THE UNIVERSITY OF SYDNEY

# Developing systems and capacities to *protect animals* in catastrophic fires

**Anna Sturman, Danielle Celermajer, Freya MacDonald, Blanche Verlie, Natasha Heenan and David Schlosberg**

**Sydney Environment Institute**

**Acknowledgments:**

This project was funded by the Australian Commonwealth Government via a Bushfire Recovery Grant from the Department of Industry, Science, Energy and Resources under grant number GA223763.

This research project was conducted in partnership with the Shoalhaven City Council. We thank them for their contributions to the wider project. This report has been prepared solely by the University of Sydney research team and reflects our research and analysis only.

We would also like to thank our research participants and the Shoalhaven community for their many contributions to this research project, and Uncle Tom, Uncle Vic, Peter Pigott, Kate Dezarnaulds and Bronwyn Lunt for their assistance and presence at the workshops.

**Trigger warning:**

The material contained within this report may be triggering or traumatising for readers. We encourage you to seek support if you need it.

www.wildtalk.org.au

www.psychologyforasafeclimate.org

www.phoenixaustralia.org/disaster-hub

www.beyondblue.org.au

www.lifeline.org.au or call 13 11 14

**Images:**

Many of the images contained in this report were taken by professional photographers during the Black Summer bushfires in locations further south, including in Victoria, than those discussed in this report.

Cover: Bandaged joeys recuperate after receiving treatment for their burned feet. Opposite: A brushtail possum with burns on their paws is treated at the Southern Cross Wildlife Care mobile triage unit in Merimbula. Images: Jo-Anne McArthur/We Animals Media.

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**Citation:** Sturman, A., Celermajer, D., MacDonald, F., Verlie, B., Heenan, N., and Schlosberg, D. (2024). *Developing systems and capacities to protect animals in catastrophic fires*. Sydney Environment Institute. https://doi.org/10.25910/82xf-5609

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**Sydney Environment Institute**

The authors of this report work at the University of Sydney's Camperdown campus, on the unceded lands of the Gadigal People of the Eora Nation. The fieldwork for this report was conducted throughout what is now known as the Shoalhaven region, on the unceded lands of the Wodi Wodi, Jerrinja, Wandi Wandian and Yuin First Nation peoples. We acknowledge the long running care for Country, including but not only of animals, that First Nations people continue to provide throughout what is now called Australia.

Mum kangaroo reckons with a burned forest.
Image: Jo-Anne McArthur / We Animals Media.

# 1. Executive summary

Climate change-exacerbated disasters are becoming increasingly prevalent across the planet. The impacts these disasters have on non-human animals[1] and the environment are myriad and catastrophic. In Australia, the 2019/20 "Black Summer" bushfires framed these impacts in stark relief as, across the country, people, animals, and nature more broadly, all bore witness to a climate-driven disaster of unprecedented magnitude. Three billion non-human animals were killed or displaced, with millions severely injured and impacted.[2]

Australia had no unified or adequate national emergency procedure in place for protecting animals before, during, or after the fires. This is not because Australian people do not care about animals. In fact, as we found in this research project, communities on the ground care so much about animals that they stepped up to fill the huge gaps in formal service provision at significant financial, personal, safety and emotional cost to themselves. Amidst catastrophic and life-threatening conditions, people in the places most heavily impacted by the fires autonomously organised themselves to evacuate, shelter, feed, water, provide healthcare and emotional safety for domesticated, wild, and farmed animals. Their heroic and mammoth efforts were deeply appreciated by local communities. However, they were largely invisible to, disregarded by, and even at times derided by, formal disaster management agencies at the time, and as the COVID-19 pandemic began just a few weeks after the fires ended, no subsequent recognition or documentation of their experiences and insights has been conducted.

Our research project, *Developing Systems and Capacities to Protect Animals in Catastrophic Fires*, engaged a suite of desktop methods and fieldwork to learn more about these experiences. In addition to reviews of Australian legislation and academic literatures, we conducted over sixty in-depth, trauma-informed qualitative interviews and four community workshops in the Shoalhaven region on the New South Wales South Coast, which was one of the worst affected areas. The Shoalhaven offered a strategic location for this research, given it includes farmland, national parks, and urban and peri-urban areas, and thus encompasses a wide range of animals and animal-human relations. Our research investigated and analysed how the communities, key actors, agencies, and institutions involved in protecting and caring for animals during the Black Summer fires interacted. We examined care for three principal categories of animals, specifically domesticated (including companion animals and larger animals like horses), farmed and native wild animals.

The primary focus of this project is on documenting the experiences, actions, knowledges and insights of community members who cared for animals, in order to evaluate what would be needed to help such communities do, and/or cope, better in a similar situation in the future. The experiences that community members shared with us, and during workshops with each other, form the foundation of the findings and recommendations set out in this report. Their understanding of what happened, and about how people can effectively care for the animals who form part of their communities, while also caring for themselves, constitute critical insights. As governments consider how to craft policy for future climate driven disasters, we suggest that they can benefit from community knowledge, experience and recommendations.

1. Hereafter "animals."

2. Binskin, M., Bennett, A. & Macintosh, A. (2020). Royal Commission into Natural Disaster Arrangements Australian Government. Canberra, Australian Capital Territory. p. 19.

## 1.1. Key findings

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| **1. The baseline is already tough** | Non-human animals already experience significant barriers to living and thriving in Australia, due to systems and structures that undermine their functioning and flourishing, such as land clearing, laws classifying animals as private property rather than as sentient beings in their own right, and the long-term undervaluing of care for animals. Emergencies shine a light on these pre-existing forms of injustice and negligence, and exacerbate the multiple forms of stressors affecting animals and the humans that care for them. |
| **2. This was not a "normal" bushfire** | The extreme speed of the fires coupled with the months-long duration of the threat and vast geographical range across which catastrophic fires were burning simultaneously made responding effectively and safely much harder than would have been the case with a "normal" (i.e. not climate-change-intensified) bushfire. |
| **3. The formal policies and procedures were woefully inadequate** | This left community members to fill many gaps, for which they were not recognised, supported, thanked, or recompensed. Indeed, in many cases the lack of appropriate top-down planning, communication and resourcing made community members' efforts to care for animals more difficult and more dangerous. |
| **4. People love animals dearly, and they created complex and effective community networks to care for them** | These communities went to tremendous effort to rescue and care for thousands of animals, including domesticated, farmed and wild animals. Despite the extraordinary and skilled teamwork, significant stress and tension arose among community groups due to the lack of formal support, accurate information, and effective planning which made their work infinitely harder. |
| **5. Different animals have distinct needs, especially in distressing situations** | Caring for animals in emergencies requires factoring in these unique needs, which include different social, nutritional, infrastructural, emotional, sensory, medicinal and ecological needs. |
| **5. Inadequate information, knowledge and communications were major barriers** | Community members encountered a profound lack of accurate information and effective communications systems regarding most aspects of planning, evacuating, feeding and caring for animals before, during, and after the fires. |
| **7. Accessing resources (donations, transport, accommodation, infrastructure, medicine and food and water) was a major challenge** | Resources needed to protect or care for animals such as transport, safe land, food, water and infrastructure were hard to come by, whether due to them not existing, higher-than-normal cost, the resources being privately owned, or other barriers. |

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| **8. Caring for animals created many financial challenges for community members** | Whether due to foregone work, new expenses, or increased costs of required items, caring for animals cost community members a lot of money. |
| **9. Decision making was very stressful** | Making decisions about how to care for animals was extremely challenging due to many uncertainties and gaps in resource provision and communications systems. This was exacerbated by the extreme speed of the fires and the long duration of the threat of fire risk. |
| **10. Ongoing care was required post-evacuation** | Even once animals had been evacuated, provision of care was logistically complex and time consuming. |
| **11. Returning home was also challenging** | For domesticated and farmed animals that had been evacuated, bringing them home once the fires were extinguished was also challenging for numerous reasons. |
| **12. Loss, grief, trauma and health issues need to be recognised** | Billions of non-human animals experienced extreme suffering including losing their lives. Human community members who cared for animals experienced significant loss, grief, trauma and health issues including physical injuries sustained while trying to care for animals. |
| **13. Social structures prevented communities from responding more effectively** | Four dominant worldviews – (1) human-centredness, (2) individualism, and the devaluing (3) of care work and (4) of community knowledge – that are pervasive in Australian culture and policy meant that at almost every turn, the efforts of human community members to care for animals were hindered or blocked. |

A magpie in a smoky landscape.
Image: Jo-Anne McArthu /We Animals Media.

Amidst *catastrophic* and life-threatening conditions, people in the places most heavily impacted by the fires autonomously organised themselves to evacuate, shelter, feed, water, provide healthcare and emotional safety for domesticated, wild, and farmed *animals*.

## 1.2. Priority recommendations

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| **1. Transform the organisation of disaster preparedness and response to account for the realities and needs of existing multispecies communities** | Disaster arrangements need to respond to the realities of people's lived experiences within multispecies communities. This means that they need to recognise that communities, rather than individuals, are the locus of agency and responsibility and that these communities include humans and non-human animals. Further, these multispecies community relations are of utmost importance to people and threats to these relations are traumatising. |
| **2. Set a fit-for-purpose national research agenda for disasters and multispecies community mobilisation** | Research regarding animals and disasters needs to meet the challenges of a future characterised by escalating climate crises; to be deeply consultative and work with communities on the ground; and to be truly multidisciplinary. |
| **3. Improve everyday wildlife protection and broader ecological management** | Environmental protection, and especially wildlife care, needs to be prioritised, better supported and governed, and appropriately funded. |
| **4. Increase and improve funding and financial support for multispecies communities before, during and after disasters** | A range of innovative means should be considered, such as a Universal Basic Disaster Payment, auspicing informal networks so they can access donations and grants more easily, funding the development of community-level emergency plans for animals and funding community-owned emergency resources such as horse floats and specialist foods. |
| **5. Improve disaster and animal-care information, training and education** | Accessible education and training should be developed and provided in order to upskill Australians in understanding animal, and especially native wildlife, care and how to do this during disasters. A range of efforts should be undertaken, such as implementing changes to the National Curriculum, supporting and expanding citizen science efforts within National Parks, improving the ability of emergency agencies to plan and respond to animal welfare, and increasing the ecological literacy of Australian communities through offering evidence-based guidelines and training in how to implement this (we have developed instructions for a self-guided workshop for local communities to prepare animal emergency plans together, which is included in Appendix 6). |
| **6. Improve accessibility and accuracy of communication to support disaster response** | Existing plans, information and networks regarding caring for animals in disasters needs to be made much more accessible to communities through both advertising it and offering interactive workshops so knowledge of how to engage with these materials can be consolidated. A phone app that can enable community members to crowd-source animal care information, infrastructure, resources and networks should be developed and funded (we have developed a prototype, detailed in Appendix 5). |

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| **7. Improve animals and bushfire management to support disaster response** | Animal-care organisations should be better integrated into formal emergency management systems, and disaster and emergency agencies such as the RFS and SES should have expertise in animal care embedded within them. Accessibility of evacuation centres needs to be dramatically improved to support people caring for animals to be able to effectively use them, including on designated "leave early" fire danger days. |
| **8. Improve transport infrastructures to support disaster response** | Improving the capacities of communities to quickly and safely evacuate animals could be achieved through removing legal barriers, providing financial support to animal transport companies so they can "pivot" in emergencies, and funding and enabling access to community-owned transport equipment. |
| **9. Enable access to land for the purposes of animal care** | Systems should be set up such that trained and registered animal carers can access both private property and government-owned land in the event of emergencies to rescue, evacuate and/or care for animals. |

A joey injured in the fires being rescued as curious horses look on. Image: Jo-Anne McArthur/ We Animals Media.

# 2. Introduction

In late 2019, as the gravity of the fires that came to be known as the Black Summer Bushfires became clear, so did the inadequacy of formal plans and systems to protect domesticated, farmed and wild animals.

In the Shoalhaven, networks to assist and support people and their domesticated and farmed animals spontaneously arose, with communities providing transport and care even under extreme conditions. After the fires, when the extent of the devastation for wild animals and the destruction of habitats was revealed, local networks similarly arose to research, build, set up and monitor feeding and watering stations and fund and support professional interventions to care for injured animals.

For many people and animals, these interventions proved invaluable, saving lives and significantly reducing isolation and trauma. They arose and functioned, however, through informal networks with no official institutional support. For some people and many animals, no assistance was available, leading to death, injury and trauma that might have been avoided. The devastation to animals was and continues to be one of the most significant sources of human loss and trauma, and this is exacerbated by the background and intensifying threat to biodiversity and more acutely, species extinction. Moreover, while research on the experience of individual animals and animal communities was beyond the scope of this research anecdotal but consistent evidence from the interviews suggests that the scale and intensity of the devastation had significant impacts on animals who survived. Official processes for emergency protection, evacuation and recovery were almost entirely focused on humans, with scant allowances for small domestic animals (mostly dogs and cats). The experience of these major inadequacies means that people now also worry about how to care for animals in the event of future fires.

Our research indicated that the community networks that arose made an important difference to many human and animal lives, however, the scale of the disaster and the lack of institutional support limited their impact. Nevertheless, they represented an important exemplar of how communities can and do spontaneously organise to address the impacts of climate disasters that the state neglects. Yet, despite their importance, many of these networks have lapsed since the fires ended, due to lack of recognition and support. There is no formal record of how they functioned, what they achieved, their capacity to provide support, the impediments they faced, what helped them to function, or how they navigated institutional, economic and infrastructure gaps and obstacles. Even as communities anticipate future fires and other climate disasters like heatwaves, there is still no formalised network of support, nor accessible and functional information to assist them to plan how to protect animals or to activate or access networks. When another disaster occurs, people will be mostly starting from scratch again.

The research we conducted in this project sought to investigate how these community networks of care for animals operated. We believe this information will be critical to building resilient, effective and equitable social systems that can support communities to prepare to care for animals in future climate disasters.

The primary purposes of this project were:

- To build tools and resources for members of the Shoalhaven community to use as they continue to respond to climate events and care for domestic, farmed and wild animals.
- To provide information and analysis that will assist other key stakeholders, including Commonwealth, state and local governments to provide the infrastructure, legal, policy and economic support required to assist community-based organising to protect animals in future catastrophic disasters.
- In this introductory section of this report, we discuss the ecological, socio-economic, and legislative context for our study, and then review the state of existing academic literature regarding animals in disasters.

## 2.1. The 2019/2020 bushfires: The "unprecedented new normal"

The 2019-2020 bushfire season in Australia was unprecedented in duration, scale, and intensity. The impacts of the fires on animal and human lives, including uncontrollable "megafires" and the resultant smoke pollution, were also unprecedented.[3] Beginning in the hot, dry winter of 2019 and burning up until the end of summer 2020, the fires impacted every state and territory, although NSW was the most significantly impacted. The preceding three years of drought provided ample fuel, and fires spread across areas such as Gondwanan rainforest ordinarily considered "too wet to burn."[4] An estimated twenty-four million hectares of land were burnt, killing or displacing nearly three billion animals, while thirty-three humans lost their lives.[5] Countless habitats and thousands of human homes were entirely destroyed. Alongside impacts on endangered species such as the brush-tailed rock wallaby, lesser known and even unknown species may have been lost forever.[6]

Despite being wholly unprecedented, the Black Summer bushfires offer a sobering glimpse of our "new normal" in a climate-changing world, as extreme weather events become more frequent and intense. If carbon emissions continue to increase as projected, the climactic conditions of 2019 may "be average by 2040 and exceptionally cool by 2060."[7] Difficulties in predicting cascading climate impacts means that measures of fire risk based on historical data are no longer reliable guides to the risk and likely severity of future fires.[8] In addition, the longer duration of bushfire seasons in Australia is making it increasingly difficult to undertake hazard reduction burning, and communities may have little time to recover and rebuild in between fire seasons in the future.[9]

The task of preparing for increasingly severe bushfire seasons is an urgent priority. It is critical that such preparation and planning for future disasters considers, responds to and learns from the experiences of communities who were impacted by the Black Summer Bushfires. This includes the relationships, institutions, and practices that emerged between people caring for animals during disasters. These experiences provide valuable evidence for the reassessment of fire knowledge, best practice disaster preparedness, and effective policy making that anticipates the likely impacts of future bushfires.

A wallaby searches for food in a blackened forest. Image: Jo-Anne McArthur/We Animals Media.

A multispecies family mid-evacuation. Image: Jo-Anne McArthur / We Animals Media.

3. Rumpff, L., Legge, S.M., van Leeuwen, S., Wintle, B.A., & Woinarski, J.C.Z. Eds. (2023). Australia's megafires: Biodiversity impacts and lessons from 2019-2020. CSIRO. https://www.publish.csiro.au/ebook/11539; Rodney, R. M., Swaminathan, A., Calear, A. L., Christensen, B. K., Lal, A., Lane, J., Leviston, Z., Reynolds, J., Trevenar, S., Vardoulakis, S., & Walker, I. (2021). Physical and mental health effects of bushfire and smoke in the Australian Capital Territory 2019–20. Frontiers in Public Health, 9(682402), 1-13. https://doi.org/10.3389/fpubh.2021.682402
4. Rumpff et al. (2023).
5. Binskin et al. (2020). p. 19.
6. Wintle, B. A., Legge, S., & Woinarski, J. C. Z. (2020). After the Megafires: What Next for Australian Wildlife? Trends in Ecology & Evolution, 35(9), 753–757. https://doi.org/10.1016/j.tree.2020.06.009; Readfern, G. (2020). 'Silent death': Australia's bushfires push countless species to extinction. The Guardian. January 4. https://www.theguardian.com/environment/2020/jan/04/ecologists-warn-silent-death-australia-bushfires-endangered-species-extinction
7. Sanderson, B. M., & Fisher, R. A. (2020). A fiery wake-up call for climate science. Nature Climate Change, 10(3), p. 176. https://doi.org/10.1038/s41558-020-0707-2
8. Sanderson & Fisher. (2020).
9. Binskin et al. (2020). p. 63.

## 2.2. The Shoalhaven Region

The Shoalhaven region refers to the lands of the Wodi Wodi, Jerrinja, Yuin and Wandandian Aboriginal peoples.[10] Located south of Sydney, it encompasses a coastal plain where most of the region's 109,611 people live in the regional city of Nowra, small towns such as Berry and Ulladulla, and numerous satellite settlements.[11] This area is delineated from the high country of the Southern Tablelands by the Illawarra Escarpment, spanning almost 100km from the Royal National Park to the intersection of the Shoalhaven and Kangaroo rivers in the south. A large variety of habitats including ocean, lakes, wetlands, woodland and eucalypt forests provide homes for millions of animals, among them 107 threatened species and sixteen endangered ecological communities.[12] Many of these animals live in protected areas, including national and state parks and reserves that were severely impacted by the Black Summer bushfires. This includes Jerrawangala National Park, where 99% of the Key Biodiversity Area (KBA) within the park was impacted by the fires.[13]

Changes to the region's key industries and employment in the past two decades include a large increase in the number of people employed in healthcare and social assistance, with agriculture, construction, tourism, retail, and defence making up other major industries. An increase in domestic migration during COVID-19 contributed to adjusted projections of the future Shoalhaven population to 145,527 in 2041 and included an influx of people telecommuting to Sydney and Wollongong, rather than working in the region.[14] In addition, during peak tourist seasons the population can triple, with popular summer destinations along the coastline such as Jervis Bay. These population shifts have implications for community cohesion and disaster planning and preparedness.

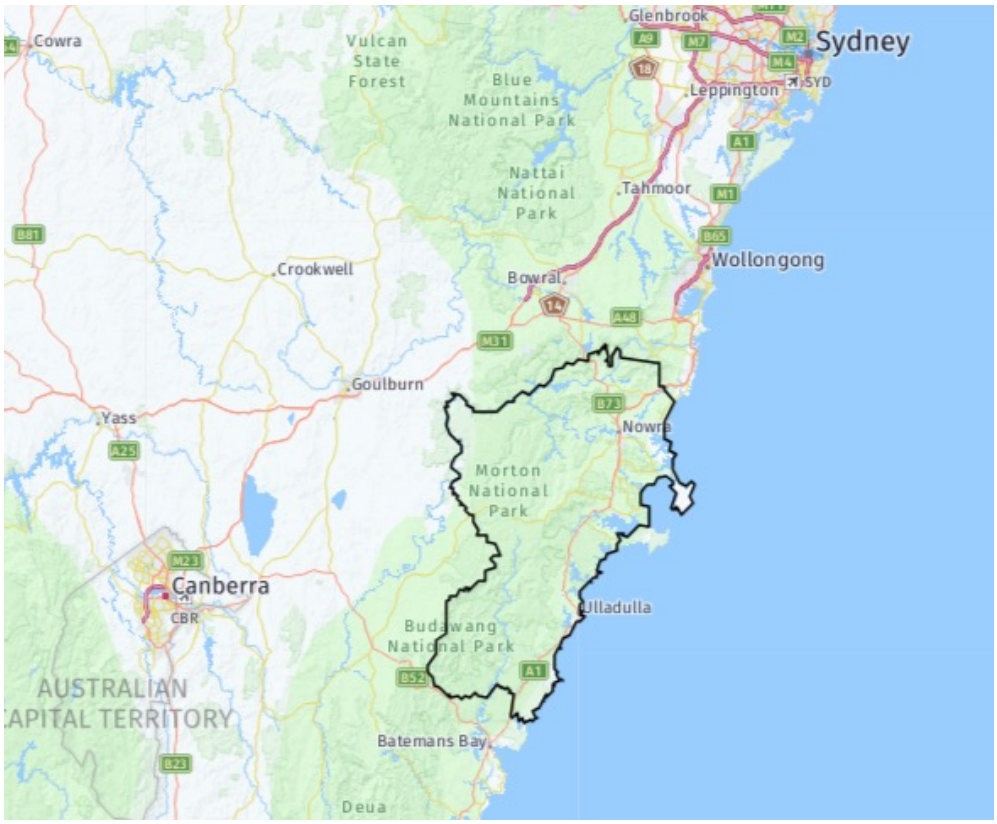



**Figure 1: The Shoalhaven Region. Shoalhaven City Council. (2024). Community profile.**

10. Shoalhaven City Council. (2024). Community profile. https://profile.id.com.au/shoalhaven/about
11. Shoalhaven City Council. (2024). Community profile.
12. Shoalhaven City Council. (2024). Threatened Fauna. https://www.shoalhaven.nsw.gov.au/For-Residents/Our-Environment/Native-Animals-Plants/Threatened-Fauna
13. Rumpff et al. (2023). p. 16.
14. NSW Government. (2024). NSW population projections. https://www.planningportal.nsw.gov.au/populations

The median weekly household income in the Shoalhaven is almost $500 less than the national median, yet the median house price rose 46% between 2018 and 2023.[15] Community members, especially those on low incomes, have highlighted housing shortages and housing unaffordability as key issues affecting the region.[16] The destruction of homes during the Black Summer bushfires has compounded housing insecurity in the region, and there are concerns that future disasters will continue to worsen access to safe and affordable housing.[17] There has also been an increase in the cost and accessibility of home insurance for areas affected by the fires.[18] The GDP of the Shoalhaven decreased by 12% in 2020 as a result of the Black Summer bushfires, making it one of the worst affected areas in terms of economic impact.[19]

A series of significant flooding and storm events since 2020 have also negatively impacted the region's infrastructure and major industries including tourism and agriculture. In response, the NSW Government and Shoalhaven City Council have provided updated strategic plans for the region, including the *Illawarra Shoalhaven Regional Plan 2041* and *Shoalhaven 2032 Community Strategic Plan*, both of which emphasise the need to create more resilient communities. This will require consideration of who is currently left out of disaster planning, and recent research on the Black Summer bushfires has highlighted the Commonwealth Government's lack of culturally safe evacuation practices.[20]

The Shoalhaven region has several vulnerabilities to future climate shocks, including the possibility of satellite settlements being cut off due to poor transport infrastructure, sea level rise affecting coastal communities, an aging population, and regional geography that heightens community exposure to bushfires, floods, storms, and extreme temperatures.[21] The region is expected to experience increased temperatures in the future, with longer and more intense heatwaves, as well as changes to rainfall patterns.[22] However, the response to the Black Summer bushfires demonstrates the capacity for community mobilisation to be an important aspect of the region's climate resilience.

Detailed in this report are some of the myriad ways individuals and groups independently organised themselves to care for animals during and in the wake of the bushfires. They did so by drawing on existing in-person and digital support groups, and generating new networks based around care for animals. The Commonwealth Government has identified the need for community-centred disaster risk reduction as a priority for disaster preparedness and response. In view of our finding that human communities understand other animals as part of their communities (see page 48), it will be critical to understand how humans and animals relate and how animals are cared for in and by communities.

15. Australian Bureau of Statistics. (2023). Shoalhaven 2021 Census. https://abs.gov.au/census/find-census-data/quickstats/2021/LGA16950; Department of Regional NSW. (2023). Shoalhaven Regional Economic Development Strategy – 2023 Update. https://www.nsw.gov.au/sites/default/files/2023-02/Shoalhaven-REDS-2023-Update.pdf
16. Department of Regional NSW. (2023).
17. Coote, G. (2021). Housing insecurity looms for many survivors, 12 months after bushfires. Australian Broadcasting Corporation. https://www.abc.net.au/listen/programs/am/fire-housing/13046638
18. Miller, K. (2023). Is your home safe? Insurance loopholes and challenges to avoid this bushfire season. UNSW Newsroom. https://www.unsw.edu.au/newsroom/news/2023/10/is-your-home-safe--insurance-loopholes-and-challenges-to-avoid-t
19. Suncorp. (2021). Submission to Treasury: Economic recovery after disaster strike. Volume 2. https://treasury.gov.au/sites/default/files/2021-05/171663_suncorp_group_ltd_supporting_documents_1.pdf
20. Williamson, B. (2022). Aboriginal community governance on the frontlines and faultlines in the Black Summer Bushfires. Centre for Aboriginal Economic Policy Research, ANU. https://caepr.cass.anu.edu.au/sites/default/files/docs/2022/4/DP_300_Williamson_2022.pdf
21. Steffen, W. & Hughes, L. (2011). The critical decade: Illawarra/NSW South Coast impacts. Climate Council. https://www.climatecouncil.org.au/uploads/046733e18f4056e34e92f8546eb6c71c.pdf
22. NSW Environment and Heritage. (2013). Southeast and Tablelands climate change snapshot. Available: https://www.climatechange.environment.nsw.gov.au/sites/default/files/2021-06/South%20East%20and%20Tablelands%20climate%20change%20snapshot.pdf

## 2.3. Animals in Australian legislation

Existing legal frameworks fail to adequately protect animals during disasters, and there is a recognised need for legal and policy reform to address the status of different animals in Australian Commonwealth and state legislative frameworks.[23] There are two primary ways animals are currently represented in legislation, a) in industry legislation as property and commodities, and b) in conservation legislation as species requiring environmental management and protection. Further, legislation at local, state and Commonwealth levels tends to be focused on compliance regarding keeping of domestic animals and livestock, introduced species, and protections awarded to native animals and threatened species.

To the extent that there is protective legislation, it is in animal welfare standards. There is recognition of animals as sentient beings such as in the Australian Capital Territory (although this does not extend to farmed animals), but this is only one part of a patchwork of legislation that currently does not provide sufficient protection for animals during disasters. In addition, there is limited integration of animal welfare standards into emergency management practices. A notable exception is the Victorian Emergency Animal Welfare Plan, introduced in 2019 based on the recommendation of the 2009 Victorian Bushfires Royal Commission.[24] The Victorian plan, like other state emergency planning frameworks, remains "highly anthropocentric" and elevates the preservation of human life over animal life as a guiding principle.[25]

The *Environmental Protection and Biodiversity Conservation (EPBC) Act 1999* sets the baseline for protection of non-human nature including other animals at a Commonwealth level. Relevant state legislation in NSW covering wild animals, companion animals and farmed animals includes the *Biodiversity Conservation Act 2016, Companion Animals Act 1998, Prevention of Cruelty to Animals Act 1979,* and the *National Parks and Wildlife (NPW) Act 1974*. These are complemented by guidelines for animal carers including the Code of Practice for Injured, Sick and Orphaned Protected Fauna 2011. The *State Emergency and Rescue Management Act 1989* includes limited provisions for the rescue and protection of animals during disasters. Derived from this, the NSW State Emergency and Management Plan (EMPLAN) includes reference to animals and animal welfare during emergencies in the response section of the plan. The response phase of the plan centres on providing "immediate relief" which includes animals:

> Immediate relief refers to the provision of essential support to meet the basic and immediate needs and safety of people and animals affected by, or responding to, an emergency.[26]

The EMPLAN also defines an emergency as "an actual or imminent occurrence (such as fire, flood, storm, earthquake, explosion, terrorist act, accident, epidemic or warlike action), which: a) endangers, or threatens to endanger, the safety or health of persons or animals in the state."[27] Yet, animals are notably absent from the *emergency planning and policy, prevention* and *preparation* sections of the EMPLAN. This is consistent with our finding in the literature review (next section, Section 2.4) that more attention to animals is needed in disaster planning and preparation, not just in the response phase.

23. Best, A. (2021). The legal status of animals: A source of their disaster vulnerability. The Australian Journal of Emergency Management, 36(3), 63–68. https://doi.org/10.3316/agispt.20210729050855
24. Best, A. (2021).
25. Best, A. (2021).
26. NSW Government. (2023). State Emergency Management Plan (EMPLAN), p. 48. https://www.nsw.gov.au/sites/default/files/noindex/2024-02/State_Emergency_Management_Plan_2023.pdf
27. NSW Government. (2023). p. 88.

