MANAGING ANIMALS IN DISASTERS (MAID): THE EXPERIENCES OF EMERGENCY SERVICES PERSONNEL IN SUPPORTING ANIMALS AND THEIR OWNERS IN DISASTERS

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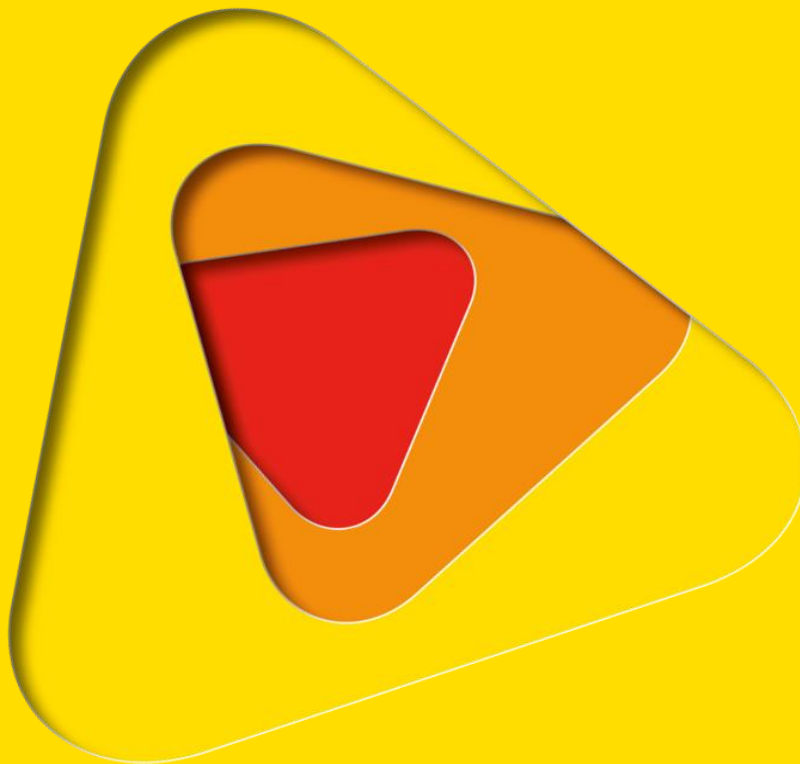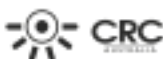[1]University of Western Sydney
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ABSTRACT

This paper details an initial exploratory study undertaken as part of the Bushfire and Natural Hazards Cooperative Research Centre (BNHRC) Managing Animals in Disasters (MAiD) project. Data to inform the scoping phase of this project are being collected via a number of small-scale studies with key groups.

The aims of this initial study were to assess attitudes towards operational responsibility for animals and to scope the range and extent of challenges faced by emergency services personnel in their interactions with animals and animal owners in the context of disasters. The goal was to gather the views and experiences of a broad cross-section of emergency services personnel operating across Australia across all hazards.

During the period May-July 2014 data were collected from 117 emergency services personnel. Around one third of responders reported occasional or recurring issues with animals and their owners, and a further 23% felt these issues were significant/frequent or severe. The main issues noted were in the areas of logistics, unclear policy, interaction with owners during response, the physical management and rescue of animals, and inter-agency coordination. Over half the sample reported details of such experiences; these were coded and are discussed in the context of future resilience-enabling emergency management.

INTRODUCTION

Much of what is known and published on the issues faced by responders, animal owners, and animals in disasters is either anecdotal or based on experiences overseas, most notably North America. Although the published academic literature in this area is growing, it remains relatively scant and heavily framed around animal owners and their failure to evacuate, their risk-taking to save animals, and the emotional impacts of animal loss (Heath et al, 2001a, Heath et al 2001b, Zottarelli, 2010). Limited articles have been published with a focus on emergency management and response in the context of animals in disasters and most are directed towards the logistics of planning for animals and justification of the need to include animals in planning (Leonard and Scammon, 2007; Edmonds and Cutter, 2008; Austin, 2013). Again, the setting for these publications is North America.

Given the differences in culture and operational environments there is a need for more research and access to post-incident reviews to understand the situation for emergency services and other response organisations in Australia and New Zealand. In Australia the National Strategy for Disaster Resilience (COAG, 2011) has shaped the approach being taken to all aspects of emergency management and this strategy has promoted the goal of disaster resilient communities. Given the high rates of companion animal ownership in Australia (63%: Animal Health Alliance, 2013) and the well documented and profound impacts of pet/animal loss on owners (Zottarelli, 2010; Hall et al., 2004; Gosse and Barnes, 1994) it would appear that a fundamental requirement of current emergency management should be consideration of companion and commercial animals in all stages of disaster preparedness and planning.

