

RSPCA Australia Alan White Scholarship 2012 - Progress Report

Factors influencing public perceptions of kangaroo management

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Introduction and aims

The management of kangaroos is a sensitive issue in Australia and it is common to encounter (often heated) disagreement over appropriate management options in a range of situations where kangaroo numbers need to be controlled. The controversy usually stems from concern within the general public about *why* kangaroos need to be managed and the *methods* used to control them. The aim of this project is to gain a detailed understanding of the beliefs, attitudes and perceptions of the general public towards the methods used for the management of kangaroos.

Kangaroos are managed in a range of circumstances, for example, when farmers and graziers want to minimise economic loss, when land managers are required to protect biodiversity, when enclosed populations become overabundant or when kangaroos are a continued hazard to traffic. Options for control include non-lethal methods (translocation - capturing and moving the animals elsewhere; fertility control – reducing the growth rate of the population; exclusion fencing; and environmental modification – limiting access to water, introducing predators or manipulating vegetation) and lethal methods (shooting under a commercial or non-commercial license and capture followed by euthanasia).

It is important that the concerns of the public are taken into account when deciding on appropriate options, however it is not well understood how the public understands or perceives different aspects of kangaroo management, including animal welfare impacts. For example, during the recent culls of kangaroos in the ACT, some groups in the community were demanding that kangaroos be captured and translocated to another location. However, the welfare of translocated wildlife, including kangaroos, is often very poor since they are highly sensitive to stress and may not cope with capture, restraint handling, transport and adaption to a new environment. Translocation is thus likely to cause prolonged suffering and distress. Government policymakers and wildlife managers are increasingly making decisions on kangaroo management based on public pressures and concerns. However, if this concern limits the control methods available, it is possible that they will be forced to use less humane methods in certain situations.

A number of surveys have previously been undertaken to examine the Australian public's views on kangaroos and their management, however to my knowledge this is the first to use 'audience segmentation'—a process of identifying coherent groups within a population. This approach is widely used in areas such as product marketing, public health and climate change to improve the effectiveness of public engagement campaigns. Use of this approach can make communication strategies more effective as messages can be tailored to distinct subgroups within society.

Methods

During April, 2013, I used a 108 item web-based survey administered by Qualtrics (Australia) to gather data from 1050 Australian residents (49% male, 51% female). Participant ages ranged from 18 to 89 years, which included 83% aged between 18 and 64 and 17% aged 65 years and over. Eighteen per cent of participants reported that the highest level of education completed was Year 10 (or below) at high school, 19% had completed Year 12 at high school, whilst 37% had completed a TAFE certificate of diploma. Twenty-five per cent had completed a Bachelor degree or above. Sixty seven per cent described their current residential circumstances as residing in a metropolitan area of a major city (over 100,000 people), 11% reported that they lived in a large town (over 25,000 people), and 22% resided in a country town or rural area or village. All of these figures closely correspond with statistics collected during the 2011 national census (ABS, 2011).

I asked the participants to rate a range of kangaroo management methods —both lethal and non-lethal—on the basis of acceptability, humaneness, effectiveness, safety to the public, and the likelihood of contributing to the extinction of kangaroos. In addition, affective associations with kangaroos and attitudes towards three different methods of killing (lethal injection, shooting and blunt trauma) were also assessed, along with measures of general knowledge about kangaroos, attitudes toward animal welfare, environmental concern, cultural cognition and behaviours related to kangaroo activism.

Preliminary Results

I have conducted a preliminary examination of the data and for this progress report present a sample of the results below and in Figure 1:

Rating of kangaroo management methods

The rating of kangaroo management methods was scored on a 5-point Likert scale, which ranged from 1 to 5 with 1 being unacceptable, inhumane, ineffective, unsafe or unlikely, and 5 being acceptable, humane, effective, safe or likely—depending on the question being asked. A mean score of 3, being the midpoint, indicates that the belief is not strong either way—although the response to some questions was polarised with equally high numbers of responses on either side of the midpoint.

