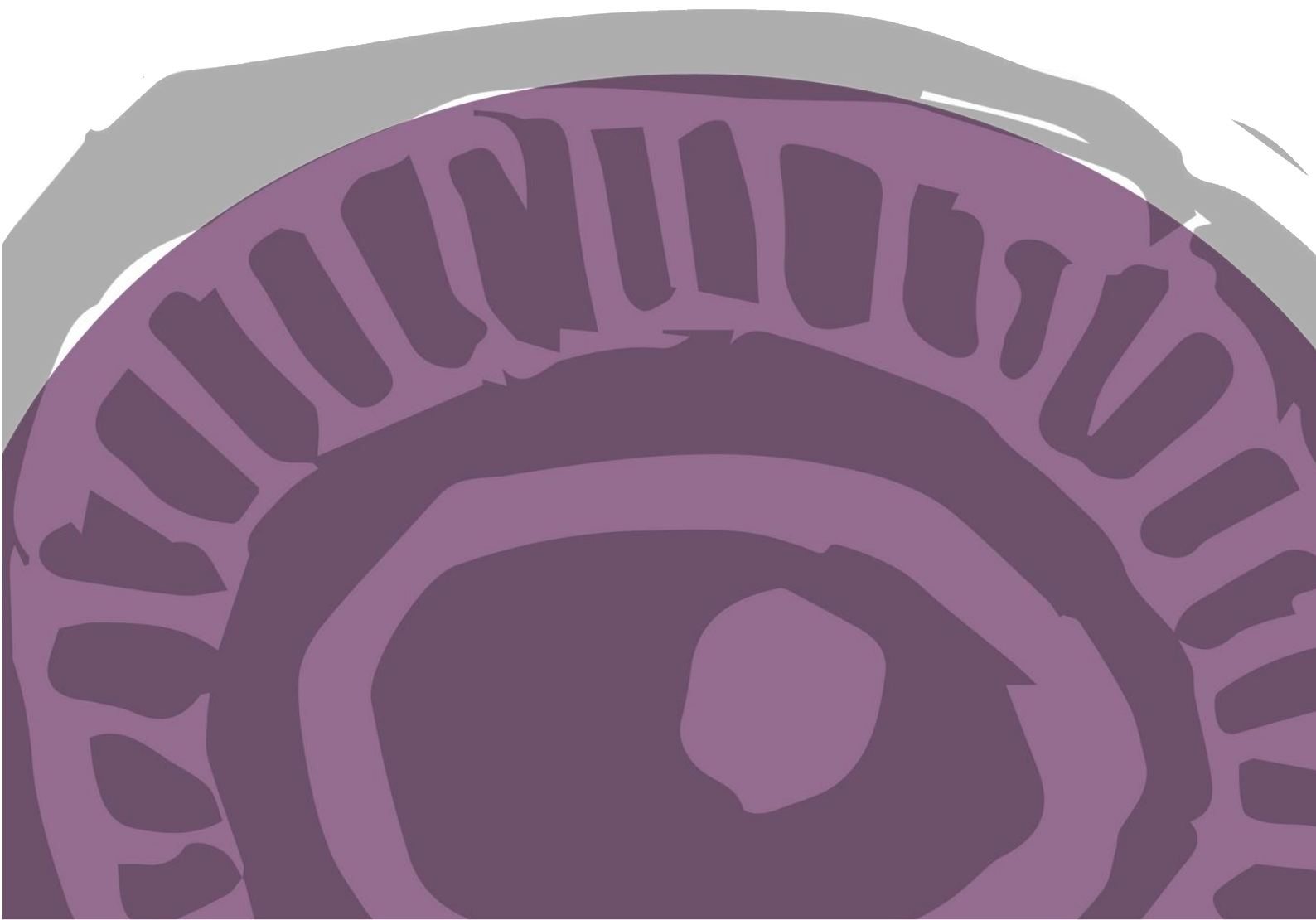
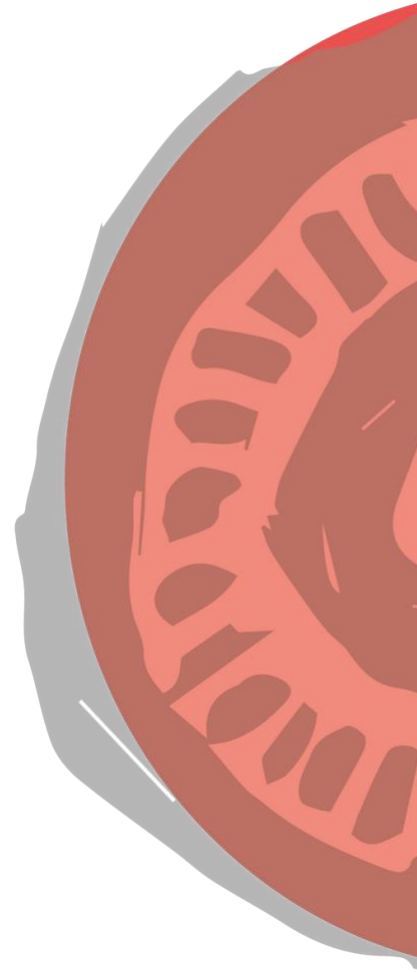




Animal Management in Rural and
Remote Indigenous Communities

Emergency Management Response for Companion Animals in Remote Communities

A LITERATURE REVIEW BY AMRRIC
MARCH 2023



About AMRRIC

As a national not-for-profit organisation that advocates and coordinates culturally safe veterinary and education programs in rural and remote Australian Indigenous communities, AMRRIC exists to assist and empower communities to meet their needs for companion animal health, care, and safety. By working with remote Aboriginal and Torres Strait Islander communities to improve the health of their pets, we are working towards our vision of Healthy Animals, Healthy, Proud Communities.

Visit www.amrric.org for more information.



About this document

Commencing in 2022, AMRRIC undertook a Northern Territory Risk Reduction Program funded project to develop a guide for local government authorities and municipal service providers, to assist them in managing companion animals in emergency events.

As part of this project, AMRRIC:

- Undertook a literature review of emergency management response for companion animals in the context of remote and isolated communities (i.e. this document)
- Established a reference group of key stakeholders, including NT government, Local Government Association NT and relevant Regional Local Authorities.
- With input from the reference group, developed a Guide to Companion Animal Emergency Management for remote Local Government Authorities

Other project outputs and resources are available on [AMRRIC's website](#).

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AMRRIC acknowledges Traditional Owners of Country throughout Australia and recognises the continuing connection to lands, waters and communities. We pay our respect to Aboriginal and Torres Strait Islander cultures; and to Elders both past and present.

TABLE OF CONTENTS

Background and context	1
Introduction.....	1
Definitions	2
Timeline of key events	5
Disaster planning in remote Indigenous communities	9
Australian Disaster Resilience Index	10
Emergency animal management.....	12
Emergency planning in the NT.....	13
Empowering Indigenous communities in emergency planning	13
Companion animal legislation	16
Emergency management responses for remote Indigenous communities and companion animal welfare in Australia	16
Other relevant frameworks for animals in emergencies	21
Emergency management in Aboriginal and Torres Strait Islander communities	21
One Health and pets in disasters	22
Identified knowledge gaps for this review.....	22
Conclusion.....	23
References.....	25
Appendix 1.....	27
The National Planning Principles for Animals in Disasters (2014).....	27
Recommendations from the review of the National Planning Principles for Animals in Disasters (2021)	28
Appendix 2.....	31
Glossary of Terms and Acronyms.....	31
Acronyms.....	31

Background and context

There is a growing list of extreme weather events associated with changing climatic conditions in Australia. These include (but are not limited to) the Black Saturday bushfires in Victoria in 2009, Cyclone Lam 2015 and Cyclone Trevor 2019 in the NT, the 'Black Summer' bushfires across NSW, Victoria, South Australia, Tasmania and the ACT in 2019-20, flooding in NSW and QLD in 2022 and flooding in WA, NT and QLD in 2023. These events have highlighted the need for disaster planning, preparation and response for both people and animals.

