Centre for
Local Government

Flying-fox Plan: Community and Stakeholder Engagement Report

Prepared for Eurobodalla Shire Council

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Executive Summary

Ecosure engaged the University of Technology Sydney's Centre for Local Government (UTS:CLG) to deliver a stakeholder and community engagement process for Eurobodalla Shire Council, to inform a plan for managing flying-fox impacts across the entire Shire (the Plan), which Ecosure is preparing for Council.

Flying-foxes have known camps across Eurobodalla, and there may be other camps of which Council is unaware or that may establish in the future. Food resources are readily available in the Eurobodalla and flying-foxes will continue to return on a seasonal basis to forage. However, it is difficult to predict the numbers of returning flying-foxes, and impacts on the community are likely to continue. The uncertainty surrounding the spatial extent of potential future flying-fox impacts means it is important the Plan has a Shire-wide focus and the engagement process is designed to reflect this.

This report documents findings of the engagement process, which included interviews with key stakeholders, an online survey open to the entire Eurobodalla community, and targeted workshops with community members and key stakeholders. Feedback received will be reflected in the Plan to ensure impacts experienced most intensely by the community are the priority for Council's management responses. Feedback will help identify preferred principles for future management actions that align with community values, feasible costs, animal welfare and conservation and community health.

Interviews

Five, one-hour phone interviews were conducted with academic experts on flying-foxes, State and Commonwealth agencies responsible for regulating flying-foxes, and a representative of other councils across NSW at which flying-foxes are present.

The purpose of the interviews was to understand the latest research on flying-foxes and approaches to managing impacts, test the concept of a 'Decision Support Tool' that would establish triggers for how and when Council responds to flying-fox impacts, understand the usefulness of this tool for other councils, and any regulatory considerations the tool needs to incorporate.

Overall, all stakeholders were supportive of the development of a decision support tool and stated that there are a number of considerations to be made specifically around quantitative metrics and measurements, spatial representation of the tool, community awareness and communication and potential management actions.

Key findings included:

1. The potential exists for Council to develop a new and innovative approach to managing flying-fox impacts and other councils expressed strong interest in the results of this approach.
2. Quantitative triggers could be determined for impacts, especially noise and potentially odour for which there are accepted thresholds and standards, although this would require further technical studies. For example, experts indicated wind, rain, humidity levels, terrain and other environmental features can all change whether and how intensely impacts are experienced.
3. Different people have different levels of tolerance and sensitivity to impacts and experience them differently. Therefore, community feedback is an appropriate trigger for action but requires further testing of the process for action.

4. Making any Decision Support Tool publicly available to help educate the community on Council's decision-making process for management action, including what would happen if there is no trigger but the community demands action.

Online survey

A community online survey was designed and analysed by UTS:CLG's survey experts, building on previous surveys about flying-fox impacts used by Eurobodalla and other NSW councils as well as other levels of government. The survey was designed to understand people's awareness, knowledge and attitudes toward flying-foxes, the impacts they experience from flying-foxes and actions they take to manage these, and preferences for future impact management actions.

The survey was open throughout April 2018, following an invitation to all community members to participate via Council's quarterly Shire-wide *Living in Eurobodalla* newsletter, as well as on Council's social media and website, local radio, and letterbox drops to Catalina and Bay residents. Hard copy surveys were made available at key locations including community centres, Council libraries and drop in sessions.

An open online survey is an appropriate method as it provides an opportunity for all community members that may be impacted in the future, not just those that are currently impacted, to input into the Plan's development.

However, a key limitation of this method is that self-selected participation means it is more likely people that have previously experienced impacts will participate. To help increase participation by those who have not previously experienced impacts, but could in the future, a prize draw for completing the survey was offered. The survey was also used as the recruiting method for targeted workshops with community members and respondents were able to nominate at the end of the survey whether they would like to participate in further face-to-face discussions about flying-foxes.

Survey respondents

A total of 492 responses were received, of which 459 (93%) came from residents and the remainder from businesses. This response rate provides a confidence level of 95% at an interval of 4.39, which is a robust basis for social research of this kind. This means that, if the survey was repeated 100 times, we can be sure that 95 of those surveys would return results within plus or minus 4.39% of the findings contained in this report.

Responses were received from 38 suburbs across the Shire. Almost two thirds (n=316, 64%) were from the northern part of the Shire. The suburbs of Batemans Bay (n=67, 14%) and Catalina (n=49, 10%), where there are known camps, received the highest number of responses at the suburb level. A total of 75 respondents indicated they lived within 300 metres of a camp, most of whom (n=63) lived near a camp in the northern part of the Shire. A further 74 respondents indicated flying-foxes roost in trees within 50 metres of their home or business during the day and, again, most of these respondents came from the north of the Shire (n=60).

The highest proportion of responses came from people aged 56 to 65 (30%), with a fairly even proportion from those aged 36 to 45, 46 to 55, and 66 to 75 (all 18%). There was also an unusually high response rate from females, who made up over 60% of respondents in almost all age categories, which provides some insights into some of the findings. For example environmental attitude surveys, such as *Who Cares About the Environment in NSW?,* have consistently found females display higher levels of concern for issues such as animal welfare and conservation and the intersection between the environment and community health outcomes. The online survey generated similar results.

Awareness and knowledge of flying-foxes

Almost two thirds of respondents (n=310, 65%) indicated they had received information about flying-foxes from Council, mostly through the *Living in Eurobodalla* newsletter (31%), social media (26%), Council's website (22%) and the local newsletter (20%).

Almost all reported they are aware flying-foxes are a protected species under legislation (95%), that the risk of disease transmission can be managed by not handling flying-foxes and appropriate animal husbandry (82%), and that flying-foxes play a critical role in seed dispersal and pollination (80%).

These are all pieces of information that Council has communicated to the community through various media including the *Living in Eurobodalla* newsletter, Council's website, and fact sheets. However, almost a third (29%) indicated they were not aware that population numbers for the grey-headed flying-fox (the main species that visits Eurobodalla) is in decline, which Council has also communicated to the community through its media.

These findings indicate the community is receiving and listening to the information Council is providing about flying-foxes.

Attitudes towards flying-foxes

Survey respondents were presented with a series of attitudinal statements and asked to indicate their level of agreement or disagreement with them (from strongly agree/disagree, agree/disagree, or neither agree nor disagree). These statements were framed both positively and negatively and randomly rotated in the question bank to avoid bias, as is best practice in survey design.

Over one third agreed or strongly agreed flying-foxes should be moved on permanently from Eurobodalla (34%). A similar proportion agreed or strongly agreed flying-foxes should not be listed as threatened species with legal protection (35%), whilst a higher proportion disagreed or strongly disagreed they are concerned that flying-fox numbers are declining (45%).

In contrast, half disagreed or strongly disagreed flying-foxes should be permanently removed from Eurobodalla (50%), just under half disagreed or strongly disagreed flying-foxes should not be listed as a threatened species with legal protection (44%), over half agreed or strongly agreed flying-foxes are important to improving the health and diversity of native forests (52%), whilst a lower proportion agreed or strongly agreed they are concerned flying-fox numbers are declining (34%).

Significantly, over half agreed or strongly agreed they are concerned about the risk of disease to humans from flying-foxes (57%), flying-foxes contaminating water supplies (59%), and the risk of disease to other animals (51%). These had some of the highest levels of agreement across all the attitudinal statements, and were confirmed through the targeted workshops where participants expressed strong concern about the potential for community health impacts.

These findings indicate about a third of the community hold consistently negative attitudes towards flying-foxes, and about half hold consistently positive attitudes. Levels of agreement and disagreement tended to be higher for respondents living or working within 300 metres of a camp than those living or working further away.

Flying-fox impacts

Over two thirds of respondents (68%) indicated they have been impacted by flying-foxes in the past, and just over a third (37%) indicated they were experiencing impacts at the time of the survey. People living within 300 metres of a camp were much more likely to report they were currently experiencing impacts at the time of the survey (76%). Of those that indicated flying-foxes have impacted them at some point in time but not at the time of the survey, over half experienced impacts in summer or autumn (both 29%).

These findings indicate most of the community is impacted by flying-foxes, regardless of how close they live to a camp, and these impacts are experienced at particular times of the year.

The survey found a clear hierarchy of impacts the community is concerned about. The levels of concern reported below are for those people that indicated they live further than 300 metres from a camp, as they made up the vast majority of respondents.

Impacts of most concern included:

- Noise (68%), faecal droppings (54%), and smell (53%)

Followed by:

- Damage to infrastructure such as power lines (37%), risk of disease (33%), and damage to vegetation from flying-foxes roosting in trees (31%)

Impacts of least concern included:

- Flying-foxes eating fruit and flowers (23%), inability to access areas where flying-foxes camp (22%), and aircraft strikes (19%)

People living within 300 metres of a camp reported much higher levels of concern about these impacts. The hierarchy of impacts was generally the same for people living within 300 metres of a camp and those living further away, although those living within 300 metres indicated much higher levels of concern about the risk of disease transmission.

Overall, there were more significant differences in levels of concern between those living within 300 metres or 50 metres of a camp, and those living further away. For example, people living within 300 metres and 50 metres of a camp reported similar levels of concern about the risk of disease (76% and 74%, respectively), which was much higher than those further away (53%). Similarly, people living within 300 metres and 50 metres of a camp reported similar levels of concern about flying-foxes contaminating water supplies (84% and 77%, respectively) although, again, this was much higher than those further away (54%).

This indicates the hierarchy of impacts about which the community are concerned is consistent across the Shire.

It also indicates relative proximity to a flying-fox camp does not significantly change people's concern about impacts. That is, people living 300 metres and 50 metres from a camp have similar levels of concern, although this is much higher than those living further away.

Therefore, concern for impacts does not automatically increase as people live closer and closer to a camp. Rather, the more significant difference is between people that live in the general proximity of a camp and those that do not.

Managing flying-fox impacts

Respondents were asked whether they or Council have done anything to reduce the flying-fox impacts they experience. Almost half (47%) indicated this was the case whilst a third (33%) indicated they or Council have not done anything.

Clearing vegetation (33%), dispersal (17%), and education (15%) were the most common management actions mentioned by respondents, and almost half (47%) indicated these were effective at reducing impacts. Clearing vegetation and removing food sources were considered particularly effective (32%).

This indicates there is scope to improve community understanding of what Council is doing to manage impacts and educate the community on actions that individuals and Council can take. For example, whilst there are high levels of concern over the potential for water contamination, and just under half the respondents have a water tank (40%), over half of these property owners have not installed a filter or first flush system on their tank (55%).

Respondents were asked their preferences regarding future impact management actions, which can then establish principles that underpin Council's future approach. Of greatest importance to the community is that future impact management actions provide a long-term solution (79% extremely or very important), ensure the risk of disease transmission stays low (73% extremely or very important), reduce noise and odour impacts on nearby residents and businesses (72% extremely or very important), do not move flying-fox camps to sites near other residents or businesses (68% extremely or very important), and do not degrade the natural values of a site (64% extremely or very important).

Of next greatest importance is that future impact management actions can be implemented quickly (56% extremely or very important), have a low financial cost to residents and businesses near camps (52% extremely or very important), do not harm the flying-foxes (50% extremely or very important), do not have a negative impact on how the site looks or recreation opportunities (49% extremely or very important), and have a low financial cost to ratepayers (43% extremely or very important).

Targeted Workshops

After the survey, four targeted workshops were undertaken with community members and stakeholders. A UTS:CLG engagement specialist facilitated the groups and was supported by a flying-fox expert from Ecosure, the environmental consultancy preparing the Plan on behalf of Council. Note that invitations were extended to stakeholders beyond those shown in the table below. Some were unable to attend or did not respond to the invitation.

Group 1	Group 2	Group 3	Group 4
Residents that indicated flying-foxes were impacting them at the time of the survey	Residents that indicated they were not impacted by flying-foxes at the time of the survey	Local community and environment organisation representatives and members of some of Council's advisory committees	Stakeholders that may be particularly sensitive to impacts, such as businesses located close to camps, infrastructure providers, and the aviation, commercial food, and animal industries

The purpose of these workshops was to provide further insights into the survey findings, seek feedback on Council's current and future approach to impact management, and test key issues

identified through the interviews such as the appropriate threshold for community feedback as part of the Decision Support Tool. Overall, there was a high degree of commonality in the range of views expressed across the groups, although each one emphasised slightly different issues.

Key findings included:

1. Participants expressed the need for Council to build community resilience and capacity to manage future flying-fox impacts in the short term through education, whilst also working towards a long-term environmental management and land use planning solution that moves flying-foxes out of Eurobodalla's urban areas.
2. The participants indicated they strongly value the ecosystem services and natural spectacle flying-foxes provide and would prefer they remain in Eurobodalla, though not close to urban areas.
3. Whilst few respondents to the online survey indicated flying-foxes are a tourism asset for the area, workshop participants identified several nature based tourism opportunities, as well as other initiatives with local community and environmental organisations, such as a flying-fox hospital or centre of excellence for flying-fox research.
4. The participants expressed the wish for a proactive management approach that monitors flying-fox food sources, updates the community on the potential for elevated population numbers, and provides practical advice on what the community do to manage impacts they may experience.
5. The impacts of most concern are community health and odour, and there is general uncertainty and a feeling of helplessness over how these could be managed. Participants indicated that odour impacts are experienced more intensely during periods of rain or high humidity. Whilst the online survey found noise was the impact of most concern, workshop participants indicated noise is generally confined to the fly in and fly out periods at dusk and dawn and can be managed more easily than odour.
6. The participants expressed the view that community feedback at the neighbourhood scale is an appropriate trigger for monitoring, and that Council should then undertake management actions appropriate to the monitoring results.
7. Commercial businesses and service providers experience different impacts to the general community but are uncertain of what action they can take to feasibly manage these. An intensive case management approach in which Council collaborates with these businesses and service providers to develop tailored impact management strategies is preferred. Some businesses and service providers report their current impact management strategies are working well.
8. Commercial businesses and service providers reported uncertainty over which level of government is responsible for regulating flying-foxes. Some businesses and service providers expressed frustration they were prevented from undertaking certain management actions on their own property. However, they were not aware this was because of the species' listing as vulnerable under national environmental legislation.

1 Introduction

Flying-foxes have known camps across Eurobodalla Shire. Other camps might exist of which Council is unaware and others might establish in the future. Food resources ae readily available in the Eurobodalla and flying-foxes will continue to return on a seasonable basis to forage. However, it is difficult to predict the numbers and possible new camp locations of returning flying-foxes, and impacts on the community are likely to continue.

Eurobodalla Shire Council (Council) has committed to preparing a Shire-wide Flying-fox Plan (the Plan) to assist Council to respond to the impacts of flying-foxes on the community. The Plan is a condition of a Conservation Agreement with the Australian Government, in accordance with the Batemans Bay Flying-fox Camp Dispersal Plan 2016-2019, and is being prepared with funding from the NSW and Australian Governments. The Plan will assist Council to make decisions and to respond to impacts based on a range of factors, including community values, legal, ecological and financial considerations.

As Council's consultant to prepare the Plan, Ecosure has engaged UTS:CLG to undertake community engagement to inform the development of the Plan and to ensure that all community members (whether they have been previously impacted or not) have the opportunity to influence how flying-fox impact management decisions are made in the future. The engagement included interviews with experts, regulators and other councils, an online survey, and targeted workshops with community members. This report outlines key findings of the interviews, survey and targeted workshops.