Shooting by professional shooters (commercial harvesting)

Commercial harvesting by professional shooters had a mean acceptability score of 3.74 (SD=1.25), indicating that the majority of participants (69%) found it 'slightly acceptable' or 'very acceptable'. The majority of participants (63%) also viewed commercial harvesting as either 'slightly humane' or 'very humane', with a mean score of 3.56 (SD=1.31). Twenty four per cent of participants thought that it was either 'slightly inhumane' or 'inhumane'. Commercial harvesting is viewed as being effective at preventing damage from overgrazing with the majority considering it 'effective' or 'very effective' (75%, mean=3.89, SD=0.94). It is considered to be a method that is safe to the public by majority of participants (mean=3.57, SD=1.17), with 58% considering it to either 'slightly safe' or 'very safe'. Finally, a small majority of participants thought that commercial harvesting was 'unlikely' or 'very unlikely' to contribute to extinction (51%, mean=2.74, SD=1.26), while 32% thought that it was 'likely' or 'very likely'.

Shooting by professional shooters (animals shot and carcasses 'let lie')

This method of kangaroo management differs from commercial harvesting in that the carcasses are not used. In contrast to the beliefs held toward commercial harvesting, when professional shooters do not use the carcass of shot kangaroos only 22% of participants thought that the method was 'slightly acceptable' or 'acceptable'. The majority of participants (65%) thought that the method was 'slightly unacceptable' or 'unacceptable' (mean=2.28, SD=1.29). Similarly, the majority of participants viewed this type of management as 'slightly inhumane' or 'inhumane' (60%) and only 21% believed it to be either 'slightly humane' or 'humane' (mean=2.34, SD=1.28). Forty seven per cent of participants thought that shoot and let-lie by professional marksmen was either 'effective' or 'very effective' at reducing the overgrazing impacts of kangaroos. Alternatively, 27% believed it to be either 'ineffective' or 'very ineffective' (mean=3.19, SD=1.16). More participants believed that this method was either 'slightly unsafe' or 'very unsafe' as opposed to 'slightly safe' or 'very safe' (45% vs. 33%)(mean=2.82, SD=1.26). More participants also thought that this method was less likely to contribute to extinction ('unlikely' + 'very unlikely' = 43%), whereas 36% thought that it was 'likely' or 'very likely' (mean=2.92, SD=1.27).

In terms of relative humaneness, effectiveness, safety and the likelihood it will contribute to extinction, the only difference between commercial harvesting and shoot and let-lie by professional marksmen is that the carcasses are used in the former method but not in the latter. Consequently, beliefs regarding humaneness, effectiveness, safety and likelihood of contributing to extinction should be similar but in most cases they were not. Participants thought that commercial use was more humane (63% vs. 21%), more effective (75% vs. 47%) and safer (58% vs. 33%). The exception was likelihood of contributing to extinction, where shoot and let-lie was slightly higher than commercial use, but not by much (36% vs. 32%). The notable differences in beliefs indicate that the general public is more comfortable with a method that makes use of the carcass.

Shooting by non-professional shooters (animals shot and carcasses 'let lie')

The difference between this method and the preceding method is that non-professionals (e.g. recreational hunters, landholders etc.) do the killing. Therefore, a direct comparison between the two methods contrasts public attitudes toward amateur vs. professional marksmen.

The overwhelming majority of participants viewed shooting by non-professional marksmen as either 'very unacceptable' (63%) or 'slightly unacceptable' (20%). Only 9% believed it to be either 'slightly acceptable' or 'acceptable' (mean=1.65, SD=1.02). Similar proportions of participants believed that non-professional shooting was either 'very inhumane' (68%) or 'slightly inhumane' (18%) and only 5% thought that it was either 'slightly humane' or 'very humane' (mean=1.53, SD=0.92). Forty-one per cent of participants thought that shooting by non-professionals was not effective at reducing overgrazing impacts ('ineffective' or 'very ineffective'). Thirty-one per cent thought it was effective ('effective' or 'very effective') (mean=2.77, SD=1.18). The majority of participants thought that it was either 'slightly unsafe' or 'very unsafe' (70%), while 11% thought that it was safe ('slightly safe' or 'very safe')(mean=2.01, SD=1.11). The participants were split almost equally between those that thought that shooting by non-professional marksmen would be either 'unlikely' or 'very unlikely' (40%) to contribute to extinction and those that thought it would be either 'likely' or 'very likely' (44%)(mean=3.09, SD=1.36).