Recently, the climate in Australia for consideration of animals in disasters has improved with a set of 'National Planning Principles for Animals in Disasters' being endorsed by the Australia-New Zealand Emergency Management Committee (AAWS, 2014). In New Zealand consideration for companion animals in emergency management has also been considered and advanced (Glassey, 2010). These plans and actions indicate a willingness to work towards better integration of animals into emergency management planning and response. In recent years fire agencies in Australia have run advertising campaigns to encourage owners to plan for animals (e.g. *For their sake* campaign, Country Fire Authority, Victoria); and other agencies provide specific advice and fact sheets for pet owners on their websites to encourage consideration of pets and other animals in disaster preparedness activities (e.g. NSW RFS, 2014; NSW SES,

2014; DFES, 2014). Furthermore, innovative research in Australia is underway to investigate ways to re-frame companion animal ownership from being considered a risk factor to a potential protective factor by using the human-animal bond as a motivating influence to engage owners in disaster preparedness (Thompson, 2013).

However, despite these recent advances in owner-centric activities which appropriately emphasise that responsibility for animals lies with the owners; animal owners continue to fail to prepare or consider their animals in their plans. Anecdotally, and usually in dramatic fashion (via news and social media) owners and animals can find themselves in difficult and potentially dangerous situations. The experiences of emergency response personnel and other animal responders involved in rescue or management of these situations remains largely untold.

To focus on the issues relating to managing animals and their owners in disasters the BNHCRC has funded the Managing Animals in Disasters (MAiD) project (BNHCRC, 2014).

THE MAiD PROJECT

The research reported in this paper forms part of the initial activities being undertaken as part of the '*Managing Animals in Disasters (MAiD): Improving preparedness, response, and resilience through individual and organisational collaboration*' project. The MAiD project is seeking to identify and build best practice approaches to animal welfare emergency management, to enable engagement with animal owners and other stakeholders in disasters/emergencies. The goal of the project is to improve outcomes for public safety and the resilience of responders, animal owners, those with animal-related businesses, and communities.

THE EMERGENCY SERVICES AND ANIMALS IN DISASTERS STUDY

One focus of the MAiD project is to understand and work to improve the interface between responders and the community concerning the planning for, and management of, animals in disaster. This current study, along with a mirror study with stakeholder organisations and studies with animal owner groups, was undertaken to aid our understanding of the breadth and the relative extent of the issues encountered, and the perspectives of a range of different responder groups operating in Australia.

METHOD

APPROACH

A questionnaire was designed to capture the experiences and attitudes of a broad range of responder groups including, but not limited to, emergency services personnel. As this study was part of initial project scoping activities the goal was to gather information from a broad cross-section of responders across Australia and across all hazards. Both opportunistic and targeted snowballing approaches were taken to the recruitment of participants.

A paper version of the questionnaire was used to gather responses from (mostly) NSW RFS personnel attending the Australian Community Engagement and Fire Awareness Conference in May 2014, and later a small number of Emergency Media professionals were recruited at the Emergency Media and Public Affairs Conference in early June 2014. Following this, a link to an online version of the questionnaire was sent to a number of project end-users and other emergency service contacts from within the BNHCRC with an email and a request to approach members of their organisations to invite them to take part in the survey. No requests for follow-up or reminders were issued.

QUESTIONNAIRE DESIGN

The questionnaire was designed by the research team to collect a broad range of information from responders. It needed to be sufficiently generic to be answered by personnel operating across all jurisdictions and all hazards. To provide structure some questions were 'tick box' multiple choice format, however, to achieve the aim of scoping the area and gaining insight the questionnaire also needed to be balanced with a number of open questions. In total there were 23 questions; 16 structured short answer and multiple choice questions and seven open questions. There was also ample space for supporting comments. None of the questions was mandatory, enabling respondents to provide information freely.

The questionnaire comprised four sections;

1. Respondents' understanding of their organisation's role and responsibility in the area of animal (and animal owner) management and their knowledge of formal emergency management arrangements.
2. Respondents' views of the degree of problems and challenges encountered by their organisations and by themselves and their colleagues. This included a general view as well as responses to a range of specific issues.
3. Respondents' experiences with animal owners, any initiatives they were aware of in the area of animals in disasters, and their ideas for things that would help them to deal with animals/animal owners.
4. A series of demographic questions to enable understanding of the sample composition and context for interpretation of the data.