In addition to existing animal welfare legislation and Commonwealth and state emergency plans, national guidelines for safeguarding animal welfare in disasters have been developed by a range of stakeholders including animal welfare organisations, state departments, local governments, industry, veterinary, and emergency management organisations to inform emergency planning. Endorsed by the Australia-New Zealand Emergency Management Committee in 2014, the *National Planning Principles for Animals in Disasters* (NPPAD) are designed to inform best practice disaster planning processes that are inclusive of animal welfare.[28] The NPPAD are based on the beliefs that animals have intrinsic value as sentient beings, human and animal wellbeing are connected, animals have economic value, and failure to consider animals in disasters puts human life at risk. Reviewing the NPPAD against current planning for animals in disasters in Australia, Trigg et al. find moderate awareness and low to moderate implementation of these principles.[29]

The implementation of disaster management frameworks in practice occurs at the local level under the guidance of both local and state authorities. Section 29 (1) of the *State Emergency and Rescue Management Act* delegates the preparation and review of Emergency Management Plans to Local Emergency Management Committees. The Act states that Local Emergency Management Committees are responsible for preventing, preparing for, and responding to emergencies within their Local Government Area (LGA), including the development of Local Emergency Management Plans. This Local Emergency Management Plan records the agreed arrangements for the control of emergency situations and the coordination of resources during emergencies. This suggests if legislative change is to occur, information regarding the status and processes relating to different animals (wildlife, farmed, and domesticated) in emergencies must be disseminated to Local Emergency Management Committees as well as local communities involved in informal voluntary networks.

Mumma koala carries baby in search of food, water and shelter.
Image: Jo-Anne McArthur/We Animals Media.

28. National Planning Principles for Animals in Disasters. (2014). Available at NEMA Australian Disaster Resilience Knowledge Hub: https://knowledge.aidr.org.au/resources/ajem-apr-2015-national-planning-principles-for-animals-in-disasters/
29. Trigg, J., Taylor, M., Mills, J., & Pearson, B. (2021). Examining national planning principles for animals in Australian disaster response. The Australian Journal of Emergency Management, 36(3), 49–56. https://doi.org/10.3316/informit.947393441783970

## 2.4. Animals in disasters: A view from the academic literature

In this section, we review the existing academic literature on disasters and emergencies to examine to what extent, and in what ways, non-human animals are considered within these fields and what responses are suggested.

### (How) are animals considered?

Disappointingly, our review found that animals are either entirely absent or marginal within the vast majority of studies in this field, including papers that focus on the analysis of disaster planning, preparedness, impacts, aftermath, and policy making.[30] This widespread lack of consideration for animals in disaster management and planning poses huge challenges for safeguarding the welfare of animals in disasters.[31] Even disaster literature concerned with "inclusivity" refers only to the inclusion of marginalised groups of humans in society, and animals are "included" solely in relation to the utility they provide to humans (e.g. as service animals).[32] This exclusion and lack of consideration can increase animal vulnerability, such as the confinement of farmed animals during disasters leading to animal injury, illness, or death.[33]

However, in the past decade the escalation of climate impacts, such as Hurricane Katrina and the extensive loss of companion animals, and the onset of the COVID-19 pandemic has prompted increased scholarly attention to human relations with animals in disasters, including wild animals and farmed animals, and shared experiences of disaster across species.[34] This small niche of the disaster literature does include studies of human relationships with companion animals and how these attachments influence decision making in disaster settings.[35] Nevertheless, the literature overwhelmingly classifies animals in terms of the function they provide to human beings, either as potential risks to human safety during disasters, as potential assets for disaster resilience.[36] These risks include delayed or avoided evacuation leading to human injury or death, the inadequacy of human evacuation centres for animals creating additional risks for humans, and the loss of animals leading to human grief and psychological harm.[37]

Thompson et al. argue that some of these risks could be reframed as "protective factors" if human attachments to animals could be leveraged to "motivate disaster preparedness, early evacuation, and survival."[38] For example, in Canada, caring for companion animals during the COVID-19 pandemic involved significant financial costs for humans while also conferring mental health benefits during a time of social isolation.[39] Particularly in developing countries, animals are also found to be a source of disaster resilience due to their status as economic assets, providing financial benefit as well as labour for their owners.[40]

There is also a growing body of literature on the extent and implications of biodiversity loss in disasters, especially climate-related disasters. This research focuses on wild animals as contributors to ecosystem health.[41] In summary, when animals are considered in disasters research, they are usually objectified: positioned either as private property that humans own and which affects human experiences of disasters, or, as objects who have important ecological roles to fill in service of "nature" at a high level. Neither of these approaches consider animals as subjects, for example by being concerned with animals' experiences or their quality of life.

30. Wu, H., Heyland, L. K., Yung, M., & Schneider, M. (2023). Human–animal interactions in disaster settings: A systematic review. International Journal of Disaster Risk Science, 14(3), 369–381. https://doi.org/10.1007/s13753-023-00496-9
31. Kleman, I. (2021). Categorising animals and habitats in disaster- related activities. Australian Journal of Emergency Management. 36(3), 57-62.
32. Villaneuve, M. (2021). Building a roadmap for inclusive disaster risk reduction in Australian communities. Progress in Disaster Science, 10(100166), 1-12. http://dx.doi.org/10.1016/j.pdisas.2021.100166
33. Fraser, H., Taylor, N., & Riggs, D. W. (2021). Animals in Disaster Social Work: An Intersectional Green Perspective Inclusive of Species. The British Journal of Social Work, 51(5), 1739–1758. https://doi.org/10.1093/bjsw/bcab143; Best. (2021).
34. Fraser, Taylor & Riggs. (2021).
35. Best, A. (2022). Material vulnerabilities and interspecies relationalities: A critical appraisal of the legal status of animals in disasters. Griffith Law Review, 31(2), 287–311. https://doi.org/10.1080/10383441.2022.2092701. p. 287; Fraser, Taylor & Riggs. (2021).
36. Wu, Heyland, et.al. (2023); Thompson, K., Haigh, L., & Smith, B. (2018). Planned and ultimate actions of horse owners facing a bushfire threat: Implications for natural disaster preparedness and survivability. International Journal of Disaster Risk Reduction. https://doi.org/10.1016/j.ijdrr.2017.11.013; Travers, C., Degeling, C., & Rock, M. (2017). Companion Animals in Natural Disasters: A Scoping Review of Scholarly Sources. Journal of Applied Animal Welfare Science, 20(4), 324–343. https://doi.org/10.1080/10888705.2017.1322515
37. Thompson, Haigh, & Smith. (2018); Ogunmakinde, O. E., Egbelakin, T., & Henderson, R. (2023). Evaluation of animal safe places for emergency evacuation in the Hunter Region of New South Wales, Australia. International Journal of Disaster Resilience in the Built Environment, 14(4), 553–576. https://doi.org/10.1108/IJDRBE-10-2022-0106; Thompson, K., Every, D., Rainbird, S., Cornell, V., Smith, B., & Trigg, J. (2014). No pet or their person left behind: Increasing the disaster resilience of vulnerable groups through animal attachment, activities and networks. Animals, 4(2), 214-240. https://www.mdpi.com/2076-2615/4/2/214
38. Thompson et al. (2014). p. 215.
39. Wu, H., Bains, R. S., & Preston, C. (2023). Physical health caregiver, mental wellness supporter, and overall well-being advocate: Women's roles towards animal welfare during the COVID-19 emergency response. International Journal of Disaster Risk Reduction, 92 (103719). https://doi.org/10.1016/j.ijdrr.2023.103719
40. Clancy, C., Watson, T., & Raw, Z. (2022). Resilience and the role of equids in humanitarian crises. Disasters, 46(4), 1075–1097. https://doi.org/10.1111/disa.12501
41. Rumpff et al. (2023); Thompson, Haigh, & Smith (2018); Ogunmakinde et al. (2023); Carlson et al. (2022). Climate change increases cross-species viral transmission risk. Nature, 607, 555–562. https://doi.org/10.1038/s41586-022-04788-w

However, there are a few papers who are working with animal rights' and related ethical frameworks. Work within this very small field of research examines human moral responsibilities toward animals, especially considering the impacts of human-made disasters like climate change on animal lives and ecologies, including the "extraordinary suffering" of animals as sentient beings who cannot mitigate climate change and may have limited abilities to adapt.[42] Vieira and Anthony argue that in this era of catastrophic ecological crises humans have a duty to "identify where the barriers to ethically responsible animal disaster management are likely to occur and to take appropriate steps to rectify them in order to prevent or reduce harm to animals."[43] They call for "interspecies relational solidarity" that accounts for the collective interests of humans and animals in disasters and extends an ethic of care to all community members, inclusive of animals.[44] In practice this would also require challenging the current legal status of animals as property, including a shift toward considering animals as sentient beings worthy of legal representation.[45] This would allow for greater consideration of animals' collective welfare in disaster risk reduction (DRR) and require proactive measures to mitigate risks to animal lives and welfare in planning for disasters.[46]

## What solutions are proposed?

Proposals to address the above challenges at the macro level include legal and policy reform, greater awareness of and inclusion of animal welfare considerations in disaster planning and management, and further research on animals in disasters.[47] Examples include the adoption of the National Planning Principles for Animals in Disasters (2014) in Australia and greater awareness of these principles at the local level where implementation of plans occurs.[48] Best argues that the legal status of animals as property "increases their exposure to hazards during disasters" and affects how animals are prioritised in emergency planning.[49] Animals' legal status as property does not capture the full extent and variety of actual individual and collective human-animal relations and does not account for the "determinative role" that humans play in animals' welfare, from wild animals, to farmed and companion animals.[50] As an alternative, Best recommends the adoption of a legal "stewardship model" for human ownership of animals, extending the notion of environmental stewardship to animals in the care of humans.[51] A stewardship model considers the potential duties and responsibilities of people who own animals, and of the government to wild animals, if human-animal relations were understood as "inherently reciprocal."[52] There is an identified need for further context-specific research on human-animal interactions in disasters, especially research that considers animals other than companion animals.[53] In addition, researchers suggest there is a need to frame and conduct disaster research in more inclusive, interdisciplinary, and less anthropocentric ways.[54]

42. Fraser, Taylor & Riggs (2021); Vieira & Anthony. (2021); Best. (2021).
43. Vieira, A. D. P., & Anthony, R. (2021). Reimagining human responsibility towards animals for disaster management in the Anthropocene. In Bovenkerk, B. & Keulartz, J. Eds. Animals in our midst: The challenges of co-existing with animals in the Anthropocene, 223-254. Springer: Cham. p. 247
44. Anthony, R., & Vieira, A. (2022). One health animal disaster management: An ethics of care approach. Journal of Applied Animal Welfare Science, 25(2), p. 190. https://doi.org/10.1080/10888705.2022.2040360
45. Best. (2022).
46. Best. (2022).
47. Best. (2021); Clancy, Watson, & Raw. (2022); Kleman. (2021).
48. Trigg et al. (2021).
49. Best. (2021). p. 63.
50. Best. (2022).
51. Best. (2022).
52. Best. (2022).
53. Wu, Heyland, et.al. (2023); Vieira & Anthony. (2021).
54. Wu, Heyland, et.al. (2023).

Other scholars have highlighted the importance of long-term monitoring, community education, training of experts, and consultation between the community and wildlife specialists. The importance of long-term monitoring is widely recommended, particularly relating to the protection and resilience of wildlife to natural disasters.[55] The community has an important role to play in monitoring fauna abundance and vegetation regeneration both before and after bushfire through citizen science. Monitoring both before and after events is important in understanding the status of threatened species and ecological communities.[56] Legge et al. suggest that the 2019–2020 bushfires provide an opportunity for researchers to compile information relating to "population impacts, the rate and extent of recovery, and the effectiveness of post-fire management actions."[57] Data collected through long-term monitoring can build the response for different species by discerning which species are more or less resilient to fire, and therefore which may require longer-term management efforts or pre-fire protection where possible.[58] A lack of reporting or monitoring post-disaster means that potential learnings are not being passed on to foster better outcomes in future.[59]

More locally-specific recommendations made in the literature include the need for governments, including local councils, to refurbish, build, and maintain appropriate animal evacuation shelters, the dissemination of information correcting myths as they relate to animals in disasters (e.g. that horses can sense danger), and training for emergency personal and social workers that accounts for the complexity of human-animal relations during disasters.[60] There is also a need to identify the character and demographics of human-animal relationships during disasters, such as the role of women as advocates for animal welfare within their families and broader community, which has implications for how disaster planning involves community networks.[61]

## What can this research project contribute?

Our literature review finds a number of important themes and gaps in the existing field of disasters research:

- Animals are overwhelmingly considered in relation to how they affect human lives, or the functional role they can play in ecosystems, rather than as sentient beings with their own lives, experiences, communities, needs, rights and preferences.
- The animals that receive the most attention are small companion animals such as dogs and cats.
- Most research studies these issues from a top-down perspective, with less research offering a grounded analysis of real-life experiences.
- Most of the research considers one-off or discrete disasters, rather than cumulative, cascading or compounding disasters.

Our research project addresses these gaps in three key ways. Firstly, we approach this project with an ethic of multispecies justice, which acknowledges that all beings live within multispecies communities, and that all beings deserve to be treated with respect and cared for.[62] Secondly, this project begins from the ground up, to develop policy recommendations that are based on rich, detailed accounts of the experiences of multispecies communities. Critically, we examine the informal and spontaneous forms of community organizing that unfolded and position them as visionary experimentations in how disaster-responsive, climate-adaptive, multispecies institutions could function. Our recommendations thus seek to support and improve these community institutions, rather than ignore, over-rule, or criminalise them. Thirdly, while our intention was to focus on the 2019/2020 bushfires, we note that these came in the wake of numerous hotter-than-ever summers and severe drought, and years of repeated catastrophic flooding followed before we conducted our interviews. As such, our study offers important insights into the lived experiences of multispecies communities throughout multiple, compounding climate disasters.

55. Lunney, D., Dickman, C. R., & Predavec, M. (2018). The critical value of long-term field studies and datasets: an editorial perspective. Australian Zoologist, 39(4), 559-567.
56. Parrott, M., Wicker, L., Lamont, A., Banks, C., Lang, M., Lynch, M., McMeekin, B., Miller, K., Ryan, F., Selwood, K., Sherwen, S., & Whiteford, C. (2021). Emergency response to Australia's Black Summer 2019-2020: The role of a zoo-based conservation organisation in wildlife triage, rescue, and resilience for the future. Animals, 11(1515), 1–22.
57. Legge, S., et al. (2022). The conservation impacts of ecological disturbance: Time-bound estimates of population loss and recovery for fauna affected by the 2019–2020 Australian megafires. *Global Ecology and Biogeography*, 31. p. 16
58. Legge et al. (2022).
59. Glassey, S. (2021). Do no harm: A challenging conversation about how we prepare and respond to animal disasters. Australian Journal of Emergency Management, 36(3), 44–48. p. 46. https://doi.org/10.3316/agispt.20210729050852
60. Ogunmakinde et al. (2023); Thompson, Haigh, & Smith. (2018); Darroch, J., & Adamson, C. (2016). Companion animals and disasters: The role of human services organisations. Aotearoa New Zealand Social Work, 28(4), 100–108. https://doi.org/10.3316/informit.590290973685373
61. Wu, Bains, & Preston. (2023).
62. Celermajer, D., Schlosberg, D., Rickards, L., Stewart-Harawira, M., Thaler, M., Tschakert, P., Verlie, B., Winter, C. (2020). Multispecies justice: theories, challenges, and a research agenda for environmental politics. Environmental Politics, 30(1–2), 119–140. https://doi.org/10.1080/09644016.2020.1827608

A kookaburra in the burned forests near Mallacoota.
Image: Jo-Anne McArthur/We Animals Media.

This project begins from the *ground up*, to develop policy recommendations that are based on rich, detailed accounts of the *experiences* of multispecies communities.

# 3. Research aims

## This research project had the following aims:

1. To compile comprehensive data about community needs, capacities, experiences and resources in relation to care for domesticated, companion and wild animals before, during and after the fires, including:
    a) The types of support and assistance that different groups – farmers, companion (including horses and other large) animal owners, wildlife carers and community caring for wildlife – needed to provide care for animals during and after the black summer fires.
    b) The networks and formal and informal support processes that were developed during and after the fires, how they developed, and how they functioned.
    c) The factors that facilitated and impeded the effectiveness of those networks and processes, including the support or absence of support, information and infrastructure from formal institutions (government and non-governmental).
2. To provide the opportunity for communities, including particular groups who experienced trauma as a result of threats and harms to animals during the Black Summer bushfires, to talk about and share their experiences of loss, trauma and also action, and to be part of future-oriented planning and mobilisation.
3. In collaboration with community, develop and produce community generated ideas, models and plans for organisation, support systems and networks that will better enable different groups within the Shoalhaven to assist animals in future fire events.
4. To produce a range of resources that will enable communities across the Shoalhaven to better plan for and manage the protection of animals during fire and other serious climate events such as heatwaves. To identify additional actions that need to be taken to support communities to care for animals in the event of fires and other extreme climate events. This will include:
    a) Recommendations for infrastructure and other processes that stakeholders in the Shoalhaven, including Council and civil society organisations should develop.
    b) The identification of gaps or impediments where intervention from other institutions such as state and Commonwealth Government is required.
5. To produce resources that will enable other fire-prone and/or climate-vulnerable communities (in regions beyond the Shoalhaven) to replicate the process and make plans to protect and care for animals during and after climate disasters.

# 4. Methods

This qualitative research project had four phases. The research conducted in phases 1, 2 and 3 enabled the analysis and development of outputs listed in Phase 4.

## 4.1. Phase 1: Desktop research

Prior to commencing field work, we conducted a suite of desktop research processes investigating: a) the context of the Shoalhaven region as a site of human-environment relationships; b) the existing legislative frameworks which govern these, including disaster management frameworks; and c) how animals are included (or not) with academic research regarding disasters. Key findings from this desktop research have been included in Section 2 of this report (Sections 2.2, 2.3, and 2.4); these findings complement the fieldwork results (see Phases 2 and 3) which are presented in Section 5.1 and 5.2 and inform the analysis that we offer in Section 5.3.

## 4.2. Phase 2: Interview

Between August 2022 and June 2023, we conducted semi-structured interviews with over sixty stakeholders from the Shoalhaven region, as well as relevant experts further afield, about their experiences and/or knowledges of protecting animals during and after the fires or similar catastrophic climate events. Interviews were audio-recorded and transcribed by professional transcribers. Table 1 provides an overview of the stakeholders we interviewed. All names used in this report are pseudonyms, to protect participants' privacy. Community members who participated were provided with $100 gift vouchers to reimburse them for their time. Interview subjects acting in their professional capacity were not provided reiumbursement. It was noted that this was not only appreciated by many participants but helped recruit a more socio-economically diverse cohort of participants than may otherwise have eventuated. We did not ask people for demographic data, however we note that approximately two-thirds of our community participants were women. The exception to this was with farmers where we spoke to more men than women. However due to recruitment challenges, we only spoke to a small number of farmers.

Southern Cross Wildlife Care's triage unit for burn victims sets up in a hotel room in Merimbula, New South Wales. This afternoon, the patients are wombats. Image: Jo-Anne McArthur/ We Animals Media.

**Table 1: Interview participants**

| Number of interviews | Number of interviewees[63] | Geographic region | Animals they were involved in caring for[64] | Their role |
|---|---|---|---|---|
| 18 | 19 | Shoalhaven | Domesticated | Community members |
| 3 | 4 | Shoalhaven | Farmed | Farmers |
| 14 | 18 | Shoalhaven | Wildlife | Formal/experienced wildlife carers[65] |
| 11 | 12 | Shoalhaven | Wildlife | Informal/spontaneous volunteers[65] |
| 10 | 10 | Various | Various | Government employee, researcher or other expert |

Animals discussed within the interviews included, but were not limited to, horses, chickens, dogs, cats, guinea pigs, rabbits, bees, cows, peacocks, other birds, possums, wombats, kangaroos, wallabies, alpacas, donkeys. In most cases, people were caring for multiple animals and multiple kinds of animals, however there were certain cohorts whose efforts primarily focused on caring for wild animals, and another whose efforts focused primarily on domesticated animals.

63. Some interviews were with multiple people.

64. Many participants cared for multiple categories of animals, so this categorisation is an approximation only.

65. We found during our research that there were two major categories of people who helped care for wildlife: firstly, those who had been volunteering as wildlife carers through formalised systems such as WIRES prior to the fires who continued with the work of rescuing, providing medical aid, food, homes and rehabilitation during the fires, and secondly, those who were not previously involved in wildlife care but were so compelled to act during the fires that they organised with others in the community to try to provide food and water in the bush. Although imperfect distinctions, we have labelled these groups as, firstly, Formal / Experienced Wildlife Carers, and, secondly, Informal/ Spontaneous Volunteers.

## 4.3. Phase 3: Community workshops

During May and June 2023, four 5-hour interactive workshops were held, specifically for community members who helped care for animals during the 2019-2020 fires. Two workshops were held in Nowra, in the northern part of the region, and two in Milton in the southern part, to try to reduce travel times for participants and maximise participation. Workshop participants were provided with $250 gift vouchers to reimburse them for their time. The events were also fully catered. Again, it was noted that this was not only appreciated by many participants but helped recruit a more socio-economically diverse cohort of participants than may otherwise have eventuated. Sharing meals also facilitated more informal conversation and relationship development.

The workshops were co-designed, and then lead-facilitated, by two externally-contracted professional community facilitators from the Shoalhaven region, Kate Dezarnaulds and Peter Pigott. Traditional owners Uncle Tom and Uncle Vic welcomed us to Country, and the workshops were also attended by Bronwyn Lunt, a Disaster Recovery Clinician, who was on-hand to provide mental health support to any participants that needed it.

The workshops began with a welcome and introductions, a check in to see how everyone was travelling. We then participated in an activity called 'Story Telling Trios' where people shared stories in groups of three about a time they had stepped up to care for an animal, and the storyteller's group members identified elements of courage that they had demonstrated. This helped build rapport and articulate shared values. After a brief presentation on the progress of the research project so far, we then broke into small groups to participate in a World Café style activity, where we brainstormed responses to three key questions:

1. What really worked for animals last time?
2. What really didn't work for animals last time?
3. What needs our attention now?

The responses that groups developed to these questions were critical in informing the recommendations of this report.

Finally, we worked in small groups to progress ideas into next steps, and concluded with a "check out" to summarise how people were feeling at the conclusion of the workshop.

### 4.3.1. Participants in the community workshops

We did not ask workshop participants for demographic data nor to indicate which "category" of animal they had cared for during the fires (i.e. domesticated, wild, or farmed). However we note that approximately 75% of workshop participants were women, under 10% were farmers, and the remaining participants seemed split fairly equally between having cared for domesticated or wild animals (we note here also that many participants cared for multiple kinds of animals).

## 4.4. Phase 4: Outputs: Production of plans, systems and resources

The final stage of the research project focused on analysing the empirical data from the workshops and interviews, reviewing this in conversation with the literature and policy review, and designing a range of outputs that can help to ensure communities are better prepared and supported to care for animals in future disaster events, and specifically bushfires.

The outputs we have produced to this end include:

1. Five academic papers.
    a) Anna Sturman, "The contested labour ecologies of climate adaptation: interspecies care praxis," submitted to Antipode. This paper examines how communities are navigating the reconstruction of capitalist human-nature relationships through climate crises and what is new about the emergent forms of interspecies care praxis.
    b) Anna Sturman, Danielle Celermajer, Freya MacDonald and Blanche Verlie, "Revealing and cohering alternative human-animals relationalities through climate catastrophe," submitted to Environmental Politics. This paper examines the ways that communities might understand their labour and the state as they fight for inclusive climate adaptation.
    c) Anna Sturman, Danielle Celermajer, Freya MacDonald, Blanche Verlie and Natasha Heenan, "Community experiences of caring for animals in catastrophic bushfires," submitted to International Journal of Disaster Risk Reduction.
    d) Blanche Verlie, "Climatic corporeality," a chapter to be included in the forthcoming edited book Beyond Bios to be published by Duke University Press. The chapter explores an older couple's experiences of being severely burned by radiant heat while trying to protect the wallabies they were caring for from the bushfires, including the long stint in hospital, surgeries, and the physical and psychological injuries they have sustained. The chapter has been accepted and the book is in production.
    e) Danielle Celermajer and Anna Sturman, "Recasting interspecies care and solidarity as emergent anti-capitalist politics" in César Rodríguez-Garavito (ed.) More Than Human Rights, 2024, New York University.
2. Three "community narratives" that tell the stories of our research participants' experiences, in both written and audio-recorded form. The written versions are included in this report in Section 5.1.1. The audio versions can be found on the University of Sydney website, Spotify (Narrative 1, Narrative 2, and Narrative 3), and Apple Podcasts (Narrative 1, Narrative 2, Narrative 3).
3. A "newsletter" style summary report sent to the community members who participated in the workshops. This can be found in Appendix 3.
4. A submission on "Community self-organising during disasters" to the Select Committee on Australia's Disaster Resilience. This submission combined research with another Sydney Environment Institute research project that looked at community recovery efforts in the Hawkesbury, Blue Mountains, and Northern Rivers regions following recent bushfires, floods, and landslides. This submission can be found here.
5. An autoethnographic account of a veterinarian's experience conducting wildlife search and rescue efforts during the fires provided by one of our participants. This extensive first-hand account echoes many of the findings and recommendations that we provide throughout this report. This is included in Appendix 4 in this report.
6. Horse loading workshops. We held a full day training workshop on how to load horses onto floats which was led by a local expert and attended by fifteen people. This was followed by one-on-one training sessions where the local expert went to people's homes to work with them and their horses.
7. Capacity building, via educational programs and resourcing community-led organising, in relation to care for wildlife and domesticated animals in disasters. This included providing small contract funding to build capacity for existing and emergent networks of carers (e.g. awareness raising through wildlife signage for remote areas, infrastructure such as fencing and treatment facilities for animal care during disasters), and support for the roll-out of "Habitat for Wildlife" workshops led by local community groups.
8. A prototype of a phone/web application that can be used by communities to self-organise animal care, provisionally called Animal Emergency Network. This prototype is detailed in Appendix 5 and can be found here.
9. A set of instructions for communities to run self-guided workshops to help them prepare to collectively care for animals during disasters. This can be found in Appendix 6.

The Shoalhaven City Council, a research partner on this project, independently prepared a literature review on provisioning for native animals in bushfires. The Council has also revisited consultation planning for wildlife carer organisations in the region. These outputs are not discussed in this report but information can be found here.

Cows grazing in the smoky landscape in the Corryong area.
Image: Jo-Anne McArthur/We Animals Media.

The final stage of this research project focused on designing a range of outputs that can help to ensure communities are better *prepared* and supported to care for animals in *future* disaster events, and specifically bushfires.

# 5. Findings

It was clear that during the fires, many people had acted with extraordinary courage, often at considerable physical, mental and emotional cost, to care for animals. They developed networks in a time of crisis that enabled them to care for humans and animals and to save significant numbers of animals across all categories. People protected animals while enduring extreme heat, smoke and stress and often while caring for vulnerable humans and property. People also felt cared for by the animals they lived with, both during and after the fires. As the fires got closer, amid anxiety, panic and uncertainty around what was going to happen or where it would be safest to go, they had to make tough decisions. The thought that a poorly executed evacuation might harm the animals was just as stressful as the thought that the fires might come their way. Nevertheless, people collaborated to make the best decisions they could. When animals died, some community members did not have time to process the deaths amid the duties and pressures brought on by the fires. Others felt the pain of these losses straight away. Many still carry the trauma. The fires took months to move across the country and the state of constant vigilance wore people down. For many, the strain and exhaustion of this was worse than anything they had previously endured. At the same time, many felt their communities coming together in ways they had never experienced before.

In this section of the report, we first present the results of the empirical elements of this study in two sub-sections: in Section 5.1 we present three community narratives built directly from the interview transcripts, and in Section 5.2 we document key ideas and suggestions developed by participants at the workshops. Drawing on these findings, in Section 5.3 we provide an analysis of common experiences of community members (Section 5.3.1) and of significant social structures that influenced these experiences (Section 5.3.2). The analysis in Section 5.3 is illuminated with some short excerpts from the interview transcripts. Our analysis is firmly grounded in the empirical data that we collected in the Shoalhaven region and informed by the desktop research presented in Sections 2.2, 2.3 and 2.4.

## 5.1. Results from interviews: Community narratives

We begin this Results section with three "community narratives" that we have developed. Each narrative is an amalgamation of community members' experiences and is a representation of real events designed to convey common experiences that our participants reported. However, the specific characters that appear in the narratives do not represent actual individuals we spoke with, but their experiences are based on those of our interview participants. The narratives incorporate key themes and findings of the project, which are discussed in detail in Section 5.3. These community narratives were produced from the results of the interviews that had been conducted by April 2023, and were distributed in advance in text and audio form to the participants who had signed up to come to the workshops in May and June 2023. The audio recordings of these community narratives can be found in Section 4.4.

A joey with burned feet being rescued.
Image: Jo-Anne McArthur/We Animals Media.

### 5.1.1. Community narrative

# Domesticated animals

Jenny lives on a small rural property with her two dogs, five rescue chickens and three horses. During the fires, there was a long period of uncertainty about whether the fires would come their way, and if so, when. People speculated about whether the fire could jump the river, and which way the winds would blow. The RFS and other officials did not suggest that they should evacuate, but Jenny's neighbour's son, who had professional skills in bushland management and connections to the RFS, got out all these maps and cross checked with other maps and news reports and such. He said he thought it was coming their way, and they'd better get out.