There are a range of detailed emergency response plans in place for the Northern Territory, however there is no specific guide to emergency management response for companion animals in remote Indigenous communities. Recognising a need for improved guidance, Animal Management in Rural and Remote Indigenous Communities (AMRRIC) secured funding through the NT Risk Reduction Program to develop a guide for local government authorities and municipal service providers to assist them in managing animals in emergency situations.

This literature review will inform the development of the guide to emergency management response for local government authorities.

Introduction

There is relatively limited but growing body of literature which recognises the importance of incorporating animals into disaster management planning and evacuation. Hurricane Katrina, which affected the gulf coast of the USA in 2005, is regarded as a major catalyst for the emergency management planning frameworks worldwide to include animals (1). In Australia, the National Advisory Committee for Animals in Emergencies was established as an interim committee in 2012, and was aimed at taking a more collaborative, proactive approach for integrating animals into disaster management planning. In 2014, the committee developed the National Planning Principles for Animals in Disasters. A key driver for the development of the National Planning Principles for Animals in Disasters was the recognition that as a result of the human-animal bond, people sometimes put themselves in danger in disaster situations (2). Accordingly, consideration of animals through improved management frameworks and planning is an important component of improved protection for people and communities in disaster situations (2). Most reports and principles are largely focused on emergency response in an urban and peri-urban context, consistent with most of Australia's population residing in these areas.

Periodically, there has been varying levels of recognition that emergency planning and response is a largely a western-based 'command and control' model, and that there is a need to develop effective partnerships between remote Indigenous communities and

emergency management agencies in Australia. While this project has a specific focus on emergency management for companion animals, the broader challenge of empowering remote Indigenous communities in natural hazards management is pertinent to the project and accordingly, key documents are included in this literature review.

The scope of the review includes both Australian and international literature, with a strong focus on Australian literature on emergency management for companion animals, and the relationship between emergency management services and Indigenous communities, and existing management frameworks for animals in emergencies in Australia. This review considers, but does not specifically include native wildlife or livestock animals (other jurisdictional animal emergency management plans include all animals).

Definitions

Remote Indigenous communities

The 'Keeping our mob safe' strategy developed by the Commonwealth of Australia in 2007 recognised that 'remote Indigenous communities are defined by some or all, but are not limited to, the following characteristics, which present complex emergency risks and challenges:

- Entrenched levels of disadvantage
- Geographic isolation
- Lack of services or infrastructures
- Lack of access to services
- Restricted or limited accessibility
- Vulnerability and exposure to hazards
- Low economic base and
- Unique cultural or communication issues (3).

The Australian Statistical Geography Standard (ASGS) does not specifically refer to remote Indigenous communities but divides Australia into five classes of remoteness on the basis of a measure of relative access to services (4). Access to services are measured using an Accessibility and Remoteness Index of Australia, developed by the Hugo Centre for Population and Housing (4). Using this classification, much of the Northern Territory is classified as very remote, except for the Darwin City Council and Alice Springs Town Council local government areas; many remote Indigenous communities are located in the Northern Territory (Figure 1).

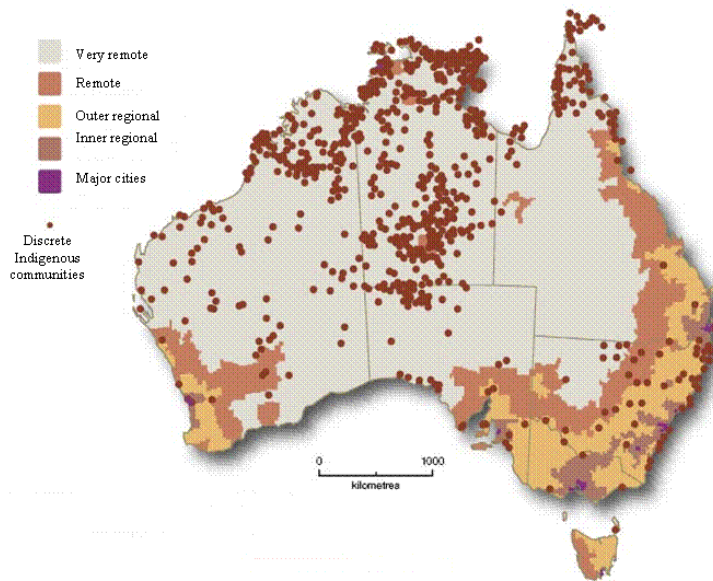


Figure 1: Discrete Indigenous communities and remoteness classification (5)

'Emergency' and 'disaster'

The 'Keeping our mob safe' strategy developed by the Commonwealth of Australia in 2007 recognised that 'emergencies mean different things to different people', noting that in many jurisdictions it is defined as 'an event requiring a significant, coordinated response' (3). Additionally, it notes that 'given the extremely limited capability and capacity of remote Indigenous communities, a broad concept of emergency is needed', and that 'the impact of these hazards on remote Indigenous communities is often greater than other communities because of their geographical and social remoteness...the risk represented by these hazards can be substantial in remote Indigenous communities'. The strategy identified a range of hazards which may affect remote Indigenous communities, broadly grouped into natural hazards, human-caused hazards and socioeconomic hazards (Table 1).

As noted in the [National Planning Principles for Animals in Disasters](#) and the [National Strategy for Disaster Resilience](#), the most common type of emergency is natural disasters. The National Disaster Risk Reduction Framework defines as disaster as 'a serious disruption to a community or society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic or environmental losses and impacts'.

Table 1: Potential hazards identified by remote Indigenous communities in Australia (3); shading denotes those which most relate to emergency management for companion animals.

Natural hazards	Human-caused hazards	Socioeconomic hazards
Cyclones, storms and destructive winds	Accidents (vehicle, plane crashes, industrial, farming)	Civil unrest, feuding, disruptive events
Floods	Environmental accidents (chemical and hazardous materials)	Social situations (excessive substance abuse, domestic violence, suicide)
Drought	Poisoning (spraying, baiting, water contamination)	Disease or infection epidemic
Dust storms	Environmental hazards (e.g. asbestos)	
Earthquakes and tremors	Loss of essential services (e.g. electricity failure, water shortage, gas leaks)	
Extreme temperatures and weather	Collapse of infrastructure	
Tsunami (tidal wave) and sea surge	Drowning	
Bushfire	Land and Sea rescue	
Insect plagues/biosecurity (pest or disease) incursion or outbreak	Lost or missing persons	
	Space debris	
	Terrorism	

Companion animals

In contrast to other jurisdictions in Australia, the NT does not have companion animal legislation in place, and accordingly, there is no consistently used definition of ‘companion animal’ in use. Companion animals are typically thought of as being the smaller animals kept as pets. They are defined in the Western Australian Animal Welfare in Emergencies State Support Plan as:

“Any animals other than horses kept primarily for companionship, hobbies, sport or work” (6).

In Victoria, they are defined as:

“Any non-human vertebrate animal kept for the purpose of companionship, recreation, protection or work” (7).

As throughout Australia, the most common companion animals in remote Indigenous communities are dogs and cats. Other companion animals in remote Indigenous communities include (but are not limited to) pigs, chickens, ducks and rabbits.

Animal disaster plan

A plan that tries to anticipate how the needs of animals will be managed in the event of a disaster; they assign roles to government agencies and non-government organisations to administer relief for animals (pets, service animals, livestock and wildlife).

Timeline of key events

Recognising there have been a range of events and documents pertinent to emergency management response, including for companion animals, we collated a (non-exhaustive) list of key management frameworks and emergency situations worldwide and in Australia (with a focus on the NT/northern Australia) since 2005 (Table 2).

Table 2: Timeline of major national and international events on emergency management pertinent to the Northern Territory and in the context of remote communities/companion animal management.