Interviews were conducted with academic experts in flying-foxes, State and Commonwealth agencies responsible for regulating flying-foxes and a representative of other councils across NSW in which flying-foxes are present. The purpose of these interviews was to understand the latest research on flying-foxes and approaches to managing impacts, test the concept of a 'Decision Support Tool' establishing triggers, thresholds and actions for Council to respond when managing future impacts, understand the usefulness of this Tool to other councils, and any regulatory considerations the Tool needs to incorporate.

The survey was designed by UTS:CLG's survey experts to capture Shire-wide input, to focus the draft Plan on the impacts that the community experiences most intensely and help shape management responses to these. The purpose of the survey was to understand people's awareness, knowledge and attitudes toward flying-foxes, the impacts they experience from flying-foxes, actions they take to manage these and preferences for future impact management actions.

An open online survey is an appropriate method, as it provides an opportunity for all community members that may be impacted in the future, not just those that are currently impacted, to input into the Plan's development. However, a key limitation of this method is that self-selected participation means it is more likely people that have previously experienced flying-fox impacts will participate. The survey was open for responses throughout April 2018, and received 492 responses.

After the survey, four targeted workshops were undertaken with community members and stakeholders. Each group was held at Council's premises in Moruya, went for between one and a half and two hours, and included between five and ten participants. Participants for the resident groups were recruited through the survey whilst participants for the community and environmental organisations and sensitive receiver groups were identified through a stakeholder analysis, in collaboration with Council. A UTS:CLG engagement specialist facilitated the groups and was supported by a flying-fox expert from Ecosure. The purpose of these workshops was to provide further insights into the survey findings, seek feedback on Council's current and future

approach to impact management, and test key issues identified through the interviews, such as the appropriate threshold for community feedback as part of the Decision Support Tool.

2 Interviews

2.1 Introduction

Five, one-hour phone interviews were conducted with academic experts in flying-foxes, State and Commonwealth agencies responsible for regulating flying-foxes, and a representative of other councils across NSW in which flying-foxes are present.

The purpose of the interviews was to understand the latest research on flying-foxes and approaches to managing impacts, test the concept of a 'Decision Support Tool' establishing triggers, thresholds and actions for Council to respond when managing future impacts, understand the usefulness of this Tool to other councils, and any regulatory considerations the Tool needs to incorporate.

2.2 Key observations

Interviewees indicated Eurobodalla Shire Council is well placed to develop a new and innovative approach to managing flying-fox impacts in the future given its experience with flying-foxes. In large part the interviews focused on the appropriateness of different impact triggers, such as noise levels, and thresholds for responding, such as a certain decibel level being reached. Interviewees indicated establishing thresholds for action would be a highly technical task with the potential for disagreement between experts involved in studies conducted to determine threshold levels.

Interviewees also noted people have different levels of tolerance and sensitivity to impacts and therefore perceive and experience them differently. For example, elevated noise during the day may be more unpleasant for shift workers than for people who are not at home during the day. Because of this, interviewees suggested community feedback is an appropriate trigger for considering action, as it accounts for different levels of tolerance and sensitivity to impacts that occur naturally across the community.

Interviewees also cautioned that it would be unfeasible for Council to respond to every piece of community feedback and that, once a threshold is established, it would need to be matched with data supporting the likelihood that increased impacts are being experienced, such as an increase in the flying-fox population potentially resulting in elevated noise levels.

3 Survey

3.1 Introduction

An online survey was designed and analysed by UTS:CLG's survey experts, building on previous surveys about flying-fox impacts used by other NSW councils as well as other levels of government. The survey was designed to understand people's awareness, knowledge and attitudes toward flying-foxes, the impacts they experience from flying-foxes and actions they take to manage these, and preferences for future impact management actions.

The survey was open throughout April 2018 following an invitation to all community members to participate, via Council's quarterly Shire-wide *Living in Eurobodalla* newsletter as well as on Council's social media and website, local radio, and letterbox drops to residents in close proximity to known camps. Hard copy surveys were made available at key locations including community centres and Council libraries, as well as drop in sessions. Given that the spatial focus of the Plan is Shire-wide, an open online survey is an appropriate method, as it provides an opportunity for all community members, not just those that are currently impacted, to input into the Plan's development.

However, a key limitation of this method is that self-selected participation means it is more likely people that have experienced impacts will participate. To help increase participation by those who have not experienced impacts, but could in the future, a prize draw for completing the survey was offered. The survey was also used as the recruiting method for targeted workshops with community members - respondents were able to nominate at the end of the survey whether they would like to participate in further face-to-face discussions about flying-foxes.

An online survey has the potential to be skewed to younger groups, given the lower likelihood of older people using this technology. The advantages of collecting data in this way include low cost, speed in collecting and analysing data and questionnaire design with functionalities that are more difficult to achieve with traditional modes. Online surveys are, therefore, a cost effective way to gauge community opinion.

The 492 survey responses came from 314 females (64%), 153 males (31%), and a further 25 (5%) that preferred not to say. This response rate provides statistical confidence in the findings of 95% at an interval of 4.39. This means that, if the survey was repeated 100 times, we can be sure that 95 of those surveys would return results within plus or minus 4.39% of the findings contained in this report.

The age distribution of respondents was slightly lower than Eurobodalla's Census profile in younger and older age groups, whilst there was some over representation in the 36 to 65 year old age groups. There was also an unusually high response rate from females, who made up over 60% of respondents in almost all age categories, which provides some insights into some of the findings. For example environmental attitude surveys, such as *Who Cares About the Environment in NSW?,* have consistently found females display higher levels of concern for issues such as animal welfare and conservation and the intersection between the environment and community health outcomes.

Data were analysed in the SPSS system using nonparametric tests. This testing approach related to the particular data collected in this survey, which was structured in ordered categories (e.g. levels of agreement or concern). The Mann-Whitney U test was selected as the most appropriate for this type of data, to test statistical differences between groups on issues of concern regarding flying-foxes and their impacts. This method compares two particular groups and their differences.

At the request of Council, some analysis was undertaken using suburb groupings (see Appendix 3). These also were analysed for statistically significant differences using a similar but different test, the Kruskall-Wallis H test. This was appropriate in this case as the independent variable, suburb groups, had three rather than two separate groups.

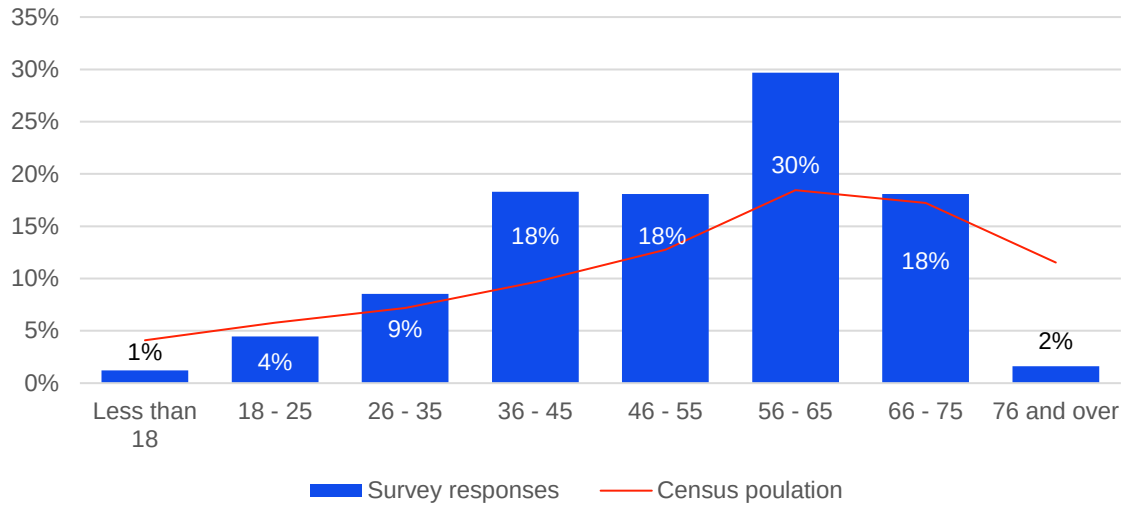
3.2 Key observations

3.2.1 Respondent characteristics

The survey was completed by 314 females (64%), 153 males (31%) with a further 25 (5%) preferring not to say. The age distribution was slightly lower than the census population in younger groups, especially less than 18 years. There was a higher proportion of respondents from the 36 - 65 year old age groups than the proportion of those age groups in the Shire's population. While representation in the 56 – 65 year age group was what would be expected there was under-representation in those over 75 years.

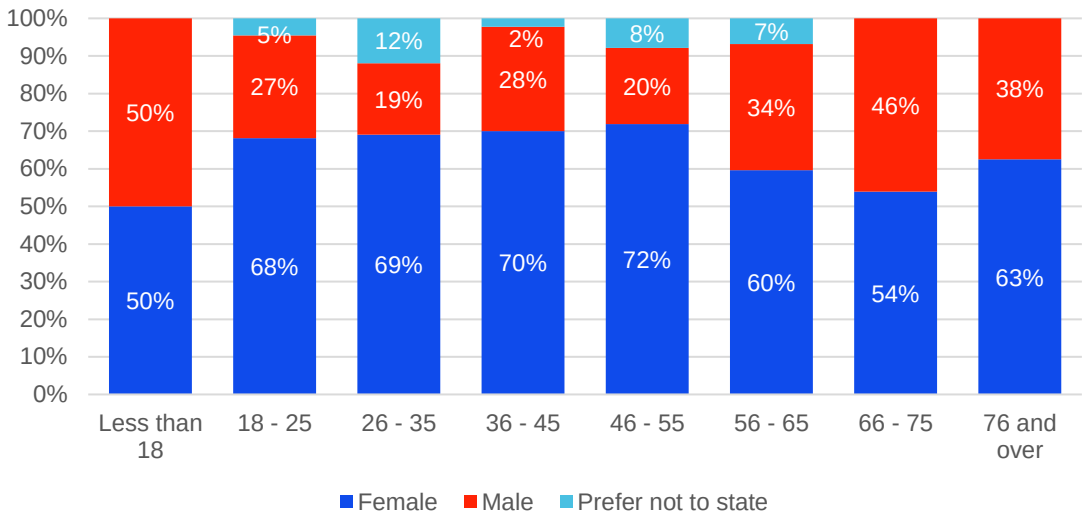
Figures 1 and 2 provide demographic breakdowns of the sample.

Figure 1: Age and gender of respondents



** Note the 2016 Census figures are approximate as they don't exactly match the age groupings sourced from ABS Tablebuilder.*

Figure 2: Age group by gender



Responses included representation of 38 suburbs in the area. Suburbs were divided into three areas: North, Mid and South. Almost two thirds were from the northern part of the Shire (n=316, 64%). The suburbs of Batemans Bay (n=67, 14%) and Catalina (n=49, 10%), where there are two large known camps, received the highest number of responses at the suburb level.

Table 1: Residential/business location of respondents

Suburb group	Number of responses	Percentage of all respondents
North	316	64.2%
Mid	99	20.1%
South	65	13.2%
Other	12	2.4%
Total	492	100%

Of all respondents, 459 (93%) described themselves as residents of Eurobodalla Shire. Forty respondents were business owners or representatives, of whom 28 were also residents of the Shire.

Table 2: Resident of Eurobodalla/ Business owner or representative

	Resident of Eurobodalla	Business owner or representative	Total
Resident of Eurobodalla	431	28	459
Other	20	12	32
Total	451	40	491

**One respondent did not answer this question*

11% of respondents (54 in number, ie n=54) said they were members of local community groups or associations. 49 of these provided the names of association. 3% (n=13) of respondents said they were members of environmental groups - mostly Landcare. A further 19 respondents described themselves in other ways, usually non-residents or those intending to become so.

Table 3: Member of local group or association

	Number of responses	Percentage of all respondents
Member of local community group or association	54	11%
Member of local environmental group or association	13	3%
Other	19	4%

Residents associations in various localities accounted for around 15 of these responses while others included sports clubs, business centred organisations and wildlife groups.

A full list is provided in Appendix 1.

3.2.2 Proximity to flying-foxes

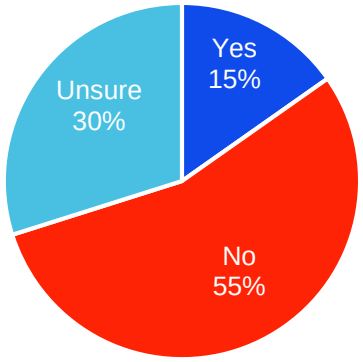
At least 420 respondents (85%) answered yes to at least one of the questions testing how close they are to a flying-fox camp and the extent of interaction with flying-foxes at their home or business environments. Almost a third indicated they live or work within 2 kilometres of a flying-fox camp, and about half of these are within 50 metres. Over half the respondents indicated flying-foxes feed in trees in their yard or fly over their home or business. A small proportion (6%) indicated flying-foxes are a nuisance that stop them from using services and businesses.

Table 4: Q3 Please indicate which of the following apply to you

	Number	Percent
Flying-foxes roost during the day in trees very close to my home (within 50 m)	55	11.2%
Flying-foxes roost during the day in trees very close to my business (within 50 m)	22	4.5%
Flying-foxes roost during the day in trees in my local area (50 m to 2km)	94	19.1%
Flying-foxes feed in trees at night in my yard	222	45.1%
Flying-foxes fly over my home or business	280	56.9%
Flying-foxes stop me from using services and businesses in the area	32	6.5%

Figure 3: Q4 Do you live within 300 m of a flying-fox camp (where they roost)?

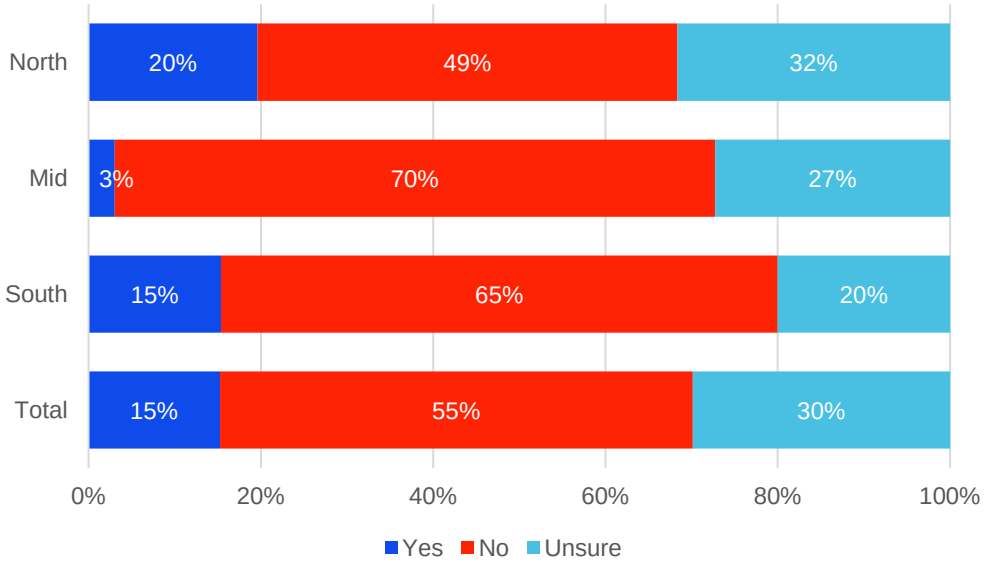
Just over half the respondents (n=270, 55%) indicated they live further than 300 metres from a flying-fox camp, whilst about 15% (n=75) stated they live within 300metres, and a further 30% (n=147) were unsure.



