

# Planning for Animals



The Australian Institute for Disaster Resilience acknowledges the Traditional Owners of Country throughout Australia and recognises their continuing connection to land, waters and culture. We pay our respects to Elders past and present. This handbook was produced on the lands of the Wurundjeri people of the Kulin Nation.

Australian Disaster Resilience  
Handbook Collection

# Planning for Animals

First edition 2024.

© Commonwealth of Australia 2024

Published by the Australian Institute for Disaster Resilience.

ISBN: 978-0-6457560-6-7

## Copyright

The Australian Institute for Disaster Resilience encourages the dissemination and exchange of information provided in this publication.

The Commonwealth of Australia owns the copyright in all material contained in this publication unless otherwise noted.

Where this publication includes material, whose copyright is owned by third parties, the Australian Institute for Disaster Resilience has made all reasonable efforts to:

- clearly label material where the copyright is owned by a third party
- ensure that the copyright owner has consented to this material being presented in this publication.

Wherever a third party holds copyright in material presented in this publication, the copyright remains with that party. Their permission is required to reproduce the material.

All material presented in this publication is provided under a Creative Commons Attribution 4.0 International Public License, with the exception of:

- the Commonwealth Coat of Arms
- registered trademarks, including
  - the Australian Government’s National Emergency Management Agency logo
  - Australian Institute for Disaster Resilience logo
- materials specifically mentioned as not being provided under a Creative Commons Attribution 4.0 International Public Licence
- content supplied by third parties.



Details of the relevant licence conditions are available on the Creative Commons Attribution 4.0 website ([creativecommons.org.au](https://creativecommons.org.au)), as is the full legal code for the CC BY-NC 4.0 license.

## Attribution

Where material from this publication is used for any purpose, it is to be attributed to the developer as follows:

Source: Australian Institute for Disaster Resilience (2024) *Planning for Animals* East Melbourne, Australia.

Front cover images clockwise from top: Karen Roberts, Isabel Cornes, Steve Young, Australian Red Cross.

## Using the Commonwealth Coat of Arms

The terms of use for the Coat of Arms are available at:

[www.pmc.gov.au/honours-and-symbols/commonwealth-coat-arms](http://www.pmc.gov.au/honours-and-symbols/commonwealth-coat-arms)

## Contact

Enquiries regarding the content, licence and any use of this document are welcome at:

The Australian Institute for Disaster Resilience  
Level 1, 340 Albert St, East Melbourne Vic 3002  
[enquiries@aidr.org.au](mailto:enquiries@aidr.org.au)

## Disclaimer

The Australian Government National Emergency Management Agency and the Australian Institute for Disaster Resilience, in consultation with subject matter experts, exercise care in the compilation and drafting of this publication; however, the document and related graphics could include technical inaccuracies or typographical errors and the information may not be appropriate to all situations.

In no event shall the Commonwealth of Australia (acting through the National Emergency Management Agency) or the Australian Institute for Disaster Resilience be liable for any damages whatsoever, whether in an action of contract, negligence, or other tortious action, arising out of or in connection with the use of or reliance on any of the information in this publication.

# Australian Disaster Resilience Handbook Collection

The Australian Disaster Resilience Handbook Collection provides guidance on national principles and practices for disaster resilience.

The Handbook Collection:

- provides an authoritative, trusted and freely available source of knowledge about disaster resilience principles in Australia
- aligns national disaster resilience strategy and policy with practice, by guiding and supporting jurisdictions, agencies and other organisations and individuals in their implementation and adoption
- highlights and promotes the adoption of good practice in building disaster resilience in Australia
- builds interoperability between jurisdictions, agencies, the private sector, local businesses and community groups by promoting use of a common language and coordinated, nationally agreed principles.

The Handbook Collection is developed and reviewed by national consultative committees representing a range of state and territory agencies, governments, organisations and individuals involved in disaster resilience. The collection is sponsored by the Australian Government Department of Home Affairs.

Access to the Handbook Collection and further details are available on the Australian Disaster Resilience Knowledge Hub (the Knowledge Hub): [www.knowledge.aidr.org.au/handbooks](http://www.knowledge.aidr.org.au/handbooks)

---

Australian Emergency Management Arrangements

---

Community Engagement for Disaster Resilience

---

Communities Responding to Disasters: Planning for Spontaneous Volunteers

---

Community Recovery

---

Disaster Resilience Education for Young People

---

Emergency Planning

---

Evacuation Planning

---

Flood Emergency Planning for Disaster Resilience

---

Health and Disaster Management

---

Incident Management

---

Land Use Planning for Disaster Resilient Communities

---

Lessons Management

---

Managing Exercises

---

Managing the Floodplain: A Guide to Best Practice in Flood Risk Management in Australia

---

National Emergency Risk Assessment Guidelines

---

**Planning for Animals**

---

Public Information and Warnings

---

Safe and Healthy Crowded Places

---

Systemic Disaster Risk

---

Tsunami Emergency Planning in Australia

# Acknowledgements

This handbook was prepared by the Australian Institute for Disaster Resilience (AIDR) (Dr Isabel Cornes and John Richardson) with the assistance of Dr Mel Taylor (Honorary Associate Professor, Macquarie University), Peta O'Donohue and Emma Barr, with financial assistance from the Australian Government. Responsibility for the views, information or advice expressed in this handbook does not necessarily reflect the views of the Australian Government. This handbook was made possible through the support of a broad cross-section of the disaster risk reduction, disaster resilience and emergency management sector.

## Working group members

AIDR acknowledges the expert guidance from the Working Group in developing this handbook:

- **Amanda Nardi-Wallace**, MEmergMan, former State Animal Welfare Emergency Coordinator, Western Australia
- Animal Evac New Zealand, **Dr Steve Glassey**, Patron
- Animal Emergency Incident Management Network ANZ, **Julie Fiedler**, Secretary
- Animal Management in Rural and Remote Indigenous Communities (AMRRIC), **Dr Bonny Cumming**, Head of Innovation and Strategy
- BML Veterinary Consulting Ltd and Massey University Joint Centre for Disaster Research, **Dr Hayley Squance**
- Community NRM, **Peta O'Donohue**
- NSW Primary Industries and Regional Development, **Glenda Briggs**, former Regional Director
- Homes NSW, **Bec Southwell**, Senior Regional Disaster Welfare Officer (prior role Blue Mountains City Council)
- Homes NSW, **Samantha Colwell**, Deputy State Welfare Services Functional Area Coordinator
- Erica Honey Consulting, **Erica Honey**, Principal Consultant
- National Emergency Management Agency, **Finn Hicks-Bullock**, Policy Officer Strategic and Resilience Policy
- NSW State Emergency Service and Animal Emergency Incident Management Network ANZ, **David King**, Vice Chair
- NSW Department of Primary Industries and Regional Development, **Leeanne Raines**, Emergency Management Officer

- NSW Department of Primary Industries and Regional Development, **Karen Roberts**, Senior Emergency Management Officer
- Pyrenees Shire Council, **Kathryn Doroshenko-Pempel**, Emergency Management Coordinator
- RSPCA QLD, **Dr Mandy Paterson**, Principal Scientist
- South Australia Police, **Senior Sergeant First Class Dr Russell Dippy**, Emergency Management Coordinator, Emergency and Major Event Section
- Wildlife Health Australia, **Dr Simone Vitali**, Program Manager – Emergencies
- WIRES, **Jennie Murray**, Head of Programs
- Zoos Victoria, **Fiona Ryan**, Senior Manager Wildlife Welfare Programs

Additional guidance was provided by Loriana Bethune (Gender and Disaster Australia), Bhamie Williamson (National Indigenous Disaster Resilience), Dr Marianne Sison, Frances Quan Farrant (People with Disability Australia), Jay Potter (Pets in the Park), Sarah Bloustein and Liz Cotton (Department of Climate Change, Energy, the Environment and Water), Dr Sahra McFetridge (South Australia Department of Education), Dr Stephen Van Mil (Byron Bay Wildlife Hospital), Dr Kylie Hewson and the Department of Agriculture, Fisheries and Forestry.

Dedicated to Archie Richardson, 2008-23. The face of Red Cross' Rediplan and faithful companion.

Sail on, fair hound.

# Contents

<b>Australian Disaster Resilience Handbook Collection .....</b>	<b>iii</b>
<b>Acknowledgements .....</b>	<b>iv</b>
<b>Chapter 1: Introduction .....</b>	<b>1</b>
1.1 Purpose of this handbook.....	3
1.2 Audience.....	3
1.3 Scope.....	3
1.4 Terminology.....	4
<b>Chapter 2: Foundations .....</b>	<b>5</b>
2.1 Hazard risk context.....	6
2.2 Key concepts.....	6
2.3 Categories of animals.....	9
2.4 Roles and responsibilities.....	10
2.5 Legislative, policy and practice context.....	10
<b>Chapter 3: Why do we need to plan for animals? .....</b>	<b>12</b>
3.1 The significance of animals in Australia.....	13
3.2 The human-animal bond.....	13
3.3 The human-animal bond in emergencies.....	14
3.4 Assistance animals.....	14
3.5 Livelihoods.....	15
3.6 Protecting wildlife.....	15
<b>Chapter 4: Principles for planning for animals .....</b>	<b>16</b>
4.1 Context.....	17
4.2 Principles.....	17
<b>Chapter 5: Planning to reduce risk .....</b>	<b>18</b>
5.1 Locating animal facilities on low hazard risk sites.....	19
5.2 Hazard reduction measures.....	19
5.3 Values-based decision making.....	20
5.4 Property management.....	20
5.5 Business practice.....	20
5.6 Health and wellbeing.....	21

<b>Chapter 6: Planning to prepare for effective emergency response</b>	<b>22</b>
6.1 Awareness raising and community messaging	23
6.2 Media, public information and warnings	23
6.3 Early evacuation	24
6.4 Shelter in place for animals	25
6.5 Emergency shelters and animals	25
6.6 Animal emergency shelters, holding areas and safe areas	26
6.7 Informal sheltering locations	26
6.8 Food and water	27
6.9 Biosecurity	27
6.10 Health	27
6.11 Death and disposal	27
6.12 Rescue	27
6.13 Reunification	28
6.14 Protection of habitat	28
6.15 Emergency planning	28
6.16 Capability and capacity building	30
<b>Chapter 7: Planning for recovery</b>	<b>31</b>
7.1 Capacity building	32
7.2 Safety	32
7.3 Impact and needs assessment	32
7.4 Temporary accommodation	33
7.5 Animal health and welfare	33
7.6 Death and disposal	33
7.7 Managing goodwill	34
7.8 Managing livestock	34
7.9 Managing captive wildlife – native and exotic	34
7.10 Managing wildlife	34
7.11 Trauma and stress – human and animal	35
7.12 Longer term planning for recovery	35
<b>Chapter 8: Continuous improvement</b>	<b>36</b>
<b>Appendix 1: Detailed animal categorisation framework</b>	<b>38</b>
<b>Appendix 2: National Planning Principles for Animals in Disasters</b>	<b>43</b>
<b>Glossary</b>	<b>45</b>
<b>References</b>	<b>46</b>





# Chapter 1: Introduction

Animals are important in people's lives and are valued in society in many ways. The relationship between humans, animals and the environment can influence health and wellbeing outcomes for animals and humans. Animals can:

- provide companionship
- contribute to wellbeing
- provide a service or assistance
- be essential for livelihoods
- have cultural and spiritual significance
- be critical to the functioning of ecosystems.

Animals are also sentient and have the right to exist, independent of their value to humans.

A single generic term - custodian - is used throughout this handbook to refer to those responsible for animals in the context of an emergency.

A custodian includes:

- individual owners
- owners of animal facilities or businesses such as farms, trail riding centres, zoos and schools
- organisations that have temporary care of animals in their possession such as kennels, catteries, agistments, animal transporters, veterinary facilities and wildlife rehabilitators
- people and organisations responsible for land management and custodianship of free ranging wildlife.

Custodians have a duty of care for animals in their care and control, including during emergencies. Duty of care includes understanding, supporting, promoting and applying animal welfare best practice contained in legislation, codes of practice, guidelines and quality assurance programs. It also means ensuring that animals do not impact adversely on other animals.<sup>1</sup>

All people who have animals in their care have a responsibility to ensure that they have adequate knowledge, training and skills to apply in the protection of the welfare of animals. These people have an enduring obligation to seek expert assistance where necessary to ensure the welfare of animals.

**(Department of Agriculture, Fisheries and Forestry (2024) *Animal welfare in Australia: Animal welfare roles and responsibilities*. [www.agriculture.gov.au](http://www.agriculture.gov.au))**

People will often put their own lives at risk to protect or save animals during an emergency, including ignoring warnings<sup>2</sup> or refusing to evacuate. The traumatic loss of animals can significantly impact human recovery following an emergency, in addition to the economic and environmental impacts. It is therefore important for those in planning roles to understand:

- the differences in perspectives, motivations and limitations of those with a responsibility for animals
- the consequences for both people and animals in emergencies.

Understanding the conditions experienced by animals is also important for those involved in planning for animals in emergencies. For example, animals may experience significant stress during an evacuation due to being away from familiar environments and routines, as well as being exposed to a range of unfamiliar experiences.

Managing animals during and after emergencies can be challenging. The outcomes can be stressful and traumatic for custodians, responders and the public due to competing values and priorities.

Examples of competing values and priorities include the:

- primacy of human life
- sentience and inherent value of the lives of animals
- status of animals as property
- role of animals having emotional, spiritual or cultural value
- status of animals as income or having monetary value
- importance of and legal obligations towards, animal welfare.

Developing and implementing a consistent and integrated approach to managing animals before during and after emergencies is challenging. There are many types of animals and diverse stakeholders.

There are complicated disaster risk reduction, emergency management, animal protection and welfare, biosecurity and biodiversity legislation and arrangements across Australian states and territories. Roles and responsibilities are not always clear and there are differences in terminology and approaches across borders.

This handbook is guided by research evidence<sup>3</sup> that shows that the integration of animals into emergency management planning and arrangements is critical to human health and safety, as well as the economy, biodiversity and ecosystem health. The principles and practices outlined in this handbook are informed by Australian and international guidance and supported by evidence-informed research.

'This isn't about the pets, it's about the people, because people will not leave their pets behind, they will not evacuate, they will go in harm's way and increasingly we are judged by how we care for our companion animals, our members of the family, as we are for the people. So, to me it's binary. You either plan for it ahead of time or you're forced to deal with it in a crisis when you have fewer options.'

**Craig Fugate, Former Director Federal Emergency Management Agency (FEMA), USA, (23 January 2019).**

# 1.1 Purpose of this handbook

**This handbook has been developed to aid policy making, planning and decision making. It is not intended to be prescriptive or operational in nature.**

This handbook presents strategic guidance on planning for animals using a principles-based approach. It outlines recommended minimum practice for the inclusion and integration of animals at all stages of the emergency management cycle (prevention, preparedness, response and recovery). It is recognised that there will be context specific considerations and actions required for individual species of animal, organisations and jurisdictions.

Animal welfare and property rights may conflict with the principle of primacy of human life in emergency management. The focus of this handbook is planning for animals in emergencies and this handbook highlights why consideration of animals should be integrated into policy development, planning and decision making. However, the duty of care to ensure human safety, of both responders and the public is recognised.

## 1.2 Audience

This handbook is for individuals and organisations with a responsibility for developing plans, policies, strategies, capabilities and guidance relating to emergency management and animals in emergencies. This includes the Australian Government, state, territory and local governments, emergency management organisations, native title representative bodies, Aboriginal community controlled health organisations, non-government organisations and businesses.

The information in this handbook is intended for people working in:

- emergency management organisations
- planning, governance and decision making in natural hazard risk areas
- community based risk reduction and resilience building activities
- agriculture, fisheries and parks planning, management and regulation
- wildlife, biodiversity, land and ecosystem management
- zoos, wildlife sanctuaries and other captive wildlife institutions
- companion animal (domestic pets) and other animal-related organisations or activities such as kennels and livestock transportation
- schools
- veterinary and animal welfare services
- training and care of assistance animals
- animal rescue, care and rehabilitation

- animal sports, recreation, tourism, agricultural shows and entertainment sectors
- animal-related education and research.

Community groups, educators, researchers, planners, businesses and the private sector may also find this handbook useful.

## 1.3 Scope

### Hazards

This handbook adopts an all-hazard disaster risk reduction approach, emphasising prevention, preparedness, response and recovery. It promotes a flexible approach to planning, to manage a wide range of emergency and disaster scenarios. The examples provided in this handbook focus primarily on hazard events typically planned for through jurisdictional emergency management arrangements such as bushfire, flood, cyclone, extreme weather, tsunami or earthquake.

National biosecurity guidance is frequently applied in the context of emergency animal diseases.<sup>4</sup> Biosecurity guidance is also an important consideration for animal health and welfare, human health during and post disasters and in the transportation of fodder. This is addressed within Chapter 2 of this handbook.