The questionnaire was reviewed and piloted by project team members before administration. A copy of the full questionnaire can be obtained from the corresponding author.

RESULTS

SAMPLE CHARACTERISTICS

Data were collected from a total sample of 165 response personnel, of which 117 were from emergency services agencies; and these have been included in the following analysis. The remainder were collected from other types of responders or emergency managers; such as primary industries personnel, veterinarians, and council officers.

The majority of the emergency services sample comprised personnel from five agencies, see Table 1.

Table 1. Sample composition.

Emergency Service Organisation	N	%
New South Wales Rural Fire Service - NSW RFS	48	41.0
Queensland Fire and Emergency Services - QFES	28	23.9
Department of Fire and Emergency Services (Western Australia) - DFES	25	21.4
Country Fire Authority (Victoria) - CFA	9	7.7
New South Wales State Emergency Service - NSW SES	4	3.4
Other (not specified)	3	2.6

The majority of respondents were volunteers (79.1%), 14.8% were salaried personnel, and 6.1% indicated that they had another type of employment status. On further investigation this latter group comprised individuals who were typically members of more than one organisation, e.g. '*salaried DFES and volunteer SES*'. Overall the sample comprised experienced emergency service personnel, with over half (51.3%) having served in their organisation for 11 or more years (34.2% for 11-20 years, and 17.4% for more than 20 years). A fifth (20.0%) had served for five years or less.

The gender of the sample was fairly evenly split; 54.8% male and 45.2% female, and as would be expected from their experience the age of the sample tended to be older, with just under half the sample (49.6%) aged over 50, 26.1% aged 41-50, and 24.3% aged 40 or under.

Respondents were asked about their own pet ownership. Just under three quarters owned household pets (73.5%) and 41.0% owned outdoor animals/pets (e.g. larger animals such as horses, cattle, and/or smaller animals such as chickens).

RESPONSIBILITY FOR THE MANAGEMENT OF ANIMALS – GENERAL VIEWS

Respondents were asked three initial questions in the survey: What was their organisation's role or responsibility with regard to the management of animals and/or their owners in disasters? (open question); Did they think their organisation should have responsibility for dealing with animals? and Were they aware of any formal animal response arrangements in their State Emergency Management Plan? Table 2 summarises the responses to these latter two questions.

Table 2. Respondents' attitudes towards organisational responsibility for managing animals and their awareness of formal animal response arrangements.

Question	Yes		Unsure		No	
	N	%	N	%	N	%
Do you think your organisation should have responsibility for dealing with animals?	43	37.1	36	31.0	37	31.9
Are you aware of any formal animal response arrangements in your State Emergency Management Plan?	28	24.3	28	24.3	59	51.3

The open question regarding respondents' understanding of their organisation's role and responsibility for the management of animals and their owners generated a wide range of responses. In total 110 respondents answered this question and their responses were coded into themes. The most frequent response (27.8%, n=32) was that the organisation had no direct responsibility to respond to animals. Typically, respondents referred to their role in managing the hazard '*we fight fires*', '*protection of life and property*', others commented that they deal with people and that animals are the owner's responsibility. The next most frequent theme (15.6%, n=18) included some direct indication of responsibility for an aspect of animal response, such as '*to protect animals*', '*to deliver food to stranded animals*', and '*We are responsible for the rescue of animals during flood events. We also assist in the evacuation of animals during floods and fires*'.

A number of respondents mentioned that they were responsible for protecting *all* life (13.9%, n=16), but pointed out that human life took priority and animal life was secondary, and that they would do what

they could to keep animals safe from harm. These responses were generally more detailed, and included the following examples.

> *'Animals may be considered property but the impact on emergency services is the attachment people have for animals and therefore the agency cannot exclude animals from their charter as excluding animals will put lives at risk as the owners try to save their animals'*

> *'Our role is to protect property owners and their family against bush fires. We are now becoming more aware of how animals are extremely important to their owners and putting in place ways to alert and evacuate people and their animals.'*

> *'Owner should take full responsibility ensuring their pets are safe and cared for, we will render assistance where possible or undertake rescue if it is too unsafe for owners to do so. We will also rescue animals, wildlife and pets where possible and is safe for rescuers.'*

The fourth most frequent theme (12.9%, n=14) referred to the role emergency services have in helping animal owners plan and prepare for emergencies and disasters and in advising them of their responsibilities, e.g. *'Ensure owners prepare for the safety of their animals (pets/cattle)'*, *'Provide information or options of where to move animals and when, how to prepare property (e.g. paddocks) prior to fire.'*

