter of the respondents were neutral (20.9%). This result indicates a significant improvement from baseline results, where 62.3% of respondents expressed positive views, whilst 12.2% strongly disagreed with this statement and 25.1% were neutral.

**Figure 12. I know how to help to protect koalas (at follow up survey)**

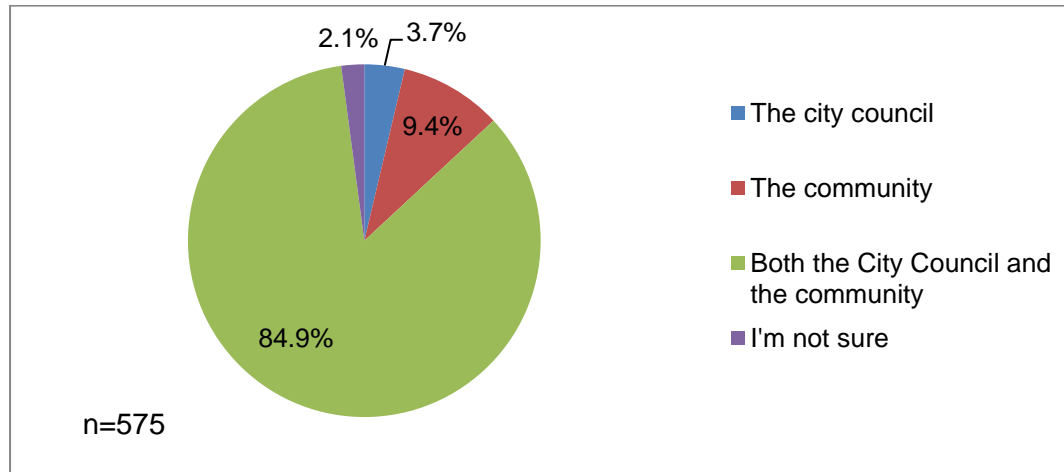


Analysis of group differences at follow-up survey:

Analysis indicated no significant differences between people from different genders, age groups and postcodes.

Respondents were asked to indicate whose role it is to protect koalas and their habitat. The majority (84.9%) responded it was both the City Council and the community's responsibility (see Figure 13). Results for this question are similar to the results at baseline.

**Figure 13. Koala conservation responsibility (at follow up survey)**



Analysis of group differences at follow-up survey:

The answers were not significantly different across gender and postcode groups. However, the answers were significantly different ( $p < 0.01$ ) across age groups. While 33.3% of respondents aged 55 to 64 reported that koala conservation was the role of the community, only 6.7% of respondents' aged 34 to 44 agreed.

Survey participants were asked to identify whether there was another party responsible for koala conservation in an open-ended question. The two themes found were *state and federal government*, and *everybody*.

Respondents were asked if they would be more vigilant if there was more available information to make them aware of the threats to koalas (N=577), 59.1% responded they would be more vigilant, 19.9% answered they would not, and 21% were not sure. There was no significant difference in terms of age groups or postcode. However, 30.6% of respondents who felt they would not be more vigilant if more information was made available to them were aged 65 and above, whereas only 7.1% were aged 18 to 24.

Respondents that indicated they would like to receive more information were asked what type of messages they would like to receive. Respondents indicated the information channels they would like to be contacted through (e.g. email, RCC Facebook page, brochures, etc) and the “type of information” they wished to receive. Information that respondents would like to receive included information about koalas, such as their habitat, threats to koalas, what they eat, etc (see *Table 3* below) and information explaining how they could help to protect koalas. Further details on specific comments can be found in Appendix G. Once again, these results reinforce findings from the baseline survey, as very similar themes emerged.

**Table 3. Information respondents would like to receive (at follow up survey)**

<b>Information themes</b>	<b>TOTAL</b>	<b>%</b>
Information channel	71	47%
Koala specifics	17	11%
Koala protection guidance	14	9%
Koala area	13	9%
Other	10	7%
All / any information	6	4%
Koala sightings	6	4%
General information	4	3%
Breeding season	3	2%
Habitat clearing	3	2%
Not sure	3	2%
<b>Total number of comments</b>	<b>150</b>	<b>100.0%</b>

## Koala Awareness Campaign Recall

To understand whether respondents could recall the koala awareness campaign, respondents were asked whether they had seen Council's recent koala awareness media campaign. Approximately one-third (30%) of all respondents (N=580) reported having seen the campaign. To understand which media channels delivered, respondents were asked to report which communication channels they had seen. Results showed that the most successful medium was Billboards (28.5%), followed closely by Social media (27%). Over 20% of respondents also responded seeing the campaign through print channels, or bus shelters. While results indicate a low recall for the cinema advertising, it is not possible to draw definite conclusions due to the very short timeframe of this media channel (only three weeks), and the fact that respondents were asked if they recalled this ad three months later. For full details, please see Table 4.

**Table 4. Recall by media channel**

Media channels (N=256)	%
Billboards	28.5%
Social media	27.0%
Print	24.2%
Bus shelter	20.3%
Bus ads	17.5%
Other	12.5%
Online ads	9.0%
Cinema advertising	5.5%

A total of 255 people reported seeing one or more messages, which represents 42.8% of the total sample. This difference can be explained due to the fact that specific channels were prompted in the questions, which can make the recall process easier.

To get more insights into people's recall of the campaign, participants were asked to state what the ads were about in an open-ended question. A summary table is provided below (see Table 5). For more details, please see full table in Appendix H.

**Table 5. Ads recall themes**

Ads recall themes	TOTAL	%
Conservation / Threats	45	27%
Media channel / location	19	11%

Breeding season	16	9%
Road signs / car speed	15	9%
Habitat / Environment	14	8%
Awareness	9	5%
Bachelor koala	6	4%
Can't remember / Didn't see	16	9%
Other	29	17%
<b>Total number of comments</b>	<b>169</b>	<b>100.00%</b>

It is important to note that the themes are not mutually exclusive. This means that some of the ads may reflect more than one theme within the same ad. Note that in the example below (Figure 14) there are three themes that could be associated with it. The line “Let’s care for koalas” can be associated to *Conservation / Threats*, while “It’s breeding time” can be related to *Breeding season* and the koala speech bubble can be linked to the *Bachelor koala*.

Figure 14. Example ad from koala awareness campaign



Some respondents recall may be more easily associated with the message rather than the image, and other with the visual rather than the message.

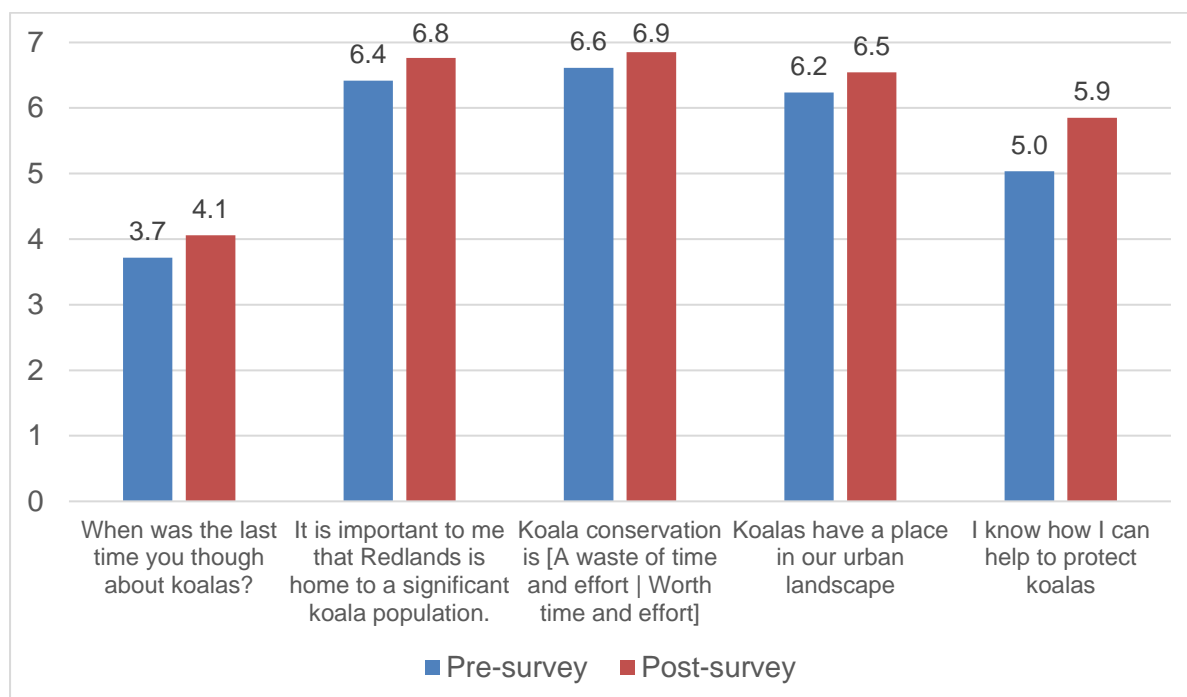


## Koala Awareness Campaign Evaluation: Pre and post survey comparison

To understand whether there were significant differences between the pre and post intercept survey results, independent samples t-test were conducted.