Arrangements for drought, emergency animal disease, marine or waterway pollution, or biosecurity concerns such as pest species or plagues are not covered. It is noted, however, that these all have significant community and economic impacts. Existing manuals, plans and arrangements provide guidance and support for managing drought,<sup>5,6</sup> marine and waterway pollution, emergency animal diseases and other biosecurity emergencies affecting animals and their environment or habitat.<sup>7</sup>

Large animal rescue, marine strandings or fish kill events are also not covered. These events have sets of guidance available through the relevant lead organisation. Lead organisations may be emergency management organisations or primary industries departments.

### Types of animals

This handbook includes domesticated, commercial and agricultural animals that are typically 'owned' or 'managed' by a custodian who is responsible for them and their welfare. It also includes native and feral wildlife although these are largely managed or protected through land and biodiversity management arrangements. This handbook does not explicitly consider invertebrate or marine species.

Aboriginal and Torres Strait Islander communities have strong connections to native wildlife, as some form Nation, clan, family and personal totems.<sup>8</sup> Additionally, companion animals in rural and remote Aboriginal and Torres Strait Islander communities that may have individual or collective ownership, are considered.

'Owned' animals may include:

- domestic pets (referred to as 'companion animals')
- assistance, support and working animals
- large and small outdoor animals, such as horses, goats and chickens.



#### **Working horses.**

Image: Karen Roberts

'Managed' animals may include those in:

- agricultural settings on farms or in aquaculture
- tourism-related businesses
- kennels and catteries
- veterinary practices
- schools
- research facilities
- zoos (for example captive exotic wildlife)
- captive native wildlife in sanctuaries or in rehabilitation
- free-ranging environments on land or in rivers.



#### **Flock of sheep with burnt paddock in the background.**

Image: NSWDPIRD

## **1.4 Terminology**

This handbook establishes a common language for Animal Emergency Management (AEM).

The terms used in this handbook are explained in the glossary. These terms and abbreviations have been adopted throughout while recognising and respecting there are nuances or alternatives in terminology. Alternative terminology may be preferred in different disciplines, contexts and jurisdictions.

The Australian Disaster Resilience Glossary on the AIDR Knowledge Hub provides further detail on terms and definitions used in emergency and disaster management.<sup>9</sup>



# Chapter 2: Foundations

This chapter outlines foundational concepts that underpin why it is important to plan for animals. This chapter will support readers to:

- develop an understanding of the hazard risk and animal emergency management contexts
- advocate for the involvement of animal custodians in emergency planning and decision-making processes
- prompt their own planning for any animals in their care.

## 2.1 Hazard risk context

In Australia, people have been caring for Country and living with natural hazards for at least 65,000 years. Individual and societal wellbeing, functioning, prosperity and resilience rely on interconnected systems to deliver essential services.<sup>10</sup> These systems can be disrupted by natural or human-made hazards. Severe hazards can cause systems to fail and can overwhelm individual and community capacity. When this happens, hazards turn into disasters.

Disaster risks are systemic. Risks must be understood in the context of broader societal processes. These processes include:

- economic conditions
- supply chain disruptions
- health and wellbeing challenges
- experience with natural hazards
- levels of social cohesion
- political instability
- technological shifts
- the state of the environment, including climate change.

These processes can influence an individual's, organisation's or community's ability to prevent, prepare for, respond to and recover from hazard events. Systems, hazards and where people live are all decisions that people, whether individuals, organisations or governments, have made. This is why disasters should not be referred to as 'natural' disasters.<sup>11</sup>

Disasters can affect people's:

- health and wellbeing
- livelihoods
- educational outcomes
- relationships and sense of safety
- spiritual and cultural connections and practices
- connections to community
- levels of trust and social cohesion.

Disasters can also disproportionately affect some communities and members of society.<sup>12</sup> People living with disability, women, children, people who identify as LGBTQIA+, people from culturally and linguistically diverse (CALD) backgrounds, those experiencing homelessness, mental illness, or poverty often experience disasters differently.

Disasters can also impact on the future liveability and economic viability of communities, industries and environmental values.<sup>13</sup> Disasters are becoming more costly due to increases in the number and value of assets at risk and the costs of reconstruction, as well as the increasing severity and frequency of many natural hazards due to climate change. There is a greater recognition that these costs include the long term and intangible costs of disaster.<sup>14</sup> Recovery from disasters is complex and can take years to decades.<sup>15</sup>

Recently, there have been several examples of concurrent, cascading and compounding disasters. An example of this is the drought in the lead up to the 2019-20 bushfires, COVID-19, followed by the 2020-22 floods.<sup>16</sup> These hazard events happened close together (consecutive) or at the same time (concurrent). This can test the capacity of governments and organisations to support individuals and communities and to consider the wellbeing of animals and the environment. It is also possible that an animal disease outbreak happens during or following a hazard event.

While the focus is often on the negative outcomes of a hazard, there can also be positive outcomes. For example, some natural hazards are beneficial for the environment, wildlife and agriculture. Flooding events can provide favourable conditions for a rapid increase in the number of some species and improve soil moisture and conditions for rangelands, pastures and cropping. Floods can also recharge groundwater and other water supplies.<sup>17</sup> Fire can encourage new growth that provides food for animals and creates hollows in trees and logs that can be used by animals for nesting and shelter.<sup>18</sup>

Understanding that hazard risks are systemic is important because this is the context in which animals need to be considered in planning before, during and after a disaster.

## 2.2 Key concepts

This section presents the concepts and models used in this handbook to guide the principles and practices of planning for animals.

### Primacy of human life

The key principle of emergency management is the primacy of human life.<sup>19</sup> Protecting humans is the primary priority for those with responsibilities under jurisdictional emergency management arrangements: 'the protection and preservation of human life (including both communities and emergency service personnel) and relief of suffering will be paramount over all other objectives and considerations (AIDR 2023).<sup>20</sup> This principle guides the prioritisation of potentially limited resources available to emergency managers.

However, the inherent value of the lives of animals, their sentience, our emotional connection with them and the legal status of animals as property is also recognised. The need to navigate conflicting priorities and values underpins

the complexities and tensions of managing animals in emergencies. There are implications for emergency management personnel, custodians and organisations and the actions that can be taken. Ethical challenges are at the forefront in some situations.

## Animal emergency management

Animal emergency management (AEM) is an emerging area of research and practice that provides a framework for organisations to use to prepare for, respond to and recover from hazard events. The term AEM is used in this handbook to encompass all activities related to prevention, preparedness, response and recovery involving animals and the people who have responsibility for them.

This handbook recognises that the goal of AEM is to protect animals, the environments in which they live and to support and protect the people who are responsible for animals and the people who are responding to emergencies.

## Interrelations and interdependencies

First Nations people have long recognised the important relationship between humans, animals and the environment.<sup>21</sup> While diverse, these understandings broadly emphasise the interrelatedness of systems, the need to mitigate the impacts of natural hazards and to protect and maintain balance across the human-animal-environment system.

The physical and mental health of animals and how they contribute to human health and wellbeing (and vice versa) and environmental sustainability is a key concept that underpins this handbook. These interdependencies are now broadly accepted in research and practice and are varyingly referred to as 'One Health', 'Planetary Health' and 'One Welfare'.

For this handbook, 'One Welfare' (see glossary) has been adopted. This is to distinguish it from threats to 'health' as the driver of action, which is the case in most emergency animal disease contexts. In addition, academic literature on AEM, especially in the Australasian region, uses 'One Welfare' as a preferred term.

By integrating 'One Welfare' principles into disaster risk reduction and emergency management, animal-related disaster risks can be reduced in a systemic way, leading to improved outcomes for animals, humans and the environment. Failing to consider human-animal-environment interdependencies puts human lives at risk and threatens community health and wellbeing, animal welfare, food security and biosecurity.

There are increasing calls to embrace a 'One Welfare' approach in emergency management.<sup>22</sup>

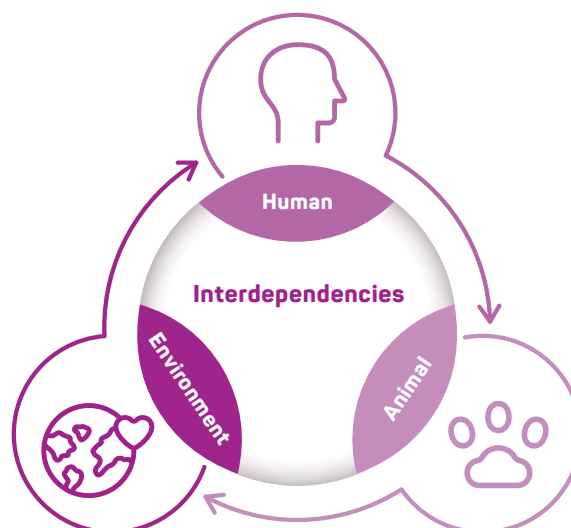


Figure 1: Human-animal-environment interdependencies.

'In emergency management, a holistic approach is needed which recognises the important interrelationships between animal welfare, human wellbeing and the physical and social environment. It is also vital to break down barriers to collaboration between individuals, organisations and the community. One Welfare, a concept with human-animal-environment interdependencies at its core, provides a framework to achieve this. Successful implementation of a transformative change will require positive strategies to deal with challenges and to ensure that animals are truly integrated into emergency management, not just included as an aside.'

**Squance, H. et al. (2021)**

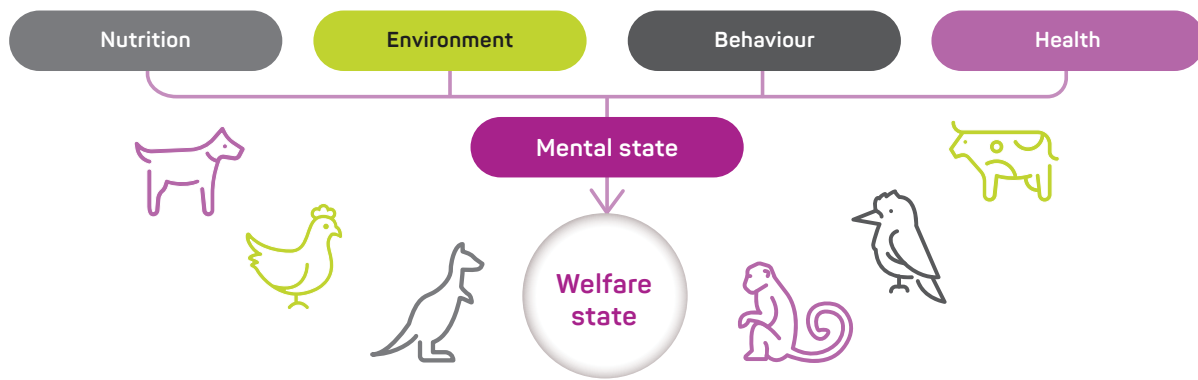
## The 'Five Domains Model' of animal welfare

The Five Domains Model is introduced in this handbook to help readers understand the approach to animal welfare that is accepted by experts and widely employed in animal welfare practice.

The Five Domains Model<sup>23</sup> highlights what is needed for positive animal welfare.<sup>a</sup> The Five Domains represented in the model are: nutrition, physical environment, health, behavioural interactions and mental state. This approach considers welfare from the perspective of the animal and addresses the physical and emotional needs of animals.

It recognises that an animal's experiences across the four physical domains (nutrition, environment, health and behaviour) range from positive to negative and contribute to positive and negative experiences in the fifth domain (mental state). The model emphasises a positive mental state as being critical to welfare, rather than purely an absence of negative experiences.

a Note: The Five Domains Model is not the same as the older Five Freedoms model (1965) which focuses only on an absence of negative states.



**Figure 2:** Five Domains Model of animal welfare.

The model also aligns with other contemporary approaches in veterinary practice, such as the ‘Fear Free’ approach, which is widely adopted by veterinarian practices to alleviate fear, anxiety and stress in animals and leads to a safer environment for people who are handling them or are in close contact with them.<sup>24</sup>

This model is actively used by professionals in veterinary medicine and wildlife care to guide action when assessing welfare and gauging distress in animals. It is used to inform the approach to large animal rescue,<sup>25</sup> and may be used to assess injured animals in triage and develop treatment strategies.

## Biosecurity

Biosecurity<sup>26</sup> is a fundamental consideration in animal health and an important consideration in AEM planning and response. Incorporating biosecurity measures into AEM planning means infectious disease threats to animals and people that may emerge through a disaster are anticipated and prevented where possible, rapidly detected when they arise and are managed effectively once detected.

## Inclusive engagement

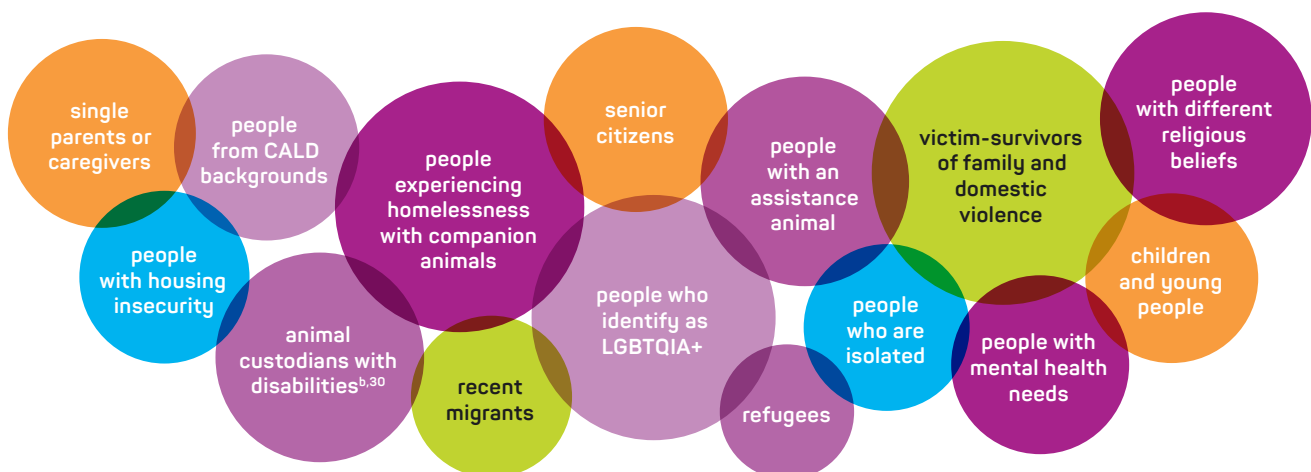
Inclusive community engagement is a key part of the AEM planning process. In AEM, animal custodians are the primary

focus for communications and they are the conduits for action. Understanding differences in language, perspectives, motivations, limitations and the consequences for custodians in emergency and disaster situations is important.

An effective community engagement process is responsive, flexible and recognises the community as central to planning, implementing and measuring success in any engagement process. Inclusive, respectful and ethical relationships between engagement partners and the community must guide every stage of the engagement process.<sup>27</sup> National guidance exists to aid handbook users in inclusive community engagement.<sup>28,29</sup>

Planning to reduce risk, building capacity to respond and recovering from disasters is more effective when communities are engaged in the planning process. In AEM, it is important to have a range of custodians engaged in the planning process. Community and custodians are not a homogenous group and people may identify with or belong to multiple groups. It should be recognised that members of a community will have different relationships with animals. People will also have varying capacities and levels of access to resources and support.

First Nations peoples are also rights holders, through traditional custodianship of lands, rivers, sea and air and will bring those perspectives to planning. Other people within communities that need to be considered include:



**Figure 3:** Custodians are diverse and will have different relationships with animals that should be considered.

<sup>b</sup> Disability Inclusive Disaster Risk Reduction (DIDRR) is a contemporary approach being used to enable the voices of people with disability to be included in emergency management and disaster planning.











## 2.3 Categories of animals

People who are planning for animals need to consider the environment or context where the animals are likely to be found.

The framework summarised in Table 1 below (further detailed in Appendix 1), considers mixes of animal types (species), numbers of animals, the environments in which they are

typically found and the custodians responsible for them. These categories are not mutually exclusive and may overlap at times, however they may help readers plan for different types of situations involving animals before, during and after a disaster.

