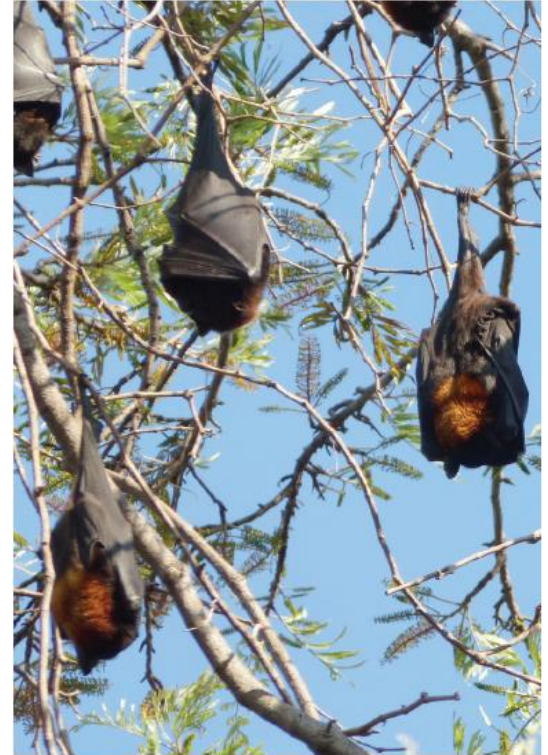


# Gauging attitudes of residents living close to flying-fox camps to inform conflict management



*Black flying-foxes. Photo: Gail Hampshire  
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## How should we manage flying-foxes into the future?



**Australian Government**

**Australian Research Council**



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Land, Water  
and Planning



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**LOGAN**  
CITY COUNCIL




## Kaye's Masters project

- A review of the status quo of management approaches used at FF camps
- Interviewed 15 managers
- Collected 54 responses to a questionnaires, representing 47 camps
- Questions along the lines of what have you done, why did you do it, how much did it cost, how effective did you think it was etc etc.



Article

### Land Manager Perspectives on Conflict Mitigation Strategies for Urban Flying-Fox Camps

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Received: 29 March 2018; Accepted: 22 May 2018; Published: 24 May 2018



**Abstract:** Over the last 20 years, there has been a notable increase in the presence of flying-foxes (*Pteropodidae*) in urban areas in Australia. Flying-foxes congregate during the day in camps which at times may contain many thousands of individuals. The associated noise, smell, mess and concerns about disease transmission can result in significant conflict with local communities. Managers of flying-fox camps use a range of management approaches to mitigate tensions, but the success or otherwise of these has been largely undocumented. Land managers were surveyed to determine the relative cost and perceived effectiveness of mitigation strategies using semi-structured interviews and an online questionnaire. We found that five actions were commonly used to manage flying-foxes: (1) stakeholder education, (2) the creation of buffers between camps and adjacent residents via vegetation removal or (3) the creation of buffers via deterrents, (4) dispersal of flying-foxes via disturbance, and (5) dispersal of flying-foxes via vegetation removal. Perceptions of effectiveness varied considerably among managers. Overall, the creation of buffers via vegetation removal was considered the most effective action, and stakeholder education was perceived to be the least effective. Dispersal via disturbance was also considered effective at reducing complaints and improving amenity, but not particularly effective overall likely due to the often short-term relief provided to residents before camps were recolonised. It was evident that the actions taken by managers and their perceived effectiveness were influenced by the attitudes of the community. This highlights the importance of considering the human dimensions of human-wildlife conflict in mitigation strategies.

**Keywords:** wildlife management; human-wildlife conflict; *Pteropus*; human dimensions; dispersal; buffers; Chiroptera; urban ecology

#### 1. Introduction

Human-wildlife conflict is a significant issue in many parts of the world [1]. Major drivers of conflict are the encroachment of expanding human populations into wildlife habitat, or wildlife colonising or utilising human-dominated areas [2]. Although direct damage caused by wildlife is often implicated as the main cause of conflict, in reality, conflict can arise whenever the presence of wildlife threatens, or is perceived to threaten human interests, be they aesthetic, social or economic [3,4].

While much of the human-wildlife conflict literature focuses on large vertebrates [2], other species such as bats can cause conflict. The *Pteropodidae* family comprises over 170 species of flying-foxes and is distributed widely in tropical and subtropical countries [5]. Flying-foxes feed primarily on flowers and fruit, and are vital pollinators and seed dispersers for a large range of food, timber and forest

## The impacts of flying-foxes on local communities

The main impacts of flying-fox camps were perceived by camp managers to be noise, smell, concerns about the transmission of serious diseases, and loss of amenity (Fig. 3). Beliefs that the community was concerned about negative impacts on property values and business profits also ranked highly. Impacts on the local environment were not considered to be as important. 'Other' factors included mess from faeces, concerns the camp would continue to grow, and impacts on tourism and community gatherings.