Having watched the news and seen so many reports of people saying the fires moved unimaginably fast, and seeing that some people thought they'd be OK and got caught out, Jenny made plans to evacuate. Luckily, as a long-time resident of the region, Jenny had some close friends near the coast, so she and her partner planned to take the dogs and stay there in their caravan.

It was less clear what to do with the chickens and horses. Jenny discovered from her network that there were Facebook groups popping up where you could go to, to find help rescuing different animals, so she began checking them out. She put out a post on one group's Facebook page, asking for anyone who could look after the chickens. She'd spoken with a friend who had recently done the same; someone had come and grabbed their chickens, but the chickens had ended up dying, either from heat stress, or the stress of moving, and in the end, the fires never came to their place, so they would have been safer staying where they were.

## But no one could predict what was going to happen or where would be safest.

Jenny knew that chickens can't just be moved around, for a number of reasons: physiological, emotional, ecological and social. They get used to their flock, used to their place, and used to the microbes around them. Messing with this can end up harming or even killing them. Jenny was really attached to her chickens, and had worked so hard to help them adjust to their new home. The thought that a poorly executed evacuation might harm them was just as stressful as the thought that the fires might come this way. After many generous strangers offered to take them, and Jenny meticulously assessed the possible evacuation site against multiple criteria, eventually she found someone who could take her chickens. This was fortunate, as it freed Jenny up to help others later on, and to this day she's still good friends with the woman who helped her out.

The situation with the horses was similar in some ways, different in others. Jenny had put a post on the Shoalhaven Horse rescue group and someone she had never met before contacted her and was up there in a few hours with their float. Jenny's friend Tamara had a small paddock the horses could go to, so they headed there rather than the showgrounds—Jenny had called the Showgrounds first, but at that stage it was still not an evacuation centre. And besides, one of her horses was really nervous and she did not think he would cope with being around so many others. She certainly couldn't be with him 24/7. It took a couple of runs to get everyone up to Tamara's but they got there in the end. Waving goodbye at the end of that day, Jenny felt the most intense relief and gratitude.

## That day had given Jenny a view to a whole new world that was emerging: an informal infrastructure of community horse evacuation.

Through community networking, and the generosity of time, money, resources and the energy of a whole lot of local people, it seemed a lot of animals were being moved around, hopefully to safer places, though as with the chickens, sometimes the places animals got moved to came under threat and they had to be evacuated again.

Jenny evacuated her property for four weeks, as the fire risk just didn't let up. Some people moved their horses home when they thought it was safe, only to have to move them again. At this point, Jenny was staying at her friend's up the coast with the dogs in the caravan, and having to drive every day to go and feed and check on the horses which were 40km away.

The fires burned right up to this property, but thankfully spared these alpacas' home.
Image: Jo-Anne McArthur/We Animals Media.

So, while getting them there had been somewhat straightforward, caring for them while they were there was really time consuming and draining, especially when most days were over forty degrees and every day was full of anxiety about the fires.

This, plus the work Jenny ended up doing to help others care for and evacuate their animals, ended up being a full-time job during those few months when the fires were most intense. Jenny was lucky – as it was the end of the year, her work was quite flexible, so she could take the time off (though she wasn't getting paid, so, not that lucky). She knew other people, including her partner, who had to keep working full-time. That made all the emergency evacuations even harder.

In between caring for her horses and managing dogs in a caravan, Jenny was helping others move their animals. Someone up the road from her friends had a trailer, but they were overseas at the time, so Jenny ended up being able to use that to help others. She contacted the Shoalhaven Horse Rescue Facebook group that had helped her, but now this time, she was offering to help others. It was hard to schedule this to be convenient – it was a lot of last-minute panicked organising, all of a sudden someone's messaging and asking if you can get to this place or that place with the float, there's 2 horses, or a donkey and a horse, or a camel, or someone has one horse trailer but needs 3, how quickly can you come?

Smaller companion animals such as dogs, cats, and rabbits, were often able to be evacuated with their humans in the car, however this depended on a number of factors such as how many there were, and how many other animals were being evacuated. Image: Jo-Anne McArthur/We Animals Media.


Often, animals were evacuated at night; either due to the sudden change in conditions, or the hope that it would not be as hot in the trailers/floats if they were transported at night. However, this brought added complications due to lack of light. Image: Jo-Anne McArthur /We Animals Media.

## It was incredibly tiring work but Jenny met a lot of amazing people along the way, and was so grateful for the help she had received caring for her animals, so how could she say no?

A lot of the time they were moving animals at night, because it was too hot and too dangerous in the daytime. Sometimes they had to fit more horses in the floats than the float was supposed to fit. Then there was the traffic. Sometimes everyone had to drive so slow because of the poor visibility, and Jenny remembers one time the highway just backed up with horse floats everywhere, going so slow when they wanted to move as fast as possible to get away from the rapidly encroaching fire threat.

There were some really stressful and upsetting moments. Sometimes Jenny was helping someone who'd really left it too late – not their fault, the fires came out of nowhere and moved so fast – but then they were trying to load the horses in a really panicked situation, which just stressed the horses out more, and of course then some of them wouldn't get on the trailer. It took everything she had to remain calm in those situations when the smoke was getting really dense. One person she was helping ended up getting kicked by a horse, and had to go to hospital for surgery. That was just one of many injuries sustained by humans or other animals during that time.

Another huge source of stress was when roads were closed. You'd want to get to a place to pick up horses or take them to the person who had offered to have them there, but the road would be closed. That meant begging the fireys or whoever was managing to let you past. Sometimes they did; sometimes not.

One time they finally got the horses on and then the ute wouldn't start, because there was not enough oxygen in the air as the fire got close, or something. It was incredibly stressful, but luckily they got out of there in time. At other times, Jenny would drive past properties where it seemed the humans had evacuated and had left the animals. Jenny and the others she was working with didn't know what to do – should they go in and open the gates, let the animals out so they can at least move themselves if they want to? Should they try and get them in trailers and take them somewhere? Who and where were the owners? Maybe they had a plan and were just out at the moment?

## That was one of the hardest things— not helping itself, which was of course really challenging, but when you wanted to help and weren't really able to. That was tough.

Apart from moving the animals, then there was making sure they all had enough food and water, and their other health and emotional needs were taken care of. Because she had access to a float, Jenny was mostly transporting horses, but there were others with utes just driving around the region moving hay from one place to another, filling troughs, keeping certain animals away from others they didn't like, trying to keep track of who's horse was who's, and such.

Throughout this experience, Jenny noticed a couple of patterns. People who'd waited too late or whose places were suddenly hit by fires that went way beyond the prediction maps had the most stressful experience, and were most likely to have lost their animals. For some people, in places where it's one road in, one road out, and surrounded by bushland, in some cases they just couldn't risk trying to move the animals, and so the owners had to just open gates, evacuate themselves and hope for the best. For those folks, leaving was very difficult.

It was so much easier for people who had close friends or family with land in a safer region, and for those who had access to forms of animal transport. Of course, it was such an expensive exercise too, so those who didn't have spare money to be transporting and then feeding their animals elsewhere were in a much harder situation.

**In the middle of disasters it can feel like you are in the middle of a nightmare and then you are still having to deal with all of the other normal pressures. Money and resources don't magically appear even when they are needed most.**

The whole thing was incredibly well organised while also being pure chaos. There was no planning in advance, not at a community or government level. No one knew what the right thing to do was, or whether you could go to the showground, or if that would be safe, or whatever. If there had been a plan, or better preparation and communication, or someone you could call for advice, or a website to go to with some basic information, it would have all been easier. But all the formal planning was about humans, or assumed the emergency wouldn't be as bad as it was. Like maybe you could have taken chickens to the showground, but not given how horrifically hot it was all the time.

But while this was really chaotic, there were some phenomenal people in the community who had spreadsheets and trucks, scheduling evacuations and tracking who was going where and when; it was really an astounding effort, moving hundreds, even thousands of animals around the region – and then, eventually, back after the rains came. When everyone finally got home, Jenny felt like she wanted to sleep for a thousand years. But there were animals to look after and work to get back to and then the rains and then COVID.

Thinking of the generosity of everyone involved in this really warms Jenny's heart, but knowing how taxing it was for everyone makes it very stressful to think about whether they could do it again, if they needed to. And of course, despite these huge efforts, not every story had a happy ending. Some animals were so stressed they just couldn't keep going after the trauma of the evacuations. Some got burned and others injured in the process; of course, many died in the fires.

Jenny knows they all learned a lot from the experience, but that a lot more work, including better planning and better resourcing of communities by the government, is needed for when, not if, there is a next time.

Horses evacuated to a local showground. Image: Julia Johnston.

5.1.2 Community narrative

# Wild animals

A wallaby near food and water that volunteers placed in the forest. Image: Jo-Anne McArthur/ We Animals Media.

As the fires continued to spread across the East Coast, Katy began to get more and more worried about the wildlife. No one seemed to be doing anything for them, and it was obvious how completely decimated the landscape was from the intensity of the fires. The few who would make it—if any did—would be left with nothing if people didn't act.

Katy could see on Facebook that other people were worried about this too, and she heard through her neighbour that there was going to be a meeting at the local pub to see what the community could do. At the meeting, people put their hands up to say what they could contribute to efforts. For some people, this meant reaching out to work contacts who could send food or materials to build feeders and water dispensers. For others, it meant keeping track of the supplies and people, and for others having access to vehicles and being able to drive.

All sorts of people, including kids and teenagers, pitched in, especially once there was a physical coordination point where people knew to come. People from far and wide tried to help in ways that they could, though sometimes the interventions from afar seemed divorced from the reality of what was happening on the ground. The local rural store became a vital point of connection for the wildlife efforts, and there were often people preparing food or rigging up new water dispensers at all times of the day and night.

Still no one in the formal disaster response seemed to be doing anything for the animals, so Katy and her crew kept going. They had some trouble finding out if there were supposed to be formal efforts or not—everyone they spoke to seemed to think it was someone else's job, or no-one's. It was a mess, and the animals were the ones paying for it.

It wasn't always clear what food should be going out, or what materials people should be using to do so. But every time new information came in and suggested something different should be done, Katy took careful note and tried her best to follow the guidance. She knew that it wasn't going to be perfect, but in the middle of a climate disaster, what is? Everyone was doing their best. It would have been much easier to do the right thing if the people in official positions provided guidance in the first place. Or if there was somewhere to get reliable information that people new to caring for wildlife could use.

Katy drove food to different distribution points, and put some food and water stations around her property, which backs onto a national park. She carefully kept location coordinates for her stations, and provided these to the person in her local area who was in charge of collating the information. Katy's daughter taught her how to use GPS as she went, which was a wholly unexpected part of the learning curve!

As the fires got more and more international media coverage, more people arrived to help out. Still, the formal disaster response was adamant that protection of human life and property trumped people's desire to care for wild animals.

Katy knew that the land belonged to those animals as much as it did to humans. The idea that people wouldn't even try to save any creature who had survived the inferno itself made Katy feel both deathly sad and unbearably angry. She refused to accept that there was nothing humans could do. Especially when it was human actions that had driven the climate disaster in the first place. It didn't make sense that it was ok for those actions to have happened, but not ok to take action now.

Katy and her friends began driving into private properties they knew the owners had evacuated and distributing more food and water. They opened gates and tried to create paths to safety for the domesticated animals they saw on the properties along their way.

As time went on, it was clear that very few wild animals had made it through. Sometimes food wasn't touched for a couple of days—but, sometimes, the food was used by unexpected animals in unanticipated ways. When that happened, in the midst of all the horror, it was one of the few things that could make Katy smile.

A koala's burned feet. Image: Jo-Anne McArthur/ We Animals Media.

The volume of goods being donated from across the world got a little unwieldy at this point. Members of the volunteer group Katy was a member of sometimes had to spend time sorting through the donations and then redirecting them to other groups or sometimes even straight to the tip, rather than making, distributing and checking up on the food and water stations themselves.

The fires took months to move across the country and the state of constant vigilance was wearing everyone down. Throughout her time helping care for wildlife, Katy was managing to keep turning up for work while also looking after her family, including the cats. The two times they had to evacuate were full-scale projects and each time she came back to the house, Katy felt relief that the place was still standing, but also waves of anxiety that animals out there were losing their homes and their lives.

Donations had also been pouring in from across the world, mainly through the existing wildlife carer organisations, but the money wasn't always getting to the people doing the work. Katy had spent hundreds, maybe thousands of dollars on petrol at this point and she knew some of the others had spent even more, including people who really couldn't afford it – especially now. It seemed ridiculous how difficult it was to access some of the donated money.

Formal disaster response officials had been getting more interested in the work that was going on informally to protect and care for wild animals. Some of the RFS members were trying to help out, but mainly that work was about euthanising animals who were considered to be too badly hurt from the fires to rescue. Some of them did take joey pouches out on the trucks. But there was definitely a sense that some of the interest from formal people was driven by a desire to stop people going out to set up and monitor the food and water stations.

Fleur had been involved in wildlife care for decades. Ever since falling in love with the little injured wombat, all those years ago, Fleur had known that caring for wild animals was something she had to do.

As the years have gone on, she'd moved a couple of times and been involved in different networks. But the point was always the same: find the animals you can help, and help them. Pretty straight forward.

The 2019/20 bushfires were something else. Absolutely unbelievable. No one was prepared. Fleur joked with her friend Laurie, at some point during the whole ordeal, that at least people might realise now how much animals matter. If the American news shows could cut through to people, perhaps they'd finally change some minds!

And it was tough sometimes, during the fires, dealing with well-meaning people who were desperate to help. Fleur saw some of the food being prepared in her local community volunteer group that had sprung up, and knew it wasn't going to end well. Between the wire hangers that Fleur could just see a small animal getting into trouble with, and the food and water being put out acting as predator beacons, she worried that it might do more harm than good.

But then, in the middle of the whole thing, who wants to hear that? She tried to gently introduce some ideas to the group and found, so long as she wasn't shaming anyone, most people wanted to learn. That felt good. But everything was on a knife's edge. There was so much at stake. And it wasn't the people trying to help that had caused the problem. A crisis is really not the time to be learning new skills or settling differences between views.

Fleur helped set up a spot for the volunteer vets from overseas to use as a base. After sorting through some of the medical supplies that had been donated and getting rid of the expired or restricted items that shouldn't have made it, she helped bandage and apply ointment to the few animals that got brought in. The thing that felt the hardest was how few there were.

In the end, what probably kept Fleur going were a couple of her carer friends who made sure to check in on her, and she with them, and knowing that they wouldn't stop trying to help either.

When the firefighters came through to help protect Michelle and Doug's place, Doug was out there side by side with the fireys protecting the chicken coop while Michelle took the wrapped-up joeys and got the hell out of there, to Fleur's. When the fire came past Fleur's, they were able to pack up again and go to Laurie's place further South.

Two young kangaroos near a water station placed in a burned forest. Image: Tracey Storm.

## When the fires finally died down, that didn't mean the work ended.

The surviving animals needed to be cared for well past the arrival of the rain, and then the pandemic. For many of them, the health issues caused by things like smoke inhalation wouldn't show up for a while—but Fleur knew that when they did, she would still do whatever she could to save a life. The loads of laundry, and the night-time feeds, and the enrichment activities and the shovelling of shit—let's be honest—all of it, Fleur would do.

But it would help if more people helped shovel the shit. After the bushfires it's been one thing after another. It's beyond time for people to wake up and do what they can to help.

When the fire season was officially over, it wasn't long before the Covid-19 pandemic arrived and the communities that had been helping each other through the climate disaster were separated. The stories of how people acted to care for and protect animals during the bushfires have not been gathered together to help people in future disasters to act, until now.

## 5.1.3. Community narrative

# Farmed animals

Farmers have long lived with the reality that drought, fire and flood are ever-present threats to the stability and ease of farming in Australia. Over time, Australian farmers have developed strategies to farm in changing climates.

When the Black Summer Bushfires approached, farmers like Clive were among those best prepared to protect animals in the catastrophic fires that were about to unfold. Like many farmers, he comes from an intergenerational farming family and has a deep sense of communion with the land. Clive, his wife Lydia and their kids are deeply connected to the local community and to the broader farming community in the Shoalhaven.

2019 was the latest in a series of tough years for farmers in the Shoalhaven. Extreme heat and drought had made farming very challenging and there was general acknowledgement that the entire community was set to face a horrific fire season. As with generations of farmers before, Clive had experience fighting fires as a member of the RFS. The current crew all knew about what was coming and had spoken about the demands the fires would place on them—Clive had had some yarns with a few of the boys over the weeks leading up to the season. The knowledge the older generations had passed down through anecdote and legend became recurring topics of conversation.

A heard of cattle amid a very smoky sky
Image: Jo-Anne McArthur/We Animals Media.

**Still, Clive couldn't fathom there having been a fire like this before. While he could draw on his knowledge of the land and farming, he felt like he, personally, was wading into unknown territory.**

Clive, Lydia and the family had an emergency plan for the farm that they'd developed through consultation with local fire services, industry, and government bodies. They'd fine-tuned these plans over time, drawing on knowledge and past experience to figure out what worked and what didn't. Having these emergency plans ready to activate provided each of them some peace of mind, though the scale of the fires that were approaching and the news that was coming in felt unprecedented and frightening.

Clive and his eldest son Ryan were the ones responsible for putting the plan into action. They knew to ensure that they had excess feed ready, for 'if and when' access to local suppliers was cut off. They had sprinkler systems installed and water tanks filled, so they could contend with disruptions to water access that were sure to come. They knew that to protect farmed animals during the fires they would have to have safe paddocks where large sections of grass had been irrigated with town or bore water, or paddocks that had large, fire resistant, concrete platforms. They hoped that these measures would be sufficient, and that they'd ensure their animals survived. Making the extreme decision to relocate hundreds of them to safer pastures hours away would be an option until it wasn't. Generally, it was too costly to consider. They'd see how they went.

Clive was nearing the end of a day's work in December when he felt the first waves of panic surge. The fires had been burning for months and he felt them getting closer. He was tired after a long few years and felt worried about whether he would have the strength to change gears when the fires came. He wanted to protect his family, which ultimately meant evacuating them, but at the same time he needed support on the farm. Ryan would stay with him even if the others evacuated.

**One farmer can't protect over five hundred cows and hundreds of chickens alone.**

Cattle in a scorched paddock.
Image: Jo-Anne McArthur/We Animals Media.

The initial spike of panic faded briefly, but it flared up again as the days went on—hotter, more smoke, more catastrophic fire alerts. When he went out to assist other farmers in his community who needed some help tamping down the peat-fires or doing more last-minute prep, he left Ryan in charge of the property. They stayed in contact on two-way radios instead of their cellphones, to avoid losing reception at a crucial moment. And it was a two-way street—on one of the worst days, a guy who lived about half an hour away had appeared as though out of the blue to help, without even being asked.

In the middle of it all, Clive was cut off from wi-fi and phone reception for weeks and was unable to access the main road to get into his local town centre in the days and even weeks after the fire. The two-way radios he and Ryan used ended up being useful to be able to talk to others who had clued onto the same thing. They formed a makeshift brigade for each other, seeing as a few of the others had never been visited by one of the official ones.

Through the long, dark days, Clive and the family kept milking. Stopping milking was of course not a choice. The cows seemed ok. Production dropped a couple of times, but basically everything kept running despite the general calamity.

When one day a tanker had trouble getting through because roads were closed, it all worked out in the end, and he hadn't had to dump the milk. Anyway, the insurance companies exist for a reason!

The physical cost of pushing through with the physical labour of milking cows, feeding and watering animals, and ensuring the house and sheds would be protected from the worst of the fire was something Clive hadn't experienced before in his life. The mental load of keeping track of it all, in the heat and the dark, was also heavy.

With only one generator on the property, they had limited access to and high demand for electricity. Ryan and Clive had to move the generator from the house, where it was used to keep food refrigerated, to the water pump to ensure the cattle and chickens had water, to milking shed to keep the milk cold. Setting alarms to wake up in the middle of the night to move the generator from site to site was exhausting work. As the smoke became heavier and the fire a greater threat, that exhaustion began to settle deep in Clive's body. He and Ryan took turns keeping watch, but Clive let his son sleep when he could. He could see the toll this was all taking on him.

Some of the key things that Clive noted along the way were mainly to do with how local community and connection to place got mucked around by some changes that had been building for a while. The control of the fire service being shifted hours away to Sydney and that, definitely didn't help. If you don't know how the local environment functions, you're liable to get caught out when the fire does something unexpected. And to be fair to the RFS, if you build a big house in the hills, at the end of a tiny road—well, they are going to have trouble getting to you.

But there were some things closer to home, and to Clive's heart, too. Lots of land development going on these days, taking some land right out of production, and driving up the costs of farmland generally. For years now, the local farmers had been seeing waves of people buying places and being around for weekends or holidays but not ever really putting down roots. Sometimes they would pitch in, say join the RFS, and make the effort to get to know people, but a lot of the time that wasn't the case. It wasn't all bad—far from it—but it changed how the community came together.

When the blazes began to die down, Clive was able to take a deep breath, and take stock. While the cows that they had cared for during the fires all survived, sadly many of Lydia's chickens did not. Most of them died during a particularly ashy night, due to a combination of extreme heat and smoke inhalation. The morning they had been discovered, between sorting the generator and getting the milking done, Clive hadn't had time to really process what had happened.

The La Nina weather pattern that swiftly started in the wake of the fires led to intense rainfall and a swift climate shift again, which meant more widespread impacts on farmed land.

As Clive started to build his strength back up after the fires, he was faced for the first time, with an outbreak of three-day sickness, or 'Bovine ephemeral fever' among his cattle.

## These impacts in the wake of the fires were particularly hard to contend with, as Clive had already been through so much by that stage.

And he was again faced with things that required urgent and immediate attention. Beyond this, his crops were impacted by large numbers of insects that Clive had never seen before on the farm. The insects would go through an entire grassy paddock in a night, further exacerbating issues with growing enough food for the cows.

With the fires in the rearview mirror and the rains, then the Covid-19 pandemic coming through and causing a whole new set of problems, Clive knows there will probably be issues with the land or the animals, caused by the fires, that just haven't been discovered yet. But until he has to deal with them—there's more than enough to be getting on with.

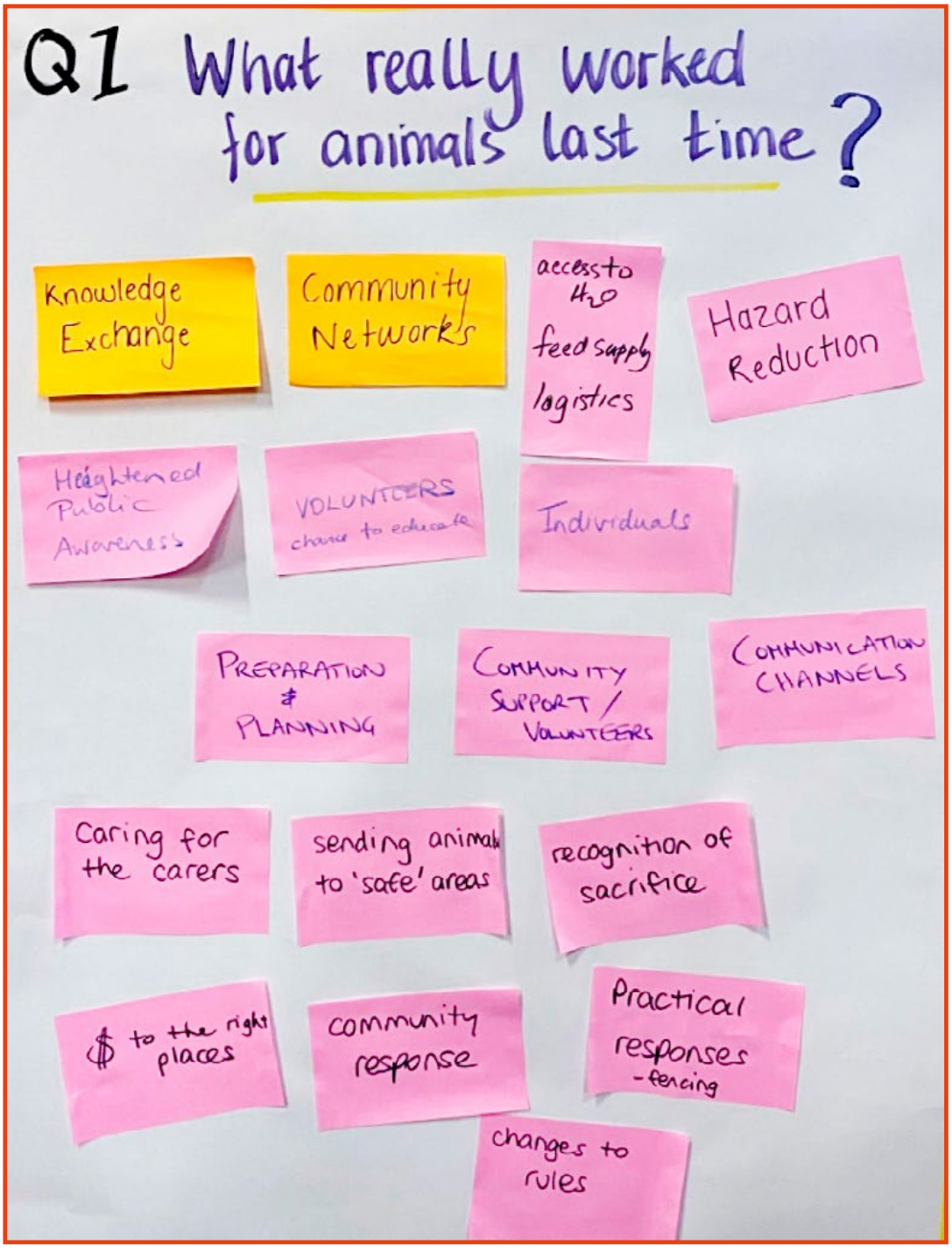
Sheep who were burned when fires tore through their field. Image: Bear Witness Australia/ We Animals Media.

Burnt eucalyptus plantation, Mallacoota area .
Image: Jo-Anne McArthur/We Animals Media.

Over time, Australian farmers have developed *strategies* to farm in changing *climates*.