When broken down by suburb groupings, North had a higher proportion of yes responses to this question, totalling 62 of 316. Suburbs in the areas that had known camps showed much higher yes responses: Batemans Bay (57%) and Catalina (29%). A full list of the suburb groupings is shown in Appendix 3.

Awareness of proximity to camps was low in the Mid suburbs, where there are known camps at Moruya Heads and one in Moruya that is small and probably not known to many residents. Only one respondent out of 28 surveyed answered yes to this question. There were 15% (n=10) yes responses in suburbs grouped in the south area. Camps are known to exist in Narooma (n=2, 14% yes responses) and Tuross Head (n=8, 27% yes responses).

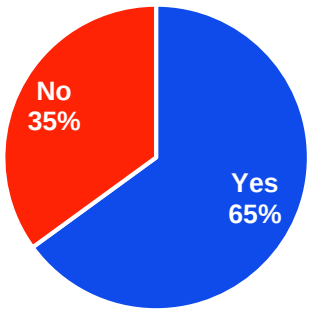
Figure 4: Do you live within 300 m of a flying-fox camp (where they roost)?



** Other (n-12) that do not have a residence or business within any suburb groups have been excluded. See Appendix 3 for a list of these places.*

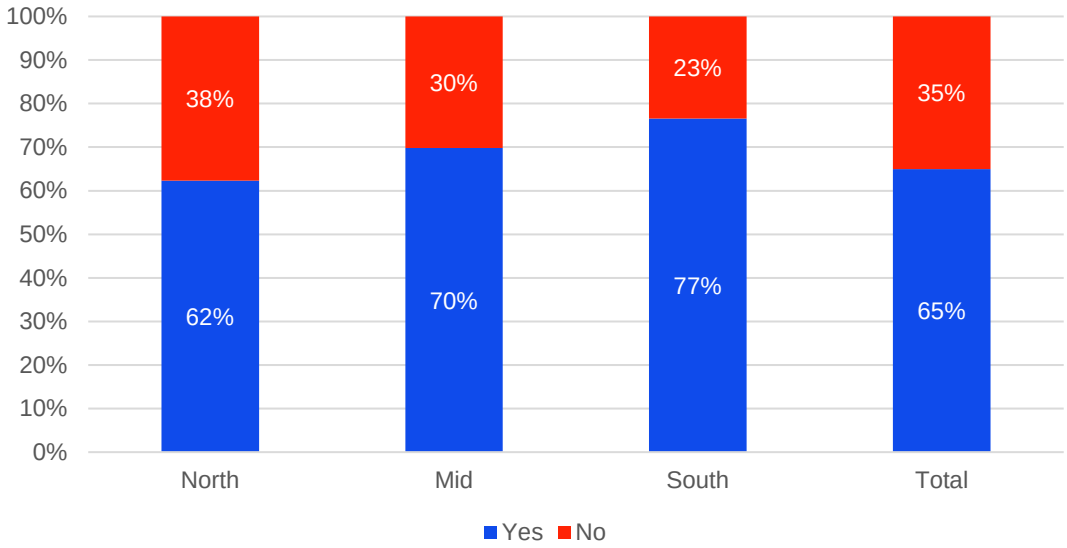
3.2.3 Awareness of flying-foxes

Figure 5: Q5 Have you recently seen any information from Eurobodalla Council regarding flying-foxes?



Around two thirds of respondents (n=310) indicated they had recently seen information from Eurobodalla Council. Others, i.e. those who are not resident within Eurobodalla Shire (n=12), have been excluded from the chart (see Appendix 2).

Figure 6: Have you recently seen any information from Eurobodalla Council regarding flying-foxes? Suburb grouping



The table below shows the main source of this information mentioned by respondents. The percentages shown relate to respondents who mentioned this as this was a multi-response question.

Table 5: Q6 Please specify where you saw this information (please select all that apply)

Place where information was seen	Number	Percent
Living in Eurobodalla - Council newsletter	154	31.3%
Council website	108	22.0%
Local newspaper	99	20.1%
Council Facebook or Instagram	82	16.7%
Council News - email newsletter	60	12.2%
Other social media	49	10.0%
Other (please specify)	26	5.3%

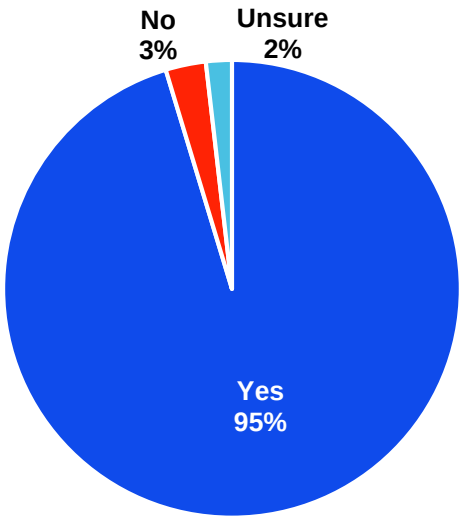
Other sources of information mentioned by respondents are set out in the table below. The most common source was a letter from the Council.

Table 6: Other place where respondent saw information

Other place where saw information	Number of respondents
Council letter	1
letter box drop Flying-fox update 23/03/2018	1
Letter dropped into work place	1
letter from council	1
Letter from council as I filled out the last survey and ticked updates.	1
Letter in mail	1
letter received in post to business address	1
mailer to residence	1
council letterbox pamphlet	1
art on the path, Broulee	1
Corrigans Beach Rep.	1
Direct contact through Landcare activities	1
Directly from Batman (Mitchell)	1
Durras Community Association	1
fact sheets given to me when Council had a stand at Stocklands re then revised dog walking areas	1
Information day at NATA oval	1
… from Melbourne Uni came to my home on December 11. And I did a questionnaire on the flying-foxes and she gave. Me lots of information about them. Also on Facebook local Batemans Bay site. People were very rude and insulting that I supported the flying-foxes.	1
Local radio	1

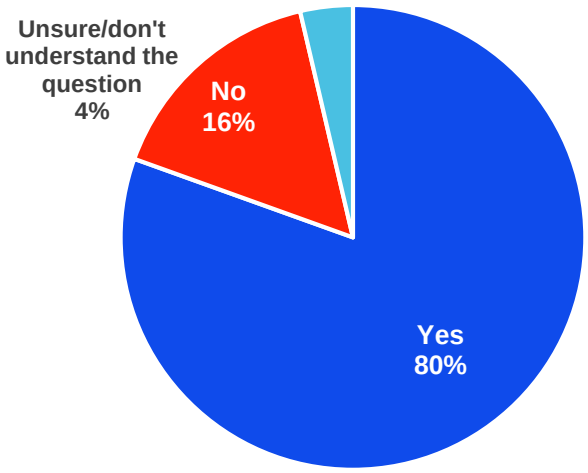
Meeting with Council reps	1
Talking with friends	1
Village information Morning	1
Watch them Fly!	1
web sites providing flying-fox articles	1
When we were looking to move here from Braidwood	1
work colleagues ESC	1

Figure 7: Q7 Do you know that flying-foxes are a native species, protected under legislation?



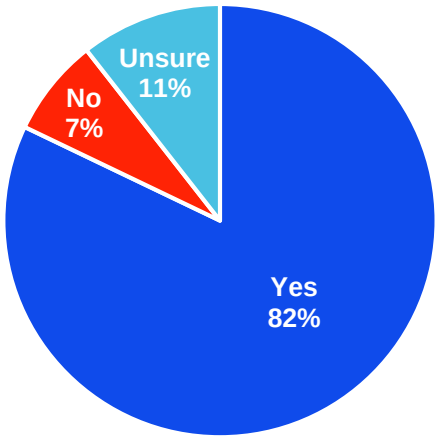
A large majority of respondents were aware of the protected status of flying-foxes as Australian native wildlife.

Figure 8: Q9 Do you know flying-foxes are critical to long-distance seed dispersal and pollination, and the long-term health of our environment and our natural areas?



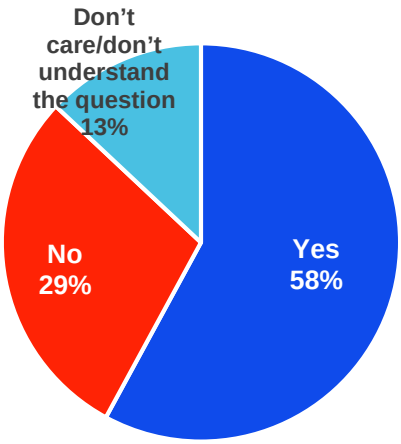
A large majority of respondents were also aware of the value that flying-foxes play in the environment.

Figure 9: Q9 Do you know that diseases from flying-foxes can be prevented by not handling them, and appropriate horse husbandry?



82% of respondents were aware that potential diseases from flying-foxes could be controlled with appropriate animal husbandry and avoiding handling them.

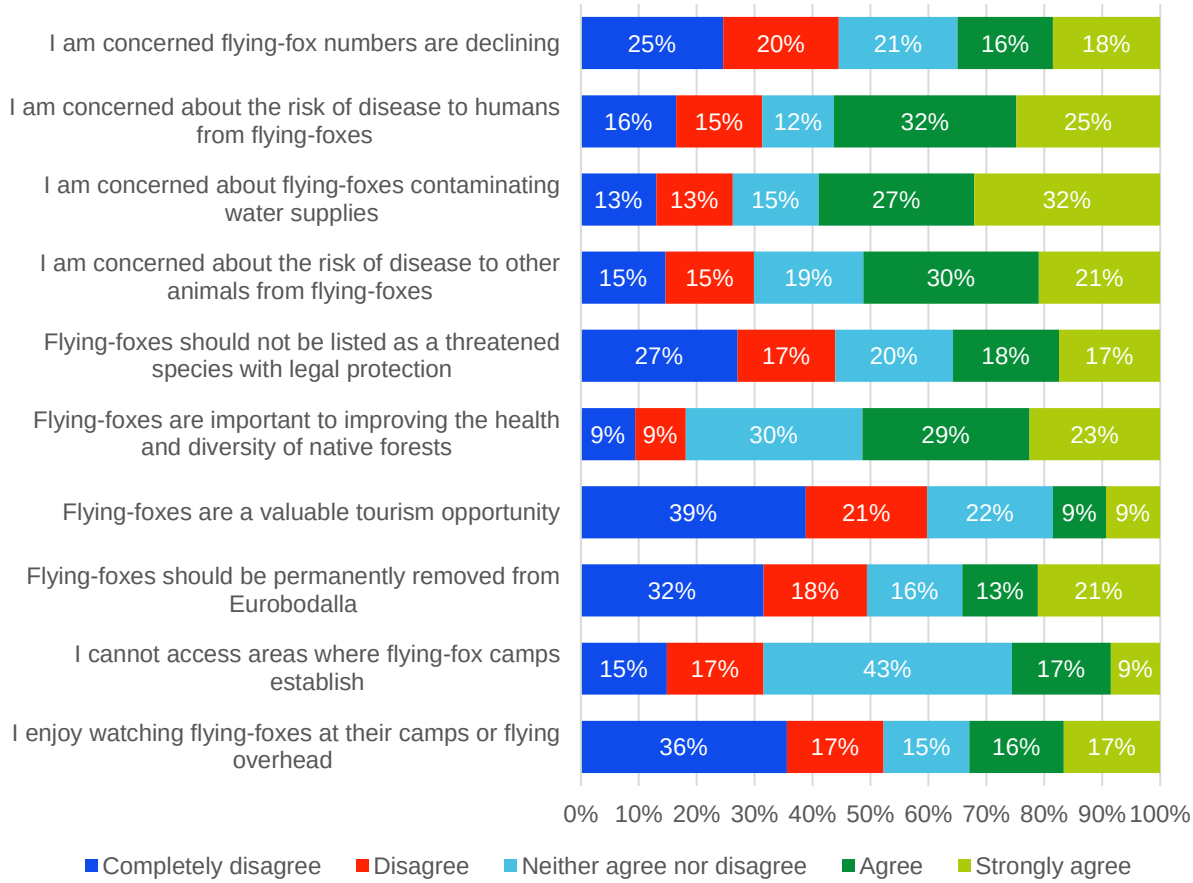
Figure 10: Q10 Do you know that the grey-headed flying-fox (the main species of flying-fox that visits the Eurobodalla area) is a threatened species due to population decline of more than 30%?



A lesser number of respondents (but still a majority) was aware that the main species of flying-fox present in Eurobodalla is in significant population decline.

3.2.4 Concerns about flying-foxes

Figure 11: Q11 Now, we would like to ask you about your concerns with flying-foxes. Please indicate your level of agreement or disagreement with each of the following statements:



This question sought respondents' level of agreement or disagreement with a range of statements. The figure above shows that the strongest levels of agreement about concerns with flying-foxes were:

- Contamination of water supplies – a total of 59% agreed or strongly agreed.
- Risk of disease to humans – a total of 57% agreed or strongly agreed.
- Risk of disease to other animals – a total of 51% agreed or strongly agreed.
- Over half (52%) agreed or strongly agree that the species was important in improving the health and diversity of native forests.
- There was a high level of disagreement with the idea that they represented a valuable tourism opportunity – 60% disagreed or strongly disagreed that they did.
- Half disagreed that they should be permanently removed from Eurobodalla. While 13% agreed and 21% strongly agreed that they should.
- A total of 53% disagreed that they enjoyed watching them either at their camps or flying overhead.

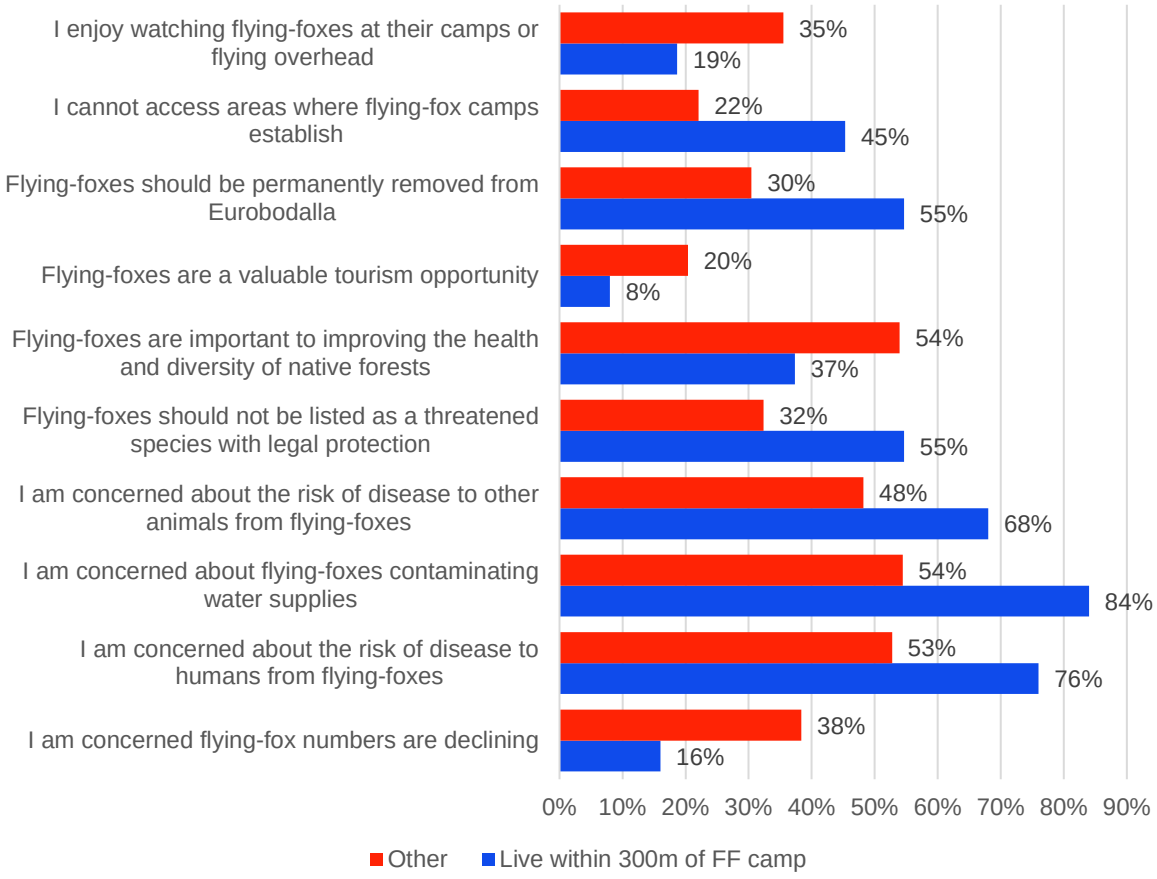
Those living within a closer proximity to flying-fox camps tend to have a more negative view of flying-foxes.