Questions regarding recalling seeing and thinking of koalas showed statistically significant differences, indicating an increase in recall of koala sights/thoughts. Interestingly, analysis of findings showed a statistically significance in the question asking when was the last time respondents thought about koalas. This result can be attributed to the fact that the campaign prompted people to think about koalas through the ads, and therefore people were thinking about koalas more frequently as a result of the campaign.

Figure 15. Attitudes pre and post comparison



In addition, attitudinal questions focussing on the sense of belongingness of the koala in the community, koala conservation, and knowing how to help protect koalas increased following the koala awareness campaign. Results of the data analyses indicate positive changes from the baseline intercept surveys to the post campaign intercept surveys.

Lastly, respondents were asked whether the ads prompted them to do anything differently. 23% reported that they have done something different due to the koala awareness campaign. A summary table with the most common themes can be seen below (see Table 6). For more details, please see full table in Appendix I.

**Table 6. Actions prompted by ads**

Action prompted by ads themes	TOTAL	%
Road or speed-related actions	33	43%
Increased awareness / alertness	30	39%
Conservation actions	3	4%
Other	11	14%
<b>Total number of comments</b>	<b>77</b>	<b>100%</b>

# Conclusion and recommendations

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## Key insights

This report for Redland City Council summarised the results of the post campaign survey, including an evaluation of changes resulting from the campaign. The overall aim of this survey was to understand whether the koala awareness campaign was effective in increasing Redlands residents' attitudes and awareness about koalas. The key insights from this evaluation are summarised below:

1. In the post survey nearly 60% of the respondents had thought about koalas within the last week, which was an increase from the pre survey (47%). This indicates that communication increases salience – brings koalas to the top of people's minds.
2. In the post survey koala sightings were not common - 44.1% of the respondents reported not seeing koalas in the past 12 weeks, which is in line with the pre-survey (42.8%). Residents residing in postcode 4184 (Bay Islands) are the least likely to report koala sightings, consistent with results from the baseline survey.
3. Aligned with baseline survey findings, attitudes towards koala conservation is generally positive, but community knowledge of koala deaths and the means that community can use to help protect koala's remains modest. In addition, females showed stronger agreements than males that koala conservation is worth time and effort and younger generations showed less agreement that koalas have a place in the community.
4. Most of the respondents believe both the City Council and the community need to work together to protect koalas. However, when comparing across different age groups, younger people tend to show less knowledge on the means they can use to help protect koalas. These findings were also consistent with baseline findings.
5. Koala warning road signs were noticed by the majority of the respondents, but many of them stated approaches such as flashing lights on the signs would be helpful. Inclusion of flashing lights is a means to increase saliency.

## Campaign evaluation – baseline and follow up comparison:

6. People reported thinking about koalas more recently compared to the baseline survey, and attitudes towards koala conservation and koala belongingness to the community increased after the campaign, although they were generally high from baseline.
7. The media channels with the largest recall were billboards, social media, print media and bus shelters. Communication channels such as cinemas and online ads should be improved by increasing the frequency and exposure, as the short timeframe of such ads does not allow to draw definite conclusions on their effectiveness.
8. The content of the ads people could recall the most was about koala conservation or messages about threats
9. Approximately one-quarter (23%) of people reported taking a different action prompted by the ad. The main themes that emerged were related to road or speed-related behaviours, or increased awareness/alertness.

## Recommendations

Based on the results of this report, re-occurrence of the koala awareness program is recommended to sustain long term impact on local residents' positive attitudes towards koala conservation. Additional recommendations for Redland City Council's future efforts focussing on koala conservation follow.

### *Communications campaign target audience*

Communications should focus on younger age groups to deliver koala protection messages. In addition, where possible these communications should focus on postcodes where koala sightings are highest.

In addition, it is recommended that other regions that have a high threat of koalas are considered, such as North Stradbroke Island. There are some differences in koalas threats in Stradbroke Island area due to the touristic aspect of the region. As such, it is important to conduct formative research to understand the target audience's awareness, attitudes and knowledge of koalas prior to implementing a campaign in this region.

### *Communications campaign content*

Given the positive attitudes towards koala conservation in the community and community attitudes that koala protection is a shared responsibility, additional emphasis on actions that community members can take to protect koalas is needed to extend beyond awareness raising.

Community awareness was highest (70% of respondents surveyed) for the role that tree clearing (and hence urban development) has on koala mortality and as such communication needs to be carefully balanced. Importantly, council needs to communicate what it is doing to help protect koalas and it needs to clearly communicate how measures implemented have had positive effects on koala populations and mortality reduction. The communication campaign needs to focus on shared roles as follows:

- Initiatives that are in place to counteract the effects of urban development on koala habitats need to be clearly communicated and ideally outcomes achieved to date by Redland City Council should be communicated. For example, a case study documenting the outcomes of the sign trial should be sent out to community. Residents involved in the trial should receive a flyer communicating the trial outcomes and thanking them for their help.
- Other Redland City Council initiatives that have been implemented successfully to save koalas should also be clearly communicated to promote council's shared undertaking to protect koalas. For example, case studies from the Leave It campaign could be communicated demonstrating how dogs have been trained to avoid koalas (aversion).

Follow up survey results showed that 23% of survey participants were prompted to take a different action after seeing the advertising campaign. When asked what they did in response to the campaign, the majority reported taking some action in regards to road awareness or speed, and/or increasing their overall alertness and awareness about koalas. Given that knowledge about koala mortality risk factors remains modest and that people would like to

know how their households can help to protect koalas clear calls to action, so that people know how to help, are needed.

### *Research design*

Moving forward an evaluation methodology that includes using matched samples for baseline and follow up assessment is recommended. Due to budgetary considerations the 2018/2019 evaluation was limited to a repeated measure cross sectional design, which means two different samples were compared and results could merely reflect the different groups measured. The quality of the outcome assessment can be increased with a longitudinal research design ensuring the sample is matched pre to post. Inclusion of a longitudinal research design would require a larger sample at baseline to allow for attrition (non-response) by some respondents in the second survey administration. Face to face survey administration could be undertaken at time point one and respondents would be asked at the end of survey completion if they are happy to undertake a follow up survey (either via phone or online). Ideally incentives would be offered to encourage follow up. Alternatively, a telephone administered survey could be used pre and post campaign.

# Authors

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**Dr. Bo Pang** is a Research Fellow in the Social Marketing @ Griffith Centre at Griffith University. Bo holds a PhD in Social Marketing and offers extensive experience in conducting research and delivering programs in the field of social marketing, all of which are published in leading scholarly journals. Bo's work involves implementing theoretical constructs into empirical community interventions and he offers experience delivering changes benefitting community across a diverse range of projects at local, State and National governments. Bo has also worked with a wide array of profit and not for profit organizations. His work has been published in over 30 refereed journal articles, conference papers, and research reports.

**Erin Hurley** is a Research Assistant at Social Marketing @ Griffith. Erin's research interests are in the areas of social marketing, health behaviour, alcohol education and co-design. She is currently working on projects delivering changes to the environment, people's health and for the greater social good. Erin offers experience in social research and analysis, delivering reports within specified project timeframes to client satisfaction. Research partners include the Department of Environment and Heritage Protection, Queensland Police Service, Redland City Council and Queensland Catholic Education Commission.

**Tori Seydel** is currently an Honours student in the Social Marketing department at Griffith. Her honours project falls within the Leave It project and focuses on evaluating the success of the communication plan in achieving its goals in changing community norms. She has previously graduated from her Bachelor Degree (Marketing and Event Management) with distinction. During her final year in the Bachelor Degree, Tori began an internship where she was responsible for the development, implementation and monitoring of the digital marketing and strategic marketing plan to increase the growth and revenue of the business.

**Professor Sharyn Rundle-Thiele** is Director, Social Marketing @ Griffith. Drawing on her commercial marketing background Sharyn's work applies marketing tools and techniques to deliver changes for the better. Working in partnerships, Sharyn has led projects that increase healthy eating, change adolescent attitudes to alcohol drinking ([www.blurredminds.com.au](http://www.blurredminds.com.au)), reduced food waste and increased dog's abilities to avoid koalas (see [www.leaveit.com.au](http://www.leaveit.com.au)). Key project partners in 2019 are Defence Science and Technology Organisation, Australian Defence Force, Queensland Catholic Education Commission, Redland City Council, National Association of Charitable Recycling Organisations, Department of Environment and Science (Qld), Johnson and Johnson Innovation, and more. Sharyn's work is evidence based and award winning. She has published more than 130 books, book chapters and journal papers.

**Jessica Harris** is Project Manager at Social Marketing @ Griffith. After completing her Honours research with the Australian Defence Force and Social Marketing, Jess was offered a Postgraduate Research Scholarship to undertake her Ph.D. with Social Marketing. She currently works with the ADF on social behaviours of how habits influence consumption and acceptability of food choices. Jess is currently a sessional academic for Griffith, teaching Digital and Social Media Marketing. Jess has a vast background working with private firms developing and implementing marketing strategies to produce growth and revenue.