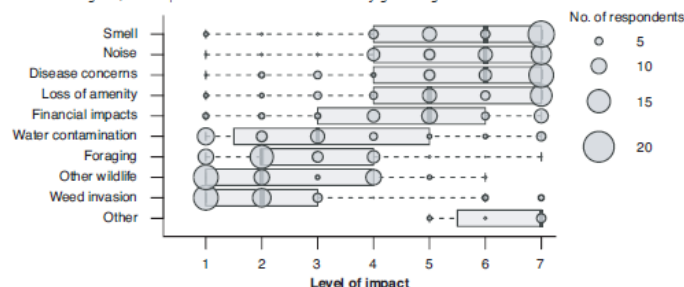


Figure 3 – Perceived level of impacts of flying-fox camps on local communities and the environment

Respondents could rate impacts from 1 (no impact) to 7 (serious impact). For each impact category the spread of data are shown as box plots (with the median and quartiles). The circles indicate how many respondents gave a particular score for a particular category: for example few (3) respondents indicated that smell was only having an impact of 1, while 17 respondents indicated it was having a serious impact of 7.

## What triggers managers to take action

Residents were identified as the most important trigger for making the decision to actively manage a camp, followed by vocal stakeholders, the media and elected representatives (Fig. 4). 'Other' factors considered important by camp managers were the camp expanding onto Council land, the public risk from tree damage, and the costs versus potential benefits of actions.

Some responses which exemplify this were:

"There was a very small minority of very, very, vocal against the bats, a very small minority are really positive about bats, and everyone else is somewhere in the middle..."

"This community was a really difficult one because we had a very vocal councillor who was feeding quite a lot of misinformation into the local area"

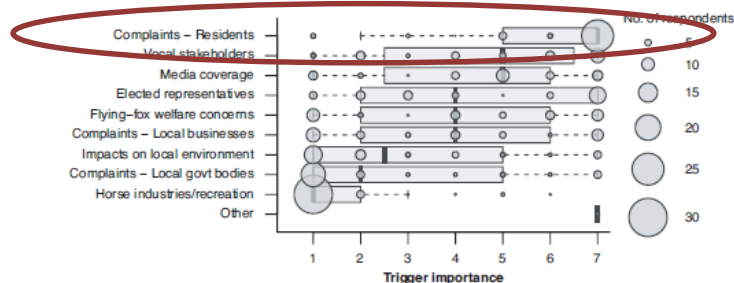


Figure 4 – Perceived importance of different triggers in the decision to manage a camp (beyond status quo maintenance)

Respondents could rate the importance of a trigger from 1 (not important) to 7 (very important). For each trigger category the spread of data are shown as box plots (with the median and quartiles). As with Figure 3, circles indicate the number of respondents to give each score.

## Effectiveness of management actions

Participants in the surveys were asked to rate the perceived effectiveness of the five most commonly used approaches from 1 (not effective) to 7 (very effective) against a range of objectives. A common theme in our interviews and surveys was the positive response of residents to many of the actions simply as a result of them feeling that their concerns had been heard:

"We identified that there was an opportunity there to do some vegetation management to just increase buffers. And so the fact that we identified those options and you know, facilitated the process ... the community could see some action and some understanding and some sort of ownership of the issue from council ..."

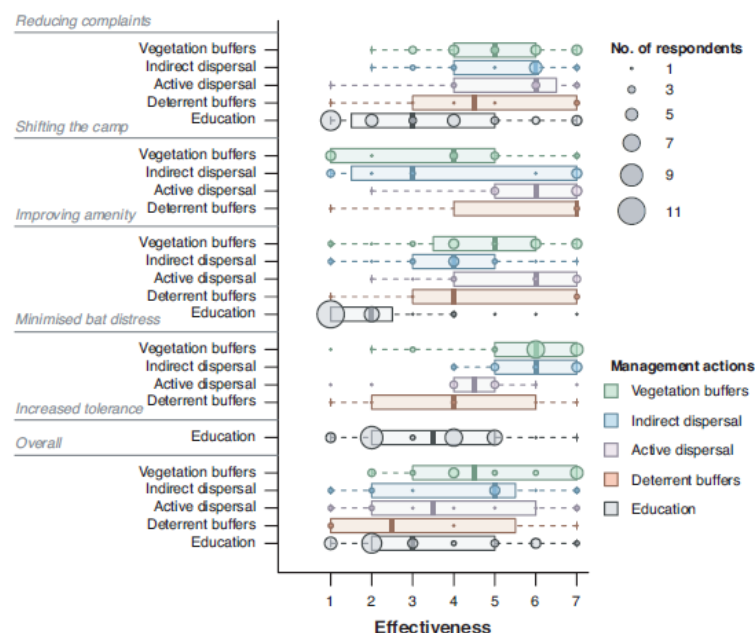


Figure 6 – Perceived effectiveness of management approaches, scored against a range of objectives.

For each management objective (reduce complaints, shift the camp etc) the spread of data are shown as box plots (with the median and quartiles), and each management approach is shown in a different colour. The circles indicate how many respondents gave a particular score for a particular objective/approach.





## Phase 1: Community interviews

Targeted residents living close to (<250m) camps along the east coast

Tried to visit both contentious and non-contentious camps

Talked to people with a range of views

Tried to cover a diversity of camp and management histories

Aim was to understand the language people use, and what they perceive to be the key issues and benefits

## **General perspectives on flying-foxes**

- Have there always been flying-foxes in this area? When did you first notice them?
- When you think about flying-foxes or bats, what are first words that come to mind?