Concerns are particularly high in relation to water supply contamination. Of those who lived within 300 metres of a camp, 84% agreed or strongly agreed this was a concern compared with 54% who lived further away.

Concern was also higher with this group in relation to risk of disease to animals and humans.

Those living in closer proximity were also less concerned about declining numbers (16% compared with 38% for others), were more likely to think they should not have legal protection (55% compared with 32% for others) and more inclined to agree they should be permanently removed form Eurobodalla (55% compared with 30% for others). “Others” includes those not living within 300 metres of a camp and those who don’t know their proximity to a camp.

Figure 12: Comparison between those living within 300 metres of a flying-fox camp and all others. Percentage who agree or strongly agree with the statements



Similar higher levels of concern were expressed by those who lived or were at a business within 50 metres of trees where flying-foxes roosted during the day. For this group, concerns were higher concerning water supplies: 77% agreed or strongly agreed this was a concern compared with 56% for all others. The spread of disease to humans rated as a higher concern (74% v 53%), as did the risk of spread of disease to other animals (66% v 49%).

On both measures, greater proximity appeared to have a negative impact on the way people viewed flying-foxes. People who lived or worked in closer proximity tended to agree with permanent removal and appeared to have a more negative view on their value to the environment.

Figure 13: Comparison between agree/strongly agree between roosting within 50 metres of house or business during day and all other respondents

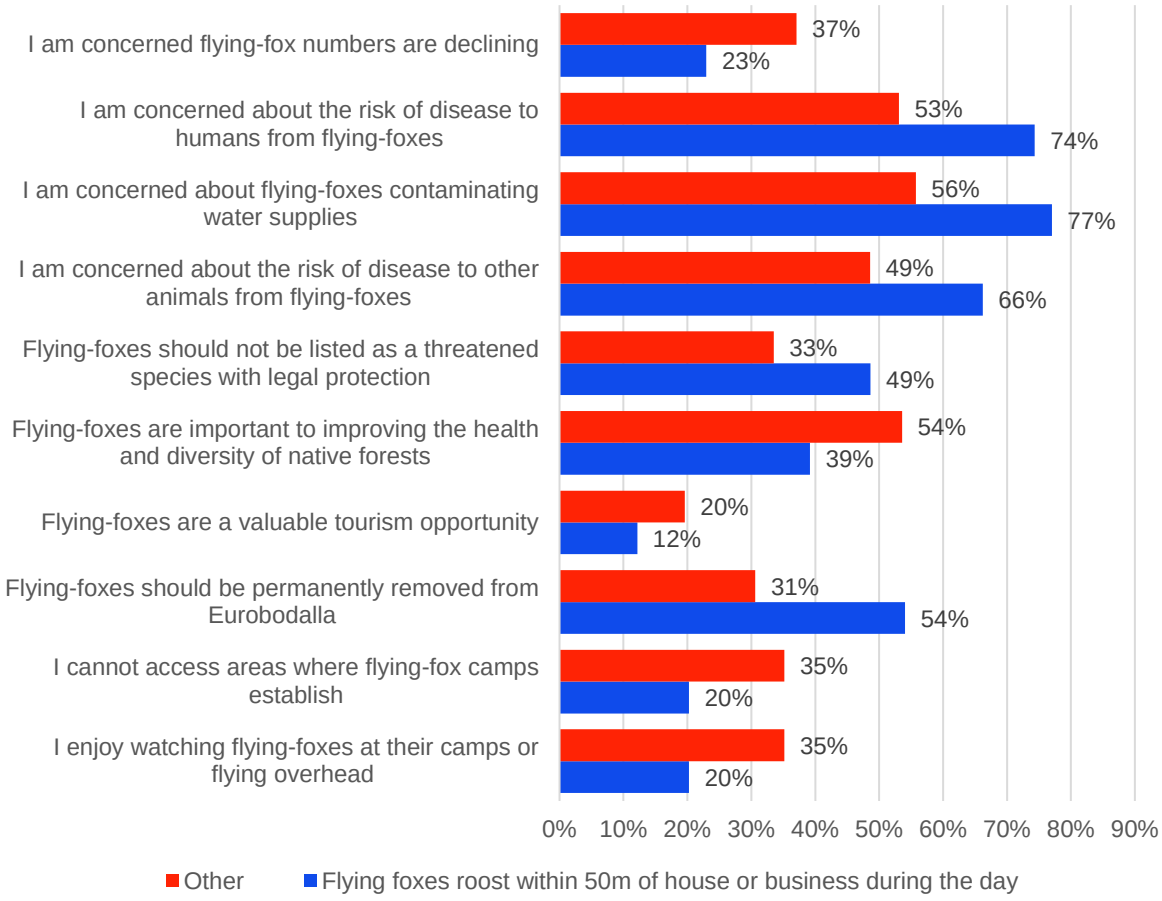


Figure 14: Agree/strongly agree difference by suburb grouping

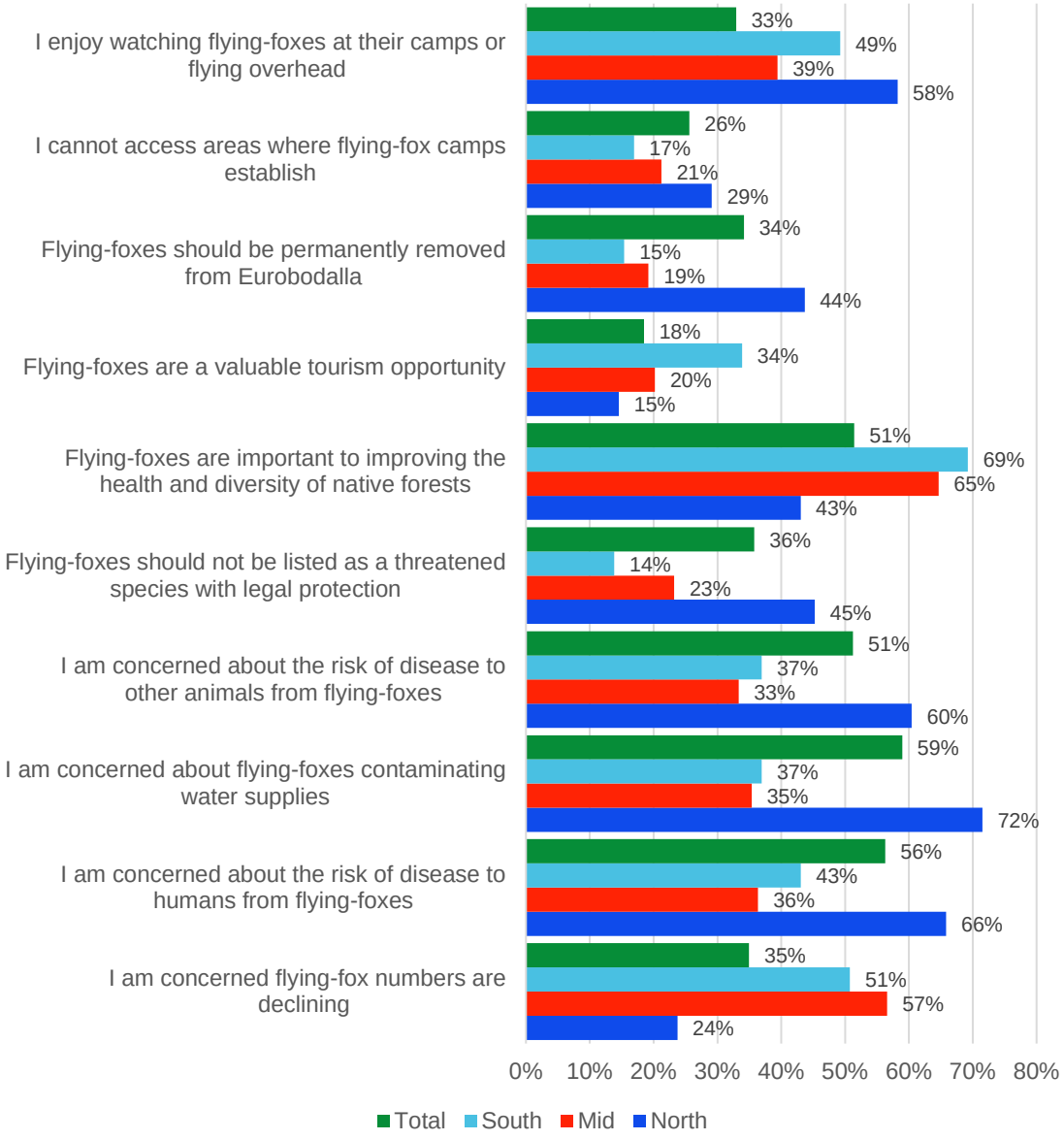
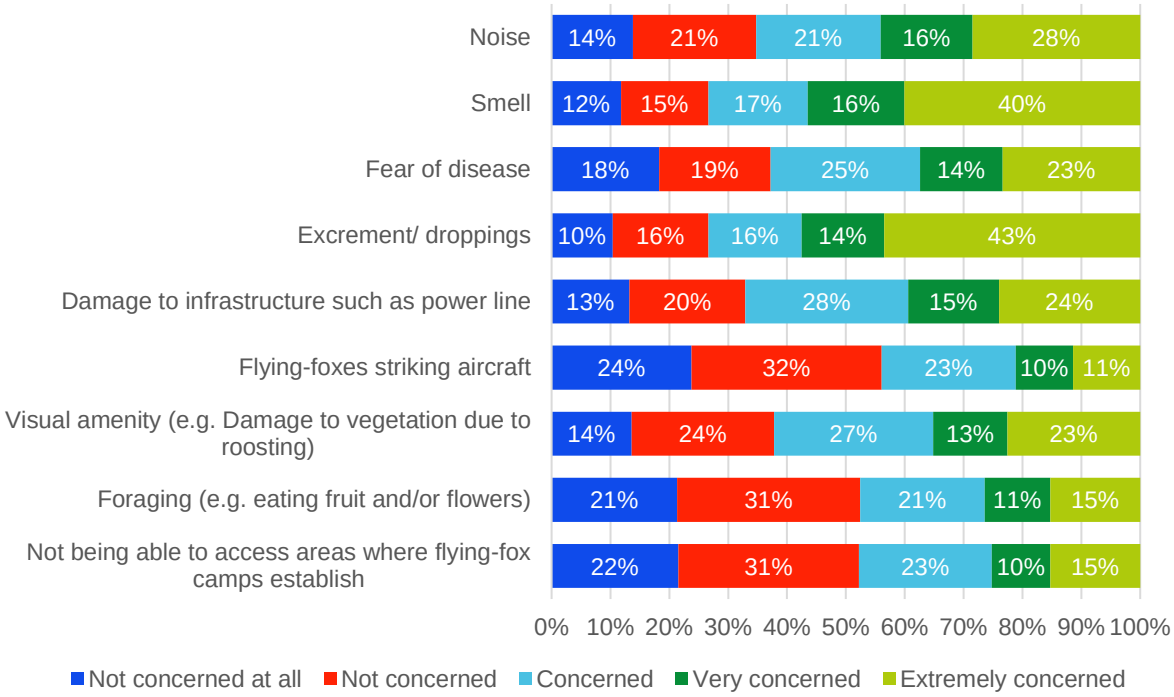


Figure 15: Q12 For each of the following, please indicate your level of concern regarding the impact of flying-foxes



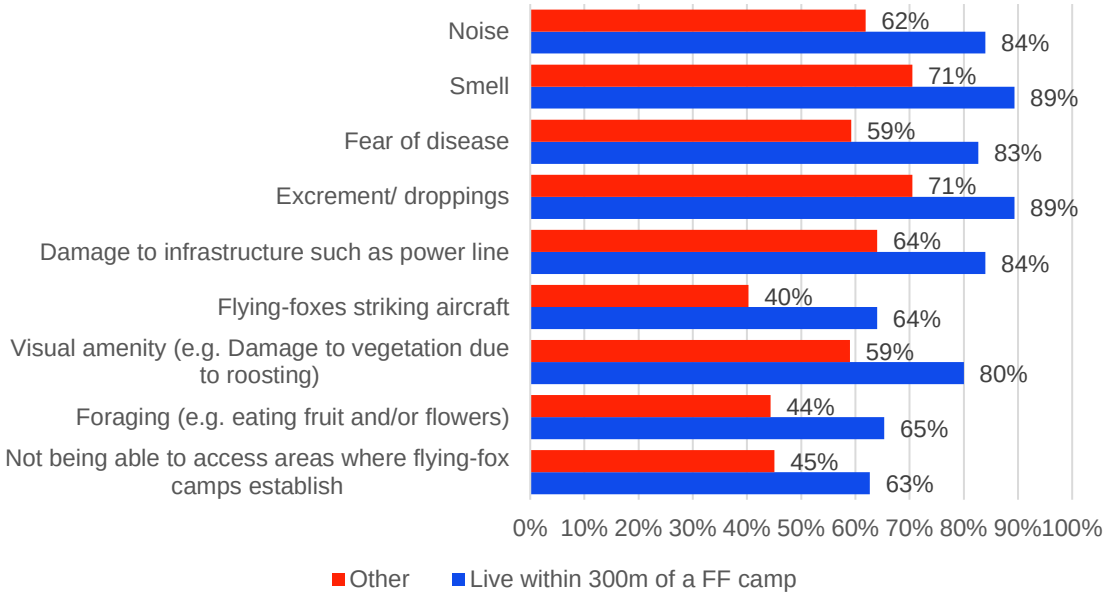
Note some percentages may not add to 100 due to rounding.

Figure 15 shows that excrement/droppings and smell from flying-foxes drew the greatest level of concerned responses 73% (n=361) for both.

Damage to infrastructure was the next highest area of concern with 67% (n=330).

Fear of disease was next with 63% (n=309) expressing concern.