Year	Event
2005	Hurricane Katrina causes over 1245 human deaths and widespread damage along the gulf coast of the USA (1). This event highlighted the strong bond between pet owners and their pets, with a large proportion of owners choosing not to evacuate as they were unable to take their pets with them (1). This led to major reforms in legislation in the USA, requiring state and local emergency management arrangements to be pet- and service animal-inclusive, and served as a catalyst for the development of animal emergency management plans worldwide (1).
2007	' <i>Keeping our mob safe</i> ': a national emergency management strategy for remote Indigenous communities in Australia, developed and endorsed by the Ministerial Council for Police and Emergency Management. It intends to provide a strategic direction for emergency management and a framework for a coordinated and cooperative approach to risk assessment, decision-making and resource allocation.
2009	2009 Black Saturday bushfires in Victoria caused widespread devastation and loss of lives. 173 people died, 414 people injured, over a million native and domestic animals were lost, and 450,000 hectares of land were burned. The 2009 Victorian bushfires Royal Commission Final Report is released.
2011	Feb: The <i>National Strategy for Disaster Resilience: Building our Nation's Resilience to Disasters 2011</i> released by the National Emergency Management Committee. This strategy recognises the increasing severity and regularity of disasters and provides the foundation of Australia's arrangements for emergencies. The strategy considers disaster resilience a collective responsibility of all levels of government, the non-government sector and individuals. A Council of Australian Government (COAG) review of the <i>National Strategy for Disaster Resilience</i> notes that 'improved disaster management outcomes in remote Indigenous communities will only be achieved if the associated systems and structures and informed by the cultural needs and perspectives of those communities. Systems and structures must be flexible, responsive to and accommodate the values, priorities and practices of Indigenous Australians and their communities. The provision of ongoing

Year	Event
	education and support to members of these communities is necessary to ensure successful achievements of this outcome’.
2014	The Australian National Advisory Committee for Animals in Emergency released the <i>National Planning Principles for Animals in Disasters</i> (NPPAD), later endorsed by the Australia New Zealand Emergency Management Committee. NPPAD was designed as a non-prescriptive tool aimed at promoting best practice for integrating animals into disaster planning and to support national consistency.
2015	<p>February: Tropical Cyclone Lam (Category 4) hits Arnhem Land, NT; state of emergency declared. The communities most significantly affected were Milingimbi, Ramingining, Galiwinku, Gapuwiyak and Warruwi. Over 350 community residents evacuated from Warruwi to Darwin.</p> <p>March: The <i>Sendai Framework for Disaster Risk Reduction 2015-30</i> adopted at the Third United Nations World Conference on Disaster Risk Reduction. The framework states ‘Disaster risk reduction practices need to be multi-hazard and multisectoral, inclusive and accessible in order to be efficient and effective...Indigenous peoples through their experience and traditional knowledge, provide an important contribution to the development and implementation of plans and mechanisms, including for early warning’.</p> <p>March: Tropical Cyclone Nathan (Category 2) hits north-east Arnhem Land, NT. 350 people evacuated from Warruwi to Darwin.</p> <p>‘Burrumalala-Strong winds’ project by Yolngu researchers reviewed governance capabilities and developed a strategic plan to engage with emergency management agencies in the NT.</p> <p>September: Audit of current legislation on animal emergency management in Australia published. Amongst the relevant recommendations are the establishment of a national forum for discussing animal emergency management, the development of an Animal Emergency Management Handbook, and for emergency service organisations to consider how communities can be engaged in animal emergency management in a more formal way.</p>
2016	<p>Dec: Flooding in Nauiyu (Daly River), NT over 400 community members evacuated to Darwin.</p> <p>Pet dogs were also evacuated from the community by loading them into cages which were transported by helicopter to Litchfield Shire Council, where they were confined in the local pound.</p>
2017	<p>Indigenous Peoples Statement from <i>the Official Statements from the 5th Session of the Global Platform for Disaster Risk Reduction</i> includes ‘Indigenous peoples must have a voice in order to reduce disaster risk and vulnerability. The practice of imposing centralised solutions to local problems can lessen the community’s capacity to reduce risk and save lives. They must have opportunities to develop their own strategies as well as participate in the development of national and international policies’.</p> <p>The Federal Government of Canada states it ‘is committed to working with Indigenous peoples to better understand the emergency management risks they face and to develop an emergency management approach that is inclusive and accessible to all Canadians’. This includes the development of an Indigenous Emergency Management</p>

Year	Event
	Capabilities Inventory, to be used as a tool to collaboratively focus on the emergency management needs of Indigenous communities across Canada.
2018	The South Australian 'Managing Animals in Emergencies' framework is released.
2019	<p>The Victorian 'Emergency Animal Welfare Plan' is released; Western Australia also releases its 'State Support Plan: Animal Welfare in Emergencies'.</p> <p>March: Cyclone Trevor (Category 4) in the Gulf of Carpentaria, NT; state of emergency declared. Mass evacuation of Robinson River, Numbulwar, Borroloola and Groote Eylandt communities with limited preparation time. Over 2,000 community residents from coastal communities evacuated to Darwin-the largest evacuation effort since Cyclone Tracy in 1974.</p> <p>Residents were advised to confine animals in houses with food and water supplies. A small number of residents locked animals inside houses, making it difficult to access and assess animals in the first response phase, and highlighting scope to improve communication about actions for pets in emergency situations.</p>
2019-20	<p>'Black Summer' bushfires across NSW, Victoria, SA, Tasmania, ACT and QLD; 33 people, an estimated 3 billion native animals, 20,000 farm animals and an unknown number of pets were affected (number of deaths also unknown).</p> <p>A report from the Centre for Aboriginal Economic Policy Research states that 'Aboriginal people were among the most affected by the 2019-20 bushfires in south-eastern Australia...we call for governments to acknowledge the erasure of Aboriginal people in previous bushfire disaster responses; to prevent this from being repeated; to ensure adequate Aboriginal representation on relevant government committees involved in decision-making, planning and implementation of disaster risk management; and to centre Aboriginal people's voices in understandings across the bushfire planning, preparation, recovery and response spectrum' (8)</p>
2020	<p>May: Cessation of the Council of Australian Governments (COAG); replaced with National Federation Reform Council (NFRC).</p> <p>July: The Bushfire and Natural Hazards Cooperative Research Centre and the University of New England release the 'Australian Disaster Resilience Index', a visual tool that shows overall disaster resilience. With the exception of the Darwin City Council local government area, the NT's capacity for disaster resilience was ranked as low.</p> <p>October: Report of the <i>Royal Commission into National Natural Disaster Arrangements</i> in Australia released. The report noted suggestions of including participants with various capabilities and expertise (including Indigenous organisations) can contribute to more holistic emergency planning, and that states and territories are best placed to determine which stakeholders need to be involved.</p>
2021	<p>July: <i>Animals in Disasters</i> report released. This report reviews the National Planning Principles for Animals in Disasters and provides an updated assessment of Australia's animal related planning and response to disasters.</p> <p>October: <i>Territory Emergency Plan</i> (noting this is revised annually) provides a framework for NT Government agencies to navigate the complexities of emergency events.</p>