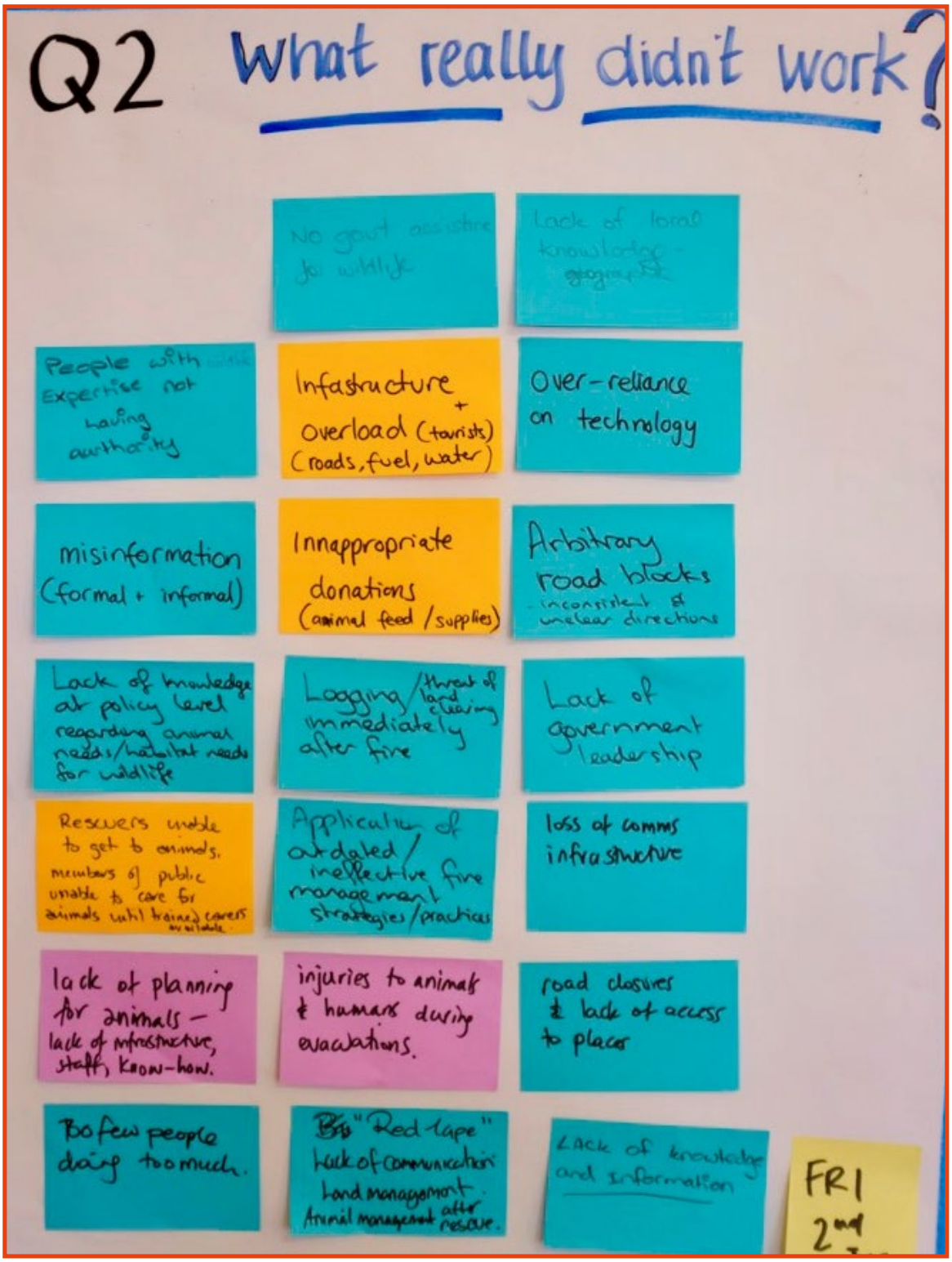
## 5.2. Results from workshops

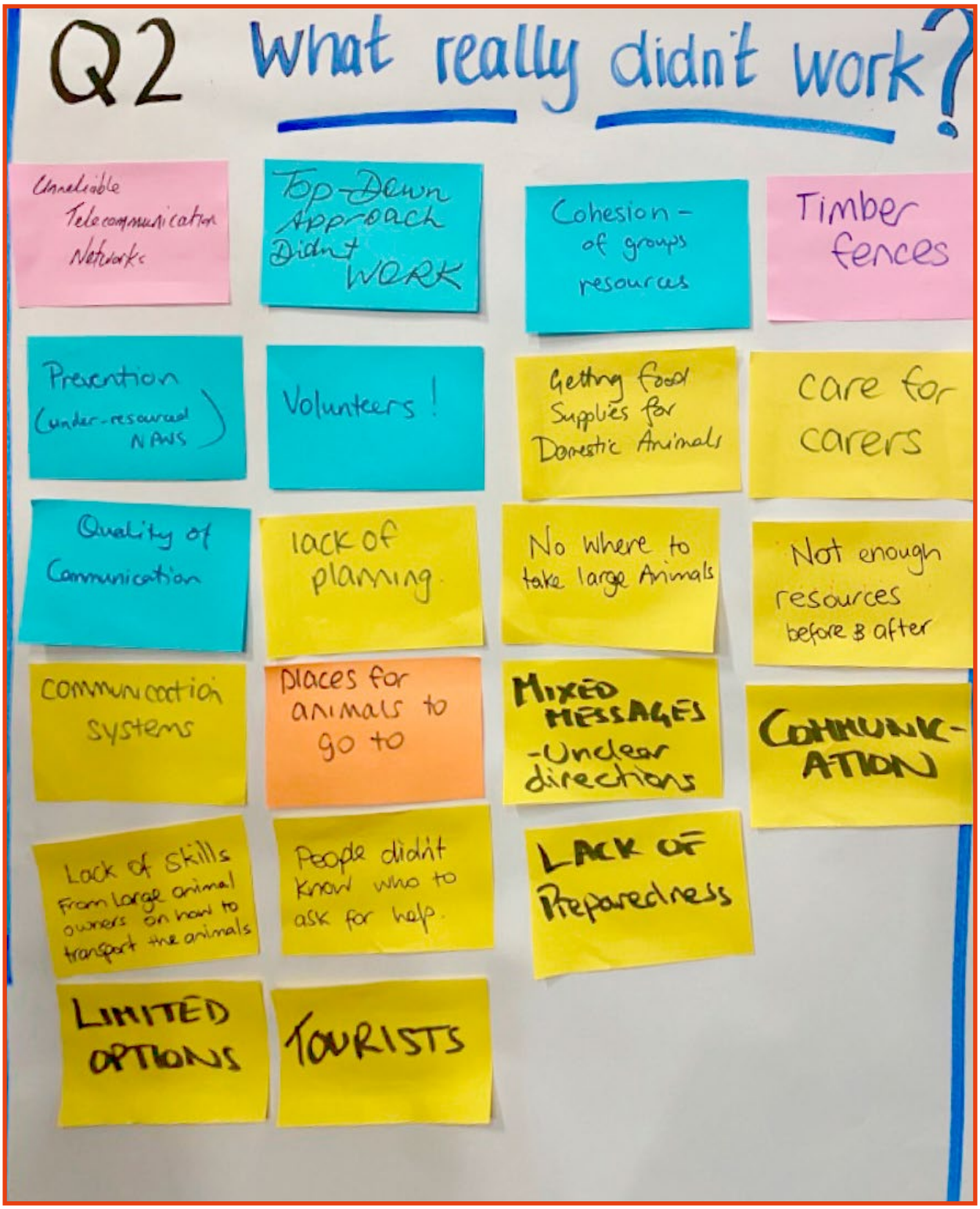
During the four workshops, our facilitators organised a number of structured activities that allowed participants to collaboratively develop shared knowledge about what happened, what worked and what did not, and what needs to be done going forward. This section provides summaries of the conversations and mind-maps that were generated in response to specific questions. Further information can be found in Appendix 3, which contains the newsletter-style summary of the workshops that was sent to the participants after the workshops concluded.

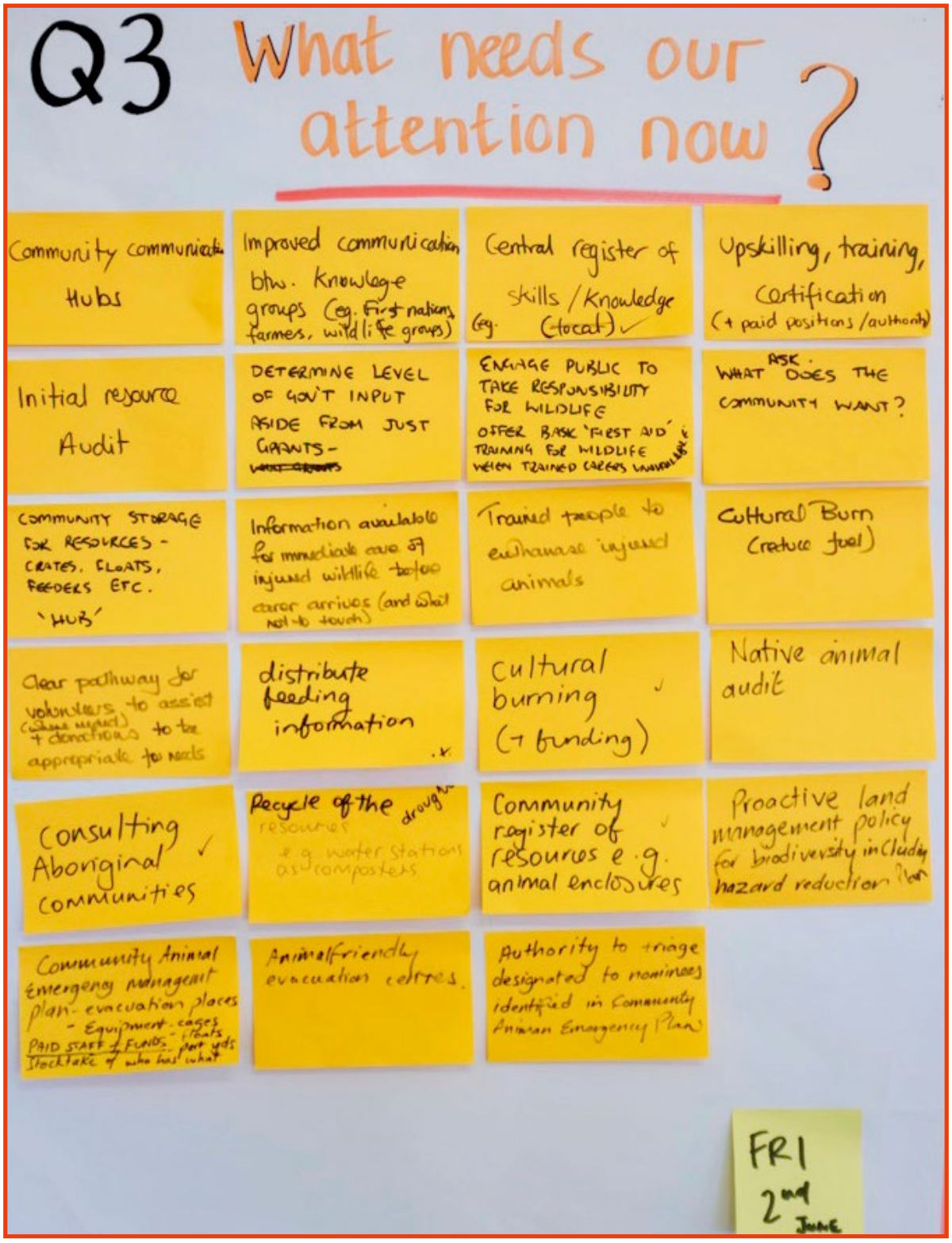



Ideas contributed by community participants in the workshops held in the Shoalhaven region.


Q1 What really worked for animals last time?
networks + communication
people working with each other - different groups
places not burning
Connecting through Social Media
Immediate response - food + water + first aid.
Generosity of giving, donations
Collection of experts (medical knowledge)
Knowing people who can euthanasia
Local knowledge & Networks
Good will Willingness People going above & beyond
Help from outside - Donation - Food/Feed - Assistance - Show of support
Social media/ communication channels - info in & out
COMMUNICATION (ACCESS)
opening up safe places for Animals & community.
ANIMALS (PART OF COMMUNITY DISASTER PLAN)
LOCAL Co-ORDINATOR (LOCAL KNOWLEDGE)
Breaking rules to help
well-equiped animal evacuation points
Sharing resources, knowledge + equipment
Network Formation + Co-ordination
Social media platforms (eg. FaceBook)
FRI 2nd JUNE


Q2 What really didn't work?
No govt assistance for wildlife
Lack of formal knowledge - geographic
People with Expertise not having authority
Infastructure + overload (tourists) (roads, fuel, water)
Over-reliance on technology
misinformation (formal + informal)
Innappropriate donations (animal feed / supplies)
Arbitrary road blocks - inconsistent & unclear directions
Lack of knowledge at policy level regarding animal needs/habitat needs for wildlife
Logging / threat of land clearing immediately after fire
Lack of government leadership
Rescuers unable to get to animals. members of public unable to care for animals until trained carers available
Application of outdated / ineffective fire management strategies/practices
loss of comms infrastructure
lack of planning for animals - lack of infrastructure, staff, know-how.
injuries to animals & humans during evacuations.
road closures & lack of access to places
Too few people doing too much.
"Red tape" Lack of communication Land management Animal management after rescue.
Lack of knowledge and information
FRI 2nd


Q2 What really didn't work?
Unreliable Telecommunication Networks
Top-Down Approach Didn't WORK
Cohesion - of groups resources
Timber fences
Prevention (under-resourced NPWS)
Volunteers!
Getting food Supplies for Domestic Animals
care for carers
Quality of Communication
lack of planning
No where to take large Animals
Not enough resources before & after
communication systems
Places for animals to go to
MIXED MESSAGES -Unclear directions
COMMUNIC-ATION
Lack of Skills From large animal owners on how to transport the animals
People didn't know who to ask for help
LACK OF Preparedness
LIMITED OPTIONS
TOURISTS


Q3
What needs our attention now?
Community communication Hubs
Improved communication btw. Knowledge groups (eg. First nations, farmers, wildlife groups)
Central register of skills / Knowledge (eg. (local) ✓
Upskilling, training, certification (+ paid positions / authority)
Initial resource Audit
DETERMINE LEVEL OF GOV'T INPUT ASIDE FROM JUST GRANTS -
ENGAGE PUBLIC TO TAKE RESPONSIBILITY FOR WILDLIFE
OFFER BASIC 'FIRST AID' TRAINING FOR WILDLIFE WHEN TRAINED CARERS UNAVAILABLE
ASK: WHAT DOES THE COMMUNITY WANT?
COMMUNITY STORAGE FOR RESOURCES - CRATES, FLOATS, FEEDERS ETC. 'HUB'
Information available for immediate care of injured wildlife before carer arrives (and what not to touch)
Trained people to euthanase injured animals
Cultural Burn (Reduce fuel)
Clear pathway for volunteers to assist (where needed) + directions to be appropriate to needs
distribute feeding information
Cultural burning (+ funding) ✓
Native animal audit
Consulting Aboriginal communities ✓
Recycle of the drought resources e.g. water stations as composters
Community register of resources e.g. animal enclosures ✓
Proactive land management policy for biodiversity including hazard reduction plan
Community Animal Emergency management plan - evacuation places - Equipment - cages PAID STAFF + FUNDS - floats Stocktake of who has what
Animal friendly evacuation centres
Authority to triage designated to nominees identified in Community Animal Emergency Plan
FRI 2nd June


THURS 25th
What needs our attention now ?
Solar for all
Gov - Stop Passing the buck to just Volunteers
Practice Equipment Lists + Plans
Prepare & Practice
Uniform information - one source
Education & Re learning
Structured Education & training / workshops
Central Resource
Develop clear guidelines for action
Climate mitigation
Momentum
A register
- properties
- resources
- infrastructure
- transport
Too many humans
Ready to Go PLANS
Preparation, Plans & Systems
Reactivating & strengthening peer networks
Agency to oversee Rescue care org's
FOLLOW UP
Public Communication
Education
Awareness Campaigns
GIVE RFS more flexibility & local input
Community Emergency Hubs
RESOURCE NPWS PROPERLY
ACTION on Climate Change

### 5.2.1. A recipe for courage in care

The qualities below were generated in response to an activity that helped participants identify times they had demonstrated courage while trying to care for animals. They indicate the extent to which human people were committed to caring for animals, and the challenges they faced to do so. The qualities included:

- Allowing self to be vulnerable
- Being prepared to act, knowing what needs to be done and doing it
- Take responsibility, being resilient, stepping up when needed, and quickly.
- Bravery
- Challenging a social norm
- Commitment to community and neighbours
- Community connections
- Compassion and empathy.
- Connection
- Necessity
- Desire to help
- Frustration
- Going back and doing it again
- Inner strength
- Joy
- Love
- Passion
- Patience, grit, stoicism
- Perseverance
- Self-sacrifice
- Selflessness and generosity.

### 5.2.2. What needs attention now?

Through the *World Café* style group activity, participants identified the following areas as issues needing to be addressed going forward.

#### 5.2.2.1. Preparedness and Training

There was a strong focus on preparedness and training. Participants emphasised the importance of practice, access to training for local rescue volunteers, and developing preparation plans. They also stressed the need for appropriately trained local experts to be identified and ready to educate the public and increase public awareness with communications campaigns.

#### 5.2.2.2. Collaboration and Coordination

Participants emphasised the need for better coordination among different agencies and organisations involved in animal rescue and care. They called for the establishment of a clear coordination body, strengthening peer networks, and improving communication and coordination between knowledge groups, farmers, wildlife carers, and First Nations communities.

#### 5.2.2.3. Resources and Infrastructure

The participants highlighted the need for adequate resources and infrastructure for animal care during disasters. This included a register of properties, resources, and equipment available for rescue, as well as access to communication tools and transport infrastructure and better skills for safer transport of larger animals especially. They also stressed the importance of more funding, volunteers, and improved road infrastructure.

#### 5.2.2.4. Government Responsibility

Participants emphasised the need for the government to take responsibility and not rely solely on volunteers. They called for clear guidelines, structured education and training workshops, and a government agency overseeing rescue and care organisations.

#### 5.2.2.5. Mental Health Support

The participants recognised the need for effective mental health preparedness and intervention for both volunteers and survivors of disasters. They stressed the importance of providing appropriate support and resources to address mental health challenges for carers before, during and debriefing and processing the impacts of disasters.

#### 5.2.2.6. Wildlife and Biodiversity

Participants expressed concerns about the impact of disasters on wildlife and biodiversity. They emphasised the need for greater funds and awareness of the importance for habitat conservation, cultural burning, and a protective land management policy to reduce fuel load and preserve biodiversity. They also called for a native animal audit and the involvement of Aboriginal communities in decision-making.

#### 5.2.2.7. Community Engagement and Responsibility

The participants highlighted the importance of community engagement and taking responsibility for wildlife care. They emphasised the need to involve the public in preparedness and training, and to offer first aid training for wildlife. They also called for community-led responses, community hubs, and mechanisms to disseminate accurate information and knowledge.

#### 5.2.2.8. Advocacy and Leadership

Participants emphasised the need for media leadership, lobbying the government for timely direction, and maintaining pressure on the government to plan and implement necessary infrastructure and resources. They also highlighted the importance of maintaining platforms for survivors and experts to be heard and considered.

### 5.2.3. Priority next steps

Six priority next steps were identified by participants at the workshops:

- Achieving better outcomes for wildlife
- Safe evacuation for horses
- Caring for the carers
- A structure for coordinating animal support in disasters
- An animal rescues register
- Building relationships with the regulators.

## 5.3. Analysis of interview and workshop data

Drawing on the results presented above in Sections 5.1 and 5.2, and the desktop research findings presented in Section 2, this section offers an analysis of what happened in the Shoalhaven region during the Black Summer Bushfires when communities tried to care for animals. Through reading community members' experiences together with insights about more general trends in contemporary societies', including Australia's, treatment of animals during disasters, we offer an analysis that identifies both patterns of and reasons for people's real lived experiences. To do so, this section firstly focuses on community members' experiences, regarding what they did, what happened to them, what they thought and felt, and what they suggested (Section 5.3.1). It then turns to look at the structures that hindered their capacities to care for animals (Section 5.3.2).

5.3.1. Community experiences

# The baseline is already tough

"It wasn't just that there was a bushfire, it was a bushfire on the back of the worst drought since federation. The wildlife was already stressed and already dehydrated and then the fire came and just pushed them over the edge basically." P14

Before looking at what happened during the fires, it is important to note that disasters always interact with existing social and ecological conditions. As such, existing conditions for some animals, and for people caring for them, dramatically influenced their experiences and capacities during the fires. For example, wild animals already experience the harms of land clearing, habitat fragmentation, pollution, and injuries sustained from cars. For some domesticated animals, such as those that now live in sanctuaries, they are already injured or traumatised from life in factory farms or with violent owners, which affects their physiological and emotional capacities, and their behaviours. Income inequality and the lack of economic value Australian society places on animal care and biodiversity means that many of the people caring for these animals are doing so on a voluntary basis and receive minimal to no financial support to do so. This means that the regular provision of food, water, medicine, shelter and healthcare is already a huge achievement, and there is often minimal capacity to absorb shocks such as bushfires.

Wildlife already grapple with "slow emergencies" such as habitat destruction and fragmentation, and death and injury on roads. Image: Jo-Anne McArthur/We Animals Media.

"It was just this perfect storm of public awareness shifting in its attitudes towards animals. Media coverage, social media, people seeing horrific pictures, a slow news cycle in the world watching, money coming in hands over fist and the world media then descending in Australia. So, suddenly there's this huge demand and nobody knows what to do and the wildlife rescuers were already burnt out from having ten years of drought and rescuing drought animals." P23

Catastrophic disasters such as the Black Summer bushfires are already becoming the pre-existing context upon which future disasters accumulate. Looking forward, continuing to rely on local communities, and volunteers especially, for disaster prevention, response and recovery is unsustainable in light of climate change, which will create ongoing and intensifying disasters. If local people are burnt out by increasing demands being placed on them, then communities will suffer and there will be greater, more complex social, ecological and economic costs that the government will have to address.

"We're still recovering from the impact of all that and the five floods since. We're just going from one disaster to the next, but it's – yeah, the capacity for a council to actually take on all that additional workload just wasn't there and burnt out a lot of people and a lot have since left the organisation as a result as they're overworked." P17

# This was not a "normal" bushfire

Two kangaroos who survived a huge forest fire.
Image: Jo-Anne McArthur / We Animals Media.

"The major fires usually come through ten years to fifteen years, most of the time. Last one here before that – the major one we had – was 2001, it was. That was bad. But this one was by far the worst that I've seen... It was like all the horrible forces of hell had come together that day." P43

As is common in other experiences of emergency decision making, time was one of the greatest limitations for people. However, many of our participants noted that the 2019/2020 fires moved incredibly fast, which prevented people across the country from being able to react with sufficient speed to protect themselves, their property or animals. This was exacerbated for those caring for animals, given the additional time it takes to move them. For example, one participant noted that they decided to evacuate well before any official information recommended doing so. It took two days to get one of their many horses onto a float, because this horse was particularly anxious. If they had waited for official instructions to evacuate, they would not have been able to evacuate that horse. For others, it was difficult to evacuate in time or in response to recommended evacuation times because they could not access land or places for their animals that would be safe. Where people had different kinds of animals the situation was even harder as they needed to find multiple places with distinct affordances so they would all be safe.

"There was nothing for them to eat. It was just ash." P4

"It was just too quick... We couldn't do anything that time... There's nothing that anyone could've done, really, that day here." P43

Not only were the fires fast moving, but the threat continued for weeks and months in some areas. Hence, not only was rapid emergency decision making required, but sustaining this level of alertness was required for quite a long time. This also meant that some decisions needed to be made differently than they would have if this had been one small but fast moving fire which was quickly extinguished. For example, if an evacuation occurred early in the bushfire season, people were not necessarily able to return their animals for weeks or months, which sometimes required making a third set of plans, or asking other community members to extend their hospitality for much longer than had been anticipated. Others evacuated and returned only to have to evacuate again when fires returned.

"I mean I just think the extent of what happened – in the past the thinking was that a bushfire would burn out a certain area and those animals would probably mostly get to safety in the adjacent bushland. But because this was so extensive and also the temperatures of it were so high, it was just an extraordinarily catastrophic event and people – it hadn't been seen before or dealt with." P14

# The formal policies and procedures were woefully inadequate

"They [governments, including local council] had weeks to prepare before this. It just was not organised well enough and really what council needs is an animal bushfire team, so when this does happen they react and they have all powers... I could have got so much more done if I had the power and the resources. But – and that will be your biggest thing is getting councils and State Government to put in place policies and a team, an emergency wildlife team or animal team, to be ready to go when this happens again – and not just have all these fluffy people up the top doing all their talking, bringing in the big money and doing bloody nothing. What you want is the people on the ground who work with this all the time – you know, boots on the ground." P27

Our desk research indicated that official government advice for planning for animals in disasters was limited to guidance on farmed and domesticated animals (i.e. no advice was provided regarding caring for wild animals), and that responsibility for this care was assigned to individuals rather than communities. We asked most interviewees if they had heard of this and overwhelmingly, the response was no, they had not, or that the official advice simply repeated what was already known (e.g. have animal food and medicine prepared). Disbelief and frustration at the lack of planning for wildlife was noted by almost all participants.

Many participants also reported that the ways government agencies responded to the disaster were either unhelpful, actively prevented them from contributing, or penalised or may have even criminalised them for doing things they deemed to be important for their community. There was almost unanimous agreement that government had got in the way and/or failed to provide any meaningful help to animals or those caring for them. As just one example, there are bureaucratic biosecurity systems that must be followed if you want to move certain animals around Australia, such as the "pig pass" that sets out detailed requirements for moving pigs. Similarly, for other farmed animals, there are livestock traceability requirements related to Australia's international trade.

These systems have clear rationales and benefits, yet in the case of emergencies, provide serious barriers to people caring for animals and force them to choose between breaking the law and saving lives.

"There was no structure in any of all that, it was quite chaotic, the interplay of all of those different things that were going on really. The government agencies were certainly caught on the back foot by the whole interplay of the whole thing." P14

Many participants were also unsure of which agencies were responsible for what; this included employees of government agencies not knowing which agencies or staff were supposed to do which particular tasks. Such confusion about roles and responsibilities meant that in many cases, crucial roles were not fulfilled.

"I remember RFS people... and such a sense of how utterly overwhelmed they were with the scale of things. Seeing RFS trucks from areas so far away, like Central Coast suburbs. I remember seeing Wyong and stuff like that racing around the bends one morning and thinking far out, everybody is just everywhere. Who is directing this? Just that sense of the RFS are bloody volunteers. How are we asking volunteers to – I think that's what was so shocking is the dissolution of the sense that anybody was in charge." P11

However, an expert interview with a participant from SAVEM, the South Australian Veterinary Emergency Management, showed that it does not have to be this way. As noted on SAVEM's website, SAVEM is "a volunteer Response and Recovery agency working under Primary Industries and Regions SA (PIRSA) within the State Emergency Management Plan. SAVEM's broad mission is to retrieve, assess, triage, shelter and treat animals of all species in an emergency incident." In South Australia, formal emergency management agencies work with SAVEM to ensure registered veterinarians are provided the requisite safety training and appropriate licencing so they can rescue wild and domesticated animals during emergencies. SAVEM provides one example of how community concerns for animals could be better incorporated into formal emergency planning.

An estimated 60,000 koalas were killed in the fires. Image: Jo-Anne McArthur/ We Animals Media.

# People love animals dearly, and they created complex and effective community networks to care for them

"One thing that you have to realise, is people's animals are their children, and they are their life. If you let someone think that their animal isn't safe, they will put themselves in danger to try and get to that animal or save that animal... They have to realise that the animals are just as important as people's lives. That's one thing the firies – you know, if they're not an animal compassionate person, they don't get that." P26

For many of our participants, the animals they live with are as important, or in some cases more important, to them than their human peers. These animals form their community and even their family. For example, in the midst of an evacuation, one participant recalled screaming for her babies which sent the RFS searching for human babies, which they could not locate, which caused immense stress. When the RFS found out she meant the wombat joeys, who were safely inside the loungeroom, they all laughed with relief at the moment of confusion. This moment highlights the significant differences in how formal agencies and community members value, speak about, and act in relation to non-human animals.

Human and joey recuperate in each others' company
Image: Jo-Anne McArthur / We Animals Media

"I mean there was so much goodwill in the community, so many people wanted to help, both in the city and in the country. So, people in the city were sending down fruit and stuff as well, there were lots of donations of all sorts of things." P11

Extensive community networks arose, building on existing networks of animal carers, and including many people who had never organised in such a way before but were drawn to participate in spontaneous mobilisations by the sheer scale of the devastation, and a sense of deep responsibility to the animals they considered part of these communities.

"I put up a post on Facebook on our business page and said, we've just been advised that, you know, the fire will be coming through by June. So because we had bookings for trail rides and lessons and people coming for riding and agistment, you know, people coming for the horses. So I felt that was the best way to communicate, to let people know that we were evacuating... and so therefore we're moving all of the horses off the property... I hadn't actually asked for help. But within a couple of hours of that post, my friends just started arriving with floats and then someone from the local transport company, she brought her truck and there were people everywhere saying, 'Right, let's get you off,' which was just incredible. So the community support was really beautiful because we had lot of horses to move." P4

For example, for wild animals, people organised themselves via Facebook, WhatsApp, phone calls and text messages, and local face-to-face meetings to locate resources with which to build and distribute the water and food stations. They self-organised into functional roles, including coordination, sourcing, building or compiling the distribution systems, transport, physical and administrative maintenance, and liaison with the various levels of state actors operating during the disaster. Different organisations of reproductive care such as childcare at local resourcing spots emerged. People offered in-kind contributions to each other for assistance, like boxes of beer and food, as recognition of the effort and the financial expenditure others were making. Some groups organised for resources to be sent from Sydney food markets and pet supply stores, for volunteer groups elsewhere to perform labour like sewing pouches for orphaned baby animals and building animal shelters.

Silky chicken and human recuperating from evacuation efforts. Image: Julia Johnston.

Different local groups operated autonomously from one another. Self-monitoring of the water and food stations and decisions to remove the supplementary food and water occurred according to the rhythms set by these local embedded networks. Some groups used GPS or other mapping tools to keep track of the location of the different water and food stations, often with one person taking the initiative to coordinate groups' information.

"It was lovely to help. I felt that it was really good to help." P16

Despite the incredible community mobilisation, we note that there was considerable disagreement between various community actors, and that while people went to extraordinary lengths to help each other, this does not mean these experiences were harmonious or immune to power hierarchies. Such tensions were exacerbated by the crisis conditions of the fires. While community certainly undertook heroic actions and efforts during the fires, the dominant narrative of communities coming together during disasters and being resilient glosses over the extreme trauma, burnout and loss that people have suffered. From our interviews, we do not think it is safe to assume that these people will be able to perform the same tasks in a similar situation in the future. To the extent that they do, it will deepen the many personal and financial costs they have already incurred.

"Because there were so many people volunteering and helping, and everybody had their heart in the right place, everybody was trying so hard." P25

# Different animals have distinct needs, especially in distressing situations

A rescued koala is provided with soft toy to cuddle, as they need to hold something to feel safe.
Image: Jo-Anne McArthur/We Animals Media .

"So here we are dealing with the drought, really high temperatures and those hot winds. Unless you really think about how you're setting up your chook pens, the chooks will just die in forty-degree heat, you know? Because otherwise, you go, oh, it worked for horses, let's do it for chickens. But it's just a totally different set of vulnerabilities." P19

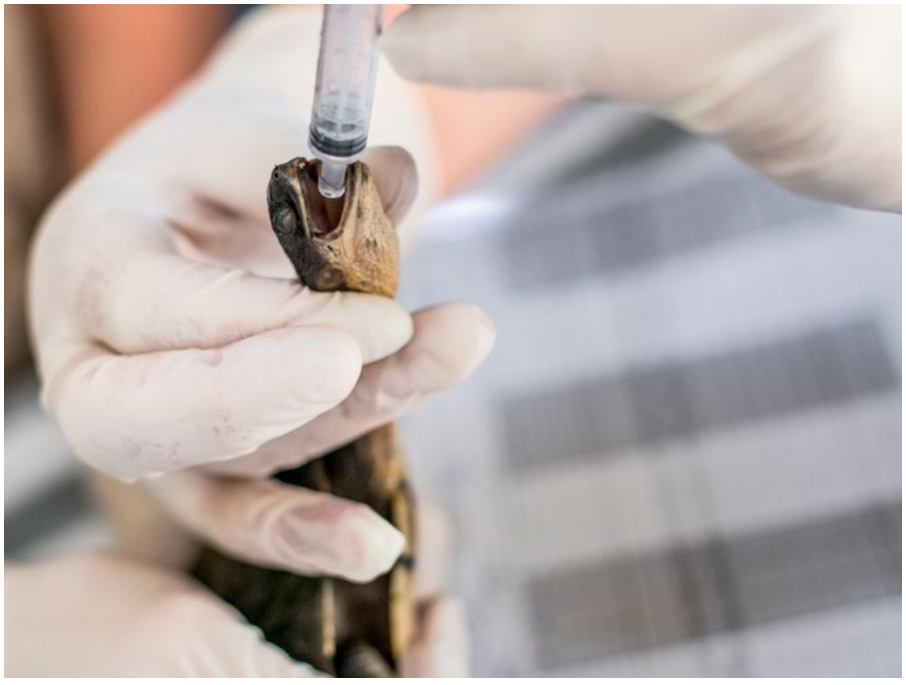
Just as with humans, non-human animals all have distinct needs according to their different species, age, health status, emotional wellbeing, sex and other factors. As such, there is no one-size fits all approach, and recognition of these distinct needs is critical to developing infrastructure and plans that will support people to evacuate, relocate, feed and/or care for animals during disasters.