The remaining responses were coded into a further three themes. These included their role in working with other agencies that are responsible for animals, such as councils and primary industries (6%, n=7), and that their responsibility did not include animals, but that animals impacted their response (2.6%, n=3). These responses mentioned issues at evacuation centres and owners' behaviour increasing risk which then impacted/necessitated a change to the response. The final coding category included comments that generally didn't sufficiently address the question (21.7%, n=25), most respondents simply named their organisation or their title, and others mentioned the hazard they responded to – possibly indicating their focus on the hazard but providing too brief a response to interpret fully or code elsewhere.

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SCOPING THE ISSUE: GENERAL PROBLEMS OR DIFFICULTIES

In the main section of the questionnaire respondents were asked a general question; "Are there problems or difficulties for your organisation around the management of animals/animal owners in disasters?" This question was important for gauging the degree of significance of this issue. Figure 1 summarises the response.

Figure 1. Summary indication of the degree of challenge faced by emergency service organisations in managing animals in disasters.

Are there problems or difficulties for your organisation around the management of animals/animal owners in disasters?
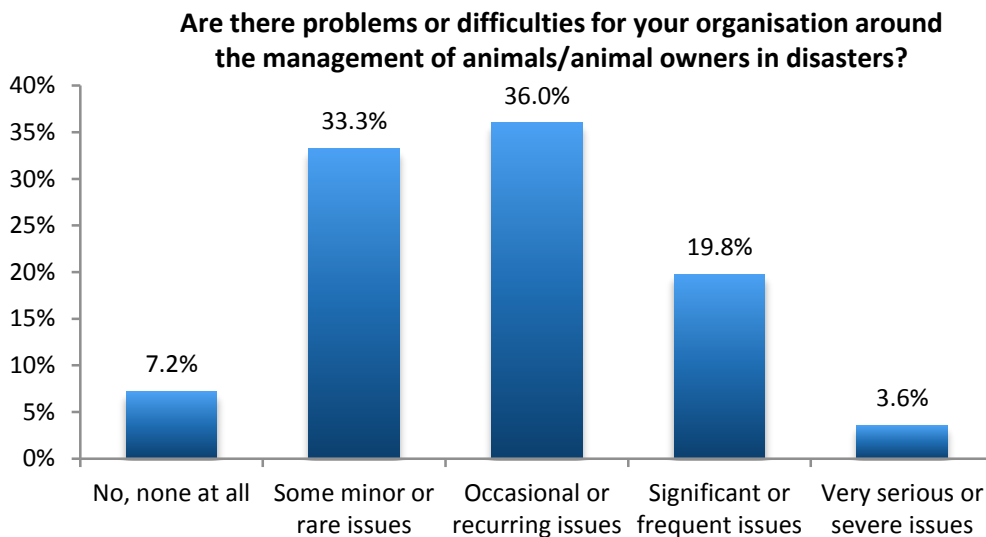
Data shown in Figure 1 indicate that more than two thirds of the sample reports that there are either some *minor or rare issues* or *occasional or recurring issues* in this area for their organisations (69.3%). Just under a quarter of the sample (23.4%) feels that there are *significant or frequent issues* or *very serious or severe issues*. Observations of differences in response patterns across the five main service organisations in the sample suggest that respondents in the CFA were more likely to report more significant or serious issues (66.7%; 6/9 respondents), whereas those in QFES were less likely to report significant or severe issues (14.3%, 4/28 respondents).

## SPECIFIC PROBLEMS AND DIFFICULTIES

To gain further, more detailed, information about the problems and difficulties encountered by emergency services personnel in this area a further question was asked in relation to a number of potential challenges. Respondents were asked a multi-part question which began "Are there problems or difficulties for you, or your colleagues, in regard to….?" and this was followed by a set of ten specific areas. Respondents were given the same set of response options as those shown in Figure 1.

To summarise the responses to this question in a single figure a mean rating score was assigned to each response level (from 1 to 5), in which 1 = '*no, none at all*' and 5 = '*very serious or severe issues*'. Therefore, the greater the mean score the more serious or severely the issue was rated by respondents.

Figure 2 summarises these data. The mean rating for the first (general) question shown in Figure 1 is also included in this Figure (in red) for comparison.