Year	Event
2022	<p>Jan: the Animal Emergency Incident Management Network (AEIMN) (Australian and New Zealand) established. One of the purposes of the group is to 'advance practices and knowledge in all aspects in incident management involving animals, including research, policy, education, planning, safety and practices to improve animal welfare'.</p> <p>April: A review by Russell-Smith recommends implementation of national policy for inclusive emergency management arrangements with remote Indigenous communities. The key mechanism for this is through the establishment of partnerships with remote Indigenous communities (Traditional Owners, government agencies, Indigenous ranger groups) (9).</p> <p>July: Australia State of the Environment 2021 report released.</p> <p>July-present: Animal Management in Rural and Remote Indigenous Communities (AMRRIC) receives a NT Risk Reduction grant to prepare a guide to emergency management response for companion animal welfare in remote Indigenous communities; literature review and preparation of draft guide.</p> <p>August: The Australian Institute for Disaster Resilience is contracted by the Australian Government to manage the Australian Disaster Resilience Handbook Collection, which provides guidance and national principles for disaster resilience. This includes the development of a handbook on <i>Animals in Disaster</i>.</p> <p>1 September: The National Emergency Management Agency is established; this agency combines the efforts of the National Recovery and Resilience Agency and Emergency Management Australia, to 'create a single, enduring, end-to-end agency to better respond to emergencies, help communities recover, and prepare Australia for future disasters'.</p>
2023	<p>January: Flooding in Fitzroy Crossing, WA. The Defence Force evacuated about 150 residents to Broome and Derby. A key part of the key transport route between Broome and Fitzroy Crossing and Derby, the Fitzroy Crossing bridge, as well as the highway, was extensively damaged. Emergency flights with food supplies people and animals) delivered food to Fitzroy Crossing. The WA Government announced that a barge system and low-level crossing will be installed to connect the East and West Kimberley until a new bridge can be built. The ABC reported that resources and supplies are being stretched in Derby, with an additional 150 evacuated community residents; food and medical supplies were delivered but there are supply chain/transport issues.</p> <p>The Australian Institute for Disaster Resilience releases a 'Recovery Exercising Toolkit' to provide guidelines and a national reference for the design, planning, conduct and evaluation of disaster preparedness exercises; this includes a module on 'Working with Indigenous Communities in Recovery'.</p> <p>March: Extensive flash flooding in the Victoria Daly region of the NT; a very rapid rise in the water level meant community residents had no preparation time. About 700 residents were evacuated from Kalkarindji, Daguragu, Pigeon Hole and Palumpa to Darwin (via Katherine). Local government authorities highlighted that the community had been seeking resourcing (river height gauges and an evacuation centre) for an</p>

Year	Event
	<p>extended period with no success. The ABC reported that about 100 pets were left behind during emergency evacuations, with the NT Government providing funding for pet food, which was distributed by first responders; there are also concerns raised about the potential spread of canine ehrlichiosis. The ABC reports an emergency declaration remains in place; the NT Government advised that infrastructure has been badly damaged and a lack of safe drinking water (as of mid-March 2023).</p> <p>March: Flooding in the Gulf of Carpentaria region of Queensland, associated with ex-Tropical Cyclone Ellie, affects the communities of Burketown, Doomadgee, Normanton, Gregory and Mount Isa. About 90 residents of Burketown evacuated to neighbouring communities with 60 residents choosing to remain in the community to look after pets, with some other smaller communities also being evacuated. There are media reports of extensive loss of livestock and infrastructure damage.</p> <p>Food drops of hay by helicopter were arranged for cattle but in some areas the flooding was severe; helicopter mustering of cattle to higher ground was also attempted; livestock losses have not yet been quantified.</p>

Disaster planning in remote Indigenous communities

A national emergency management strategy '*Keeping our mob safe*' was developed and endorsed by the Ministerial Council for Police and Emergency Management in 2007 (3). The aim of this strategy was to provide a strategic direction for emergency management, and a framework for a coordinated and cooperative approach to risk assessment, decision making and resource allocation (3).

In February 2011, the [National Strategy for Disaster Resilience](#) was released; the strategy provides the foundation of national coordination arrangements in emergency situations. The strategy notes that 'development of remote community and industrial centres, extent of isolation, and reliance on emergency service volunteers, all present challenges (to disaster management)'. Later in the same year, a Council of Australian Government (COAG) review of this strategy recognised that 'improved disaster management outcomes in remote Indigenous communities will only be achieved if the associated systems and structures and informed by the cultural needs and perspectives of those communities' (9).

In both documents, it was recognised that remote Indigenous communities have diverse and complex emergency management needs, as a result of various and interacting factors: isolation, vulnerability and exposure to natural hazards, inadequate services and infrastructure, transient populations, low literacy and numeracy levels, accessibility issues and entrenched levels of socio-economic disadvantage (3). Each community has different governance structures, statutory arrangements, different

languages and customs; additional challenges in establishing consistent approaches to emergency management (3).

While both these national-level documents recognised the importance of developing a partnership approach to emergency management between remote Indigenous communities and emergency management agencies and expressed an intent to embed such an approach in practice, no funding was allocated to implementation (9). At the time of writing (March 2023), there are no known additional (current) national level policy frameworks which focus on emergency management in a remote area context.

Australian Disaster Resilience Index

Capacity for disaster resilience is highly variable across Australia. An 'Australian Disaster Resilience Index' website developed by the Bushfire and Natural Hazards Cooperative Research Centre and the University of New England is a useful visual tool that shows overall disaster resilience, as well as coping and adaptive capacity for disaster.

With the exception of Darwin, the NT's capacity for disaster resilience has been ranked as low (Figure 1).

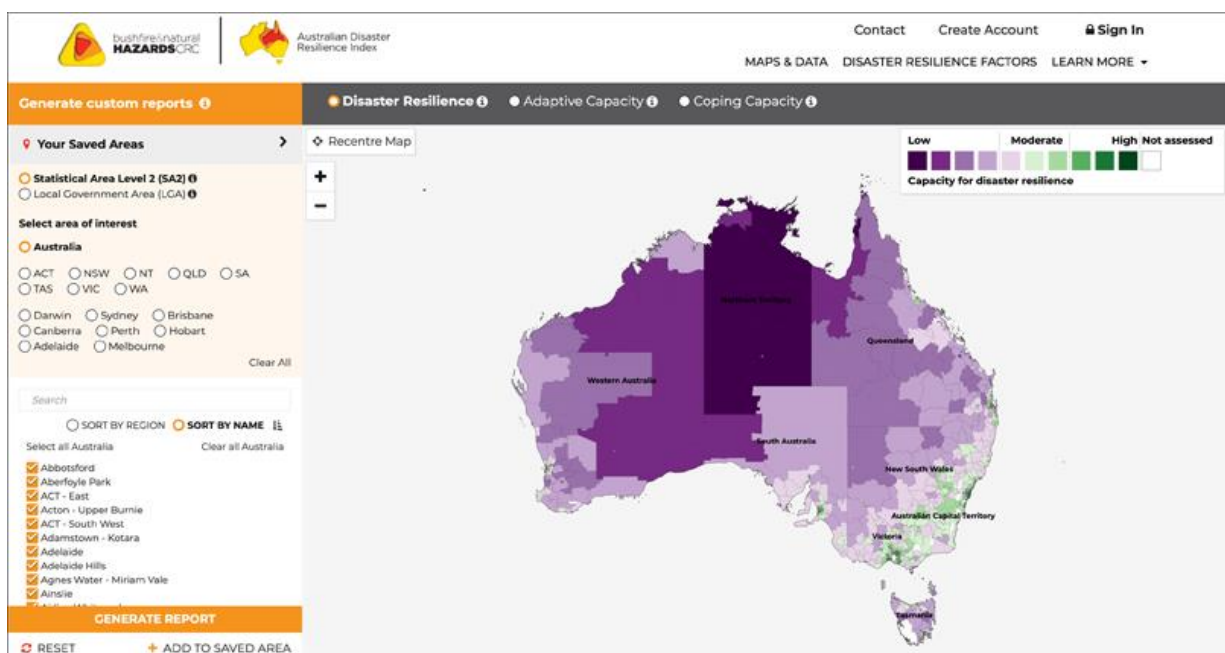


Figure 1: The Australian Disaster Resilience Index assesses disaster resilience; interactive mapping and allows for compilation of tailored reports, strengths and barriers to disaster resilience (Bushfire and Natural Hazards Cooperative Research Centre and the University of New England, accessed February 2023).

Culturally responsive frameworks in Australia

While there is growing recognition of the need to centre Aboriginal and Torres Strait Islander people in decision-making processes in Australia, there remains a significant gap between stated intent and implementation. There are also few frameworks available which showcase how to collaborate with and elevate Aboriginal and Torres Strait Islander voices in decision making processes.