**Table 1:** Animal categorisation framework.

ANIMAL CATEGORY NAME	ANIMALS INCLUDED (EXAMPLES)	CUSTODIANS (TYPICAL)	CONTEXT / ENVIRONMENT (EXAMPLES)	
Household animals – companion, assistance and support.		'Pets' e.g. dogs, cats, birds, pocket pets, fish, reptiles, exotics. Also, assistance, service, support, small working animals.	Individual owners and households.	Homes, workplaces, schools, holiday locations – usually with owner.
Household animals – outdoor.		'Pet' livestock, small numbers of horses, pigs, chicken, goats. Small breeders e.g. dogs.	Households, small landholders, hobby farmers, small business owners.	Private property, sometimes taken to shows or events.
Agricultural and commercial animals.		Commercial livestock, horses, cattle, sheep, pigs, chickens, ducks, fish/aquatic.	Farmers, livestock producers, medium/large business owners, event organisers.	Farms, commercial enterprises, schools, tourism, petting zoos, trail riding, racing stables.
Animals in veterinary and holding facilities.		Mostly cats and dogs but other animals too.	Under temporary care of small/medium business owners, veterinarians.	Kennels, catteries, agistments, pounds, veterinary practices, hospitals, research laboratories, livestock transport.
Captive wildlife – native and exotic.		Zoo animals e.g. zebra, elephant, birds, monkey, captive native wildlife in care.	Business (zoo) owners, individual rehabilitators and carers.	Sanctuaries, zoos, wildlife hospitals and smaller-scale rehabilitation.
Free ranging wildlife – native.		E.g. kangaroos, bats, wombats, koalas, possums, birds, freshwater fish, lizards, platypus, crocodiles.	Aboriginal and Torres Strait Islander peoples, government agencies, public and others invested.	Uncontained, localised, free ranging.
Animals in rural and remote Indigenous communities.		Dogs, cats and others.	Individual and collective/ community ownership.	In homes and free ranging locally.
Feral animals.		Feral species e.g. pigs, deer, goats, camels, horses, cats, foxes.	Landowners/managers.	Uncontained, localised, free ranging.

## 2.4 Roles and responsibilities

Limited or poor understanding of established or accepted emergency management protocols can result in challenges during emergencies. It is important for people working within the emergency management sector to engage with a diverse range of stakeholders to bridge knowledge gaps and assist with:

- interoperability
- optimisation of skills and resources
- harnessing the capacity of non-traditional responders
- management of spontaneous groups and volunteers
- integration of AEM.

In Australia, the custodian is responsible for all animals in their care and control and remains responsible in an emergency or disaster. The custodian is usually an owner, but this can change. For example, if the animal is under the care of a third party such as a veterinarian. In this handbook 'custodian' also includes any person or organisation responsible for land management and duty of care for free ranging wildlife.

### Complex responsibilities in AEM: an example

The context for free-ranging wildlife management in emergencies for is complex. Generally, native and introduced species are considered the property of the government. Government regulations may directly govern the welfare of wildlife through their status as property or under biodiversity legislation. Impacts (direct or indirect) on wildlife may also occur through jurisdictional regulation of land management practices, such as reducing hazards to humans by requiring firebreaks.

The rehabilitation of sick and injured wildlife is undertaken by professional veterinarians or volunteer rehabilitators who are licenced to operate within a jurisdiction. These individuals are then responsible for the welfare of any wildlife in their care pending release back to the wild.

## 2.5 Legislative, policy and practice context

There is a range of legislative arrangements that inform policy and practice for AEM in both emergency management and animal welfare.

**Due to significant differences in legislation, policy, roles and responsibilities for AEM across jurisdictions, readers must refer to animal emergency plans in their state, territory and local government area. Animal welfare, emergency management, biosecurity and biodiversity agencies in each jurisdiction can provide information and guidance about local roles and responsibilities.**

## Legislative context

In Australia, legislative responsibility for animal welfare is held by state and territory governments and the Australian Government. States and territories have primary responsibility for animal welfare. Each state and territory has legislation referring to emergency management, animal welfare, biodiversity, biosecurity and land use. The national arrangements for emergency management in Australia are detailed in *Australian Emergency Management Arrangements* (AIDR 2023).<sup>31</sup>

Nationally, the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) is also important as it covers threatened species in Australia.<sup>32</sup> Biodiversity legislation protects endangered species, regulates the control of feral animals, outlines how threats are to be managed and the powers for enforcement.<sup>33</sup>

The Australian Government also regulates livestock exports, including animal welfare at registered abattoirs. The Australian Government has committed to renewing an 'Australian Animal Welfare Strategy' that will provide a framework for a national approach to animal welfare in Australia. The previous Australian Animal Welfare Strategy lapsed in 2014.

Local governments have a role through bylaws relating to animals and their management. These often vary between local governments. Local government land use planning laws may also be relevant in the context of reducing risk and considering hazards when deciding on appropriate land use.

### Legislative and regulatory complexities: Byron Bay Wildlife Hospital case study

Byron Bay Wildlife Hospital (BBWH) was established in November 2020 and provides free treatment for native wildlife 7 days a week. BBWH is Australia's only mobile wildlife hospital and it is one of only 2 wildlife hospitals in NSW that treat all wildlife species. BBWH is a custom-built semi-trailer that can be deployed to respond to wildlife research field trips, conservation education events, and in emergencies. This includes bushfires, disease outbreaks and flooding events that impact wildlife.

As BBWH needed to have the capability to perform major surgery (requiring the use of general anaesthetic), there were several regulatory and legislative hurdles that needed to be navigated. The mobile facility needed to apply to be licenced as a wildlife hospital by the Veterinary Practitioners Board of NSW. This application was initially rejected as there was no provision in NSW legislation to allow for a wildlife hospital on wheels. Licensing also required the addition of a new veterinary hospital licence category for a wildlife animal hospital. The successful case to license BBWH means there is now a precedent for other states and territories to establish and licence mobile wildlife hospitals.

**Source: Byron Bay Wildlife Hospital, Dr Stephen Van Mil, Founder and CEO**

**Where animals, their environments or animal services are governed by other laws, the reader must consult the relevant jurisdiction.**

## Disaster policy context

International efforts to reduce disaster risk are governed by the United Nations Sendai Framework for Disaster Risk Reduction (Sendai Framework). Australia is a signatory to this Framework.

Australia has several national disaster policy arrangements that outline how we build resilience, reduce risk, prepare for effective response and recover from disasters. These are the:

- National Strategy for Disaster Resilience
- National Disaster Risk Reduction Framework
- Australian Disaster Preparedness Framework
- Australian Disaster Recovery Framework
- Australian Government Crisis Management Framework.

This handbook aligns with Priority 1 of the National Disaster Risk Reduction Framework 'Understanding Risk'. It also aligns with 'Planning' and 'Community Planning, Capacity and Resilience Building' national capability requirements identified in the Australian Disaster Preparedness Framework.


**In Australia, there is no overarching national legal or policy arrangement for animals in emergencies. The states and territories have their own emergency management policies and arrangements. Some of these include AEM.**

## Further reading

*Planning for Animals* is part of the Australian Disaster Resilience Handbook Collection. It should be read in conjunction with the following handbooks:

- *Community Engagement for Disaster Resilience*
- *Community Recovery*
- *Communities Responding to Disasters: Planning for Spontaneous Volunteers*
- *Emergency Planning*
- *Evacuation Planning*
- *Incident Management*
- *Land Use Planning for Disaster Resilient Communities*
- *Systemic Disaster Risk*.

A range of other practice guidance has been developed by states and territories, non-government agencies, peak national bodies and the private sector to inform good practice. The Australian Disaster Resilience Knowledge Hub has details of these resources.



# Chapter 3: Why do we need to plan for animals?

This chapter outlines why it is important to plan for animals by describing the bonds between humans and animals. During an emergency or disaster, humans and animals are impacted in various ways. When humans and animals interact during these events, there can be additional complexities and risks. The risks to people and animals will vary depending on the type of disaster, the animals involved and the actions, skills and resources of the human interacting with the animal.

## 3.1 The significance of animals in Australia

Animals play an important role in the lives of many Australians. Humans have varying attachments to and dependencies on, animals. Australian household companion animal (pet) ownership in 2022 was estimated at 69 percent.<sup>34</sup> This is an increase from estimated ownership levels of 63 percent in previous years. These numbers indicate:

- Australia has a high level of household companion animal ownership
- any given household is more likely to have animals, than not
- many new households have taken on animals in recent years.

In the agricultural sector animals are also a major contributor to the economy and to prosperity. In 2021 there were 24.4 million cattle and 68 million sheep and estimates suggest over 1 million horses. The National Farmers Federation estimates that 2.5 percent of the national workforce is employed in agriculture, forestry and fisheries.<sup>35</sup> The protection of animals and animal-related industries from an economic perspective should be considered in AEM, along with animal sentience and emotional values.

Australia's native wildlife species are iconic, often unique to the continent and of cultural significance to many people. The 2019-20 bushfires resulted in the loss or displacement of nearly 3 billion native animals. This prompted global media coverage and national and international outpouring of grief.<sup>36</sup> In addition to their cultural and intrinsic value, native wildlife is intricately linked to the health and continuity of ecosystems and to the economy through tourism and the flow-on effects to agriculture and trade.

Totem animals hold profound significance to Aboriginal and Torres Strait Islander peoples, serving as symbolic connections to the spirit and natural world and embodying ancestral wisdom.<sup>37</sup> The assignment of totem animals is a deeply rooted tradition passed down through generations. The beliefs surrounding totem animals can vary based on the clan or tribe an individual belongs to.<sup>38</sup> Responsibilities to care for, not harm and treat these animals with respect, also vary between and within Aboriginal and Torres Strait Islander communities. Nevertheless, the connection between humans and animals is of profound significance to many Aboriginal and Torres Strait Islander people and continues to form a central pillar or identity and responsibility in many people's lives.

## 3.2 The human-animal bond

The human-animal bond is reflected in a variety of circumstances. There are also dependencies to be considered. Domesticated, captive and farmed animals depend on humans for food, water, shelter and protection. These are fundamental requirements for any animal, including during an emergency.

Some of the highly varied relationships (or bonds) humans may have with animals include:

- A child with a pet snake or lizard.
- An elite equestrian in a sporting partnership with their horse.
- A person experiencing homelessness and their dog.
- An intergenerational farmer with their breeding livestock.
- Individuals who may not have children but have 'fur babies.'
- A wildlife rehabilitator with an orphaned wombat.
- A senior citizen who lives alone with their talking parrot.
- A family with their 10-year-old cat.
- A school class and their pet goldfish.
- An alpaca breeder with their prize-winning show alpaca.
- A widow caring for their deceased loved one's dog.
- A person with hearing loss and their assistance 'hearing' dog.
- The cultural significance of dogs to Dog Dreaming for a First Nations person.
- The owner of a crocodile farm.
- An equine veterinarian caring for a client's thoroughbred mare.
- A farmer with an experienced working dog.
- A zoo employee working on an international conservation project with endangered rhinos.

Humans may gain companionship, emotional support, identity, physical independence and a sense of purpose from their relationships with animals. This bond has been shown to have positive effects on physical and mental health by reducing stress, improving mood and increasing social connectedness.<sup>39</sup>

Children often turn to their companion animals for comfort, reassurance and emotional support when feeling anger, sadness or happiness.<sup>40</sup> Animals may form a significant part of children's lives at home, through recreation and in school. The bond is important for children and young people's development.

Women are often the primary custodians of animals. The human-animal bond can also be used negatively, to perpetrate intimate partner violence, through threats

to the animal.<sup>41</sup> Legislation, such as the *Family Violence Protection Act 2008* in Victoria, recognises the strategic use of companion animals as tools for manipulation and control within abusive relationships. Disasters can exacerbate these vulnerabilities, allowing perpetrators to further exploit and harm their victims.

For people experiencing homelessness being the custodian of a companion animal provides companionship, a sense of responsibility and a sense of purpose.<sup>42</sup> For people who live with disability, animals may provide a vital medical service, allow for independence and provide companionship.

While there is limited research on LGBTIQ+ people in disasters with animals, it is well established that disasters amplify existing inequalities in communities - particularly for LGBTIQ+ people - and this can include when animals are involved.<sup>43</sup> There is also limited research for non-binary people and companion animals and adversity, although one study recognises the protective factors of companion animals in the context of family violence and other adversity.<sup>44</sup>

For people from a multicultural background, animals may have a variety of meanings. While there may be some 'general' beliefs<sup>45</sup> around human-animal relationships within different cultural groups, it is important not to assume the same beliefs and practices apply to all nationalities, ethnicities or cultural groups. Religious traditions can influence beliefs (about animals) around reincarnation, sentience, value, caste, their sacred role, being a status symbol in society and euthanasia.<sup>46</sup> For refugees and asylum seekers, separation from their animals may bring back previous traumas of separation from companion animals in their home countries.

The inset box on page 13 contains examples of human-animal bonds. Reviewing these scenarios may help emergency planners reflect on any preconceptions they may have about the relative worth of a particular animal species, or the relationships they expect people to have with animals. Many of the bonds are not visible and would not be apparent to an outsider having a discussion with 'a person' about 'an animal', when separated from the context.

### 3.3 The human-animal bond in emergencies

The human-animal bond can affect the way people behave in emergencies and disasters. This can have subsequent impacts on the safety of both humans and animals. Custodians may be unwilling to evacuate if they cannot take their animals, or people may re-enter unsafe areas, resulting in situations where people risk their lives to protect and care for their animals. People may also avoid going to safer places if there is the possibility that they will be separated from their animals. This is particularly apparent for people experiencing homelessness.<sup>47</sup>

Supporting human-animal bonds during emergencies or disasters can help alleviate the emotional distress and anxiety that both animals and their custodians may experience, leading to better animal welfare in natural hazard events.

The risk of injury or death to humans and animals is significantly increased by people attempting to rescue companion animals, livestock or wildlife without sufficient planning, training or equipment. Animals can become increasingly distressed and difficult to manage when separated from their custodians or when left in unfamiliar environments.

Separation, the loss of animals, or seeing animals in distress can have a significant psychological impact on people. Custodians, responders, bystanders and the broader community can be distressed by experiencing these events or observing them through media channels. It is often traumatic and emotional.<sup>48</sup> Feelings of guilt, anger and intense sadness are common. Although the focus is primarily on custodians of animals, it is important to note that other people, whether as bystanders, responders, or observers seeing a situation unfolding on social media may also act when they see an animal in danger.

During emergencies, gender-based behaviours emerge as individuals prioritise the safety of their animals. Women are more likely to face the difficult decision of remaining in hazardous situations to protect companion animals and increasingly, livestock, while men are more likely to risk their lives safeguarding livestock both before and in the days following the emergency, sometimes with tragic consequences.<sup>49</sup> Post disaster, the burden of caregiving, including the needs of animals, falls disproportionately on women and often teenage children.<sup>50</sup>

A lack of recognition of animal loss, often suppressed by the individual in disaster situations when others are seen to have 'lost more', can lead to disenfranchised grief and complications for recovery and future resilience.<sup>51</sup> Research has found that the loss of a companion animal may have similar emotional impacts to the loss of a sibling.<sup>52</sup> Children and young people acutely feel the loss of companion animals. They also feel the loss of livestock animals and wildlife. In agricultural contexts, the loss of livestock and managing the euthanasia and disposal of animals can be devastating.<sup>53</sup>

### 3.4 Assistance animals

The bond with animals can also impact people's capacity to recover from emergency events. The loss of an assistance animal for people living with a disability means the loss of vital services and support. Assistance animals are recognised in the *Commonwealth Disability Discrimination Act 1992*. This Act requires assistance animals be planned for and

accommodated for to remain with their human. People with assistance animals rely on their animal to perform certain roles. It is important to be aware that this human-animal combination is a 'unit'. The person with the assistance animal will see the animal as an extension of themselves and the ways in which the animal is treated will be felt as treatment extended directly to them.

### Assistance animals

**Definition:** Assistance animals are specifically trained to perform functions necessary for the daily or medical needs of a person with a disability.

**Examples:** Guide dogs for the visually impaired, medical alert animals, hearing assistance animals, mobility assistance animals, psychiatric assistance animals and those aiding individuals with developmental disorders.

**Legal recognition:** Australian law, through the *Disability Discrimination Act 1992* (Cth), formally recognises assistance animals. By law, an assistance animal can be a dog or another animal that meets specific criteria, including accreditation or training standard.

In addition to assistance animals, there are 'emotional support' or 'therapy' animals. Although there are differences between 'support' and 'assistance' animals in terms of their training and legal status, their owners may rely on them for emotional support and to assist with alleviating the symptoms of mental health conditions. Understanding this relationship and accounting for it in emergency planning is also important.

## 3.5 Livelihoods

People working with agricultural and commercial animals, animals in veterinary and holding facilities and captive wildlife – native and exotic – depend on animals for their livelihoods. This financial dependency may affect the way they view and want to protect animals. It is important to note that financial dependency on an animal does not preclude the existence of a strong emotional bond.


## 3.6 Protecting wildlife

Wildlife is a core component of healthy ecosystems and biodiversity. These animals have an intrinsic value at an individual and species level.<sup>54</sup> Wildlife assists with soil formation, decomposition, water filtration and flow, pollination, seed dispersal, pest control and climate regulation. Wildlife also provides food, medicine, recreation, income and economic development. Wildlife is an essential part of the history, culture, tradition and folklore of every culture on Earth and their aesthetic values and spiritual roles provide comfort and inspiration.<sup>55</sup> It is therefore important to include wildlife in AEM planning and policy.



Wildlife rehabilitation - Tili the wombat

Image: Simone Vitali



# Chapter 4: Principles for planning for animals



This section of the handbook outlines principles that have been developed to assist with planning for animals in emergencies. As managing emergencies and animals are complex, a principles approach supports people and organisations to make policies, decisions, or navigate situations that arise without being directive. These are high level principles and not standards. The following principles are intended to be relevant to all the animal categories identified in Chapter 2.