# Appendix A: Intercept survey

Survey

**About you and your dogs(s)**

1. Do you own any dogs?

Yes  
 No *[skip to question 18, turn the paper]*

2. How many dogs do you currently have?

---

3. Has your dog(s) ever received any kind of training?

Yes                       No *[skip to question 5]*

4. Which dog training company did you use?

---

5. Does your dog sleep in a confined space at night (confined space means to keep your dog in an enclosure e.g., crate, or indoors)?

Yes                       No

6. People who are important to me think I should not/should confine my dog(s).

Should not							Should
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Most of my family members confine their dog(s).

Strongly disagree							Strongly agree
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. For me confining my dog(s) is:

Fodlish							Wise
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. For me confining my dog(s) is:

Unpleasant							Pleasant
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. How confident do you feel about confining your dog(s)?

Not at all confident							Completely confident
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Whether or not I confine my dog(s) is entirely up to me.

Strongly disagree							Strongly agree
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. In the next week I will confine my dog(s).

Extremely unlikely							Extremely likely
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

————— Look at the poster —————

13. Which of the following can your dog(s) do?

	Never	Rarely	Sometimes	Very often	Always
Sit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stay	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Come back when called	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aversion (not chase things)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stay quiet on command	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. People who are important to me think I should not/should confine my dog(s)

Should not							Should
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Most of my family members confine their dog(s).

Strongly Disagree							Strongly Agree
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. For me confining my dog(s) is:

Fodlish							Wise
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. For me confining my dog(s) is:

Unpleasant							Pleasant
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



# Survey

## About Koalas

18. When was the last time you thought about koalas?

- Within the last week       In the past 2 to 3 weeks  
 In the past 4 to 8 weeks       In the past 9 to 12 weeks  
 Haven't thought about koalas in the past 12 weeks

19. When was the last time you saw a koala?

- Within the last week       In the past 2 to 3 weeks  
 In the past 4 to 8 weeks       In the past 9 to 12 weeks  
 Haven't seen a koala in Redlands in the past 12 weeks       Have never seen a koala  
 I'm not sure

20. It is important to me that Redlands is home to a significant koala population

- Strongly disagree      Strongly agree
- 3   -2   -1   0   1   2   3
- 

21. Koala conservation is

- A waste of time and effort      Worth time and effort
- 3   -2   -1   0   1   2   3
- 

22. Koalas move around a lot more in their breeding season (July-Dec)

- True       False  
 Not sure

23. The main causes of Koala deaths are (Please tick all that apply)

- Vehicle strikes       Clearing trees  
 Dog attacks       Disease, e.g. Chlamydia  
 Other       Not sure

If 'Other', please write your answer here:

---

24. Did you notice koala warning road signs when driving in the last week?

- Yes       No  
 Not sure

25. If 'Yes', which messages were more likely to make you slow down?

---

26. Koalas have a place in our urban landscape

- Strongly disagree      Strongly agree
- 3   -2   -1   0   1   2   3
- 

27. I know how I can help to protect koalas

- Strongly disagree      Strongly agree
- 3   -2   -1   0   1   2   3
- 

28. Whose role is it to protect koalas and their habitat?

- The City Council       The community  
 Both the City Council and the community       I'm not sure  
 Other

If 'Other', please write your answer here:

---

29. If there was more available information to make you aware of the threats to koalas locally would you be more vigilant about protecting koalas around your home garden and when driving?

- Yes       No  
 I'm not sure

30. If 'Yes', what type of information would you like?

---

## More About You

31. Your gender

- Male       Female  
 Other

32. What is your current age in years?

---

33. How would you describe your current household?

- At home with my parents/guardians       One parent family  
 At home with my sole parent/guardian       Group or share household (most people in household are non-related)  
 Couple without children       One person household  
 Couple with children (includes children aged 18 years and older)       Other

34. Does your property have a backyard and/or a front yard?

- Yes       No

35. What is your postcode?

---

36. Are you willing to be re-contacted by Griffith University to support a follow up study in 6 months time?

- Yes       No

To enter a draw to win 1 of 10 \$50 gift vouchers, please enter your email address:

## Survey

### About Koalas

18. When was the last time you thought about koalas?

- Within the last week       In the past 2 to 3 weeks  
 In the past 4 to 8 weeks       In the past 9 to 12 weeks  
 Haven't thought about koalas in the past 12 weeks

19. When was the last time you saw a koala?

- Within the last week       In the past 2 to 3 weeks  
 In the past 4 to 8 weeks       In the past 9 to 12 weeks  
 Haven't seen a koala in Redlands in the past 12 weeks       I'm not sure

20. It is important to me that Redlands is home to a significant koala population

Strongly disagree							Strongly agree
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. Koala conservation is

A waste of time and effort							Worth time and effort
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Koalas move around a lot more in their breeding season (July-Dec)

- True       False  
 Not sure

23. The main causes of Koala deaths are (Please tick all that apply)

- Vehicle strikes       Clearing trees  
 Dog attacks       Disease, e.g. Chlamydia  
 Other       Not sure

If 'Other', please write your answer here:

---

24. Koalas have a place in our urban landscape

Strongly disagree							Strongly agree
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. I know how I can help to protect koalas

Strongly disagree							Strongly agree
-3	-2	-1	0	1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26. Whose role is it to protect koalas and their habitat?

- The City Council       The community  
 Both the City Council and the community       I'm not sure  
 Other

If 'Other', please write your answer here:

---

27. Would more available information to make you aware of the threats to koalas locally make you more vigilant about protecting koalas?

- Yes       No  
 I'm not sure

If 'Yes', what type of information would you like?

---

28. Did you notice koala warning road signs when driving in the last week?

- Yes (Where? \_\_\_\_\_)  
 No  
 I'm not sure

If 'Yes', which messages were more likely to make you slow down?

---

29. Did you see Council's recent koala awareness media campaign?

- Yes       No

30. Which media channels do you recall seeing the ads in? (Please tick all that apply)

- Print       Social media  
 Cinema advertising       Online ads  
 Bus ads       Bus shelters  
 Billboards       Other

31. What were the ads about?

---

32. Did the ads prompt you to do anything differently?

- Yes       No

If so, what?

---

## Survey

## Appendix B: Respondents thoughts about koalas in the past weeks

	Age Groups							
	<18	18 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+	Total
Haven't thought about koalas in the past 12 weeks	18.9%	11.1%	8.8%	12.6%	2.7%	10%	8.3%	10%
in the past 9 to 12 weeks	7.5%	6.3%	8.8%	8%	4%	2.9%	8.3%	8%
In the past 4 to 8 weeks	11.4%	17.5%	13.2%	11.5%	9.3%	8.6%	9.4%	11%
In the past 2 to 3 weeks	22.6%	14.3%	14.7	10.3%	16%	10%	10.4%	13%
Within the last week	39.6%	50.8%	54.4	57.5%	68%	67.1%	62.5%	58%
Total	100%	100%	100%	100%	100%	100%	100%	100%

p < 0.01

## Appendix C: Koala sightings in the past weeks

	Postcodes										
	4157	4158	4159	4160	4161	4163	4164	4165	4183	4184	Total
Have never seen a koala	4.2%	11.1%	2.9%	3.1%	0%	1.4%	1.1%	3.6%	0%	26.3%	4%
in the past 12 weeks	50%	33.3%	57.1%	44.3%	53.6%	34.5%	35.6%	54.1%	0%	57.9%	44.2%
In the past 9 to 12 weeks	8.3%	0%	14.3%	10.3%	10.7%	9.5%	9.2%	9%	0%	2.6%	9.1%
In the past 4 to 8 weeks	12.5%	11.1%	14.3%	13.4%	14.3%	18.9%	16.1%	5.4%	0%	0%	12.7%
In the past 2 to 3 weeks	0%	0%	2.9%	8.2%	3.6%	10.8%	9.2%	6.3%	0%	0%	7%
Within the last week	8.3%	22.2%	5.7%	9.3%	10.7%	10.8%	11.5%	9%	80%	0%	10%
I'm not sure	16.7%	22.2%	2.9%	11.3%	7.1%	14.2%	17.2%	12.6%	20%	13.2%	13.1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

p < 0.000

## Appendix D: Koala conservation statements by age groups

Age group	Redlands is home to a significant koala population N=513	Koala conservation is a waste of/worth time and effort N=513	Koalas have a place in our urban landscape N=511
	Mean (SD)	Mean (SD)	Mean (SD)
Under 18	5.9 (1)	6 (1.3)	5.7 (1.5)
18 to 24	6.3 (0.9)	6.6 (0.7)	5.8 (1.6)
25 to 34	6.4 (1)	6.7 (0.7)	6 (1.5)
35 to 44	6.5 (0.7)	6.7 (0.6)	6.3 (1)
45 to 54	6.6 (1)	6.7 (0.6)	6.2 (1.4)
55 to 64	6.5 (1.1)	6.7 (0.5)	6.5 (0.9)
65 and over	6.6 (1.2)	6.6 (1.2)	6.5 (1.3)