Done properly by proficient shooters, there should be very little difference between shoot and let-lie killing done by professional or non-professional marksmen. The participants, however, viewed the two groups quite differently. Shooting by professional marksmen was thought to be more acceptable (22% vs. 9%), more humane (21% vs. 5%), more effective (47% vs. 31%), safer (33% vs. 12%) and less likely to contribute to extinction (43% vs. 40%), than shooting by non-professional marksmen.

Comparing the three methods above—commercial harvest, shoot and let-lie by professional marksmen and shoot and let-lie by non-professional marksmen—the results clearly indicate a preference: if the kangaroo is to be killed, it should be done by a professional shooter and the carcass should be used.

Capture followed by euthanasia

Capture followed by euthanasia was viewed as slightly more acceptable than unacceptable by participants (mean=3.18, SD=1.37). Forty-nine per cent of participants believed that this method was either 'slightly acceptable' or 'acceptable', whereas 34% thought that it was either 'slightly unacceptable' or 'unacceptable'. This method was also considered to be either 'slightly humane' or 'humane' by 55% of participants, while 27% believed it to be either 'slightly inhumane' or 'inhumane' (mean=3.41, SD=1.34). Capture followed by euthanasia was thought to be highly effective at reducing the grazing impacts of kangaroos, with 65% of participants indicating that it was either 'effective' or 'very effective'. Only 9% thought it was ineffective and a further 4% thought it was 'very ineffective' (mean=3.64, SD=1.02). Fifty-nine per cent of participants thought that it was either 'slightly safe' or 'very safe', while 14% thought that it was either 'slightly unsafe' or 'unsafe' (mean=3.71, SD=1.14). There was little difference between the proportion of participants that thought that the method was either likely or unlikely to contribute to the extinction of kangaroos (combined 'likely' and 'very likely' = 37% vs. combined 'unlikely' and 'very unlikely' = 42%, mean=2.93, SD=1.27).

Capture followed by translocation

Capture followed by translocation was viewed favourably as a management method by the participants. The majority believed that it was either 'slightly acceptable' (34%) or 'very acceptable' (36%), while only 16% believed it to be either 'slightly unacceptable' or 'very unacceptable' (mean=3.87, SD=1.15). Most participants also considered it to be either 'slightly humane' or 'very humane' (76%), whereas only 10% considered it to be either 'slightly inhumane' or 'very inhumane' (mean=4.07, SD=1.08). There was less support for translocation being an effective method of management with only 49% considering it either 'effective' or 'very effective'. Twenty-seven per cent considered it to be either 'ineffective' or 'very ineffective' (mean=3.29, SD=1.12). Most participants considered the method to be safe for the public (combined 'slightly safe' and 'very safe' = 59%), while 14% considered it to be either 'slightly unsafe' or 'unsafe' (mean=3.71, SD=1.14). A clear majority of participants believed that translocation would not contribute to the extinction of kangaroos, with 38% believing it to 'unlikely' and a further 20% believing it to be 'very unlikely'. In contrast, 22% thought that it would be either 'likely' or 'very likely' (mean=2.5, SD=1.15).

Fertility control

Fertility control was viewed as a 'slightly acceptable' or 'very acceptable' method of management by 64% of participants. Nineteen per cent of participants thought it was either 'slightly unacceptable' or 'very unacceptable' (mean=3.66, SD=1.22). Most participants believed it to be a humane method with 34%

regarding it as 'slightly humane' and 31% as 'very humane'. Only 18% considered it to be either 'slightly inhumane' or 'inhumane' (mean=3.71, SD=1.22). Fertility control was believed to be effective with 65% of participants indicating that it was either 'effective' or 'very effective'. Fourteen per cent thought that it was either 'ineffective' or 'very ineffective' (mean=3.64, SD=0.98). Most participants believed fertility control to be safe to the public (combined 'slightly safe' and 'very safe' = 64%), while only 9% considered it to be either 'slightly unsafe' or 'very unsafe' (mean=3.87, SD=1.04). There was about the same proportion of participants who thought that fertility control was either likely ('likely' or 'very likely') or unlikely ('unlikely' or 'very unlikely') to contribute to the extinction of kangaroos (39% vs. 41%, respectively)(mean=2.96, SD=1.23).