## 4.1 Context

In 2014, the National Advisory Committee for Animals in Emergencies developed and released the first nationally agreed National Planning Principles for Animals in Disasters (NPPAD).<sup>56</sup> The NPPAD was developed for AEM planning with custodians who can be identified as responsible for their animal's welfare. This focus excludes wildlife unless under the care of a licensed wildlife rehabilitator. Currently, there is no equivalent to the NPPAD for wildlife. The NPPAD has now lapsed, however they are included for readers reference in Appendix 2.

**Table 2:** Principles guiding planning for animals in emergencies.

PRINCIPLE	DESCRIPTION
<b>Responsibility of custodians</b>	Custodians have ultimate responsibility for the welfare of animals in their care or control. Individuals, businesses and organisations need to understand their responsibilities and include their animals in planning for hazards.
<b>Recognise diverse values</b>	While human life takes priority in emergency management arrangements, recognise that animals are valued differently by different people and groups in a community. Values include cultural, emotional and financial. The human-animal bond means that people may put themselves at risk to protect animals. Recognise that animals also have needs and values in their own right.
<b>Build capacity</b>	Support and build the capacity of custodians and emergency management personnel to integrate animals into policies, planning, response and recovery. Some custodians will need more support than others to include animals in planning.  Build partnerships between custodians, emergency management personnel and animal experts and provide education and resourcing opportunities in key aspects of animal management.
<b>Integration and inclusion</b>	Integrate animals and animal expertise in prevention, preparedness, response and recovery policies, planning, processes and communications. Recognise that integration improves animal welfare and human welfare and safety outcomes. Integrating animals increases understanding of risks and reduces vulnerabilities for humans and animals.
<b>Focus on reducing current and future risks</b>	Focus efforts, actions, legislation and investment on reducing risks to humans and animals. Increase human and animal capacities and resilience to hazards. Consider long-term scenarios to avoid creating new future risks. Involve the custodians, community and other stakeholders with specific expertise in animal management and emergency response in scenario development.
<b>Place the community at the centre</b>	Planning involves those who are responsible for animal welfare, as well as the management of animals within the community and recognises the unique needs relating to animals of diverse members of the community.  Animal welfare and those that are custodians of animals are central to emergency planning efforts and must be appropriately consulted and engaged in the processes.  Inclusive, respectful and ethical relationships between engagement partners, community and custodians must guide every stage of the engagement process for emergency planning.
<b>Recognise complexity and the systemic nature of disaster risk</b>	Recognise the systemic, complex and dynamic nature of hazards and risks and the diverse identities, histories, composition, circumstances, strengths and needs of communities and custodians. This includes understanding the dependencies, interdependencies and relationships of humans, animals and the environment.
<b>All hazards and all consequences</b>	Ensure planning is broad enough to consider a range of possible risks and hazards to people and animals – avoid focusing on just a single hazard or single category of animal. Recognise that the consequences of disasters are complex and long term and that the losses of animals have significant personal and community consequences.

c These are principles, which allow a flexible and general approach to planning for animals in emergencies. They are not prescriptive standards.

## 4.2 Principles

The following good practice principles<sup>c</sup> draw upon the key concepts outlined in this handbook, as well as the NPPAD. The principles are also drawn from the:

- *Australian Emergency Management Arrangements Handbook*
- National Disaster Risk Reduction Framework
- *Community Engagement for Disaster Resilience Handbook*
- National Principles for Recovery.

Additional resources from national and state emergency and disaster management organisations are included alongside this handbook on the AIDR website and a selection of international organisations' standards and guidance are included as supporting materials on the AIDR website: <https://knowledge.aidr.org.au/resources/handbook-animals-in-disaster>.



# Chapter 5: Planning to reduce risk

The objectives of disaster risk reduction are to:

- take action to reduce existing disaster risk
- minimise the creation of future disaster risk
- equip decision makers with the capabilities and information they need to reduce disaster risk
- manage residual risk.

These objectives can be applied to AEM to help reduce the exposure of animals and their custodians to risk and the need for response and recovery.

Actions can be taken to anticipate, prevent or mitigate the impact of hazard events on animals. Many of these are based on good day-to-day management practices. These actions, recognising the 'One Welfare' concept, are likely to have the greatest long-term benefit for animals, custodians, the environment and business continuity by reducing vulnerability and exposure, hence disaster disruption and losses.

Actions can include:

- locating facilities on low hazard risk sites
- hazard reduction measures
- values based decision making
- property management
- changing business practices and making business-related decisions
- supporting the health and wellbeing of animals to increase their physical (and mental) resilience.

## 5.1 Locating animal facilities on low hazard risk sites

The recognition of hazards when zoning land can assist with the appropriate location of animals or animal facilities and eliminate or reduce the impact of hazards. This includes not

locating new intensive farming or managed animal facilities, or native and exotic captive wildlife facilities, in high hazard risk areas.

Custodians should be aware of the hazard risk profile of the properties they own, rent or manage. Land use planners should provide information on hazard zoning. Building surveyors, engineers, architects and construction professionals will be able to provide advice on disaster resilient construction and retrofitting measures for animal enclosures and facilities.

Structures to house and shelter animals should also be built to withstand hazards and extreme conditions such as cyclone, extreme heat, air pollution and flooding.

Refer to *Land Use Planning for Disaster Resilient Communities* (AIDR 2020) for further guidance.<sup>57</sup>

## 5.2 Hazard reduction measures

Hazard reduction measures can reduce the impact of hazards on livestock and other animals. Habitat protection measures and land management practices such as hazard reduction burns, clearing waterways of debris and weeds, may also protect wildlife. These activities are planned by emergency management organisations, local government, land management agencies, Indigenous rangers, native title representative bodies and private landholders, depending upon the land tenure.

Contiguous riparian zones (connected, continuous habitats along water bodies), safe over-road crossings and tunnels can provide safer access or egress for wildlife if threatened by hazards.

Consulting experts and having access to good data on wildlife populations, in particular threatened species or animals with high community value, can assist decision makers when

**Table 3:** Examples of risks to animals that should be mitigated.

RISKS TO ANIMALS CAN ARISE FROM	EXAMPLES
<b>Locating animal businesses in hazard prone areas</b>	Boarding kennels located in fire prone areas. Animal sanctuaries on flood plains.
<b>Failing to make reasonable property modifications in hazard prone areas</b>	Raised refuge mounds are not constructed for livestock on flood prone farms, barren graded refuge paddocks are not prepared in bushfire prone areas.
<b>Lack of safety systems and equipment</b>	Stables or commercial breeding facilities without a sprinkler system.
<b>Poor quality structures</b>	Buildings housing animals are not built to withstand extreme weather, wind or heat leading to injuries or illness.
<b>Lack of maintenance</b>	Horse float is not maintained, registered or roadworthy.
<b>Lack of hazard reduction activities in locations bordering threatened wildlife species habitat</b>	Hazard reduction burns, drainage or groundworks not implemented.
<b>Lack of contingency planning</b>	Genetic material for breeding stock not stored off site as a back-up.
<b>Failing to identify alternative locations for animal agistment</b>	Plans are not in place if there is a need to move school animals off site.
<b>Poor animal handling training and competencies</b>	Animals injured due to poor handling techniques, such as dragging recumbent animals by the neck or horses not trained to enter floats for transport.

assessing areas to prioritise for hazard protection. This can also allow for the pre-positioning of resources when planning for emergencies and potentially expedite detection and retrieval of injured animals. This also applies to areas where there are concentrations of other animals, such as feedlots or boarding kennels.

## 5.3 Values-based decision making

Making decisions about which animals to prioritise in an emergency can be sensitive and confronting. Values are at the core of resource allocation decisions.<sup>58</sup> The value assigned to various attributes, such as cultural, economic, future potential, emotional attachment, conservation status or community value will vary from person to person and over time. Examples include:

- protecting stud animals (bloodlines) for future farm viability, but also to protect a future for the next generation and to protect and honour the achievements of past generations
- protecting successful show-winning or competitive/sporting animals that will provide a pathway to continuing to compete and retain social connections
- identifying and prioritising the movement of stronger, younger animals more likely to survive and cope with the stress of moving (or alternatively, moving the ones who are less likely to be able to help themselves)
- protecting certain animals or species over others due to their cultural meaning or connection to a community
- prioritising relocation of individual horses or animals that are easier to load onto a float/trailer, to move more animals to safety quickly.

These decisions will also be guided by realistic assessments of capability and capacity to move animals.

## 5.4 Property management

Improving properties where animals are housed can help reduce hazard exposure and risks. Custodians must identify what improvements to their properties are most appropriate and feasible for their circumstances.<sup>59</sup> Examples of risk reducing improvements include:

- installing firebreaks
- putting in laneways for fast movement of large numbers of animals
- having access to materials for erecting temporary animal holding areas, such as panels, electric fence units
- building refuge mounds or raised areas in flood prone areas
- having well maintained structures
- installing sprinkler systems on stables or anywhere where animals are intensively housed
- having back-up power for dairies

- having reserve and protected feed supplies such as in underground silos in bushfire areas or offsite
- maintaining or improving access roads and improving drainage
- maintaining a heavily grazed refuge paddock during bushfire periods
- felling unsafe trees that may impact key access routes, buildings or refuge areas
- planting to reduce erosion and landslip risks
- building and maintaining levees, where approved.

## 5.5 Business practice

Good business and organisational practices can also help manage hazards and aid recovery. Maintaining good records, keeping them backed up and stored in a safe place can reduce disruption to businesses. Good practices include:

- using microchipping and other forms of animal identification as appropriate
- recording numbers and details of animals
- maintaining health records and care arrangements
- maintaining pasture records and fertiliser history.

Businesses and organisations planning for animals should also consider (where relevant):

- planning for sacrifice paddocks (paddocks devoid of grass)
- developing resowing schedules for different hazards
- having insurance on buildings, fencing and livestock where feasible
- regularly tested business continuity planning that includes arrangements for evacuation and relocation, as well as clear roles and responsibilities for staff and volunteers
- planning for long term agistment options, or triggers for sale
- freezing important genetic material and storing it securely off site.

Contingency planning for emergencies should include:

- having arrangements in place in case a custodian is not with their animals or can't be contacted when an emergency occurs
- making arrangements with others to help move animals to a pre-determined location, such as animal transport companies, friends or neighbours
- communication strategies for clients and customers (particularly when the custodian has temporary responsibility for the animal such as boarding kennels and veterinarian surgeries).

These arrangements should be documented, practised and reviewed on a regular basis. Agricultural and animal businesses, professional associations and emergency management organisations can assist with advice and strategies about risk mitigation measures.

## 5.6 Health and wellbeing


The Five Domains Model (Chapter 2) guides practice in this section. Maintaining animal health may reduce the physical and mental stress that animals experience during and after an emergency. Custodians of livestock and horses should familiarise their animals with loading and unloading onto animal transport vehicles, as well as refuges and safe areas which may be used in the event of an emergency.

There may be opportunities for a range of stakeholders (such as councils, agricultural businesses, animal rescue organisations, peak bodies, veterinarians and community groups) to work together around high-risk weather seasons, or support seasonal vaccinations, desexing, microchipping and health check programs where relevant.



Evacuating sheep by helicopter.

Image: NSW DPI RD



# Chapter 6: Planning to prepare for effective emergency response

Prevention and mitigation activities will not eliminate all risks to animals, however, preparing for an effective response can reduce the impact of hazard events on animals, their custodians and the community. Having plans in place for how to manage animals enables more careful and thoughtful decision-making in stressful emergency conditions, supports safer evacuation for people and animals and better outcomes.

Custodians and emergency planners should consider how to collaboratively implement the following measures within their plans and activities:

- awareness raising
- community engagement
- public information and warnings
- relocating, evacuation and moving animals
- establishment and provision of emergency shelters
- sheltering in place options
- rescue arrangements
- food and fodder supply
- animal health and veterinary care
- emergency planning
- capacity and capability building.

## 6.1 Awareness raising and community messaging

Emergency planners will need to consider the inclusion of preparedness for animals in their locally based emergency preparedness campaigns. Proactive community engagement is key to success for awareness raising campaigns and local capacity building programs. Those responsible for the campaigns should ensure that those with AEM responsibilities are part of the planning, particularly when determining the aims, objectives and key messages of the campaigns. Using the presence of animals in a household is effective as a prompt for broader preparedness action.<sup>60</sup>

Targeting ‘animal owners’ broadly does not consider the diversity across custodians. It is important to provide assistance to support planning for animals, appreciating that for some people there may be restrictions on their ability or capacity to act and access support.

As noted in Chapter 2, designing and delivering engagement approaches must be inclusive. For messaging to be successful it needs to be targeted, timely and repeated. Language, literacy and accessibility needs of recipients will need to be considered and strategies designed to take these into account.

It is important to include culturally and linguistically diverse (CALD) communities in the design and communication of preparedness information (including in multiple languages) to help ensure that cultural sensitivities around animal and animal welfare are observed. One size will not fit all.

When interacting with animal custodians, do not make assumptions or default to cultural stereotypes. If unsure about how a particular community or individual might view animals and animal welfare, ask them in a kind and compassionate manner. One option might be to enlist animal welfare ambassadors trusted by their communities to help to share critical information with their community leaders and members.

While it will always be necessary to consult locally about accurate and consistent messaging, there are a few key messages that are important in this context.

### – ‘Your animal, your responsibility’

This message is consistent with current legislation. It is important to encourage custodians to understand that they are responsible and will remain responsible for their animals in an emergency. It is also important for custodians to know that in emergencies resources are limited and they may not be able to get assistance and therefore need to be prepared to manage their animals.

### – ‘Make a plan and ensure that your animals have been included in that plan’

Encouraging people to have emergency plans that include all members of their household (or business or organisation). Sometimes the needs of animals can be overlooked, or not seen as additional to the human members of the household or business.

### – ‘The safest option is to leave early and take your animals with you’

Encourage planning for early relocation of animals wherever and whenever possible (although this may not be a universally applicable message). Sheltering animals in place is regarded as a legitimate option in some jurisdictions and in some environments. However, in many circumstances at the planning stage, especially with companion animals, this can be a helpful expectation to set.

Individuals should be directed to the relevant organisations for general household emergency planning, for animal specific guidance and for state-based organisations for hazard specific advice. Children should be included in these planning processes, as their values may be different to adults and they may have attachments to pets that parents may overlook. For people with a disability, the Disability Inclusive Disaster Risk Reduction guidance is available to support planning.

*Community Engagement for Disaster Resilience* (AIDR 2020) provides further guidance on developing and delivering community engagement activities.

## 6.2 Media, public information and warnings

Official messaging in AEM should address what is happening and what actions people need to take to avoid putting themselves in harm’s way and avoid putting emergency responders at risk. When addressing the media, avoid saying

'no lives lost' when there have been animal losses. Such statements are triggering for those who have sustained animal losses and minimise loss to only that of humans.

Early warnings are part of this messaging. Warnings are governed by the Australian Warning System (AWS) as Advice (yellow), Watch and Act (orange) and Emergency (red). Warnings provide information and calls to action that aim to reduce losses of human and animal life, property and improve health outcomes of those threatened by a hazard. Custodians can plan for the actions they will take when they receive certain warning messages or information. This includes when they will enact those plans.

Emergency planners and organisations involved in AEM therefore need to consider, plan for, agree to and approve ahead of time the messaging that includes animals for each warning stage. Considerations include the locations of appropriate evacuation centres for those with animals, the inclusion of animals in evacuation plans, the dangers of evacuating late and the risks to personal safety when rescuing animals. These messages also need to align with and reinforce preparedness messages.

Public information can guide those threatened by or affected by hazards to take appropriate actions to manage or reduce the impacts. Public expectations and emotions are high during and after an emergency. Images of injured animals and animal rescues are emotive and are often used by media. These images spark commentary, public sympathy and outrage and can contribute to risky behaviours. Social media and traditional media images of animal rescues or animals in distress can motivate people to respond. These images without the context of formal response or in the absence of public messaging may result in spontaneous volunteers deploying to rescue or retrieve animals in dangerous situations.

Bystanders may put themselves at risk and be framed in the media as 'heroic', with AEM responders facing accusations of failing to respond. Spontaneous volunteers may approach wildlife without an awareness of the consequences and put the welfare of the animal (and themselves) at risk.<sup>d</sup> All responders should be aware of the potential for public criticism if they are unable or unwilling to take part in a risky rescue. These social and emotional pressures can be challenging for responders.

Images of emergency responders rescuing animals from homes can create a feel-good image. However, these images may send mixed messages to the 'your animal, your responsibility' message and may promote a reliance on emergency responders to rescue animals.

Emergency planners and organisations involved in AEM need to plan their key messages and communications strategies to maximise the impact across all affected community sectors

'There is no other factor contributing as much to human evacuation failure in disasters that is under the control of emergency management when a threat is imminent as pet ownership.'