## **Perceptions of the specific camp and its impacts**

- Do you know how long it's been there? Are the flying-foxes here all year round, and do the numbers change a lot month-to-month or year-to-year? Do you know what species they are?
- Has the camp had any direct impact - positive or negative - on you or your family/household?

## Perceptions of management actions

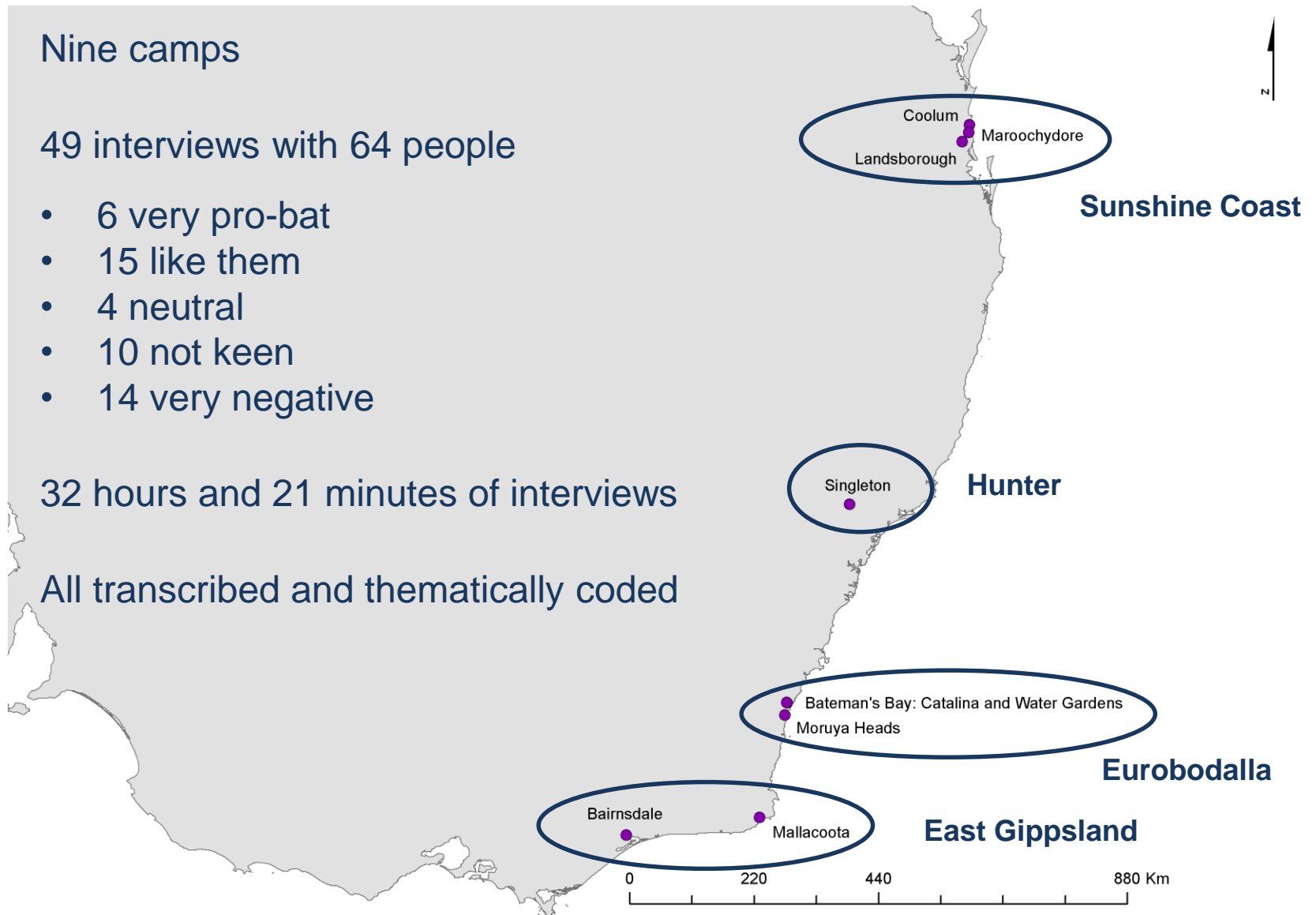
Nine camps

49 interviews with 64 people

- 6 very pro-bat
- 15 like them
- 4 neutral
- 10 not keen
- 14 very negative

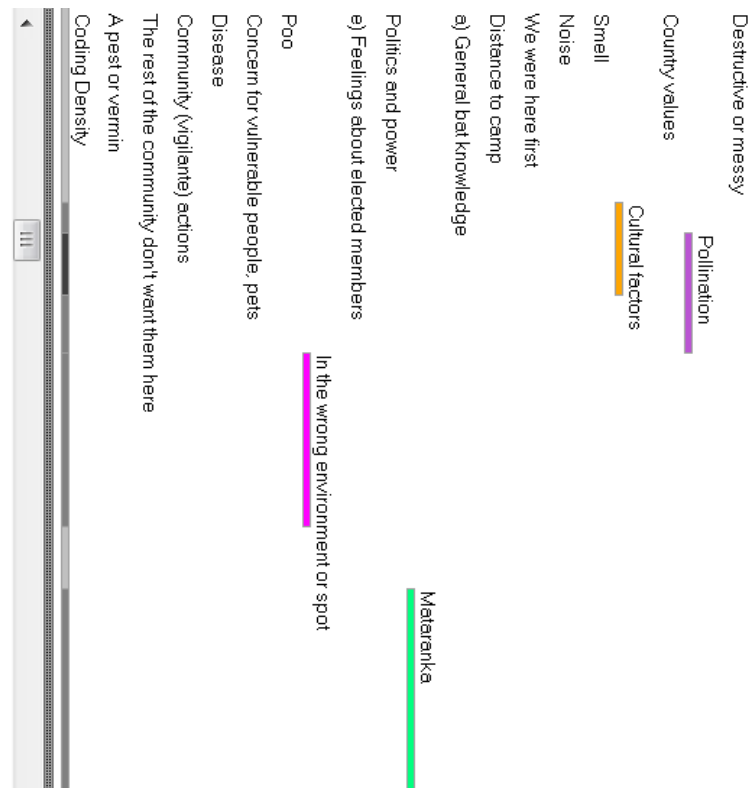
32 hours and 21 minutes of interviews

All transcribed and thematically coded



# Thematic coding

|              |   |
|--------------|---|
| <b>Resp:</b> | The dogs you can, you can get baits, 10-80 baits you can put out for the dogs. I put out 72 baits one year and I only recovered 12, so that means 60 of them were taken, but I only found one dead dog. So, how effective it is, I don't know.  |
| <b>INT:</b>  | Alright, we'll get back to the bats because I know you have to go. So, if you were thinking about bats, what words spring to mind?  |
| <b>Resp:</b> | I suppose traditionally to a lot of people they've got a bad reputation, a scary reputation. They're always in horror films and all that sort of stuff, but we understand that they have a purpose in the ecology. Very important as far as regenerating some of the gum vegetation in the ecology.   |
| <b>INT:</b>  | So, you can sort of see some benefits to the species?   |
| <b>Resp:</b> | Oh yeah.  |