Figure 16: Difference in percentage of those concerned, between those who live 300 metres or less from a flying-fox camp and respondents outside that zone or unsure of proximity



"Other" means those who live/work outside of 300 metres and those who did not know their proximity

For respondents who were concerned about particular impacts of flying-foxes, Figure 16 compares those who lived/worked within 300 metres of a flying-fox camp with others. Again, proximity seems to influence the degree of concern. While there was less difference in terms of noise, other factors such as smell, excrement, damage to vegetation and access to areas close to the camps generated greater differences. The results show that for all impacts, proximity generates statistically significant differences in levels of concern, at a 95% confidence level using a Mann Whitney U test.

The chart below shows that these differences were similar (except for noise) when those who live or work within 50 metres of places where flying-foxes roost during the day. Excrement and smell are the dominant issues of concern but issues such as noise become more significant. All differences were statistically significant at a 95% level, with the exception of not being able to access areas where flying-foxes camps are established.

Figure 17: Difference in percentage of those at all concerned between respondents reporting flying-foxes roosting during the day within 50 metres of house of business during day and respondents outside that zone or unsure of proximity

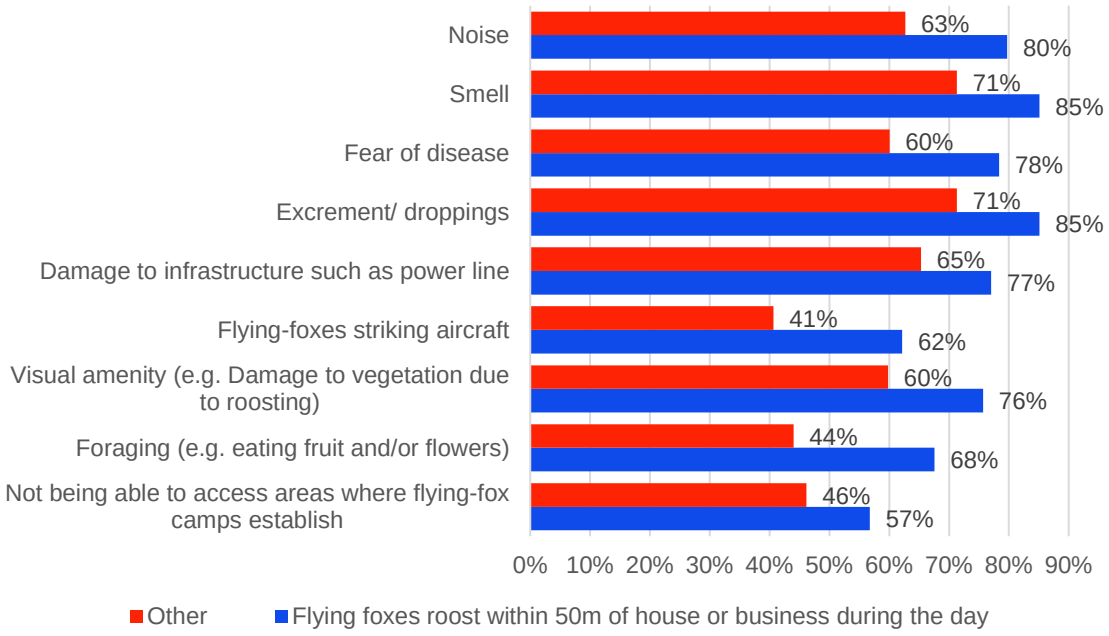
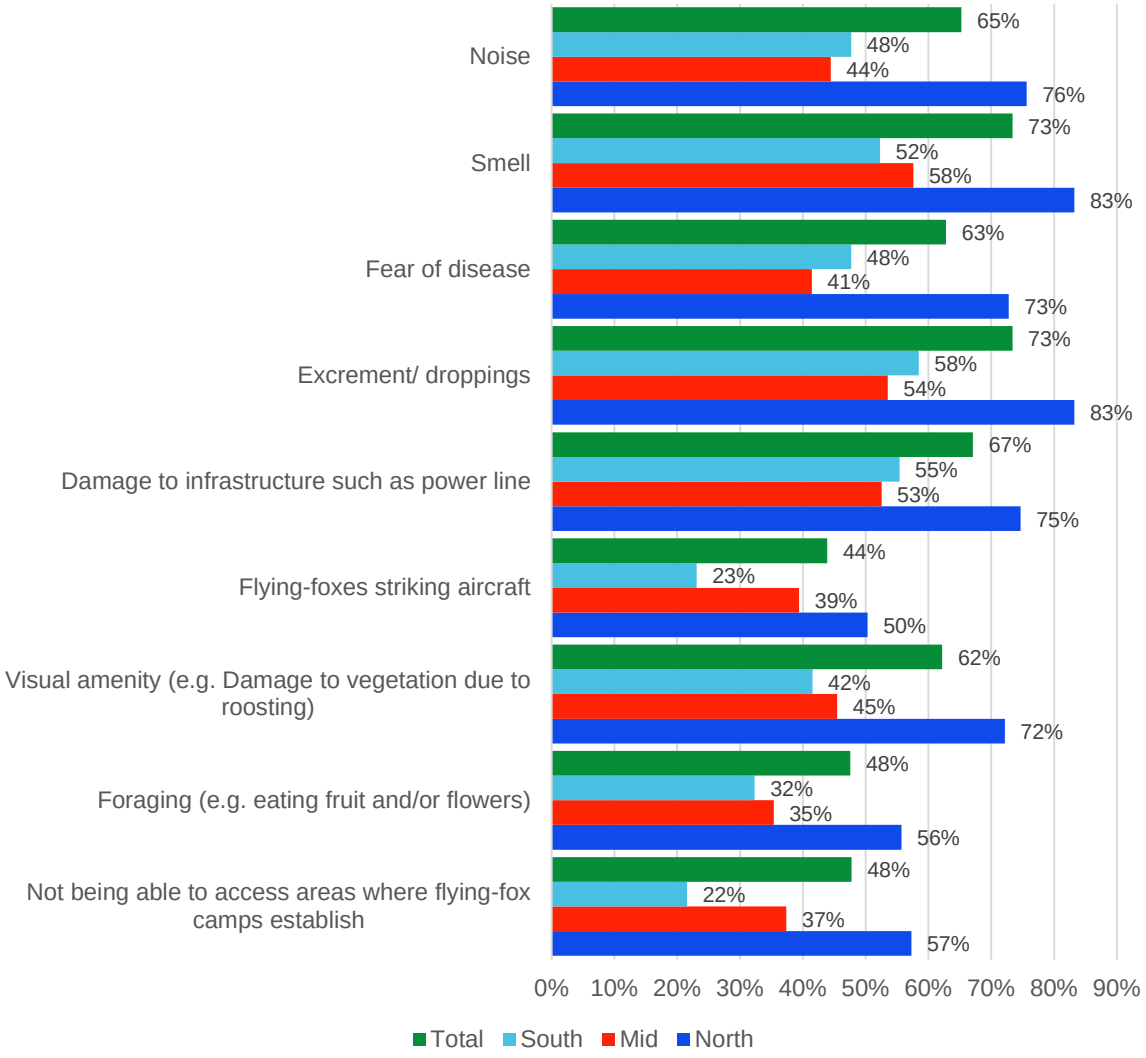


Figure 18: Difference in percentage of any level of concern between suburb groupings



Overall there tended to be greater concern expressed by those living in suburbs classified as North, where there is a larger resident population and known presence of flying-fox camps and a history of conflict with the 2016 influx. There is generally less difference between Mid and South suburb groupings. All differences between North and other suburb groups were tested as statistically significant, with the exception of not being able to access areas where flying-foxes camps establish.

A comparison of Batemans Bay and residents of other suburbs where respondents had indicated they lived 300 metres or less from a flying-fox camp did not provide any significant difference in attitudes towards flying-foxes. This would be, to some extent, influenced by the relatively small size of the samples as seen in the table below.

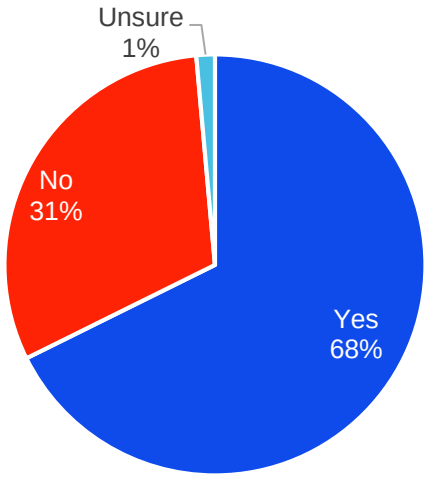
Table 7: Residents stating they live within 300 metres of a flying-fox camp

Locality	Number	Percent
Batemans Bay/Catalina	52	69%
Other areas	23	31%
Total	75	100%

3.2.5 Impacts of flying-foxes

68% of respondents indicated that they have been affected by flying-foxes previously.

Figure 19: Q13 Have you been affected or impacted by flying-foxes in the past?



Again, proximity is a significant factor for those living in proximity to a camp or living or working near roosting areas. Around 87% of those living or working within 300 metres of a flying-fox camp report having been affected, compared with less than two thirds who are not in this proximity.

Figure 20: Question 13: Have you been affected or impacted by flying-foxes in the past? Live within 300 metres of a flying-fox camp

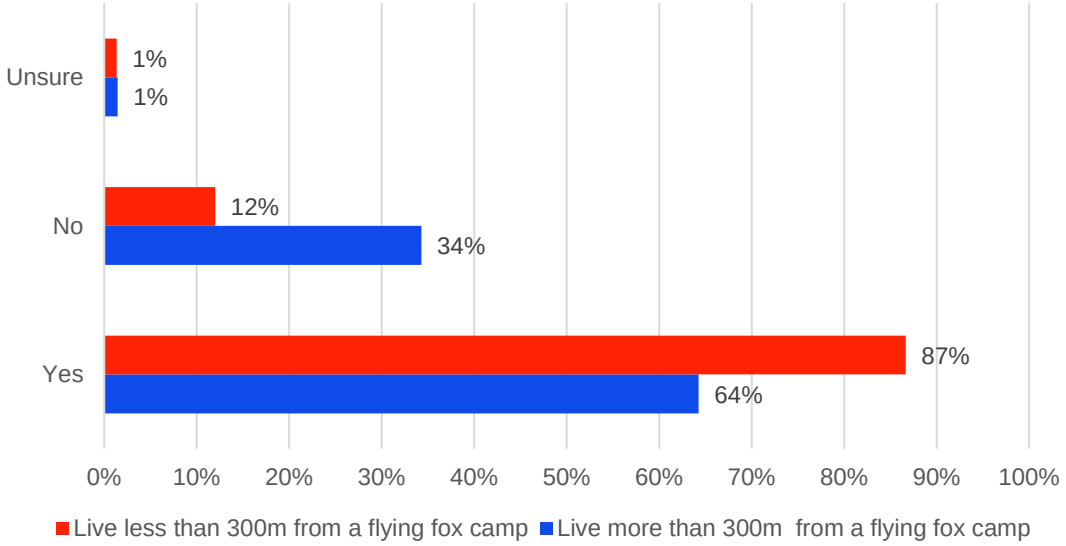


Figure 21: Q13: Have you been affected or impacted by flying-foxes in the past? Difference in percentage of very and extremely concerned between those who live or have a business where flying-foxes roost during the day within 50 metres of house of business during day and others.

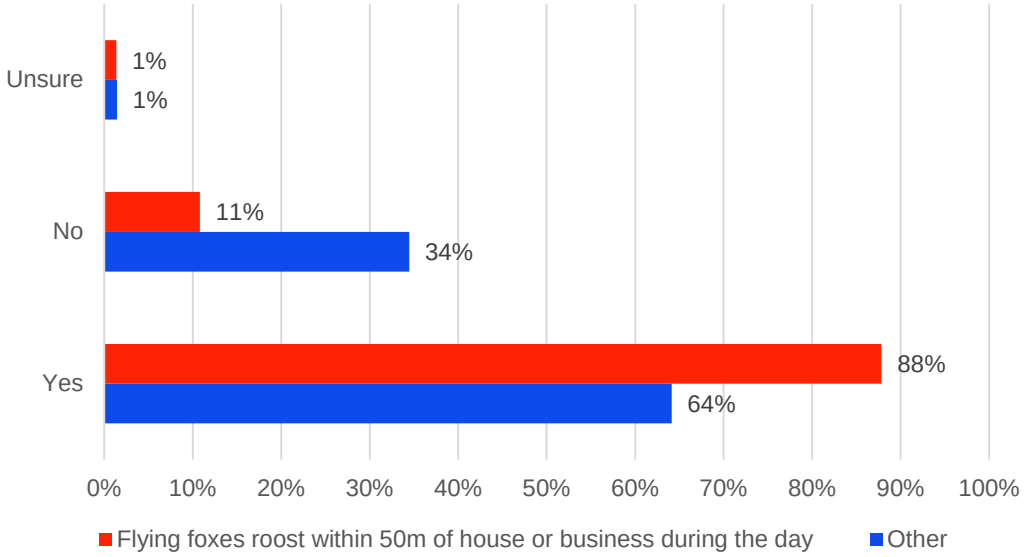
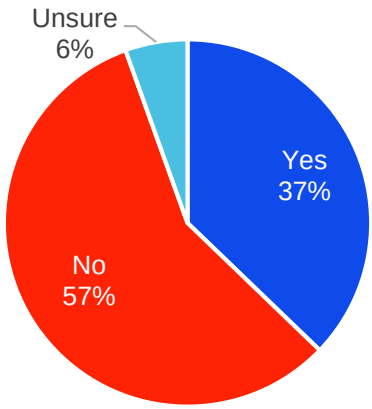


Figure 22: Q14 Are you currently affected or impacted by flying-foxes? Live/work within 300 metres of a flying-fox camp



Overall, 37% indicated that they are *currently* affected or impacted by flying-foxes. This figure nearly doubles for those living or working close to camps.

Figure 23: Q14: Are you currently affected or impacted by flying-foxes? Difference in percentage of those who were very and extremely concerned between those who live or work within 300 metres of where flying-foxes roost during the day and others.

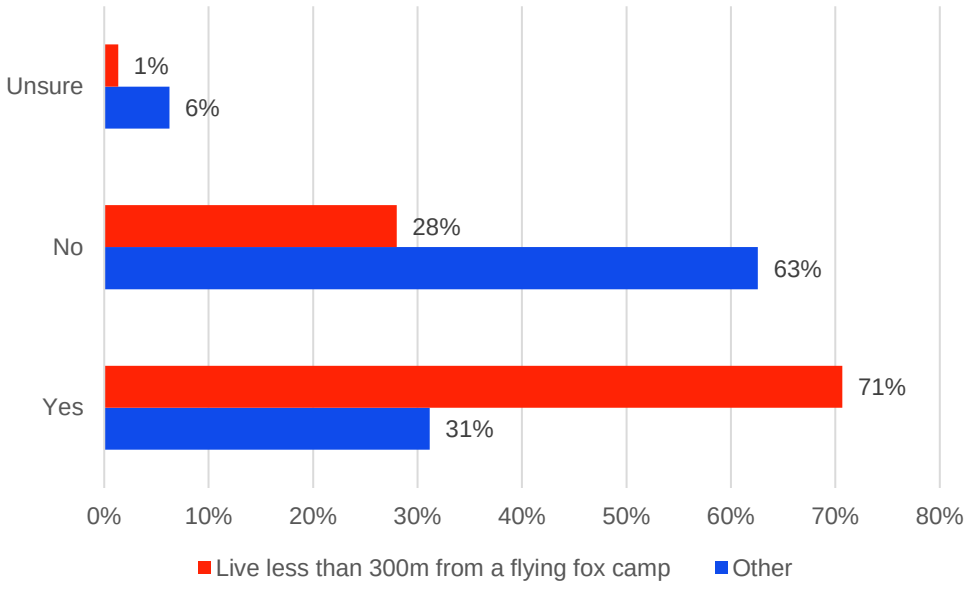


Figure 24: Question 14: Are you currently affected or impacted by flying-foxes? Difference in percentage of those who were very and extremely concerned between those who live or work within 50 metres of where flying-foxes roost during the day and others.