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Figure 2. Indication of the relative severity of different issues encountered by respondents and their colleagues in relation to the management of animals and their owners in disasters.
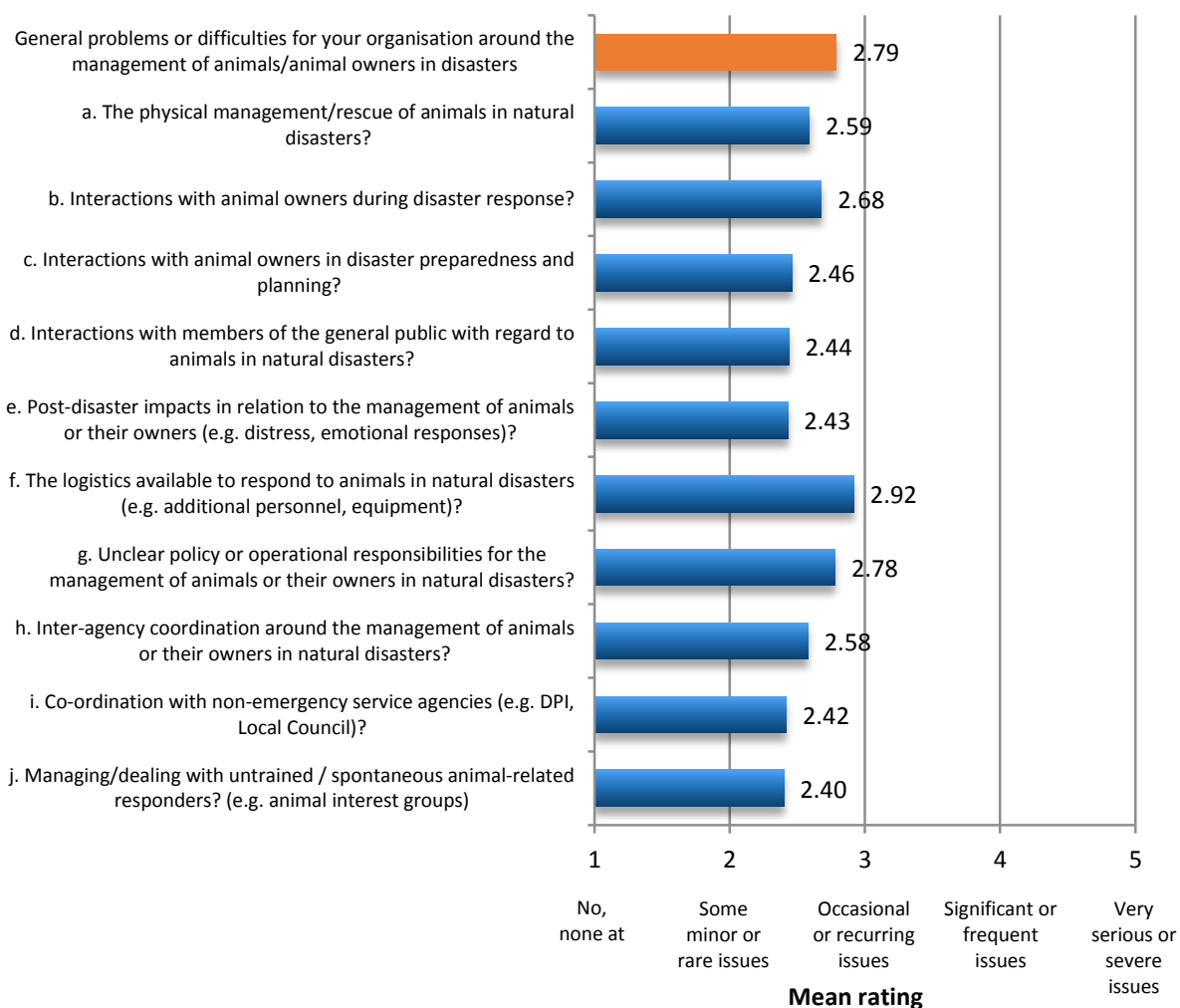
As can been seen from Figure 2 there is some variability in the mean ratings for different issues. Issues around the logistics of response and unclear policy or operational responsibilities are rated as being slightly more problematic than the other issues listed. However, interactions with animal owners during response, physical management and rescue of animals, and inter-agency co-ordination are also three of the more highly-rated problems.

In addition to the structured question reported above, respondents were asked about additional challenges they had encountered with animals/animal owners (open comment). In total 31 respondents (26.5%) made further comments, some commented on a general lack of resources including physical equipment and training or agency expertise, others included comments about their experiences, concerns, or examples of how they/their unit responded to animals. Some examples are provided below.