Exclusion from water points

Most participants thought that excluding kangaroos from water points was either 'slightly unacceptable' (28%) or 'very unacceptable' (38%), whereas 22% of participants thought that it was either 'slightly acceptable' or 'very acceptable' (mean=2.24, SD=1.28). A clear majority believed exclusion from water to be inhumane, with 54% considering it to be 'very inhumane' while a further 26% thought it was 'slightly inhumane'. Only 8% of participants thought that it was either 'slightly humane' or 'very humane' (mean=1.77, SD=1.03). Participants were evenly split between those who thought exclusion from water to be an effective method of managing kangaroo impacts (combined 'effective' and 'very effective' = 36%) and those who thought it would be ineffective (combined 'ineffective' and 'very ineffective' = 35%) (mean=2.97, SD=1.07). This method was most commonly viewed as 'neither safe nor unsafe' (32%), with slightly more participants viewing it as either 'slightly safe' or 'very safe' (42%) (mean=3.26, SD=1.23). Exclusion from water points was thought to be unlikely to contribute to extinction by 29% of participants, while a further 17% thought that it was 'very unlikely'. Thirty-six per cent thought it would be either 'likely' or 'very likely' to contribute to extinction (mean=2.85, SD=1.30).

Exclusion fencing

Exclusion fencing was thought to be an acceptable method of managing kangaroos by 51% of participants (combined 'slightly acceptable' and 'very acceptable'). A further 34% of participants considered it to be either 'slightly unacceptable' or 'very unacceptable' (mean=3.20, SD=1.35). Forty-nine per cent of participants viewed it as either 'slightly humane' or 'very humane', while a further 29% thought that it was either 'slightly inhumane' or 'very inhumane' (mean=3.27, SD=1.31). Just over half of the participants (52%) considered exclusion fencing as an effective form of managing the grazing impacts of kangaroo (combined 'effective' and 'very effective'), while 22% considered it to be either 'ineffective' or 'very ineffective' (mean=3.33, SD=1.04). Exclusion fencing was thought to be safe by 53% of participants. Twenty per cent regarded it as either 'slightly unsafe' or 'very unsafe' (mean=3.52, SD=1.17). Most participants thought that this method would be either 'unlikely' or 'very unlikely' to increase the likelihood of extinction, while a further 22% considered it to be either 'likely' or 'very likely' (mean=2.5, 1.15).

Do nothing – no management

Deciding to do nothing and allow kangaroos to live without intervention was viewed as either 'slightly acceptable' or 'very acceptable' by 28% of participants. Thirty-nine per cent thought that this approach was either 'slightly unacceptable' or 'very unacceptable' (mean=2.85, SD=1.25), while a third of participants (33%) were 'undecided'. More participants were undecided if doing nothing was humane, with 30% considering it to be either 'slightly humane' or 'very humane', while a further 26% thought it was either 'slightly inhumane' or 'very inhumane' (mean=3.10, 1.18). Most participants (64%) viewed doing nothing as either 'ineffective' or 'very ineffective', with only 6% considering it either 'effective' or 'very effective'. Just under a third (30%) considered it be neither effective nor ineffective (mean=2.11, SD=0.96). Forty-three per cent of participants considered no management to be neither safe nor unsafe, while 29% considered it to be either 'slightly safe' or 'very safe', and a further 28% considered it to be either 'slightly unsafe' or 'very unsafe' (mean=3.07, SD=1.20). A clear majority (74%) indicated that doing no management was either 'unlikely' or 'very unlikely' to contribute to the extinction of kangaroos, while 7% thought that it might (combined 'likely' and 'very unlikely')(mean=1.89, SD=1.02).

Statistical analysis of the data is continuing and I will be performing a latent profile analysis to classify participants according to patterns in their specific attitudes, knowledge, beliefs etc. relating to kangaroos and their management and also more general demographic and cognitive characteristics.