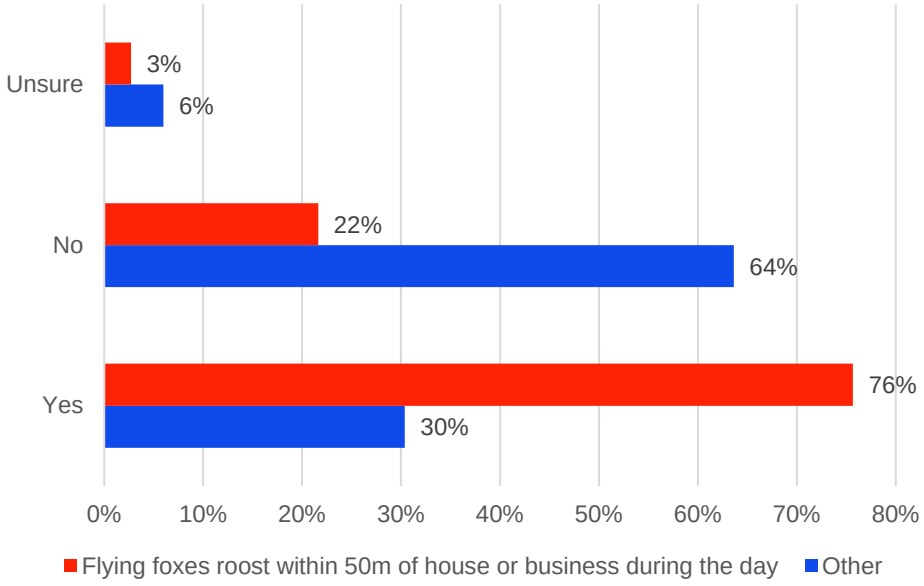
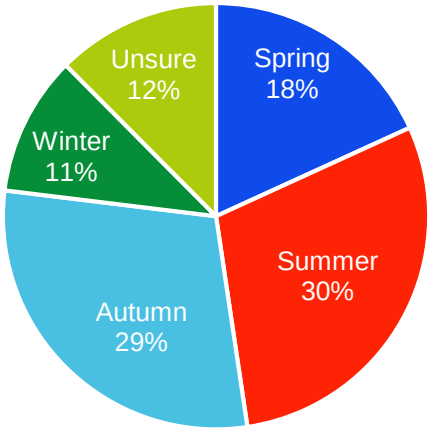
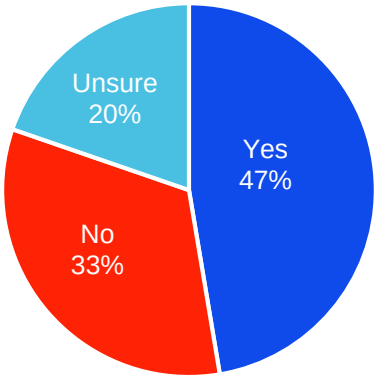


Figure 25: Q15 When are you most affected by flying-foxes?



Summer and autumn appear to be the seasons in which flying-fox activity has the most impact.

Figure 26: Q16: Have you or Council done anything to reduce the impacts of flying-foxes?



47% of respondents indicated that they thought the Council had done something about flying-foxes. 20% were unsure while one third thought nothing had been done.

Table 8 below summarises the main answers given to the question about what respondents thought Council had done and anything they had done themselves to reduce the impacts of flying-foxes. Clearing of vegetation was the most common activity, mentioned by 33% of respondents.

Clearing the water gardens in Batemans Bay was specifically mentioned by around 6% of respondents.

Table 8: Q17: What have you or Council done to reduce the impacts of flying-foxes?

Action	Number of mentions
Clearing vegetation/cutting trees/buffer zones	74
Noise	54
Dispersal	45
Water gardens management, clearing etc	37
Council programs, education, policies etc	34
Clearing of water gardens	24
Clearing food sources	22
Removal of cocos palms	13
Council programs	12
Removed/netted fruit trees	10
Smoke	8
Education	8
Car covers	6
Other	27

A list of responses is shown in Appendix 5.

Figure 27: Q18: Did this reduce the impacts of flying-foxes?

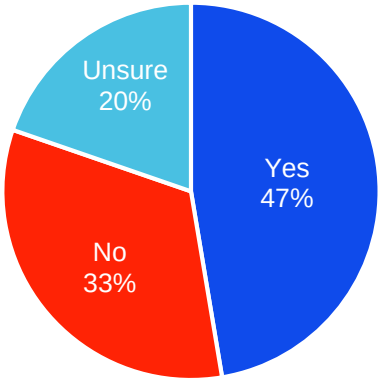


Table 9 below summarises actions that respondents considered effective.

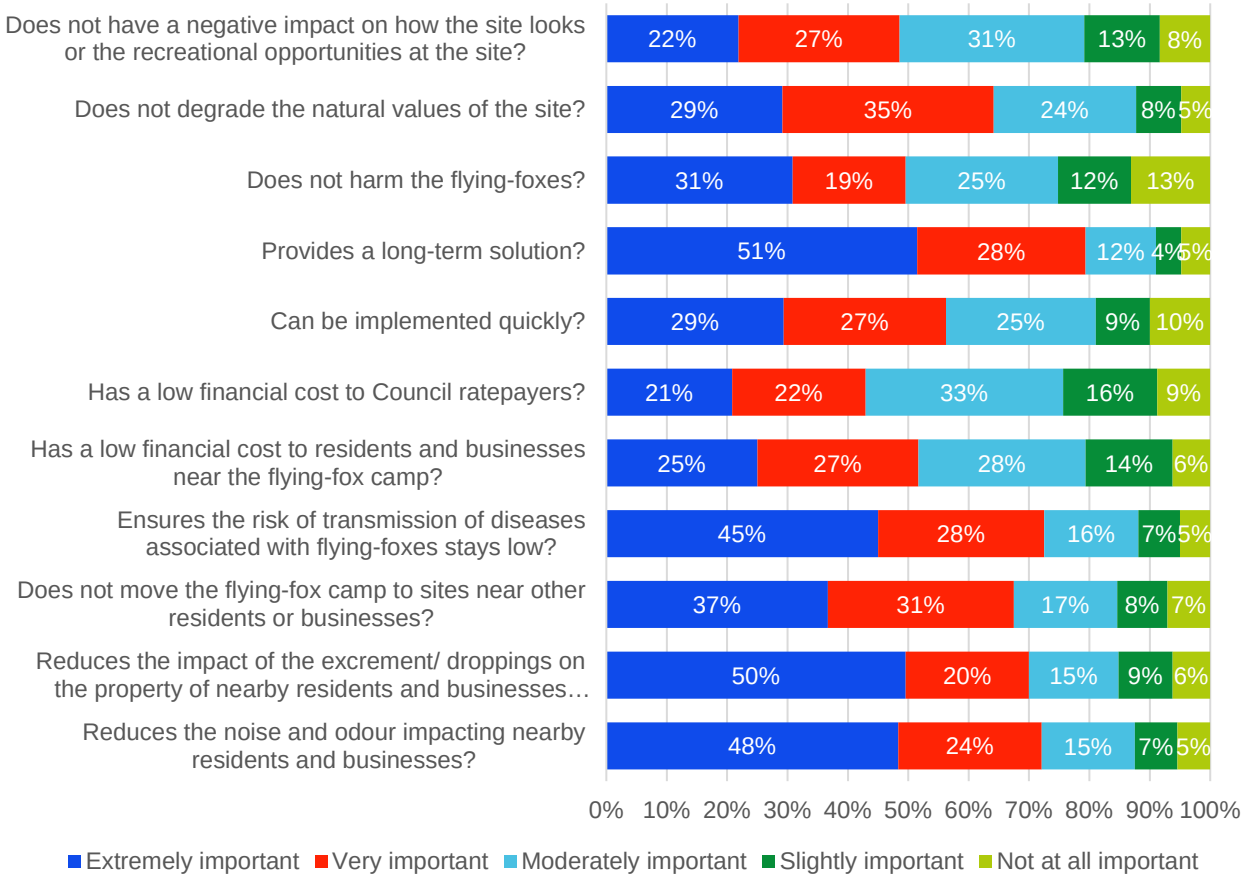
Table 9: Q19 Which of those actions do you feel helped reduce the impacts of flying-foxes?

Action	Number of mentions
Clearing vegetation/cutting trees/buffer zones	43
Noise	25
Dispersal	15
Council programs/actions	14
Clearing food sources	9
Clearing water gardens	9
Removal of cocos palms	6
Smoke	5
Car covers	3

A full list of actions mentioned is shown in Appendix 6.

3.2.6 Management of flying-fox impacts

Figure 28: Q20: For each of the following please indicate whether they are important or not important in managing the impacts of flying-foxes



Factors rated extremely or very important in the management of flying-foxes were:

- Provides a long-term solution 73% (n=381)
- Ensures the risk of transmission of diseases associated with flying-foxes stays low 73% (n=348)
- Reduces the noise and odour impacting nearby residents and businesses 72% (n=346)
- Reduces the impact of the excrement/ droppings on the property of nearby residents and businesses from flying-foxes 70% (n=336)

The highest rating for extremely important was “provides a long-term solution with 51% (n=247) with reducing impact of droppings at 50% (n=238).

The question does not define what a long-term solution is but it was asked with the assumption that it would be more than a temporary solution such as dispersal.

Figure 29: Q20: Indicate the importance of the following in managing the impacts of flying-foxes: percentage stating very or extremely important

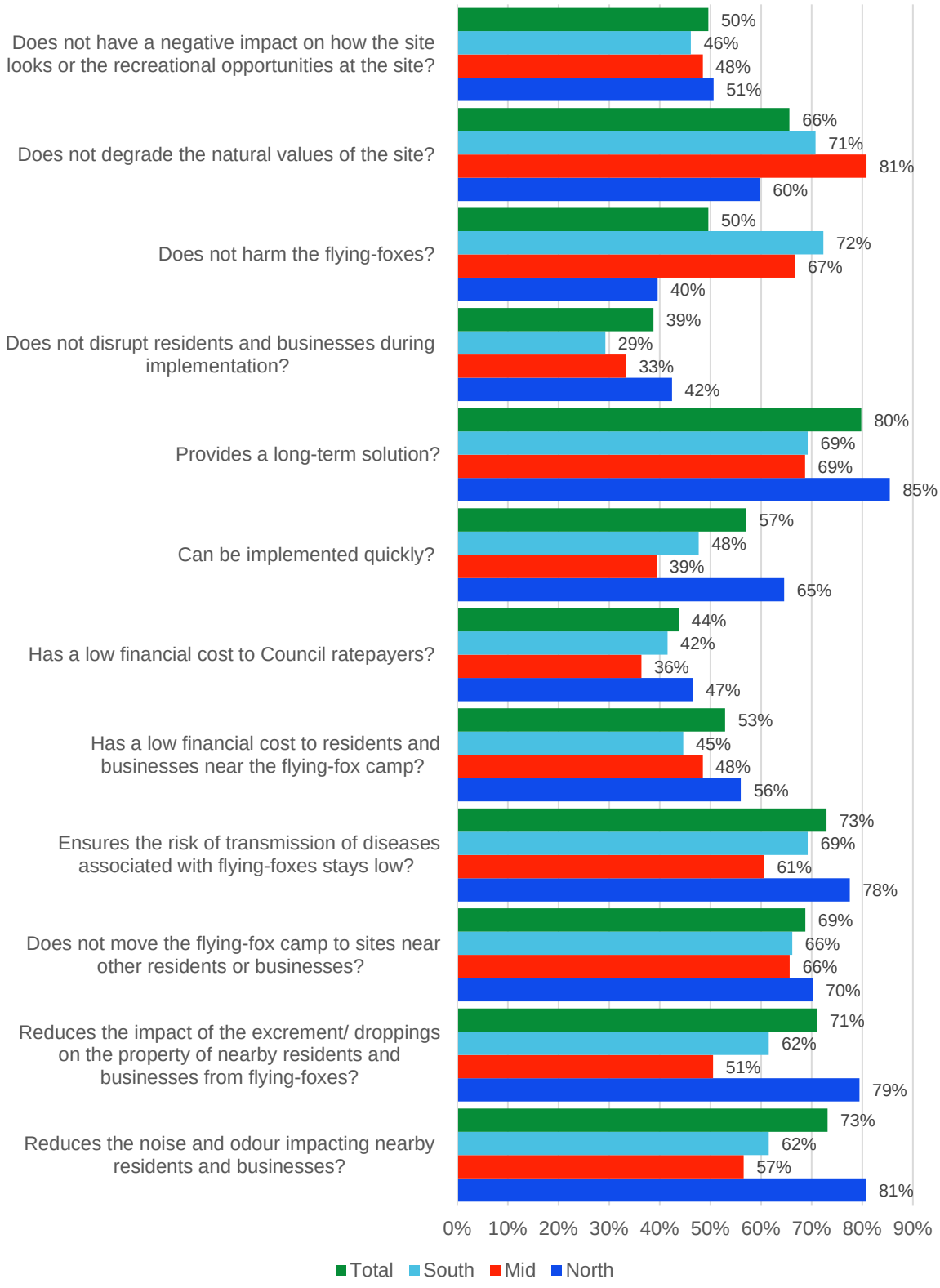


Table 10: Q21 Please tick all that apply to you:

	Number	Percent
My property has an outdoor clothes line	437	82.3%
My property has trees that produce fruit or nectar	325	61.2%
I have domestic pets such as cats or dogs	314	59.1%
My property has a garage or car cove	310	58.4%
My property has air conditioning	281	52.9%
My property has a water tank	215	40.5%
My property has a pool	43	8.1%
My property has double glazed windows	35	6.6%
My property has none of the above	28	5.3%

Table 11: Q22 I have a filter and first-flush system on my water tank

	Number	Percent
No	118	54.9%
Yes	97	45.1%
Total	215	100.0%

(n=215- those who stated their property has a water tank)

4 Targeted workshops

4.1 Introduction

After the survey, UTS:CLG facilitated four targeted workshops with community members and stakeholders. Each workshop was held at Council's premises in Moruya, went for between one and a half and two hours, and included between five and ten participants. Participants for the resident groups were recruited through the survey whilst participants for the community and environmental organisation and sensitive receiver groups were identified through a stakeholder analysis in collaboration with Council. The UTS:CLG facilitator was supported by a flying-fox expert from Ecosure, the environmental consultancy preparing the Plan on behalf of Council.

Group 1	Group 2	Group 3	Group 4
Residents that indicated flying-foxes were impacting them at the time of the survey	Residents that indicated they were not impacted by flying-foxes at the time of the survey	Local community and environment organisation representatives and members of some of Council's advisory committees	Stakeholders that may be particularly sensitive to impacts, such as businesses located close to camps, infrastructure providers, and the aviation, commercial food, and animal industries

The purpose of these workshops was to provide further insights into the survey findings, seek feedback on Council's current and future approach to impact management, and test key issues identified through the interviews, such as appropriate triggers for community feedback as part of the Decision Support Tool. Overall, there was a high degree of commonality in the range of views expressed across the groups, although each group tended to emphasise slightly different issues.