# Appendix E: Messages more likely to make respondents slow down

Messages themes and specific comments
<b>Speed / slow down (23%)</b>
Electronic smiley face/sad face (N=3), digital signs (N=2), slow down (N=9), lower speed signs, speed signs (N=8), big slow down sign, the ones that monitor your speed, slow down- be aware, slow down – koalas, sign posted reduce speed, koala habitat – slow down, speed cameras, drive slowly, koalas in area slow down, variable speed signs –slow for Sam, the ones that do not show speed- psychological showing speed=police enforcement, combination of speed and smiley face is effective, 'slow down' 'people don't clear trees', road signs 'please slow down sign', slow down - koala at night, when my speed is displayed, faces and speed indicators, between 7pm - 6am 80 reduce 60
Slow down / koalas crossing
<b>Flashing lights / sign (17%)</b>
Big signs also flashing, light signs, flashing signs (N=10), flashing kilometre signs, the ones that light up, flashing crossing signs, neon lights sign, flashing speed signs are good, flashing signs like traffic light (N2), light up signs in evening, flashing road sign, flashing sign road marking, flashing night time signs
Flashing / slow down signs
The big flashing / orange ones, can't miss it
Flashing lights / speed alert
Flashing / warning lights
<b>Other (19%)</b>
Awareness (N=3), the ones with individual koala information, all throughout Cleveland, more information in general, depends of traffic, more, seeing a koala on the road, when it is personal, thank you-koala aware, the one with the hairdryer, koalas died here, it is up to the people, signs that alert me that there is a high koala count, none really about with cars-koala bridge, designated sanctuaries, any car damage (don't want), 'Your killing us off', signs taken away, yes (N=15), yes but not everyone will, just the koala area sign
<b>Koala crossing (8%)</b>
Koala crossing (N=9), koalas crossing roads, koalas crossing here, koala and kangaroo crossing, probably crossing, that they may cross
Koala crossing / speed detection
Koala crossing / picture
<b>Koala picture (7%)</b>
Pictures on signs, anything with koala on it, koala symbol, picture representing koalas, picture (n=4), any pictures
Koala images / speed signs
Pictures / flashing signs / speed

Messages themes and specific comments
Pictures with koala / flashed green and red
Pictures koalas / koalas cross here speed
Pictures / speed
<b>All / any sign (5%)</b>
All (N=2), all messages, all of them, more likely the breeding season on or flashing signs, any (N=3_, all of them (N=2)
<b>General koala sign (5%)</b>
Road signs (N=4), street signs, just seeing a koala sign, more of the sign, same for kangaroo, koala, just the koala sign
<b>None (5%)</b>
No (N=2), none (N=4), no as I am used to seeing signs everywhere, none because the sign loses effect quickly, no too selfish – need to get to work
<b>Koala active times (4%)</b>
Moving house, koala breeding season (N=5), breeding season mobility alerts, advice that it is breeding season
<b>Current signs (3%)</b>
Current methods are appropriate, the ones that you are already showing, the existing ones are effective
<b>Yellow sign (2%)</b>
Big yellow / orange signs
<b>Warning/caution (2%)</b>
Warning road sign, watch out for koalas, caution koalas (N=2), please be careful koala in the area
Yellow / warning signs
The yellow signs / with the koala images
<b>Not sure (2%)</b>
not sure (N=2), unsure, not sure but was more cautious
<b>Koala sighting (1%)</b>
Koala sighting, sighted in area would help
<b>Wildlife sign (1%)</b>
it was a wildlife sign on the road not specific to koalas, wildlife

Unless otherwise denoted with a reported N, 1 response was received.

## Appendix F: Koala conservation statements by postcodes

---

Post code	Koalas have a place in our urban landscape N=581
4157	6.4 (1.1)
4158	5 (1.7)
4159	6.2 (1.4)
4160	6.4 (1)
4161	6 (1.3)
4163	6.2 (1.4)
4164	6.2 (1.5)
4165	6.2 (1.2)
4183	6 (1.4)
4184	5.3 (2.3)



# Appendix G: Information respondents would like to receive

Information themes and specific comments
<b>Information channel (47%)</b>
Advertisements (N=6), billboard (N=2), brochure (N=3), council news and information, Facebook (N=4), flyer (N=4), leaflets (N=2), pamphlets in letterbox, media (N=3), newspaper, news, community – all levels of government, public information, more wildlife signs, common place resources – e.g. ad, public information e.g. tv, in your face all around people, bus stops, education in schools (N=3), talks, more information outside, notice in parks, poster (N=6), print, signs (N=6), social media (N=2), TV (N=10), videos, website (N=2), YouTube ads
<b>Koala specifics (11%)</b>
population decline, statistics about the species life and ways of living habits, more information on life of koala, statistics on koala deaths koala population and locations, how to tell if ill or in danger, population numbers + habitat areas, general koala information and ideas of how to keep them safe, importance of habitat, what kills/harm koala most and what we can do to help, awareness, need stats e.g. injuries/dog attack, updates, more awareness, TV, how much are being killed, behaviour
<b>Koala protection guidance (9%)</b>
look after them very well, understanding what to do with injured koala, who to call awareness of populated areas and how to protect them, about how the community can protect, how to keep them safe how to protect, what we can do to help educate people on what they can do, how to help avenues where I can assist, information on what we can do in the community to help, e.g. volunteer knowledge how to help how to
<b>Koala area (9%)</b>
facts and statistics about local area, locations, ways to help incomparable into urban landscapes, local habitat/ local trees (N=3), where they feed, density of koalas in specific areas, looking after habitat, information on where most koala are located, most populated areas, places they are-own place, instructions on where most koalas in each suburb can be found, numbers of koala around area
<b>Other (7%)</b>
might help those who are not aware, more deaths and causes, already very aware more image in koala zones, how accessible it is to public I am vigilant now, what trees? where to plant, regular update and reminders, to give them homes, fun facts
<b>All / any information (4%)</b>
Everything, whatever, all types of information, all relevant information, all (N=2)
<b>Koala sightings (4%)</b>
Sightings (N=2), hotline to call, details of koala sightings and deaths seeing koala and reporting that locations seen is known koala activity in a specific area

Information themes and specific comments
<b>General information (3%)</b>
General information (N=4)
<b>Breeding season (2%)</b>
education on their movement and breeding, migration, how to help, more information of breeding seasons
<b>Habitat clearing (2%)</b>
when koala habitat is endangered by another housing development, habitat removal. Often it is too late to stop it, hearing they aren't cutting down more trees, notice and habitat
<b>Not sure (2%)</b>
not sure (N=3)

Unless otherwise denoted with a reported N, 1 response was received.

# Appendix H: Ads recall themes and comments

Ads recall themes and specific comments
<b>Conservation / Threats (27%)</b>
about koalas getting wiped out slowly, animal protection, dropping koala numbers, how close we are to koalas not existing, how to protect koalas, koala conservation, koala conservation donations, koala preservation, koala protection, koala protection generally, koala's being endangered, koalas being extinct, koalas diminishing, looking after, looking after them, looking on for koalas, loss and protect koala, protect koala, protecting, protecting koala, protecting koala + their habitat, protecting koalas, protecting koalas by knowing where your dog is, protecting their environment and watch out for them, protection, protection of koala, protection and awareness, Protection/habitat, reduced numbers of koala, safety for koalas, RSPCA-save koalas, saving koalas (N=3), saving them
<b>Media channel / location (11%)</b>
Alex Hills, bus, bus shelter - in the area, electronic road signs, general ads I have specifically seen koalas on billboards, only saw Roadside, Ormiston, Redland times, Redlands, saw news not ads, season crossing here, signs, Stradbroke Ferry Terminal, Taronga zoo, the consultation zone/situation, YouTube
<b>Breeding season (9%)</b>
being aware of mating seasons and keep your dogs away, breeding season (N=7), breeding, breeding season-koala on the move. I thought billboard with koala hairdryer was inappropriate, koala breeding, koalas moving before breeding season, moving around season, slowing down (vehicles) during breeding season, TV breeding season
<b>Road signs / car speed (9%)</b>
reduced speed and extra vigilance, road sign (nearby siting), signs on road, slow down, slow down koalas crossing, slowing down, slowing down for wildlife, slowing down in koala zones, slowing for koalas, speed
<b>Habitat / Environment (8%)</b>
clearing lands/habitats, concern about habitat, designed koala essential habitat, disease and clearing trees, dog attacks - news reports, clearing concerns (news, documentary), habitat loss, keep dogs confined at night, koala active, koala environments, koala locations-street signs, koala movements, koala moving around, land clearing, local road,
<b>Awareness (5%)</b>
awareness of koalas, awareness re: driving on roads where koalas cross, be alert, be aware, be aware as koalas are on the move, being aware of koalas whilst driving, being more aware on the roads to minimise koala deaths on the road, koala awareness
<b>Bachelor koala (4%)</b>
Bachelor, Bachelor koala, Bachelor koalas, eligible bachelor koala, koala- our bachelor in Paradise, koalas in area and koala bachelor add
<b>Can't remember / Didn't see (9%)</b>
can't recall, can't remember, can't remember - not too interested, did not see any, didn't see, didn't see any, didn't see any ads, haven't seen any, haven't seen them, I am not sure, I don't know, I don't see them, unsure, was a long time ago
<b>Other (17%)</b>

### Ads recall themes and specific comments

a koala is awesome, area, cars, council couldn't care less, Gold Coast hunter land, hair dryer, hair dryer-smart koala, it was a koala running on the road, I avoid all ads, Koala was body on us back, koalas, moving homes, moving house, new team, no home, none, not on social media and don't watch a lot of TV, NSI, pictures, Redlands bachelor to Hake R.C.C. look better, speak control

Unless otherwise denoted with a reported N, 1 response was received.