| <b>F:</b>    | Just not in suburbia.   |
| <b>Resp:</b> | All the experts tell you that it'd be detrimental to the ecology if they weren't here, if we simply just shot them all, so we believe those experts, but equally, there's got to be a way around keeping them out of our living space, if you like. I also saw what they did do to Mataranka in the Northern Territory. We've travelled through there many times and that's in the high trees again. Security of height and they just decimated the whole place. They eventually went. They put sprays. They put water up the trees and I think they hit them with water during the day, so they couldn't roost, and they eventually moved on, but I think by then they'd destroyed the habitat anyway. |



## Bairnsdale (10)



## Mallacoota (9)



Impacts on path where they walk

Very vocal community member

EPBC approval process

Veg removal in phases

No much communication from council, forum with David Westcott

Seasonal camp

“Tree changers” and gentrification

Water tanks

Massive influx of GHFF, 1/3 pop

Dislike of council: far away, don't care

## Maroochydore (3)



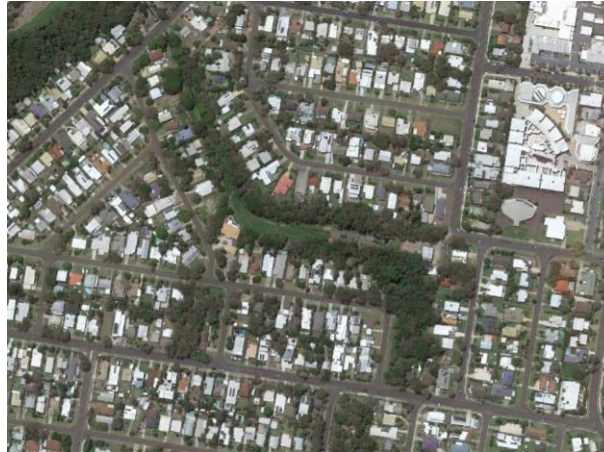
Camp not on council land  
– school

Expensive failed  
dispersal + buffer (\$111K)

Disp now off the table

Proactive local group,  
community meetings

## Coolum (6)



Camp seems to have est  
after another dispersal

A couple of failed  
dispersals (\$150K)

Council installed sprinklers

Vigilante actions – tree  
deaths, shooting

## Landsborough (3)



Has been there for a  
while, seasonal?