An example of a culturally responsive trauma-informed public health emergency framework for Australia was developed during the COVID-19 pandemic (10). The framework (Figure 2) includes the following components:

- An overarching philosophy (cultural humility, safety and responsiveness);
- Key enablers (local leadership);
- Supporting strategies (provision of basic needs and resources, well-functioning social systems, human rights, dignity, choice, justice and ethics, mutuality and collective responsibility, strengthening of existing systems);
- Interdependent core concepts (safety, transparency and empowerment, holistic support, connectedness and collaboration and compassion, protection and caring) and
- Central goals (a sense of security, resilience, wellbeing, self- and collective-efficacy, hope, trust, resilience and healing from grief and loss).



Figure 2: Developed as part of the COVID-19 pandemic in Australia-an example of a culturally responsive public health emergency framework for Aboriginal and Torres Strait Islander communities (10).

The framework can be used or adapted for emergency management response in remote Indigenous communities. Another approach is the use of First Nations Community Panels, which comprises of 5 steps (community engagement, prepanel yearning session, evidence and deliberation days, follow up yearning session and production of a final recommendations report (11).

We suggest that in an emergency management context, community engagement frameworks or approaches can be applied to empowering and investing in local emergency management capacity across northern Australia.

Emergency animal management

There are a range of resources which focus on the management of animals during an emergency situation.

The Australian Veterinary Association states that animal management needs to be included as a component in all disaster management plans; owners need to formulate an exit strategy or safe containment and protection plan in advance of any natural disaster; and that veterinarians should be engaged in the implementation of local, state and federal plans for disasters and emergencies involving animals (6).

The Australian National Advisory Committee for Animals in Emergency released the *National Planning Principles for Animals in Disasters* (NPPAD) in 2014 (Appendix 1), later endorsed by the Australia New Zealand Emergency Management Committee. NPPAD was designed as a non-prescriptive tool aimed at promoting best practice for integrating animals into disaster planning and to support national consistency. A 2021 report reviews the NPPAD provides an updated assessment of Australia's animal related planning and response to disasters (Appendix 1).

Both the NPPAD and the subsequent 2021 review are useful tools for the integration of animals into disaster planning. Notably, both are broadly based on the premise of the 'western' model of 'command and control' approach to emergency management and have a primary focus on an urban or peri-urban context.

The 2021 review of the National Planning Principles for Animals in Disasters found that the principles applied across Australia. It notes the principles are not explicitly incorporated into the Territory Emergency Plan (2). The review includes a case study of Cyclone Trevor and recommends "increased AMRRIC and veterinary presence during evacuation has been recommended, to reassure animal owners, and to increase veterinarians' opportunity to gauge household animal numbers, speeding up household community safety checks".

Emergency planning in the NT

The NT Government Department of Industry, Tourism and Trade is the lead agency for animal welfare for domestic, commercial and native animals in disasters (12). At an operational level, the mechanism for this is a Biosecurity and Animal Welfare Functional Group (BAWFG) (Table 4) (12).

In a disaster situation affecting the NT, the BAWFG is responsible for coordinating the care, treatment and reunion (where appropriate) of domestic and commercial animals and wildlife through the activities of government, veterinary clinics and private animal care organisations at the request of the Incident Controller (12).

The most common model of emergency planning is the ‘western’ model of ‘command-and control’. We suggest that there is a need and immense value in revising this model to address previously expressed national-level intentions to adopt and implement a collaborative approach to emergency planning (described in more detail below).

To illustrate this need, local government emergency plans in the NT are developed in technical English by a regional (or local) Incident Controller, and typically kept at local community police stations. Accordingly, the plans were not accessible (physically or linguistically) to remote Indigenous community members (11), including those affected by Cyclone Lam and Cyclone Nathan.

Table 4: Membership of the Biosecurity and Animal Welfare Functional Group (12).

Participating organisations	Supporting organisations
Department of the Chief Minister and Cabinet	Interstate and Federal Primary Industry departments
Department of Health	Primary Industry peak bodies (e.g., NT Cattlemen’s Association, NT Farmers Association, NT Seafood Council)
Department of Environment, Parks and Water Security	Animal welfare organisations (RSPCA, PAWS, AMRRIC)
Department of Infrastructure, Planning and Logistics	Private veterinary clinics
Local Government	Wildlife care groups
Northern Territory Police, Fire and Emergency Services	
Department of Treasury and Finance	

Empowering Indigenous communities in emergency planning

In addition to the two known Australian Government strategy documents which describe a greater need for partnership approaches in emergency planning with remote Indigenous communities, there is also a growing body of peer-reviewed literature reiterating the need and value in this, summarised in Table 5.

Table 5: Summary of Australian and international research papers and reports which recognise and recommend a need for partnership approaches in emergency planning with remote Indigenous communities.

Study	Scope	Key conclusions
Ellemor 2005	Indigenous communities in Australia	Emergency managers must learn to recognise and integrate local knowledge and coping strategies in order to move the balance from emergency management done for (and sometimes to) Indigenous communities, to emergency management done in partnership with Indigenous communities.
Mercer <i>et al</i> 2010	Small islands in developing countries, with a focus on Papua New Guinea	This paper presents a framework for integrating Indigenous knowledge and science knowledge in frameworks for disaster risk reduction.
Petheram <i>et al</i> 2010	North-east Arnhem Land, NT	A key issue expressed by Yolngu communities in NE Arnhem Land was frustration over lack of transparency, communication and Indigenous input, and an associated need for improved communication, engagement and decision making (and management).
Veland <i>et al</i> 2010	Warruwi, NT	Indigenous institutions can contribute to effective emergency responses, even at the cost of cutting across formal emergency service guidelines and protocols to ensure that locally appropriate action is undertaken. Action to support and integrate networks of connection in the development of local protocols and guidelines is urgently needed and is likely to strengthen efforts in emergency management and avoid unnecessary conflict and trauma.
Howitt <i>et al</i> 2012	Northern Australia	Risk assessment, preparation and recovery should prioritise partnerships based on recognition, respect and commitment to justice.
Price-Robertson and Knight 2012	Australia	Highlights that 'widely understood and broadly applied disaster plans and policies, emergency management plans and the application of standards and regulations are pivotal procedural enablers of community resilience'.
Kenney and Phibbs 2014	Christchurch, New Zealand	Analysis of the results suggest that New Zealand's disaster response policies may be enhanced by the integration of Māori approaches to facilitating disaster risk mitigation, community recovery and social resilience.
Rahman <i>et al</i> 2017	Aceh, Indonesia	The findings support the conclusion that knowledge management is one alternative that can prevent the disappearance of Smong as Indigenous Knowledge on future tsunami risk, offering a way to strengthen the community's ability take the best decisions and take appropriate actions before, during, and after disasters. Finally, this study also found that, to achieve enhanced community resilience, Indigenous Knowledge needs to be linked to the entire range of disaster management activities in all disaster phases.
Thomassin <i>et al</i> 2018	Canada, Australia, New	Recommends 'natural hazards management agencies should pay greater attention to local initiatives and forms of

Study	Scope	Key conclusions
	Zealand and the USA	resilience and make space for Indigenous practitioners and communities to collaboratively reconceptualise risk and vulnerability according to their own perspectives and priorities. To proceed in this direction, natural hazards management agencies must actively build and maintain trusting relationships with Indigenous people and be prepared to fund and truly embark on collaborative decision-making’.
Lambert and Scott 2019	Global	‘Essential Disaster Risk Reduction strategies can be adapted for Indigenous communities through respect for Indigenous approaches in coordinating alliances; culturally appropriate incentives; accurate, appropriate and ethical data collection; acknowledgement of Indigenous land use practices; use of Indigenous language, leadership and institutions; collaboration with Indigenous knowledges; and acceptance of traditional healing approaches’.
Ali <i>et al</i> 2021	Galiwin’ku NT	‘Colonisation, the imposition of Western culture, the government application of top-down approaches, infiltration in Indigenous governance systems, the use of fly-in/fly-out workers, scarcity of employment, restrictions on technical and higher education opportunities, and overcrowded housing undermine the Disaster Risk Reduction capability. Facilitating sustainable Disaster Risk Reduction requires Indigenous and non-Indigenous partners to genuinely work together in two-direction and complementary ways’.
Weir <i>et al</i> 2021	Southern Australia	‘Hazard sector leadership has to consider why and how it wishes to collaborate with Indigenous peoples; allocate the resources and time to understand the status quo that has excluded Indigenous people to date; create processes and structures to support Indigenous leadership, participation and collaboration across the sector; and address deficiencies in how sector performance is currently measured and reported’.
Sithole <i>et al</i> 2021	Ramingining and Galiwin’ku, NT	‘Bininj and Yolngu have a great deal to offer hazard assessment, preparation and response and are pushing for equitable and authoritative involvement in all aspects of emergency management as the only way to maximise positive emergency management outcomes. Local knowledge, skills and other assets should be engaged and developed to achieve more effective emergency management outcomes. What this looks like in each place will be unique’.
Russell-Smith <i>et al</i> 2022	Northern Australia	Whilst acknowledging the significant logistical and resourcing challenges associated with developing inclusive and foundational governance partnerships given the diversity of remote community contexts, the authors demonstrate that (a) the potential for cost-effective delivery of contracted emergency management services to many remote communities is already achievable through the