'I have experienced the following: Roads used for evacuating communities blocked by horse floats… People helping to evacuate friends' horses with no plan or idea of the area and not knowing the roads into or out of the area they have gone into to assist. Non-emergency personnel removing horses/stock from properties without the permission of the owner with no notice of where they have taken the animals and how they can be recovered. Animal/equine Facebook groups becoming

immune to the risk as they have got away with doing what they are doing previously, therefore they are taking more risks next time, if that makes sense.'

'In this rural area the general consensus is to turn the animals loose and worry about catching them later, however this creates dangerous situations on the roads with cattle and horses bolting from the disaster area.'

'Main concern is anticipated slow response from insurance assessors re burnt livestock that need to be euthanased humanely. Have experienced a time when livestock could not be euthanased before assessor has given the OK. Extremely upsetting for stock owner.'

'The current system of not being able to tell people where to take their animals is difficult to 'sell'.'

'The non-action of pet owners to evacuate when asked and then their anger and distress when animals are not able to be transported in air support (i.e. helicopters).'

As these example comments indicate, the situations and experiences described by these emergency service personnel can often be emotionally-charged or potentially chaotic and dangerous.

DETAILED EXAMPLES AND EXPERIENCES

In the latter section of the questionnaire respondents were asked to identify and provide details of specific problems or challenges they had previously encountered with animal owners. Just under half of the sample (45.3%, n=53) provided details of their experiences. These comments were coded into themes for reporting to provide an overall indication of their content. Many comments were quite detailed, and therefore some were coded into more than one theme, and themes were sometimes inter-related.

Table 3 summarises the themes identified and the number of respondents making comments that were coded to these themes.

Table 3. Coding of Emergency Service Personnel's experiences with animals and their owners.

Themes	N	%
Examples of dangerous/risky behaviour or inappropriate actions	14	26.4
Refusal to leave or be parted from animals	12	22.6
Comments about horses and horse owners as a special case	9	17.0
Details of emotional responses of owners	7	13.2
Experiences with dangerous animals/animal behaviour	7	13.2
Issues around owners returning/wanting to return early or being denied access	6	11.3
Owners' focus solely on animals and ignoring risk to self and others	5	9.4
Owners having unrealistic expectations of the level of help from emergency services	4	7.5
Problems with response co-ordination - with groups/agencies or absent owners	3	5.7

To expand on the themes in Table 3 and provide details of the experiences of emergency service personnel a selection of example comments are shown below.

Comments about risky or inappropriate actions ranged from brief comments, such as '*animals being let free during wild fires*' and '*they [animal owners] try to enter unsafe areas during an incident*' to more lengthy comments like these two below.

'People ignoring road blocks/ police / RFS to run into dangerous situations to 'rescue' animals that should have been relocated well in advance!'

'Animal owners, particularly horse owners, are reluctant, at times, to remove themselves from danger and hand over the control of a rescue to our trained responders. Often their lack of appropriate PPE and their emotional, irrational response to their distressed animal is an added challenge during rescues potentially putting the owner and others involved at greater risk.'

Issues around road blocks were often mentioned, as were situations in which people put themselves into other dangerous positions to rescue animals and in doing so either risked harm to others (emergency services personnel) or held up the response to the hazard.

As expected, experiences around failure to evacuate and leave animals was mentioned by a number of respondents, comments such as '*not evacuating or leaving high risk areas due to pets - especially horses*' and '*family pets missing - would not evacuate in imminent danger*'.

One respondent commented on a specific event.

'In Bundaberg 2013 floods, communities were requested to evacuate while roads were still accessible. They relied on their experience with previous floods to ignore the request. They need to understand each event is different. Many people were plucked off their roofs by helicopter and pets had to remain behind. Some people refused to be rescued as their pets were not able to be taken as well.'

As noted earlier, one aspect that was evident in comments from respondents was the strong and emotionally-charged situations that could occur; this clearly could be quite distressing for responders to manage, as well as potentially dangerous. Simple comments included '*they [animal owners] can get in the way and become very emotional*', '*very emotional situations in time of large fires endangers staff and public*', and '*telling people they can't go and get their animals as all ways into area are closed. Very hard to deal with crying angry people*'

With regard to owners abandoning or leaving animals, or generally not planning adequately and then wanting to go back to retrieve animals, the following comment made the point.