# Appendix I: Actions prompted by ads themes and comments

Action prompted by ad themes and specific comments
<p><b>Road or speed-related actions (43%)</b></p> <p>slow down, care for koalas when driving a car, drive carefully, drive more carefully, drive slow, drive slowly, driving more cautiously, driving slowly, I always drive carefully looking out for wildlife, make sure I am vigilant when driving in a koala habitat area, more vigilant on road, reduce speed, reminded me to be vigilant + slow down on roads, reminded to slow at night, slow down, slow down + be aware of koala activity in the area, slow down and be aware, slow down in areas while driving, slow down whilst driving be cautious, slow down, speed &amp; want the council to mitigate habitat loss- this is main problem- protection is too late if no koala left to protect. See report by U.Q. Tonathen Rhodes, to be more aware of what's on the road and to slow down if necessary, watch the roads</p>
<p><b>Increased awareness / alertness (39%)</b></p> <p>already aware, always do right thing &amp; check look out for animals, as I always aware of protection of nature koalas, aware of habitat, be alert on the road, be alert, be aware, be aware of koala in our community, be aware when driving at road, be more aware, be more aware of koalas. Look up to see if I can find them in trees when I go for a walk, be more aware on the road, drive slower within koala zones, be more careful, be more vigilant, be more vigilant on ready, currently aware, definitely think about it, I am always aware of koala problems, I am always diligent, it is important we take time for the wildlife and nature, it made me think about it but have not made any positive effort, just be aware and mindful, keep an eye out for any wildlife, keep watch for wildlife, look more closely, make aware, unawareness</p>
<p><b>Conservation actions (4%)</b></p> <p>act locally to protect koala &amp; trees would help koalas &amp; Plant more trees &amp; Clear design needs to help wildlife, if I see a koala on the road I should call some department to protect it, I tried to remind dog owners to have dog on lead and they respond with verbal abuse</p>
<p><b>Other (14%)</b></p> <p>ads are not informative enough, because I don't have a dog, did not see, didn't see ads, donate money to that cause, don't watch non-paid TV, explore, give them homes, made me angry at the hypocrite of RCC+ habitat cleared for development, not sure, didn't see, they need a home too</p>

Unless otherwise denoted with a reported N, 1 response was received.

# Appendix J: Baseline intercept survey results (pre-survey report)

Since significant group differences were found between respondents of the online survey and respondents of the intercept survey for most of the psychological measures, the sample can not be considered the same for the two surveys. Only the intercept survey results (n= 502) are presented here in two sections, namely 1) respondent characteristics and 2) awareness and attitudes towards koalas. Each section includes the results of the data analysis, illustrated in charts or tables, and a short description. A detailed section of online survey results (n=183) can be found in Appendix G.

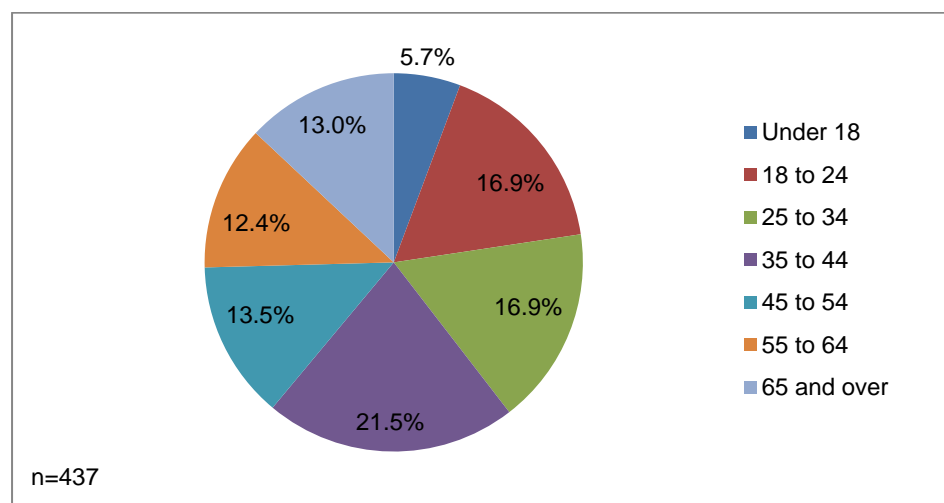
## Respondents' characteristics

Respondents were asked a series of questions to provide a profile of the sample obtained in the survey. This section of the report presents the respondents' characteristics.

Respondents were asked to indicate their gender (N=502). The sample was evenly distributed, with 41.8% being male respondents and 58.2% female.

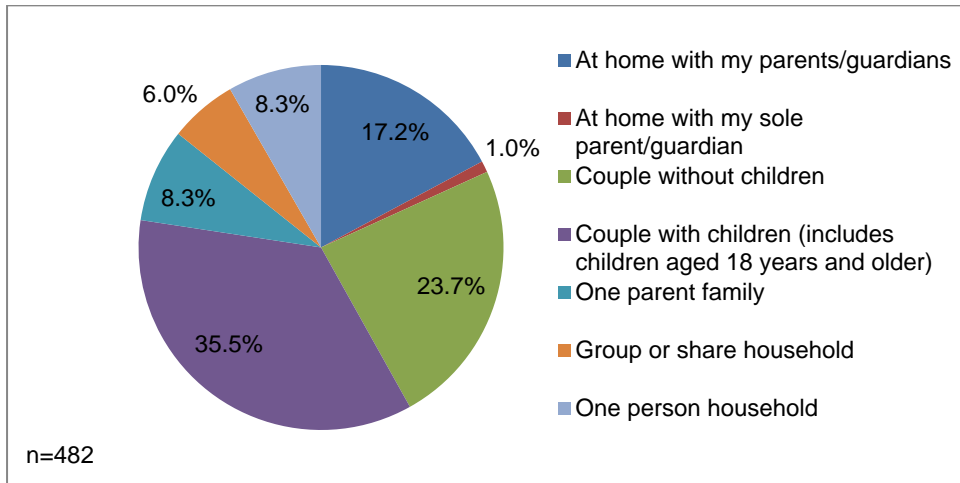
Data analysis of age demonstrated that participants (N=437) belonged to different age groups, indicating the largest group (21.5%) belonged to the 35 to 44 age group. More details of the distribution by age groups are included in Figure 1 below.

Figure 16. Age (intercept)



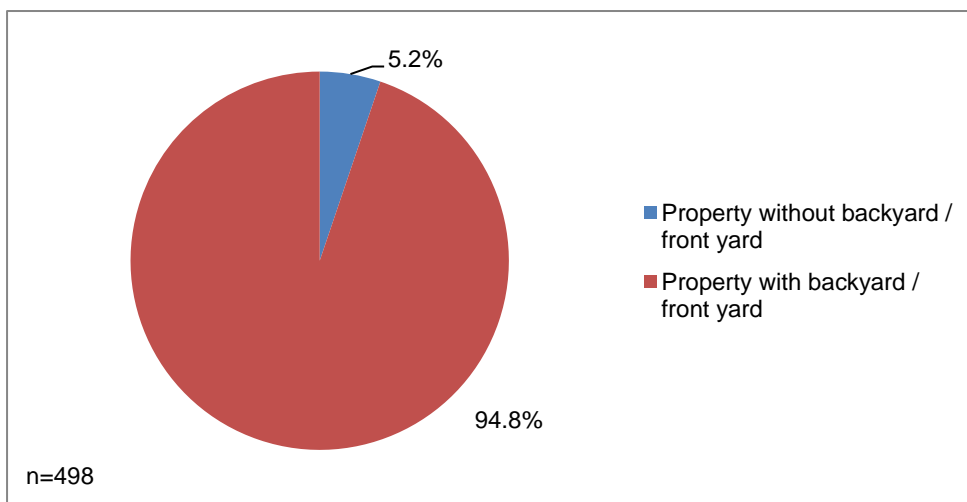
Results show that approximately 60% of the respondents (N=482) identified their households' structure as couples (35.5% with children and 23.7% without children).

**Figure 17. Household (intercept)**



To gain insight into the respondents' property type, respondents were asked to indicate whether they had a property with a backyard and/or front yard. The large majority (94.8%) indicated living in a property with a backyard and/or a front yard (see Figure 3).

**Figure 18. Property type (intercept)**



Respondents were also asked to report their postcode. Table 1 below shows the frequency of postcodes reported by survey respondents.