Study	Scope	Key conclusions
		<p>geographically expansive network of existing Indigenous Ranger Groups, and</p> <p>(b) such engagement can also serve as an instructive model for building economic capacity, enterprise and employment opportunity in remote communities where little currently exists.</p> <p>We acknowledge further that such a vision will take time to realise, but recognise that</p> <p>(c) positive regional examples of agency-community collaborations are already in train,</p> <p>(d) many communities and their respective Indigenous Ranger groups are keen to participate where opportunity presents, and</p> <p>(e) there is evident commitment and enthusiasm on the part of both engaged senior emergency management managers and community leaders to further explore collaborative partnership models.</p>

While not specifically focused on emergency management, the Australia State of the Environment report 2021 states that ‘mainstream management decisions that disconnect people from Country have a negative impact on health and wellbeing; much more (needs) to be done to enable Indigenous people to apply their knowledge, manage their Country and exercise rights of self-determination’ (13).

Companion animal legislation

Companion animal legislation at the state/territory level is in place in other jurisdictions in Australia; in some cases, this legislation confers local governments with the ability to set local bylaws. Such legislation and bylaws are important for setting of standards for responsible pet ownership, through registration, desexing, identification, confinement/containment or prohibition of pets from ecologically sensitive areas. Such legislation is also used to inform emergency management planning.

We note that the absence of companion animal legislation is one factor which impedes the development of emergency management response for companion animals in the NT.

Emergency management responses for remote Indigenous communities and companion animal welfare in Australia

Australia’s three tiers of government (Commonwealth, state/territory, and local) means that there may be a range of management frameworks and plans in place for any given topic, which may or may not neatly relate to one another. For emergency management,

most jurisdictions have a hierarchical system of emergency plans (state/territory-regional-local).

At the time of writing (August-September 2022), South Australia, Victoria and Western Australia have specific frameworks outlining the emergency management response for companion animals. Other jurisdictions recommend the need for a 'pet emergency plan and kit' for each pet owner (Table 6). Only Queensland has an emergency management framework (from 2004) specifically focused on remote Indigenous communities (Table 7).

Table 6: Formal state/territory management frameworks for companion animals in emergencies, alignment with National Planning Principles for Animals in Disasters and specific reference to remote Indigenous communities.

Jurisdiction	Formal emergency management framework for companion animals in place?	Alignment with National Planning Principles for Animals in Disasters?	Specific reference to remote Indigenous communities?
ACT	No-advice only	N/A	N/A
NSW	Yes 'Agriculture and Animal Functional Area Supporting Plan 2017'		N/A
NT	No	N/A	N/A
QLD	No-advice only	N/A	N/A
SA	Yes 'Managing Animals in Emergencies: A Framework for South Australia 2018'	Yes	No
TAS	No-advice only	N/A	N/A
VIC	Yes 'Victorian Emergency Animal Welfare Plan 2019'	Yes	No
WA	Yes 'Animal Welfare in Emergencies: State Support Plan 2021'	Yes	No

Table 7: State/territory emergency management plans specifically for remote Indigenous communities.

Jurisdiction	Formal emergency management framework specifically for remote Indigenous communities?	Specific reference to companion animals?
ACT	N/A	N/A
NSW	No	N/A

Jurisdiction	Formal emergency management framework specifically for remote Indigenous communities?	Specific reference to companion animals?
NT	No-embedded within local area plans	Some local plans include specific reference to companion animals. Local plan advice varies from “no domestic animals are to accompany evacuees. Any self-evacuees with domestic animals will be expected to make their own arrangements for the animals” to “ensure pets and animals are in a safe area”.
QLD	Yes (2004)	No
SA	No-but State Emergency Management Plan includes a ‘People at Risk in Emergencies’ section, which includes consideration of Aboriginal and Torres Strait Islander peoples.	No
TAS	N/A	N/A
VIC	N/A	N/A
WA	No-remote communities are included as part of state level plan.	N/A

New South Wales

The ‘Agriculture and animal services supporting plan’ by the NSW Government sets out the emergency control and coordination requirements for agricultural and animal resources.

South Australia

Primary Industries and Regions South Australia (PIRSA) developed a ‘Managing Animals in Emergencies: a framework for South Australia’ in 2018. The purpose of the framework is to support animal owners, the community, government agencies, non-government organisations and businesses to understand their roles and responsibilities towards managing animal welfare before, during and after emergencies (14). It is intended to provide an overview of the principles and issues that should be considered in planning, and states that each organisation should have its own plan detailing responsibilities and operating procedures in place (14).

In the framework, the possible provision of services by local governments in a companion animal context is summarised in Table 8.

Table 8: Assistance that may be provided by local governments in South Australia in the event of an emergency. The framework notes that the provision of services is dependent on the individual policies of the relevant council(s) and capacity at the time of an emergency (14).

Emergency stage	Current services
Prevention/preparedness	Provide emergency preparedness information to the community.
Response	Provide local knowledge on sites of significance, access routes and other issues which may assist (or impede) the response
Recovery	Assist with managing lost companion animals through existing pound and shelter facilities and by accessing Dog and Cats Online database.

Western Australia

The WA Department of Primary Industries and Regional Development has an 'Animal Welfare in Emergencies: State Support Plan' in effect as of June 2021. The plan outlines the roles and responsibilities of stakeholders involved in emergency response and recovery in relation to animal welfare in emergencies (6). The plan highlights that local government has a key roles in supporting emergency animal welfare activities, given it is the tier of government with the closest proximity to affected communities (Table 9) (6).

Table 9: Potential actions by local governments in Western Australia in the event of an emergency (6).

Emergency stage	Current services
Prevention/preparedness	Consider developing, maintaining and reviewing a Local Government emergency animal welfare plan. Maintain representation on the Committee for Animal Welfare in Emergencies (CAWE) via the Western Australian Local Government Association (WALGA) CAWE member.
Response	Activate the Local Government emergency animal welfare plan or contingency arrangements where identified within Local Emergency Management Arrangements. Liaise with Department of Primary Industries and Regional Development to provide a coordinated approach to animal welfare response actions, where relevant.
Recovery	Include animal welfare considerations in any recovery plan. Liaise with Department of Primary Industries and Regional Development to transition the ongoing animal welfare activities back to the control of local government and the owner or carer. Review the effectiveness of any animal welfare plans Ensure local government is represented on the Committee for Animal Welfare in Emergencies (CAWE) via the Western Australian Local Government Association (WALGA), to participate in reviewing this plan.

Victoria

The Victorian State Government has a Victorian Emergency Animal Welfare Plan in place, dated October 2019 (7). The purpose of the plan is to provide the community, including emergency services and the animal management sector with a plan that integrates arrangements for animal welfare within formal emergency management arrangements, to ensure that animals are planned and that their welfare is appropriately addressed in any emergency (7).