"People don't understand that you have to keep (milking all the time), like you can't just press the nose of the cow and make the whole thing stop." P47

For example, most native animals that are in the care of wildlife carers are there because they are unwell or injured, or orphaned. In addition, different native animals have distinct diets and need specific food, which often cannot be sourced through regular supply chains. Many are also sensitive to sound, making evacuation centres with lots of people and other animals so stressful as to be a serious risk to their health. People caring for chickens noted how vulnerable (particularly rescued chickens) are to being relocated away from their home places, their susceptibility to disease when exposed to unfamiliar environments, and how vulnerable they are to the impacts of heat stress and smoke. In those cases, people had to decide if it was too risky to move the chickens, and this call was harder to make at earlier stages in the fire season when the immediate impacts seemed less consequential.

Similarly, people caring for any other companion or domesticated animals with vulnerabilities had to undertake increasingly rigorous and considered risk assessments. Many domesticated animals – such as horses or chickens – have social systems that mean they cannot be placed with strangers (i.e. other animals they do not know), or that integrating them with others takes time and involves risks. Some participants reported moving horses away from the fire risk, who were then injured through fighting with the horses they had to share paddocks with.

"[Volunteers were making these contraptions with] a downpipe, and at the bottom it curled under and then was sort of cut out there so that the animals could drink from it, and it still had a store of water there. But the problem with those was that they were too small for wombats to drink from, because wombats don't lap. They have to put their whole face in and suck. So at one stage there was this awful video, that someone had taken down later, but of this wombat pushing this thing around a tree. It was trying to get a drink from this bowl at the bottom of this thing, and it was sort of pushing it, trying to get to the water and it couldn't. The person hadn't understood why it was doing that and was just saying, oh, a typical wombat being destructive again. You just think, it's not, it's dying of thirst and it can't get the water. Anyway, so that's actually something that wasn't really resolved. A few people – I know the wildlife stations started putting in bowls of water buried into the ground, so that they could get it – but that was still just not a great, once the water was gone, it was gone. So that's an issue that needs to just be resolved, some way of having big bowls for them to get to. Also they have to have something in them that small creatures can climb out of." P12



A turtle is provided turtle-specific care.
Image: Jo-Anne McArthur/We Animals Media.

# Inadequate information, knowledge and communications were major barriers

"I think the things that we learned during the fires, it was probably my mistake. We had our horses on a neighbouring property and he locked up the horses because he was a bit scared that they might, when the RFS came, not that they did, they might get in the road of trucks and things like that. So, he locked them up into a yard and that being the reason why they died was because they couldn't go where they needed to go to get away from the fire whereas the cattle, none of his cattle actually died because they could go to spots that weren't being affected. So, I think if there was some sort of – further down the track if you've got animals or a flyer or something so people realise don't lock up your animals, let them have a bit of freedom so that they can move to areas because they were burnt from head to toe and that sort of thing." P55

One of the major issues that people struggled with was having access to accurate, reliable, up to date information, and being able to communicate effectively with other parties. The difficulty of getting accurate and up to date information about the movement of fires has been documented elsewhere,[70] but for people caring for animals there were additional information gaps. A lack of easy-to-find, relevant, and up-to-date information that was specifically relevant for animals of different types was a critical barrier. Many participants reported not knowing where they could take their animals, and that even if some options were known (such as the local showgrounds), the status of the availability of these options was often changing and unclear. For example, some people told us that they arrived at the showgrounds only to be told they were full and sent onwards to the next town. Others we interviewed, who were managing the showgrounds, did not believe that people were turned away. This inconsistency in our data is indicative of the confusion people experienced. Other examples of such miscommunication, or inaccurate or imperfect information abounded. Knowing where to go was not just about knowing what infrastructure existed, but knowing where the fires would go and where would be safe, and for how long. Some participants evacuated their animals, only for the fires to arrive at the place they evacuated to while sparing their home, meaning the animals would have been better off kept at home.

70. Binskin, Bennett, & Macintosh. (2020).

A scrap of fabric extending from a water station, allowing bees to drink without drowning. Image: Tracey Storm.

Those who found themselves trying to care for wildlife who were still in the bush struggled to find accurate information on what would be the best things to do for those animals. This evidenced a general deficit in knowledge of native Australian wildlife biology, including what they eat, how they behave, and the ecologies they live within. These gaps in knowledge resulted in significant community conflict, regarding issues such as whether supplying food and water in the bush would be a) likely to attract predators, b) make wildlife ill due to the food being inappropriate, c) expose them to injuries due to getting trapped or otherwise in the feeding contraption. Given the diversity of species people were trying to care for, these questions were very difficult to resolve and in the context of the catastrophic fires, these difficulties caused significant stress to community members trying to help and significant disagreement among different stakeholders as to what people should and should not do. As climate change continues to alter known baselines and challenge the applicability of existing evidence-based approaches, these tensions seem likely to proliferate.

"There's not any information on realistically what you do with your animals in a case of an emergency like that in a massive disaster. I mean it's like someone said about cutting the fences. But now you've got stocking cattle running through the bush and they don't know where the fire's going to turn or what's going to happen. They could end up anywhere, they could end up jam stuck, get themselves into crevasse of a valley and just not be able to get back out. That's not really an answer either. 'I'll let you [go],' your domestic horse that's never been out there. It's going to run for a certain bit and go, 'now where am I? I don't even know where I am. I don't know what to do. I don't know where to go. I don't know'..." P29

In the absence of accurate formal information, many people turned to their friends, family, neighbours and community for the information they were seeking. In addition to face-to-face and phone conversations, this happened mostly over Facebook and Whatsapp where topic-specific groups were set up. Many participants reported Facebook and Whatsapp being absolutely critical resources, as they enabled people to post requests for help in real time, and for that message to be seen by a wide yet relevant audience, who could then co-ordinate to support those people. This is how many of the horse evacuations were organised.

It is important to acknowledge here that while in some cases these virtual platform networks pre-existed the fires, some of them were set up and sustained by individuals who identified the need and stepped up to help. Their initiative, courage and labour needs to be acknowledged, as does the difference that they made. Were they not to have taken the actions they did, far more animals would have died and suffered.

Some people in the community lacked the practical skills required in an emergency. For example, some were not capable of safely loading their horses onto trailers – because they had never had to before. Others had done so, but not under emergency conditions or with stressed animals, and had to ask for help to do this.

Nevertheless, there were community members who held immensely valuable knowledge and important skill sets that were crucial to the safe care and evacuation of human and non-human people. Local, place-based, interpersonal and relational knowledges were especially important, as these knowledges are not held by formal agencies. For example, knowing how particular animals would react to certain situations, knowing which community members had which animals with what needs, which roads were inaccessible, and such kinds of knowledge were instrumental to saving many lives, human and non-human.

Despite the critical role they played, community members reported that often the huge effort they contributed and the valid and important knowledges and skillsets they had were not officially recognised, and sometimes even actively dismissed by formal agencies. This led to a lack of trust, frustration, and disappointment among community members regarding the formal agencies, and hindered the capacity of formal agencies and community members to work effectively together.

"Firstly, I think if you've got agencies that are receiving money for specifically for wildlife recovery, they need to step in and step up very, very quickly. They need to have frameworks for them to be able to come in and support those communities quickly. Because we were just trying to do what we could with the very little knowledge that we had and being very mindful of the risks involved with that at the same time. I think we did an outstanding job. I really don't deny that. But if we weren't there, I don't even – you know, people would have just done – people would have responded and they would have done a really stellar job as well. But it's like coordinating it, there needs to be some coordination plan where you go in, just as you do with people where you go in and – look, I can't even imagine the enormity of this – the loss during this fire in terms of wildlife. I hope it never happens again. I can't – I just – but we have to learn from that and we have to learn that we need a response framework. Because there needs – I don't even know where that starts, but we do just have to sit down, have these conversations and look at that network mapping and say, okay, well, if those bigger agencies that are receiving that funding can't do it themselves, how can they collaborate with the smaller grassroots organisations on the ground or have key people, key response people set up in each area, so that – that are constantly being trained and updated on this information, so that they have – you know – they can quickly mobilise?" P28

An arboreal food station provided by volunteers in a burned forest.
Image: Tracey Storm.

# Accessing resources (donations, transport, accommodation, infrastructure, medicine and food and water) was a major challenge

"There were things like knowing which hays and things you could put out that they would eat, particularly for wombats and things. There are certain hays that they won't eat, and there's no point in putting it out. Then you sort of had the problem of, well, the hardware store that we're getting it from, their supplier won't bring that sort of hay. So we had to go to a different hardware store, [and they say] "we can't do that." So there was all these sort of organisational things that needed to be ironed out, because they were just putting out any old hay and things." P12

In many cases, it was difficult to find adequate transport and emergency accommodation for animals under the tight time frames of the emergency. But more significantly, often the resources and infrastructure were simply lacking, or too expensive for people to access. In part this is due to animal care being considered an individual responsibility, rather than a community or society wide responsibility. The individualisation of responsibility was eased when community members stepped in through providing resources and skills.

An emergency care centre is set up in a motel.
Image: Jo-Anne McArthur/We Animals Media.

Other barriers were also significant, such as evacuation centres only being opened if there indeed was a fire happening locally. This meant that some people who followed emergency warnings to "leave early" left on days of catastrophic fire danger, despite no fire having started yet and they therefore had nowhere to go with their animals. When evacuation centres that did accept animals, such as showgrounds, were open you had to stay with your animals 24/7, which was impossible for many people who had other demands they needed to fulfil.

"The other thing is, evacuation centres don't open until a fire actually arrives in an area. So you can go and sit in the car near a potential evacuation centre, but you won't be allowed to take your animals in, or go in, until the fire arrives. The other thing about evacuation centres, they only open them if they have enough people to staff them because they're kind of responsible for people. But what's happening in a lot of these areas is that wealthy people are putting in their own bunkers into properties. So that ... on the catastrophic days when there's no fire ... they can go and sit in their bunker, and it's cool, and it's got everything they need. But there's nowhere for the community to do that, for general people. So I can see that the government doesn't want to be responsible for people to go to centres and then have to provide staff on every catastrophic weather day." P12

Evacuation centres were also frequently under-staffed.

"So this is one thing that I found really challenging. Because a lot of the staff, and I don't know on a percentage basis but it felt like a lot of the staff, are temporary staff. So they come in on contracts, we train them up and their contracts finish. If they're lucky enough we can maintain them and we've got that expertise in the system." P22

Resources such as medicines, or special kinds of foods, were especially difficult to access. For example, food for particular species of wildlife who were starving due to the complete decimation of the forests was very challenging, as foods that are commonly available for domesticated animals are not suitable for all species of wildlife. These sorts of foods are not usually grown or harvested in Australia at all, and even if they are, accessing them in times of emergency was nearly impossible. As such, volunteers would be trying to source appropriate foods by, for example, taking fresh branches of eucalypts from gardens and other forests, to deliver them to the burned places. Questions as to the effectiveness of this approach arose, as some felt that the food provided was not eaten; other wildlife carers noted that some species of possums will only eat very fresh juvenile leaves, and as such, only a small proportion of these branches were appropriate food, and only if they managed to get them there while they were very fresh, which was obviously a big logistical challenge.

"I mean the government provided all this money; it just took such a long time to come through. Then when it did come through, the manpower wasn't there to be able to spend it." P17

On the other hand, the inundations of donations were often overwhelming and resulted in more work for on-the-ground volunteers trying to sort out what was actually useful.

"Yeah, there were official ones being done through different charities, and then it'd just be – I remember there was – I don't even know what he does, some kind of wholesaler in Canberra that decided to help and do a lot of publicity around it. Truckloads of shit just started arriving. They were people in Sydney, and there was always lots of publicity around it, and it was just useless to the point where the people managing that were screaming out, no more donations, no more donations." P37

# Caring for animals created many financial challenges for community members

"So they'd just had the fire – a lot of horses had had smoke inhalation problems, including ours, so they had this cough that went for ages and ages. Our vet came down and checked a couple of horses - she charges us less because we've got so many and she's a mobile vet and she's very good, but we had to find the money for that." P21

During the fires, people who cared for animals suffered significant financial losses. These came in a number of forms, including:

- People spent money on petrol, food, medicine, transport, temporary fencing, and other necessary resources.
- Some people had to sacrifice paid work so that they had the time needed to provide the care that they did, or lost paid work as a result of the fires and so the impact of financial costs was greater.
- In addition, many items were more expensive than normal at that time, due to the emergency situation. For example, petrol costs increased due to roadblocks which meant people had to drive long ways around, and the supplies such as food being shipped in also were subject to these additional petrol costs.

"Yeah, I felt almost numb, you know, like trying to do anything other than the day to day keeping the horses alive after the drought through the water with the feed, making sure my daughter was just starting high school. That was the first day she was coming from a different area into school. And, you know, all the family were together and they trying to get to work from a strange house and, you know, try to keep that going and thinking, well, our income has just gone completely. Obviously, we can't have an income. We can't run the business." P4

"Somebody could have probably helped us with petrol money, because we spent a lot of money. Some people who were in big diesel trucks, and I think probably you can get a little tired of helping if a lot of money's coming out and we're like, should we all - every time someone drives, whoever's driving, should we all put in a kitty or should we just take it in turns, that way it's fair. I did it a number of times and ... there was machinery on the road sort of doing something, threw up the rock and ... my window got smashed, so I had an extra expense that kind of, I just went, ah, that's really annoying. I know that's tough luck for me. I think if there had have been some fund there to say, here's a $50 petrol voucher, you've been helping a lot. Something like that. It sort of helps you to continue because you don't want to leave animals in the lurch and you don't want to stop volunteering, but you can only sometimes do it to a point." P25

A koala receiving surgical care. Image: Jo-Anne McArthur/ We Animals Media.

# Decision making was very stressful

"I mean the particular concern that we dealt with a lot was temperature, transport and animal welfare. Do we sedate them? Do we have to fill them up with electrolytes beforehand, so they'll be less likely to become dehydrated in the transport?" P11

Given the aforementioned complexities, of those we interviewed, some, but not all people reported that it was initially a big challenge to make the decision to evacuate domesticated and companion animals. They reported having difficulty simultaneously thinking through multiple evacuation plans and sets of care needs while under great emotional, physical and financial stress. This was exacerbated by the lack of clear guidance or information about animal evacuation or care. This contrasts strongly with the availability and accessibility of clear information about preparing and responding to fires in ways to protect human life and property.

A pony is loaded onto a float at night time in preparation for evacuation.
Image: Jo-Anne McArthur / We Animals Media

People who did decide to stay and to keep their animals with them often reported that they were able to do so because they had access to essential infrastructure that ensured a degree of fire protection. Those that reported being in this situation noted that they had sprinkler systems, water tanks, steel sheds and concrete platforms, or they that they were on properties that had been heavily cleared. These factors informed the decision making of those who believed keeping animals at home with them was the best and safest decision.

Some, particularly those with pre-existing, established support networks, took friends and volunteers up on offers to temporarily foster their animals. In some cases, friends and volunteers signing up to foster would go to the person's property and pick up the animals. When this occurred, a whole set of decisions around transportation and timing were streamlined. This was only reported by people located in areas where road access was still safe, and road closures and other fire dangers were still minimal.

At the extreme, some people had to decide, under stress and extreme threat, which animals to protect first, or at all. This was obviously extremely distressing for people who did not have access to the resources they needed and had no time to make an emergency plan. Again, it is important to emphasize that emergency planning tools that most people accessed said nothing about animals other than including some information about where to place dogs and cats in the case of an approaching fire.

In summary, one of the implications of the multiple forms of uncertainty and inaccessibility regarding when, where and how to evacuate animals was that it led to delays in evacuating animals as human people faced considerable decision paralysis which also took an emotional and mental toll on them. These decisions were difficult to make due to:

- Uncertainty around whether, and if so, when to evacuate.
- Not knowing where to go due to lack of information about appropriate evacuation sites.
- Finding locations that would be available and safe for weeks or months, given the extreme duration of the fire risk.
- Ensuring access to feed, water, appropriate fencing/ shelter, and care at the evacuation site.
- Ascertaining whether or not they would have to take the companion and domesticated animals they care for to multiple locations.

"But then I got a phone call from one of the local RFS members and he said, 'Take the [Facebook] post [that talks about evacuating] down immediately. You're going to cause hysteria.' And he's a friend of mine. And I said, 'hold on. You know, we've been told 100% the fire's coming through.' And he said 'it's not official. We don't know that.' And I said, 'but I've got a lot of animals to move.'... You know, we can't do it at the last minute and we're surrounded [by bush]. And then it wasn't until about six months ago when someone said, 'I just want to say to you that post that you put up, I told all of my friends and we evacuated' and she said, 'if we hadn't have seen that, I wasn't thinking the fire was coming anywhere near us. We wouldn't have prepared and we wouldn't have been as prepared as we were.' And so she really thanked me for that." P4

# Ongoing care was required post-evacuation

An emergency animal care centre is set up near airport. Image: Jo-Anne McArthur/ We Animals Media

"Sadly, in that time [when I had evacuated my horse] my mare – my horse knew [the other] horses, but I put them in the same paddock and something happened, she had an altercation or hissy fit with one of them and she ended up fracturing her front foot. I thought I was going to have to get her put down...Which was awful. That was a real struggle for me because I had to get the vet ... we had to do an x-ray and then she couldn't because she couldn't even weight bear. So, I had to put her on a float to move her to put her in a little paddock to keep still. Then it was an ongoing problem and because then we had all the rain and so I had to move her down to Shoalhaven Heads where the llamas went because he had a stable. I didn't have a stable to put her in to keep her out of the rain. It was horrendous and then I didn't think I'd ever be able to ride her again. So, I felt like I paid the ultimate price." P16

Evacuating animals was only the first phase, with ongoing care throughout the fire risk period requiring similar levels of organisational planning, community networking, and mental and physical labour. In some cases, it seemed that people had left animals while they had evacuated themselves. In these situations, the people who had stayed were unsure whether and if so how to care for the animals that had been left, including whether they needed to be evacuated.

For some people, having evacuated different animals to different places, they then spent weeks or even months travelling every day to visit and care for the animals at these different places; or asking people who were with the animals to do this work, but then feeling indebted to them, and also being unsure if the other people were capable of providing adequate care to the animals. This is in part because caring for animals during emergencies is more complex than caring for them at other times. For example, these fires came on the back of a few long hot and dry years, meaning that even in places that were "safe" from the fires, there may have still been issues of heat stress, lack of pasture, and thus requiring additional care, or additional labour, to source adequate food and water. Further, the temperatures during the fire period were extreme, sometimes in the high forties, meaning that animals experienced significant heat stress.

"Because it was the end of the drought, there was no grass. So, my job over those three months was really going out to the horses in the morning across a lot of different places. Traveling to each property, topping up their water and giving them feed. And by the time I'd finished that and, you know, got kids off to school and stuff like that, then I'd go back again in the afternoon to do the same thing. So, it was hard for me to come out here and look after the wildlife because I was completely looking after the horses." P4

# Returning home was also challenging

The scariest thing for me was – once my horses were not burnt, the scariest thing for me was how was I going to keep feeding them? We were told – when I rang up the fire helpline for animals, we were told that we were going to be allowed [just] one bale of hay per horse ... So another thing that would have been helpful was to have someone give us rugs, because a lot of our stuff got trashed; like, it just got destroyed. ...because when you've got that much rain, what happens is that their skin, if they've got any mark on their skin, it creates a fungal infection and they get rain scald and then all their hair falls out. Their hair falls out, their eyes get really – above their eyes; their eyelids and their eyelashes get very sore." P21

Once the immediate fire risk had passed, people took stock of the situation, and for animals that had been evacuated, sought to return them. This was often still a very complex task, despite no longer being under the intense time pressure of the fire emergency. Infrastructures and resources at the animals' homes had often become very different due to the impact of the fires – whether due to loss of physical property such as sheds and fences, or to loss of vegetation and habitat, such as shade trees, pasture, or trees with blossoms or hollows. Some people's own homes had been destroyed in the fire, meaning that they were required to live elsewhere. In addition, with the pulse of adrenaline now gone, exhaustion, stress, trauma and burnout set in for some people.

This was exacerbated by the lack of formal recognition of the incredible efforts people had gone to, and the lack of structures, funding or programs to assist them. Inevitably, the extreme circumstances people had been pushed into led to conflicts and tensions. For example, some people's animals had been killed or harmed during the period. Communicating these losses and injuries, and taking responsibility for them, was a source of much grief and pain for community members who had done their best to look after various animals. Not to mention, moving animals back was stressful for the animals too, for various reasons.

"[The place where I had been working with horses], they were displaced for a couple of months. The house didn't burn down but all the stables went, all the infrastructure, because they're off grid it wrecked all the solar. They did have to do some repairs to the house. It took months to get the place up to a standard where they could take the horses back." P16

A magpie on a deck, amid smoky skies and burned trees. Image: Jo-Anne McArthur/ We Animals Media.

# Loss, grief, trauma and health issues need to be recognised

"The people at Lake Conjola, I've spoken to a couple of people that were there that got evacuated to the beach and they said it was like an apocalypse. They said there was dead birds dropping out of the sky. Kangaroos would come hopping out of the bush on fire, land on the beach and see the people and turn around and hop back into the bush, and I know it really heavily affected very – most of the people that were on the beach, the horrific things that they saw. ... to be able to help the animals to recover would've been healing for people." P29

While already noted, it bears repeating that many billions of non-human animals lost their lives in the fires; many experienced extreme suffering, whether from injuries, starvation, displacement, and/or losing contact with their families.

Given the vast numbers of animals who were injured or killed in the fires and the close relationships and attachments many human community members had with these animals, these people experienced severe emotional losses. For some, this involved grieving the loss of an individual animal that they had a deeply interpersonal relationship with. For others, this involved a more existential sense of injustice and systemic violence at the huge numbers of animals who had suffered. For many people in the region, the presence of native animals and the habitats they live in is critical to their sense of place, home and value. Of course, many people experienced all of these kinds of distress.

"Yeah. Even going up to the stables, when we first looked at it, I realized later it took me a year to get back out there and just look at it and absorb what had happened, because that's where, you know, so much memory and everything had happened there. Yeah. So you are kind of in shock and you try to still deal with it." P4

All of the above culminated in community members being subjected to extreme stress, trauma and mental health issues, as well as physical injuries. For example, two separate people we spoke to reported witnessing someone get kicked by a horse who had been stressed by the situation. One noted that she had had to take her child to get facial reconstruction surgery in the midst of all the horse evacuations they were conducting. Another couple suffered extreme burns from radiant heat that hit them as they sought to cool the wildlife in their care.

For many, the interviews we conducted were the first time someone had asked them about what they went through, and many found recounting the situation to be very emotional. The lack of public witnessing of their experiences, and of the value of non-human animal lives, was noted as a further hurt, indicating that the lives of animals and their efforts to protect animals were apparently not worth commemorating. Some participants noted that formal psychological services were either too hard to access, or their availability ended before the issues of trauma had time to surface and become evident. We also note that for many people in rural communities, accessing psychological support remains stigmatised.

"The fire had gone through North Bendalong and was racing towards Manyana and people had nowhere to go. They were trying to fight the fire in thongs and t-shirts and garden hoses – rubber garden hoses. So they would go from one person's house to the next person and they worked as a team. Through the next few days you heard stories about kangaroos jumping into the ocean on fire and firies saying that birds were just dropping from the sky, like in front of them. I've made friends through [one of the local organisations and many of] these people are scarred for life. Like some of them are suicidal." P42

### 5.3.2. Social structures preventing communities from responding more effectively

Consistently, throughout this research project, community members affirmed that care for animals, both in everyday life and especially during disasters, is systematically ignored by government policy, resulting in huge funding gaps and major bureaucratic barriers. Given how significant these are, it becomes difficult to try to pinpoint particular policies or funding mechanisms that need reform; or, to do so would require an extensive research project in its own right which is beyond the scope of this project.

As such, we argue that there needs to be a more fundamental transformation of how animals are understood, valued and treated by Australian governments. Towards that end, in this section, we discuss some of the prevailing worldviews that we encountered throughout the project that structured how people understood and responded to the issues that were unfolding. These largely stemmed from two over-arching worldviews: 1) individualism and 2) human-centrism (the belief that humans are the only beings with ethical value). These two over-arching worldviews combined to create two other significant worldviews: 3) the devaluing of the (heavily feminised) care work that was provided to animals and 4) the devaluation of community knowledge. We suggest that these four worldviews combined to create extensive challenges to people on the ground who sought to care for animals during the 2019/2020 Bushfires, and that any and all government efforts to improve the situation need to seek to transform these worldviews.

A burned wombat held in arms. Image: Jo-Anne McArthur / We Animals Media.

# Individualism

The form of individualism that we encountered was attachment to the ideal of individual responsibility. Given that in Australia, companion and domesticated animals are considered property and have the legal status of property, the safety of those animals was often framed as the responsibility of their individual "owners." The view that animals are an individual responsibility was something that was communicated to us by government officials and by some, but not all community members. Thus, sometimes people who did not have enough trailers or cages to safely evacuate their animals were blamed for not taking responsibility for their animals. We note that this logic was often driven by care for the animals and frustration that animals were in harm's way, and we acknowledge that individual people should be encouraged and supported to do what they can to best care for the animals they live with.

However, our research demonstrates that it is not realistic to expect every person to always have adequate supplies for a full-scale emergency evacuation on hand. The storage requirements as well as expense would make this impractical and unachievable. As disasters intensify and multiply, it will become increasingly unrealistic to expect people to own all of the equipment they may need. Sometimes, the response we heard from many officials and some community members was that if people cannot afford and store all the required equipment for emergencies, "they should not have animals."

Again, while this response appears driven by concern for the wellbeing of the animals, as some of our research participants also pointed out, it does not take into account the often complex realities of the situations on the ground. For example, there are multiple ways that people come to care for animals that cannot be judged by this logic, such as those who offer sanctuary to animals who have been abused by violent people or factory farms, those who inherit animals whose previous carers have died or are no longer able to look after them, or wildlife carers who already spend all their disposable income on day-to-day resources for animal care. In addition, some community members also pointed out that it overlooks the huge income disparities within regional communities.

These observations, combined with the research team's larger observations of the social demography of the region and the ethnographic data we collected while in the field lead us to conclude that the individualist world view, consistent with the view of domesticated and farmed animals as private property, is not appropriate to the realities of how animals are cared for contexts like that of the Shoalhaven, or what will best support an effective response to disasters. The logic that people who cannot provide full and perfect emergency care to animals should not live with animals would prohibit many people from caring for animals in everyday (i.e. non-emergency) situations. As such, although this ideal of individual responsibility seems driven by animal welfare concerns, if implemented fully it would effectively lead to a significant reduction in the care offered to animals.

We note that this logic of individual responsibility is uniquely intensified for people who care for animals, because of animals' legal status as property rather than as family members. For example, we are not expected to be able to provide every possible resource for human children; the state provides assistance for caring for them such as public schooling and the public health system, and in times of emergency, government duty of care extends to human people including children, but not animals.

This more socialised system of care (that which is offered to humans) is not extended to animals by formal government systems in Australia. However, we found that this is what communities in the fire zones enacted during and after the emergencies, because this is what was needed. Overwhelmingly, we found that people were happy and indeed wanted to share resources within the community to care for animals. Yet, this almost exclusively looked like one person (or one small business) sharing a privately owned resource with another individual because there was no pre-established collective organisation that offered, or could offer, such services. It became apparent when we asked communities whether we could recommend purchasing resources to be shared by the community, that there is often no community or even government institution capable of storing, maintaining, and then organising the use of such resources in an effective and equitable way.

Joeys in hand made pouches. Image: Jo-Anne McArthur / We Animals Media.

Individualism also meant that most top-down government planning and response was directed at individuals, or at least, individual households, rather than at communities. This lack of attention to communities as key actors in disasters meant that resourcing, support and laws became barriers to people working together. The overemphasis on individuals/households as the key actors meant that even when communities were considered, they were poorly understood, poorly supported, and in fact were often hindered. For example, the dominant narratives about what constitutes community and how community operates are at odds with how many people we spoke with described their experiences of community. This includes assuming that communities are "resilient," and composed of humans only (rather than being composed of multiple species). Because official responses did not take animals into account and because they targeted only individuals or households, people disengaged from these formal responses, and the responses often failed.