Community tensions,  
petitions and disturbances

Gentrification

Moderate buffers and  
signage (\$11K)

## Smell

*“Thick. Very thick. You could almost taste it”  
(BB WG)*



## Property values

*“He gets feedback from the agents all the time.  
People come in, they see the bats camped at the  
back, and that’s it.” (CO)*



## Quality of life

*“...the people had no life there. They couldn't sit out in their back terraces... they've got to **lock themselves inside their home and have their air-conditioning on.**” (MD)*



## Attitudes about people

*“There's a certain **redneck element in town, some people just don't like nature, particularly if there's a lot...**” (MA)*



*“There's a whole lot of people - **people who don't live here... come and tell us we've got to keep the bats here**” (SI)*



## Interesting, cute, nice to watch, pollinators

*“I think they’re fascinating actually, yeah, absolutely fascinating. **One of nature’s real wonders**” (MH)*



## Part of nature??

*“I'm not against nature, **I love birds and things and they don't do any damage, but these things just do damage wherever they go.**” (SI)*



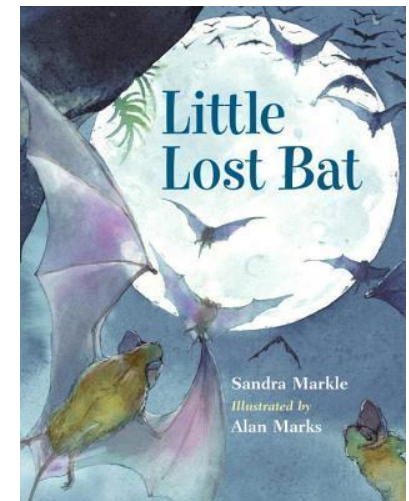
## Diseases

*“I know they’re – we mustn’t touch them because some of them can be very deadly and have diseases, so we don’t touch them... **I know if dogs eat them they – dogs can get really sick and die, and people can get very sick too**”. (BB CA)*



## They are just in the wrong place

*“Oh, I think as far as flying foxes as a species goes I’m positive, I like them... So, yeah, I’ve got no problem with them in their natural habitat. **When they’re in an unnatural one right in the middle of our town, it’s not so good.**” (BB WG)*



## Education

*“...tolerance and living next-door to them are just two different issues. I’m fascinated with flying fox behaviour and what they do, but living next-door to them is just horrendous and no amount of education is going to change that.” (CO)*



## Threat status

*“If they’re an endangered species, there’s a hell of a lot of them.” (SI)*



## Values and attitudes

People should take precedence, we were here first

*“I’ve lived here all my life.... **I don’t really believe that human beings should be given the minority opinion**” (SI)*

People should live in harmony with nature, the bats were here first

*“...they’re a native species... we have to live with them, not fight against them. **I can’t imagine not to have the bats here, or what it could do.** (CO)*



## Managers and politics

*“As I said, **they are hamstrung**... But they could've acted a little quicker... **I think it's sitting in the too hard basket for them, and I can understand why**” (BD)*

*“**Why would people develop in an area that was known to have a bat roost, so I’m not sure if the buyers got those reports going with, but certainly no-one was aware.**” (MD)*

## Our working theory...

**Distance** moderates sensory impacts (smell)

×

**Baseline expectations** (camp size, influxes, permanence)

×

**Dominionistic values** (whose rights take precedence)

## Community views on flying-foxes and the management of their camps

Pia E. Lentini<sup>1</sup>, Kaye Currey<sup>1</sup>, Dave Kendal<sup>2</sup>, Kylie Soanes<sup>3</sup>, Kathryn Williams<sup>3</sup>

<sup>1</sup> School of BioSciences, the University of Melbourne <sup>2</sup> School of Technology, Environments and Design, University of Tasmania <sup>3</sup> School of Ecosystem and Forest Sciences, the University of Melbourne

### Executive summary

In recent decades flying-fox camps in Australia have become increasingly urban, leading to human-wildlife conflict in some places because of concerns about noise, smell, diseases and loss of amenity. Local government managers are under pressure from nearby residents and other members of the community to address these concerns. Following on from our previous study<sup>1</sup>, which showed that the community are influential in triggering decisions to manage camps, we set out to develop a better understanding of i) how people living close to camps feel about flying-foxes; ii) what they perceive the impacts of the camp to be; iii) how satisfied they are with management that has been carried out; and iv) how acceptable alternative management options would be to them.

We interviewed 64 residents living close to nine camps (both contentious and non-contentious) across the east-coast of Australia: two in Victoria, four in New South Wales and three in Queensland. We identified themes that were specific to each of the camps, as well as those that were raised repeatedly across all of the camps. These were divided into five categories:

1. *Positive and negative impacts.* Sensory impacts (particularly smell) and fear of diseases (for vulnerable people and pets) were the key concerns for residents. Some perceived them to be destructive and messy, and felt they impacted on their quality of life. Yet, positive associations were also common, such as appreciation of the ecological role that flying-foxes play, and a sense of awe and wonder in experiencing flying-fox camps.
2. *Situational factors that influence views on flying foxes.* Many people living closer to camps were negative about flying-foxes, although there were exceptions to this. Some residents also expressed resentment when the camp changed in a way that was unexpected, such as when camps grew larger over time, or there were sudden influxes of a large number of flying-foxes.
3. *Managers and sources of information.* Interviewees got most of their information from the media or public meetings. Many didn't know who managed the camp, and hadn't tried to contact them. Participants generally understood that managers were limited by legislation, but some were sceptical about both the political nature of decision-making and the threatened status of the grey-headed flying-fox.
4. *Attitudes and sentiments.* Interviewees often described people who held different views as being an unreasonable minority. Most acknowledged that flying-foxes were an important part of nature, but many felt that they had no place settling in urban areas. Almost everyone stated that they loved wildlife, but in some cases this did not extend to the bats. Residents with strong opinions were divided between those that felt the rights of humans should take precedence, versus those who thought humans had to learn to live in harmony with wildlife.