**Heath and Linnabary (2015) Challenges of managing animals in disasters in the U.S.**

## 6.3 Early evacuation

Self-initiated evacuation (prior to an official warning) or early evacuation of animals reduces the need to return to an area before it is safe to do so. Ensuring that animals are evacuated and not abandoned avoids the need for responders to rescue animals or feed them in place. Early evacuation also means that spontaneous volunteers and animal custodians will not feel the need to undertake unsafe rescues of animals or enter unsafe areas.

Early evacuation can reduce the likelihood of vehicle incidents, such as entering floodwater, road traffic accidents or horse float/trailer roll overs. These situations are complex for responders and stressful or potentially fatal for humans and animals. Incident Management Teams (IMTs) should understand the complexity of these arrangements, particularly the time required for evacuation.

When emerging threats are identified, custodians should plan to remove animals from exposure to risks. This may include moving animals from high-risk areas for high-risk periods of time. For example, smaller businesses might agist animals elsewhere or operate from alternative premises during bushfire, flood or cyclone 'season'. Companion animals may be housed with family or friends in a lower-risk location during forecast periods of extreme or catastrophic fire danger, cyclone, flood or heat risk.<sup>61</sup>

It is important for custodians to know what items they will need to evacuate their animals and where these items are located. This will avoid wasting time and ensure important items are not forgotten, like animal medications, food, water, leads, halters, cages, bedding or harnesses. Containing animals early saves valuable time searching for, or capturing animals and reduces the risk of a delayed or unsafe evacuation. Custodians of companion animals and assistance animals should have 'go bags'<sup>e</sup> ready with important items.

Custodians of managed animal facilities should plan when, how and to where they would move animals, decide what triggers this action, or what alternatives they can put in place. When custodians are informed of a hazard, the focus will be preparing to relocate animals or manage them onsite and then activating their emergency plans.

<sup>d</sup> <https://7news.com.au/news/wildlife/koala-rescuers-warned-that-bottle-feeding-them-could-lead-to-death-c-645556>

<sup>e</sup> There are multiple sources for advice for custodians about what to take for their animals. These practical guides tend not to be area specific unless they are giving people advice about where to go, or what organisation/department is responsible. Check the relevant department of primary industry, emergency service or fire agency website, the local council and/or organisations like RSPCA for resources.



Arrangements need to be in place for custodians and their animals when their triggers to evacuate are activated. Ideally, those with small animals should have plans to go to friends and family, rather than an evacuation or relief centre, as both animals and people are likely to be more comfortable and settled there.

For custodians with companion animals the main considerations are:

- having somewhere safe to relocate all their animals
- having transport to move all their animals
- having enough time to make multiple, safe journeys if needed
- what to do if they are not home or cannot get home when an emergency event arises
- managing specific issues pertinent to their animals, such as behavioural, stress and medical considerations.

Those with larger companion animals and on small holdings are also likely to want to relocate their animals. In addition to the points above, planning should:

- consider a buddy system to provide shelter and support
- draw upon existing networks (such as neighbours, pony group contacts, fellow custodians)
- ensure emergency supplies of food, water, equipment, such as food bucket, shovel, halter, bedding, are assembled ready for meeting animal needs on relocation
- identify places that are not at the risk of the same hazard type
- identify transport arrangement and resources, such as an additional float/trailer that can be borrowed and somewhere safe to take their animals to. Multiple trips for larger animals may be required, depending upon the capacity of the transport vehicle. This additional time will need to be factored into planning.

Social networks are important resources to aid evacuation. Developing buddy systems, to team up with other animal owners and pool resources, can also provide human connection and support for the custodians.<sup>62</sup>

Traffic and roadblock management and relevant messaging needs to be a focus for planning. There should be AEM input into the management of exclusion areas. Custodians may want to collect animals in a hazard area or return to a location but are stopped by a roadblock. These situations can be difficult for those managing the roadblock, as people may become confrontational or may find ways around roadblocks and put themselves in danger.

Practicing evacuation plans is important as the logistics and time taken to evacuate during stressful circumstances can often be underestimated. Practicing evacuation plans enables realistic timing to be determined. Knowing what actions to take is also likely to result in safer and more efficient evacuation.

## 6.4 Shelter in place for animals

Custodians with larger numbers of animals or with animals that are hard to move should plan how to keep animals protected onsite. Some options are mentioned in Chapter 5. For those in organisations and businesses with employees, their business continuity planning will include decisions about when and how to move animals safely to more protected areas, whilst minimising any risks to employees. These plans should include basic animal needs to ensure there is sufficient, protected fodder and water on farms, avoiding the need for fodder drops.

In business-related environments a mix of approaches might be needed, with some animals being relocated and some sheltered onsite. For example, animals that are:

- easier to accommodate off-site
- smaller
- easier to load and transport
- safer to move
- higher in 'value'.

Farmers and animal business custodians should also be aware of the risks to animals from disease current at the time. There may be the need to balance any biosecurity risks of relocating animals against the potential harm of sheltering in place. This may be a particular challenge for a zoo, a research facility or a veterinary hospital.

Aboriginal and Torres Strait Islander communities and other custodians, may seek to create safe havens for wildlife and companion animals to be able to shelter in place. These safe havens may be places of high ground in flooding events, permanent or reliable water sources during bushfires and heatwaves, or sheltered locations during cyclones and major storms. Some animals may evacuate with their custodians, whereas others such as community dogs, may stay and be cared for on site.

For animals not used to being confined, being caged and transported would be extremely stressful and potentially dangerous for those handling them. It is important for the community to be included in deciding what they would like to happen and then working with stakeholders to plan for that situation. It is also important to plan for the veterinary care and welfare needs of animals that are not evacuated, including food, water, shelter and veterinary care for injuries, illness and potential euthanasia.

## 6.5 Emergency shelters and animals

Evacuation centres may or may not be able to accommodate animals. If an evacuation is required, self-organised shelter options such as staying with family or friends, or in animal friendly accommodation is strongly encouraged where

possible. However, some people will be unable to organise their own self-shelter options and will arrive with animals, even if the centre is not set up to receive them or allow entry. Planning for animals in evacuation centres should cover:

- maintenance of animal-human bonds and keeping owners and animals together whilst maintaining human and animal safety and wellbeing
- registration, tracking and reunification (where animals are separated from owners)
- provision of quieter, suitable areas for shelter, shade, containment, toileting
- provision of water and food/fodder to maintain wellbeing
- hygiene and biosecurity, to prevent the spread of disease – including ensuring fodder remains free from contamination
- human and animal safety
- veterinary care for injury, ill health and if required, euthanasia
- security of animals and custodians from threats and media intrusion.

‘The significant negative psychological impacts on people [separated from companion animals in crisis situations] underline the deep connection between humans and animals and highlight that, when pets are not given equal consideration in policy/programs and people are not provided with sufficient support to stay with their pets, the wider community, including health and animal welfare sectors, may be impacted as the recovery process is hindered.’

**(Montgomery, Liang and Lloyd, 2024)**

Planning for the containment of animals will depend on the numbers and types of animals expected to be sheltered at a site. Planners will need to seek advice from local or state and territory government authorities on space requirements for animals and the number of animals that can or may need to be catered for. Secure and safe containment of animals is important for safety of both animals and humans. Animals at an evacuation centre have been reported by parents of young children as a risk to their safety.<sup>63</sup> Animals at an evacuation centre may be an attraction for people seeking comfort or if they observe an animal in distress. However, an animal under stress may be unpredictable in its behaviour and a hazard to humans, children in particular,<sup>64</sup> and to other animals. Hence it is important to have separate areas for animals that are not accessible to children.

Evacuation or relief centres may have a high proportion of people who may not be well connected to the community, such as tourists or those who might be socially isolated. Enforced separation from animals can be harmful to people’s health and wellbeing.<sup>65</sup> For example, people experiencing homelessness with companion animals are highly reliant on

their animals for a sense of security, purpose and wellbeing. If they are unable to shelter with their companion animals, then they are more likely to choose to shelter in unsafe situations like cars, or in higher risk areas.

*Evacuation Planning* (AIDR 2023)<sup>66</sup> includes guidance on the establishment and management of centres.

## 6.6 Animal emergency shelters, holding areas and safe areas

Planning should be undertaken to provide shelters or safe areas for animals, especially large animals. These areas need to be part of official arrangements and should be identified with consideration of the needs of custodians, as well as their animals.

Showgrounds or large areas with stabling or other structures in place for containing and caring for animals are often identified for this purpose. The relevant Department of Primary Industries usually lead or coordinate the animal elements of these arrangements, in conjunction with local emergency committees, local government or lead agencies for emergency relief.

In most situations, custodians are expected to stay with their animals to care for them and they may camp onsite and self-organise.

People and animal management issues that need to be considered include access to facilities for animal custodians and animal care, biosecurity requirements, security and access to information on the unfolding emergency, along with disaster recovery services.

These arrangements should be included in local, regional, or state and territory emergency plans.

## 6.7 Informal sheltering locations

People may also evacuate to familiar places or places they have used previously, even if those locations are not formally identified and set up for the current event. Informal locations where people might seek shelter include local sports clubs with sports grounds or saleyards. These locations are not part of formal arrangements and their use is not likely to be encouraged by authorities.

A lack of organisation and resourcing at informal locations can become an issue for emergency response organisations and for the people and animals going there. Venues that will not let animals inside can create potential animal and human welfare issues, for example if people and animals remain outside and exposed to heat, smoke or rainfall. Informal locations might also simply lack necessary amenities or capacity. There are also other potential safety risks. For example, the locations may not have been selected due to the risk of flooding, power outage or sewerage failure.

Planning needs to consider that, while not encouraged, the occupation of informal facilities may occur. Also note that these locations may be private businesses that may initially welcome the custom and want to help the community by providing refuge. Advanced communication with community venues to minimise these situations occurring is important and early inspections and advice for custodians in these situations may prevent further problems from arising. This also reinforces the need to encourage animal custodians, through preparedness and community engagement activities, to have multiple plans that avoid needing to use informal locations.

## 6.8 Food and water

It is the responsibility of the animal custodian to plan for and provide feed and water for impacted animals. In emergency situations, allocation of feed and water will likely be based on meeting immediate basic needs for animal survival.

Hazards may impact on water quality or supply, leading to the need to supply alternative water sources. Hazards may also impact pastures and other sources of food usually available to sustain livestock and companion animals.

It is important to ensure that post-emergency or disaster needs are anticipated ahead of foreseeable risk periods, as supply networks are likely to be disrupted leading to additional challenges post-event.

Resupply of households and communities that are isolated by the hazard must also include pet food supplies. Similarly, some members of public may be reliant upon pet foodbanks for the supply of their feed. These organisations should be identified and included in emergency plans. For evacuated communities, particularly remote Indigenous communities, supplies for community animals sheltered in place must be planned for.

When access to properties is blocked, response organisations will endeavour to provide assistance with food and water where possible. However, the provision of fodder for livestock is often coordinated by farmer organisations and other rural based not-for-profit organisations. These arrangements should be identified and included in the appropriate emergency plan. It is important to ensure that transportation of fodder does not lead to the introduction of pests or diseases or cross quarantine boundaries.

## 6.9 Biosecurity

Biosecurity requirements are important in disasters. Quarantine and biosecurity protocols should be followed wherever practicable. Adherence to biosecurity requirements and protocols is important for effective management and mitigation of the risks associated with infectious diseases, potentially contaminated fodder and biosecurity hazards during disasters.

## 6.10 Health

Addressing the physical wellbeing of animals affected by disasters is a priority. Timely assessment by veterinary professionals and animal health staff and by farmers or others is required to get animals triaged and either treated, or euthanised as indicated. For wildlife, it is imperative they are triaged and either euthanised, if required, in a timely way or transferred to licensed wildlife rehabilitation as soon as possible.

Provision should be made to care for injured and sick animals, including euthanasia if this is warranted. Organisations that should be included in the plans include local veterinary services, animal welfare services, wildlife rehabilitators, or government departments with responsibility for primary industries.

These arrangements need to be detailed in emergency plans and incorporated into IMTs. However, planning needs to keep in mind that services may be limited or require coordination in a large emergency.

## 6.11 Death and disposal

Rangers or shooters may be needed to manage darting and euthanasia of wildlife and larger animals. Appropriate plans will also be needed to manage the timely disposal of carcasses of large animals, or large numbers of animals. In addition, resources will be required for transport, excavation and environmental services for advice on appropriate burial locations. These should be planned for and documented in emergency preparedness arrangements.

In some instances, it is best to leave carcasses in situ where it is unsafe or difficult to relocate, including where decomposition is too far advanced. Removal should occur where there is an environmental or social amenity impact. This may include situations where deceased animals are visible to distressed personnel, near towns, water supplies or where smell is an issue that cannot be managed.

Biosecurity guidelines, such as AUSVETPLAN, provide guidance on large scale disposal.

## 6.12 Rescue

Rescues of large animals during and after emergencies are common, particularly where there is significant flooding. This requires specialised skills and equipment. Guidance for these types of rescues is provided in the AFAC guideline *Large Animal Rescue Operations*.<sup>67</sup> There are teams of professional volunteers that can undertake these rescues. These should be identified and incorporated into emergency plans and IMTs.

In the absence of trained local resources, animal emergency plans should identify who else can help animal custodians in an emergency.

Flash flooding, for example, often occurs quickly and without warning. Although it is the custodian's responsibility to move their animals to safety, there will likely be requests for assistance with rescue. This may require identifying trained and appropriately skilled individuals or community groups that can safely assist. In these circumstances it is important to also be aware of potential issues around insurance, personal protective equipment and clothing, safety training, coordination and communication for spontaneous volunteers and groups.

The challenges associated with the rescue and relocation of animals during an emergency underpins the importance of good preparedness and is essential for ensuring that responders are not required to take risks to rescue animals and that animal welfare is not compromised.

## 6.13 Reunification

Animals can go missing for a range of reasons and may be displaced with or without identification tags or microchips. This period of separation can be very distressing for custodians and for companion animals. Displaced animals are often taken to local council pounds, veterinary clinics, shelters or showgrounds where people with animals may gather. Social media groups and organisations with microchip scanners may help with animal reunification.

Reunification challenges following emergencies underscore the need for good identification practices, registration of animals and record keeping of animal holdings before an emergency. Although not ideal, just-in-time approaches, such as the use of stock markers to write the phone numbers of custodians on horses have been effective for reunification later.

Events such as floods where animals can get washed away and people may not be able to immediately return, provide opportunities for the theft of animals or for individuals to keep possession of the animals they find. Proof of ownership is important in post-event disputes. Reporting and addressing criminal behaviour can be a key part during recovery post-emergency.

Planning for reunification needs to ensure that organisations with the capability and capacity to assist with reunification are included in plans and have capacity to assist.

## 6.14 Protection of habitat

Protection of habitat is a key way to protect critical wildlife species. Aboriginal and Landcare groups implementing Caring for Country practices have had a demonstrable impact in creating resilient landscapes through practices such as cultural burning and wetland restoration. Timely communication of information, such as recent land, water, or other resource management activities to the IMT via appropriate channels can be critical for including the consideration of wildlife in operational decision-making.

## 6.15 Emergency planning

The guidance and activities identified in the above sections should be documented in relevant emergency plans. Emergency planning is a collective and collaborative effort where agreements are reached and documented between people and organisations to meet their communities' or entities' emergency management needs. These activities are underpinned by capacity and capability building.

Further guidance on emergency planning can be found in *Emergency Planning* (AIDR 2020).

### Who needs to plan?

**Individuals and households** completing their own household emergency plan can significantly reduce their level of risk and improve their outcomes during and after an emergency. Household animals such as companions, assistance animals and outdoor animals must be included in this planning. Wildlife rehabilitators and those caring for multiple animals at home, will also need to have plans in place for emergencies. The need for these plans must be communicated by emergency planners prior to emergencies occurring. It should also be recognised that not all individuals, particularly those experiencing disadvantage, have equal capacity to prepare for disaster and may need assistance.

**Communities** undertaking community-based resilience planning can consider how they will incorporate animals into their planning activities. Indigenous communities in rural and remote areas will want to make plans for both household and community animals to ensure their safety. Early engagement with multicultural and faith communities is also recommended. This will ensure that they understand the protocols regarding AEM and will enable discussion on how these protocols may or may not align with cultural beliefs. This engagement could provide solutions to achieve outcomes in a culturally sensitive way.

**Owners or operators** of animal businesses and facilities, such as farmers, veterinarians, schools and animal boarding facilities, will need to develop their own business continuity plans. These plans need to encompass the impacts of hazards on their business and incorporate how they will protect animals in their care as well as minimising business impacts. The Australian Government Business Portal has guidance on business continuity planning. The need for these plans must be communicated by emergency planners.