'In the event where owners have been told to evacuate pets/animals are often forgotten, when told they cannot return this causes many problems for emergency crews. Endangering life for animals is a big decision and can stretch already busy emergency crews to the limits. Again owners need to take responsibility for their pets/animals where safe to do so. If they chose to leave them behind they cannot get angry when told for their own safety they cannot return.'

Finally, the last respondent summed up a wide range of issues in his comment, drawing attention to the range of situations that can arise and touching on issues not mentioned by others, such as misinformation and changes to processes and procedures to react to evolving situations.

'Volunteers, either spontaneous individuals or emerging groups, self-determining activity to evacuate horses and causing issues at roadblocks, promoting misinformation about animals at risk, etc. Issues at roadblocks generally (people trying to get back to get pets, milk cows, etc.). People turning up with pets to evacuation centres managed by DCPFS who do not normally allow animals in (so dogs in cars outside etc.) and ad-hoc arrangements by local government with variable success (risk of aggression by pets to other people and animals).'

DISCUSSION

This study elicited details of emergency service personnel's experiences with animals and their owners in the context of disasters, and provided material to begin scoping the challenges faced in these situations. Overall there was a range of responses regarding the role of service organisations in response to animals, and a variety of responses was gathered from within the same organisations. In addition, half the sample was not aware of formal animal response arrangements. These findings suggest that there is a lack of clarity in this area, even for experienced emergency services personnel, and further education of the workforce in this area might be required.

The sample was equally split when asked about whether their organisation should have responsibility for dealing with animals and this mix of opinion was reflected in comments; with some respondents clearly indicating that their responsibility was firmly hazard-focused, and others having a more flexible view, in which the human life was the priority but rescuing and helping owners with animals would be part of their response if conditions permitted. It is likely that public pressure and adoption of national guidance (such as the National Planning Principles for Animals in Disasters) will drive a greater consideration of animals in emergency planning and response in coming years. This will require a cultural shift within emergency management organisations and therefore there could be merit in early promotion of a clearer position, or direction, now to aid such a shift.

The section of the survey focused on the extent and range of challenges faced by emergency service personnel was useful in starting to quantify this issue in the Australian context. To our knowledge, nothing similar has been published in the open literature. It was quite clear that survey respondents felt there were some significant issues in this general area, and the more detailed question enabled a breakdown of which specific areas were regarded as more significant. Issues of logistics and the need for additional personnel and equipment suggest that responders feel inadequately resourced to manage animals. Anecdotally, response to large numbers of livestock or large numbers of people with pets has been challenging in recent disaster events.

Identification of challenges relating to unclear policy, operational responsibilities, and inter-agency co-ordination further support the need for greater awareness and training at the individual level and may suggest a need for a review of policy or more multi-agency response training in this area.

The finding that interactions with animal owners during response can be challenging concurs with the reported experiences of many emergency services personnel in the survey, and aligns with experiences reported in the literature around evacuation failure in the context disasters in North America (e.g. Heath et al, 2001a). The experiences reported in this study clearly highlight the challenges faced by emergency services personnel in dealing with the differing emotional responses of owners, and the requirement they have for skills to manage such responses in complex and hazardous situations. Literature in this area has typically focused on veterinarians or primary industries personnel in the position of first responders. Often this literature has centred on emergency animal disease response rather than natural disaster response; and the focus has either been on animal welfare or on the psychological impacts of the response on the responders rather than the management of impacted people or recipient communities (e.g. Hall et al, 2004 in the disaster context and Jenner 2007, in Newcastle Disease, and other agricultural responses in Australia). Further attention is required in this area to assist with communication at the responder-animal owner interface.

LIMITATIONS

As noted, this study was an initial exploratory study, focused on gathering a diversity of responses from Australian emergency service organisations, across all hazards. This study did not set out to gather representative data and relied on a passive self-selection/opt-in administration and used opportunistic and targeted sampling techniques. As such, data presented here do not represent the position of personnel across Australian emergency services organisations, it is only indicative of some of them. It is likely that those who took part in the survey were either more interested or engaged in this area or felt they had a contribution to make to the study. As a point of interest, household pet ownership in this sample was 73.5%, significantly higher than figures for national pet ownership (around 63%) and also underlines the simple fact that many emergency responders are animal owners too. They bring their own views and emotions to this situation, and although they are trained to respond professionally that does not make them immune to the potential emotional and psychological sequelae of difficult operational situations.

Further data collection, additional research with other responder and owner groups and stakeholders, and analysis of the existing dataset are still underway as part of the MAiD project scoping activities. Engagement with a range of project end-users and stakeholders is ongoing and it is expected that review of these scoping data and iterative discussions will lead to the development of a shortlist of target areas for the next phase of the project.