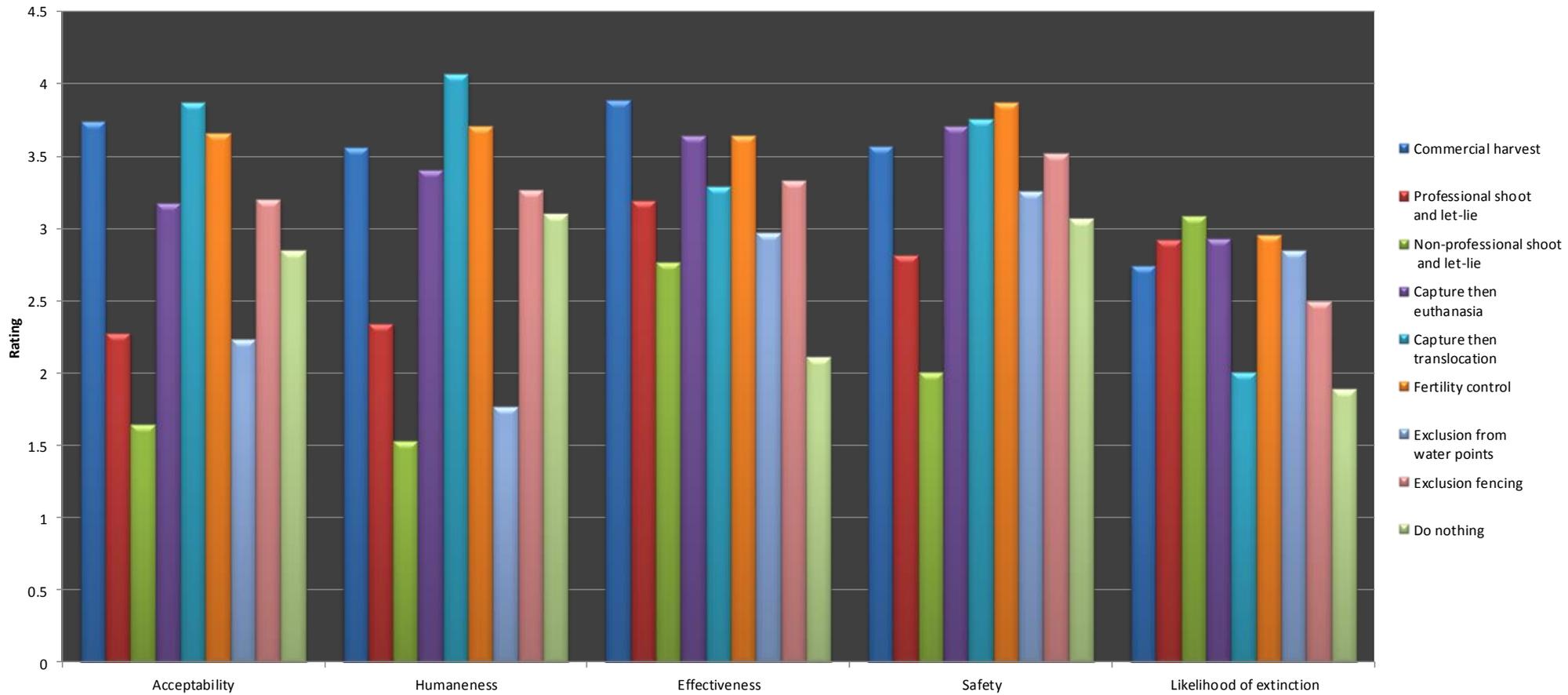


Figure 1: Ratings—in terms of acceptability, humaneness, effectiveness, public safety and the likelihood of contributing to extinction of kangaroos—given by the participants for nine kangaroo management methods.

Discussion

Further results and conclusions are to follow and will be presented in the final report.

The findings from this study will be useful when considering the attitudes, perceptions and knowledge of the general public during the development of policies and strategies for the management of kangaroos. When wildlife is managed, the aim should always be to use the most effective and humane methods available. Thus it is important that the public has at least a basic understanding of the animal welfare impacts of different methods and why a particular method may be used in a particular situation. Using the information from this study we can determine what the public *actually* thinks about the different ways kangaroos are managed rather than just relying on assumptions about their attitudes. We can also identify misperceptions and gaps in knowledge which will allow future communication on specific issues to be tailored to different groups within the community. This could potentially help to prevent situations where policymakers or wildlife managers are coerced into using less humane or ineffective methods due to public pressure (or *perceived* public pressure).

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