In contrast to other jurisdictions, the Victorian plan includes the management of relocated animals at Emergency Relief Centres (7). Under Victoria's emergency management arrangements, local government is responsible for the coordination of the provision and operation of emergency relief centres, and that centres should include mechanisms for registering, treating and short-term housing of animals (Table 10) (7). At all times, the person presenting with the animal holds overarching responsibility for the animal (7).

Table 10: Potential actions by local governments in Victoria in the event of an emergency (7).

Note: The Victorian Emergency Animal Welfare Plan includes consideration of companion animals, livestock and native wildlife.

Emergency stage	Current services
Prevention/preparedness	<p>Ensure emergency relief and recovery components of Municipal Emergency Management Plans detail local emergency animal welfare arrangements and providers for relevant animal welfare services including consideration of the following:</p> <ul style="list-style-type: none"> - Department of Jobs, Precincts and Regions (DJPR) (managed animals) and Department of Environment, Land, Water and Planning (DEWLP) (wildlife) contacts for animal assessment activities, - carcass transport providers and disposal sites, - options for the housing and management of displaced animals, including those presenting at emergency relief centres, - potential sites for donated fodder distribution, - alternative emergency water sources for animals, and - systems for the management of offers of assistance or donations made to local government. <p>Communicate municipal animal welfare contacts and arrangements to relevant stakeholders.</p> <p>Reference animal welfare information in publications and websites to assist broader community awareness, education and understanding</p>
Response	<p>Liaise with relevant local animal welfare agencies and organisations to enable effective and timely delivery of council's animal welfare support services.</p>

Emergency stage	Current services
	Provide input to information for the public and media relating to the management of animals impacted by the emergency and arrangements for relocated animals for release by the Incident Controller
Relief	<p>Provide assistance with urgent animal welfare needs, including emergency shelter, water or fodder.</p> <p>Manage donated goods and services offered to the municipality.</p> <p>Emergency confinement of stray animals within the local government area.</p> <p>Referral of animal welfare needs to responsible and animal welfare support organisations.</p> <p>Coordination of clean-up activities, including disposal of dead animals.</p> <p>Provide a municipal point of contact for other agencies and organisations (e.g., control agencies, DJPR, DELWP, RSPCA, Australian Veterinary Association and Victoria Farmers Federation), in relation to animal welfare needs or issues.</p> <p>Make provisions for animals presenting at emergency relief centres that include provision for the registration, treatment and housing of animals at the relief centre or advise animal owners of alternative arrangements where animals cannot be housed at the site.</p>
Recovery	<p>Work with DJPR to assist in ongoing animal welfare recovery within the municipality.</p> <p>Coordinate recovery services for animal owners and carers</p>

Other relevant frameworks for animals in emergencies

This project is focused on companion animals in remote communities. While this project is considered a first 'starting point' for consideration of animals in emergencies; there is a corresponding need to include native wildlife in emergency systems. [Wildlife Health Australia](#) intends to develop guidelines and protocols for best practice in wildlife welfare during emergencies (15); there may be some useful principles applicable to remote areas to incorporate once these are completed.

Emergency management in Aboriginal and Torres Strait Islander communities

Queensland

The Queensland Fire and Emergency Services developed a guide to disaster risk management in Aboriginal and Torres Strait Islander communities in 2004. The plan includes information on training opportunities with natural hazard management agencies, volunteering with emergency services, and a stated intent to increase employment of Aboriginal and Torres Strait Islander people in emergency services (16). There are no known revisions of this guide, but it provides a useful example of the type

of a specific resource that state/territory local governments can prepare for remote Indigenous communities.

One Health and pets in disasters

There is growing interest in applying the One Health approach to a complex, multi-faceted, global issues such as emerging infectious diseases, neglected tropical diseases, antimicrobial resistance, and climate change. There are a range of definitions for One Health; recently it was defined by the One Health High Level Expert Panel as:

An integrated, unifying approach that aims to sustainably balance and optimise the health of people, animals and ecosystems (17). It recognises the health of humans, domestic and wild animals, plants and the wider environment (including ecosystems) are closely linked and interdependent (17).

The approach mobilises multiple sectors, disciplines and communities at different levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for healthy food, water, energy and air, taking action on climate change and contributing to sustainable development (17).

There are two known research articles examining animals in disasters and One Health. The Australian study recommends the following five actions:

- i. Integrate pets into disaster management practice and policy.
- ii. Create pet friendly environments and related policies.
- iii. Engage community action in disaster management planning.
- iv. Develop personal skills by engaging owners in capacity building; and
- v. Re-orient health and emergency services towards a more than human approach (18).

The other international study notes that collective engagement in One Health animal disaster management can lead to improvements in human health and welfare and that a commitment to animal care and husbandry and interspecies biosecurity during disasters benefits human-animal relationships (19).

While there are considerable barriers to the implementation of One Health in Australia, it is a useful and integrated approach which could be applied to emergency management. In a remote area context, some of these recommendations (notably number ii) are not feasible or practical, for the reasons described previously. While there are criticisms and challenges with One Health, it is increasingly recognised that it can be used as the basis for consolidating expertise and knowledge, particularly in the prevention stage (20).

Identified knowledge gaps for this review

The Territory Emergency Plan includes a requirement for a formal debrief report for all emergency events that require a multi-agency response (12). The formal debrief report includes the sequence of events, response measures and arrival actions of functional

areas; what went well; what did not go well; an assessment of whether there was sufficient capacity and capability across key functions of emergency response and recovery operations and the welfare and recognition of personnel involved (12).

The NT Government approach of having a formal debrief reporting process is commendable and informs continuous improvement. We note that the formal debrief report for Cyclones Lam and Trevor may contain useful insights and learnings on the emergency management response for companion animals for remote areas, but to the best of our knowledge, these reports are not publicly available.

Conclusion

This review has explored research and other planning documents which relate to emergency animal management in remote Indigenous communities of Australia. The review found there are different approaches to emergency management across different jurisdictions of Australia; a fundamental difference being that in the NT, the NT Government (rather than local government) holds primary responsibility for emergency management.

The Territory Emergency Plan provides a comprehensive, detailed and hierarchical framework for emergency management in the Northern Territory. This includes a sound mechanism for the management of companion animal welfare (the Biosecurity and Animal Welfare Functional Group), which works in collaboration with local governments in emergency situations.

While it is outside the scope of this review and project, we highlight there have been previous national policy documents, in addition to a growing body of research that recognises the need to develop a collaborative approach with Indigenous communities in Australia, particularly for public health emergencies (such as COVID-19) and in emergency management. Noting that on an operational level, the Northern Territory Government prioritised collaborations with local government (Roper Gulf Regional Council) and AMRRIC during Cyclone Trevor, there is a need to formalise and explicitly recognise a collaborative approach with remote Indigenous communities in emergency management frameworks. Accordingly, we suggest there is strong scope for the Northern Territory Government to formally embed collaborations with remote Indigenous communities, within the Territory Emergency Plan. The emergency framework developed by Graham et al (2022) incorporates recognition of Aboriginal and Torres Strait Islander culture and complex, intergenerational trauma, and could be applied or adapted for public health and emergency management. In emergency management, one model for collaboration involves the development of emergency management partnerships with agencies, volunteers, Traditional Owners and Indigenous ranger groups to mitigate and manage natural hazards; deliver emergency management services; develop local community emergency management plans, and providing employment and fee-for-service opportunities with Indigenous rangers (9).

We concur with the recommendation from the Animals in Disasters report: in emergency situations in remote Indigenous communities, increased AMRRIC and veterinary presence during evacuation is recommended; this measure assists in reassuring animal owners, and increases the opportunity for veterinarians to gauge household animal numbers and speed up household safety checks (2). It should also be noted that AMRRIC holds companion animal census data for some remote Indigenous communities; this data can be useful in the emergency management planning phase. A companion animal census template is also available on the AMRRIC webpage; this and other useful resources will be included in the draft plan. We further recommend that the development of companion animal legislation in the NT would have far-ranging benefits, for informing emergency management response and as a key enabling mechanism for local governments to encourage responsible pet ownership, noting that adequate resourcing for implementation, education, compliance, and enforcement are required for legislation to be effective.

