

Peri-urban kangaroos. Wanted? Dead or alive?

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ABSTRACT

Although questionnaire responses and direct feedback from residents showed that a substantial proportion of residents from a Port Macquarie retirement community found local peri-urban kangaroos to be 'too close for comfort', most participants indicated a preference for kangaroos remaining in their local area and for management to be undertaken using non-lethal means. Essentially, peri-urban kangaroos were wanted; preferably alive. High participation rates (91%) by local residents demonstrate there is potential for actively involving communities in the management of human-kangaroo conflicts in peri-urban areas.

Key words: human-wildlife conflict, stakeholder management preferences, eastern grey kangaroos

Introduction

Australia is not immune from the global increase in human-wildlife conflict (Madden 2004; Raik et al. 2005). As urban expansion continues, large numbers of people and wildlife are coming together at the interface between residential areas and rural lands. In these peri-urban areas, particularly on the nation's east coast, active management is required where species such as *Macropus giganteus*, the eastern grey kangaroo (Figure 1), occur sympatrically with humans (Adderton Herbert 2004).

In coastal areas of mainland Australia's eastern states, *M. giganteus* utilise house-yards and communal green-space, such as parks and golf courses, for readily available food, water and shelter resources. Often they are not alone since red-necked wallabies *M. rufrogriseus* and swamp wallabies *Wallabia bicolor* also commonly occur in such situations. Although many people enjoy observing nearby



Figure 1. A large, free-ranging eastern grey kangaroo in a Coffs Coast house yard. Photographed by C. Laverty.

kangaroos and wallabies, close proximity between humans and macropods can be problematic. Despite the fact that commonly observed problems, in the form of damage to garden plants and lawns, seem innocuous, more serious incidents like motor vehicle collisions with kangaroos and interspecific aggression towards people and pets, do occur.

Several reported 'attacks' on humans, by *M. giganteus*, have occurred along the mid-north coast of New South Wales in recent years (Jones 2000; NPWS 2004a; Sullivan 2005), providing a significant challenge for local wildlife managers. These scenarios prompted an investigation of residents' management preferences in five communities along the Coffs Coast (Ballard 2006). Soon after the conclusion of that initial research, wildlife managers from Port Macquarie contacted the University of New England regarding a challenging scenario in a local retirement community known as the Retreat Village.

Following at least two incidents that resulted in injuries to elderly residents, and assorted damage caused to property, staff from the retirement community wanted local kangaroos culled. However, such action requires assessment and approval by the NSW National Parks and Wildlife Service (NPWS). Since anecdotal evidence collected by NPWS staff suggested a threat of public backlash against culling, local wildlife authorities sought assistance to better assess the human dimensions of the management scenario.

This paper outlines the types of community consultation used and reports selected results from research undertaken at the Retreat Village. The small-scale study was aimed at demonstrating the potential for actively involving residents in management decision-making by using questionnaire-based research and simple interviews to determine the range of experiences residents had with peri-urban kangaroos and their preferences for managing local 'problems' with these animals.

Methods

Study site

In 2005, the Retreat Village was a community of approximately 200 residences on the western edge of Port Macquarie, New South Wales. Incomplete fencing between the retirement village adjacent rural lands meant that local kangaroos could freely move between the properties and were regularly found in the retirement village during the day, and at night, feeding on green lawns, drinking from small wetlands or resting in the shade of ornamental trees and shrubs.

Community consultation

Following discussion with local wildlife managers and staff to scope issues within the Retreat Village, a community meeting was held to explore residents' views of local kangaroos and the various interactions that occurred with the animals. Information gathered at the meeting was used to modify an existing questionnaire (Ballard 2005) that was then distributed to each of the 192 residences within the local area.

Two weeks after the questionnaires were initially distributed, a reminder letter and second copy of the questionnaire were provided to non-respondents. After another fortnight, face-to-face interviews were attempted with residents who had still not returned a completed questionnaire.

Results

More than 120 residents attended the community meeting, providing valuable insight into local social dynamics, relationships between residents and Retreat Village staff, experiences with kangaroos and preferences for management.

Although many residents initially seemed to be habituated to the presence of kangaroos in their community, a variety of positive and negative interactions were described as the meeting proceeded. After some time spent discussing local issues it was revealed that many people obviously enjoyed the presence of kangaroos. Many proudly reported that animals would regularly graze or lie about within a few metres of residents as they hung out washing or worked in their yards. Unsurprisingly, these people were almost invariably supportive of maintaining the local population of kangaroos.

It became evident, however, that some residents were clearly afraid of these large herbivores. Some indicated that they felt trapped in their houses or cars when the animals were nearby. Others reported individual kangaroos kicking windows, turning over outdoor furniture, kicking external water heaters and, in one case, hopping onto the bonnet of a stationary vehicle.