For **organisations** who are involved in AEM response, it is also important to recognise other responders. Individual jurisdictions will have a range of different arrangements and Memoranda of Understanding (MOUs) in place to assist with AEM. However, many of these groups may not be included in formal arrangements or experienced in emergency management. These groups may include veterinarians and veterinary response teams, who are 'extending' their

volunteering into emergency management and other affiliated volunteers who will assist such as wildlife rehabilitation/carers.

In addition, there will be spontaneous groups and individuals from local community and out of area. Organisations may also need to have plans to enable the rapid scaling up of volunteer workforces. *Communities Responding to Disaster: Planning for Spontaneous Volunteers* (AIDR 2018) can assist with considerations for planning.

**Emergency planners** will need to plan for the integration of AEM into local emergency management plans. Plans need to be clear, written in plain language and agreed upon by all parties. The jurisdictional and multidisciplinary nature of AEM means that there are many local, state, territory, national and international stakeholders who share interests in AEM. The plans will provide clear routes to finding the right people or organisations to consult, collaborate with, or involve in AEM.

IMTs need to make provision for AEM activities to be able to provide guidance to the Incident Controller on matters relating to animals and their custodians and to integrate AEM activities into broader incident control and to coordinate AEM agencies.

Animal welfare-related NGOs, professional, business and industry groups and wildlife and conservation organisations are also interested in AEM. Proactive engagement with these other stakeholders through workshops, attendance at community events and targeted media can be helpful to gauge the interests and the needs of their members. This engagement also provides pathways for AEM messaging to custodians and the broader public.

Partnering with key organisations, local leaders or individuals who have influence and connection with custodians will ensure the planning process is robust. This includes local:

- veterinary practices
- emergency service units
- fire brigades
- council
- disability service providers
- health services
- education providers
- neighbourhood house/centre managers
- community leaders from multicultural and faith communities.

In addition to outlining roles and responsibilities for AEM, the plans should also outline resource requirements and cost recovery arrangements. Plans should be exercised on a regular basis to test the arrangements and make improvements to the plan. Exercising also acts as a capacity building exercise. Refer to *Managing Exercises* (AIDR 2023) for guidance on exercising.

## Expectations of emergency response capacity

An important consideration in this area are the practical resource limitations of AEM. In large scale emergencies, issues arise in managing the geographical scale, animal numbers and demands of the emergency. Animal welfare needs to focus on basic priorities including administering pain relief, medical treatment, water and food. Further animal welfare considerations are managed when capacity is available.

This approach in veterinary management is termed 'contextualised care,' where the best care possible is provided given the prevailing circumstances, such as the availability of skilled personnel, shortages of supplies and time available. It is important that the expectations of custodians and the public are managed and all are aware of potential limitations ahead of emergencies.

This underpins the critical importance of custodians to have implemented risk reduction measures and have their own plans in place. This allows custodians to be as self-reliant as possible and scarce resources can be deployed for those who need them most. It also underpins the need for emergency planners to incorporate AEM organisations into their plan to enable them to gain additional support and resourcing.

## Additional considerations in emergency planning

IMTs should make provision for the planning and management of AEM issues. Further information on incident management can be found in *Incident Management* (AIDR 2023).

Planning should include provision for responder safety, including risk assessments for entry to affected areas, practices for working safely in affected areas, equipment safety (including firearms), the use of personal protective equipment, occupational health and safety, fatigue management and psychosocial support.

There are many ways to experience trauma in AEM. This might be from experiencing animals suffering, being unable to act to save an animal, separation from animals, managing distraught or aggressive people in evacuation centres, or having to manage the aftermath of a disaster with euthanasia and disposal of animals and the distress of the animal's custodians. It is also highly likely that responders will have animals of their own. Organisational planning should incorporate arrangements for psychosocial support for employees and volunteers.

The plans should be tested on a regular basis through exercising and scenarios relating to animals should be introduced into the exercises. Guidance on exercising can be found in *Managing Exercises* (AIDR 2023).

Implementing a lessons learned process or monitoring and evaluation processes post-events contributes to the continuous improvement of plans. Refer to *Lessons Management* (AIDR 2019) for further information.

## 6.16 Capability and capacity building

All organisations working in emergency management, formally or informally, will have a role in AEM. For organisations involved in AEM and emergency management, it will be important to build capability and capacity so that each organisation understands arrangements, roles and responsibilities, terminology and core functions.

Core capabilities that should be examined include basic awareness of emergency management, incident management, risk management, animals in emergencies, wildlife and animal care, work health and safety, recovery basics, psychosocial support, as well as hazard specific training, such as fireground awareness, or biosecurity.

Identifying AEM, responders, or volunteers who may be of CALD backgrounds, will help draw upon their cultural expertise in how to engage respectfully with cultural and faith groups.


Incorporating all organisations in emergency exercising can also assist with capacity and capability building while testing arrangements.

In addition, a focus for capacity building should be on psychosocial support. Given many situations arise through stressful interactions with animal custodians, additional skills training should be provided such as in animal handling, conflict management and in providing mental health support.



**Sheep boat extraction from flooding.**

Image: Marine Rescue NSW and NSWDPIRD



# Chapter 7: Planning for recovery

Successful recovery requires a planned, coordinated and adaptive approach between community and partner organisations. It should be based on a continuing assessment of impacts and needs. Impacted individuals in communities are key stakeholders and should be at the forefront leading or driving the recovery process in their community. Custodians of animals should be one of the key groups involved in recovery and participate in local community recovery committees, where feasible.

The impacts and challenges of disasters involving animals can be significant. These can include, but are not limited to:

- animals returning to dangerous situations or poor-quality environments, such as areas with debris or unsafe structures, poor containment, inadequate fencing, contaminated water or land and poor quality or non-existent pasture
- underestimating the commitment to care for animals sheltered on site without custodians and caring for injured animals, such as veterinary costs, time, stress, especially when managing post disaster clean-up and other losses
- inadequate planning or shortage of feeding stations resulting in a convergence of wildlife into areas after a hazard event, leading to increased predation, competition for scarce resources and spread of disease
- grief and bereavement at the loss of companion animals and other animals where the human-animal bond is strong
- trauma resulting from the large-scale destruction of livestock, wildlife and other animals
- loss of economic capacity or income earning capacity for businesses and communities
- loss of cultural icons and meaning for First Nations peoples.

Animals can also play an important role for human well-being during the recovery period.

The recovery process from disasters is long, complex and challenging for individuals, businesses and communities. Impacts can occur across seven areas (or capitals): human, social, environment, political, cultural, built and economic.<sup>68</sup> The National Principles for Disaster Recovery and *Community Recovery* (AIDR 2018) provide guidance on good practices in recovery.<sup>69,70</sup> *Community Recovery* (AIDR 2018) is comprehensive and includes considerable reference to companion animals and agricultural animals and considerations for the custodians of these animals.

Custodians and emergency planners need to plan for and take actions that help reduce or manage the consequences of a hazard.

## 7.1 Capacity building

Recovery organisations and those involved in AEM will need to understand the key capabilities, skills and knowledge they require to undertake their role. Skilling up of local community members and organisations in the aftermath of disaster is

likely to be a key focus of recovery coordination organisations and it is important that those involved in AEM are included.

Those involved in AEM can provide briefings on the impacts on animals, how the event might have disrupted the human-animal bond and the needs of animals as they move through the recovery process.

## 7.2 Safety

In the aftermath of a disaster there will be dangers for animals. Many different stakeholders will be involved with communicating advice around safe return to properties including general safety advice, support with utilities and safety for animals specifically.

While this will vary depending on the type of hazard, dangers to animals might include:

- contaminated water and feed
- waste, debris and broken glass
- unsafe trees
- exposure to predators from lack of shelter
- limited containment or broken fencing
- erosion gullies
- mud
- hot spots.

If animals are being moved to unfamiliar places, like temporary accommodation or agistment, there is also the potential for new risks, such as escape, toxic plants or dangers posed by exposure to other animals. Such risks should be assessed beforehand.

Fencing and containment are often compromised by a hazard event, which enables animals to stray onto roads. The resulting welfare concerns may require animals to be moved off property onto agistment or the custodian may need to sell animals.

Planning will need to consider how to make these situations safe, or to consider how to keep the animals from harm through containment measures. This will involve custodians of all types of animals where their properties have been affected, emergency management organisations managing safety and volunteer organisations that assist with tasks such as fencing and fodder provision.

## 7.3 Impact and needs assessment

Damage, impact and needs assessments are critical components of recovery planning. Damage assessments need to be conducted early. Impact and needs assessments will need to be repeated as needs will change over time and can often be staged, based on urgency. Assessments can also be challenging as not all the data are readily available or easily collated.

These assessments are the responsibility of the coordinating organisations for the emergency and recovery. Organisations working in AEM will need to be engaged in impact and needs



assessment processes to establish the losses associated with animals and the ongoing needs of animals and their custodians. Planning will identify what data are likely to be easily supplied in the aftermath of the emergency. Further guidance on needs assessments can be found in the National Disaster Recovery Needs Assessment Guidelines.<sup>71</sup>

## 7.4 Temporary accommodation

Damage to homes may mean that animal custodians will require temporary accommodation. Planning for this is undertaken by recovery organisations. Temporary accommodation needs for custodians also needs to consider their animals and an animal inclusive approach at this stage is critical. It is important that the human-animal bond is maintained, particularly where separation can have significant health and wellbeing issues. It is important that housing providers and social welfare organisations recognise this, especially in mid-term temporary accommodation that is often through private rental agreements. Advocacy to landlords may be required for them to accept companion animals in rental properties.

## 7.5 Animal health and welfare

Health checks will be required on animals injured during the emergency, as well as treatment of any pre-existing conditions and any issues that present in the weeks following.

As the recovery process unfolds, ongoing assessment by private veterinarians, farmers and others may be required for continued triage, treatment or euthanasia of impacted animals.

There are additional issues for some animals depending on the hazards they have been exposed to. Examples include:

- extended periods standing in floodwater can cause skin and hoof issues and injuries can become infected
- animals that were washed away or swam in floodwater, but survived, may have aspirated water into their lungs, leading to pneumonia
- animals with burn injuries will require ongoing and intensive veterinary care
- loss of power and inability to milk cows on dairy farms can lead to mastitis that requires treatment.

Flood and fire can cause several pasture and soil issues such as erosion, pasture death or weakness or contamination by weeds or chemicals. These will need to be addressed in the longer term for pasture health and animal productivity to recover. Pasture and soil can also be contaminated leading to health issues for animals. Further, the growth of noxious or poisonous weeds can also lead to animal suffering and death.

Water or fodder drops and feeding of animals in situ may be required until custodians can overcome short term disruptions such as infrastructure damage, supply or access issues. This will require logistics for transport, the sourcing

of feedstuffs and communication with property owners. Long term decisions around the sustainability of hand or supplementary feeding should be considered. This includes if owners cannot afford to, or it is not viable to, feed animals for the long term. For example, if the country is muddy or pastures need time to recover, they need to make decisions around agisting or reducing numbers to make a return to productivity or to ensure animal welfare.

For animals isolated for a long time there will be animal husbandry issues, for example treatment for flystrike or shearing. Custodians may need assistance from people and equipment to undertake these tasks. However, a business should endeavour to plan and arrange their own transport, infrastructure recovery and veterinary treatment where possible.

For wildlife, there can be increased predation risks when food and shelter are in short supply. Supplementary feeding of wildlife is generally not recommended.<sup>f</sup> Dehydration is a major challenge for wildlife and the provision of fresh clean water should be the top priority.<sup>72</sup>

Custodians will also need to watch for mental health and behavioural issues in animals in their care, particularly where there has been separation or losses of the human-animal bond, or if bonded animals have lost their close animal companion.

Custodians of animals will need to consider these issues in their emergency planning. Recovery planners will need to consider evolving arrangements to support custodians, where the existing local capacity is exceeded.

## 7.6 Death and disposal

Destruction and disposal of animals that commenced during the relief and early recovery stage of an emergency may continue for an extended period. Responders will be exposed to potentially traumatic sights, sounds, smells and distraught people, including animal custodians, the public and colleagues. Overall exposure, work or duty times and rostering need to be considered. Many of these considerations are mainstream in emergency response focussed organisations but may not be as familiar to other organisations.

For companion animal custodians, returning home and searching for lost pets or finding remains is very traumatic. For some, there is no trace of their companions and this lack of closure can be equally hard to manage.

It is important to clarify if euthanasia of animals aligns with the custodian's belief system. If not, ensure communication is culturally sensitive whilst communicating animal welfare needs and legislation requirements. It is recommended that communication occurs in consultation with specific multicultural communities to ensure engagement with custodians reflects sensitivity, empathy and concern. Unfortunately, there are examples of euthanasia undertaken without individual or community engagement that then

<sup>f</sup> Wildlife Health Australia have a fact sheet *Supplying water and food for free-living wildlife after disasters* that provides appropriate guidance: [https://wildlifehealthaustralia.com.au/Portals/0/ResourceCentre/FactSheets/General/WHA\\_Water\\_and\\_food\\_natural\\_disaster.pdf](https://wildlifehealthaustralia.com.au/Portals/0/ResourceCentre/FactSheets/General/WHA_Water_and_food_natural_disaster.pdf)

results in further trauma, such as in the aftermath of Tropical Cyclone Tracy in Darwin in 1974.<sup>73</sup>

Research and experience indicate that those who are involved in large scale euthanasia of animals also find this challenging for their mental health.<sup>74</sup> This needs to be recognised in emergency planning and support provided. This is particularly important for smaller, volunteer-based organisations that are not part of a system, or do not have access to workplace support services.

## 7.7 Managing goodwill

Online and traditional media coverage can drive people to acts of goodwill. This can prompt people to donate their money, time, or unsolicited goods. Affected animals can be a major focus for support. As an example, the fundraising for animals after the 2019-20 bushfires exceeded \$200 million.<sup>75</sup>

Each of these acts of generosity also brings management complexities for the organisations that are the recipients of the goodwill.

Plans need to be in place to manage goodwill. Organisations need to have the ability to scale up quickly. Organisations also need the ability to communicate with the broader community and donors about what is needed and their plans for managing the donations. Having a plan means organisations can continue to focus critical resources on responding to animal needs, rather than managing the complexities that emerge from the donations.

Fundraising campaigns to support volunteer-based organisations working in AEM can be highly successful but require additional support for the management of funds.<sup>76</sup> This demonstrates the need to plan for the post disaster period, to manage employee workloads and rosters and have communications and campaign strategies to direct volunteers that are ready to go. Approaches that favour a single funding source for public donations, with subsequent distribution across animal organisations, could aid recovery planning. Such approaches streamline efforts for national and international marketing and media and would reduce the staffing and administrative challenges outlined above.

Guidance for planning for the management of goodwill can be found in the *Communities Responding to Disasters: Planning for Spontaneous Volunteers* (AIDR 2018) and Australian Red Cross' *Communicating in Recovery*.<sup>77</sup>

## 7.8 Managing livestock

Custodians of agricultural and commercial animals may need help with stock assessments for insurance, access to rangers or shooters to dart or euthanise injured animals that cannot be approached or handled. There are likely to be difficult conversations around the ethics of euthanasia, with people wanting to keep alive and treat animals that are unlikely to survive. This also applies to those wanting to embark on treatment and care protocols likely to be beyond

their financial, physical, or emotional capability. The scale, contexts and additional emotional factors surrounding these conversations can take a toll on all participants.

In recovery planning, businesses will be seeking advice on returning to production and making business decisions on future directions. Similarly, alterations to farm design may be warranted and there may be opportunities to make positive changes for the future. Appropriate consideration of options may require consultation with farm and business advisors.

## 7.9 Managing captive wildlife - native and exotic

Where zoos or animal sanctuaries have been impacted by the emergency, their business continuity plans need to be enacted to ensure continuity of care for animals. Their networks need to be developed to allow for movement of animals to other sites if required. These should be planned for and tested in advance.

After a significant emergency, efforts will focus on rebuilding and communicating with the public about the impacts and actions being taken. Decisions about future animal intakes will also be needed based around the safety of the site, animal and staff welfare, feed supplies and animal health. Many zoos and sanctuaries normally open to the public will focus on communicating when they will reopen to reestablish revenue flows.

## 7.10 Managing wildlife

Following a disaster where there have been heavy impacts on wildlife, the wildlife sector is likely to receive a greater media and public focus. Media access to iconic species being rescued spontaneously against backdrops of dramatic and damaged environments makes for compelling visuals and emotional stories. Many animal-focussed NGOs are also registered charities, reliant on public support and donations for their upkeep, so the post disaster period is an important time to generate media to highlight the plight of animals and boost fundraising. There may be an influx of volunteers and people wanting to help wildlife, who often underestimate the skills and experience necessary for welfare-based decision making. This influx of goodwill requires management and resources at a time when these may already be stretched and fatigued.

Wildlife sector custodians should provide ongoing support to their employees and volunteers working in post disaster recovery. Veterinary professionals and volunteers involved in animal rehabilitation may face many months of work treating sick, injured and orphaned wildlife after an emergency event. There will be a need to plan for and provide psychological support and assistance, as well as financial assistance to these groups.