CONCLUSIONS

This initial study sought to elicit information from a range of emergency services personnel operating across Australia about their experiences with animals and their owners in the context of disasters. Data were collected from more than 100 emergency service personnel and nearly 50 other types of emergency managers and animal responders. Data collection is continuing over the coming months and information will be used to supplement what is already collected to support the requirements of the MAiD project.

The study identified a range of potential priority areas for further discussion and a number of possible recommendations, including clearer communication about the role and responsibilities of emergency service organisations in this area and the need to support responders in their training to manage animals and their interactions with animal owners.

Outcomes of this, and other current scoping studies, will be used to direct future MAiD project activities. In addition, results from these studies will help to guide the development of evidence-informed support tools to assist operational response and community engagement, and the production of professional development resources.

ACKNOWLEDGEMENTS

REFERENCES

AAWS (2014) National Planning Principles for Animals in Disasters. Australian Animal Welfare Strategy. [accessed on 15/08/2014] http://www.australiananimalwelfare.com.au/app/webroot/files/upload/files/PDF/FINAL%20National%20Planning%20Principles%20for%20Animals%20in%20Disasters.pdf

Animal Health Alliance (2013) Pet ownership in Australia. [accessed 15/08/2014] http://223.27.22.40/~sh10135/wp-content/uploads/2013/08/Pet-Ownership-in-Australia-2013-Summary-report-2013.pdf

Austin JJ (2013) Shelter from the storm: Companion animal emergency planning in nine states. *Journal of Sociology and Social Welfare* 40, 4, 185-210.

BNHCRC (2014) Managing Animals in Disasters. Bushfire and Natural Hazards Cooperative Research Centre [accessed on 15/08/2014] http://www.bnhcrc.com.au/research/resilient-people-infrastructure-and-institutions/237

COAG (2011) National Strategy for Disaster Resilience: Building Our Nation's Resilience to Disasters, Council of Australian Governments, Canberra, Australia.

DFES (2014) Pets and other animals. [accessed 15/08/2014] http://www.dfes.wa.gov.au/safetyinformation/animalwelfare/Pages/petsandotheranimals.aspx#1

Edmonds AS, Cutter SL (2008) Planning for pet evacuations during disasters. *Journal of Homeland Security and Emergency Management* 5, 1.

Glassey S (2010) Recommendations to enhance companion animal emergency management in New Zealand. [accessed 15/08/2014] https://training.fema.gov/EMIWeb/edu/docs/Glassey%20-%20Report-recommendations%20to%20enhance%20companion%20animal%20EM%20in%20NZ.pdf.

Hall MJ, Ng A, Ursano RJ, Holloway H, Fullerton C, Casper J (2004) Psychological Impact of the Animal-Human Bond in Disaster Preparedness and Response. *Journal of Psychiatric Practice* 10,368–374.

Heath SE, Kass PH, Beck AM, Glickman LT (2001a) Human and Pet-related Risk Factors for Household Evacuation Failure During a Natural Disaster. *American Journal of Epidemiology* 2001, 153, 659–665.

Heath SE, Voeks SK, Glickman LT (2001b) Epidemiologic features of pet evacuation failure in a rapid-onset disaster. *Journal of the American Veterinary Medical Association* 218, 1898–1904.

Jenner M (2007) The psychological impact of responding to agricultural emergencies. *Australian Journal of Emergency Management* 22, 2, 25-31.

Leonard HA, Scammon DL (2007) No Pet Left Behind: Accommodating Pets in Emergency Planning. *Journal of Public Policy and Marketing* 26, 49–53.

NSW RFS (2014) Fire Safety for your pets. Fact Sheet [accessed 15/08/2014] http://www.rfs.nsw.gov.au/__data/assets/pdf_file/0006/9429/Fire-Safety-for-your-Pets-Factsheet.pdf

NSW SES (2014) Pet safety in storms. Storm Safe: Pets Fact Sheet. [accessed 15/08/2014] http://www.ses.nsw.gov.au/content/documents/pdf/floodsafe/42153/stormsafepetsfactsheet

Thompson K (2013) Save me, save my dog: Increasing natural disaster preparedness and survival by addressing human-animal relationships. *Australian Journal of Communication* 40, 123–136.

Zottarelli LK (2010) Broken Bond: An Exploration of Human Factors Associated with Companion Animal Loss During Hurricane Katrina. *Sociological Forum* 25, 110–122.