"If there could be some strategies and some plans that we can learn from this and somehow or another have some form of a committee or an entity of some sort that in the times of disaster, whether it be flood, fire or whatever happens because again, with the floods, even at Nowra, I've seen horses standing in water up to their knees. It's one of those things as you drive past you know that, that animal needs some aid, but you don't really know who to call or where to go to get that aid for that animal, other than the RSPCA, which the RSPCA is busy doing a whole heap of other things at the same time as well, and often it'll be a case of, yes, well, we'll speak to the owner, but it's in a paddock. You don't even know who owns the horse. You don't even know who to contact, who to ask, who to do anything. There almost needs to be an entity for large animals where people can contact, particularly when it's an environmental disaster rolls through again, whether it be flood or fire so that the people have a start point. That seemed to be the hardest bit for most people, was there was no start point, there was no one, [so the animals] wouldn't have got the help." P29

# Human-centredness and the separation of humans and nature

The second world view that became apparent (and which has already been touched on in the above section) was how human-centred disaster management is. Similarly to the issues described above, this means that even when non-humans/nature are considered, they are poorly understood and thus the support and management available often misses the mark. More commonly, animals are forgotten and erased in disaster management, or framed as a problem to be overcome within the more important tasks of saving human lives and built infrastructure.

"I think about how completely obsessed we were with that Fires Near Me app and how close it was to being the solution and then how much it fell short at crucial moments. To me that, you know, there was no information on Fires Near Me about animal evacuation points. Everything was so geared towards this is the, you know, stay in place or leave early...but that was so human [-centred]. That was just about property and human life." P11

Another dimension of this worldview was the idea of "nature" as a stable and wild ecosystem that exists completely distinct from (human) "culture" which should be kept free of human intervention. This was used by some actors – more commonly government agencies – to express opposition to animal rights approaches (such as providing individual care or food to wildlife). We found this ideology to be strongly held by some actors, and that it was often used to dismiss the efforts that community volunteers had taken to care for wildlife as ill-informed and harmful. Others we interviewed, however, were of the view that given the gravity of climate change driven, and other human-caused impacts on wild animals, human intervention in favour of animals is justified and ethical.

"The Government was saying basically 'you don't know what you are doing.' In a way, they were right. We'd say 'what should we do?' But of course, they were silent at that point. They were completely silent on that point about well, what should we do? Go home was their best advice. Go home." P24

These debates became more heated due to the lack of contemporary ecological research specific to the context of catastrophic fires and in the context of intensifying climate change that could inform them. Whereas some contemporary areas of conservation science are acknowledging that the extreme impacts of climate crisis require careful intervention to prevent rapid mass extinctions,[71] some participants in this research project, particularly those from government agencies, but also some wildlife carers, vehemently argued that the forest ecosystems and wild animals who remained there should be left to recover by themselves.

"I mean I just think the extent of what happened, in the past I think the whole thinking was a bushfire would burn out a certain area and those animals would probably mostly get to safety in the adjacent bushland. But because this was so extensive and also the temperatures of it were so high, it was just an extraordinarily catastrophic event and people, it hadn't been seen before or dealt with." P14

71. McCormack, P.C. (2018). The legislative challenge of facilitating climate change adaptation for biodiversity. Australian Law Journal, 92(7), 546-562.

While we recommend in Section 6 that more climate-crisis informed disaster-responsive ecological research be conducted, as social scientists we caution that in the meantime, this worldview of "forest as self-organising resilient wilderness" can border on becoming a form of climate change denial as it fails to reckon with the unprecedented scale of destruction that contemporary disasters are wreaking on our ecosystems. Of course, well-meaning but ill-considered human interventions can make the situation worse, both for ecosystems and for individual animals. As some wildlife carers and government officials noted, human interventions might harm wild animals if they are not based on expert knowledge of those animals' dietary or other species-specific needs. Complexities are magnified by the urgency of climate change.

Yet what we persistently found in these discussions was that only the small-scale actions of community volunteers were framed as the problematic human interventions, and that some of the same critics ignored or took for granted the longer-term and much larger scale human interventions that are government-sanctioned or government-led, such as over-development, land clearing, habitat fragmentation and road development. In other words, these larger scale human interventions then became uncontested and even naturalised. Perhaps the possible harms of, for example, placing small amounts of food in the forest, were seen as the last straw atop these pervasive and dramatically harmful human interventions. However, analysing the different positions against widespread human interventions such as habitat loss and climate change, we caution that an abstract ideal of wanting forests to be free of human impact may result in the forgetting or normalising of systemic forms of destruction such as climate crisis and land clearing, and lead to the vilification of community members who are on the ground responding to the fallout from these structural harms as best they are able to. Indeed, this is what happened in the Shoalhaven.

"Well, I think the issue is, is that no government really wants to put this in the hands of amateurs. Right? But the issue is, is that they are also – the governments have spent years stripping resources out of National Parks. The people who came to me, they used to be rangers. They got downgraded. They got made part-time. There were no resources. They were supposed to be doing 20 other things. They weren't available. They couldn't do it." P24

This combination of human-centredness and of understanding "nature" as something that should be free from human intervention also materialised in the examples of formal agencies misunderstanding, and thus dismissing, blocking or criminalising community members' statements, intentions, motivations, values and behaviours (this is also discussed below on page 75). Rather than seek to help community volunteers do better at trying to provide food and water to wildlife in the forests through providing resources, information, education and collaboration, we found that official agencies reiterated the historical position that forest ecosystems should be left to recover by themselves, or that if someone is going to intervene at this stage, it should be the government only. Nevertheless, our findings indicate that government efforts were deemed by community members to be highly inadequate to meeting the scale of the crisis and it is hard to imagine how government agencies could adequately meet those challenges in future as climate change intensifies.

"The National Parks were underfunded for decades and had no personnel and no infrastructure to respond." P23

We acknowledge that without better information and support, community members may indeed implement questionable responses. However, we emphasise that when people are faced with forests that are "just black. As far as you could see, just charred. Nothing. There was not one green thing left," as one of our participants described the situation, people who live near forests will try to provide food and water for animals. Communities consistently conveyed to us that it would be valuable for them if governments were to prepare, provide and disseminate best-practice guidelines, and ideally resources, so that communities can be well informed and empowered when they take these actions.

A human provides precise care for an injured possum. Image: Jo-Anne McArthur / We Animals Media.

# Devaluing care for animals

A possum's burned feet with cream applied. Image: Jo-Anne McArthur/ We Animals Media.

"The other thing is, and something that wildlife rescuers don't understand, is that if the local whoever – National Parks, government, fire brigade – tell you to leave now, you have to leave now. You can't say, no, just one more koala, or you won't be invited back. You won't be allowed into a disaster field again. Because their primary responsibility is to the safety of the humans." P22

A third major world view that was operating, which is tied to the individualism and human-centrism discussed above, was the de-valuing of care work. The work of caring for humans often falls on the shoulders of women and is systematically undervalued and thus underpaid and underfunded. This is even more so when it comes to caring for animals. A significant majority of our research participants were women, and the vast majority of the care work they described conducting was not only unpaid but in fact cost them significant amounts of money, time and labour to conduct. Not only does this mean that caring for animals comes at a cost to the people (mostly women) who perform it, but also, due to gendered hierarchies in society, this care is systematically positioned as unimportant or a luxury, a choice people can engage in when their human community and built infrastructure is secured.

As ecological systems increasingly fail due to the escalating climate and biodiversity crises, more work will be needed to restore, repair and maintain them. At present, this labour is performed overwhelmingly for free by volunteers. Community members conveyed to us their exhaustion and in many cases, the concern that they would not be able to carry out this labour into the future, especially as disasters intensify. While people did the work willingly, they expressed concern about expectation that the community "could" or "should" do this again and made clear that this will not be possible without massive changes to structures and support.

Assessing this situation, our view is that it would cost the government far less to proactively address the situation than to wait until the crisis plays out to a bigger systemic rupture. Thus, as we outline in Section 6, we support the communities' recommendation that informal ecological care work be formally recognised and acknowledged by the state as a vital set of practices contributing to the ongoing functionality of key economic sectors, such as agriculture and tourism, in rural Australian communities and beyond. In supporting this view, we also note that successive decades of government emphasis on ongoing economic growth and development, combined with withdrawal from social support systems has, on the contrary, undermined the conditions for social and ecological care work.

# Devaluing community knowledge

The final worldview that repeatedly came through in interviews and in the community workshops was that community knowledge – of place, of community networks, and about animals and the broader ecological system – were dismissed, marginalised and underused. Community members described in detail how they built on and mobilised existing networks, and how their knowledge about who had particular needs and expertise facilitated their taking effective action. Some community members were easily identified as nodes, for example because they had official community roles (in horse or pony clubs for example), because they ran businesses like rural stores that networked them into communities or because they had built extensive multispecies social networks. This enabled them to identify who needed what and who could assist and how in ways that official agencies could not.

Nevertheless, community members indicated that official agencies either failed to take advantage of – or even worse dismissed – this local knowledge, at least until its unique value and their deficit became evident. We were told, for example, about people who built community networks to rescue and care for animals being dismissed by official agencies, only later to be called in to assist them by sharing knowledge. While some people told us that this left them feel undervalued, the more significant message that we received was that the neglect of this knowledge by official agencies represented a waste and missed opportunity from the perspective of developing effective responses. Our study participants were well aware of how difficult it was to develop effective responses in the face of a disaster of this scale, and that doing so would have been significantly easier and more effective if local expertise of all sorts had been valued and accessed from the start of the disaster cycle (i.e. preparation) all the way through to recovery. At the same time, they indicated the importance of having their knowledge valued and their efforts recognised as a critical part of disaster management.

A feathertail glider with burns on their paws is treated at the Southern Cross Wildlife Care mobile triage unit in Merimbula. Image: Jo-Anne McArthur / We Animals Media.

Our view is that it would cost the government far less to *proactively* address the situation than to wait until the *crisis* plays out to a bigger systemic rupture.

# 6. Recommendations

This report is primarily concerned with what the Commonwealth Government can do to better support Australian communities to care for animals in disasters. To investigate this, the research team conducted extensive desktop and fieldwork based research.

This report's recommendations are grounded in these findings, and thus include suggestions made directly by community members, as well as those the research team has developed through the project's multi-modal analysis of community experience and knowledge, existing disaster and animal governance frameworks and practices, and the insights of academic literatures.

As this report has discussed, how animals are implicated in disaster response in Australia is complex. It involves multiple, overlapping geographical scales, different laws and legislative contexts and different state agencies. Therefore, this report recommends both longer-term transformations and forms of leadership that the Commonwealth Government should provide for future climate adaptation pathways, as well as more detailed suggestions for medium- and short-term actions. For the most part, the Commonwealth Government alone will not be able to implement these, and other levels of government and agencies will need to be involved. Nevertheless, we present a range of recommendations that will need to be taken up at different levels of government to provide as comprehensive a picture of the changes needed. The Commonwealth should play a coordinating role beyond the actions for which it will be directly responsible.

## 6.1. Transform the organisation of disaster preparedness and response to account for the realities and needs of existing multispecies communities

**Recommendation 1**

Disaster arrangements need to respond to the realities of people's lived experiences within multispecies communities. This means that they need to recognise that:

- Communities rather than individuals are the locus of agency and responsibility.
- These communities include humans and non-human animals.
- These multispecies communities are tightknit, and people's relations with animals are of utmost importance to them.
- The loss and suffering of animals causes immense grief and trauma to the humans that care for them.

## 6.2. Set a fit-for-purpose national research agenda for disasters and multispecies community mobilisation

**Recommendation 2**

The Commonwealth Government should establish a fit-for-purpose national research agenda to enable adequate disaster management planning and climate adaptation, in line with Recommendation 1, i.e. with a focus on supporting multispecies communities. Such an agenda should be guided by the following principles:

- Because the existing ecological baselines will become increasingly inappropriate as evidentiary bases for planning as climate change escalates, what is needed is grounded research that investigates how to minimise harm to multispecies communities while considering future climate impacts. To support this, a set of research guidelines/principles for this research should be developed at the national level.
- Affected communities must be involved in the development of research programs and projects. Such research projects must include community participation, value community knowledges and be designed to produce tangible outcomes for communities.
- Research should be multidisciplinary, including not only natural scientists (such as ecologists) but also social scientists. Multidisciplinary research is necessary to ensure attention to the relationships between human communities, biodiversity and animals, and to counter the top-down approach favoured by many government bodies, which is creating sub-optimal outcomes for all, including animals.

## 6.3. Improve everyday wildlife protection and broader ecological management

**Recommendation 3**

The Commonwealth Government should conduct a review of funding made available to registered wildlife groups and carers outside periods of disaster with a view to providing sufficient funding to alleviate the chronic stress and exhaustion that undermines their capacity to provide critical services in both everyday, and especially in emergency, situations.

**Recommendation 4**

A national review should be undertaken into whether the wildlife care sector would benefit from greater government support, perhaps in the form of a dedicated government agency. Possible roles for the agency would include (but not be limited to):

- conducting research;
- allocating funding;
- providing advice; and
- connecting wildlife carers with other agencies.

**Recommendation 5**

Building on Recommendations 3 and 4, an inquiry should be set up to explore the best way to provide adequate economic support for the work and workers required to repair, restore and maintain ecological systems to overcome the current unsustainable reliance on volunteers (such as Landcare groups, wildlife carers and such). The inquiry should analyse and evaluate the different forms the relationships between the state and the members of the public performing crucial ecological repair may take.

One possibility is that the Commonwealth provide comprehensive under-writing for a range of "green jobs" that would be incorporated into state planning as part of a larger just transition. Such jobs should include proactive and reactive wildlife care as well as work related to restoring and protecting degraded environmental conditions.

## 6.4. Increase and improve funding and financial support for multispecies communities before, during and after disasters

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| **Recommendation 6** | Funding should be made available to encourage and support communities to develop emergency plans that include animals. This will require expanding the existing approaches to disaster planning beyond a focus on human life and property. Such planning needs to take place at the level of the community or sub-groups of communities before disasters occur. |
| **Recommendation 7** | In the event of climate disasters, the Commonwealth Government should fund and facilitate the provision of species-appropriate food, medical supplies, and infrastructure such as temporary fencing and additional shelter to care for animals. Such goods and services should be made available through agencies that are readily accessible to all communities. |
| **Recommendation 8** | Funding should be made available, with low entry and reporting conditions, for individuals and communities caring for animals during bushfires and other disasters, including those providing land, feed, transport and labour. To facilitate access to these funds, the Commonwealth Government should set up a means of auspicing informal community groups in instances of disasters so they can easily and quickly get funding directed to them. |
| **Recommendation 9** | The Commonwealth Government should inquire into a form of disaster-specific Universal Basic Income (such as a Universal Basic Disaster Payment) for all members of communities effected by climate driven disasters that last beyond a certain period and of a certain gravity. |

## 6.5 Improve disaster and animal-care information, training and education

**Recommendation 10**

The Commonwealth Government should fund and then ensure the effective dissemination of evidence-based multidisciplinary research on:

- appropriate practices of feeding and providing water for wild animals in the context of escalating climate change and the acute and chronic emergencies that it generates, such as bushfires and droughts.
- care and protection of different categories of domesticated and companion animals in the context of bushfires and other disasters (preparation, response, recovery, options for support).

**Recommendation 11**

Training for disaster preparedness and response should be made available, and financially accessible and incentivised, to collectives, such as formally and informally organised community-based groups, not just for individuals, households, or major institutions. This should extend to animal-care disaster preparedness and response training.

**Recommendation 12**

All members of the RFS and SES (and equivalents in other states) should be offered wildlife care response training.

**Recommendation 13**

School curricula should be developed regarding the effects of ecological changes, specifically climate-driven disasters, on Australian native animals. Such curricula should include information about wildlife ecology such as nutrition and behaviour, and resources on practices to support wildlife, like planting certain trees, soil care, networks of care available to them, and best practice advice on when and how, and when not to, provide water and/or specific foods in emergency situations. This is important so that the Australian public has a greater understanding of how to care for native wildlife in times of ecological disaster.

**Recommendation 14**

Existing Commonwealth and State agencies responsible for wildlife management, such as the NSW National Parks and Wildlife service, should be expanded to increase community participation including citizen science projects and participant action research. This would assist in expanding the environmental education offered to adult Australians.

## 6.6 Improve accessibility and accuracy of communication to support disaster response

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| **Recommendation 15** | The evidence-based, reliable information set out at Recommendation 10 above should be provided in accessible forms across a range of platforms. Such information should be communicated proactively in advance of disasters, targeted in geographic areas that are most likely to need this information, and in multiple languages and formats (including e.g. disability-accessible information). Appropriate funding needs to be available to support preparation of materials and dissemination, for example through targeted Facebook ads, to ensure these materials reach the communities who are in need of it. |
| **Recommendation 16** | Information concerning available support services, including mandates of different agencies and contacts to assist with different categories of animals before, during and after bushfires should be communicated and disseminated in ways that are easily accessible to a broad range of people. This should include people who are professionally responsible for animal care, registered wildlife organisations, people with companion animals and informal wildlife carers. |
| **Recommendation 17** | Accessible information about state or local action plans or frameworks concerning disaster management and different categories of animals should be disseminated in ways that will be accessible and easily found by communities when they search for it. |
| **Recommendation 18** | Local Government and/or other locally based organisations should provide interactive workshops that help communities plan how to care for animals when disasters strike. These workshops should include information about state support and local disaster action plans and frameworks, and ensure people leave with a comprehensive plan for how to care for the animals they live with. |
| **Recommendation 19** | An App, supplemented by a web-based platform specifically designed to facilitate the exchange of resources, goods and services to support care and rescue of animals should be developed and funded. Such an App should facilitate communications between people wanting to offer land, transport, feed etc, and people in need of such goods and services. Where facilitators are needed to support the use of the App, funding should be made available to support their time and work. A prototype of such an App is included in Appendix 5. |

## 6.7 Improve animals and bushfire management to support disaster response

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| **Recommendation 20** | In each state, consideration should be given to including animal welfare groups and professional bodies such as vets as part of official and coordinated disaster response management and response. The model used in South Australia (SAVEM – see page 50) provides an inspiring example. |
| **Recommendation 21** | People with expertise in animal care, across different categories such as wildlife, domesticated and farmed animals, should be (better) integrated into the RFS and SES, and their expertise embedded throughout the organisations' operations. These emergency service agencies should be encouraged and funded to upskill and improve their capacity to integrate with community-based animal care efforts. |
| **Recommendation 22** | Evacuation centres should be designed and/or retrofitted in consultation with local communities to house many and different kinds of animals in emergencies and on "leave early" days. |
| **Recommendation 23** | Evacuation centres for animals who cannot be accommodated in human-focused evacuation centres (such as horses) should be set up proximate to human ones so that people can care for animals in evacuation centres and for themselves. |
| **Recommendation 24** | Protocol for keeping animals at evacuation centres should also be revised and developed through consultation with local communities to ensure that the physical infrastructure is practically accessible for people; for example, by setting up systems such that people do not need to stay with the animals 24/7 and can attend to other needs knowing the animals are safe and cared for. This may require additional staffing or the pro-active organisation of an effective volunteer network. |

## 6.8 Improve transport infrastructures to support disaster response

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| **Recommendation 25** | Transport for animals to evacuation centres should be enabled through community access to publicly owned and held equipment such as animal crates and horse floats. |
| **Recommendation 26** | Animal transport companies should have ready access to funding to enable them to transport animals to safety and return them home during and after disasters (see Recommendations 8 and 9 above). |
| **Recommendation 27** | During disasters, the legal mandates for paperwork normally required for transporting animals (such as PIC numbers, National Vendor Declaration, Transported Stock Statement) should be waived; or, alternative biosecurity systems that are designed to protect animal lives and health during disasters and emergencies should be developed. |

## 6.9. Enable access to land for the purposes of animal care

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| **Recommendation 28** | Where property owners cannot be contacted, and where it is believed that animals are at risk of fire or have been injured by fire (or other ecological emergencies), registered carers or professional bodies should have an implied right of access to private property (as is the case with people). Risk assessments concerning safety in entering the fireground should be conducted in the same way as they are in the case of rescuing humans and appropriate safety training provided to registered animal carers and rescuers. |
| **Recommendation 29** | The Commonwealth Government should consider an implied right of access for registered carers or professional bodies to public land (i.e. national parks) where it is believed that animals are at risk of fire or have been injured by fire (or other ecological emergencies). Risk assessments concerning safety in entering the fireground should be conducted in the same way as they are in the case of rescuing humans and appropriate safety training provided to registered animal carers and rescuers. |

Image: Jo-Anne McArthur/We Animals Media.

*Planning* ahead can make sure you and your beloved critters have the best chance of surviving and *thriving* on the other side of an emergency situation.

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# 8. Appendices

## Appendix 1: Schedule of Interview Questions

The following set of topics and questions were used by the researchers to guide the interviews, which took a semi-structured approach.

Introduce the participant to the project's aims.

Non-intrusive demographic questions, e.g., how long have you been in the area; tell us a little bit about what you do, etc.

Which animals were you involved in protecting during the Black Summer bushfires?

Which risks were you responding to?

Since then, a lot has happened, e.g., floods, covid, has the bushfires experience impacted how you've responded to those?

What did you do during the fires?

Be sure to check on at least:

- Networking and communications
- Physical care for animals
- Transport

What impediments did you face?

What did this require?

Did you collaborate with others in your efforts?
E.g., community groups, social media, vets, friends and family, other farmers, private land holders, any others?

How did you do that/how did you stay in touch, e.g., forms of communication (phone trees, Facebook, others?)

Prior to the bushfires, were you already connected into the communities you then worked with during? I.e., were any relationships new?

Has it led to any changes in the community relationships?

Did you get any assistance from government agencies or NGOs?

Were there any guidelines or written resources that you went to, to figure out what to do?

Were you aware that there is a NSW Animals in Disaster Management Plan?

Were there networks outside the physical area that were involved in support? How did they work?

Have you stayed in touch with anyone you were involved with during the bushfires?

What were the outcomes, thinking about both the short- and the long-term?

Let us know what can be done:

- What resources would have helped you, or would help in the future?
- Institutional changes?

Is there anything else you'd like us to know?

# Appendix 2: Invitation for participants to attend workshops


## How can our communities come together now to care for other animals in the face of climate driven disasters?

You are warmly invited to join researchers from the Sydney Environment Institute and others from the Shoalhaven community to explore how we can come together now to protect, rescue and care for other animals before, during and after climate driven disasters.

Building on the interviews our team has been conducting across the Shoalhaven community over the last year, this workshop will provide the opportunity to share experiences and learning, and to identify connections and opportunities to be prepared for next time.

You have been invited as someone who directly experienced the 2019/20 bushfires or subsequent disasters, and/or someone who brings knowledge and experience to help protect, rescue and care for animals in future disasters. You may be a wildlife carer, in the equestrian community, look after farmed animals, domestic pets or companion animals, or be in a minor or major role that supported animals in recent disasters. You may already have been interviewed as part of this research project or you may be joining for the first time.

## Workshops

If you meet any of the criteria above, we would value your participation at the workshop.
To acknowledge the time you commit to working with your community and for animals:

- We are offering a $250 voucher to all workshop participants as a token of appreciation; and
- We will help remove any obstacles to your attendance.

If there are any barriers to your to your participation, please let us know (contact details below) e.g. you might need childcare, additional staffing, or require accessibility supports or transport.

We are hosting four workshops, with options of an evening or a daytime workshop at the following locations. You may attend whichever location or time suits your best. The format will be similar for each group.

**Northern Shoalhaven –**
**Nowra Showground:**

4:00pm to 9:00pm on Thursday May 25th
OR
9:00am to 3:00pm on Friday May 26th

**Southern Shoalhaven –**
**Milton CWA Hall:**

4:00pm to 9:00pm on Thursday June 1st
OR
9:00am to 3:00pm on Friday June 2nd

Lunch / dinner and refreshments provided at all sessions.

There is a limited number of open places available for these workshops, so please register early to ensure your place.

This workshop is by invitation only so if you would like to suggest a participant, please contact the team and we will pass on an invitation. There are also opportunities to be interviewed individually as part of this research project.

## What will we explore?

Since 2019, our experience of serious disasters has made it clear that we need to develop better plans and systems to protect domestic and wild animals. During and following the 2019-2020 bushfires in the Shoalhaven, networks to assist and support people and their animals spontaneously arose, with communities providing transport and care even under extreme conditions. After the fires, when the extent of the devastation for wild animals and the destruction of habitats was revealed, local networks similarly arose to set up feeding stations and fund and support professional interventions to care for injured animals.

Our workshop brings together those directly affected to share experiences and discuss ideas and models and identify the types of support systems that will be most effective for you. During the workshops we will:

- Present an overview of the themes and insights from the research conducted to date;
- Discuss what worked well and how we can be prepared for next time;
- Identify tools, networks, resources and opportunities for collaboration; and
- Work together on clear next steps, including plans, for you and the animals you care for.

We acknowledge that it was a challenging time and some stories will be hard to tell or listen to. The workshop will be facilitated by Shoalhaven locals Kate Dezarnaulds and Peter Pigott who bring direct experience of animals in disaster and practices that focus on the wellbeing of those in the room. We will have nourishing food and refreshments and will have support staff on hand.

## The team

- Professor Danielle Celermajer (University of Sydney)
- Dr. Anna Sturman (University of Sydney)
- Freya MacDonald (University of Sydney)
- Dr. Blanche Verlie (University of Wollongong)
- Professor David Schlosberg (University of Sydney)

If you would like to discuss the workshop, or your participation, please feel free to contact one of us.

**This research is funded by an Australian Government Black Summer Bushfire Recovery Grant.**

# Appendix 3: Workshop newsletter

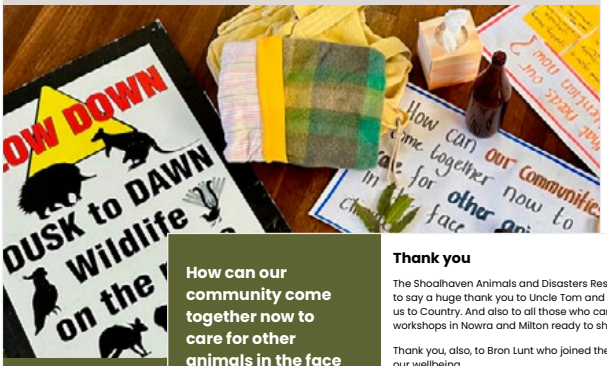
## SHOALHAVEN ANIMALS AND DISASTERS COMMUNITY WORKSHOPS

A RECORD OF FOUR PARTICIPATORY WORKSHOPS

MAY 25 & 26 IN NOWRA
JUNE 1 & 2 IN MILTON
YUIN NATION

READ ABOUT HOW WE

- gathered and set up the workshop
- came up with a recipe for courage
- explored what needs attention now in the world cafe
- worked in groups to identify the next steps.




**How can our community come together now to care for other animals in the face of climate-driven disasters?**


### Thank you

The Shoalhaven Animals and Disasters Research Project would like to say a huge thank you to Uncle Tom and Uncle Vic for Welcoming us to Country. And also to all those who came along to the workshops in Nowra and Milton ready to share your ideas.

Thank you, also, to Bron Lunt who joined the workshops to support our wellbeing.

### Staying connected for next steps

If you would like opportunities We would love to hear more from you about what your needs might be going forward and have put together a short questionnaire for you so we can best meet your needs as the project progresses to the next phase.

***Please answer a few questions here***

### Workshop background

Researchers from the Sydney Environment Institute and others from the Shoalhaven community are exploring how we can come together now to protect, rescue and care for other animals before, during and after climate driven disasters.

Building on the interviews conducted across the Shoalhaven community over the last year, the workshop provided the opportunity to share experiences and learning, and to identify connections and opportunities to be prepared for next time.

### What happened...

Community members from across the Shoalhaven came together across four workshops to have conversations about how we can care for other animals in the face of climate driven disasters.

This newsletter captures the essential parts of the workshop for you to draw on and use as you prepare for the future.


**SURVEY**

We acknowledge the traditional owners whose land this learning and community work was held on.

Contact: Anna Sturman anna.sturman@sydney.edu.au

## HOW ARE YOU LEAVING THE WORKSHOP?

## OUR CHECK OUT...

*We invited everyone to check out at the end of the workshop.*
*We captured the essence of this on post-it notes and summarised your words into themes.*

**Hope and Positivity:** A large portion of the feedback was hopeful and positive. Many of you felt uplifted, energised, and left with renewed hope for the future of animals in climate-driven disasters. This was often tied to the shared compassion, passion, and determination seen within the group.

**Community and Solidarity:** The workshops fostered a sense of community and unity among you. Many appreciated the opportunity to connect with like-minded individuals, realising they were not alone in their concerns and aspirations. The communal sharing of knowledge, perspectives, and experiences was highly valued.

**Gratitude:** There was a significant sense of gratitude expressed towards the workshop, the organisers, and the participants. This gratitude extended to the space provided for sharing, the passion and goodwill seen among participants, the food and financial support provided to enable attendance and the potential for practical outcomes and impact.

**Emotional Healing and Processing:** Attendees noted the therapeutic aspect of the workshops, helping them to process emotions related to climate disasters and animal welfare. Sharing stories and experiences in a supportive environment was found to be cathartic and comforting.

**Inspiration and Motivation:** Many participants felt inspired and motivated by the workshops. This was due to a combination of shared passion, empathy, understanding, and a shared desire to make a difference next time.

**Concerns and Criticism:** Some participants voiced concerns and criticism, particularly relating to the government's role in animal protection during disasters, the impact of COVID-19, and the current state of the wildlife sector. There was also an undercurrent of frustration at the perceived lack of action and change.

**Desire for Practical Outcomes:** There was a strong desire among attendees for tangible outcomes and action plans stemming from the workshops. Many attendees are looking forward to future progress and change, hoping that the discussions and ideas shared would result in practical solutions.