Guidance on providing food and water for native wildlife should be provided to the public by AEM authorities. This should be incorporated into public information strategies.

## 7.11 Trauma and stress – human and animal

Managing animals impacted by emergencies can be traumatic for everyone involved. There can also be considerable vicarious trauma to those not directly impacted or managing these situations.

Managing practical tasks after disasters can be challenging. Owners or managers of businesses may need to make short- and long-term decisions about their business, manage distraught or angry animal custodians (if they own a boarding/agistment business), or struggle to provide ongoing care to injured animals with the ongoing burden of post-disaster recovery.

The human-animal bond is likely to add to trauma where animals are lost or injured. However, the survival of an animal, even in the face of other animal losses, can be powerful and positive – a beacon of hope.

For Aboriginal people, the loss of totemic animals may cause experiences of deep and immense cultural stress and personal trauma.<sup>78</sup> Conversely, sightings or evidence of totemic or ancestral animals may be taken as a sign, indicating life and providing renewal and cultural nourishment post-disasters.

The breaking of the human-animal bond can impact people negatively in the same ways that the establishment of these bonds is positive. People can become more isolated and lose connections through disrupted or lost routines, for example they lose a dog and do not go for regular walks in the local community. People can become depressed as they grieve for their animals.

For children and young people, the losses can be significant as they may have known the companion animals their whole lives or may have been active in an animal program at their school. Children may also be affected by losses that are not easily recognised, for example their dog or cat was saved but the classroom goldfish or budgie was not. Children can also be profoundly affected by losses of wildlife.

The large-scale destruction of animals, particularly livestock and wildlife can cause significant stress and trauma for farmers, primary industries and parks and wildlife staff.

After disasters, the broader public, not just animal custodians can become distressed by the negative impacts on the natural environment (solastalgia) including the loss of birdsong and garden wildlife.

Animals are also directly affected by disasters and can be traumatised and exhibit behavioural changes, such as separation anxiety, aggressive behaviours or may stop eating. Changes of environment and routines can be stressful too.

Planning needs to consider the exposure of community members, those who work in AEM and other organisations to these traumatic situations. This exposure needs to be incorporated into mental health and psychosocial support services screening, support and intake activities, as well as consideration for healing ceremonies.

Emergency and recovery planning consequently needs to incorporate recognition of bereavement at the loss of companion, livestock, wildlife or Nation, clan, family or personal totemic animals. This is because this grief is often disenfranchised, ranking lower than the loss of human lives, or the loss of homes, businesses and other structures. This is especially important to remember and include when there is planning for anniversary events and memorials. Careful management of all veterinary professionals and those who support them, such as administration, is needed. Many people may not have been exposed to post-disaster recovery situations previously and may need additional monitoring and support. The value of peer support and a culture of care ahead of time can be helpful.

## 7.12 Longer term planning for recovery


The recovery process unfolds over months and years, into decades. Once the urgent needs are managed and uncertainties about the future are reduced, animal custodians can make longer term plans. Given the length of disaster impacts, recovery organisations will need to have strategies to provide ongoing support and communication to animal custodians and the wider community. Those who work with businesses and industry may need to assist with business planning, financial counselling and financial supports such as loans and grants.

Longer term planning may include business decisions to destock to avoid future hazard-related losses, to relocate to another less risk prone location, or to make improvements to emergency plans such as changing evacuation procedures or business processes. Some may decide to invest in new risk mitigation approaches, make improvements to structures, such as adding sprinklers, strengthening roofs, or purchasing equipment or vehicles, like a larger horse float or a trailer.

In communities, memorials may be planned to acknowledge animal losses and help community members grieve. Arranging community events and ways for communities to come together to commemorate a shared event can be good for building connections and sharing stories, as well as learning and developing new networks. Memorials and services that acknowledge the loss of animals can be good healing opportunities and can provide support to communities. These may also take the form of community building activities, such as working bees or replacement of animal facilities.

In the wildlife sector, actions may be taken to repair and restore the environment and biodiversity. Some wildlife populations may be relocated if their existing environment is too impacted to support survival. For severely affected environments, there will likely need to be replanting to generate habitat and food sources longer term and there may be a need to control invasive species – both weeds and pest species that may outcompete or threaten native flora and fauna.

Recovery planning needs to consider the diverse needs of different animals and their diverse custodians. It should also be supported by ongoing needs assessments.



# Chapter 8: Continuous improvement

A successful outcome for AEM is no different to success in other areas of emergency management.<sup>79</sup>

- The best outcomes result from preventing risks from occurring and mitigating potential impacts.
- Having custodians understand their risks and responsibilities and be supported in disaster risk reduction, preparedness and planning is key.
- Early supportive, participatory and inclusive engagement is required, where possible.
- Building and maintaining connections with animal custodians, communities and the organisations that represent groups in this area helps to build momentum in planning and preparedness.

The planning activities outlined in this handbook should be tested regularly through the conduct of exercises. Guidance on exercise development and conduct, whether it is multi-organisation, or single agency or community can be found in *Managing Exercises* (AIDR 2023) and the companion documents.

After action reviews should be run, which feed into lessons management. These activities should involve all stakeholders, including emergency organisations, to get a full picture of what worked well, what needs improvement and what the root causes of issues may be that can be learned from and fixed for next time. Lessons management activities are an excellent way to understand and improve operational processes during exercises and emergencies. Guidance on this can be found through *Lessons Management* (AIDR 2019).


For risk reduction and recovery programming, it is important to allocate time and resources to evaluating the effectiveness of the programs.

Finally, it is important to acknowledge the efforts of those involved in planning and responding and formally recognise and acknowledge the partnerships that have been built. This will assist with team building and future activities.



**Mobile veterinary clinic.**

Image: Animal Welfare League and NSW DPI RD



# Appendix 1: Detailed animal categorisation framework

**Table 4:** Detailed animal categorisation framework.


Category names	Household animals – companion animals, ‘pets’ (incl. assistance and support animals)	Household animals – outdoors (incl. pet livestock)	Farm / agricultural animals (commercial production, tourism, livestock) (incl. large working animals)	Boarding / shelters / rescue / veterinary and research and educational contexts	Captive – native and exotic wildlife	Wildlife – free ranging	Animals in rural and remote Indigenous communities	Feral animals (vertebrates only)
<b>Key agencies / stakeholders for each group</b> Note: Emergency management organisations (SES / Fire / Police) are across all.	Local government, primary industries, private veterinarians, NGOs (RSPCA, AWL, Guide Dogs, etc.)	Primary industries, local government, private veterinarians, breed associations / industry groups.	Primary industries, industry groups / associations, agricultural organisations, show societies, local government.	Local government, primary industries, educational organisations / institutions, associations, NGOs.	Local government, industry associations, wildlife organisations, primary industries.	State government / parks, environment department, local government, primary industries, wildlife organisations.	State government, primary industries, Indigenous organisations, AMRRIC.	State government / parks, local government, primary industries, land managers (or bodies representing).
<b>Custodians</b> Responsible person / entity.	Householders.	Householders, small landholders, small businesses.	Business owners (medium / large), farmers, managers, event organisers (agricultural shows, sports).	Business owners (small / medium), local government.	Business owners, individual carers.	Government agencies, wildlife organisations, carers, general population.	Community, individuals.	Government agencies, general population.
<b>Contexts / environments</b> Examples of locations and enterprises.	Homes, workplaces, schools, holiday locations.	On-property.	Farms, commercial enterprises (incl. tourism), petting zoos, trail riding, racing stables, showgrounds, schools.	Kennels, catteries, agistments, pounds, schools, veterinary practices and hospitals, research facilities.	Sanctuaries, zoos, circuses, wildlife hospitals and smaller-scale rehabilitation.	Free ranging, uncontained, some may be localised.	Homes and free ranging in local community.	Free ranging.
<b>Animal types</b> Some examples – not exhaustive.	Cats, dogs, pet fish, rabbits, reptiles, birds, pocket pets, exotics.	Horses, alpacas, poultry, goats, cows, sheep, pigs.	Livestock, horses, cattle, sheep, pigs, chickens, ducks, fish / aquatic.	Mostly cats and dogs but also others.	Zoo animals, captive wildlife.	Macropods, bats, wombats, koala, possum, gliders, birds, reptiles, amphibians. Also, aquatic / fish, crocodiles.	Dogs, cats and others.	Domesticated species living in the wild (feral) – pigs, goats, camels, horses, cats, excl. rodents.

Category names	Household animals – companion animals, 'pets' (incl. assistance and support animals)	Household animals – outdoors (incl. pet livestock)	Farm / agricultural animals (production, tourism, livestock) (incl. large working animals)	Boarding / shelters / rescue / veterinary and research and educational contexts	Captive – native and exotic wildlife	Wildlife – free ranging	Animals in rural and remote Indigenous communities	Feral animals (vertebrates only)
<b>Animal size</b>	Smaller, generally portable depending on numbers and compatibility.	Mixed, but mostly larger animals.	Large and small.	Generally smaller.	Mixed sizes.	Mixed.	Generally smaller.	Mixed. (Small 'pest species', e.g. mice, out of scope).
<b>Numbers of animals</b>	Usually smaller numbers – except aviary, fish tanks.	Generally smaller numbers – typically 2-10.	Large and small.	Larger numbers – 20-50.	Larger overall.	Varied. Large but dispersed. Some small / high value populations.	Varied at the household level, but larger numbers (10+) if management of animals is considered for a community.	Mix. Usually, larger overall but could be dispersed.
<b>Relationship with / to people (nature of the bond)</b>	Companion, emotional. Some functional or work-related dependencies – e.g. assistance animals / dogs, SAR, working dogs.	Emotional, varied – recreational, sporting, showing, breeding.	Livelihood / economic, prestige / professional (showing, sporting, competing).	Transferred responsibility from 'owner', welfare / rehoming. Livelihood / economic. Professional.	Livelihood / economic, conservation / welfare. Emotional.	Valued – connection to place, wellbeing, spiritual, and societal cultural values. Conservation status, e.g. threatened, endangered.	Companions, emotional, cultural and spiritual. Societal value.	Mixed. Polarised. Emotional.
<b>Animal behaviour</b>	Socialised / trained or contained. Some used to each other / relationships known to 'owner', also 'yard' dogs and dangerous pet species.	Socialised / used to people. Generally, like own kind – herd / flock.	Herds / flock, generally not trained (some exceptions in tourism uses).	Mixed. Used to people – but sometimes neglected / mistreated / injured. Not used to each other.	Mixed. Mostly wild. Some herd / some solitary / some predatory. Many dangerous / unpredictable.	Wild. Wary or frightened of people, some herd / some solitary / some predatory. Most require expert handling.	Mixed. Mostly approachable / used to people. Potential pack issues with dogs. Some not used to confinement or typical restraint tools, e.g. collars.	Wild. Some herd / some solitary.



Category names	Household animals – companion animals, ‘pets’ (incl. assistance and support animals)	Household animals – outdoors (incl. pet livestock)	Farm / agricultural animals (production, tourism, livestock) (incl. large working animals)	Boarding / shelters / rescue / veterinary and research and educational contexts	Captive – native and exotic wildlife	Wildlife – free ranging	Animals in rural and remote Indigenous communities	Feral animals (vertebrates only)
<p><b>Main risk reduction and preparedness activities</b></p> <p>All will require water, food.</p> <p>Most need secure containment or safe refuge.</p>	<p>Know / understand risks.</p> <p>Ensure inclusion of animals in household plan and be prepared.</p> <p>Containment, transportation arrangements considered.</p> <p>Know where to go / timing.</p> <p>Possible need to take to more than one place.</p> <p>Secure food / meds for 72 hours.</p>	<p>Know / understand risks.</p> <p>Ensure inclusion in household emergency plan and be prepared.</p> <p>Have arrangements in place ahead of time about where to go.</p> <p>Move large animals early.</p> <p>Anticipate whether multiple trips are required.</p> <p>Plan for being unable to return.</p> <p>Have a plan for how you will stay responsible for animals if going to evac / holding area.</p>	<p>Ensure inclusion of animals in business continuity / farm emergency plan.</p> <p>May have different plans for different animals / groups.</p> <p>On-site refuges in place e.g. mounds, bare paddocks, access to water and food.</p> <p>Some may be moved to high ground on property.</p> <p>Industry-specific actions e.g. dairy power supply.</p> <p>Evacuation plans in place for some ‘high value’ animals.</p> <p>if evacuating animals, have plans in place to transport, allow time and have back up plan.</p>	<p>Avoid locating premises in high-risk areas.</p> <p>Know risks.</p> <p>Plans in place and staff trained.</p> <p>Anticipate issues with owners / managers e.g. booking-in – know the plan if emergency, including the communications plan for contacting owners.</p> <p>Have logistics / help pre-arranged.</p> <p>Activate early.</p> <p>Have back up plans for evacuation failure.</p>	<p>Avoid locating premises in high-risk areas.</p> <p>Risk management and mitigation plan in place.</p> <p>Have plan with staff for managing situation / duty of care.</p> <p>Sprinkler systems in place, vegetation management around establishment.</p> <p>Refuges / safer places for animals where possible.</p> <p>Plans for food / water.</p> <p>Evacuation plans in place for some ‘high value’ animals.</p>	<p>Know where critical habitat is. Protect those areas if / where possible.</p> <p>Have wildlife advice in IMT.</p> <p>Expedite response as early as possible with trained wildlife responders.</p> <p>Have communications plan in place for public / reduce self-deployed groups.</p> <p>Have care and transport in place for surviving wildlife asap.</p>	<p>Work with community to agree their preferred course of action.</p> <p>Scope the number of animals and mix.</p> <p>Plan for assistance with evacuation, where wanted or anticipated and help to keep those animals with their people.</p> <p>Have care set up in place for those animals staying.</p> <p>Consider locations and convergence of animals.</p> <p>Include communication plans, veterinary care etc.</p>	<p>Mostly confined to protecting land for free-ranging wildlife, which includes feral habitat and preparing to reduce animal suffering in a timely way post-event.</p> <p>Mostly large and hard to handle animals.</p> <p>Limited triage and retrieval (cats).</p> <p>Rangers and shooters deployed for larger animals.</p>
<p><b>Typical / main protective action before / during emergency</b></p>	<p>Relocate / evacuate – stay with owner / household members.</p>	<p>Mostly relocate early elsewhere, due to bond.</p> <p>Some protect in place.</p>	<p>Protect in place – some could be evacuated – ‘high value’ / breeding or easily handled.</p>	<p>Mostly relocate due to species, bonds and professional reputation issues.</p> <p>Some protect in place.</p>	<p>Protect in place – some could be evacuated potentially – ‘high value’.</p>	<p>Protect habitat from hazard.</p>	<p>Mix – protect in place, some may be evacuated with household members.</p>	<p>Opportunistic monitoring for impact.</p>

Category names	Household animals – companion animals, 'pets' (incl. assistance and support animals)	Household animals – outdoors (incl. pet livestock)	Farm / agricultural animals (commercial production, tourism, livestock) (incl. large working animals)	Boarding / shelters / rescue / veterinary and research and educational contexts	Captive – native and exotic wildlife	Wildlife – free ranging	Animals in rural and remote Indigenous communities	Feral animals (vertebrates only)
<b>Considerations post-event (first few days / week)</b> Assessment, treatment, euthanasia and disposal will be common to all – as well as the direct impacts on owners / managers – e.g. their displacement, injuries, trauma.	Safe return home – debris, ash, contaminated water, hazards – glass etc., injuries. May require fostering (due to temporary accommodation restrictions). Broader issues of donations management.	Fencing / containment. Agistment. Appropriate disposal. Feed and water. Assessment, treatment or euthanasia, appropriate disposal.	Fencing / containment. Pasture / feed / water. Assessment, treatment or euthanasia of multiple animals. Mental health issues. Insurance issues. Appropriate disposal.	Communication and coordination with owners (may be away / holiday / unable to get back to area). Assessment and triage. Veterinary assistance. Crisis communications to stakeholders and public.	Assessment and triage. Urgent veterinary assistance. Public communications – reputational considerations. Fundraising / donations. Individual carers – capacity to take additional animals, supplies, self-care.	Retrieval, assessment, triage. Reduce suffering – euthanasia protocols and treatment options / vet and carer skills. Numbers. Management of spontaneous volunteers. Public communication. Fundraising / support.	Communication with community. Reassurance about care in place. Awareness of culturally significant issues.	Euthanasia.
<b>Consequence of loss (primary)</b> All have emotional impacts and potential human grief and animal trauma.	Emotional. Social capital (e.g. via walking, showing). Financial (veterinary treatment / funeral).	Emotional. Social capital (e.g. via competing, showing, etc). Financial (veterinary treatment / funeral). Some economic.	Economic. Social licence. Emotional. Reputational. Inter-generational issues. Time to re-stock / recover / loss of bloodlines.	Economic. Reputational. Legal.	Reputational. Loss to conservation efforts / genetic diversity. Economic.	Biodiversity loss. Public outrage. Political and reputational.	Emotional. Cultural loss.	Has potential to be beneficial, e.g. assists with control programs.