**Table 7. Respondents' postcodes (intercept)**

Postcodes	Suburb(s)	N=501
4157	Capalaba, Sheldon	66
4158	Thorneside	9
4159	Birkdale	31
4160	Ormiston, Wellington Point	66
4161	Alexandra Hills	53
4163	Cleveland	79
4164	Raby Bay	54
4165	Thornlands	74
4183	Mount Cotton, Point Talburpin, Redland Bay, Victoria Point	8
4184	Bay Islands (Karragarra Island Lamb, Island Peel Island Perulpa, Island, Macleay Island, Russell Island, Coochiemudlo Island)	61

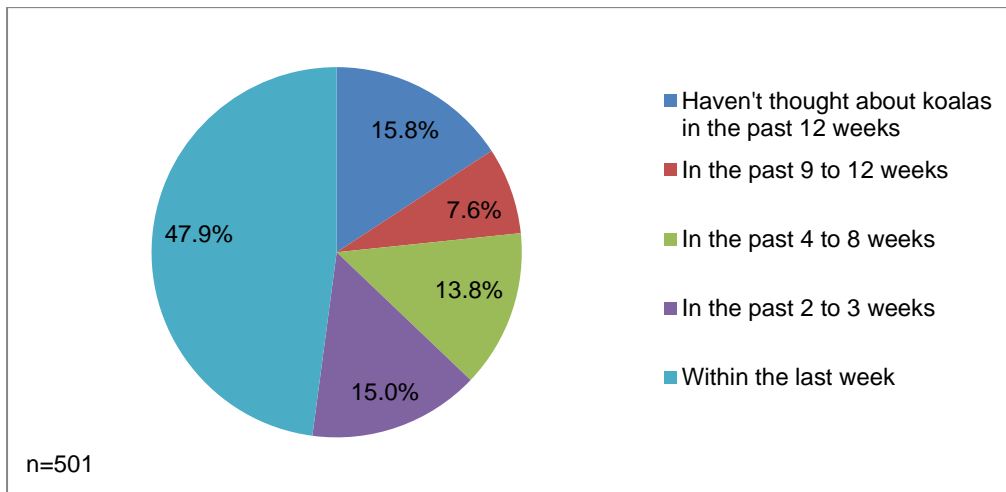
## Awareness and attitudes toward koalas

Respondents were asked a series of questions which would provide insight into the views of Redland Residents towards koalas and koala protection. This section of the report presents the awareness and attitudes toward koalas.

Respondents were asked to indicate when they last thought about koalas. Figure 4 indicates that nearly half of the respondents (47.9%) reported that they had thought about koalas within the last week.



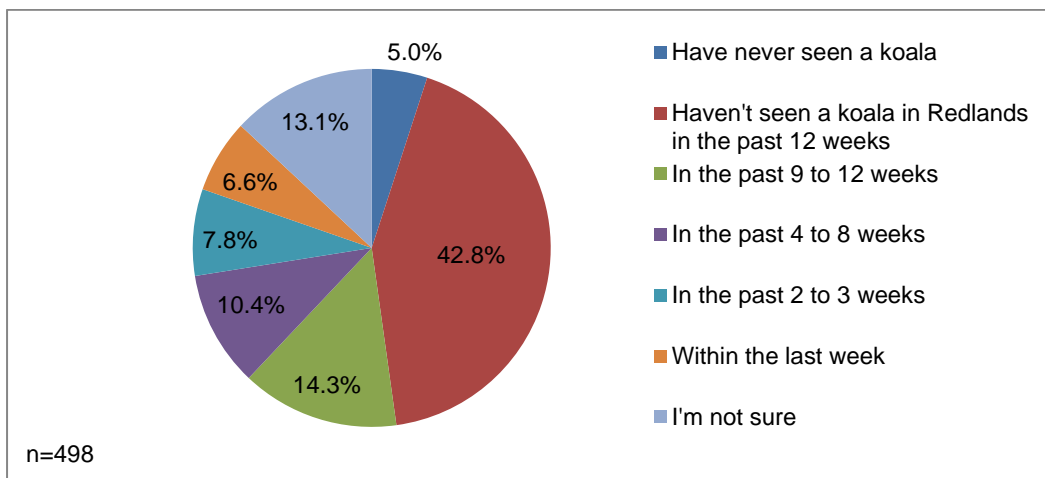
**Figure 19. Respondents' thoughts about koalas in the past weeks (intercept)**



Analysis indicates no significant differences between people according to age, gender, and postcodes in terms of when was the last time they thought about koalas.

Participants were asked to indicate when the last time that they saw a koala was. More than one-third (42.8%) responded they had not seen a koala in the past 12 weeks.

**Figure 20. Koala sightings in the past weeks (intercept)**

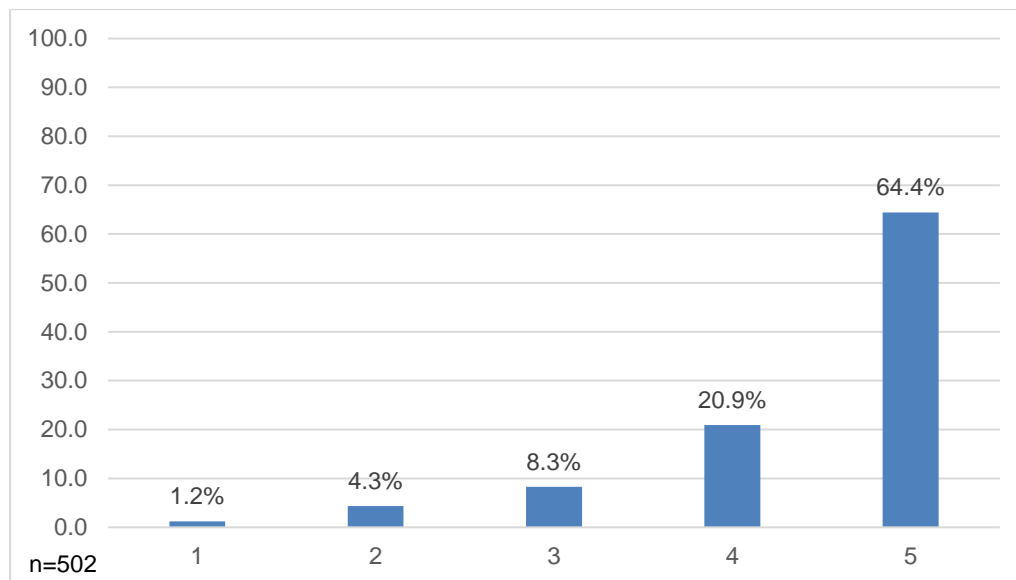


Analysis indicated no significant differences between people from different age groups and gender in terms of the last time that they saw a koala. However, people from different postcodes were significantly different. Among the people who reported “having never seen a koala”, 37.5% are from postcode 4184 (Bay Islands), whereas among the people who reported

“within the last week”, 24.2% were from postcode 4163 (Cleveland). Please refer to Appendix B for more details.

Respondents were asked to indicate to what degree that they agree that Redland is home to a significant koala population (strongly disagree is 1, and strongly agree is 5). Figure 6 below shows that about two thirds (64.4%) of the respondents strongly agree and only 1.2% strongly disagree.

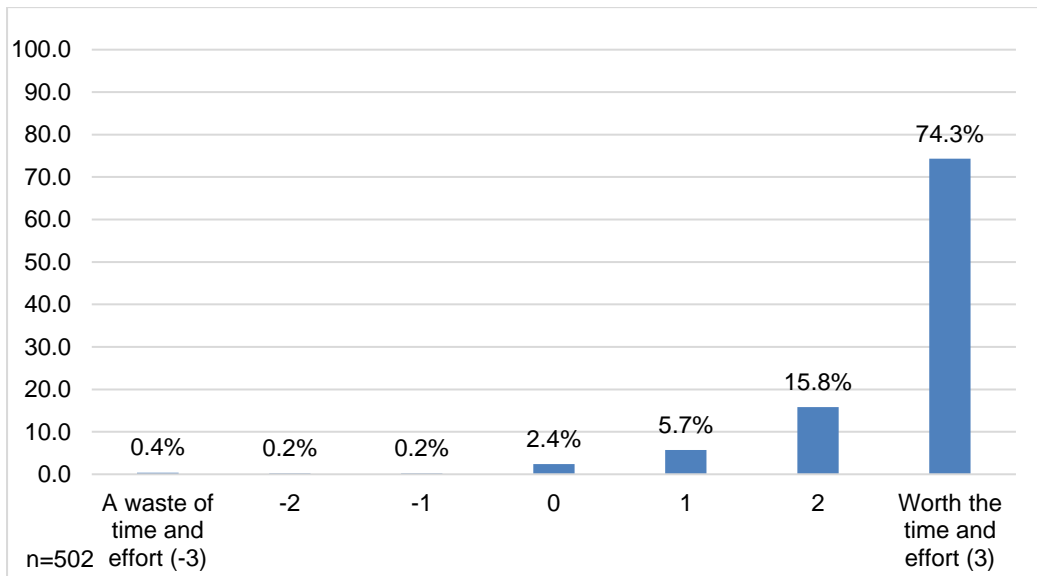
**Figure 21. Redland is home to a significant koala population (intercept)**



Analysis indicated no significant differences ( $p > 0.05$ ) between people from different age groups and postcodes. However, females were significantly more positive than males ( $M_{\text{female}}=6.51$ ,  $M_{\text{male}}=6.30$ ,  $p = 0.024$ ). Specifically, females showed stronger agreements than males that Redland is home to a significant koala population.