Respondent characteristics

In total, people from 91% of Retreat Village residences participated in this research, with 71% of all residences ($n = 138$) returning completed questionnaires.

The gender ratio of respondents (53% female: 42% male: 5% undeclared) matched expectations of more female

than male residents. Unfortunately, the actual ratio was not available for comparison. On average, respondents had lived in the community for 4.4 years (± 3.2) and were separated almost evenly between having those rural (42%) or metropolitan (52%) backgrounds.

Responses to the questionnaire

Most respondents (86%) reported seeing kangaroos daily, with much of the remainder (12%) seeing them at least weekly. The animals were most frequently reported using communal areas of the Village (92%) but more than three-quarters of respondents (78%) reported seeing kangaroos in their yards. Respondents who had the animals in their yard at some time reported them eating grass (100%), eating other garden plants (19%), drinking water (19%) or simply lying about (95%).

Most respondents (71%) indicated that they were aware of the presence of kangaroos before moving to the Retreat Village. Whilst nearly half (47%) believed that the number of animals had increased since they moved into the area, roughly a third (32%) disagreed, instead indicating that the population was relatively stable.

Few respondents (6%) felt they would have not chosen to live in the Retreat Village if they had understood the reality of living with local kangaroos. Although most people (51%) indicated that the presence of local kangaroos was important to them, nearly a third (30%) were indifferent and just under a fifth (19%) disagreed. Similarly, just over half (57%) believed that kangaroos should be able to remain within the bounds of the Retreat Village but more than a quarter (26%) disagreed with maintaining the local kangaroo population, with the remaining 17% uncommitted.

Levels of support for local kangaroos and the importance they hold for the Retreat Village community could be drawn from residents' responses. For example, 34% of respondents reported that kangaroos had, at some time, made them feel uncomfortable about stepping out of their house. Likewise, 40% were concerned about the prospect of motor-vehicle accidents involving kangaroos (despite the fact that only 1% had been involved in such a collision) and 55% indicated that they were concerned about the prospect of conflict between humans and kangaroos in the local area.

Overall, 92% of respondents believed that people who move into an area inhabited by kangaroos should be provided with information on how to best live with the animals (only 33% had received such information themselves). Most residents indicated a preference for non-lethal management of aggressive kangaroos. Just 7% believed that such animals should be killed, compared to 67% who preferred relocation away from people and 21% who wanted them 'left alone'.

Discussion

M. giganteus' propensity to be aggressive when threatened made them a source of concern for many Retreat Village residents. In fact, prior incidents that had resulted in injuries to local people appeared to have prompted concern about future conflict among a majority of

participants. Although fewer residents stated that they were actually 'afraid' of local kangaroos than those who had 'concern about conflict', the fact that the animals had made a third of respondents worried about leaving their house showed that some respondents were being adversely affected. Consequently, some form of management was required.

Fortunately, by actively seeking feedback from the community, it was possible to identify the types of management that would be appropriate in the local area, from a social perspective. Respondents made it clear that traditional reactive strategies, such as culling aggressive animals, would mostly not be welcomed. Instead, there was overwhelming support for proactive management, in the form of education, to make residents aware of how to live with kangaroos. Furthermore, suitable education material (Redman and Jarman 1999) was already available for distribution to residents.

Where education could not alleviate conflict between people and kangaroos, there was strong support for non-lethal management options to be used in dealing with aggressive animals, particularly capture and relocation. Although this preference could prove to be problematic in the Port Macquarie area, due to the absence of suitably qualified staff for tranquilising animals (Amanda Smith

pers. comm.), it was obvious that managers needed to seriously consider this as a reactive management option and at least be prepared to explain to residents why it was unlikely to be implemented. Culling aggressive kangaroos was the least popular reactive management strategy and its use, given that local kangaroos were important to a majority of residents, posed an obvious risk of substituting conflict between residents and kangaroos for conflict between residents and managers.

This case study, together with research undertaken in other communities (Ballard 2006), revealed that peri-urban kangaroo management, much like scenarios involving urban deer, in the United States of America (e.g. Stout et al. 1997), can be a difficult issue. Although it is unsurprising that this study confirmed residents can be divided in their preferences for management, it importantly showed that fear and concern about conflict with wildlife were not necessarily associated with support for lethal control of the animals, particularly where the presence of those animals was widely regarded as important. Equally, it was valuable to see that conflict could begin to be addressed by actively seeking feedback from stakeholders about their experiences and preferences for management, allowing authorities to make educated decisions about how to alleviate future problems in the area.

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