**Shared Love for Animals:** A common theme was the shared love and respect for animals. Attendees found comfort in the presence of other people who recognised the value of animals and were dedicated to their well-being.

**Awareness and Learning:** The workshops served to broaden attendees' perspectives, raise awareness, and increase knowledge on the topic of animals in climate-driven disasters.

**Vulnerability and Authenticity:** Participants appreciated the opportunity to express their thoughts and feelings openly. They valued the display of vulnerability, which contributed to the authenticity of the conversations and deepened connections among the group.

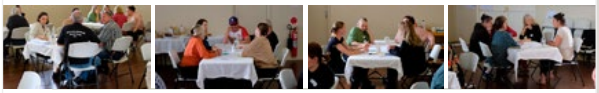
## WORLD CAFE

### What do we need to pay attention to now?

We explored what we need to pay attention to now in the World Cafe, having discussed what really worked and also what didn't.

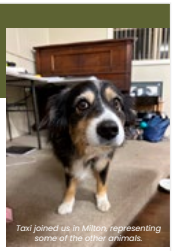
The world cafe offered the opportunity to have three rounds of conversation, each with a different group and a different question.

You captured the essential insights and themes from those conversations and wrote them down on sticky notes. On page 6 we have summarised all that was captured in the conversations about 'what needs our attention now?'.

ACCESS LARGE PHOTOS OF THE POSTERS & TEMPLATES HERE DOWNLOAD PHOTOS

## WHAT NEEDS OUR ATTENTION NOW?


Taxi joined us in Milton representing some of the other animals.

Across the four groups, the themes and insights of this rich and diverse conversation around this question were captured by participants and displayed on the posters in the images above.

We have summarised these further to make sense of what is emerging as most important for this group, at this time. These themes and concerns reflect a strong focus on preparedness, collaboration, resource allocation, community engagement, and the well-being of both animals and humans in disaster situations.

**This is what you think needs attention now to care better for animals in the face of disasters.**

**Preparedness and Training:** There was a strong focus on preparedness and training. Participants emphasised the importance of practice, access to training for local rescue volunteers, and developing preparation plans. They also stressed the need for appropriately trained local experts to be identified and ready to educate the public and increase public awareness with communications campaigns.

**Collaboration and Coordination:** Participants emphasised the need for better coordination among different agencies and organisations involved in animal rescue and care. They called for the establishment of a clear coordination body, strengthening peer networks, and improving communication and coordination between knowledge groups, farmers, wildlife carers, and First Nations communities.

**Resources and Infrastructure:** The participants highlighted the need for adequate resources and infrastructure for animal care during disasters. This included a register of properties, resources, and equipment available for rescue, as well as access to communication tools and transport infrastructure and betters skills for safer transport of larger animals especially. They also stressed the importance of more funding, volunteers, and improved road infrastructure.

**Government Responsibility:** Participants emphasised the need for the government to take responsibility and not rely solely on volunteers. They called for clear guidelines, structured education and training workshops, and a government agency overseeing rescue and care organisations.

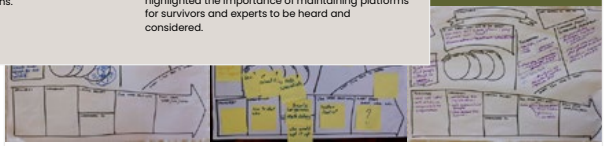
**Mental Health Support:** The participants recognised the need for effective mental health preparedness and intervention for both volunteers and survivors of disasters. They stressed the importance of providing appropriate support and resources to address mental health challenges for carers before, during and debriefing and processing the impacts of disasters.

**Wildlife and Biodiversity:** Participants expressed concerns about the impact of disasters on wildlife and biodiversity. They emphasised the need for greater funds and awareness of the importance for habitat conservation, cultural burning, and a protective land management policy to reduce fuel load and preserve biodiversity. They also called for a native animal audit and the involvement of Aboriginal communities in decision-making.

**Community Engagement and Responsibility:** The participants highlighted the importance of community engagement and taking responsibility for wildlife care. They emphasised the need to involve the public in preparedness and training, offer first aid training for wildlife, and encourage self-reliance. They also called for community-led responses, community hubs, and mechanisms to disseminate accurate information and knowledge.

**Advocacy and Leadership:** Participants emphasised the need for media leadership, lobbying the government for timely direction, and maintaining pressure on the government to plan and implement necessary infrastructure and resources. They also highlighted the importance of maintaining platforms for survivors and experts to be heard and considered.

s our attention now by moving
ow we can do better next time.
f action plans and that we will




Thanks to all the participants for sharing their ideas and time.
For more information contact: Anna Sturman anna.sturman@sydney.edu.au

# Appendix 4: A veterinarian's auto-ethnography

## Wildlife Rescue and Care During the 2019-20 NSW Bushfires: What went wrong, why, and how to fix it

This short report examines the veterinary anthropology of wildlife rescue, treatment, and care that unfolded during the 2019-2020 bushfire disaster from a social science perspective. Veterinary anthropology is the social science lens used here because the focus is the culture of wildlife care, not the science or medical management of wildlife. Specifically, this report looks at the relationship of wildlife organisations and individuals to veterinarians, state systems, agencies, and the public in New South Wales in the context of the 2019-20 bushfires. Each stakeholder's relationship to wildlife and their understanding of what wildlife care means will be described, along with how these different paradigms of care led to confusion and conflict. Many enquiries, reviews, and reports produced after the 2019-20 bushfire disasters have increased our understanding of what went wrong and why. However, action is still required to change the causes and conditions that caused dire consequences for human or non-human animals. This short report indicates how such change can occur.

Wildlife has always suffered and died in natural disasters. During the decade preceding the bushfires, dedicated wildlife carers and organisations grappled with many drought-affected animals with barely any public awareness or support. However, the bushfires of 2019-20 resulted in global awareness and mass public concern about the impacts on Australian wildlife.

The reasons for this are as yet unclear. Perhaps the scale of the disaster, the physical area affected, larger than some small countries, and the estimated number of three billion native animals killed made this event newsworthy and shocking. Whatever the cause, there was an unprecedented amount of public support, donations, and volunteers wanting to help in any small way. Wildlife organisations were suddenly inundated by offers of assistance, and international volunteers started turning up at their doorsteps. Volunteer organisations like Vets Beyond Borders had thousands of volunteer vets and veterinary nurses signing up, and companies and individuals wanted to do anything possible to alleviate the distress.

The enormous swell of goodwill from people and organisations globally during these bushfires should have resulted in a positive outcome for animals. However, there was no framework or plan for wildlife under emergency management in NSW to coordinate these volunteers and supporters. Those involved had different mandates or agendas and lacked preparedness, communication pathways, and the leadership needed to bring them together cohesively. As a result, care outcomes for bushfire-affected wildlife fell short of the hopes and intentions of the people involved. In analysing the situation, this report focuses on four key factors that impeded their ability to work together effectively: differing paradigms of care, conflicts among stakeholders, opacity of information and the patchwork quality of regulations. In the conclusion, five specific recommendations are offered.

### Paradigms of care

There are different ways to conceptualise and carry out the care and conservation of wildlife, which vary depending on the individual's and the organisation's training, workplace and background. Understanding how each sector's paradigms result in different policies and actions surrounding wildlife programs is essential, as this will help avoid future conflict within and between stakeholders. This section will explain these paradigms of care and how misunderstandings about each sector's role in wildlife care, especially during emergency management, led to confusion, distress, and conflict during the bushfire disaster.

Types of wildlife care can be classified into three paradigms: individual care, herd health, and ecosystem health. Depending on the circumstances, different paradigms operate in specific contexts, and the same person or group may use different paradigms. In veterinary medicine, for example, animals kept as pets may be provided with individual care. Then, when managing livestock or animals of production, the priority is the health and maximum productivity of the whole group or herd, which is called herd health. So, an individual dog with a broken leg may receive life-saving medical and surgical intervention. In contrast, an individual pig or sheep may be slaughtered to enable a post-mortem examination to diagnose and treat a disease affecting the flock or group. Also, animals of same species might be treated under alternate care paradigms at different times. For example, in commercial chicken farms, sick individuals are rarely treated and usually die

or are killed. However, many dedicated owners pay for vet care for beloved pet chooks. Therefore, the type and level of veterinary care depends on the relationship between animals and humans, demonstrating the operation of different care paradigms in the veterinary profession.

During the bushfire wildlife rescue efforts, veterinary personnel worked within the care paradigm that best supported their specific assignment. Some vets and nurses were primarily occupied with the treatments of individual animals, either in their clinics, wildlife hospitals, or when volunteering in the field. Some worked for state agencies and operated along the ecosystems approach, while others practised veterinary conservation biology, applying a herd health paradigm. Veterinarians are familiarised with these paradigms during their undergraduate training and instinctively move between them depending on their job requirements.

Wildlife carers, by contrast, primarily operate within the individual care paradigm; they focus on the individual care of animals, rehabilitating and releasing them back into their natural habitat. They usually specialise in a narrow range of species, mainly mammals such as macropods, koalas, wombats, and possums, and sometimes birds, reptiles, or marine animals. Many dedicate themselves to caring for just one species. Wildlife carers are incredibly devoted and focused, they often provide round-the-clock care, investing considerable resources. Their relationship with the individual animals is like that of pet owners. It's not uncommon for them to suffer from carers' grief, exhaustion, and long-term stress when animals die or require long-term care. While many carers have good relationships with the veterinary profession, others may not. According to many veterinarians, wildlife carers are intense, dedicated, obsessed, single-minded, and zealous, but they must be to care for wildlife with those high demands. This intensity of effort leads wildlife carers to expect others to be equally concerned and put the same energy into each animal's recovery as they do. Conflict arises when wildlife carers don't receive the service, care, and support they expect.

In contrast to the individual care paradigm of wildlife carers and some vets, National Parks and Wildlife Service (NPWS) policies and procedures prioritise the herd health and ecosystem health paradigms. NPWS is responsible for the stewardship of the ecology and environment, waterways and the land, including every single species of plant, insect, and animal in NSW national parks. As a result, individual care may be reserved only for critically endangered species, such as the koala, for which the NSW government is funding a new hospital at Port Stephens. However, there are competing drivers in NPWS decision-making. After the 2019-20 bushfires, NPWS did not allow wildlife search and rescue teams access to fire grounds within national parks, even for endangered species like koalas and brush-tailed rock wallabies. This was due to their risk aversion to liability for wildlife search and rescue teams in firegrounds, which caused conflict in the bushfire wildlife rescue efforts. Furthermore, the NWPS's principal focus on ecosystem care at the expense of individual animals also contributed to this conflict.

## Conflicts among Stakeholders

During the 2019-20 bushfires, there were conflicts between stakeholders due to a failure to understand and value each paradigm of care. Many carers were distressed and angered by their perception that park personnel did not care about injured, burnt, starving, and suffering animals when they did not provide access to the fire grounds. Some wildlife rescuers illegally entered national park areas to rescue animals, which caused altercations between rescuers and park officers. NPWS were risk-averse when liable for the volunteers' welfare in dangerous fire grounds and lacked spare personnel. They also knew they could save more individuals through environmental preservation or the ecosystem paradigm than through individual veterinary care. In addition, rescuers did not always appreciate that park personnel lacked authorisation to provide access, a structural and institutional problem. The difference in paradigms of care produced conflicts. Because stress, trauma and exhaustion affected all sectors, there was little time or energy left to understand differing worldviews and the structural limitations each sector faced.

Conflict and misunderstanding also resulted from expectations about the average veterinarian's education and skill concerning wildlife medicine and surgery.

The public often assumes that vets know how to treat all species of animals equally. However, Australian veterinary science degrees provide training correlated with the employment fields available after graduation. Most vets will work in companion animal or mixed small and large animal practice, so their training focuses on small animal and livestock care. Only a few undergraduate lectures and clinical sessions on wildlife, birds, exotic animals and zoo animals are delivered. Traditionally, employment for wildlife vets has been scarce. Due to societal changes and increased funding, there has lately been a slight increase in the number of vets working with zoo and exotic animals and wildlife, including those employed at the five wildlife clinics in NSW[1]. However, these vets specialising in wildlife must further their wildlife education after graduation. There are currently only twenty-two veterinarians worldwide who have passed membership exams in Australasian Wildlife Medicine.

Because of the few certified experts and the scarcity of wildlife hospitals, general practitioners of domestic animals treat most sick or injured wildlife in Australia in private vet clinics[2]. These GP vets must educate themselves through informal networks, conferences, short courses, and textbooks[3]. Many report needing more professional development in wildlife medicine and surgery.[4] Also, the commercial pressures of the small business environment of private veterinary clinics restrict wildlife cases from being prioritised.[5] This low priority, along with the pressure on vets and vet nurses to treat wildlife without adequate training and support, disappointed wildlife carers and members of the public, leading to conflict. This was compounded during veterinary volunteer efforts during and after the 2019-20 bushfires, where some vets had to treat highly specialised bushfire-related injuries like burns and smoke inhalation. Unfortunately, the lack of adequate resources and training in wildlife medicine and disaster-related treatments contributed to the difficulties wildlife rescue teams experienced during the bushfire response.

The lack of adequate wildlife-specific training and guidelines also led to specific conflicts around euthanasia. Veterinary decisions to treat wildlife unsuitable for rehabilitation and release attracted criticism from rehabilitators who must comply with wildlife rehabilitation codes of practice that stipulate wildlife must either be rehabilitated and released or euthanised. However, the codes do not explicitly describe euthanasia decision-making criteria. The few guidelines that existed during the bushfires were species and condition-specific and were often too general to help decision-making with bushfire-specific injuries[6]. In addition, GP veterinarians are sometimes unaware of what injuries or illnesses prevent successful rehabilitation. Most have never studied this, nor are they experienced wildlife rehabilitators themselves. Moreover, research and protocols describing conditions and treatments that can lead to successful rehabilitation, release, and survival are scarce, hard to access, and very species-specific  7. There are few published treatment protocols for disaster-related conditions like bushfire burn injuries and smoke inhalation for domestic animals, and almost none for wildlife.

During the 2019-20 fire response, lack of guidelines also meant vets sometimes prematurely euthanised wildlife on welfare grounds8 as they lacked either the knowledge, skills, or equipment to treat them effectively. Both by failing to euthanise animals with little chance of rehabilitation and euthanising animals capable of recovery and release, vets lacking adequate guidance disappointed the expectations of wildlife carers and members of the public, leading to conflict. Vets also faced disputes about their authority to euthanase animals. As wildlife is owned by the state and held in care under the wildlife group's rehabilitation licence, it is not clear whose jurisdiction prevails. Some wildlife carers tend towards a no-kill philosophy and may prevent vets from performing euthanasia. Ethical and philosophical differences such as these exacerbate disputes about wildlife euthanasia and can have a profound effect on animal welfare.

These misunderstandings about vets' treatment decisions result in criticism by wildlife carers and groups for what they perceive to be a lack of knowledge, skill, and compassion for wildlife. Many wildlife carers have spoken negatively about their interactions with vets and vet clinics before and after the bushfires. Surveys conducted before the bushfires discussed this distrust between NSW's wildlife rehabilitation and veterinary sectors (Haering et al., 2021, 2020). Their 2020 survey of wildlife carers showed that only 66% were satisfied with the veterinary services they received. Veterinarians, though, have a different opinion about their dedication to wildlife— 93% believed their legal and ethical obligation to sick and injured wildlife was the same as that of companion animals (Haering et al., 2021). Vets also expressed critical views of wildlife rescue groups; the main complaints were about slow response times to animal collection requests and the negative behaviour of rescue group leaders and members (Haering et al., 2021). About one-quarter of vets reported negative interactions with wildlife volunteer carers, such as conflict and criticism of their treatment decisions, as a barrier to providing wildlife care. Nearly half of the respondents reported wanting wildlife groups to be more open, transparent, and respectful in their interactions with vet clinical personnel. Recognising these conflicts, the NSW Government Department of Planning, Industry and Environment (DPIE) has since created a "Charter of Engagement with Veterinary Professionals" outlining the appropriate behaviour and cooperation they expect of wildlife rehabilitators (NSW DPIE, 2022). However, this charter of conduct is aspirational and not enforceable. In summary, this distrust and the existing sources of conflict laid a strong foundation for ongoing and amplified conflict during the bushfires.

In addition to these conflicts between vets and wildlife carers, during the 2019-20 bushfires, the scope of the threat, suffering and destruction produced discord between individuals within and between sectors over the appropriate allocation of resources. Resource allocation is always contentious, especially during disasters like bushfires and when lives are at stake. For example, the estimated weekly cost for a single koala in intensive care hospitalisation following the bushfires was $16,000 (Sherwen et al., 2023, p. 349). In the individual care paradigm, paying this cost is justifiable. Those operating within a herd health and ecosystem health paradigm might also agree to pay similar sums to treat critically endangered animals but not to treat common species like brushtail possums and eastern grey kangaroos. Some believe it is better to euthanise all burnt wildlife that they can't quickly release to conserve resources that may be spent saving a

greater number of animals. Some believe each individual's life has meaning and value, and all efforts should be made in their recovery. Hence, conflict over resource allocation for wildlife rescue resulted during the 2019-20 bushfire response from philosophical differences and misunderstanding of the different paradigms of care and how they were implemented.

A lack of resources also produced conflict between vets and wildlife rehabilitators before and after the bushfire disaster. Vets have traditionally viewed wildlife work as voluntary, community work, or a charitable donation. Because wildlife is officially the state's property, vets believe their voluntary work contributes to the public commons, even though the government does pay for wildlife veterinary treatment. However, some clinics don't treat much wildlife, citing lack of time, expertise, or cost as reasons for this decision. Others are passionate about wildlife and invest heavily in facilities, equipment, and wildlife-specific medicines. Most, however, treat some wildlife, providing at least emergency first aid or humane euthanasia. The veterinary business carries the financial burden of wildlife care as a form of charitable donation because other funding sources usually don't exist. This situation is not often advertised, so financial decisions create tension between vets and carers. For example, some vets charge for the medicines and occasionally their professional fees. Many dedicated wildlife carers choose to pay for drugs from their funds but might balk at professional fees. The result is the negative perception that veterinary clinics, which are privately run small businesses, do not care for wildlife enough to donate the treatments for free, leading to friction between stakeholders.

The NSW state, the official owners of wildlife, do not pay for veterinary wildlife treatments. There is also no state funding for wildlife care organisations to pay for these services. Only a few wildlife organisations have dedicated veterinary funds generated via fundraising and small grants from other not-for-profit organisations. Additional grants were available during the bushfires, but the majority were still from non-government organisations. Thus, all of Australia's wildlife treatments, before, during and after the bushfire response, were paid for by vets, wildlife carers, and non-government organisations, including the labour cost. Before the bushfires, studies showed vet clinics and wildlife carers' voluntary wildlife care labour contributed 28 million dollars to NSW[9]. The additional burden of care produced by the disaster strained already thin financial and personnel resources, creating enormous stress.

The trauma of the 2019-20 bushfires and witnessing the impact on wildlife produced internal, personal conflicts for those involved and added to interpersonal conflicts. This trauma, stress and extra workload led to burnout for many. Trauma, anxiety, and post-traumatic stress disorders have been well-researched in other fields of care work and disaster scenarios. While prevalent in animal care arenas, little has been done to research and develop management strategies. Paul et al. (2024) were among the first to explore the psychological hazards veterinary and animal care workers experienced during and after these bushfires. Extreme and prolonged stressors were measured, including post-traumatic stress disorder symptoms, psychological distress, burnout, and grief. Paul et al. described the pivotal role of animal care personnel during disaster response and recovery. The broader failure of society to include animals in disaster preparedness or to acknowledge the efforts of wildlife rescuers contributed to the trauma rescuers experienced. In addition, veterinarians, vet nurses, and wildlife carers are overwhelmingly women workers. These workers usually earn less than male workers, frequently need to balance animal care with other unpaid care work and face additional challenges in mobile fieldwork. During the bushfires, this meant the burden of undertaking wildlife rescue fell to an already-overburdened workforce, compounding the effect of trauma and stress. Lacking support, financially, physically and emotionally drained, these workers suffered psychological harm and struggled to meet public expectations and their own high aims for wildlife rescue.

This summary of the NSW wildlife rehabilitation environment describes a highly motivated but exhausted volunteer workforce with complex motivations, needs, and skills that often came into conflict during the bushfire response. Haering et al.'s two studies on wildlife rescuers (2020) and veterinarians (2021) discussed in this section capture the limitations and complaints of these groups but not the inherent causes of the conflicts, which are, in part, differing paradigms of care, and an under-resourced wildlife sector. However, the misunderstandings and stresses leading to conflict were magnified during the 2019-20 bushfire response by a lack of clear information for rescuers.

## Opacity of information

During emergencies and traumatic events, those rescuing and caring for wildlife require straightforward and easy-to-understand information on who is responsible for what, where, when and how. They need easy access to state disaster management plans for animals and wildlife, guidelines, structures, available resources, and contact details. Unfortunately, the lack of clear and consistent information during the 2019-20 bushfires caused confusion and distress. Searching for this information wasted valuable resources and time, leading to poor or no outcomes. The public and official agencies struggled to determine who was responsible for animals and where the plans were to provide animal care. Those who attempted to find out where wildlife fit into emergency management encountered vague, confusing and often conflicting answers. In addition, most government bodies had limited resources, staffing and capabilities due to decades of funding cuts. NPWS faced challenges in extinguishing the fires, and they did not have the capacity to manage ongoing calls for wildlife search and rescue or to supervise wildlife rescue teams in the field. Due to the opaque chain of responsibility and the lack of resources, individual rehabilitators, veterinarians, and members of the public were left to manage the NSW wildlife rescue.

Many of these responded to the crisis and were willing to volunteer in wildlife rescue and treatments. However, the impenetrable web of information and lack of central responsibility meant the large numbers of volunteer veterinarians and nurses were initially told to wait until someone called them up— a vague reference to either government agencies, NPWS, DPI, or non-governmental organisations like Vets Beyond Borders' Australian Veterinary Emergency Response Team. Volunteers were repeatedly told not to enter fire grounds to search for burnt wildlife, especially in national parks. Eventually, several groups of volunteers self-organised into teams—vets, nurses, wildlife carers, ecologists, conservation biologists, arborists, SES volunteers, and drone pilots. They eventually partnered with wildlife rehabilitation organisations, local community groups and some animal non-government organisations.

In NSW, volunteer groups were unable to officially search and rescue wildlife due to the lack of a structural system to facilitate such operations. These groups could only unofficially search for burnt wildlife on private properties or some state forestry lands. Despite negotiations with NPWS, access to national park fire grounds was consistently denied. Access to private property depended on the will or interest of the property owner. The absence of a clearly communicated state disaster response for wildlife resulted in absurd and distressing situations. For instance, in some regions, search and rescue teams would set out in the morning to search for injured kangaroos on private properties and pass kangaroo hunting units returning from shooting kangaroos on adjacent properties. The conflicts between kangaroo shooters and the kangaroo industry with wildlife conservation, ecologists, and rescue groups are well-known. However, it was challenging for veterinary teams and volunteer rescuers to work around shooters while experiencing the emotional distress of wildlife care following the fires. The shooters encountered expressed confusion to these teams about why they spent so much money and resources to rescue and save what they perceived as a pest species. Ironically, one thanked the rescuers for saving more kangaroos they could later shoot and profit from.

During the 2019-20 bushfires, wildlife rescuers and owners of domestic animals faced difficulties in finding a clear pathway for disaster relief for their animals. There was no official responsibility assigned for the rescue, treatment, or management of wildlife during emergencies. While the Department of Primary Industries (DPI) was responsible for livestock and some domestic animals, the DPIE only regulated wildlife rehabilitators and didn't manage wildlife rescue during disasters. Similarly, the National Parks and Wildlife Service (NPWS) wasn't responsible for individual animal rescue or care. Although veterinarian associations regulated veterinary activities, they also didn't provide animal care. The lack of an official entity responsible for wildlife rescue or management during disasters caused problems for the willing veterinary and wildlife rescue volunteers. The piecemeal regulations governing wildlife in NSW only made the situation worse.

## Patchwork of regulations

The lack of cohesive regulations governing wildlife in NSW can be traced to the historical exclusion of wildlife from policies. This exclusion came to light during the 2019-20 bushfires as public concern for wild animals grew during the disaster. In NSW and most other Australian states and territories, disaster management structures do not include wildlife, and there was no clear framework outlining roles, responsibilities and jurisdictions. During the bushfires, information on where wildlife fit in disaster management was vague, contradictory, and opaque. The patchwork of state regulations also led to fragmented responsibility for animals, causing wildlife to slip through the cracks. Furthermore, variations in regulations and jurisdictional limits within the state meant mobile volunteers working at multiple locations in NSW faced problems learning about and meeting statutory requirements. The lack of a unified framework led to confusion, distress and stalled action.

Wildlife's exclusion from disaster management is a result of the human-centric construction of society, systems and processes, where "disasters are a social construct that preferences humans over more-than-human species and systems... such framings are inadequate for responding to the wider challenges about the Anthropocene" (Dominey-Howes, 2018, p. 12). This construct results in a disaster management system that focuses exclusively on humans and those animals humans rely on, like livestock and pets. The public concern for wildlife affected by the bushfires exposed the exclusion of wildlife from disaster planning as a fundamental, structural gap in regulation.

It is difficult to maintain high standards of wildlife welfare and monitoring due to the lack of clarity and enforcement of legislation, roles, responsibilities, and authority over animals. This confusion is not surprising given that six different acts in NSW regulate wildlife10. For example, wildlife rehabilitators must be licensed members of wildlife rehabilitation groups with a biodiversity Conservation Licence under the Biodiversity Conservation Act 2016 (NSW). Only licensed rehabilitators and registered veterinarians are legally allowed to take injured and orphaned native wildlife into temporary care. There are an estimated 5600 volunteers who provide over $27 million in voluntary wildlife rehabilitation services annually in NSW11. The peak body responsible for many wildlife carers in NSW is the Wildlife Council, which is regulated by the NSW Office of Environment and Heritage (OEH). However, this council only represents just over half of NSW wildlife carers.

WIRES, the most prominent and well-funded wildlife care agency with 2500 members, is not a member of the Wildlife Council. Regardless, WIRES members are bound by the same state legislation, policies, and protocols as the Wildlife Council members. Complicating matters further, in addition to the six acts covering wildlife and the regulations provided by the NSW Department of Planning, Industry and Environment (DPIE), the DPIE publishes several policy manuals and codes of practice that those working with wildlife are expected to know. Researching, locating, understanding, and applying all the relevant regulations, codes, and policies and keeping current when they change are complex and ongoing tasks. The additional effort of researching where wildlife fit in emergency management was overwhelming for those working in the bushfire emergency.

The six acts governing wildlife in NSW were inconsistently developed and contain many gaps that do not cover the needs of wildlife rescuers, particularly in disasters. These gaps in legislation hindered wildlife rescue efforts during the 2019-20 bushfire emergency, especially when interpersonal and inter-organisational conflict prevented harmonious cooperation. For example, there were issues with the jurisdiction over animals, especially koalas, which were sometimes moved between various carers, facilities, veterinary clinics, rehabilitation groups, and regions. Clear guidelines were needed to determine whose wildlife licence they were to be registered under, who was to carry out their rehabilitation, and where they should be released when their injuries had healed, especially if their territory was burnt. Some decisions were technical such as working out the legal jurisdiction and licence wildlife rehabilitators were operating under while outside their own wildlife rehabilitator licence region.

These issues were especially critical for wildlife responders specialising in the euthanasia of large macropods by gunshot or for darting (using firearms to capture animals by chemical immobilisation). Their firearms subject these responders to much more legislation than the average carer, with heavy penalties and consequences for misconduct. During the bushfires, these responders and the teams working with them had difficulty clarifying standard policies for non-standard circumstances, such as the requirement to register their weapons with police at each location where they travelled and to keep their firearms in a gun safe while working in field camps. Other responders also faced problems during the disaster response, for example, mobile veterinarians had to determine if and how they could use restricted drugs like pain relief medications while moving around in the field, which they must keep in locked safes in specific registered locations. Some legislative questions link to the ethical issues described earlier, such as how to make decisions about euthanasia. These are just a few examples of the many legislative and planning issues faced by wildlife search and rescue teams in NSW during the bushfires,

which were aggravated by confusion over responsibility and jurisdiction for wildlife during emergencies. The hierarchy of organisations, designations, and the chain of responsibility was difficult to ascertain. During the bushfires, most veterinarians and wildlife carers were unaware of the network of government agencies responsible for animals.

During the bushfires, wildlife rescue efforts were hindered by a lack of proper regulation, policy, and planning. This issue was evident even within government agencies responsible for animal care. In New South Wales, the Animal and Agricultural Services Functional Area (AASFA), led by the Department of Primary Industries (DPI), was responsible for animal care during emergencies. Local Land Services (LLS) and their veterinarians were part of the AASFA and were active during the bushfire emergency. They treated and euthanased burnt livestock on private pastoral land and farms. LLS was also tasked with treating domestic animals taken to evacuation shelters. For the first time, LLS veterinarians received requests to treat wildlife during the bushfires. However, they were unprepared for the unprecedented need for this service and the sudden public interest and demand.

During the 2019-20 bushfire response, there was an overwhelming acknowledgement that wildlife had fallen through the cracks. The burden of care fell to wildlife rescue groups, individuals, and local community groups to fill the gap when government agencies failed. In NSW, inconsistent and incomplete legislation that excluded wildlife from disaster planning made the situation worse. Emergency and disaster management in Australia is state-legislated and differs in each state and territory. South Australia and Victoria are the only two states that have incorporated wildlife into their disaster management structure and processes after more than a decade of advocacy and work by local veterinary volunteer organisations and wildlife agencies. However, during the bushfires, NSW had not undergone the same development to include wildlife in disaster management plans and policies. That left individuals and organisations to conduct wildlife rescue during these bushfires without formal structures to work within, leading to consequences for workers and wildlife.