Respondents were asked to indicate what their attitude towards koala conservation is. Figure 7 below shows that about three quarters of the respondents think koala conservation is worth the time and effort (74.3%), and the majority of the respondents reported positive attitudes (96.8%) towards koala conservation.

**Figure 22. Respondents' attitudes toward koala conservation (intercept)**

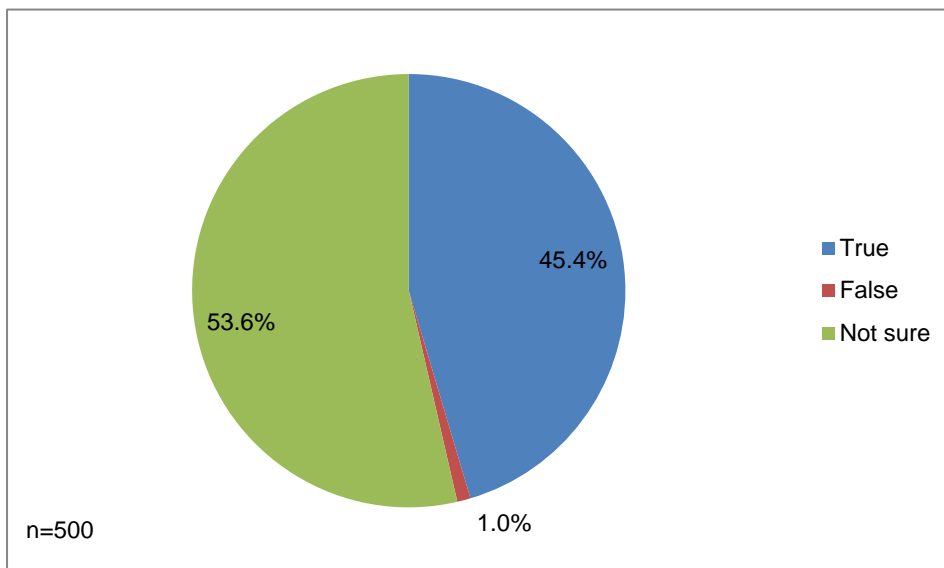


Analysis indicated no significant differences between people from different age groups, genders, and postcodes in terms of their attitudes towards koala conservation.

To understand the level of knowledge, a statement about koala movements during breeding season was included (*Koalas move around a lot more in their breeding season*), with respondents answering either “True”, “False” or “Not sure”. Results showed that 45.4% of respondents answered this was true, and 53.6% were not sure (see This result represents a significant increase from the baseline results, where 45% of the respondents had responded they thought it was “True”).

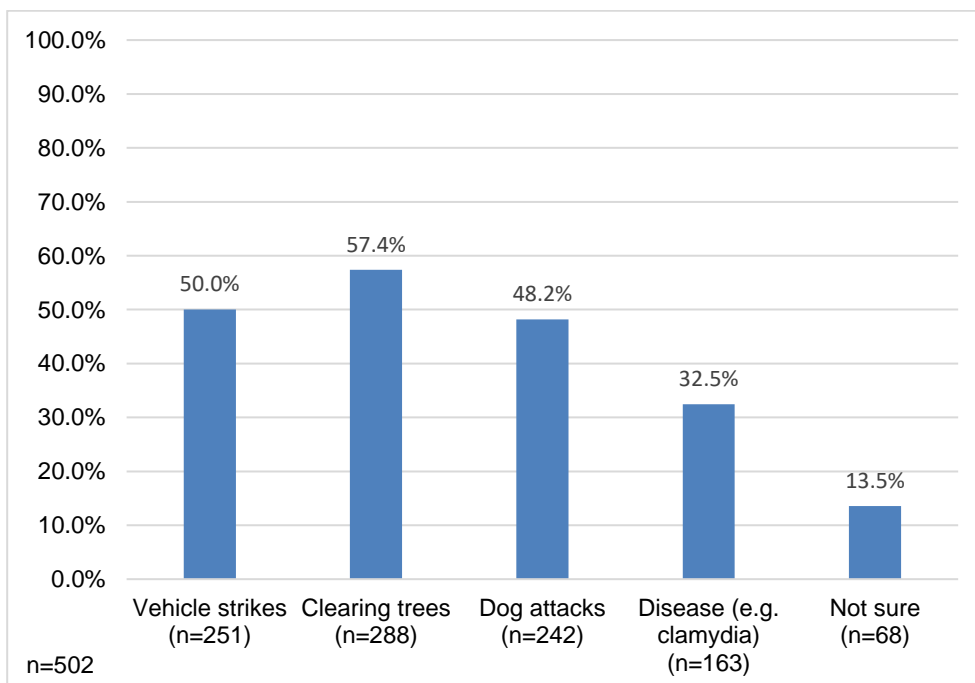
Figure 8).

**Figure 23. Breeding season movement (intercept)**



Another level of knowledge question that was asked in the intercept survey was a multiple-choice question to understand Redland City Council residents' understanding of the main causes of Koala deaths. Respondents could choose more than one answer. Results in Figure 24 shows the level of respondents' understanding about the main causes of koala's death.

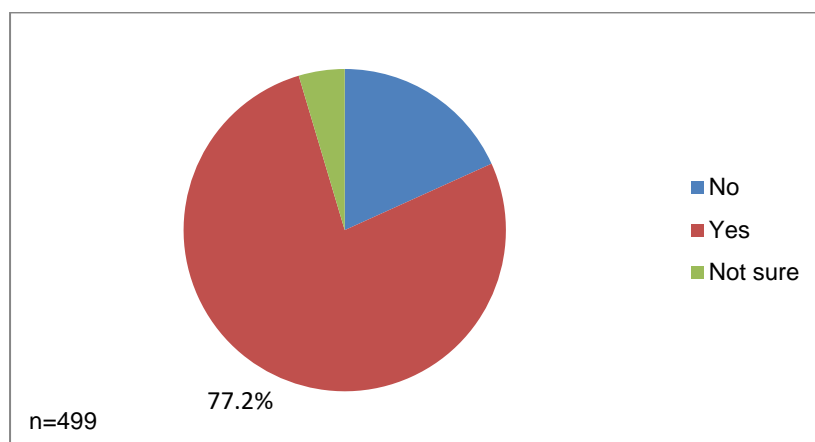
**Figure 24. Koalas' main cause of deaths (intercept)**



Awareness of the threats faced by koalas were highest for clearing trees, vehicle strikes and dog attacks respectively. Awareness that koalas face risk of disease was lower. Importantly, only one half of Resident City Council residents were aware of the causes of koala mortality. Analysis indicated no significant differences between people from different age groups, genders, and postcodes in terms of awareness of threats to koalas.

Respondents were asked if they had noticed koala road signs when driving in the last week (N=501). The majority of respondents reported that they had noticed the signs (76.8%), while 18.2% indicated they had not noticed any koala signs (see Figure 10).

**Figure 25. Koala warning signs notice (intercept)**



Analysis indicated no significant differences between people from different age groups, and genders in terms of whether they reported noticing signs.

A significant difference emerged by postcodes ( $p < 0.001$ ). Resident's living in the 4184 (Bay Islands) area have not seen a warning sign while 93.5% of the participants who live in 4159 (Birkdale) report that they have seen a warning sign. Please refer to Appendix C for more details.

A follow up open ended question asked respondents that indicated “Yes” to the above question to report on which messages were more likely to make them slow down. A range were reported, with the most frequent themes being *speed / slow down sign*, *flashing lights / sign*, and *koala picture* (see analysis in These results reinforce findings from the baseline survey, emphasising the need for more signage as demonstrated in the table below.

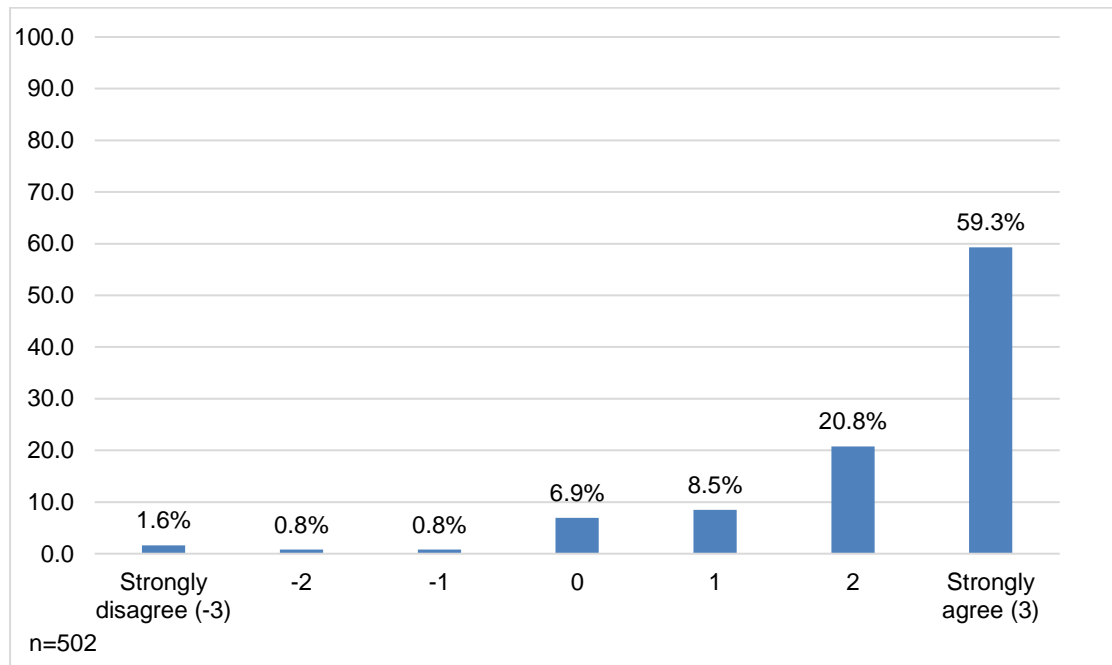
Table 2 below). Within each of these themes, messages were varied, and these are tabled all respondent comments in Appendix D.