4.2 Key Observations

Participants felt the community and Council are only slightly more prepared to manage future impacts following the 2016 influx. Several participants were also unaware that this influx in part resulted from an unprecedented mass flowering event of two main flying-fox food sources that are abundant in Eurobodalla.

Participants indicated that Council could do more to enhance community resilience by helping residents and businesses become more prepared to manage short-term impacts during future flying-fox seasons. They thought Council could do more to educate the community on flying-fox migratory behaviours and food sources, what is known about the range of potential impacts and effective strategies to manage them in the short term, what Council is doing to help the community manage short-term impacts and how it is working towards a long-term solution.

Participants emphasised their strong environmental values, the important ecosystem services flying-foxes provide for long-distance seed pollination of native forests, and that any future management actions do not harm flying-foxes. A number of participants indicated they enjoyed certain aspects of flying-foxes that other community members may perceive as impacts. For example, some considered the visual amenity and noise generated during the evening fly-out and morning fly-in to be a spectacle of nature that Eurobodalla is fortunate to host. Reflecting on this, some identified the potential for entrepreneurial tourism activities based on the flying-foxes

and the unique environment Eurobodalla provides for them, as well as other opportunities such as establishing a 'Flying-fox Hospital' similar to Port Macquarie's renowned Koala Hospital.

Participants articulated a preference for a long-term environmental management solution for habitats and food sources, so that flying-foxes are no longer located close to Eurobodalla's urban areas. Long-term land use planning that conserves habitat and food sources in non-urban areas whilst directing residential and business land uses away from these areas should support this. It is acknowledged that currently knowledge of flying-fox camp selection is insufficient to be able to attract flying-foxes to a desired site, however this approach will be informed by ongoing research. Participants indicated they would feel more comfortable managing short-term impacts if they knew Council was working towards this long-term solution, but accepted it is difficult to manage the environment, particularly migratory animals, and that a long-term solution that moves flying-foxes out of urban areas may be a decade or more away or not feasible at all as it is difficult to control the behaviour and movement of migratory animals such as flying-foxes.

Overwhelmingly, participants identified the need for a proactive approach to managing future impacts based on real-time monitoring of increases in the population, alerting the community to the potential for increased numbers based on the level of food sources, and providing practical advice on what they can do to manage impacts. For example, whether washing droppings off vegetables grown in household gardens mitigates potential health risks. Participants also suggested there is an opportunity for the community to share ownership of the problem and contribute to monitoring population fluctuations, as some community members regularly count flying-fox numbers in various locations across the Shire. This was a particularly strong sentiment amongst the community and environmental organisations group, with a number of representatives expressing a willingness to work with Council to assist with management, such as helping to educate the community about flying-foxes.

The workshop participants were provided further insights on the impacts of most concern to the community. There was a striking degree of concern for potential community health impacts, particularly regarding respiratory conditions. This concern extended to flying-fox droppings landing on roofs and washing into water tanks and the town water supply, food growing in household vegetable gardens, and commercial agriculture and aquaculture grown outdoors. Participants also noted the significance of odour impacts, with some suggesting they are only ever made aware flying-foxes are around once they experience odour impacts. In particular, odour impacts were considered most difficult to mitigate and manage. Actions may make people feel trapped in their own homes, as it often required shutting all windows and doors, which could still be ineffective. Other attempts to mask the odour with scented candles or deodorisers were also considered ineffective.

In contrast, impacts from flying-fox droppings, whilst considered inconvenient and unpleasant, could be managed by washing items or hosing affected areas. Several community members felt that free pressure cleaner hire offered by Council in the past was helpful, but should have been extended to anyone in the Shire and for longer time periods. However, there was general uncertainty over whether vegetables grown in household gardens remained safe to eat once affected by faecal drop, even after washing, and similarly contamination of tanks collecting water from affected roofs. Noise was also considered more manageable as it was experienced most intensely during the evening fly-out and early morning fly-in.

Participants agreed community feedback is a legitimate trigger for some form of action by Council, and that feedback received at the neighbourhood scale (i.e. from approximately 50 to 100 residences) was an appropriate threshold for action. They also indicated action should only be taken following confirmation from Council's monitoring of the potential for heightened impact. For example, if Council received feedback, Council officers would need to visit the location and confirm the increased number of flying-foxes and/or impacts.

Discussions with the sensitive receiver group had a somewhat different focus from that of other groups. These stakeholders were keen to discuss how Council currently approaches managing

impacts, particularly on commercial businesses and service providers. They felt Council is only interested in protecting flying-foxes, rather than working toward a long-term solution, and expressed frustration at the lack of advice and consultation from Council on what they can do to manage short-term impacts on their businesses and services. They suggested Council should work more closely with businesses and service providers that may be particularly impacted through a more intensive case management style approach. This would help build Council's understanding of the impacts that businesses and service providers experience, collaboratively identify feasible impact mitigation measures, and educate businesses and service providers on what actions they can take to manage these impacts.

Some sensitive receiver stakeholders indicated flying-foxes are not particularly impacting them at this time, or they have processes in place to help manage impacts they do experience. For example, animal industry representatives indicated there is a low risk of Hendra Virus as it is mostly contained to Queensland, and they are working with industry peak bodies to monitor this. Food industry representatives indicated industry peak bodies had advised the potential risk from flying-fox droppings on food grown outdoors is low, although there is some scientific uncertainty and conflicting advice on this. Aviation industry representatives indicated they have existing processes to manage bird strikes on aircraft that also extend to flying-foxes.

5 Conclusions

This engagement process has identified the flying-fox impacts experienced most intensely by the Eurobodalla community. These include noise, odour and droppings, followed by community health impacts, damage to the environment and infrastructure, and, finally, flying-foxes eating fruit and flowers, inability to access areas where flying-foxes camp, and aircraft strikes. Current actions undertaken by residents and Council to manage some of these impacts are perceived as effective, in particular removing food sources and creating vegetation buffers.

However, these are not effective at managing all of the impacts experienced and there may be opportunities for the Eurobodalla community to take further action. For example, whilst there is concern over potential community health impacts from flying-fox droppings contaminating water tanks and storage, there is a degree of uncertainty over the threshold at which contamination may occur and whether installing filtration devices would mitigate potential impacts.

The Eurobodalla community accepts that short-term impacts may continue until Council can institute a long-term solution. In the interim, the community requires further education from Council to better understand the challenges faced when managing flying-fox impacts, better prepare them on day-to-day actions they can take to become more resilient to future impacts, and what Council is doing to work towards a feasible long-term solution. At the same time, Council should work more collaboratively and intensively with local businesses and service providers to educate them on what actions they can take and develop feasible strategies to address the short-term impacts they experience.

Ultimately, the respondents seek from Council a long-term, dual-pronged environmental management and land use planning solution that aims to encourage flying-foxes to set up camps away from Eurobodalla's central urban areas. Potential solutions include conserving and improving flying-fox habitat in non-urban areas and directing residential and business land uses away from these areas, whilst ensuring community health and the welfare and conservation of the flying-foxes in Eurobodalla remain paramount. The community understand at a general level the challenges and uncertainties of managing the behaviour and movement of migratory animals and awaits further advice from Council on the feasibility of this long-term solution.

The findings of this engagement process highlight a number of issues for further investigation when developing the Plan:

1. Assess the feasibility of a long-term environmental management and land use planning solution that aims to discourage flying-foxes away from Eurobodalla's urban areas (informed by ongoing research).
2. Develop a community education and communications strategy that improves community resilience by:
    a. building understanding of seasonality, behaviours and food sources, the range and likelihood of potential flying-fox impacts, and practical actions the community can take to minimise the impacts that they experience. This may require further research as there is some uncertainty around the range and likelihood of potential impacts and, therefore, what actions may be more or less effective in managing these.
    b. communicating what Council is doing in the short-term to help manage impacts experienced by the community, what Council is doing to assess the feasibility of and working towards a long-term solution, and the role of local government and other levels of government in regulating flying-foxes and impact management.
    c. regularly updating the community on Council's flying-fox monitoring and the likelihood of heightened impacts. For example, a change in the size of a camp or

another mass flowering event may increase the availability of food resources and the likelihood flying-foxes will return to the Eurobodalla in large numbers.

d. working with local community and environmental organisations to educate the community on the ecological and potential tourism value of flying-foxes to Eurobodalla.

3. Develop a process under which community feedback is established as a trigger for further investigation / monitoring, followed up by appropriate management by Council (ranging from education and support to camp management).
4. Undertake further studies to establish quantitative metrics as a trigger for action to manage noise and odour impacts, and investigate the effectiveness of odour neutralisers.
5. Develop a process to work more intensively with local business and service providers to collaboratively manage the impacts they experience.

Appendix 1: Membership of community groups

Table 12: Which local environment group or association are you a member?

Environmental group	Number
Landcare	3
BMP Landcare	1
South Durras Landcare	1
Broulee Mossy Point Dunecare	1
Deua River Care	1
Wires	1
N/a or no	4
Total	12

Table 13: Other description that applies to you

Other description	Number
8 – 7 [*unclear meaning*]	1
Bega Valley	1
Concerned environmentalist	1
Employee at Batemans bay hospital	1
ESC Employee	1
Eurobodalla Landcare Network	1
Ex resident intending to move back	1
Former resident	1
Have holiday home in Eurobodalla	1
Home owner	1
Interested	1
Na	1
no	1
Outer area resident/looking to move to Eurobodalla Shire	1
Own a house and live in it Approx 4 months per year	1
Regular visitor	1
Resident	1
We own a house at Batehaven and plan on moving into it in 2019	1
Total	18

Other description	Number
Club or association	**Number**
Catalina Golf Club	3
Durras Community Association	2
Long Beach Community Association	2
Marine Rescue NSW	2
Albert Ryan Park	1
Batemans Bay bushwalkers	1
Batemans Bay Chamber	1
Bingi Residents Assoc	1
Bodalla Soccer & Bodalla P&C and Narooma Swim Club	1
Broulee Mossy Point Community Association	4
Clyde united	1
Coast to Coast Animal Advocates	1
Eurobodalla Concerned Citizens and Save Albert Ryan Park	1
Eurobodalla orchid society	1
euroscug	1
Historical Society	1
Landcare, Old courthouse museum	1
Lions club	1
Long Beach Community Assn	3
Mogo Business Chamber	1
RAC	1
RAI	1
RFS	1
Rosedale Association Inc	2
RSPCA	1
SAGE	1
Soccer club	1
South Durras Community Association	1
Teacher	1
The Salvation Army	1
Tomakin Community Association	1
U3A	1
Wires member	1
Women in business	1
N/a	4
Total	49

Appendix 2: Respondents by suburb

Table 14: Respondents by suburb

Suburb	Number	Percent	Group
Batemans Bay	67	13.6%	North
Catalina	49	10.0%	North
Batehaven	20	4.1%	North
Lilli Pilli	10	2.0%	North
Surfside	28	5.7%	North
Surf Beach	27	5.5%	North
Long Beach	24	4.9%	North
Sunshine Bay	20	4.1%	North
Malua Bay	21	4.3%	North
Nelligen	7	1.4%	North
Rosedale	12	2.4%	North
North Batemans Bay	11	2.2%	North
South Durras	10	2.0%	North
Benandarah	2	0.4%	North
Runnyford	1	0.2%	North
Maloneys Beach	7	1.4%	North
North total	**316**	**64.2%**	
Bimbimbie	1	0.2%	Mid
Bingie	1	0.2%	Mid
Broulee	22	4.5%	Mid
Congo	3	0.6%	Mid

Suburb	Number	Percent	Group
Deua	1	0.2%	Mid
Deua River Valley	2	0.4%	Mid
Jeremadra	1	0.2%	Mid
Meringo	2	0.4%	Mid
Mogendoura	3	0.6%	Mid
Mogo	5	1.0%	Mid
Moruya	14	2.8%	Mid
Moruya Heads	14	2.8%	Mid
Mossy Point	13	2.6%	Mid
Tomakin	17	3.5%	Mid
Total Mid	**99**	**20.1%**	
Central Tilba	1	0.2%	South
Dalmeny	12	2.4%	South
Kianga	1	0.2%	South
Mystery Bay	2	0.4%	South
Narooma	14	2.8%	South
North Narooma	3	0.6%	South
Turlinjah	2	0.4%	South
Tuross Head	30	6.1%	South
Total South	**65**	**13.2%**	
Other	12	2.4%	Other
Grand total	**492**	**100.0%**	

Table 15: Places mentioned in the 'Other' category

Place	Number of mentions
Bodalla	6
Bermagui	1
Canberra	1
Hanging Rock	1
Moving back to Bay, not yet purchased home.	1
Potato Point	1
Quaama	1
Total	12

Appendix 3: Suburb groups

Table 16 Suburb groups

North	Mid	South
Batehaven	Bergalia	Akolele
Batemans Bay	Bimbimbie	Central Tilba
Benandarah	Bingie	Coila
Catalina	Broulee	Corunna
Lilli Pilli	Congo	Dalmeny
Long Beach	Deua	Dignams Creek
Maloneys Beach	Deua River Valley	Kianga
Malua Bay	Jeremadra	Mystery Bay
Nelligen	Kiora	Narooma
North Batemans Bay	Meringo	North Narooma
Pebbly Beach	Mogendoura	Tilba
Rosedale	Mogo	Turlinjah
Runnyford	Moruya	Tuross Head
South Durras	Moruya Heads	Wallaga Lake
Sunshine Bay	Mossy Point	
Surf Beach	Tomakin	
Surfside	Wamban	
	Woodlands	

Appendix 4: Comments on Council and individual actions on flying-foxes

Table 17: Comments on Council and individual actions

Vegetation clearing last year at the rear of property

Cleared trees

Cleared vegetation

Cleared vegetation

Clearing food sources

Council cleared SOME vegetation but not enough Casuarinas/Sheoaks. I keep windows closed, no shoes inside, restrict movements around town.

Council conducted dispersal in Batemans Bay, provided car covers, removal of cocos palms and other services to heavily affected areas. they also created buffer zones in Batemans Bay around the camps in Catalina and the water gardens.

Council cut down their roosting trees in the Bay. I am happy that they visit my place.

Council did a disbursement 2 yrs ago cutting trees down & tried moving them on

Council has cut down habitat

Council has cut down trees in town

Council has removed bush that attracted the bat

Council has removed trees in Batemans Bay

Council has removed vegetation & roosting areas which has also affected the local ducks etc

Council has removed vegetation around the water gardens to create a buffer, attempted dispersal in the past and offered rebates/car covers to affected residents.

Council reduce trees and used noise employers to move flying-foxes from roosting in the eater gardens at Batemans Bay

Council reduced impacts of colony near B/Bay hospital (trimming etc)

Council reduced vegetation around camp and tried to dispersed with water spray

Council reduced vegetation at water gardens to reduce numbers

Council reduced vegetation in Batemans Bay, and conducted a noise program at Catalina.

Council removed significant amount of vegetation in Batemans Bay to promote flying-foxes to vacate their roosting area.

Council removed trees at B. Bay water gardens but not at golf course

Council took action removing and trimming trees

Council trimmed trees and used noise to disperse them in 2017. We have to close all windows and run air conditioning to reduce impact of smell, noise and asthma attacks from the flying-foxes. We have to hose down verandahs and building daily to wash off excrement. We can't hand washing out overnight.