## Common themes from across all the interviews

The perspectives of participants are presented under five major themes:

- *'Positive and negative impacts'* of the flying-foxes and the camp on the local community.
- *'Situational factors that influence views on flying foxes'*, such as how long the camp had been there, how far the camp is from the respondent's house, how many bats use the camp etc.
- *'Managers and information'* relates to how interviewees accessed information about the camp and interacted with the relevant authorities and experts, including council employees and elected members.
- *'Attitudes and sentiments'* captures some of the commonly used phrases relating to both flying-foxes but also fellow community members and the issues surrounding flying-fox management
- *'Management options'* refers to the discussion of management options, both those presented on the information cards or alternatives that were brought up independently through conversation.

Each of these major themes are discussed below, highlighting subthemes that were raised many times across all of the camps. Themes which were predominantly raised at a single camp (e.g. water tanks in Mallacoota) are instead discussed below. We have provided quotes which exemplify the subthemes – the initials next to these indicate which camp the interview quote came from, not the name of the individual (BD: Bairnsdale, MA: Mallacoota, MH: Moruya Heads, BB WG: Bateman's Bay Watergardens, BB CA: Bateman's Bay Catalina, SI: Singleton, LB: Landsborough, MD: Maroochydore, CO: Coolumb).

We also provide summary plots to show how many times each theme was mentioned. These bar charts are aggregated across all interviews (so there is no distinction between one person mentioning a theme three times and three people mentioning it separately) and do not account for the unequal number of interviews between camps.

*The findings from this work are intended to capture a range of views on flying-foxes and their management, and to understand the kinds of factors that shape these views. Given the breadth of sites considered, the diversity of people interviewed, and the care taken in analysing the interviews, we are confident the research provides a reliable understanding of these matters.*

*The research was not designed to provide a representative picture of the prevalence of these views beyond the people interviewed, or to understand how important different factors are in shaping these views. The findings reported here should not be used to draw conclusions on these matters, which will be the subject of further research.*

<sup>1</sup> Currey, K.C., Kendal, D., van der Ree, R. and Lentini, P.E. (2018) Manager perspectives on strategies used at flying-fox camps. *National Environmental Research Program Threatened Species Recovery (TSR) and Clean Air and Urban Landscapes (CAUL) Hubs, Melbourne*

## Phase 2: Quantitative surveys

Large-scale, quantitative survey that will allow us to build robust statistical models.

Address two key questions:

- What shapes resident's attitudes towards flying-fox camps and their management?; and
- What factors influence whether a flying-fox camp is or isn't 'controversial'?

We are aiming to target 30 camps and send surveys to about 8,000 residents (to get 1,000 responses)

...but we need your help! **Nominate a camp.**

## Manager's survey

Have kept this as brief as possible, it should take about 5 minutes per camp

- Your name and agency, whether there is a FF management strategy
- The name of the camp, the location, whether it's controversial
- How many bats use the camp
- How many pieces of correspondence your receive about it
- Rate from 1-7 the impacts on residents, the community tension, and the level of resentment directed at you
- Tick-a-box to indicate what management actions have been used

THEN I'll send you a map and ask you to trace the outline of the camp



|   | Strongly disagree        |                          |                          |                          |                          |                          |                          | Neutral |  |  | Strongly agree |  |  |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------|--|--|----------------|--|--|
|   | 1                        | 2                        | 3                        | 4                        | 5                        | 6                        | 7                        |         |  |  |                |  |  |
| Animals should have rights similar to the rights of humans                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |  |  |                |  |  |
| Wildlife is on earth primarily for people to use  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |  |  |                |  |  |
| I take great comfort in the relationships I have with wildlife                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |  |  |                |  |  |
| It is acceptable for people to kill wildlife if they think it poses a threat to their property  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |  |  |                |  |  |
| We should strive for a world where there's an abundance of wildlife for hunting and fishing     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |  |  |                |  |  |
| It is acceptable to use wildlife for research purposes even if it may harm or kill some animals | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         |  |  |                |  |  |