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Appendix 1

The National Planning Principles for Animals in Disasters (2014)

1) The planning process for animals in disasters

The planning process should:

- explicitly recognise that integrating animals into emergency management plans will improve animal welfare outcomes
- explicitly recognise that integration of animals into emergency management plans will help secure improved human welfare and safety during disasters
- aim to clearly identify roles and responsibilities within command and control structures in sufficient detail to allow for effective implementation of animal welfare measures
- recognise the wide range of parties involved in animal welfare at each stage of the disaster cycle and ensure these organisations are consulted during writing or reviewing disaster plans
- respect the role of local government as 'first responders' in disasters and acknowledge local government expertise in understanding local needs and resource availability, especially with reference to animal welfare and animal management arrangements within the local area
- consider how best to ensure effective integration and implementation of the plan by, for example, extensive consultation during the planning process or inclusion of an animal welfare element in requirements for disaster training exercises
- include effective communication about plan implementation with those parties who may be involved as well as those who may be impacted by disasters
- be communicated in language that is accessible to all stakeholders including the general public.

2) The disaster plan

The plan should:

- make reference to, and situate the plan within, the local area and/or jurisdictional regulatory and legal frameworks
- take an 'all hazards' humane approach to all species and encompass a wide range of possible disaster-type situations that may impact upon the welfare of livestock, companion animals, wildlife and other categories of animals such as laboratory animals
- use a definition of disaster that aligns with the National Strategy for Disaster Resilience

- include a statement of scope that excludes animal disease and biosecurity emergencies from the plan
- emphasise that biosecurity requirements are of utmost importance in disasters and that quarantine and biosecurity protocols must be followed wherever practicable
- appropriately plan for animals taking into consideration the types of disasters most likely to be experienced in the particular jurisdiction
- provide for a staggered scaling up of response and resources in line with the scale and severity of disasters and their impact on animal and human welfare
- include a vision statement that makes reference to the importance of securing animal welfare outcomes in disasters
- include a brief rationale statement that includes reference to the benefits of the plan for animal welfare, human safety and wellbeing, and for the economy
- include consideration of animals at all stages of the disaster cycle including preparedness, response, recovery and mitigation
- outline command and control structures in language that is accessible to the general public
- specify that the individual in charge of an animal is ultimately responsible for its welfare in disasters
- outline the processes for interagency co-operation at all stages of the disaster cycle
- include a system for formalising arrangements with animal welfare support organisations
- take into consideration logistical challenges that may impact upon implementation of the plan during disasters, for example, in the event that key infrastructure or personnel are not able to be deployed, communication is affected or shelters are destroyed or otherwise unavailable
- include arrangements for regular testing of the animal welfare in disasters plan
- include requirements and arrangements for regular testing and review of the animal welfare in disasters plan.

Recommendations from the review of the National Planning Principles for Animals in Disasters (2021)

R1: To increase uptake of the NPPAD across Australia, it is recommended that representatives from organisations responsible for animal welfare planning in each State and Territory strategically share information about how they have integrated (or

plan to further integrate) the tool into their emergency management planning for animals.

R2: To help advocate for, and frame, local disaster planning arrangements, DAWE/DHA/DRRA or appropriate responsible agencies or organisations should ensure that the NPPAD is more actively shared with State and Territory Local Government Associations across Australia.

R3: To emphasise the role and recognise the challenges for animal owners, statements addressing the owner's ultimate responsibility for animal welfare in disasters need to be more consistently stated in disaster plans. Statements should also consider the variable capacity of owners to meet this requirement and emphasise awareness of potential assistance needs.

R4: To strengthen and embed the case for effective emergency planning for animals, disaster plans should include vision and rationale statements that recognise that positive outcomes for animal welfare are linked to benefits for individual and community resilience, through improved human safety, well-being, and economic outcomes.

R5: To increase implementation, it is recommended that targeted NPPAD awareness and education campaigns be conducted by DAWE or other appropriate responsible agencies with stakeholders at both state and local levels.

R6: To improve animal welfare consultation in disaster planning, improved processes for identifying, engaging, and including parties with local or other relevant expertise should be implemented by any authority developing or updating a plan.

R7: To increase best practice communication in animal welfare planning, guidance should be made available to support those developing plans and materials to ensure that readability level and comprehension testing is undertaken with target audiences, and appropriate revisions are made as a result.

R8: To expand implementation of the NPPAD across all phases of the disaster cycle additional focus on prevention and recovery stages should be considered.

R9: To support animal welfare in response scaling, logistical planning, interagency cooperation, and formal welfare consultation, application of the NPPAD within national disaster incident response systems (e.g., AllMS1) should be explored by DHA/DRRA and/or other relevant organisations, e.g., the Australasian Fire and Emergency Service Authorities Council (AFAC).

R10: To support animal welfare planning, guidance should be created to support an 'all hazards' perspective being applied at different jurisdictional levels, from national down to local levels.

R11: To enable regular testing and review of plans for animal welfare in disasters, capacity and resources for testing and review should be assessed and incorporated at the outset of plan development.

R12: To increase uptake, it is recommended that the NPPAD be provided by DAWE/DHA/DRRA or other appropriate responsible agencies and peak bodies in a format that can easily be shared by all stakeholder organisations, and that it is emphasised that human behaviour is shaped by the human–animal bond and that this has a powerful influence on decision-making in emergencies.

R13: To improve implementation, the NPPAD should be communicated via a State or Territory specific strategy that maps principles to examples of practical actions.

R14: To acknowledge the impact of the human-animal bond on owner decision-making and behaviour in emergencies, the NPPAD should address this aspect more directly and ensure that risk and safety behaviour motivated by attachment to animals is communicated to all users of planning information.

R15: To promote a consistent and optimised approach to disaster planning, consultation with animal welfare organisations and other stakeholders should be guided by a centralised or coordinated source and a common set of best available resources.

R16: To promote consistent integration of animals in disaster planning, the NPPAD should emphasise the need to maintain knowledge of emergency systems and resources available to support animal welfare in disasters.

Appendix 2

Glossary of Terms and Acronyms

Term	Definition
Companion animal	Any animals other than horses kept primarily for companionship, hobbies, sport or work (21)
Emergency	An event that requires a significant coordinated response using the combined resources of the Territory and non-government entities within the Territory (12)
Remote Indigenous communities	Remote Indigenous communities are defined by some or all, but are not limited to, the following characteristics, which present complex emergency risks and challenges: <ul style="list-style-type: none"> • Entrenched levels of disadvantage • Geographic isolation • Lack of services or infrastructures • Lack of access to services • Restricted or limited accessibility • Vulnerability and exposure to hazards • Low economic base and • Unique cultural or communication issues (3)

Acronyms

Acronym	Meaning/brief description
AEIMN	Animal Emergency Incident Management Network established in 2022, with a key purpose being to 'advance practices and knowledge in all aspects in incident management involving animals, including research, policy, education, planning, safety and practices to improve animal welfare'.
AIDR	Australian Institute for Disaster Resilience is a national institute for disaster risk reduction and resilience, currently working on an <i>Animals in Disasters</i> handbook
AMRRIC	Animal Management in Rural and Remote Indigenous Communities
BAWG	Biosecurity and Animal Management Working Group, the functional working group for animal welfare for domestic, commercial and native animals in disasters, under the Territory Emergency Plan
COAG	Council of Australian Governments (1992-2020) was the peak intergovernmental forum in Australia. Members include the Prime Minister, State and Territory Premiers and Chief Ministers and the President of the Australian Local Government Association. The role of COAG was to promote policy reforms that are of national significance, or which

Acronym	Meaning/brief description
	need coordinated action by all Australian Governments. Replaced by National Cabinet in 2020.
National Cabinet	Intergovernmental forum established in 2020, chaired by the Prime Minister, with a focus on Australia's economic recovery and the creation of jobs.
NPPAD	National Planning Principles for Animals in Disasters, designed as a non-prescriptive tool aimed at promoting best practice for integrating animals into disaster planning and to support national consistency.