# Appendix 2: National Planning Principles for Animals in Disasters

The National Advisory Committee for Animals in Emergencies developed the National Planning Principles for Animals in Disasters, which was designed as a non-prescriptive tool to support jurisdictions as they improve disaster management planning by ensuring that animals are considered. The National Planning Principles for Animals in Disasters have been endorsed by the Australia-New Zealand Emergency Management Committee.

#### 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, for the benefit of emergency managers and animal welfare managers, 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, especially with reference to animal welfare and animal management arrangements within the local area, as 'first responders' in disasters and acknowledge local government expertise in understanding local needs and resource availability.
- 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.
- Specify that the individual in charge of an animal is ultimately responsible for its welfare in disasters.

#### THE DISASTER PLAN THAT INCORPORATES ANIMAL WELFARE IN DISASTERS 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.
- Appropriately plan for animals taking into consideration the types of disasters most likely to be experienced in the particular jurisdiction.
- Include consideration of animals at all stages of the disaster cycle including preparedness, response, recovery and mitigation.
- 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.
- 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.
- Outline command and control structures in language that is accessible to the general public.
- 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 requirements and arrangements for regular testing and review of the animal welfare in disasters plan.

# Glossary

TERM	DEFINITION
<b>ANIMAL EMERGENCY MANAGEMENT (AEM)</b>	Encompasses any activities related to disaster risk reduction, planning, preparedness and recovery that involve animals and animal custodians. The term is used in this handbook to distinguish between general emergency management considerations and actions and those that specifically refer to animals and animal custodians.
<b>ASSISTANCE ANIMALS</b>	Animals that provide assistance to people living with a disability or impairment and are accredited under state or territory laws.
<b>BIOSECURITY</b>	Biosecurity is the management of the risks to the economy, the environment and the community, of pests and disease entering, emerging, establishing or spreading.
<b>COMPANION ANIMALS</b>	Animals that are in the household that humans often have close bonds with. This includes cats, dogs, pocket pets, fish, birds. The term is used in preference to 'pets' and is applied broadly in this handbook to avoid more detailed listings of animal types.
<b>CUSTODIAN</b>	A person who has the care and control of (and therefore responsibility for) an animal. This term is used throughout this handbook in place of other terms such as guardian, owner, manager, or person in charge.
<b>FERAL ANIMALS</b>	Non-native species that have established themselves in the wild through various means, including escape from captivity, deliberate or accidental release and illegal importation. The terms 'pest animals' or 'invasive species' may be used in other contexts.
<b>ONE WELFARE</b>	A concept that recognises the interconnectedness of animal welfare, human well-being and environmental sustainability. It extends the One Health framework, considering not only physical health but also mental health and the role of society.
<b>RESCUE</b>	The safe removal of persons or animals from actual or threatened danger of harm.
<b>WILDLIFE</b>	Managed and unmanaged populations of native animals, including amphibians, reptiles, birds and mammals. In this handbook, the term 'wildlife' excludes feral animals. The term 'native wildlife' is sometimes used to distinguish between wildlife and feral ('non-native') animals.

Further terminology can be found in the *Australian Disaster Resilience Glossary* available on the Australian Disaster Resilience Knowledge Hub [www.knowledge.aidr.org.au](http://www.knowledge.aidr.org.au).

# References

- 1 Australian Government (2024) Department of Agriculture, Fisheries and Forestry.
- 2 Glassey, S (2022) Animal Disaster Management. *Routledge Handbook of Animal Welfare* (1st ed), Routledge.
- 3 BNHCRC (2019) [www.bnhcrc.com.au/research/animalsindisasters](http://www.bnhcrc.com.au/research/animalsindisasters)
- 4 Department of Agriculture, Fisheries and Forestry (2022) *Animalplan 2022 to 2027: Australia's National Action Plan for Production Agricultural Animal Health*, Canberra.
- 5 Department of Agriculture (2019) *Australian Government Drought Response, Resilience and Preparedness Plan*, Canberra.
- 6 NSW Government (2024) *Managing Drought, Fire and Flood: A Guide for Primary Producers*.
- 7 Animal Health Australia (2024) *Australian Veterinary Emergency Plan (AUSVETPLAN)* edition, 11 April.
- 8 Glynn McDonald, R (2024) Connection to animals and country, Common Ground. [www.commonground.org.au/article/connection-to-animals-and-country](http://www.commonground.org.au/article/connection-to-animals-and-country)
- 9 **Australian Disaster Resilience Glossary** (aidr.org.au)
- 10 National Resilience Taskforce (2018) *Profiling Australia's Vulnerability: The interconnected causes and cascading effects of systemic disaster risk*.
- 11 Kelman, I (2020) *Disaster by choice: how our actions turn natural hazards into catastrophes*, Oxford University Press.
- 12 Richardson, JF (2014) *Beyond vulnerability: Developing disaster resilience capacities to target household preparedness activities*, Australian and New Zealand Emergency Management Conference, Gold Coast.
- 13 Gibbs L, Molyneaux R, Harms L, Gallagher H, Block K, Richardson J, Brandenburg V, O'Donnell M, Kellett C, Quinn P, Kosta L, Brady K, Ireton G, MacDougall C & Bryant R (2020) *10 Years Beyond Bushfires Report*, University of Melbourne, Melbourne.
- 14 Australian Business Roundtable (2017) *The economic cost of the social impact of disaster*.
- 15 Gibbs L, Molyneaux R, Harms L, Gallagher H, Block K, Richardson J, Brandenburg V, O'Donnell M, Kellett C, Quinn P, Kosta L, Brady K, Ireton G, MacDougall C & Bryant R (2020) *10 Years Beyond Bushfires Report*. University of Melbourne, Melbourne.
- 16 AIDR (2023) **Australia's Riskscape** (aidr.org.au)
- 17 DCCEEW (2022) *State of the Environment Report*.
- 18 NSW Department of Environment and Heritage, How fire affects plants and animals [www.environment.nsw.gov.au/topics/fire/plants-animals-fire](http://www.environment.nsw.gov.au/topics/fire/plants-animals-fire)
- 19 Ibid.
- 20 AIDR (2023) **Australian Emergency Management Arrangements** (aidr.org.au)
- 21 Smart, C, Nou, T, Lassa, J (2024) Pets are family, keep them safe: a review of emergency animal management in remote First Nations communities. *Australian Journal of Emergency Management*.
- 22 Squance H, MacDonald C, Stewart C, Prasanna R, Johnston DM (2021) Strategies for Implementing a One Welfare Framework into Emergency Management. *Animals*, 11(11):3141.
- 23 Mellor, D.J, Beausoleil, N.J, Littlewood, K.E, McLean, A.N, McGreevy, P.D, Jones, B, Wilkins, C (2020) The 2020 Five Domains Model: Including Human–Animal Interactions in Assessments of Animal Welfare. *Animals*, 10, 1870.
- 24 Vaile, H (2018) The Fear Free approach to veterinary care. *Vet Practice*.
- 25 AFAC (2022) **Large Animal Rescue Operations**. Procedural Guideline (afac.com.au)

- 26 Food and Agriculture Organization (2007) *FAO Biosecurity Toolkit* (p3).
- 27 AIDR (2021) **Community Engagement for Disaster Resilience** (aidr.org.au)
- 28 Australian Red Cross (2021) **Emergency Resilience in Culturally and Linguistically Diverse Communities.**
- 29 Gender and Disaster Australia (2023) *Gender and Emergency Management Guidelines.*
- 30 Villeneuve, M., Abson, L., Yen, I., & Moss, M (2020) *Person-Centred Emergency Preparedness (P-CEP) Workbook.* Centre for Disability Research and Policy, The University of Sydney.
- 31 AIDR (2023) **Australian Emergency Management Arrangements** (aidr.org.au)
- 32 DCCEEW (2024) What's protected under the EPBC Act: [www.dcceew.gov.au/environment/epbc/our-role/what-is-protected](http://www.dcceew.gov.au/environment/epbc/our-role/what-is-protected)
- 33 The Biosecurity Act (2015) Latest amendment 2023. [www.agriculture.gov.au/biosecurity-trade/policy/legislation/biosecurity-legislation](http://www.agriculture.gov.au/biosecurity-trade/policy/legislation/biosecurity-legislation)
- 34 Animal Medicines Australia (2022) *Pets in Australia report 2022.*
- 35 National Farmers Federation (2020) *Food, Fibre and Forestry Facts.*
- 36 van Eeden LM, Nimmo D, Mahony M, Herman K, Ehmke G, Driessen J, O'Connor J, Bino G, Taylor M, Dickman CR (2020) *Impacts of the unprecedented 2019-2020 bushfires on Australian animals.* Report prepared for WWF-Australia.
- 37 Victorian Aboriginal Heritage Council (2020) **Taking care of culture: A discussion paper.**
- 38 Glynn-McDonald, R (2024) Connection to animals and country. Common Ground, [www.commonground.org.au/article/connection-to-animals-and-country](http://www.commonground.org.au/article/connection-to-animals-and-country)
- 39 Hughes, B and Lewis Harkin, B (2022) The Impact of Continuing Bonds Between Pet Owners and Their Pets Following the Death of Their Pet: A Systematic Narrative Synthesis.
- 40 Jenner M (2007) The psychological impact of responding to agricultural emergencies. *Australian Journal of Emergency Management*, 22(2):25-31.
- 41 National Alliance to End Homelessness (2020) Improving Outcomes in Homelessness: Keeping People and Pets Together.
- 42 Purewal R, Christley R, Kordas K, Joinson C, Meints K, Gee N, Westgarth C (2017) Companion Animals and Child/Adolescent Development: A Systematic Review of the Evidence. *Int J Environ Res Public Health*. 27;14(3):234.
- 43 Larkin, B (2019) Pride and prejudice: LGBTIQ community responses to disaster events worldwide. *Australian Journal of Emergency Management*, 34(4), 60-66.
- 44 Rosenberg, S., Riggs, D. W., Taylor, N., & Fraser, H (2020) 'Being together really helped': Australian transgender and non-binary people and their animal companions living through violence and marginalisation. *Journal of Sociology*, 56(4), 571-590.
- 45 Szűcs E, Geers R, Jezierski T, Sossidou EN, Broom DM (2012) Animal welfare in different human cultures, traditions and religious faiths. *Asian-Australas J Anim Sci*. Nov;25(11), 1499-506.
- 46 Sinclair M, Lee NYP, Hötzel MJ, de Luna MCT, Sharma A, Idris M, Derkley T, Li C, Islam MA, Iyasere OS, Navarro G, Ahmed AA, Khruapradab C, Curry M, Burns GL and Marchant JN (2022) International perceptions of animals and the importance of their welfare. *Front. Anim. Sci.* 3:960379.
- 47 Cronley, C., Strand, E.B., Patterson, D.A., & Gwaltney, S. (2009) Homeless people who are animal caretakers: a comparative study. *Psychological Reports*, 105, 481-499.
- 48 Hunt M, Al-Awadi H & Johnson M (2008) *Psychological sequelae of pet loss following Hurricane Katrina.* *Anthrozoos*, 21(2), pp. 109–121.
- 49 Foote, W. L., Alston, M., Betts, D., & McEwan, T (2024) Women's leadership and a community 'saving itself': Learning from disasters, health and well-being impacts of the Northern Rivers flood 2022. University of Newcastle.
- 50 Parkinson, D., Duncan, A., & Kaur, J. (2018). Long-term disaster resilience. Report. Gender and Disaster Pod, WHGNE.
- 51 Rachel M. Park, Kenneth D. Royal & Margaret E. Gruen (2023) A Literature Review: Pet Bereavement and Coping Mechanisms, *Journal of Applied Animal Welfare Science*, 26:3, 285-299.
- 52 Harms L, Gibbs L, Bryant R, Lusher D, Richardson J, MacDougall C, Block K, Snowdon E, Gallagher C, Sinnott V, Ireton G, Forbes D, & Waters E (2015) Conceptualising post-disaster recovery: Incorporating experiences of grief and loss. *British Journal of Social Work*. 45(sup1): i170-i187.

- 53 Hughes, B and Lewis Harkin, B (2022) The Impact of Continuing Bonds Between Pet Owners and Their Pets Following the Death of Their Pet: A Systematic Narrative Synthesis.
- 54 The State of Victoria Department of Environment, Land, Water and Planning (2021) Regulating the protection of Wildlife State of Regulatory Intent.
- 55 International Union for the Conservation of Nature (2024) [www.iucn.org/our-work/biodiversity](http://www.iucn.org/our-work/biodiversity)
- 56 National Advisory Committee for Animals in Emergencies (2014) *National Planning Principles for Animals in Disaster*.
- 57 AIDR (2020) **Land Use Planning for Disaster Resilient Communities** (aidr.org.au)
- 58 AIDR (2021) **Systemic Disaster Risk**, Principle 13 (aidr.org.au)
- 59 AIDR (2023) **Emergency Planning** (aidr.org.au)
- 60 Thompson, Kirrilly & Every, Danielle & Rainbird, Sophia & Cornell, Victoria & Smith, Bradley & Trigg, Joshua (2014) No Pet or Their Person Left Behind: Increasing the Disaster Resilience of Vulnerable Groups through Animal Attachment, Activities and Networks. *Animals*. 4. 214-240.
- 61 Heath SE, Linnabary RD (2015) Challenges of Managing Animals in Disasters in the U.S. *Animals* (Basel). 26;5(2):173-92.
- 62 Egbelakin, Temitope & Adedokun, Olufisayo (2024) Social resilient networks for improving animal evacuation in emergencies: rural/isolated community perspectives. *Australian Journal of Emergency Management*.
- 63 Gribble, K, Hamrosi, M and Tawai, S (2023) *Want to help the children? Help the Parents. Challenges and Solutions from Babies and Young Children in the Black Summer Study*.
- 64 Davie, S (2015) Safeguarding children from animals in emergencies. *Australian Journal of Emergency Management*, 30 (2), 47-48.
- 65 Montgomery J, Liang Z, & Lloyd J (2024) A Scoping Review of Forced Separation Between People and Their Companion. *Animals. Anthrozoös*.
- 66 AIDR (2023) **Evacuation Planning** (aidr.org.au)
- 67 AFAC (2022) **Large Animal Rescue Operations**. Procedural Guideline.
- 68 Quinn, P, Gibbs, L, Blake, D, Campbell, E, Johnston, D, Richardson, J, Coghlan, A (2022) Recovery Capitals: A collaborative approach to post-disaster guidance. *Australian Journal of Emergency Management*, 37 (2), 52-62.
- 69 AIDR (2018) **Community Recovery** (aidr.org.au)
- 70 Ibid.
- 71 National Emergency Management Agency (2024) *National Disaster Recovery Needs Assessment Guidelines* [www.nema.gov.au/about-us/governance-and-reporting/strategies-and-frameworks/national-disaster-recovery-needs-assessment-guidelines](http://www.nema.gov.au/about-us/governance-and-reporting/strategies-and-frameworks/national-disaster-recovery-needs-assessment-guidelines).
- 72 Wildlife Health Australia (2023) *Supplying water and food for free-living wildlife after disasters*, WHA Fact Sheet.
- 73 Cunningham, S (2014) *Warning: The Story of Cyclone Tracy*.
- 74 Olff M, Koeter MWJ, Van Haaften EH, Kersten PH, Gersons BPR (2005) Impact of a foot and mouth disease crisis on post-traumatic stress symptoms in farmers. *British Journal of Psychiatry*, 186:165-166.
- 75 Australian Broadcasting Corporation (2021) Animal rescue groups race to save Australia's bushfire-hit wildlife with nearly \$200 million in donations. [www.abc.net.au/news/2021-02-26/animal-rescuers-raise-\\$200-million-for-bushfire-hit-wildlife/13135592](http://www.abc.net.au/news/2021-02-26/animal-rescuers-raise-$200-million-for-bushfire-hit-wildlife/13135592)
- 76 Australian Red Cross (2022) *Communicating in Recovery* [www.redcross.org.au/globalassets/cms-assets/documents/emergency-services/communicating-in-recovery-resource.pdf](http://www.redcross.org.au/globalassets/cms-assets/documents/emergency-services/communicating-in-recovery-resource.pdf)
- 77 The Guardian (2015) Thanks, everyone, but the koalas have enough mittens now.
- 78 Williamson, B, Weir, J, Cavanagh V (2020) Strength from perpetual grief: how Aboriginal people experience the bushfire crisis. *The Conversation*.
- 79 AIDR (2023) **Emergency Planning** (aidr.org.au)





Image: AMRICC

Some of the friends that helped inspire the working group for this handbook.

**Australian Institute  
for Disaster Resilience  
Knowledge Hub**

[www.knowledge.aidr.org.au](http://www.knowledge.aidr.org.au)



Australian Government  
National Emergency Management Agency