**Table 8. Message to slow down themes (intercept)**

<b>Messages themes</b>	<b>n</b>	<b>%</b>
Speed / slow down	37	17.2%
Flashing lights / sign	28	13.0%
Koala picture	25	11.6%
Koala crossing	21	9.8%
All / any sign	15	7.0%
General koala sign	15	7.0%
Yellow sign	14	6.5%
Koala area	9	4.2%
Warning/caution	7	3.3%
Koala active times	5	2.3%
Wildlife sign	5	2.3%
Other	24	11.2%
None	8	3.7%
Not sure	2	0.9%
<b>Total number of comments</b>	<b>215</b>	<b>100.0%</b>

Respondents were asked to what degree they agree that koalas have a place in our urban landscape. Again, most of the respondents (89.8%) agree that koalas have a place in our urban landscape. See Figure 11.

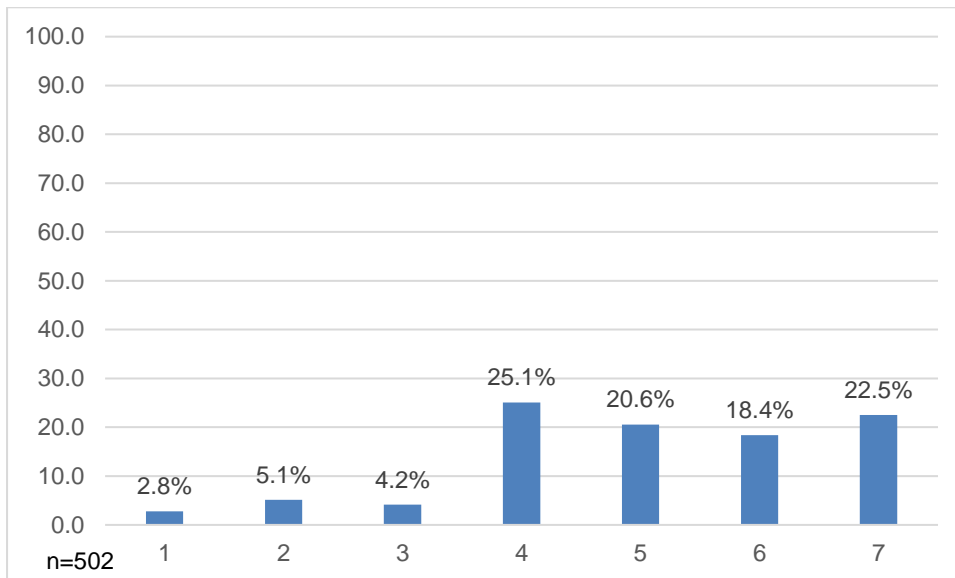
**Figure 26. Koalas have a place in our urban landscape (intercept)**



Analysis indicated no significant differences between people from different genders and postcodes in terms of their attitudes towards koala conservation. However, analysis indicated significant differences ( $p < 0.05$ ) between participants' attitudes towards koalas having a place in Redland City's urban landscape across the 7 age groups. Among respondents, attitudes towards koalas having a place in the urban landscape was the highest for respondents between 35 to 44 years old ( $M=6.5$ ;  $SD=0.9$ ) while respondents between 18 to 24 years old ( $M=5.8$ ;  $SD=1.3$ ) had the lowest level of agreement that koalas belong in our urban landscape (see Appendix E).

Participants were asked to rate whether they believed that they knew how to help protect koalas on a scale from 1 (Strongly Disagree) to 7 (Strongly Agree). Approximately 62.3% of respondents expressed positive views, whilst 12.2% strongly disagreed with this statement, and one quarter of the respondents were neutral (25.1%).

**Figure 27. I know how to help to protect koalas (intercept)**



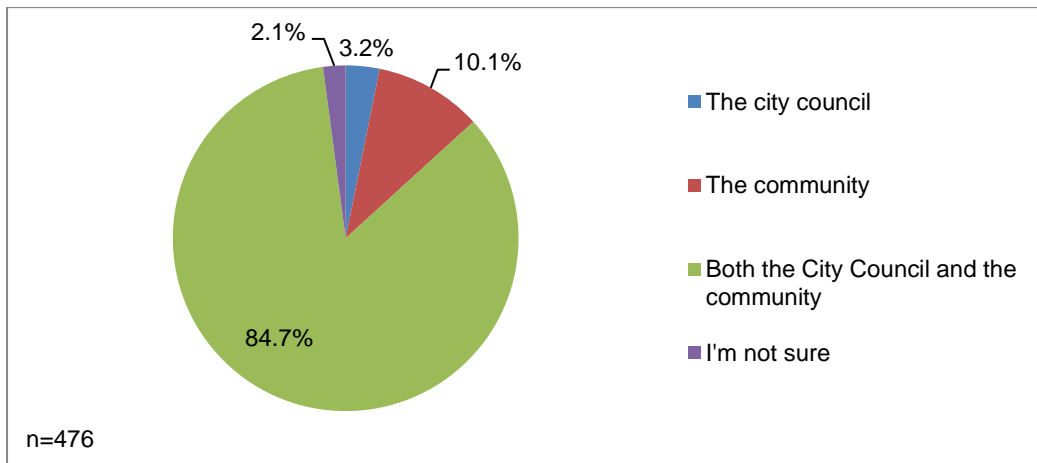
Analysis indicated no significant differences between people from different genders and postcodes. Differences ( $p < 0.001$ ) between respondents' beliefs of knowing how they could help to protect koalas across the 7 age groups were observed. Among respondents, those between 55 to 64 years old ( $M=5.5$ ;  $SD=1.3$ ) were more confident they knew how they could help to protect koalas, while respondents between 18 to 24 years reported the lowest agreement with the statement ( $M=4.4$ ;  $SD=1.5$ ). Please refer to Appendix E for more details.

Respondents were asked to indicate whose role is to protect koalas and their habitat. The majority (84.7%) responded it was both the City Council and the community's responsibility (see Figure 13).

The answers were significantly different ( $p < 0.05$ ) across gender groups for males and females. While 87.3% of the females reported that it was the role of both the city council and the community, among males a relatively lower proportion of 81% agreed that it was both the City Council and the community's responsibility. Differences were observed among those who thought it is the city council responsibility to protect koalas, with 6% of the males thinking it is the city councils' role to protect koalas and only 1.4% females thinking so.



Figure 28. Koala conservation responsibility (intercept)



Survey participants were asked to identify whether there was another party responsible for koala conservation in an open ended question. The two themes found were *state government*, and *everybody*.

Respondents were asked if they would be more vigilant if there was more available information to make them aware of the threats to koalas (N=500), 70.6% responded they would be more vigilant, 11.2% answered they would not, and 18.2% were not sure.

Analysis indicated age differences ( $p < 0.001$ ) across the 7 age groups. Among different age groups, both respondents' aged 18 to 24 and 45 to 54 reported they would be more vigilant about protecting koalas if they had more information (yes=75%), while the age group 55 to 64 reported less inclination to be more vigilant even if they had more information (yes=57%; no =32%) than other age groups.

Respondents that indicated they would like to receive more information were asked what type of messages they would like to receive. Respondents indicated the information channels they would like to be contacted through (e.g. email, RCC Facebook page, brochures, etc) and the “type of information” they wished to receive. Most common information respondents would like to receive were how to help protect koalas (easy and practical ways), and information about koalas, such as their habitat, threats to koalas, what they eat, etc (see Table 3 below). Further details on specific comments can be found in Appendix F.

**Table 9. Information respondents would like to receive (intercept)**

<b>Information themes</b>	<b>TOTAL</b>	<b>%</b>
Information channel	56	36.4%
Koala protection guidance	19	12.3%
Koala specifics	18	11.7%
Other	17	11.0%
Koala area	10	6.5%
All / any information	9	5.8%
General information	9	5.8%
Easy and helpful tips	7	4.5%
Breeding season	3	1.9%
Habitat clearing	2	1.3%
Koala sightings	2	1.3%
Not sure	2	1.3%
<b>Total number of comments</b>	<b>154</b>	<b>100.0%</b>