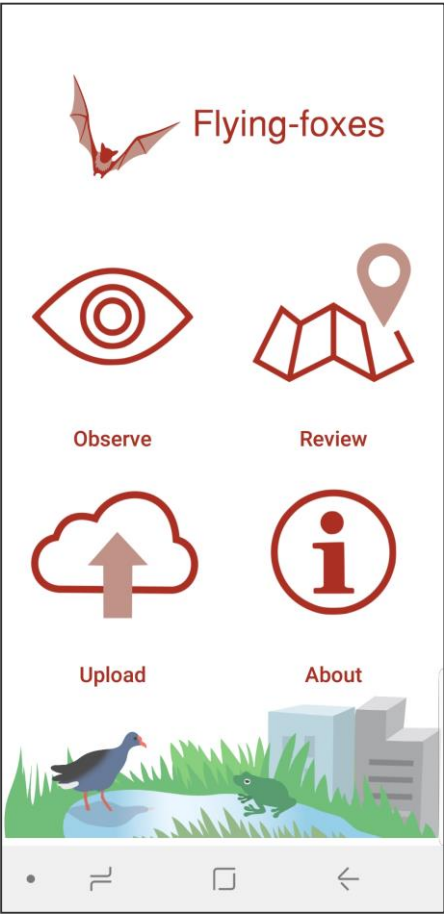
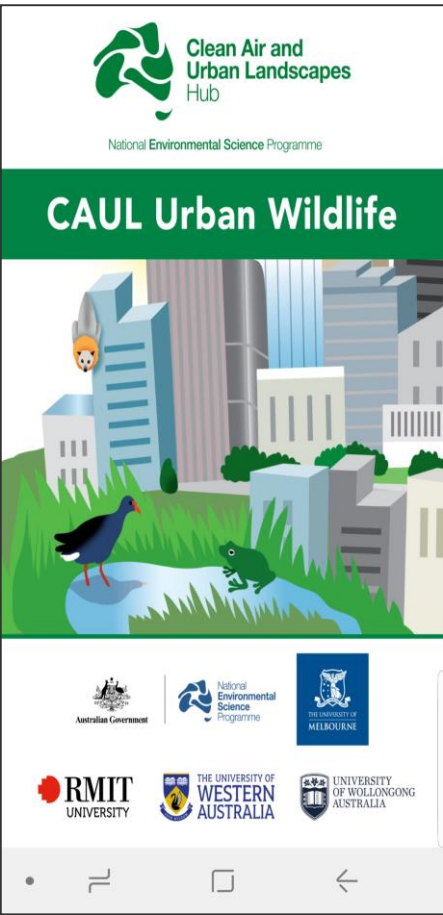
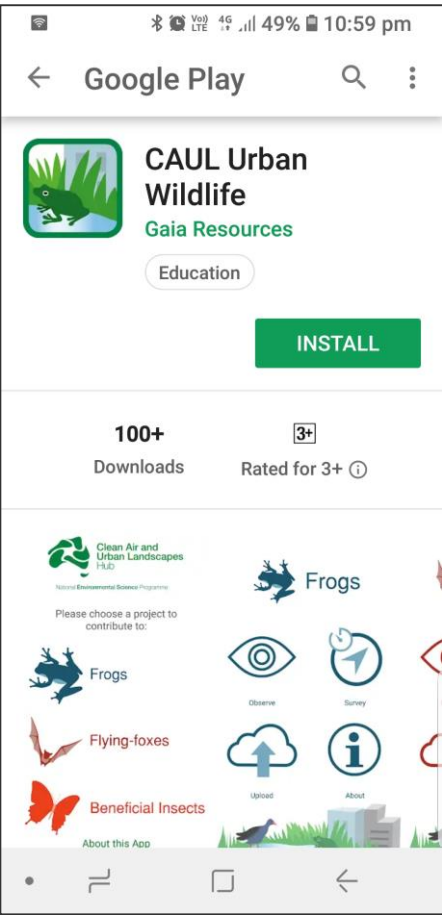
As with the previous work, the findings will be published as an academic paper but also a more accessible report.

The results can also be linked to ecological data relating to camp counts, movements etc.

There are limits to what data we can share, but we do want to help you better understand to situation around your camps.