## Conclusion

This report highlights practical challenges faced by bushfire wildlife responders and the inherent causes that resulted in an ineffective wildlife disaster response. These include piecemeal, opaque and inadequate legislation and planning for wildlife in emergencies, as well as conflict over differing paradigms of care. Several researchers have already summarised specific practical and legislative hindering wildlife rescue in NSW problems, specifically during the bushfires, and offered their solutions12. While some recommendations have been adopted, more transformational change is required to meet the public's demand for effective wildlife care. A social science or veterinary anthropology analysis may help to shift how wildlife is perceived and cared for, creating genuine and effective structural change. This section summarises the report's key findings, outlines evidence of progress and outstanding issues, and offers recommendations.

During the bushfire response, misunderstandings about the nature of wildlife care and conservation worsened conflicts between stakeholders. Before the fires, their differing paradigms weren't so prominent as each organisation or group worked relatively independently. However, being suddenly thrown together to address a disaster on a scale previously unheard of caused distress, confusion, conflict and trauma. To complicate the situation, the bushfire disaster erupted on a workforce of primarily female wildlife rehabilitators and groups who were already exhausted and overburdened from a decade of caring for drought-affected animals.

Paul et al. (2024) recommend that government agencies responsible for wildlife fund paid veterinary emergency response positions and provide resources to relieve some of the volunteer and financial stress experienced. This would help the veterinary sector. However, the wildlife care sector, like many care work performed in society, relies mainly on free labor, which is predominantly provided by women. More needs to be done to address the exploitation of women in animal care work. During the bushfire wildlife rescue response, the trauma, stress and workload led to burnout for many. This situation is bound to repeat until a fundamental shift occurs to the free labour approach to wildlife care.

The lack of wildlife-specific training led to poor outcomes for animals, conflicts between vets and wildlife carers and trauma for vets and vet nurses during the 2019-20 bushfire wildlife rescue response. Future training must include specific information and skills to assess when an animal can be effectively treated, rehabilitated, and released. Recently, some wildlife organisations and zoos have increased their funded short courses in wildlife medicine, allowing more GP vets to improve their skills.  13 The DPIE has also published codes of practice, treatment, and care guidelines for the main wildlife species handled by vets and carers14. They are conducting centralised webinar training sessions on these species for wildlife carers15 and have recently published simple fact sheets on veterinary triage and treatment of several key species16. They also promote a Wildlife Friendly Vet program on their website (FNPW, 2023). Additionally, Taronga Zoo is running veterinary professional training courses in wildlife treatment and care for veterinarians and vet nurses17. However, centralised disaster-specific guidelines are required to prevent confusion and conflict and ensure better outcomes for wildlife in future disasters.

The severity and frequency of disasters are increasing in the Anthropocene era, as exemplified by the magnitude of the recent bushfires. During the 2019-20 bushfires, there was a growing concern about the welfare of wildlife during disasters. However, traditional disaster work has always prioritised human needs over non-human species and ecosystems, which led to challenges for wildlife rescuers in the field who faced conceptual, philosophical, and structural limitations. These problems hampered the effectiveness of those wildlife rescuers in the field despite the enormous amount of goodwill, volunteers, and financial resources available.

The exclusion of wildlife from disaster planning, fragmented regulations regarding wildlife and lack of accessible information hampered wildlife rescue efforts during and after the fires. In the years since then, most organisations and agencies with a stake in wildlife health have also conducted enquiries, reviews, and updates to refine or create disaster preparedness plans, both in NSW and nationally. These include the NSW Bushfire Enquiry18, the NSW Koala Enquiry19, and the Royal Commission into National Natural Disaster Arrangements20. The NPWS is adopting many enquiry recommendations to improve wildlife response in bushfires, including establishing a wildlife emergency response task force.

In September 2023, the NSW government published the 'NSW Wildlife in Emergencies Sub Plan', a part of the State Emergency Plan (EMPLAN) coordinated by the NSW Environmental Protection Authority (NSW EMPLAN, 2023). This thirty-page document is a worthy start toward building preparedness by integrating wildlife into state disaster structures and processes. The NSW NPWS is reforming its response to wildlife during and after emergencies and aims to incorporate veterinary practices within the emergency planning and incident control structure (Haering et al., 2021). Private veterinary practice staff will be compensated for time and travel costs associated with wildlife treatment.

In addition, they plan new programs to partly reimburse practices for the daily wildlife health expenses and essential housing and diagnostic equipment. How and when this compensation will be funded and administered is not yet clear. Haering et al. (2021) reiterate calls from the sector to establish a regional wildlife hospital network staffed by paid professionals that would relieve some burden from private vet clinics and wildlife carers. Centralising care can scale costs and alleviate the burden of the home-based care model currently practised. While this plan is still in the early stages, it is unfortunately still far behind Victoria's coordinated wildlife emergency processes that Parrott et al. (2021) describe in their breakdown of Zoo Victoria's role in the 2019-20 bushfires. NSW has a lot of catching up to do.

## Recommendations

Arising out of the problems revealed by the 2019-20 bushfire wildlife rescue experience, this report makes the following five recommendations:

1. It is essential to move away from the free labour approach to wildlife care. Government funding for wildlife veterinary treatment and wildlife rehabilitator expenses should be provided through a simple, transparent, centralised funding model. A network of funded and staffed wildlife hospitals distributed throughout the state must be established.

2. Adopt and implement all the recommendations produced by the NSW Bushfire Enquiry, the NSW Koala Enquiry, and the Royal Commission into National Natural Disaster Arrangements.

3. Increase the promotion and funding of wildlife research and publication in the most common species' care, treatment and rehabilitation. This includes best practice guidelines for disaster-specific injuries like burns, smoke inhalation and flood-affected animals. Euthanasia decision trees should be more elaborate, standardised and expanded to include these disaster-related conditions, enabling consensus among and between sectors.

4. Increase funded training in hard and soft skills for the sector. Hard skills include wildlife medical and surgical treatment, care, and rehabilitation. Soft skills include training in the different paradigms of care, conflict resolution, and mental health support.

5. Provide and maintain a single central, official repository of information and publications that covers the needs of the wildlife care sector. Examples include legislation, codes of practice, policies, guidelines, veterinary manuals, rehabilitation manuals, a flowchart of government organisations regulating wildlife care and their contacts, non-government agencies involved, funding sources, disaster preparedness training, wildlife emergency response processes, responsibilities and channels, and application forms.

In the future, Australia will experience an increasing number and scale of natural disasters, such as bushfires and floods. A coordinated, holistic, and multidisciplinary approach to future disaster preparedness must include all animals, including wildlife. Without sincere efforts by institutions and political establishments, the structural changes needed to include the more-than-human world of wildlife in disaster management policies and procedures will continue to fall short of need and public expectations.

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# Appendix 5: Animal Emergency Network: A phone/web app prototype

The Animal Emergency Network is a mobile application that helps communities who are exposed to climate-induced or other crises coordinate the shared care of at-risk animals.

## The challenge

During research into animal care during the 2019-2020 bushfire crisis in the Shoalhaven region, the research team at the University of Sydney looked at how communities came together to care for and rescue animals during and after the Black Summer fires. While communities did extraordinary work for animals, they were hindered by the absence of any existing coordination mechanisms or platforms. To fill this gap, committed volunteers set up Facebook and WhatsApp groups, sometimes building on existing networks and sometimes from scratch, to help coordinate the care of animals. They mainly did this by identifying who needed what and connecting them with people with the available resources. This coordination rested squarely on a small number of people who were often already overburdened with caring responsibilities.

During our research, we heard that better coordination platforms would have significantly multiplied their efforts and reduced their personal costs—ultimately resulting in better animal care and survival during the crisis. From these conversations, the idea of a dedicated digital platform, such as a mobile app, was born.

## The proposed solution

As part of this project, we have explored how to meet this need with a digital platform that could provide such support. It became clear that no digital solution could be all things to all people, and to succeed, it would require focus to better ensure its adoption. We, therefore, first developed some guiding principles for any proposed solution, which informed an articulation of what the app should and should not achieve.

## Guiding Principles

### Build on centres of trust

Integrating trusted community networks and advocates is essential for fostering user trust and engagement in the app.

- The platform could connect with established community networks, key individuals and community advocates, leveraging existing trust to encourage adoption and usage.
- Utilise technology already widely adopted, such as SMS and phone calls, to ensure connectivity with people on and off the platform.
- Reference and collaborate with trusted sources within community, ensuring credibility and reliability in the app's information and services.
- By building upon existing trusted networks, the app becomes an extension of community support systems, enhancing its acceptance and effectiveness during crises.

### Provide evergreen relevance

The app provides ongoing value beyond crisis situations, fostering community engagement and preparedness through its multifaceted features:

- Provide resources for disaster planning and preparedness, such as personalised animal crisis care plans, fostering proactive engagement and readiness in the community.
- Facilitate connections within the community, encouraging collaboration and support networks that persist beyond crisis periods.
- Register for alerts and updates, ensuring timely information dissemination and readiness for potential emergencies, enhancing community resilience and responsiveness.

### Scale with a disaster

The platform's core functions should scale around a crisis moment, ensuring help requests and responses are prioritised and alert and coordination systems enabled.

- Transitioning into a crisis mode, the app could adjust its core features to prioritise urgent assistance requests and streamline response efforts.
- Provide opportunities for people to step into community coordinator roles, which would increase the effectiveness of communication and coordination of support.
- In a crisis, the app can notify users to activate their crisis plans while providing flexibility for unexpected emergencies, allowing for adaptive support strategies tailored to specific situations.

## Platform do's:

A digital platform to help prepare for and coordinate the care of animals during a disaster should provide the following core features:

- Easy to sign up
- Provide offline features
- Link to expert advice for animal care before, during and after disasters
- Create a personalised crisis plan
- Protect people's privacy
- Connect people with local support
- Subscribe to SMS alerts
- Work on common devices
- Have a web version
- Emphasise animal care, not general emergency advice
- Report abandoned or hurt animals to relevant services
- Connect with appropriate emergency services

## Platform don'ts:

Importantly, while there are countless opportunities here, a focused platform cannot over-extend its features without creating confusion, so it should not:

- Be the go-to emergency beacon for a disaster
- Overpromise the availability of support or resources
- Require high speed internet
- Publish private contact details
- Limit communication to on-platform
- Require providing personal info to access resources
- Encourage people to take dangerous risks

## Prototyping a solution

With the scope of the app starting to be defined, we contracted a digital agency to help us prototype an application that models how to meet these needs. Under the working name Animal Emergency Network, this prototype comprehensively explored a feature-rich mobile application that helps communities who are experiencing climate-induced or other emergencies to coordinate the shared care of animals while equipping themselves for crises through resources and emergency planning.

### View the Prototype

Scan the QR code to view the application prototype on your mobile device, or visit the following URL:
https://bit.ly/animal-emergency-network

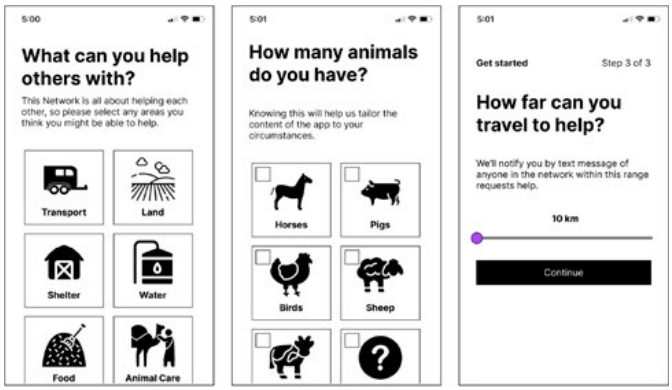



Figure 2: Screenshots of the Animal Emergency Network App prototype. These images are from the 'Get Started' section of the app.

## Platform features

### Networks

#### How it works

Rather than a single online community that connects all users across the country, the app would provide geographically based 'community networks' for people to request to join. These networks can be searched by name, location or proximity to the user's current location. If a network doesn't exist, the user can request a new network be added. To join a network, users must create an account and then request to join a network. Their request would either be automatically approved once their email is confirmed, or moderated by a network coordinator depending on the resources available within each network. Once approved, the user is walked through the ground rules for the network and asked to consider how they can contribute support.

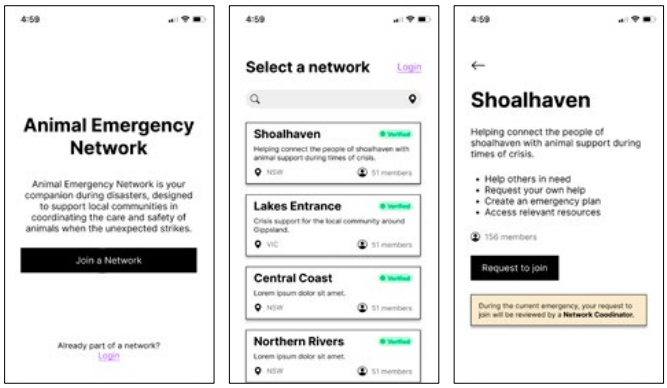



Figure 3: Screenshots of the Networks elements of the App.

#### What need does it meet?

In the research, it was clear that the community groups spontaneously coordinated both through shared interests and within bounded areas (that did, at times, interconnect), which was an affiliation that helped garner relevance, accessibility and trust. It was also clear that some of the well-intended offers of help from outside these regional zones were not always that helpful and at times created interference. On balance, we consider the spatial organisation of communities a more useful organising logic than topics of interest, at least in the early stages of app development.

#### Considerations

How to define network boundaries needs consideration. If a user lives on a network border, the support is only available within that network and not across networks. This would require the user to be in multiple networks and know which network to use.

## Requests

### How it works

The core function of the app is for users within a network to offer or request help. When someone joins a network, they are on-boarded by asking how they can assist others. This introduces them to the request framework, which covers types of requests and the animals supported by the network. Current requests are then displayed on the home screen of the network, marked by urgency. If someone requires support, they can request help from the app and provide details of the type of help they need. The app then notifies all people within range who have previously suggested they could help, where they can review the request before contacting them via SMS or phone call.

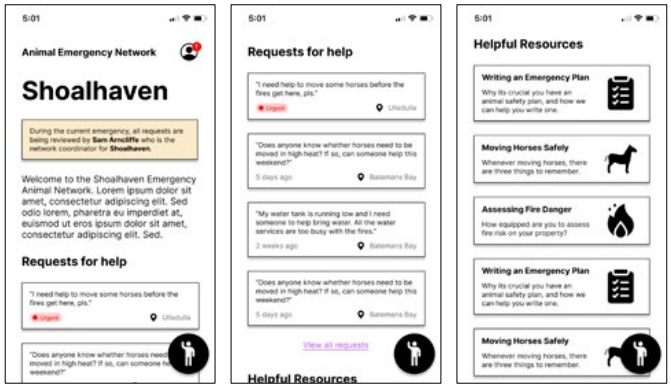



Figure 4: Screenshots from the app showing how a user can see others' requests for help.

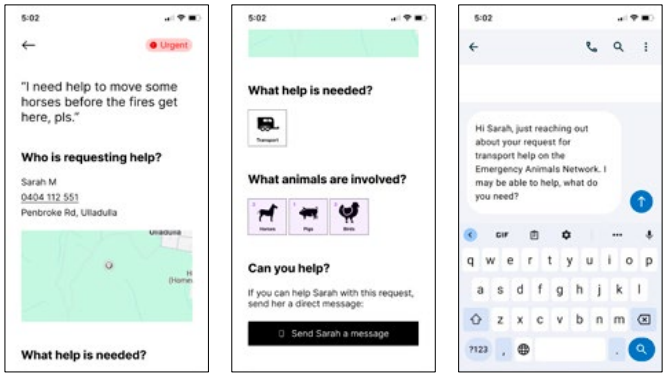



Figure 5: Screenshots of the app showing how a user can respond to someone else's request for help.

### What need does it meet?

The request system triages support needs by type and animal. This helps to target notifications to only appropriate community members who have aligned resources. The notification system is the initial request beacon, though active requests are also listed within the network. By first optionally asking new users how they can help when they sign up (i.e. before requesting help), the network sets the tone of a shared responsibility across the community.

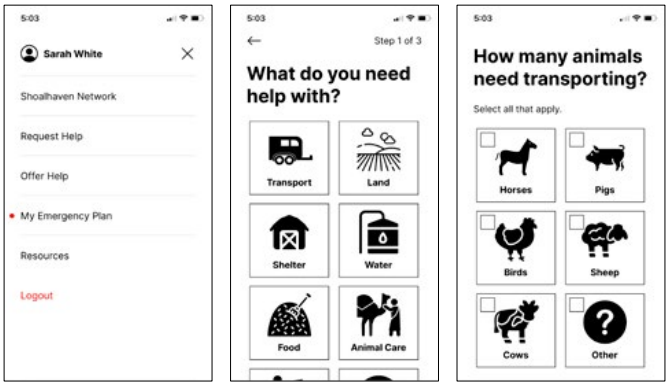
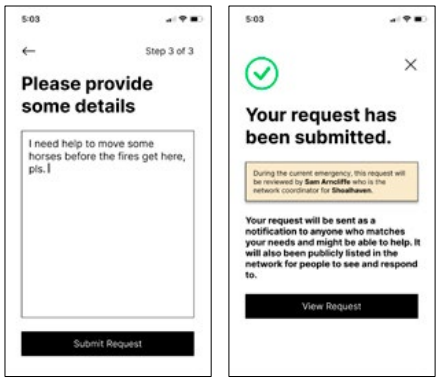



Figure 6: Screenshots of the app showing how a user can request help.

### Considerations

Triaging requests requires a clear and conclusive list of the types of support people can request, meaning some niche requests may not fit this system. Notifications are not a guaranteed method of contact, and so a fallback SMS service could also be considered. Not all local community members will be active on the platform, and so the optional role of Network Coordinators elevates the meaningfulness of this network as a support system for animal care because they will be able to connect App users with community members who are not on the App.

Figure 7: Screenshots of the app showing how a user can request help.



## Coordinators

### How it works

While the app primarily functions as a peer-to-peer community network, the utility of the app is enhanced when a volunteer network coordinator can help moderate requests and identify people in the network who may be able to support. When new people request to join, network coordinators can moderate to ensure they are legitimate community members. Then, for every new support request which is made, the network coordinator is notified and can help provide behind the scenes connections, beyond the app members, to ensure the right person is located to help.

### What need does it meet?

The role of coordinators was clearly observed in our research. The existing trust and connections they held in the community saw them become the conduit of support, though often at personal cost. By resourcing them with a structured digital support network, they can more easily create those connections between need and support, without having to manage the connection in an ongoing way.

### Considerations

There remains the risk that coordinators could become overloaded during a crisis. To help prevent this, the app should primarily function as an effective peer-to-peer network, augmented by the role of an optional coordinator.

## Resources

### How it works

To help people prepare for disaster, the app provides a comprehensive list of evergreen resources that are suitable prior to, during, and after an emergency. These resources are available offline, and can be easily downloaded or printed as PDFs. They cover a range of relevant topics, and can be searched within the app for quick access. These resources can be organised based upon the animals identified during the on-boarding process. The most popular resources are shown on the home screen of a network, below the requests, helping people quickly learn how the app can serve their needs. These resources can also be accessed by people who have not formally joined a network.


Figure 8: Screenshots showing the Resources section of the app.

### What need does it meet?

One of the big insights from the research was that many people felt they could have been better prepared but did not know where to start with those preparations. The app helps educate and resource animal carers year-round by providing resources on common needs.

### Considerations

The needs and context of each network across the country could differ significantly, and so the app will need to allow for filtering of these resources per network. This could be something done by a Network Coordinator or when the network is initially set up.

## Emergency Plan

### How it works

The Emergency Plan feature goes further still than the Resources, walking users step by step through the considerations they need to take into account to ensure they have a plan for the care of the animals they are concerned with during a disaster. The Emergency Plan is shown as an alert throughout the app until it is populated by the user, where the user can select the same categories available for requests and answer key questions about who, what and how they'll support the animals if any emergencies occur. Any topics that aren't relevant can be hidden from the plan, allowing the user to tailor their plan uniquely around their needs. The plans would be available offline and can be printed or downloaded as a PDF to ensure there isn't an internet dependency on the plan. As people prepare their plans, they are prompted with relevant resources for each topic that can help them think more broadly about their needs. This feature is also available without a need to join a network.

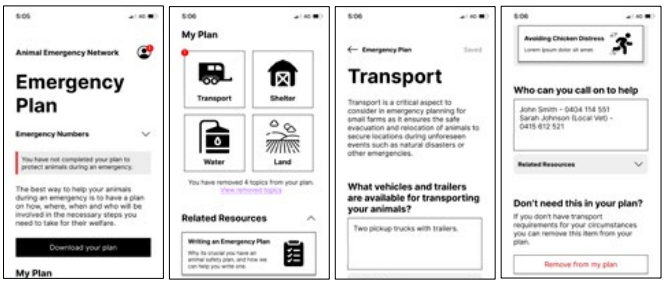



Figure 9: Screenshots showing how a user can create their own emergency plan in the app.

### What need does it meet?

A significant finding from the study revealed that numerous individuals lacked a prepared plan on what to do in emergencies, specifically how to care for animals. By offering a systematic approach to crafting an emergency plan for themselves and the animals they care for, the app serves as a valuable educational and support tool for animal caregivers.

### Considerations

Crises never follow our plans, and so this feature should be presented as a guide rather than a comprehensive, failsafe action list. When the plan fails, the app should still provide a support network that people can request within. The purpose here is to aid preparation, not foresee all challenges.

## Further considerations

This app prototype is only illustrative of how a digital platform could be delivered. A thorough consultation and user-led research process would need to be undertaken for any full application build, ensuring that the app directly meets the community's needs.

Additionally, this app has been prototyped based on the needs of one regional network (the Shoalhaven) and one category of climate-induced crisis (bushfires), so further review across other communities nationwide would be important to inform a more universally applicable full feature set.

Lastly, this app prototype has been designed to be largely community-led, though there would need to be a team behind the app providing support to networks, resolving bugs, updating the app, marketing within communities and coordinating with other emergency networks. The nature of this organisational infrastructure has not been considered in this prototype, though would play a key role in any final delivery.

# Appendix 6: Preparing for emergencies with your animals: a community conversation guide

The following document is a set of instructions on how community members can work through a self-guided process to collectively plan to care for their animals during emergencies. The document begins overpage and can be disseminated as a stand-alone document without the rest of this report. Click here to download a standalone version.

# Preparing for emergencies with your animals: A community conversation guide

Image: Jo-Anne McArthur/ We Animals Media.

# About this guide

Past experience in Australia and around the world shows that in emergencies and disasters such as bushfires and floods, animals – wildlife, farmed, and companion animals – are often the most vulnerable members of our communities. Worrying about or losing loved animals can also put humans in dangerous situations and cause significant distress.

**Planning ahead can make sure you and your beloved critters have the best chance of surviving and thriving on the other side of an emergency situation.**

As disasters get more frequent, fast-moving and widespread, developing your animal emergency plan with your local community is more important than ever, because not everyone will have the resources or capacities to care for their animals by themselves.

**This guide will help you take the time with some trusted neighbours, family, friends or community members to make sure that your and their animals will be as safe as possible, come fire, flood, or other emergency.**

This guide has been developed as part of the 'Developing systems and capacities to protect animals in catastrophic fires' research project. This research found that emergency planning often does not include animals, or when it does, this planning is only done at the household level. The project found that during the Black Summer bushfires, this level of preparation was not sufficient, and many people needed additional support from their communities to safely care for their animals – and the communities that responded achieved amazing things, but it was also very challenging to make this happen. Planning ahead as communities will make the processes easier, more effective, and less stressful. The full project report can be found in full at https://doi.org/10.25910/82xf-5609.

# Part 1:
# Organising the session

1. Identify a small, trusted group of people you would like to work through this process with, and make a time to catch up with them, ideally in person, but a video conference chat will work too. You might also like to think about anyone you don't know that well, who would benefit from being included in the process. We know that social connection is one of the most valuable resources in disasters, so this process could be a great opportunity to build those community relationships.

2. We suggest allowing up to 3 hours, when you will not be tired or distracted (you could break it into 3 x 1 hour sessions, if that is easier, or similar), and that a group of 3 – 4 households would be a good number. Set a date a few weeks in advance, so you can each do your homework.

3. Let everyone know that, depending on their previous experiences, this planning process might be quite stressful and remind them of challenging situations in the past, even though it will help everyone be better prepared in future. It might be beneficial to check out www.beyondblue.org.au/mental-health/natural-disasters-and-your-mental-health and www.phoenixaustralia.org/disaster-hub which have disaster-specific mental health resources. As you work through this process with people, make sure everyone looks out for each other emotionally, and that if people need to take a break or slow down, that is respected.

4. Before you meet up in person, allocate one person to be the "facilitator" and another to be the "notetaker." When those people are speaking through their own plans, make sure someone else takes on the role of facilitator and notetaker, so they are free to discuss their plans.

5. The facilitator's role is to keep conversations on track and on time, and to make sure people are feeling comfortable to discuss their situations.

6. The notetaker's role is to write down all the things the group needs to be aware of going forward, and to make an action plan for what tasks remain at the end of the workshop.

# Part 2: Preparing individual plans ahead of the collective session

**7.** Each household should prepare their own individual animal emergency plan in advance. Here are some existing templates and guidance provided by other agencies which will be useful for this:

- The New Zealand government website has a great selection for different kinds of animals and different kinds of disasters: https://www.mpi.govt.nz/animals/animal-welfare/animal-welfare-emergency-management/preparing-animals-for-emergencies/
- These two sites focus on farm animals: https://www.four-paws.org.au/our-stories/publications-guides/disasters-and-farm-animals-are-you-ready and https://ccmedia.fdacs.gov/content/download/11446/file/Disaster%20Preparedness%20for%20Livestock.pdf
- These two sites focus on pets; The Red Cross page has the information in a number of different languages: https://www.redcross.org/get-help/how-to-prepare-for-emergencies/pet-disaster-preparedness.html and the RSPCA has some advice specific to reptiles, rodents and other less common pets: https://kb.rspca.org.au/knowledge-base/what-preparations-should-i-make-for-my-pets-in-case-of-an-emergency/

**8.** While developing their individual household plans, each household should identify the following (you can use Table A on the following pages as a guide):

- What resources do we not already have? For example, adequate cages to transport all our chickens.
- What information do we not already have? For example, where are the local evacuation centres, and do we know if they would accept our animals? Have the disaster warning systems changed, and do we need to look into that?
- What skills do we not already have? For example, the ability to confidently and quickly load all our horses onto trailers.
- What networks do we not already have? For example, do we only know people with spare paddocks locally, who are also likely to be affected by the same bushfires/floods as we would be? Will we need to connect with some people in a neighbouring region, where their land might be safe when ours is not, or ours might be safe when theirs is not?

# Part 3: Running the collective session

**9.** Once you've all arrived and settled in, begin with each household talking through the plans they have for all their animals, and the resources, information, skills and networks that they need but do not have. Depending how many and what kind of animals each household has, this might take a little time or a lot. Try to be realistic and plan this in advance, so you don't run out of time.

**10.** Let your group members know if you think they have missed any crucial steps in their emergency plan.

**11.** Allow each household to share their plans and the gaps they've identified, before you turn to the group problem solving part. The notetaker can take note of all the gaps identified by each household.

**12.** After each household has shared their plan, as a group, discuss which of these gaps in resources, information, skills and networks you can help fill within the group. Are everyone's needs going to be able to be met by the group? If so, what kinds of planning or communications need to happen to ensure this really works in an emergency situation? Do you need to practice anything?

**13.** Which gaps remain? What can you do, as a group, to fill these gaps? Is there someone you can speak to to get more advice or information?

**14.** Turn items 12 and 13 into a list of actions. For each action, allocate a person to complete it, and a timeline by which you hope to achieve it (you can use Table B on the following pages as a guide).

**15.** If necessary, set up another time for the group to catch up, to check in on progress against the actions, and if any further help will be required.

**16.** Celebrate your successes in multispecies community emergency planning! Thank all your human group members for their time and effort. Go home and give your non-human companions a hug or pat or special treat.

**17.** Share the love! Encourage every household that was part of your group to repeat this process with another group of different people. This will help ensure more and more people in your community go through this process, and that each household has multiple points of contact who know their situation and can help them keep on top of their emergency planning and possibly help if an emergency does happen. And/or you might like to share this form and talk about your experience on social media.

## Table A: Homework for individual households to prepare in advance

| **Resources** we need but don't have yet | How could we fill the **gaps?** |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |

| **Information** we need but don't have yet | How could we fill the **gaps?** |
|---|---|
| | |
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| | |

## Table A: Homework for individual households to prepare in advance (cont.)

| **Skills** we need but don't have yet | How could we fill the **gaps?** |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |

| **Networks** we need but don't have yet | How could we fill the **gaps?** |
|---|---|
| | |
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| | |

## Table B: Collective to-do list to be collectively decided during the session

| **Actions** required | **Who** will do this? | **When** to do this? | **What help** do they need to get it done? |
|---|---|---|---|
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Image: Jo-Anne McArthur/We Animals Media.

*Planning* ahead can make sure you and your beloved critters have the best chance of surviving and *thriving* on the other side of an emergency situation.

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CRICOS 00026A