Council unnecessarily cut down established gum trees/casuarinas in Lake Catalina Reserve with the result the grass now grows profusely and the area has lost much of its natural amenity.

Council, noise and removal of trees

Created noise and cut back trees to move them on

Cut back trees in my yard, cover vehicles and clothes lines

Cut down some trees and loud music

Cut trees down where they roost.

Cut vegetation, ruined my garden

Cutting back trees, increasing buffer zone around homes, dispersal, community impact survey

Destroyed their habitat by ripping down the trees but they came back anyone thank god.

I have done nothing as I do not suffer any adverse effects from the presence of the bats, however, Council has done considerable tree clearing work, particularly in the water gardens, to establish a buffer zone between bat habitat and human habitat.

I have just recently had the fruit from Cocos Palm (in my yard) removed.

I have removed fruit trees from my garden that were attracting the flying-foxes.

I have trimmed food sources within my own yard. Council have proceeded with measures to decrease or 'move the population on'

Management of vegetation at the water gardens. People should better manage feed trees

Reduce number of fruit bearing palm trees.

Reduce vegetation & roosting trees. Provide coverings for cars, clotheslines etc

Remove Cocos palms from properties in my area

Remove vegetation

Removed 5 x large cocos palms

Removed 7 cocos palms

Removed all our cocos palms

Removed all seed pods from palms on our rural property.

Removed as many trees that may be attracted by the bats, council (with state and federal funding) had to remove overcrowded trees on the nature reserve at the Catalina lake area (Country Club Drive and Heron Road) as well as the extensive undergrowth crippling the nature reserve

Removed fruit from neighbors cocos palm

Removed large numbers of them recently

Removed or do not plant any vegetation on my land that might attract flying-foxes.

Removed palm trees

Removed palm trees from my yard.

Removed palm trees to deter them.

Removed particular trees that attract foxes

Removed seed from palm trees. Could council do same on streets?

Removed some tree areas of past concern

Removed their roosting habits such as trees in ware gardens

Removed them once after a long fight

Removed trees and created a buffer zone between Catalina lake and the back of our home in Country Club Drive

Removed trees that they roost in

Removed two cocos palms but still have two more

Removed weed species feeder trees, provided covers for cars, noise to disperse

Removing vegetation, making noise

Self: had to remove fruits before they ripen from extremly high (dangerous) palms however we cannot reach all the bunches of fruits

The animals feed substantially on palm tree fruit and domestic fruit trees on private property and on council verges even though their natural native food sources are plentiful. We have asked

neighbours to consider doing as we have done, eg reducing palm trees, as they are not native to this region they were originally imported for decorative purposes and are now an invasive problem as the bats spread their seed everywhere.

They cut the trees down next to our house to provide a bigger buffer zone, plus the dispersal early in the morning to prevent them from landing to roost.

Tree removal and pruning off seed heads

Trimmed trees

Vegetation management

Vegetation removal

Vegetation removal, 'moving on' of the group

Vegetation clearing

We have cut down the trees that they feed from in our yard and council have cleaned up the water gardens

We have removed several trees from our yard that the bats use to feed on. They were introduced palms that were not native.

Had some palms removed

I cut down the palms in my yard to stop the flying-foxes feeding. I assisted with dispersal.

Advised neighbours/community about removing species in gardens that are attractive food sources for flying-foxes eg. Tuckeroos, Date Palms

Attended information sessions ... council then developed a plan to move flying-foxes

Council program to reduce flying-foxes last year

Council > entire mitigation and relocation program 2015, 2016, 2017. Self > move/ cover car

Council are doing more work in this department than I can list, I saw council guys with drone cameras doing research one day. They do a lot more too, more than most people realise

Council attempted to remove bats

Council commenced measures to move the flying-foxes on in 2017

Council did a "clearing" of them about 2 years ago

Council did a move on about two years ago which was not overly successful

Council did something

Council discouraged flying-foxes from roosting

Council has drawn up a management plan and has attempted to relocate the flying-foxes. It has also done extensive remedial work in the water gardens and assisted locals severely impacted by flying-foxes. I have removed my peach tree. I did not mind using strategies to deter fruit fly or cockatoos but once I realised it was my peach tree that was attracting flying-foxes into my yard at night I did not hesitate to remove it.

Council has employed staff + volunteers to address the problem + develop a LGA wide strategy

Council has provided assistance to residents located in close vicinity to camps

Council has thoroughly monitored the camps to get a better understanding of whats going on, increased buffers between camps and houses, dispersal to move them on, updated community through media, received funds from state gov

Council has visited camps regularly at dawn and tried to collect data as to size of camp. Supplied protection covers for residents in affected zones. Kept public informed re situation. Adhered to regulations re controlling them,

Council have had eradication attempts in my area

Council implemented a plan of action in 2016 to reduce the impact

Council needs to do a lot more - a very disappointing Council response generally - very slow to action, need new people there.

Council received funding to stop grey headed flying-fox from landing after feeding to discourage colony

Council says it built buffer vegetation

Council's programme. Use of bright lights.

Council's work on their roosting area near the hospital. Personally I've not done anything, no will I.

Councils action at Batemans Bay!

Door knocking with surveys to gather information on what residents think about the smell and impact on the environment. Illness and other concerns residents had when the flying-foxes were roosting in their back yards

Drained ponds at BBay Museum, cut many trees down in Batemans Bay and Catalina, carried out other methods to disperse roosting flying-foxes

Educating people regarding endangerment to species, council looking at non harmful ways to reduce impact to residents

Education of local residents

Gave info

I understand the Council has taken measures but I don't know what they are

In 2016 I was involved when council engaged a consultant and I participated in meeting and the information sessions in Batemans Bay with the consultants.

It is about education - Council are doing a good job

Last year council did quite a lot to reduce the amount of flying-foxes

Our council are great

Disposing of all fruit and veggie debri very carefully

Don't leave food out at night,cover all bins. > no food available for them.

Council did smoking trials and some clearing

Smoke

Banging pots n pans n noise alarms but very little tree felling

Council removed them from Batemans Bay by making a lot of noise

Council tried to remove the camp in Batemans bay with noise

Didn't Council have a program where they made noise early in the morning when the foxes were coming back to roost?

Had a tree cut down but was for different reasons, but works well as the bats wont sit in it and make loud noise and poo all over our cars.

I am aware of the light/noise action taken at batemans bay

Last year and year before they did the noise with the metal sheets and stuff every night to get them to stop roosting. They stayed away for a year and now their back and something meeds ro be done before there's hundreds of thousands flying around again pooping on everything

Loud noise

Made noise and trim/removed trees

Make loud noises to scare off flying-foxes. Use a rodent ultrasonic device.

Make loud noises to scare them away from my house.

Moved flying-foxes on utilising noise & smoke

Personally nothing. Council in conjunction with state & federal gov used numerous tools, tree felling, noise, smoke when we had huge issues two years ago. I understand council are currently tracking numbers of bats.

Population control plan couple years ago. Used noise and lights to stop them roosting

Speakers and noise to make them relocate elsewhere

The noise at Batemans Bay

Various forms of noise to move on roosting flyingfoxes

When I lived in Batemans Bay I could hear banging and whistles early in the morning , apparently it was a way to make the flying-foxes not return to their roost and go elsewhere .

Music

Noise, lights and things

Noises at the Batemans Bay Camp arranged by the Council. Have not noticed much excrement this year. Much more last year.

Council dispersed the flying-foxes

Council dispersed the flying-foxes in Batemans Bay using pots and pans?

Council dispersed the last major colony

Council drove them out before about 2 years ago

Council finally acted last year/two years ago, but they (the bats) are back

Council has conducted dispersal in Batemans Bay

Council has created vegetation buffers in Catalina and Water Gardens, and a dispersal from that area last year.

Council has tried dispersal techniques

Council have been undertaking dispersal programs

Council have tried to evict the flying-foxes with loud noise.

Council helped move them on

Council made efforts to dispurse camps last year

Disbursement of some FF, education re FF

Dispersal

Dispersal activities

Dispersal by council. Cleaned up town centre main camp (Water Gardens). Me: distributed flyers advising local residents to watch for and report camps (roosting) close by in Long Beach and Maloney's Beach

Dispersal each morning 2016

Dispersal in 2016

Dispersal in 2016 due to the extreme numbers in the water garden area

Dispersal last year but they are back

Dispersal plan in the past

Dispersal program in recent Years

Disperse them

Flying-fox dispersal officer

Husband was a part of bat disporsal a few yrs ago, with the council

I was part of the dispersal in 2016

I was part of the volunteer dispersal team. I worked across the community sharing information. gathering data. I spoke at a council meeting

Just what council did in the previous year to disperse and clear vegetation from near homes

They dispersed

They tried to disperse the camp

Tried to disperse them

Participated in dispersal campaign

Previous dispersal improved the situation

Camp dispersal

Council did dispersal

A disbursement program

I know that the council has offered people car and clothes line covers in affected areas and conducted dispersal in Batemans Bay

Council has done a lot of work with the residents most affected by flying-foxes. There has been a lot of communications, subsidised services and the 2016 dispersal.

Cleared out water gardens, move them on with noise and lights, removed other vegetation

Clearing Water Gardens

Council cleared Water Gardens

Council clearing and improvements in water gardens.

Council destroyed the amenity of the water garden area and blocked access to the water garden for around 6 months making it almost impossible for myself and many others without a car to access shops and having to do without for food and medication. Much worse than any slight inconvenience caused by the bats and councils dis interest in the harm of not being able to access food and medication.

Council did try to disperse the flying-foxes last year from the Water gardens at Batemans Bay but atter being on the forshore at Batemans Bay at dusk over the last few months there are now thousands of flying-foxes back in Batemans Bay.

Council ha done work around the water gardens etc to minimise numbers

Council has closed Water Gardens in Batemans Bay and conducted dispersal

Council were involved in the removal of the Flying-foxes from the water gardens in Batemans Bay.

ESC cleared the beautiful Watergardens so that the Flying-foxes would have no homeESCc drove flying-fox camp away from the water gardens in Batemans Bay

I have made management suggestions and Council has undertaken action around the Water Garden.

In Batemans Bay - removal of attracting vegetation in water gardens

Last years efforts to reduce numbers and move on the bats from Catalina and the water gardens.

Remove them from the Water gardens in B/Bay

Water gardens action by council

Water gardens clean up

Water gardens clean-up

Water Gardens cleared

Water gardens management

You wasted our tax payers money trying to get rid of them from water garden. There were other cheaper options.

Broken up camp at Water Gardens

Cleaned up the water gardens

Cleaned up the water gardens in town

A year or so ago council cleared foxes from Batemans Bay which appeared to temporarily reduce the flying-fox issue but now they have returned in as many if not greater numbers

Attempt to relocate roosting areas

ESC

Eurobodella Flying-fox Management Plan

Havent seen them since the control measures at Batemans Bay last year

I lobbied Council to remove Cocos palms from public and private land at South Durras

I park my car in a different place so it doesnt get shat on

I volunteered with WIRES to rescue and relocate injured and displaced flying-foxes. Inoculated against Lyssavirus

I'm aware of the work that has been done in the Bateman's Bay area

Installed movement activated lights to no avail

k

keep them on the move

Major project to reduce impact on the district

Na

Netted fruit trees

Notified conserned parties to be aware of increased flying-fox activity

ranger visited my home and advised solar lights on the building with absolutely no effect at all

Reduce numbers

Reduce the impact of Flying-foxes on town by making be reducing the total number in the vicinity

Reduced ONLY SOME of the feeding grounds

Regular monitoring and relocation efforts

Relief for those people who are directly affected (eg. car covers)

Relocated them

Scared em away but they came back in force

Scared them away

Sprayed them with water

They moved them on from memory

Tried to move them to new roosting sites

Tried very hard to get rid of them

We are on tank water and have had to pay $500 to put in an underwater filter system to filter out bacteria and viruses.

We have netted our fruit trees

Appendix 5: Other actions you or the Council have taken to reduce impacts of flying-foxes

Table 18: Other actions you or the Council have taken to reduce impacts of flying-foxes

A year or so ago council cleared foxes from Batemans Bay which appeared to temporarily reduce the flying-fox issue but now they have returned in as many if not greater numbers

Attempt to relocate roosting areas

ESC

Eurobodalla Flying-fox Management Plan

Havent seen them since the control measures at Batemans Bay last year

I lobbied Council to remove Cocos palms from public and private land at South Durras

I park my car in a different place so it doesnt get shat on

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Tried to move them to new roosting sites

Tried very hard to get rid of them

We are on tank water and have had to pay $500 to put in an underwater filter system to filter out bacteria and viruses.

We have netted our fruit trees

Appendix 6: Which other actions do you feel have helped reduce the impacts of flying-foxes?

Table 19: Which other actions do you feel have helped reduce the impacts of flying-foxes?

By reducing the number in the total area it made life easier. This was achieved by council taking measures to reduce the roosting area available to them in the local area

Car covers

Caring

Community

Coordinated dispersal efforts in the past

Don't know if it helped or if the foxes moving on was a seasonal thing

Don’t know

Everyone is impacted, even if one never sees one - lot of publicity, some nonsennse

Foods left out gives them a food source.

Get rid of Cocos palms

Going out every morning as the bats came home to roost and making them find elsewhere not close to homes

Having nowhere for them to feed

I don't know

I don't think that Council strategies have helped much as I still see thousands of flying-foxes if I am ever in Batemans Bay at dusk. Removing the peach tree has reduced the numbers and frequencies of flying-fox visits but has not entirely deterred them.

I hope that it means we won't get sick from the bat droppings on the roof.

I think it impacted flying-foxes which I don't believe is great for the species

I think they should have been left alone until they left of their own accord, then the trees could have been felled.

I would call it hindered not helped the flying-foxes. It helped humans.

I’m sure that people who used the car and clothes line covers would be less impacted.

It temporarily reduced the impact

It's unclear whether the dispersal action reduced flying-foxes or whether fluctuations in the past few years were due to other factors.

Less feed

Loss of food source and resting place.

Management of feed trees in housing areas could help

Maybe a vo incident but when remived from yge Bay no longer seen in Narooma on the flat

Minimal

Moved them back from being so close to residential housing and businesses.

Moving my car

Moving the flying-foxes on was just a temporary action and they have returned.

Previous council measures finally saw the bats move elsewhere (I assume). But like I said, they have returned.

Providing residents with protective covers.

Removal but they will come back, even council says this

Shoot them

Smoke and noise

Smoke billows, noise techniques

Some

Stop them from landing

Taking their homes, food and water away

The above

The buffer zones created

The clearing of the overgrown vegetation. the combined efforts from experts and community members

The consistency

The council had a removal program supported my local community.

The councils efforts

The disbursement plan of two years ago was successful. Currently the golf course is seeing increasing numbers of bats & associated problems with smell & the constant urination particularly when they are disturbed by hitting a ball & they take off on mass. I am unsure/unaware of any proactive measures to move the bats at the present time.

The first

The lights and noise

Think they have moved on from Bay?

Understanding seasonality of camp

Unsure

Unsure how they were moved but thankful

Unsure if they helped or they just moved on anyway.

Vegetation clearing as the flying-foxes have not returned to the immediate area at the rear of the property but have returned the area close by.

Vehicle covers, removal of cocos palms and access to a gurney

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