**And now for a final couple of plugs...**

# Flying-fox app



| Cultivated fruits                     | Other fruiting species         | Lilly pilly and native cherry ( <i>Syzygium</i> ) | Eucalypts cont'd               | Paperbark ( <i>Melaleuca</i> )           |
|---------------------------------------|--------------------------------|---|--------------------------------|--|
| Cashew                                | Lemon aspen                    | Brush cherry                                      | New England Blackbutt          | Cajuput                                  |
| Sour-sop                              | Red ash                        | Sour cherry                                       | Orange gum                     | Karnbor                                  |
| Custard apple                         | <i>Barringtonia</i> sp.        | Purple cherry                                     | Southern blue gum              | Broad-leaved paperbark                   |
| Pawpaw                                | Scrub turpentine               | Weeping lilly pilly                               | Blakely's red gum              | Prickly-leaved paperbark                 |
| Mandarin                              | Chinese elm trees (introduced) | White apple                                       | Bangalay                       | Broad-leaved paperbark                   |
| Orange                                | Five-leaf water vine           | Broad-leaved lilly pilly                          | River red gum                  |  |
| Persimmon                             | Cotoneaster                    | Red apple   | New England blackbutt          | <b>Silky oak (<i>Grevillea</i>)</b>      |
| Loquat                                | Tuckeroo                       | Kuranda satinash                                  | Sugar gum                      | Silky grevillea                          |
| Lychee                                | Davidson's plum                | Riberry   | Gympie messmate                | Southern silky oak                       |
| Apple                                 | Silky myrtle                   | Blue lilly pilly                                  | Yate                           |  |
| Mango                                 | Giant stinging tree            | Magenta cherry                                    | Mountain blue gum              | <b>Banksia (<i>Banksia</i>)</b>          |
| Mulberry                              | Shining-leaved stinging tree   | Watergum  | Broad-leaved ironbark          | Tropical banksia                         |
| Banana                                | Myrtle ebony                   | Lilly pilly                                       | Flooded gum                    | Coastal Banksia                          |
| Olive                                 | Native tamarind                | White Eungella gum                                | Pink bloodwood                 | Old Man Banksia                          |
| Avocado                               | Koda                           |   | Bushy yate                     |  |
| Apricot                               | Broad leaved ballart           | <b>Palm trees</b>                                 | Yellow gum                     | <b>Bottle-brush (<i>Callistemon</i>)</b> |
| Cherry plum                           | Glory vine                     | Alexander palm                                    | Grey gum                       | Common red bottlebrush                   |
| Peach                                 | Silky mulberry                 | Bangalow palm                                     | Red stringybark                | Narrow-leaved bottlebrush                |
| Plum                                  | Broad-leaf privet (introduced) | Rattan palm                                       | Maiden's gum                   | White bottlebrush                        |
| Stone Fruit                           | Cockspur thorn                 | Carpentaria palm                                  | Grey gum                       |  |
| Nectarine                             | White kamala                   | Cabbage palm                                      | Silver-leaved ironbark         | <b>Other species</b>                     |
| Cherry                                | Wongi                          | Sand palm   | Yellow box                     | Queen wattle                             |
| Guava                                 | White cedar                    | Mataranka palm                                    | Darwin woollybutt              | Swan river peppermint                    |
| Pomegranate                           | Southern Melodinus             | Royal palm  | Grey box                       | White siris                              |
| Rollinia                              | Sweet Morinda                  | Canary Island date palm                           | Yellow stringybark             | Grey mangrove                            |
| Choko                                 | Bur tree                       | Date palm   | Narrow-leaved black peppermint | Illawarra flame tree                     |
| Tamarid                               | Kurrajong mistletoe            | Cocos palm  | Grey Ironbark                  | Moreton Bay chestnut                     |
| Grape                                 | Nonda plum                     |   | Parramatta red gum             | Camphor laurel (introduced)              |
|                                       | Native passionfruit            | <b>Eucalypts</b>                                  | Blackbutt                      | Gymea lily                               |
| <b>Fig (<i>Ficus</i>)</b>             | Brown beech                    | Sydney red gum                                    | Sydney peppermint              | Coral tree                               |
| Weeping fig                           | Sweet pittosporum              | Rough-barked apple                                | Needlebark                     | Hibiscus                                 |
| Plentiful fig                         | Black apple                    | Smooth barked apple                               | Small-fruited grey gum         | Japanese raisin (introduced)             |
| Creek Sandpaper fig                   | Yellow boxwood                 | Lemon-scented gum                                 | Large-fruited grey gum         | Sweetgum (introduced)                    |
| Round-leaved Banana fig               | Plum pine                      | Corymbia clavigera                                | Large-fruited blackbutt        | Tulip tree (introduced)                  |
| Rubber plant                          | Canary beech                   | Yellow bloodwood                                  | Narrow-leaved peppermint       | Brush box                                |
| Sandpaper fig                         | Leatherwood                    | Red flowering gum                                 | Red mahogany                   | Hairy-leaved bolly gum                   |
| Moreton Bay fig                       | Zig zag vine                   | Red bloodwood                                     | Swamp messmate                 | Poplar (introduced)                      |
| Small-leaved fig                      | Seaberry saltbush              | Large-leaved spotted gum                          | Steel box                      | Mangrove                                 |
| Sweet sandpaper fig                   | Malletwood                     | Pink bloodwood                                    | Sydney blue gum                | Willow (introduced)                      |
|                                       | Native raspberry               | Spotted gum                                       | Narrow-leaved red gum          | Umbrella tree                            |
|                                       | Yellow elderberry              | Ghost gum   | Grey ironbark                  | Devil's fig (introduced)                 |
|                                       | Peppercorn (introduced)        | Long-fruited bloodwood                            | Mugga ironbark                 | Firewheel Tree                           |
| <b>Quandongs (<i>Elaeocarpus</i>)</b> | Crabapple                      | Carbeen   | Eucalypt                       | Turpentine                               |
| Blue marble tree                      | Kangaroo apple                 | Cadaga  | Forest red gum                 | Athel pine (introduced)                  |
| Kuranda quandong                      | Wild tobacco (introduced)      | Brown bloodwood                                   | Darwin Stringybark             | Rosewood (introduced)                    |
| Blue quandong                         | Brown damson                   | Northern spotted gum                              | Red ironbark                   | Kanooka                                  |
| Hard quandong                         | Country-almond                 | White mahogany                                    | Manna gum                      |  |
| Blueberry Ash                         | Damson plum                    | White box   |                                |  |
|                                       | Berombong                      | Cabbage gum                                       |                                |  |

## Kaye's PhD project...

*Decision-making in complex  
human-wildlife conflict  
situations*



**How? Who? Stakeholders? Useful? Constraints?**